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Accelerated Leach Testing of GLASS: ALTGLASS Version 4.0

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August 2019

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PREFACE OR ACKNOWLEDGEMENTS

The authors would like to thank Madison Caldwell at Savannah River National Laboratory (SRNL) for her diligent and meticulous work in helping to complete ALTGLASS Version 3.0, as well as, Frances Williams (SRNL) for her outstanding efforts that helped bring the first versions of ALTGLASS to the international glass corrosion community. Without the help of both of these individuals, updates to the database would be much slower coming to fruition.

The development of the database was completed at SRNL under contract with the Department of Energy - DE-AC09-08SR22470 with Savannah River Nuclear Solutions (SRNS). Versions 3.0 and 4.0 of the database were sponsored by the Department of Energy's Office of Environmental Management (DOE-EM) The compilation efforts of the original Versions 1.0-2.2 were cosponsored by DOE-EM and the Department of Energy's Fuel Cycle Research and Development (DOE-FCR&D) program.

EXECUTIVE SUMMARY

The Accelerated Leach Testing of GLASS (ALTGLASS) database is a collection of data from short- and long-term product consistency tests (PCT, ASTM C1285 A and B) on high level waste (HLW) as well as low activity waste (LAW) glasses. The database provides both U.S. and international researchers with an archive of experimental data for the purpose of studying, modeling, or validating existing models of nuclear waste glass corrosion. The ALTGLASS database is maintained and updated by researchers at the Savannah River National Laboratory (SRNL)[‡].

ALTGLASS provides the leachate compositions for corroding solutions including data for: Si, B, Ca, Li, Na, K, Al, Fe, Mo, Mg, Ti, Zn, and Zr. The database also provides information about each of the reported PCTs:

- Glass Type (HLW or LAW)
- Test vessel type (Teflon or stainless steel)
- Test duration (days)
- Geometric surface area (SA) of initial glass product (m^2)
- Surface area – to – volume ratio (SA/V) (m^{-1})
- SA/V*time (days/m)
- Density (g/cm^3)
- Glass starting mass (g)
- Glass particle size (mesh)
- Leachant volume (L)
- Type of leachant (water, brine, etc.)
- Test temperature (°C)
- Final pH of leachant solution
- Secondary mineral phases formed during corrosion (mineral type, name)[†]
- Analytical method used to identify/study secondary mineral phases[†]
- Glass homogeneity prediction (THERMO™ model)
- Glass compositional state predictions
- Glass composition (wt.%)

The PCT-B test was recommended as indicator of long-term glass dissolution behavior at surface area to volume ratios of 20 m^2/L and at 90°C.

The database was first compiled in FY2013 (ALTGLASS Version 1.0) and originally contained 2112 rows of data where each row represented the average of a duplicate or triplicate PCT response of a particular glass composition at a given test duration. The database, ALTGLASS Version 1.0, was updated to Version 2.0 in 2014 with the addition of 20 rows of data, and two updates, Versions 2.1 and 2.2, were issued to correct several minor input errors. Version 3.0 added 238 rows of data representing PCT results from corrosion experiments conducted in the United States by the Savannah River National Laboratory, Pacific Northwest National Laboratory, Argonne National Laboratory, and the Vitreous State Laboratory (SRNL, PNNL, ANL, VSL, respectively) as well as the National Nuclear Laboratory (NNL) in the United Kingdom.

This newest version, ALTGLASS Version 4.0[‡], has been updated with an additional 100 rows of data from the GLAMOR[f] program in Europe, most notably data on the French R7T7 (SON68) glass.

[†] Not available for all glass compositions reported in the database.

[‡] Electronic copies of ALTGLASS Version 4.0 can be obtained by contacting the database custodians:
Cory L. Trivelpiece: cory.trivelpiece@srnl.doe.gov; Carol M. Jantzen: CarolJ@usca.edu; Charles L. Crawford: charles.crawford@srnl.doe.gov

[f] P. VanIseghem, M. Aertsens, S. Gin, D. Deneele, B. Grambow, P. McGrail, D.Strachan, and G. Wicks, "GLAMOR, A Critical Evaluation of the Dissolution Mechanisms of High Level Waste Glasses in Conditions of Relevance for Geological Disposal," (2007) EUR23097.

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LIST OF ABBREVIATIONS

ALTGLASS	Accelerated Leach Testing of Glass
ANL	Argonne National Laboratory
ASTM	American Society of Testing Materials
DOE	Department of Energy
EA	Environmental Assessment
EM	Environmental Management
FCR&D	Fuel Cycle Research and Development
HLW	High-level Waste
LAW	Low-activity Waste
MAGNOX	Magnesium non-oxidizing
NNL	National Nuclear Laboratory (United Kingdom)
PCT	Product Consistency Test
PFA-TFE	Perfluoroalkoxy-tetrafluoroethylene
PNNL	Pacific Northwest National Laboratory
ROC	Reduction of Constraints
SA	Surface Area (m^2)
SA/V	Surface Area-to-volume Ratio (m^2/L)
SEM	Scanning Electron Microscopy
SRNL	Savannah River National Laboratory
SRS	Savannah River Site
THERMO	Thermodynamic Hydration Energy Reaction MOdel
V	Volume (L)
VSL	Vitreous State Laboratory
XRD	X-ray diffraction

1.0 Introduction

The Savannah River National Laboratory (SRNL), along with other laboratories within the DOE complex (e.g., ANL, PNNL, VSL) and international laboratories (e.g., NNL), have been conducting short to long-term sequences of static powder corrosion tests on high-level waste (HLW) and low-activity waste (LAW) using the short and long term Product Consistency Tests (PCT-A and PCT-B; ASTM C1285) [1]. These test sequences follow the evolution of the leachate solution composition so that the long term durability and corrosion mechanisms of the glasses can be assessed. SRNL has undertaken the task of compiling, combining, and preserving data from various national and international glass corrosion research programs into the Accelerated Leach Testing of GLASS (ALTGLASS) database.

The generally accepted model of glass corrosion [2, 3], shown in Figure 1, divides the dissolution process into three stages marked by the different glass/gel corrosion mechanisms and solution interactions (Stage I, II, & III). Glasses typically undergo an initially rapid rate of corrosion, known as Stage I, during which several mechanisms are taking place nearly simultaneously relative to the duration of the latter stages [3]. Stage I corrosion mechanisms include hydrolysis, ion exchange, and interdiffusion. As the concentration of glass elements increases in the leachant solution, this initially rapid rate will start to slow and the glass corrosion process will transition into Stage II [2].

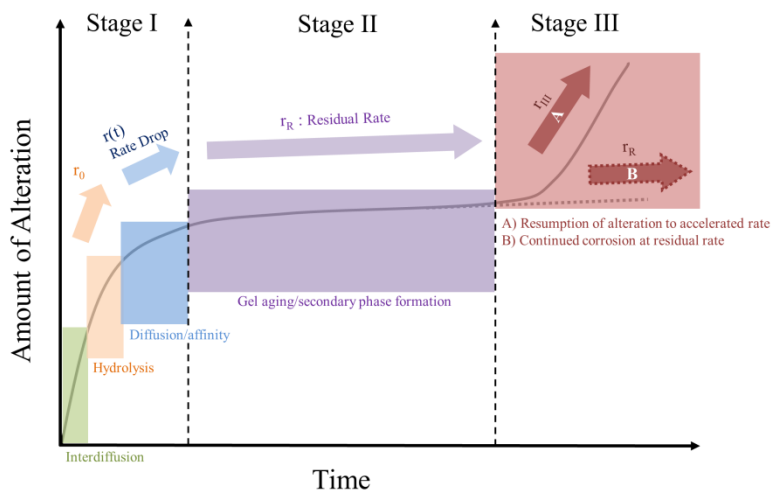

Figure 1: The generally accepted conceptual model demonstrating the various stages of corrosion a homogeneous waste glass will undergo in contact with aqueous solutions.

Characteristic Stage II corrosion is marked by a slow release of glass components into the leachate solution – the rate is typically orders of magnitude slower than the initial rate in Stage I. In Stage II, a pseudo-equilibrium state exists between the corroding glass/gel system and the contacting solution. Two hypotheses have been proposed for the rate controlling mechanism driving the Stage II "residual" rate: 1) a thermodynamic affinity between the glass/gel and solution slowing the release of glass components into solution (e.g., aqueous silica saturation), and 2) a transport barrier is established by the formation of the gel layer, which hinders and/or prevents the diffusion of glass components into solution. It is probable that a coupled mechanism between those two hypotheses is controlling Stage II corrosion [4].

Certain glass compositions will exhibit a sudden "resumption of alteration" after remaining in the pseudo-equilibrated Stage II regime for long times – this is known as Stage III corrosion. During Stage III, the concentration of elements such as B and Si in the leachant solution will increase to rates which are comparable to the initial rate and significantly greater (1-4 orders of magnitude) than the residual rate. This

"resumption of alteration" is marked by the formation of large quantities of highly crystalline mineral assemblages on the glass surfaces, which continue to increase in size as the glass dissolves at the accelerated rate.

Detailed knowledge of the corrosion behavior of a wide-ranging glass compositional space is required to develop an accurate radionuclide source term for a repository performance assessment (PA) model that encompasses the aforementioned corrosion phenomena and their effects on waste glass durability.

The ALTGLASS database was originally compiled in FY 2013 [5] and contained the results of static corrosion test duration sequences so that geochemical, thermodynamic, kinetic, and glass composition/structural approaches to the prediction of the long-term glass durability can be studied on the national and international level. Version 1.0 of the database contained 2112 rows of data where each row represented an averaged duplicate or triplicate test response. Version 2.0 added 20 data sets [6] and Versions 2.1 and 2.2 corrected some minor input errors [6]. Version 3.0 added 238 lines of additional data from tests conducted at several national and international sites including: SRNL, PNNL, VSL and NNL [7].

This report documents Version 4.0 of the database, an update including 100 rows of new data, from durability testing conducted in Europe [3]. The ALTGLASS Version 4.0 database is given in tabular form in this report (Table 11) and is electronically available to national and international modeling groups as an Excel file upon request.

The purpose of the database is to facilitate studying, modeling, or validating existing models of nuclear waste glass corrosion. For example, SRNL is currently applying aspects of informatics[†] to the database in order to correlate the evolution of corroding glass systems to observed corrosion phenomena. By utilizing the informatics methodologies, HLW and LAW glasses can be compared, contrasted, and grouped into categories that allow researchers to search for unifying compositional characteristics on a large, preexisting dataset rather than designing and conducting expensive experiments sometimes lasting years or decades, which target only a few compositions or experimental conditions. The ultimate goal of these efforts is to establish a link between deleterious corrosion mechanisms and original glass compositions.

2.0 Experimental Review

All of the static durability testing in the database was performed in accordance with the procedures set forth by ASTM C1285A or B, the Product Consistency Test (PCT). The PCT-A is a 7-day short term test conducted in a stainless steel digestion vessel with very specific experimental parameters. The PCT-B is less strictly parameterized in that many controls such as duration, particle size, and vessel type are variable. The PCT-B test was recommended as indicator of long-term glass dissolution behavior at surface area to volume ratios of 20,000 m^{-1} (20 m^2/L) and 90°C [8]. The ALTGLASS database contains data from two days to over 20 years of testing and is primarily for glasses tested in deionized water (ASTM Type I water). A few glasses that were tested in Yucca Mountain EJ-13 and SRS E-Area groundwater are included for comparison to the studies in ASTM Type I water. The European glass durability testing was static and followed a procedure similar to the PCT, so it is included in the ALTGLASS database.

[†] The term "informatics" refers to the science of information processing.

2.1 Static Test Details

The data in ALTGLASS was generated with the PCT – this ASTM protocol has two test methods: Test Method A and Test Method B. The details of each test method are given in Table 1, which is reproduced from Table 1 in the ASTM C1285 procedure [1].

Table 1: Summary of PCT Test Methods A and B (from ASTM C1285-14)

	Test Method A	**Test Method B**
Type of Waste Form	Radioactive, Mixed Simulated, Hazardous	Radioactive, Mixed Simulated, Hazardous
Usage	During production for rapid analysis and for waste compliance*	Scoping tests; Crystallization studies; Comparative waste form evaluation
Test Vessel	Unsensitized Type 304L stainless steel; vessels rated to> 0.5 MPa	Unsensitized Type 304L stainless steel or PFA TFE-fluorocarbon vessels rated to >0.5 MPa
Test Duration	7 days ± 2%	7 days ± 2% or varying times
Leachant	ASTM Type I water	ASTM Type I water or other solutions
Condition	Static	Static
Minimum Sample Mass	≥1 g	≥1 g
Particle Size	U.S. Standard ASTM −100 to +200 mesh (0.149 to 0.074 mm)	U.S. Standard ASTM −100 to +200 mesh (0.149 to 0.074 mm) or other sizes which are <40 mesh (0.420 mm)
Leachant Volume	10 ± 0.5 cm^3/g of sample mass	10 ± 0.5 cm^3/g of sample mass or other volume/sample mass
Temperature	90 ± 2°C	90 ± 2°C or other temperatures provided that any observed changes in reaction mechanism are noted
Atmosphere	Air	Air or CO_2 free air (optional)
Type of System	Closed to transport	Open to transport in PFA TFE-fluorocarbon; Closed to transport in stainless steel

The majority of data in ALTGLASS was derived at a leaching temperature of 90°C and in ASTM Type I water. Some of the data were collected at 200°C. Only one set of data was generated in EJ-13 groundwater from the Nevada Test Site at 90°C and one set of data at 25°C in Savannah River Site (SRS) E-Area groundwater. The latter data were added to the database as the leachate data contained U concentrations which many of the other datasets did not. Other datasets in EJ-13 groundwater were not included for the following reasons:

- Geochemical modeling in ASTM Type I water is fundamental for understanding glass dissolution mechanisms since all of the species in solution are generated by the glass.
    - Geochemical modeling in groundwater is complicated by the presence of Si and other elements that are common to the glass and the groundwater.
- Geochemical modeling of leachate concentrations in ASTM Type I water should be benchmarked before attempting to model more complicated leachate solution compositions.

The compositions of the EJ-13 and E-Area groundwaters are given in Table 2.

Table 2: Compositions of EJ-13 groundwater and SRS E-Area Groundwater

	EJ-13 Yucca Mountain Groundwater [9]	SRS E-Area Groundwater [10]
Species	**Concentration (ppm)**	**Concentration (ppm)**
Aluminum	1.1	0.90
Boron	0.16	---
Calcium	5.1	0.41
Potassium	7.3	---
Iron	---	0.06
Lithium	0.05	---
Magnesium	0.39	0.71
Sodium	54	2.76
Silicon	46	10.2
HCO_3^-	120	---
F^-	3	---
Cl^-	9	2.71
NO_3^-	16	---
SO_4^{2-}	35	6.15
pH	8.2	5.79

3.0 Test Parameters

The test parameters that govern the conduction of a PCT experiment were carefully chosen for a number of reasons, which are discussed in the following sections.

3.1 Glass Sample Parameters

For most of the samples in the ALTGLASS database, the crushed glass particle size was the nominal -100 to +200 mesh; although, the database does contain some glass entries with non-standard particle sizes shown in Table 3. For the majority of the entries in the ALTGLASS database, all of the test parameters that are relevant to geochemical modeling efforts are provided or can be calculated from the information given.

The surface area of the glass was calculated using equation (1):

$$SA = \frac{6m_g}{\rho d} \quad \left(cm^2\right) \tag{1}$$

Where m_g (g) is the mass of the glass, ρ (g/cm^3) is the glass density, and d (cm) is the diameter of an average particle in a given mesh size. Within the ALTGLASS database, measured density values are displayed in **boldface** font, and estimated density values[§] [11] are displayed in plain text. The average diameter of the particle sizes used for the different mesh ranges is given in Table 3, which were calculated using the arithmetic mean of the particle size range associated with each mesh size range [1].

[§] The value used for the "estimated density" was based on the density of an average HLW glass composition from DWPF.

Table 3: Average Particle Diameter for Various Mesh Sizes

Mesh Size Range	Range of Particle Diameters (cm)	Average Particle Diameter (cm)
-60 +80	0.0177-0.0250	0.0214
-100 +140	0.0105-0.0149	0.0127
-100 +200	0.0074-0.0149	0.0112
-200 +325	0.0044-0.0074	0.0059
-270 +400	0.0037-0.0053	0.0045

The surface area to volume of leachate, the SA/V parameter, is the surface area of glass calculated from equation (1) divided by the volume of the leachate solution – the units of the SA/V ratio are expressed in terms of the glass surface area exposed to a unit volume of corroding solution, e.g., m^2/L.

A time-normalized, SA/V parameter, SA/V*time, where time is the duration from t=0 to the aliquot sampling time, is also reported in the database. The dimension of this parameter is expressed in units of (m^2-day)/L. The SA/V and SA/V*t parameters provide a means to normalize results of experiments that were conducted with differing initial conditions as allowed by the PCT-B protocol.

Note that the SA/V values given in the database are calculated from the average particle size determined from the sieve range used in each study, which is the current method specified in the PCT procedure. For the SON68 and AFCI glasses studied and reported in Ebert et al. [12], the measured particle size from Microtrac analysis (after glass fines had been washed from the powder) was used to calculate the SA/V. Therefore, the SA/V given in the database does not match the values in Reference 12. Note that the method used to report the SA/V in the PCT procedure (ASTM C1285) is under discussion by the ASTM C26.13 committee. The European data included the BET surface area in addition to physical measurements from which the geometric particle size could be calculated. The latter was used in ALTGLASS 4.0 to be consistent with the manner in which the surface area has been historically presented in the ALTGLASS database.

All of the leachates were filtered through a 0.45 μm filter. Data from Reference 12 indicated that filtering with a 0.45 μm filter provided sufficient filtration to remove colloidal suspensions – viz., the same solution analyses results were obtained for filters with lesser pore sizes as were obtained with the 0.45 μm filters. Therefore, the ultrafiltration data is not tabulated separately in the database.

The maximum and minimum values of the test parameters are given in Table 4.

Table 4: Maximum and minimum of test parameters.

Parameter	Minimum	Maximum
Test Duration (days)	0.02	7426
SA/V (m^2/L)	0.36	81.6
(SA/V) ·time (days/m)	1.53	141759
Glass Density (g/cm^3)	2.37	2.93
Temperature (°C)	25	200

3.2 Compositional Characteristics and Indicators

There are currently no direct measurement techniques of a glass specimen that can quantify its chemical durability. Durability is measured through secondary measurements of leachate solutions, alteration layers, etc.; all of which are byproducts of durability and/or corrosion. However, one can make estimations of the corrosion resistance of a particular glass based on certain compositional "states", which are useful for classifying subsets of glasses based on structural properties. For instance, glasses that are predicted to be phase separated (φ-sep.) or potentially phase separated from compositional indicators are particularly susceptible to anomalous corrosion behavior [13].

Phase separation in glasses generally takes the form of two immiscible glass phases which differ in chemical composition, density, and surface tension. Usually one phase is more soluble than the other. Phase separation complicates modeling of glass durability as a function of composition because the composition of the overall glass is known but the compositions of the two immiscible phases are not known. Consequently, the performance of the overall glass is unpredictable and the long-term durability of the glass cannot be modeled [13]. As such, information regarding the potential phase separation of a glass is useful in discriminating potentially anomalous durability responses caused by structural phenomena from an ALTGLASS data subset that is being used in modeling efforts. These compositional states are described in detail below.

Tovena, et al. [14] demonstrated that several HLW glass durability models [15-18] did not predict waste glass durability accurately when the composition of the waste glass contained > 15% B_2O_3 with little or no Al_2O_3. For these glasses all the models under-predicted the glass durability significantly. Tovena, et al. attributed the under-prediction to phase separation and complete dissolution of a borate rich phase in the glass when the Al_2O_3 content was insufficient to stabilize a glass against phase separation.

Jantzen, et al. [13] determined that phase separation could also occur in iron containing HLW glasses with insufficient Al_2O_3, i.e. Al_2O_3 concentrations in the region of 3-4 wt.%. It was also determined that the Al_2O_3-SiO_2-Fe_2O_3-Na_2O basalt quaternary system was a natural analog system for HLW iron containing glasses: the quaternary system depicts a region of phase separation at <4 wt.% Al_2O_3 [19]. In addition, glasses in the Na_2O-Al_2O_3-SiO_2 system are known to phase separate when the glasses contain less than 3 wt.% Al_2O_3 [20, 21].

For these reasons, the durability model used by the Savannah River Site (SRS) Defense Waste Processing Facility (DWPF) [19] excluded the modeling of phase separated glasses by the development of a "phase separation discriminator" based on experimental data for both homogeneous and phase separated glasses. This discriminator methodology was carried over into the construction of the ALTGLASS database as a means of classifying glasses that with potentially anomalous durability responses; i.e., the phase separation discriminators provide a potential mechanistic explanation of PCT anomalies.

The original discriminator [19] was a probability function that determines if glasses are homogeneous based on the following criterion, where the more **negative the value**, the **less likely** the glass is to **phase separate**:

$$-1.6035x - 5.6478y + 210.9203 = P(x,y) \quad (2)$$

Where, P(x,y) is the criterion value and:

$$y = \text{Dense Oxide Components} \equiv Al_2O_3 + (Fe_2O_3 + FeO \text{ calculated as } Fe_2O_3) + Nd_2O_3 + Ce_2O_3 + La_2O_3 + Y_2O_3 + CaO + MoO_3 \quad (\text{wt.\%})$$

$$x = \text{Less Dense Oxide Components} \equiv Na_2O + Li_2O + K_2O + Cs_2O + SiO_2 + B_2O_3 \quad (\text{wt.\%})$$

There is an intermediate region, where the criterion value in Equation (2) may equal a value on the interval [-1,1]. If the discriminator criterion falls within this interval, this particular criterion is indeterminate, and more investigation is needed to determine if the composition is phase separated.

The use of this phase separation criterion in Equation 2 was later dropped in favor of an approach that ensured that the DWPF durability model would be linear in glass composition, which is an important factor in the error analysis within the DWPF process/product (P/P) models for process control. Rather than group glasses as "phase separated", "intermediate", or "homogeneous", these new constraints indicate if a glass composition's durability is predictable via the THERMO™ model based on the potential for phase separation. Collectively referred to as the "reduction of constraints (ROC)", the criteria in use in DWPF during sludge-only processing [22] and in coupled processing [23] is currently defined as the following:

(1) an alumina constraint of $Al_2O_3 \geq 3$ wt.% and a sum of alkali constraint with an upper limit of 19.3 wt.% ($\Sigma M_2O < 19.3$ wt.%), or
(2) a lower limit on the Al_2O_3 constraint of 4 wt.% ($Al_2O_3 \geq 4$ wt.%) without a ΣM_2O

For glasses with $Al_2O_3 \geq 3$ wt.% and $\Sigma M_2O < 19.3$ wt.% or glasses with ≥ 4 wt.% Al_2O_3, phase separation is not problematic, and the glass durability response is linear in glass composition. For glasses with Al_2O_3 of 3-4 wt.% and $\Sigma M_2O \geq 19.3$ wt.%, the homogeneity of the glass should be examined by various microscopy techniques to determine if the glass is phase separated and the durability response needs to be examined as durability becomes dependent on the glass composition and the solution pH. The pH of the corroding solution is directly proportional to the alkali content of the corroding glass, and durability is inversely proportional to solution pH [19]. For nuclear waste glasses with $Al_2O_3 < 3$ wt.%, the glasses are likely to be phase separated – independent verification is also suggested with electron microscopy or spectroscopic diffraction. These criteria have been included in previous versions of the ALTGLASS database.

In 2016, a TiO_2 criterion was added to the DWPF durability model, based on data that suggested glasses with $TiO_2 \geq 2.0$ wt.% could potentially phase separate if the Al_2O_3 content in the glass was less than 4.0 wt.% [24]. This TiO_2 criterion was added to this version of the ALTGLASS database. If $TiO_2 < 2.0$ wt.%, the older, then the aforementioned criteria regarding Al_2O_3 content and the sum of the alkali oxides is used to indicate the predictability of a glass composition's durability based on potential phase separation issues. All of the current DWPF-based discriminators were combined into a single logical test that was also added to ALTGLASS Version 3.0 and is maintained in ALTGLASS Version 4.0. Table 5: Information useful for subset classification is provided by the database in the form of the listed property states. summarizes the various discriminators that were added to the ALTGLASS database to facilitate glass dissolution modeling efforts.

Table 5: Information useful for subset classification is provided by the database in the form of the listed property states.

Property State	Database Definition
Phase-separated/homogeneous (Original THERMO™ discriminator)	$-1.6035x - 5.6478y + 210.9203 \begin{cases} < -1, \text{ HOMOGENEOUS} \\ > 1, \text{ Potential } \varphi\text{-sep.} \\ [-1,1], \text{ Indeterminate} \end{cases}$
Low or high alkali	Low alkali $\Rightarrow \Sigma_{alkali} < 19.3$ wt.% alkali High alkali $\Rightarrow \Sigma_{alkali} \geq 19.3$ wt.% alkali
Low/Mid/High Al_2O_3	Low Al $\Rightarrow Al_2O_3 < 3.0$ wt.% Mid Al $\Rightarrow 3.0$ wt.% $\leq Al_2O_3 < 4.0$ wt.% High Al $\Rightarrow Al_2O_3 \geq 4.0$ wt.%
Low/High TiO_2	Low Ti $\Rightarrow TiO_2 < 2.0$ wt.% High Ti $\Rightarrow TiO_2 \geq 2.0$ wt.%

All of the new compositions have been added to Table 9 in Appendix A. Note that the Environmental Assessment (EA) glass [25, 26], which has Al_2O_3 ~3 wt.% and $\Sigma M_2O \geq 19.3$ wt.%, was extensively studied by microscopic methods to determine that it was not phase separated. This example with EA glass is highlighted to illustrate that the discriminators referenced here and extensively reported on in the given references are not necessarily wholly deterministic – some glasses that are indicated to be phase separated may, upon investigation, be determined homogeneous and at the same time the opposite may be true. The information regarding phase separation is included in the database only to serve as a guide to modeling efforts should anomalous leaching behavior not fit a given model or approach and not to definitively designate glasses as "homogeneous" or "phase separated."

The cells with gray shading in Table 9 are compositional regions where glasses are expected to be homogenous based on the aforementioned ROC constraints. The regions with black shading are glass formulation regions where care must be exercised to determine the impact of potential phase separation and/or excess alkali on the glass durability. The unshaded region of glass formulation should be avoided during HLW and LAW glass formulation for long term durability concerns associated with potential phase separation. Table 10 gives a comparison between the ROC glasses that were determined to be predictable coupled with the criterion from the original homogeneity discriminator. Glass compositions in the shaded cell of Table 10 are considered to be agreeably homogeneous in that their P(x,y) is negative and they are considered "predictable" by the ROC criteria.

While a failure to meet the phase separation criteria excluded a glass's inclusion in the aforementioned DWPF modeling efforts, glasses that were potentially phase separated were not automatically excluded from the ALTGLASS database. Phase separated glasses, especially low alkali phase separated glasses, can be durable depending on the type of phase separation that occurs [13, 19]. Therefore, the low alkali glasses, as well as the glasses with less than three weight percent Al_2O_3, are also gray shaded in Table 9 in Appendix A.

3.3 Leachate Parameters

In the ALTGLASS database, the leachate parameters given in Table 6 were tabulated if available. Data for specific compositions or test durations were not entered into the database unless a minimum set of leachate parameters were available – these essential elements are shaded in Table 6. Some glasses did not contain Li_2O and/or Fe_2O_3, and for those glasses the minimum leachate parameters for Li and Fe concentration were nonexistent. Those glasses without Li_2O and Fe_2O_3 reported in the leachate were included in ALTGLASS, whereas a glass containing Li_2O and/or Fe_2O_3 that did not report the Li and Fe releases to solution were not included in the database. Data sets used in ALTGLASS had to contain Al or Fe or both in ppm in order to be included in the database due to the importance of these two components in the secondary phase formation on the glass surfaces that return to an accelerated rate. Because of these minimum requirements, many of the available data could not be included.

Table 6: Leachate parameters tabulated and minimum leachate requirements for inclusion in the database. Shaded cells represent elements that must be reported in the leachate concentration for a sample to be included in the database.

Leachate Parameter
pH
Si (ppm)
B (ppm)
Ca (ppm)
Li (ppm) †
Na (ppm)
K (ppm)
Al (ppm)†
Fe (ppm)†
Mo (ppm)
Mg (ppm)
Ti (ppm)
Zn (ppm)
Zr (ppm)
U (ppm)

†Unless a given glass did not contain these elements.

The ALTGLASS Version 3.0 database contains 2635 rows of data with each row representing the average of duplicate or triplicate PCT tests for over 500 different glasses. Averages of the individual PCT tests were used instead of singular measurements as many of the references only contained averaged results. In order to maintain consistent error structure in accordance with ASTM C1285-14 and eliminate weighting discrepancies during modeling, singleton (not duplicate or triplicate analyses) measurements were not included in the database.

Two sets of data in groundwater, one in Yucca Mountain EJ-13 groundwater and one in SRS E-Area Groundwater, are located at the end of the database since these experiments were conducted under different initial conditions (i.e., leachant type) than the other experiments conducted in ASTM Type I water.

For several of the longest duration PCT tests, pH measurements were not available due to a lack of solution for analysis.

The ranges of leachate pH values and the concentrations represented by the leachates in the database are given in Table 7. As can be seen by inspection of Table 7, the ranges of measured leachate concentrations for the glass elements can vary by as much as four orders of magnitude implying that the database covers a broad spectrum of glass durabilities.

Table 7: Maximum and minimum (non-zero) concentration of measured leachate parameters.

Parameter	Min.	Max.
pH	2.88	13.66
Si (ppm)	2.260	21543.33
B (ppm)	0.08	35230.62
Ca (ppm)	0.01	206.10
Cr (ppm)	0.40	166.45
Li (ppm)	0.03	6750.00
Na (ppm)	3.45	76318.23
K (ppm)	0.13	10,223.10
Al (ppm)	0.00	1812.18
Fe (ppm)	0.00	1485.90
Mo (ppm)	0.38	9219.73
Mg (ppm)	0.00	10.88
Ti (ppm)	0.01	47.00
Zn (ppm)	0.01	115.33
Zr (ppm)	0.01	76.00
U (ppm)	0.08	8.31

3.4 Glass Parameters and Phase Identification

The compositions of glasses in ALTGLASS are given in oxide weight percent (wt.%). In addition, any experimentally observed glass alteration phases, formed as a result of corrosion phenomena, that were identified by x-ray diffraction (XRD) and/or scanning electron microscopy (SEM) were tabulated. The minimum and maximum glass compositions are given in Table 8. The compositions reported in the database are a combination of both target and measured values since measured glass compositions were not present in all the references used to compile the database. The target compositions of some glasses did not contain many of the species for which compositional columns are listed, such as BaO, Ce_2O_3, Li_2O, U_3O_8 or "others"; however, the minimum value for these oxides is not reported as zero but rather as the minimum measured concentration when that particular oxide *is* present in a glass. If the composition of the "others" component was not given in the references from which the data was taken, no additional information is available about the "others" compositions, and these data are not tabulated.

Table 8: The minimum and maximum compositional values of the glasses presented in ALTGLASS.

Oxide	Non-zero Min.[1]	Max.
Al_2O_3	0.19	21.29
B_2O_3	3.70	20.23
BaO	0.01	1.34
CaO	0.01	12.81
CeO_2	1.10	1.97
Ce_2O_3	0.02	0.95
Cr_2O_3	0.01	1.14
Cs_2O	0.03	2.23
CuO	0.01	0.22
Cu_2O	0.11	0.20
FeO	0.07	8.81
Fe_2O_3	0.01	21.86
K_2O	0.01	8.08
Gd_2O_3	0.06	4.90
La_2O_3	0.01	1.49
Li_2O	0.00	14.67
MgO	0.02	7.70
MnO	0.03	3.34
MnO_2	0.06	1.37
MoO_3	0.01	2.84
Na_2O	1.40	25.65
Nd_2O_3	0.01	8.59
NiO	0.21	2.97
PO_4	0.42	0.75
P_2O_5	0.04	2.64
PbO	0.02	0.03
Pd	0.1	0.88
Pr_2O_3	0.05	0.95
RuO_2	0.15	1.70
SiO_2	32.77	35.56
Sm_2O_3	0.36	0.67
SO_4	0.03	0.08
SrO	0.01	0.62
TeO_2	0.03	0.34
ThO_2	3.34	4.50
TiO_2	0.01	8.83
U_3O_8	0.54	4.42
Y_2O_3	0.02	0.44
ZnO	0.002	5.82
ZrO_2	0.01	6.12
Others	0.42	5.81

[1] The non-zero minimum was calculated in Microsoft® Excel. Zero values in this table represent non-zero numbers that are less than 0.005 wt.%.

4.0 ALTGLASS Version 4.0 Updates

ALTGLASS Version 3.0 was the first issuance of the database to include a major subset of data from a non-US-based institution. Version 4.0 is the second issuance of data which includes data from a non-US-based institution. One hundred rows of data have been added from the GLAMOR study.

5.0 Path Forward

Current efforts at SRNL are focused on applying informatics principles to a limited data subset of long-term HLW corrosion experiments in order to hypothesize the fundamental mechanisms responsible for various glass corrosion phenomena [27, 28]. The ALTGLASS database is central to the development of this statistical approach, and researchers have already used the informatics approach to establish a statistically significant correlation between leachate concentration data, such as those provided in ALTGLASS, and potential "trigger" mechanisms for Stage III corrosion.

Given the level of interest in developing glass dissolution models that can adequately predict the rate of radionuclide release at all stages of glass corrosion, longer term corrosion tests are required to provide a broader experimental reference for geochemical, chemical, and atomistic modeling. To date, only a limited number of corrosion experiments reported in the database have been conducted for sufficiently long duration to observe a resumption of glass alteration that is conducive with Stage III corrosion.

Additions will continue to be made to the ALTGLASS database as data becomes available from other groups, laboratories, and institutions within and outside of the United States. A new version of ALTGLASS will be released upon the accumulation of sufficient data to merit revision. SRNL will continue to be responsible for the maintenance and distribution of the database in electronic form upon request.

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Appendix A. Potential Phase Separation Indicators for Anomalous Durability Responses

Table 9: The glass compositions in ALTGLASS delineated by the new discriminators utilized by DWPF. Glass compositions in red italics contain $TiO_2 \geq 2.0$ wt.%.

	$\Sigma_{alkali} \geq 19.3$ wt.%	$\Sigma_{alkali} < 19.3$ wt.%
$Al_2O_3 \geq 4.0$ wt.%	AH-1, MG-4, MG-13, MG-15, MG-16, MG-17, MG-31, WV203-18-Th Type IIIR, WVUTh186 Type III, A1-AN105R2, A1C1-1, A2-AP101, A88AP101R1, A88Si+15, LAWA104, LAWA105, LAWA112B14, LAWA112B15, LAWA125, LAWA126, LAWA133, LAWA41, LAWA43-1, LAWA44, LAWA44R10, LAWA45, LAWA49, LAWA50, LAWA52, LAWA53, LAWA56, LAWA60, LAWA65, LAWA81, LAWA83, LAWA84, LAWA87, LAWA88, LAWA88R1, LAWA90, LAWA96, WVF-G-21B, M-Area MN-12-A, M-Area MN-12-B, M-Area MN-12-E, M-Area MN-12-F, M-Area MN-12-G, M-Area MN-12-H, M-Area MN-12-I, M-Area MN-12-J, M-Area MN-13-A, M-Area MN-13-B, M-Area MN-13-E, M-Area MN-13-F, M-Area MN-13-G, M-Area MN-13-H, M-Area MN-13-I, M-Area MN-13-J, 12S-G-85C, 12U-G-86A, A3C2, LA44CCCR2, LA44PNCC, LAWA170, LAWCrP1R, LAWCrP2R, LAWCrP3R, LAWCrP4R, LAWE11, LAWE12, LAWE13, LAWE14, LAWE15, LAWE16, LAWE2H, LAWE3, LAWE3Cr2CCC, LAWE3H, LAWE4H, LAWE5H, LAWM17, LAWM20, LAWM22, LAWM24, LAWM32, LAWM34, LAWM52, LAWM57, LAWM58, LAWM59, LAWM60, LAWM61, LAWM62, LAWM63, LAWM64, LAWM65, LAWM66, LAWM67, LAWM68, LAWM69, LAWM70, LAWM71, LAWM72, LAWM73, LAWM74, LAWM75, LAWM76, WVM-G-142C, HLP-64, HLP-66, HLP-67, HLP-68, HLP-71, HLP-73, HLP-76, HLP-77, *A88Si-15, LAWA127R1, LAWA127R2, LAWA128, LAWA129, LAWA130, LAWA134, LAWA135, LAWA136, LAWA42, LAWA82, LAWA89, LAWC12, LAWC15, PNLA126CC, TFA-BASE, LA126CCC, LAWM15, LAWM31, LAWM33R1, HLP-58, HLP-61, HLP-70, HLP-75*	AH 131AL, AH 131AV, AH 165AL, AH 165AV, AH 168AL, AH 168AV, AH 200AL, AH 200AV, AH 202AL, AH 202AV, AH-10, AH-11, AH-12, AH-13, AH-14, AH-15, AH-16, AH-17, AH-2, AH-4, AH-5, AH-6, AH-7, AH-8, AH-9, MG-1, MG-2, MG-5, MG-6, MG-11, MG-21, MG-22, MG-23, MG-24, MG-25, MG-26, MG-27, MG-28, MG-29, MG-30, MG-32, MG-33, PSON-90 7day, PSON-90 28day, PSON-90 56day, PSON-90 91day, PSON-90 182 day, PSON-90 317 day, PSON-90 450 day, PSON-90 600 day, PAFCI-90-7day, PAFCI-90-28day, PAFCI-90-56day, PAFCI-90-91day, PAFCI-90-182 day, PAFCI-90-317 day, PAFCI-90-450 day, PAFCI-90-600 day, PSON-200 7day, PSON-200 28day, PSON-200 90day, PSON-200 124 day, PSON-200 308 day, PSON-200 509 day, PSON-200 791 day, PAFCI-200 7day, PAFCI-200 28day, PAFCI-200 90day, PAFCI-200 124 day, PAFCI-200 308 day, PAFCI-200 509 day, PAFCI-200 805 day, WVUTh198 Type IR, WVCM59 Type 1R, WVUTh122 Type IIR, WVUTh179 Type I, WVUTh193 Type II, A100CC, A100G115A, A1C1-2, A1C1-3, A2B1-1, A2B1-2, A2B1-3, B1-AZ101, C100-G-136B, C100GCC, C1-AN107, C22AN107, C22Si+15, C22Si-15, LAWA102R1, LAWA51, LAWA76, LAWA93, LAWB30, LAWB31, LAWB32, LAWB33, LAWB34, LAWB35, LAWB37, LAWB38, LAWB40, LAWB41, LAWB60, LAWB61, LAWB62, LAWB63, LAWB64, LAWB65, LAWB66, LAWB67, LAWB68, LAWB69, LAWB70, LAWB71, LAWB72, LAWB73, LAWB74, LAWB75, LAWB76, LAWB77, LAWB78, LAWB79, LAWB80, LAWB81, LAWB82, LAWB83, LAWB84, LAWB85, LAWB86, LAWB87, LAWB88, LAWB89, LAWB90, LAWB91, LAWB92, LAWB93, LAWB94, LAWB95, LAWC21rev2, LAWC22, LAWC23, LAWC24, LAWC25, LAWC26, LAWC27, LAWC28, LAWC29, LAWC30, LAWC31, LAWC32, LAWC33, WVH-G-57B, WVJ-G-109D, M-Area HSi-5-A, M-Area HSi-5-B, M-Area HSi-5-E, M-Area HSi-5-F, M-Area HSi-5-G, M-Area HSi-5-H, M-Area HSi-5-I, M-Area HSi-5J, BATCH 1 AVG, BLEND 1 AVG, HM AVG, MSP 28 wt.% Magnox, G1 25 wt.% Magnox 4% Li2O, G4 32 wt.% Magnox 4% Li2O, MMP 38% Magnox MW, MCP 38% Magnox Ca/Zn, M28R 28 wt.% Magnox, M32 32 wt.% Magnox, G3 25 wt.% Magnox 5.0% Li2O, G6 32 wt.% Magnox 5.0% Li2O, MP 35 wt.% Magnox, M25 25

	$\Sigma_{alkali} \geq 19.3$ wt.%	$\Sigma_{alkali} < 19.3$ wt.%
		wt.% Magnox, G2 25 wt.% Magnox 4.5% Li2O, G5 32 wt.% Magnox 4.5% Li2O, 25 wt.% NDA VTR Glass, G7 38 wt.% Magnox 4% Li2O, G8 38 wt.% Magnox 4.65% Li2O, M35H 35wt.% Magnox, M25H 25 wt.% Magnox, M25B 25 wt.% Magnox, G10 38 wt.% 50:50 Blend, G11 38 wt.% 25:75 Blend, G7H 38 wt.% Magnox 4.00% Li2O, G8H 38 wt.% Magnox 4.65% Li2O, HSV 25 wt.% NDA Glass, SRS 100/0, A3-AN104, C2-AN102C35, GTSD-1126, GTSD-1437, LA137SRCCC, LAWB96, LAWC21, LAWCrP5, LAWCrP6, LAWCrP7, LAWE10H, LAWE10HCr3CCC, LAWE7H, LAWE9H, LAWE9HCr1CCC, LAWE9HCr2CCC, LAWM19, LAWM25R1, LAWM26, LAWM3, LAWM30, LAWM37, LAWM38, LAWM39, LAWM40, LAWM41, LAWM46, LAWM47, LAWM49, LAWM50, LAWM51, LB83CCC-1, LB83PNCC, LB88CCC, PLTC35CCC, WVB-G-124B, WVR-G-127A, HLP-28, HLP-46, HLP-49, HLP-54, HLP-55, HLP-74, *LAWM1, LAWM10, LAWM16, LAWM18, LAWM21, LAWM23, LAWM27, LAWM28, LAWM29, LAWM35, LAWM36, LAWM42, LAWM43, LAWM44, LAWM45, LAWM48, LAWM5, LAWM53, LAWM56, LAWM6, LAWM7, LAWM8, HLP-59, HLP-60, HLP-62, HLP-69, HLP-72,* A1 (R7T7 type (SON68) 1997, A2 (R7T7 type (SON68)-1998), A21 (AVM6) 1999, A22 (AVM6) 1999
3.0 wt.% ≤ Al_2O_3 < 4.0 wt.%	**MG-19, ANL on EA, EA AVG, LAWM11, *LAWM12, LAWM13, LAWM14, LAWM55, HLP-63, HLP-63***	**MG-8, WVCM60 Type ES, SRS 60/40, LAWM54R1, LAWM9, HLP-65, HLP-65, *LAWM2, LAWM4, HLP-34***
Al_2O_3 < 3.0 wt.%	**MG-7, MG-9, MG-10, MG-18, MG-20, PUREX AVG**	**AH 131FE, AH 165FE, AH 168FE, AH 200FE, AH 202FE, WVUTh123 Type ESR, WVUTh157 Type ESR, BLP 17 wt.% Blend, BP 31 wt.% Blend HP, B31H 31wt.% Blend HP, G9 38 wt.% 75:25 Blend, SRS 0/100, SRS 20/80, SRS 40/60, B1 (simplified-same molar comp SON68)-1997, B4 (simplified-same molar comp SON68)-1998, FZK2, FZK6, FZK8, FZK10**

Table 10: Comparison of original phase separation discriminator to the ROC durability indicators.

		Reduction of Constraints for Durability Prediction:	
		Predictable	Not Predictable
Original Phase Separation Criterion	Homogeneous	AH 131AL, AH 131AV, AH 165AL, AH 165AV, AH 168AV, AH 200AL, AH 200AV, AH 202AL, AH 202AV, AH-1, AH-10, AH-11, AH-12, AH-13, AH-14, AH-15, AH-16, AH-17, AH-2, AH-4, AH-5, AH-6, AH-7, AH-8, AH-9, B1-AZ101, BATCH 1 AVG, BLEND 1 AVG, C100-G-136B, C100GCC, C22AN107, C22Si-15, G7 38 wt.% Magnox 4% Li2O, G7H 38 wt.% Magnox 4.00% Li2O, G8 38 wt.% Magnox 4.65% Li2O, G8H 38 wt.% Magnox 4.65% Li2O, GTSD-1126, GTSD-1437, HLP-68, HLP-73, HLP-74, HM AVG, LAWA43-1, LAWA50, LAWA52, LAWA53, LAWA76, LAWA81, LAWA93, LAWB30, LAWB41, LAWB60, LAWB61, LAWB62, LAWB65, LAWB66, LAWB68, LAWB82, LAWB83, LAWB84, LAWB87, LAWB89, LAWB90, LAWB91, LAWB92, LAWB93, LAWB94, LAWB95, LAWB96, LAWC12, LAWC21, LAWC21rev2, LAWC22, LAWC23, LAWC24, LAWC25, LAWC28, LAWC31, LAWC32, LAWC33, LAWCrP6, LAWE10H, LAWE10HCr3CCC, LAWE7H, LAWE9H, LAWE9HCr1CCC, LAWE9HCr2CCC, LAWM1, LAWM10, LAWM11, LAWM16, LAWM18, LAWM19, LAWM21, LAWM24, LAWM27, LAWM28, LAWM3, LAWM31, LAWM33R1, LAWM34, LAWM36, LAWM37, LAWM38, LAWM41, LAWM44, LAWM45, LAWM46, LAWM47, LAWM5, LAWM53, LAWM59, LAWM6, LAWM69, LAWM7, LAWM72, LB83CCC-1, LB83PNCC, SRS 60/40 (4-40), SRS 100/0 (4-40), M35H 35wt.% Magnox, M-Area HSi-5-A, M-Area HSi-5-B, M-Area HSi-5-E, M-Area HSi-5-F, M-Area HSi-5-G, M-Area HSi-5-H, M-Area HSi-5-I, M-Area HSi-5J, M-Area MN-12-A, M-Area MN-12-B, M-Area MN-12-E, M-Area MN-12-F, M-Area MN-12-G, M-Area MN-12-H, M-Area MN-12-I, M-Area MN-12-J, M-Area MN-13-A, M-Area MN-13-B, M-Area MN-13-E, M-Area MN-13-F, M-Area MN-13-G, M-Area MN-13-H, M-Area MN-13-I, M-Area MN-13-J, MCP 38% Magnox Ca/Zn, MG-1, MG-11, MG-13, MG-15, MG-16, MG-17, MG-19, MG-2, MG-21, MG-22, MG-23, MG-24, MG-25, MG-26, MG-27, MG-28, MG-29, MG-30, MG-31, MG-32, MG-33, MG-4, MG-5, MG-6, MMP 38% Magnox MW, MP 35 wt.% Magnox, PAFCI-200 124 day, PLTC35CCC, PSON-200 124 day, WV203-18-Th Type IIIR, WVCM59 Type 1R, WVH-G-57B, WVJ-G-109D, WVUTh122 Type IIR, WVUTh179 Type I, WVUTh193 Type II, WVUTh198 Type IR, A1 (R7T7 type (SON68) 1997, A2 (R7T7 type (SON68)-1998), A21 (AVM6) 1999, A22 (AVM6) 1999	AH 131FE, AH 165FE, AH 168FE, AH 200FE, AH 202FE, HLP-63, HLP-63, HLP-65, LAWM13, LAWM2, LAWM4, LAWM54R1, LAWM9, MG-10, MG-20, MG-8, PUREX AVG, WVCM60 Type ES
	Indeterminate	A100CC, A100G115A, A3-AN104, ANL on EA, C1-AN107, C22Si+15, C2-AN102C35, EA AVG, G11 38 wt.% 25:75 Blend, G4 32 wt.% Magnox 4% Li2O, G5 32 wt.% Magnox 4.5% Li2O, HLP-59, HLP-70, LA137SRCCC, LAWA102R1, LAWA49, LAWA90, LAWB31, LAWB34, LAWB76, LAWB86, LAWB88, LAWCrP5, LAWCrP7, LAWM30, LAWM75, LB88CCC, WVB-G-124B, WVR-G-127A	WVUTh123 Type ESR
	Potential φ-sep.	12S-G-85C, 12U-G-86A, 25 wt.% NDA VTR Glass, A1-AN105R2, A1C1-1, A1C1-2, A1C1-3, A2-AP101, A2B1-1, A2B1-2, A2B1-3, A3C2, A88AP101R1, A88Si+15, A88Si-15, AH 168AL , G1 25 wt.% Magnox 4% Li2O, G10 38 wt.% 50:50 Blend, G2 25 wt.% Magnox 4.5% Li2O, G3 25 wt.% Magnox 5.0% Li2O, G6 32 wt.% Magnox 5.0% Li2O, HLP-58, HLP-60, HLP-61, HLP-62, HLP-64, HLP-66, HLP-67, HLP-69, HLP-71, HLP-72, HLP-75, HLP-76, HLP-77, HSV 25 wt.% NDA Glass, LA126CCC, LA44CCCR2, LA44PNCC, LAWA104, LAWA105, LAWA112B14, LAWA112B15, LAWA125, LAWA126, LAWA127R1, LAWA127R2, LAWA128, LAWA129, LAWA130, LAWA133, LAWA134, LAWA135, LAWA136, LAWA170, LAWA41, LAWA42, LAWA44, LAWA44R10, LAWA45, LAWA51, LAWA56, LAWA60, LAWA65, LAWA82, LAWA83, LAWA84, LAWA87, LAWA88, LAWA88R1, LAWA89, LAWA96, LAWB32, LAWB33, LAWB35, LAWB37, LAWB38, LAWB40, LAWB63, LAWB64, LAWB67, LAWB69, LAWB70, LAWB71, LAWB72, LAWB73, LAWB74, LAWB75, LAWB77, LAWB78, LAWB79, LAWB80, LAWB81, LAWB85, LAWC15, LAWC26, LAWC27, LAWC29, LAWC30, LAWCrP1R, LAWCrP2R, LAWCrP3R, LAWCrP4R, LAWE11, LAWE12, LAWE13, LAWE14, LAWE15, LAWE16, LAWE2H, LAWE3, LAWE3Cr2CCC, LAWE3H, LAWE4H, LAWE5H, LAWM15, LAWM17, LAWM20, LAWM22, LAWM23, LAWM25R1, LAWM26, LAWM29, LAWM32, LAWM35, LAWM39, LAWM40, LAWM42, LAWM43, LAWM48, LAWM49, LAWM50, LAWM51, LAWM52, LAWM56, LAWM57, LAWM58, LAWM60, LAWM61, LAWM62, LAWM63, LAWM64, LAWM65, LAWM66, LAWM67, LAWM68, LAWM70, LAWM71, LAWM73, LAWM74, LAWM76, LAWM8, M25 25 wt.% Magnox, M25B 25 wt.% Magnox, M25H 25 wt.% Magnox, M28R 28 wt.% Magnox, M32 32 wt.% Magnox, MSP 28 wt.% Magnox, PNLA126CC, SRS 100/0 (4-40), TFA-BASE, WVF-G-21B, WVM-G-142C, WVUTh186 Type III	B31H 31wt.% Blend HP, BLP 17 wt.% Blend, BP 31 wt.% Blend HP, G9 38 wt.% 75:25 Blend, LAWM12, LAWM14, LAWM55, MG-18, MG-7, MG-9, SRS 0/100 (8-8), SRS 20/80 (8-8), WVUTh157 Type ESR, B1 (simplified-same molar comp SON68)-1997, B4 (simplified-same molar comp SON68)-1998, FZK2, FZK6, FZK8, FZK10

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
AH 131AL	14.00	0.08	2.089	29.245	**2.576**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.35	64.31	41.02	0.11
AH 131AL	28.00	0.08	2.089	58.491	**2.576**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.97	66.60	53.42	3.47
AH 131AV	14.00	0.08	2.004	28.058	**2.685**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.86	59.11	52.91	0.14
AH 131AV	28.00	0.08	2.004	56.116	**2.685**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.58	70.34	77.69	3.09
AH 131FE	14.00	0.08	1.939	27.148	**2.775**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.10	65.77	59.67	0.11
AH 131FE	28.00	0.08	1.939	54.296	**2.775**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.86	80.20	82.70	3.61
AH 165AL	7.00	0.08	2.095	14.668	**2.568**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.58	97.34	11.39	0.19
AH 165AL	14.00	0.08	2.095	29.337	**2.568**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.28	104.64	14.72	0.23
AH 165AL	28.00	0.08	2.095	58.673	**2.568**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.96	118.09	26.53	2.68
AH 165AV	14.00	0.08	1.999	27.982	**2.692**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.41	119.18	21.37	0.14
AH 165AV	28.00	0.08	1.999	55.964	**2.692**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.04	138.73	25.23	2.56
AH 165FE	7.00	0.08	1.923	13.458	**2.799**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.07	646.72	186.71	0.39
AH 165FE	14.00	0.08	1.923	26.915	**2.799**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.75	705.50	245.13	0.49
AH 165FE	28.00	0.08	1.923	53.831	**2.799**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.29	747.24	142.06	5.00
AH 168AL	7.00	0.08	2.140	14.977	**2.515**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.17	84.23	19.76	1.28
AH 168AL	14.00	0.08	2.140	29.955	**2.515**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.81	95.05	27.91	0.17
AH 168AL	28.00	0.08	2.140	59.910	**2.515**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.43	105.02	33.75	2.53
AH 168AV	7.00	0.08	2.027	14.187	**2.655**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.51	84.07	31.82	0.08
AH 168AV	14.00	0.08	2.027	28.374	**2.655**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.05	91.52	45.47	0.11
AH 168AV	28.00	0.08	2.027	56.748	**2.655**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.68	105.24	58.06	3.34
AH 168FE	7.00	0.08	1.952	13.663	**2.757**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.36	386.68	329.06	0.10
AH 168FE	14.00	0.08	1.952	27.325	**2.757**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.76	373.16		0.11
AH 168FE	28.00	0.08	1.952	54.651	**2.757**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.34	405.50		5.62
AH 200AL	14.00	0.08	2.117	29.637	**2.542**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.90	53.80	21.23	0.13
AH 200AL	28.00	0.08	2.117	59.273	**2.542**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.46	61.69	24.42	2.17
AH 200AV	7.00	0.08	2.030	14.209	**2.651**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.48	66.89	19.98	0.11
AH 200AV	14.00	0.08	2.030	28.418	**2.651**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.92	68.72	25.53	0.13
AH 200AV	28.00	0.08	2.030	56.836	**2.651**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.65	79.83	32.77	2.20
AH 200FE	7.00	0.08	1.939	13.574	**2.775**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.24	41.74	20.35	2.17
AH 200FE	14.00	0.08	1.939	27.148	**2.775**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.64	41.13	25.54	0.24
AH 200FE	28.00	0.08	1.939	54.296	**2.775**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.87	48.20	32.31	2.06
AH 202AL	14.00	0.08	2.135	29.895	**2.520**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.81	71.10	13.17	0.16
AH 202AL	28.00	0.08	2.135	59.791	**2.520**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.63	82.74	16.33	2.77
AH 202AV	7.00	0.08	2.035	14.247	**2.644**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.46	71.57	10.74	1.93
AH 202AV	14.00	0.08	2.035	28.493	**2.644**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.87	71.73	13.68	0.18
AH 202AV	28.00	0.08	2.035	56.987	**2.644**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.84	81.33	16.52	2.30
AH 202FE	7.00	0.08	1.957	13.698	**2.750**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.72	161.04	32.41	1.53
AH 202FE	14.00	0.08	1.957	27.395	**2.750**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.03	179.71	44.74	0.21
AH 202FE	28.00	0.08	1.957	54.790	**2.750**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.94	212.90	54.66	2.46
AH-1	7.00	0.08	1.957	13.698	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.01	62.92	56.43	2.16
AH-1	14.00	0.08	1.957	27.395	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.56	74.13	88.90	0.11
AH-1	28.00	0.08	1.957	54.790	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.14	74.95	112.32	0.13
AH-10	7.00	0.08	2.048	14.333	**2.628**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.59	86.10	13.50	3.05
AH-10	14.00	0.08	2.048	28.667	**2.628**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.18	99.39	16.47	0.11
AH-10	28.00	0.08	2.048	57.334	**2.628**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.54	104.40	20.53	0.13
AH-11	7.00	0.08	1.957	13.698	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.30	65.48	22.60	2.68
AH-11	14.00	0.08	1.957	27.395	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.88	79.47	34.23	0.09
AH-11	28.00	0.08	1.957	54.790	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.24	83.91	45.09	0.10
AH-12	7.00	0.08	1.957	13.698	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.61	47.40	29.81	3.51
AH-12	14.00	0.08	1.957	27.395	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.21	49.38	38.71	0.17
AH-12	28.00	0.08	1.957	54.790	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.85	47.74	53.35	0.20
AH-13	7.00	0.08	1.977	13.842	**2.721**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.89	75.10	11.76	3.25
AH-13	14.00	0.08	1.977	27.685	**2.721**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.56	87.20	14.67	0.25
AH-13	28.00	0.08	1.977	55.370	**2.721**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.03	89.92	18.22	1.93
AH-14	7.00	0.08	1.957	13.698	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.26	67.58	16.20	3.36
AH-14	14.00	0.08	1.957	27.395	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.87	73.53	18.78	0.14
AH-14	28.00	0.08	1.957	54.790	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.37	74.82	22.61	0.18
AH-15	7.00	0.08	1.957	13.698	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.77	61.72	16.79	2.88
AH-15	14.00	0.08	1.957	27.395	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.39	65.37	19.72	0.13
AH-15	28.00	0.08	1.957	54.790	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.79	66.08	23.08	0.16
AH-16	7.00	0.08	2.003	14.018	**2.687**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.67	82.62	15.12	2.83
AH-16	14.00	0.08	2.003	28.036	**2.687**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.25	87.00	16.94	0.18
AH-16	28.00	0.08	2.003	56.073	**2.687**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.69	93.66	21.33	0.24
AH-17	7.00	0.08	1.957	13.698	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.63	84.55	13.00	3.03
AH-17	14.00	0.08	1.957	27.395	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.24	88.18	14.52	0.15
AH-17	28.00	0.08	1.957	54.790	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.66	93.00	17.68	0.18
AH-2	7.00	0.08	1.957	13.698	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.84	79.75	11.88	1.59
AH-2	14.00	0.08	1.957	27.395	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.44	90.76	14.44	0.17
AH-2	28.00	0.08	1.957	54.790	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.85	86.83	17.46	0.18
AH-4	7.00	0.08	1.957	13.698	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.85	91.58	12.40	1.73
AH-4	14.00	0.08	1.957	27.395	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.51	100.92	14.41	0.25
AH-4	28.00	0.08	1.957	54.790	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.92	102.23	18.03	0.29

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
AH 131AL		17.69	107.59	0.19	76.03	1.53							Not Studied
AH 131AL		21.78	129.79	0.31	82.60	1.60							Not Studied
AH 131AV		22.26	137.02	0.16	62.65	3.83							Not Studied
AH 131AV		30.54	186.87	0.37	72.24	5.17							Not Studied
AH 131FE		23.58	172.84	0.31	59.22	2.37							Not Studied
AH 131FE		30.84	226.42	0.48	65.45	2.74							Not Studied
AH 165AL		17.20	28.82		39.54	4.43							Not Studied
AH 165AL		20.37	32.34	0.21	42.59	4.99							Not Studied
AH 165AL		23.50	36.03	0.27	49.25	5.73							Not Studied
AH 165AV		22.64	60.07	0.26	8.77	4.84							Not Studied
AH 165AV		25.79	68.46	0.38	9.23	6.16							Not Studied
AH 165FE		125.52	535.13		1.64	23.14							Not Studied
AH 165FE		136.45	702.73	1.93	1.88	18.35							Not Studied
AH 165FE		143.33	788.79	2.10	0.96	2.69							Not Studied
AH 168AL		14.41	26.73		35.74	3.35							Not Studied
AH 168AL		18.77	32.68	0.19	40.73	4.51							Not Studied
AH 168AL		21.21	34.32	0.28	45.65	4.95							Not Studied
AH 168AV		17.09	48.07		14.60	3.51							Not Studied
AH 168AV		22.99	63.98	0.13	12.43	3.90							Not Studied
AH 168AV		27.33	75.81	0.26	12.08	4.67							Not Studied
AH 168FE		127.76	509.77		0.79	7.12							Not Studied
AH 168FE		131.47	606.67	1.55	0.44	0.12							Not Studied
AH 168FE		136.46	667.31	1.86	0.45	0.06							Not Studied
AH 200AL		7.24	35.33	6.71	25.24	0.85							Not Studied
AH 200AL		8.49	39.45	6.23	28.76	0.98							Not Studied
AH 200AV		7.66	43.02		9.11	2.24							Not Studied
AH 200AV		8.97	52.45	9.39	8.39	2.35							Not Studied
AH 200AV		10.69	62.95	9.62	8.62	3.10							Not Studied
AH 200FE		7.58	57.77		52.93	1.62							Not Studied
AH 200FE		8.85	68.59	13.44	52.90	1.58							Not Studied
AH 200FE		10.61	81.58	12.65	56.54	1.98							Not Studied
AH 202AL		13.80	16.86	6.96	26.15	1.91							Not Studied
AH 202AL		16.44	18.53	6.08	29.39	2.07							Not Studied
AH 202AV		10.49	21.35		13.68	3.36							Not Studied
AH 202AV		12.73	25.46	8.02	13.53	3.40							Not Studied
AH 202AV		14.65	28.67	7.81	14.38	4.18							Not Studied
AH 202FE		23.22	73.98		1.81	5.96							Not Studied
AH 202FE		29.99	100.46	31.16	1.42	3.55							Not Studied
AH 202FE		33.75	120.22	33.53	1.70	7.53							Not Studied
AH-1		20.96	80.01		16.30	2.92							Not Studied
AH-1		34.31	127.99	16.89	15.94	4.14							Not Studied
AH-1		40.47	152.53	17.19	13.10	4.29							Not Studied
AH-10		12.71	25.47		6.06	3.14							Not Studied
AH-10		16.78	32.15	10.17	6.48	4.15							Not Studied
AH-10		19.22	37.23	10.78	6.24	4.13							Not Studied
AH-11		10.58	24.22		7.38	1.92							Not Studied
AH-11		16.80	36.65	8.87	7.76	3.10							Not Studied
AH-11		20.14	45.13	8.69	7.37	3.55							Not Studied
AH-12		11.62	57.93		41.37	1.65							Not Studied
AH-12		15.58	75.51	12.05	46.67	1.77							Not Studied
AH-12		19.68	94.93	12.06	48.85	2.22							Not Studied
AH-13		10.16	38.31		10.77	3.25							Not Studied
AH-13		13.63	50.69	10.58	11.29	4.56							Not Studied
AH-13		14.97	57.47	9.64	10.40	4.55							Not Studied
AH-14		12.15	50.42		17.68	2.45							Not Studied
AH-14		15.40	63.79	11.08	19.19	3.53							Not Studied
AH-14		16.62	72.41	10.85	18.55	4.04							Not Studied
AH-15		7.93	39.39		14.81	2.28							Not Studied
AH-15		10.29	49.88	9.20	15.00	2.99							Not Studied
AH-15		10.86	54.94	8.63	14.15	3.17							Not Studied
AH-16		12.15	29.64		6.90	2.38							Not Studied
AH-16		15.31	35.39	9.96	6.76	3.13							Not Studied
AH-16		17.91	41.75	9.80	6.31	3.66							Not Studied
AH-17		12.79	23.22		6.76	4.14							Not Studied
AH-17		16.50	27.83	8.80	7.00	5.02							Not Studied
AH-17		18.07	31.05	8.51	7.14	4.99							Not Studied
AH-2		10.21	38.13		10.66	3.42							Not Studied
AH-2		13.57	48.60	10.69	10.44	4.48							Not Studied
AH-2		14.00	51.22	9.31	10.01	4.47							Not Studied
AH-4		11.05	44.03		7.75	4.18							Not Studied
AH-4		14.13	55.19	12.00	8.02	4.86							Not Studied
AH-4		15.64	62.58	11.86	7.72	5.05							Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
AH 131AL		75.39	18.910017	-16.76755901	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 131AL		75.39	18.910017	-16.76755901	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 131AV		76.71	17.05791	-8.423849098	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 131AV		76.71	17.05791	-8.423849098	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 131FE		73.69	20.660553	-23.92828623	HOMOGENEOUS	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
AH 131FE		73.69	20.660553	-23.92828623	HOMOGENEOUS	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
AH 165AL		75.74	18.746712	-16.40647003	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 165AL		75.74	18.746712	-16.40647003	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 165AL		75.74	18.746712	-16.40647003	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 165AV		76.85	17.812311	-12.90904507	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 165AV		76.85	17.812311	-12.90904507	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 165FE		74.03	19.824682	-19.752644	HOMOGENEOUS	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
AH 165FE		74.03	19.824682	-19.752644	HOMOGENEOUS	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
AH 165FE		74.03	19.824682	-19.752644	HOMOGENEOUS	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
AH 168AL		87.24	9.31913663	18.39834014	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 168AL		87.24	9.31913663	18.39834014	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 168AL		87.24	9.31913663	18.39834014	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 168AV		76.54	17.447893	-10.35380009	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 168AV		76.54	17.447893	-10.35380009	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 168AV		76.54	17.447893	-10.35380009	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 168FE		74.62	20.122286	-22.37951687	HOMOGENEOUS	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
AH 168FE		74.62	20.122286	-22.37951687	HOMOGENEOUS	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
AH 168FE		74.62	20.122286	-22.37951687	HOMOGENEOUS	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
AH 200AL		74.97	18.407791	-13.25761701	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 200AL		74.97	18.407791	-13.25761701	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 200AV		75.43	17.673407	-9.847573055	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 200AV		75.43	17.673407	-9.847573055	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 200AV		75.43	17.673407	-9.847573055	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 200FE		73.84	19.391122	-16.99931883	HOMOGENEOUS	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
AH 200FE		73.84	19.391122	-16.99931883	HOMOGENEOUS	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
AH 200FE		73.84	19.391122	-16.99931883	HOMOGENEOUS	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
AH 202AL		74.66	18.708904	-14.46115801	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 202AL		74.66	18.708904	-14.46115801	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 202AV		75.69	17.584503	-9.762371043	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 202AV		75.69	17.584503	-9.762371043	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 202AV		75.69	17.584503	-9.762371043	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH 202FE		74.80	18.918964	-15.87202488	HOMOGENEOUS	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
AH 202FE		74.80	18.918964	-15.87202488	HOMOGENEOUS	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
AH 202FE		74.80	18.918964	-15.87202488	HOMOGENEOUS	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
AH-1		74.13	19.94	-20.56108	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-1		74.13	19.94	-20.56108	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-1		74.13	19.94	-20.56108	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-10		76.21	17.12	-7.972771	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-10		76.21	17.12	-7.972771	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-10		76.21	17.12	-7.972771	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-11		75.49	17.35	-8.117245	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-11		75.49	17.35	-8.117245	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-11		75.49	17.35	-8.117245	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-12		75.51	18.33	-13.684159	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-12		75.51	18.33	-13.684159	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-12		75.51	18.33	-13.684159	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-13		70.64	21.33	-22.818514	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-13		70.64	21.33	-22.818514	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-13		70.64	21.33	-22.818514	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-14		69.89	22.23	-26.698909	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-14		69.89	22.23	-26.698909	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-14		69.89	22.23	-26.698909	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-15		70.16	21.74	-24.364432	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-15		70.16	21.74	-24.364432	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-15		70.16	21.74	-24.364432	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-16		71.09	21.02	-21.789271	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-16		71.09	21.02	-21.789271	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-16		71.09	21.02	-21.789271	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-17		75.04	17.77	-9.767746	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-17		75.04	17.77	-9.767746	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-17		75.04	17.77	-9.767746	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-2		75.07	18.59	-14.447047	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-2		75.07	18.59	-14.447047	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-2		75.07	18.59	-14.447047	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-4		77.75	16.69	-8.013607	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-4		77.75	16.69	-8.013607	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-4		77.75	16.69	-8.013607	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
AH 131AL	13.50	10.80	0.00	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.09	4.57	0.00	0.00	0.36	4.09
AH 131AL	13.50	10.80	0.00	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.09	4.57	0.00	0.00	0.36	4.09
AH 131AV	4.39	7.60	0.00	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.70	11.13	0.00	0.00	0.00	4.25
AH 131AV	4.39	7.60	0.00	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.70	11.13	0.00	0.00	0.00	4.25
AH 131FE	2.25	7.33	0.00	1.01	0.00	0.00	0.00	0.00	0.00	0.00	8.81	7.61	0.00	0.00	0.00	4.06
AH 131FE	2.25	7.33	0.00	1.01	0.00	0.00	0.00	0.00	0.00	0.00	8.81	7.61	0.00	0.00	0.00	4.06
AH 165AL	13.40	7.34	0.00	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.24	4.57	0.00	0.00	0.00	4.20
AH 165AL	13.40	7.34	0.00	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.24	4.57	0.00	0.00	0.00	4.20
AH 165AL	13.40	7.34	0.00	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.24	4.57	0.00	0.00	0.00	4.20
AH 165AV	5.17	6.57	0.00	1.04	0.00	0.00	0.00	0.00	0.00	0.00	0.47	11.08	0.00	0.00	0.00	5.02
AH 165AV	5.17	6.57	0.00	1.04	0.00	0.00	0.00	0.00	0.00	0.00	0.47	11.08	0.00	0.00	0.00	5.02
AH 165FE	1.42	7.28	0.00	1.40	0.00	0.00	0.00	0.00	0.00	0.00	7.14	9.07	0.00	0.00	0.00	4.05
AH 165FE	1.42	7.28	0.00	1.40	0.00	0.00	0.00	0.00	0.00	0.00	7.14	9.07	0.00	0.00	0.00	4.05
AH 165FE	1.42	7.28	0.00	1.40	0.00	0.00	0.00	0.00	0.00	0.00	7.14	9.07	0.00	0.00	0.00	4.05
AH 168AL	6.72	13.70	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.14	2.31	0.00	0.00	0.00	5.34
AH 168AL	6.72	13.70	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.14	2.31	0.00	0.00	0.00	5.34
AH 168AL	6.72	13.70	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.14	2.31	0.00	0.00	0.00	5.34
AH 168AV	5.58	10.60	0.00	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.61	10.51	0.00	0.00	0.00	4.24
AH 168AV	5.58	10.60	0.00	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.61	10.51	0.00	0.00	0.00	4.24
AH 168AV	5.58	10.60	0.00	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.61	10.51	0.00	0.00	0.00	4.24
AH 168FE	2.47	11.40	0.00	1.35	0.00	0.00	0.00	0.00	0.00	0.00	6.22	9.39	0.00	0.00	0.00	4.12
AH 168FE	2.47	11.40	0.00	1.35	0.00	0.00	0.00	0.00	0.00	0.00	6.22	9.39	0.00	0.00	0.00	4.12
AH 168FE	2.47	11.40	0.00	1.35	0.00	0.00	0.00	0.00	0.00	0.00	6.22	9.39	0.00	0.00	0.00	4.12
AH 200AL	13.40	10.20	0.00	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.07	4.39	3.12	0.00	0.00	2.65
AH 200AL	13.40	10.20	0.00	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.07	4.39	3.12	0.00	0.00	2.65
AH 200AV	5.14	10.30	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.39	11.47	3.18	0.00	0.00	2.68
AH 200AV	5.14	10.30	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.39	11.47	3.18	0.00	0.00	2.68
AH 200AV	5.14	10.30	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.39	11.47	3.18	0.00	0.00	2.68
AH 200FE	2.07	10.10	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	5.94	9.80	3.15	0.00	0.00	2.59
AH 200FE	2.07	10.10	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	5.94	9.80	3.15	0.00	0.00	2.59
AH 200FE	2.07	10.10	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	5.94	9.80	3.15	0.00	0.00	2.59
AH 202AL	13.90	7.42	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.08	4.31	3.32	0.00	0.00	4.18
AH 202AL	13.90	7.42	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.08	4.31	3.32	0.00	0.00	4.18
AH 202AV	4.96	7.44	0.00	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.31	11.56	3.33	0.00	0.00	4.27
AH 202AV	4.96	7.44	0.00	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.31	11.56	3.33	0.00	0.00	4.27
AH 202AV	4.96	7.44	0.00	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.31	11.56	3.33	0.00	0.00	4.27
AH 202FE	1.36	7.08	0.00	0.96	0.00	0.00	0.00	0.00	0.00	0.00	6.28	9.62	3.28	0.00	0.00	4.27
AH 202FE	1.36	7.08	0.00	0.96	0.00	0.00	0.00	0.00	0.00	0.00	6.28	9.62	3.28	0.00	0.00	4.27
AH 202FE	1.36	7.08	0.00	0.96	0.00	0.00	0.00	0.00	0.00	0.00	6.28	9.62	3.28	0.00	0.00	4.27
AH-1	6.98	10.30	0.00	0.96	0.00	0.00	0.00	0.07	0.00	0.00	0.00	12.00	3.31	0.00	0.00	4.47
AH-1	6.98	10.30	0.00	0.96	0.00	0.00	0.00	0.07	0.00	0.00	0.00	12.00	3.31	0.00	0.00	4.47
AH-1	6.98	10.30	0.00	0.96	0.00	0.00	0.00	0.07	0.00	0.00	0.00	12.00	3.31	0.00	0.00	4.47
AH-10	5.14	7.59	0.00	0.68	0.00	0.00	0.00	0.06	0.00	0.00	0.00	11.30	3.09	0.00	0.00	4.44
AH-10	5.14	7.59	0.00	0.68	0.00	0.00	0.00	0.06	0.00	0.00	0.00	11.30	3.09	0.00	0.00	4.44
AH-10	5.14	7.59	0.00	0.68	0.00	0.00	0.00	0.06	0.00	0.00	0.00	11.30	3.09	0.00	0.00	4.44
AH-11	5.70	12.00	0.00	0.65	0.00	0.00	0.00	0.06	0.00	0.00	0.00	11.00	2.99	0.00	0.00	3.62
AH-11	5.70	12.00	0.00	0.65	0.00	0.00	0.00	0.06	0.00	0.00	0.00	11.00	2.99	0.00	0.00	3.62
AH-11	5.70	12.00	0.00	0.65	0.00	0.00	0.00	0.06	0.00	0.00	0.00	11.00	2.99	0.00	0.00	3.62
AH-12	6.04	8.75	0.00	0.69	0.00	0.00	0.00	0.06	0.00	0.00	0.00	11.60	3.13	0.00	0.00	3.47
AH-12	6.04	8.75	0.00	0.69	0.00	0.00	0.00	0.06	0.00	0.00	0.00	11.60	3.13	0.00	0.00	3.47
AH-12	6.04	8.75	0.00	0.69	0.00	0.00	0.00	0.06	0.00	0.00	0.00	11.60	3.13	0.00	0.00	3.47
AH-13	6.48	6.41	0.00	1.25	0.00	0.00	0.01	0.05	0.00	0.00	0.00	13.60	3.06	0.00	0.00	3.32
AH-13	6.48	6.41	0.00	1.25	0.00	0.00	0.01	0.05	0.00	0.00	0.00	13.60	3.06	0.00	0.00	3.32
AH-13	6.48	6.41	0.00	1.25	0.00	0.00	0.01	0.05	0.00	0.00	0.00	13.60	3.06	0.00	0.00	3.32
AH-14	7.08	8.25	0.00	1.25	0.00	0.00	0.01	0.06	0.00	0.00	0.00	13.90	3.08	0.00	0.00	3.94
AH-14	7.08	8.25	0.00	1.25	0.00	0.00	0.01	0.06	0.00	0.00	0.00	13.90	3.08	0.00	0.00	3.94
AH-14	7.08	8.25	0.00	1.25	0.00	0.00	0.01	0.06	0.00	0.00	0.00	13.90	3.08	0.00	0.00	3.94
AH-15	6.87	9.20	0.00	1.27	0.00	0.00	0.01	0.05	0.00	0.00	0.00	13.60	3.10	0.00	0.00	2.80
AH-15	6.87	9.20	0.00	1.27	0.00	0.00	0.01	0.05	0.00	0.00	0.00	13.60	3.10	0.00	0.00	2.80
AH-15	6.87	9.20	0.00	1.27	0.00	0.00	0.01	0.05	0.00	0.00	0.00	13.60	3.10	0.00	0.00	2.80
AH-16	6.36	7.20	0.00	1.26	0.00	0.00	0.08	0.03	0.00	0.00	0.00	13.40	3.06	0.00	0.00	4.06
AH-16	6.36	7.20	0.00	1.26	0.00	0.00	0.08	0.03	0.00	0.00	0.00	13.40	3.06	0.00	0.00	4.06
AH-16	6.36	7.20	0.00	1.26	0.00	0.00	0.08	0.03	0.00	0.00	0.00	13.40	3.06	0.00	0.00	4.06
AH-17	5.72	8.12	0.00	0.65	0.00	0.00	0.09	0.06	0.00	0.00	0.00	11.40	3.06	0.00	0.00	4.69
AH-17	5.72	8.12	0.00	0.65	0.00	0.00	0.09	0.06	0.00	0.00	0.00	11.40	3.06	0.00	0.00	4.69
AH-17	5.72	8.12	0.00	0.65	0.00	0.00	0.09	0.06	0.00	0.00	0.00	11.40	3.06	0.00	0.00	4.69
AH-2	6.55	13.30	0.00	0.64	0.00	0.00	0.02	0.05	0.00	0.00	0.00	11.40	3.11	0.00	0.00	3.76
AH-2	6.55	13.30	0.00	0.64	0.00	0.00	0.02	0.05	0.00	0.00	0.00	11.40	3.11	0.00	0.00	3.76
AH-2	6.55	13.30	0.00	0.64	0.00	0.00	0.02	0.05	0.00	0.00	0.00	11.40	3.11	0.00	0.00	3.76
AH-4	4.69	7.06	0.00	1.00	0.00	0.00	0.05	0.06	0.00	0.00	0.00	11.00	3.16	0.00	0.00	4.10
AH-4	4.69	7.06	0.00	1.00	0.00	0.00	0.05	0.06	0.00	0.00	0.00	11.00	3.16	0.00	0.00	4.10
AH-4	4.69	7.06	0.00	1.00	0.00	0.00	0.05	0.06	0.00	0.00	0.00	11.00	3.16	0.00	0.00	4.10

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
AH 131AL	1.38	2.51	0.00	0.00	14.10	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.00	46.40	0.00	0.00
AH 131AL	1.38	2.51	0.00	0.00	14.10	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.00	46.40	0.00	0.00
AH 131AV	0.67	2.59	0.00	0.00	9.86	0.00	1.04	0.00	0.00	0.00	0.00	0.00	0.00	55.00	0.00	0.00
AH 131AV	0.67	2.59	0.00	0.00	9.86	0.00	1.04	0.00	0.00	0.00	0.00	0.00	0.00	55.00	0.00	0.00
AH 131FE	0.66	0.93	0.00	0.00	10.90	0.00	2.56	0.00	0.00	0.00	0.00	0.00	0.00	51.40	0.00	0.00
AH 131FE	0.66	0.93	0.00	0.00	10.90	0.00	2.56	0.00	0.00	0.00	0.00	0.00	0.00	51.40	0.00	0.00
AH 165AL	0.66	2.62	0.00	0.00	10.60	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.00	53.60	0.00	0.00
AH 165AL	0.66	2.62	0.00	0.00	10.60	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.00	53.60	0.00	0.00
AH 165AL	0.66	2.62	0.00	0.00	10.60	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.00	53.60	0.00	0.00
AH 165AV	0.66	2.57	0.00	0.00	9.96	0.00	1.01	0.00	0.00	0.00	0.00	0.00	0.00	55.30	0.00	0.00
AH 165AV	0.66	2.57	0.00	0.00	9.96	0.00	1.01	0.00	0.00	0.00	0.00	0.00	0.00	55.30	0.00	0.00
AH 165FE	0.65	1.07	0.00	0.00	10.70	0.00	2.97	0.00	0.00	0.00	0.00	0.00	0.00	52.00	0.00	0.00
AH 165FE	0.65	1.07	0.00	0.00	10.70	0.00	2.97	0.00	0.00	0.00	0.00	0.00	0.00	52.00	0.00	0.00
AH 165FE	0.65	1.07	0.00	0.00	10.70	0.00	2.97	0.00	0.00	0.00	0.00	0.00	0.00	52.00	0.00	0.00
AH 168AL	0.89	1.09	0.00	0.00	11.80	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	56.40	0.00	0.00
AH 168AL	0.89	1.09	0.00	0.00	11.80	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	56.40	0.00	0.00
AH 168AL	0.89	1.09	0.00	0.00	11.80	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	56.40	0.00	0.00
AH 168AV	0.74	2.64	0.00	0.00	10.10	0.00	1.02	0.00	0.00	0.00	0.00	0.00	0.00	51.60	0.00	0.00
AH 168AV	0.74	2.64	0.00	0.00	10.10	0.00	1.02	0.00	0.00	0.00	0.00	0.00	0.00	51.60	0.00	0.00
AH 168AV	0.74	2.64	0.00	0.00	10.10	0.00	1.02	0.00	0.00	0.00	0.00	0.00	0.00	51.60	0.00	0.00
AH 168FE	0.71	0.98	0.00	0.00	10.80	0.00	2.82	0.00	0.00	0.00	0.00	0.00	0.00	48.30	0.00	0.00
AH 168FE	0.71	0.98	0.00	0.00	10.80	0.00	2.82	0.00	0.00	0.00	0.00	0.00	0.00	48.30	0.00	0.00
AH 168FE	0.71	0.98	0.00	0.00	10.80	0.00	2.82	0.00	0.00	0.00	0.00	0.00	0.00	48.30	0.00	0.00
AH 200AL	1.25	2.49	0.00	0.00	10.60	0.00	0.61	0.00	0.00	0.00	0.00	0.00	0.00	48.40	0.00	0.00
AH 200AL	1.25	2.49	0.00	0.00	10.60	0.00	0.61	0.00	0.00	0.00	0.00	0.00	0.00	48.40	0.00	0.00
AH 200AV	1.24	2.55	0.00	0.00	9.77	0.00	1.02	0.00	0.00	0.00	0.00	0.00	0.00	49.50	0.00	0.00
AH 200AV	1.24	2.55	0.00	0.00	9.77	0.00	1.02	0.00	0.00	0.00	0.00	0.00	0.00	49.50	0.00	0.00
AH 200AV	1.24	2.55	0.00	0.00	9.77	0.00	1.02	0.00	0.00	0.00	0.00	0.00	0.00	49.50	0.00	0.00
AH 200FE	1.21	0.95	0.00	0.00	10.60	0.00	2.57	0.00	0.00	0.00	0.00	0.00	0.00	47.40	0.00	0.00
AH 200FE	1.21	0.95	0.00	0.00	10.60	0.00	2.57	0.00	0.00	0.00	0.00	0.00	0.00	47.40	0.00	0.00
AH 200FE	1.21	0.95	0.00	0.00	10.60	0.00	2.57	0.00	0.00	0.00	0.00	0.00	0.00	47.40	0.00	0.00
AH 202AL	1.28	2.51	0.00	0.00	7.34	0.00	0.62	0.00	0.00	0.00	0.00	0.00	0.00	52.40	0.00	0.00
AH 202AL	1.28	2.51	0.00	0.00	7.34	0.00	0.62	0.00	0.00	0.00	0.00	0.00	0.00	52.40	0.00	0.00
AH 202AV	1.30	2.59	0.00	0.00	6.55	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	54.10	0.00	0.00
AH 202AV	1.30	2.59	0.00	0.00	6.55	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	54.10	0.00	0.00
AH 202AV	1.30	2.59	0.00	0.00	6.55	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	54.10	0.00	0.00
AH 202FE	1.26	0.95	0.00	0.00	7.62	0.00	2.73	0.00	0.00	0.00	0.00	0.00	0.00	52.55	0.00	0.00
AH 202FE	1.26	0.95	0.00	0.00	7.62	0.00	2.73	0.00	0.00	0.00	0.00	0.00	0.00	52.55	0.00	0.00
AH 202FE	1.26	0.95	0.00	0.00	7.62	0.00	2.73	0.00	0.00	0.00	0.00	0.00	0.00	52.55	0.00	0.00
AH-1	0.66	2.31	0.00	0.00	11.90	0.00	0.94	0.00	0.00	0.00	0.00	0.00	0.00	44.08	0.00	0.00
AH-1	0.66	2.31	0.00	0.00	11.90	0.00	0.94	0.00	0.00	0.00	0.00	0.00	0.00	44.08	0.00	0.00
AH-1	0.66	2.31	0.00	0.00	11.90	0.00	0.94	0.00	0.00	0.00	0.00	0.00	0.00	44.08	0.00	0.00
AH-10	1.11	2.67	0.00	0.00	6.83	0.00	0.96	0.00	0.00	0.00	0.00	0.00	0.00	54.20	0.00	0.00
AH-10	1.11	2.67	0.00	0.00	6.83	0.00	0.96	0.00	0.00	0.00	0.00	0.00	0.00	54.20	0.00	0.00
AH-10	1.11	2.67	0.00	0.00	6.83	0.00	0.96	0.00	0.00	0.00	0.00	0.00	0.00	54.20	0.00	0.00
AH-11	1.11	2.63	0.00	0.00	6.42	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00	50.40	0.00	0.00
AH-11	1.11	2.63	0.00	0.00	6.42	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00	50.40	0.00	0.00
AH-11	1.11	2.63	0.00	0.00	6.42	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00	50.40	0.00	0.00
AH-12	0.58	2.64	0.00	0.00	9.20	0.00	0.97	0.00	0.00	0.00	0.00	0.00	0.00	50.90	0.00	0.00
AH-12	0.58	2.64	0.00	0.00	9.20	0.00	0.97	0.00	0.00	0.00	0.00	0.00	0.00	50.90	0.00	0.00
AH-12	0.58	2.64	0.00	0.00	9.20	0.00	0.97	0.00	0.00	0.00	0.00	0.00	0.00	50.90	0.00	0.00
AH-13	0.49	3.25	0.00	0.00	8.80	0.00	1.14	0.00	0.00	0.00	0.00	0.00	0.00	49.00	0.00	0.00
AH-13	0.49	3.25	0.00	0.00	8.80	0.00	1.14	0.00	0.00	0.00	0.00	0.00	0.00	49.00	0.00	0.00
AH-13	0.49	3.25	0.00	0.00	8.80	0.00	1.14	0.00	0.00	0.00	0.00	0.00	0.00	49.00	0.00	0.00
AH-14	0.53	3.34	0.00	0.00	9.76	0.00	1.13	0.00	0.00	0.00	0.00	0.00	0.00	44.80	0.00	0.00
AH-14	0.53	3.34	0.00	0.00	9.76	0.00	1.13	0.00	0.00	0.00	0.00	0.00	0.00	44.80	0.00	0.00
AH-14	0.53	3.34	0.00	0.00	9.76	0.00	1.13	0.00	0.00	0.00	0.00	0.00	0.00	44.80	0.00	0.00
AH-15	1.02	3.26	0.00	0.00	9.41	0.00	1.13	0.00	0.00	0.00	0.00	0.00	0.00	45.60	0.00	0.00
AH-15	1.02	3.26	0.00	0.00	9.41	0.00	1.13	0.00	0.00	0.00	0.00	0.00	0.00	45.60	0.00	0.00
AH-15	1.02	3.26	0.00	0.00	9.41	0.00	1.13	0.00	0.00	0.00	0.00	0.00	0.00	45.60	0.00	0.00
AH-16	1.00	3.22	0.00	0.00	6.54	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00	50.20	0.00	0.00
AH-16	1.00	3.22	0.00	0.00	6.54	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00	50.20	0.00	0.00
AH-16	1.00	3.22	0.00	0.00	6.54	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00	50.20	0.00	0.00
AH-17	0.58	2.71	0.00	0.00	6.61	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	52.50	0.00	0.00
AH-17	0.58	2.71	0.00	0.00	6.61	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	52.50	0.00	0.00
AH-17	0.58	2.71	0.00	0.00	6.61	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	52.50	0.00	0.00
AH-2	0.58	2.67	0.00	0.00	10.30	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
AH-2	0.58	2.67	0.00	0.00	10.30	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
AH-2	0.58	2.67	0.00	0.00	10.30	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
AH-4	0.73	2.12	0.00	0.00	9.89	0.00	0.97	0.00	0.00	0.00	0.00	0.00	0.00	53.48	0.00	0.00
AH-4	0.73	2.12	0.00	0.00	9.89	0.00	0.97	0.00	0.00	0.00	0.00	0.00	0.00	53.48	0.00	0.00
AH-4	0.73	2.12	0.00	0.00	9.89	0.00	0.97	0.00	0.00	0.00	0.00	0.00	0.00	53.48	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
AH 131AL	0.00	0.00	0.00	0.72	0.00	0.00	0.00	0.34	0.00	99.87		
AH 131AL	0.00	0.00	0.00	0.72	0.00	0.00	0.00	0.34	0.00	99.87		
AH 131AV	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.88	0.00	98.93		
AH 131AV	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.88	0.00	98.93		
AH 131FE	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.87	0.00	98.40		
AH 131FE	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.87	0.00	98.40		
AH 165AL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	99.20		
AH 165AL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	99.20		
AH 165AL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	99.20		
AH 165AV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.00	99.61		
AH 165AV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.00	99.61		
AH 165FE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00	98.60		
AH 165FE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00	98.60		
AH 165FE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00	98.60		
AH 168AL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.00	99.72		
AH 168AL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.00	99.72		
AH 168AL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.00	99.72		
AH 168AV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.00	99.01		
AH 168AV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.00	99.01		
AH 168AV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.00	99.01		
AH 168FE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.00	99.23		
AH 168FE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.00	99.23		
AH 168FE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.00	99.23		
AH 200AL	0.00	0.00	0.00	1.70	0.00	0.00	0.00	0.03	0.00	99.45		
AH 200AL	0.00	0.00	0.00	1.70	0.00	0.00	0.00	0.03	0.00	99.45		
AH 200AV	0.00	0.00	0.00	1.41	0.00	0.00	0.00	0.02	0.00	99.30		
AH 200AV	0.00	0.00	0.00	1.41	0.00	0.00	0.00	0.02	0.00	99.30		
AH 200AV	0.00	0.00	0.00	1.41	0.00	0.00	0.00	0.02	0.00	99.30		
AH 200FE	0.00	0.00	0.00	1.78	0.00	0.00	0.00	0.02	0.00	99.10		
AH 200FE	0.00	0.00	0.00	1.78	0.00	0.00	0.00	0.02	0.00	99.10		
AH 200FE	0.00	0.00	0.00	1.78	0.00	0.00	0.00	0.02	0.00	99.10		
AH 202AL	0.00	0.00	0.00	1.71	0.00	0.00	0.00	0.03	0.00	99.51		
AH 202AL	0.00	0.00	0.00	1.71	0.00	0.00	0.00	0.03	0.00	99.51		
AH 202AV	0.00	0.00	0.00	1.37	0.00	0.00	0.00	0.03	0.00	99.53		
AH 202AV	0.00	0.00	0.00	1.37	0.00	0.00	0.00	0.03	0.00	99.53		
AH 202AV	0.00	0.00	0.00	1.37	0.00	0.00	0.00	0.03	0.00	99.53		
AH 202FE	0.00	0.00	0.00	1.72	0.00	0.00	0.00	0.02	0.00	99.70		
AH 202FE	0.00	0.00	0.00	1.72	0.00	0.00	0.00	0.02	0.00	99.70		
AH 202FE	0.00	0.00	0.00	1.72	0.00	0.00	0.00	0.02	0.00	99.70		
AH-1	0.04	0.00	0.00	1.33	0.00	0.00	0.00	0.66	0.00	100.01		
AH-1	0.04	0.00	0.00	1.33	0.00	0.00	0.00	0.66	0.00	100.01		
AH-1	0.04	0.00	0.00	1.33	0.00	0.00	0.00	0.66	0.00	100.01		
AH-10	0.05	0.00	0.00	1.30	0.00	0.00	0.00	0.01	0.00	99.43		
AH-10	0.05	0.00	0.00	1.30	0.00	0.00	0.00	0.01	0.00	99.43		
AH-10	0.05	0.00	0.00	1.30	0.00	0.00	0.00	0.01	0.00	99.43		
AH-11	0.04	0.00	0.00	1.29	0.00	0.00	0.00	0.01	0.00	98.85		
AH-11	0.04	0.00	0.00	1.29	0.00	0.00	0.00	0.01	0.00	98.85		
AH-11	0.04	0.00	0.00	1.29	0.00	0.00	0.00	0.01	0.00	98.85		
AH-12	0.05	0.00	0.00	1.33	0.00	0.00	0.00	0.01	0.00	99.42		
AH-12	0.05	0.00	0.00	1.33	0.00	0.00	0.00	0.01	0.00	99.42		
AH-12	0.05	0.00	0.00	1.33	0.00	0.00	0.00	0.01	0.00	99.42		
AH-13	0.05	0.00	0.00	1.29	0.00	0.00	0.00	0.03	0.00	98.23		
AH-13	0.05	0.00	0.00	1.29	0.00	0.00	0.00	0.03	0.00	98.23		
AH-13	0.05	0.00	0.00	1.29	0.00	0.00	0.00	0.03	0.00	98.23		
AH-14	0.07	0.00	0.00	1.32	0.00	0.00	0.00	0.58	0.00	99.10		
AH-14	0.07	0.00	0.00	1.32	0.00	0.00	0.00	0.58	0.00	99.10		
AH-14	0.07	0.00	0.00	1.32	0.00	0.00	0.00	0.58	0.00	99.10		
AH-15	0.06	0.00	0.00	1.34	0.00	0.00	0.00	0.01	0.00	98.73		
AH-15	0.06	0.00	0.00	1.34	0.00	0.00	0.00	0.01	0.00	98.73		
AH-15	0.06	0.00	0.00	1.34	0.00	0.00	0.00	0.01	0.00	98.73		
AH-16	0.07	0.00	0.00	1.30	0.00	0.00	0.00	0.01	0.00	98.89		
AH-16	0.07	0.00	0.00	1.30	0.00	0.00	0.00	0.01	0.00	98.89		
AH-16	0.07	0.00	0.00	1.30	0.00	0.00	0.00	0.01	0.00	98.89		
AH-17	0.03	0.00	0.00	1.30	0.00	0.00	0.00	0.66	0.00	99.10		
AH-17	0.03	0.00	0.00	1.30	0.00	0.00	0.00	0.66	0.00	99.10		
AH-17	0.03	0.00	0.00	1.30	0.00	0.00	0.00	0.66	0.00	99.10		
AH-2	0.04	0.00	0.00	1.30	0.00	0.00	0.00	0.63	0.00	99.83		
AH-2	0.04	0.00	0.00	1.30	0.00	0.00	0.00	0.63	0.00	99.83		
AH-2	0.04	0.00	0.00	1.30	0.00	0.00	0.00	0.63	0.00	99.83		
AH-4	0.05	0.00	0.00	1.30	0.00	0.00	0.00	0.01	0.00	99.67		
AH-4	0.05	0.00	0.00	1.30	0.00	0.00	0.00	0.01	0.00	99.67		
AH-4	0.05	0.00	0.00	1.30	0.00	0.00	0.00	0.01	0.00	99.67		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
AH-5	7.00	0.08	2.032	14.227	**2.648**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.24	98.76	22.48	1.97
AH-5	14.00	0.08	2.032	28.453	**2.648**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.87	110.01	26.33	0.15
AH-5	28.00	0.08	2.032	56.907	**2.648**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.40	111.91	31.75	0.19
AH-6	7.00	0.08	1.957	13.698	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.56	93.52	20.81	2.68
AH-6	14.00	0.08	1.957	27.395	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.15	103.78	24.14	0.22
AH-6	28.00	0.08	1.957	54.790	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.72	108.97	30.82	0.25
AH-7	7.00	0.08	1.957	13.698	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.48	72.22	22.11	3.01
AH-7	14.00	0.08	1.957	27.395	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.05	75.46	26.18	0.11
AH-7	28.00	0.08	1.957	54.790	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.43	76.78	34.00	0.12
AH-8	7.00	0.08	2.035	14.242	**2.645**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.64	75.34	19.63	3.14
AH-8	14.00	0.08	2.035	28.485	**2.645**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.22	74.55	20.57	0.14
AH-8	28.00	0.08	2.035	56.969	**2.645**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.60	79.17	27.50	0.17
AH-9	7.00	0.08	2.030	14.213	**2.650**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.75	73.37	14.89	3.07
AH-9	14.00	0.08	2.030	28.426	**2.650**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.38	80.60	19.18	0.19
AH-9	28.00	0.08	2.030	56.851	**2.650**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.75	84.11	21.90	0.22
MG-1	7.00	0.09	2.268	15.874	**2.373**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.00	52.74	48.52	
MG-1	14.00	0.09	2.268	31.747	**2.373**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.10	52.83	69.86	
MG-1	28.00	0.09	2.268	63.495	**2.373**	4.00	100-200	1.125E-04	0.040	ASTM I	90	8.90	57.57	97.36	
MG-1	168.00	0.09	2.268	380.967	**2.373**	4.00	100-200	1.125E-04	0.040	ASTM I	90	8.90	56.11	249.89	
MG-2	7.00	0.08	2.140	14.983	**2.514**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.90	24.97	2.38	4.17
MG-2	14.00	0.08	2.140	29.967	**2.514**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.00	27.97	3.80	3.55
MG-2	28.00	0.08	2.140	59.933	**2.514**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.00	28.44	3.05	3.84
MG-2	168.00	0.08	2.140	359.601	**2.514**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.20	44.86	3.90	2.97
MG-4	7.00	0.09	2.163	15.140	**2.488**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.60	105.42	9.90	
MG-4	14.00	0.09	2.163	30.280	**2.488**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.80	121.36	12.65	
MG-4	28.00	0.09	2.163	60.560	**2.488**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.90	122.76	15.55	
MG-4	168.00	0.09	2.163	363.358	**2.488**	4.00	100-200	1.125E-04	0.040	ASTM I	90	12.20	186.86	33.87	
MG-5	7.00	0.08	2.117	14.818	**2.542**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.90	98.60	30.69	18.56
MG-5	14.00	0.08	2.117	29.637	**2.542**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.90	99.90	31.25	17.60
MG-5	28.00	0.08	2.117	59.273	**2.542**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.90	104.34	37.19	16.44
MG-5	168.00	0.08	2.117	355.640	**2.542**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.90	117.65	44.81	16.19
MG-6	7.00	0.08	2.059	14.416	**2.613**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.60	89.13	66.68	
MG-6	14.00	0.08	2.059	28.831	**2.613**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.50	91.95	76.69	
MG-6	28.00	0.08	2.059	57.663	**2.613**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.50	104.11	94.16	
MG-6	168.00	0.08	2.059	345.976	**2.613**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.50	126.16	132.31	
MG-7	7.00	0.08	2.125	14.877	**2.532**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.80	8359.70	2685.50	
MG-7	14.00	0.08	2.125	29.754	**2.532**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.40	17095.00	5239.80	
MG-7	28.00	0.08	2.125	59.507	**2.532**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.20	3542.47	3169.60	
MG-7	168.00	0.08	2.125	357.044	**2.532**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.40	21543.33	6278.93	
MG-8	7.00	0.08	1.928	13.496	**2.791**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.50	58.70	7.60	0.60
MG-8	14.00	0.08	1.928	26.993	**2.791**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.40	64.14	8.35	0.74
MG-8	28.00	0.08	1.928	53.985	**2.791**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.60	73.85	9.82	0.78
MG-8	168.00	0.08	1.928	323.911	**2.791**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.80	112.84	15.06	1.00
MG-9	7.00	0.08	2.091	14.634	**2.574**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.00	8941.30	1186.47	5.23
MG-9	14.00	0.08	2.091	29.268	**2.574**	4.00	100-200	1.125E-04	0.040	ASTM I	90	12.60	17212.00	2242.80	6.13
MG-9	28.00	0.08	2.091	58.536	**2.574**	4.00	100-200	1.125E-04	0.040	ASTM I	90	12.60	16404.33	2130.20	4.97
MG-9	168.00	0.08	2.091	351.218	**2.574**	4.00	100-200	1.125E-04	0.040	ASTM I	90	12.70	14714.67	2174.93	4.13
MG-10	7.00	0.08	1.963	13.742	**2.741**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.70	385.17	43.82	
MG-10	14.00	0.08	1.963	27.485	**2.741**	4.00	100-200	1.125E-04	0.040	ASTM I	90	12.00	542.03	70.03	
MG-10	28.00	0.08	1.963	54.970	**2.741**	4.00	100-200	1.125E-04	0.040	ASTM I	90	12.20	768.51	100.50	
MG-10	168.00	0.08	1.963	329.820	**2.741**	4.00	100-200	1.125E-04	0.040	ASTM I	90	12.40	1438.73	207.40	
MG-11	7.00	0.09	2.146	15.019	**2.508**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.20	21.15	24.39	3.49
MG-11	14.00	0.09	2.146	30.038	**2.508**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.20	18.79	30.67	3.27
MG-11	28.00	0.09	2.146	60.077	**2.508**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.10	23.27	44.77	3.75
MG-11	168.00	0.09	2.146	360.461	**2.508**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.00	27.06	88.48	4.78
MG-13	7.00	0.09	2.165	15.158	**2.485**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.20	41.41	183.84	
MG-13	14.00	0.09	2.165	30.316	**2.485**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.20	47.07	279.15	
MG-13	28.00	0.09	2.165	60.633	**2.485**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.20	45.90	380.01	
MG-13	168.00	0.09	2.165	363.797	**2.485**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.20	40.60	753.41	
MG-15	7.00	0.08	2.101	14.708	**2.561**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.90	59.24	4.95	5.31
MG-15	14.00	0.08	2.101	29.417	**2.561**	4.00	100-200	1.125E-04	0.040	ASTM I	90	12.00	78.44	6.83	4.60
MG-15	28.00	0.08	2.101	58.834	**2.561**	4.00	100-200	1.125E-04	0.040	ASTM I	90	12.10	92.91	11.18	2.66
MG-15	168.00	0.08	2.101	353.001	**2.561**	4.00	100-200	1.125E-04	0.040	ASTM I	90	12.36	162.93	27.77	0.96
MG-16	7.00	0.08	2.008	14.055	**2.680**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.30	102.78	13.54	
MG-16	14.00	0.08	2.008	28.111	**2.680**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.80	116.98	16.81	
MG-16	28.00	0.08	2.008	56.221	**2.680**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.80	132.65	18.16	
MG-16	168.00	0.08	2.008	337.327	**2.680**	4.00	100-200	1.125E-04	0.040	ASTM I	90	12.12	306.06	31.84	
MG-17	7.00	0.08	1.968	13.773	**2.735**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.20	33.56	15.39	0.85
MG-17	14.00	0.08	1.968	27.545	**2.735**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.30	35.23	17.41	0.97
MG-17	28.00	0.08	1.968	55.091	**2.735**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.40	41.66	18.41	0.99
MG-17	168.00	0.08	1.968	330.543	**2.735**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.56	57.74	24.93	1.07
MG-18	7.00	0.08	2.077	14.538	**2.591**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.30	3517.60	2771.97	6.70

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
AH-5		16.04	71.14		8.05	3.27							Not Studied
AH-5		20.24	91.20	14.86	8.18	4.06							Not Studied
AH-5		21.82	102.61	14.18	7.69	4.12							Not Studied
AH-6		22.37	65.28		19.39	6.89							Not Studied
AH-6		27.88	81.59	13.31	21.44	8.11							Not Studied
AH-6		31.59	96.49	13.22	21.50	8.60							Not Studied
AH-7		9.08	38.07		9.61	3.66							Not Studied
AH-7		11.51	46.95	8.84	9.76	4.33							Not Studied
AH-7		13.42	56.07	8.40	9.35	4.59							Not Studied
AH-8		9.15	41.72		10.36	5.00							Not Studied
AH-8		10.44	46.85	8.71	10.54	5.39							Not Studied
AH-8		12.50	57.67	8.57	10.58	6.20							Not Studied
AH-9		9.50	35.83		12.06	4.51							Not Studied
AH-9		13.31	48.27	9.12	12.24	5.24							Not Studied
AH-9		14.10	52.59	8.75	12.58	5.96							Not Studied
MG-1			53.09		17.53								amorphous
MG-1			68.81		17.61								amorphous
MG-1			82.63		19.20								amorphous
MG-1			183.08		16.97								amorphous
MG-2			42.46		7.15								amorphous
MG-2			59.37		7.12								amorphous
MG-2			55.24		7.67								amorphous
MG-2			101.48		11.53								amorphous
MG-4			249.36		38.48								amorphous
MG-4			292.35		46.39								amorphous
MG-4			316.27		45.36								amorphous
MG-4			685.67		63.01								amorphous
MG-5			77.59										amorphous
MG-5			78.70										amorphous
MG-5			82.24										amorphous
MG-5			123.09										amorphous
MG-6			106.89			6.81							amorphous
MG-6			120.99			6.94							amorphous
MG-6			135.31			8.18							amorphous
MG-6			214.00			19.82							amorphous
MG-7			9494.07			1.90							amorphous
MG-7			18531.33										amorphous
MG-7			10539.70										amorphous
MG-7			22026.67										amorphous
MG-8			126.13			1.39							amorphous
MG-8			145.99			1.56							amorphous
MG-8			171.18			2.35							amorphous
MG-8			318.93			2.45							amorphous
MG-9			10499.33										amorphous
MG-9			19046.00										amorphous
MG-9			18090.67										amorphous
MG-9			18350.67										amorphous
MG-10			572.96			54.19							Smectite
MG-10			828.54			69.82							Smectite
MG-10			1115.80			95.11							Smectite
MG-10			2296.77			0.07							Smectite
MG-11			64.40		8.14								amorphous
MG-11			75.57		7.25								amorphous
MG-11			98.83		9.02								amorphous
MG-11			198.37		9.43								amorphous
MG-13			405.60		18.75								amorphous
MG-13			545.85		23.29								amorphous
MG-13			718.49		20.38								amorphous
MG-13			1511.63		18.17								amorphous
MG-15			272.37		24.76								amorphous
MG-15			333.71		34.08								amorphous
MG-15			396.62		40.58								amorphous
MG-15			831.49		73.89								amorphous
MG-16			214.45		41.12	42.62							amorphous
MG-16			260.73		47.60	52.30							amorphous
MG-16			291.67		53.17	60.63							amorphous
MG-16			544.46		70.53	92.93							amorphous
MG-17			95.90		14.67								amorphous
MG-17			113.33		15.99								amorphous
MG-17			130.26		19.63								amorphous
MG-17			230.67		30.06								amorphous
MG-18			8780.53										amorphous

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
AH-5		76.20	17.54	-10.328812	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-5		76.20	17.54	-10.328812	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-5		76.20	17.54	-10.328812	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-6		74.92	18.04	-11.100232	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-6		74.92	18.04	-11.100232	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-6		74.92	18.04	-11.100232	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-7		76.04	18.21	-13.856278	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-7		76.04	18.21	-13.856278	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-7		76.04	18.21	-13.856278	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-8		75.15	18.17	-12.203251	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-8		75.15	18.17	-12.203251	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-8		75.15	18.17	-12.203251	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-9		75.49	18.33	-13.652089	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-9		75.49	18.33	-13.652089	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
AH-9		75.49	18.33	-13.652089	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-1	SEM/TEM ED	81.80	15.583777	-8.261338541	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-1	SEM/TEM ED	81.80	15.583777	-8.261338541	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-1	SEM/TEM ED	81.80	15.583777	-8.261338541	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-1	SEM/TEM ED	81.80	15.583777	-8.261338541	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-2	XRD	73.30	24.542591	-45.22172197	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-2	XRD	73.30	24.542591	-45.22172197	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-2	XRD	73.30	24.542591	-45.22172197	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-2	XRD	73.30	24.542591	-45.22172197	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-4	XRD	81.58	16.787387	-14.70841448	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-4	XRD	81.58	16.787387	-14.70841448	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-4	XRD	81.58	16.787387	-14.70841448	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-4	XRD	81.58	16.787387	-14.70841448	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-5	XRD	84.23	13.870798	-2.483793864	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-5	XRD	84.23	13.870798	-2.483793864	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-5	XRD	84.23	13.870798	-2.483793864	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-5	XRD	84.23	13.870798	-2.483793864	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-6	XRD	74.65	26.46066066	-58.23076978	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-6	XRD	74.65	26.46066066	-58.23076978	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-6	XRD	74.65	26.46066066	-58.23076978	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-6	XRD	74.65	26.46066066	-58.23076978	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-7	XRD	97.20	0.996837	49.42678061	Potential ϕ-sep	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-7	XRD	97.20	0.996837	49.42678061	Potential ϕ-sep	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-7	XRD	97.20	0.996837	49.42678061	Potential ϕ-sep	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-7	XRD	97.20	0.996837	49.42678061	Potential ϕ-sep	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-8	XRD	66.65	32.75655501	-80.94857217	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-8	XRD	66.65	32.75655501	-80.94857217	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-8	XRD	66.65	32.75655501	-80.94857217	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-8	XRD	66.65	32.75655501	-80.94857217	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-9	XRD	88.45	9.147914	17.41872391	Potential ϕ-sep	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-9	XRD	88.45	9.147914	17.41872391	Potential ϕ-sep	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-9	XRD	88.45	9.147914	17.41872391	Potential ϕ-sep	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-9	XRD	88.45	9.147914	17.41872391	Potential ϕ-sep	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-10	SEM/TEM ED	70.12	21.71005792	-24.1322675	HOMOGENEOUS	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-10	SEM/TEM ED	70.12	21.71005792	-24.1322675	HOMOGENEOUS	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-10	SEM/TEM ED	70.12	21.71005792	-24.1322675	HOMOGENEOUS	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-10	SEM/TEM ED	70.12	21.71005792	-24.1322675	HOMOGENEOUS	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-11	XRD	73.44	25.085655	-48.51679239	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-11	XRD	73.44	25.085655	-48.51679239	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-11	XRD	73.44	25.085655	-48.51679239	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-11	XRD	73.44	25.085655	-48.51679239	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-13	XRD	80.90	17.956987	-20.22117103	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-13	XRD	80.90	17.956987	-20.22117103	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-13	XRD	80.90	17.956987	-20.22117103	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-13	XRD	80.90	17.956987	-20.22117103	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-15	XRD	72.75	25.265367	-48.43330177	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-15	XRD	72.75	25.265367	-48.43330177	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-15	XRD	72.75	25.265367	-48.43330177	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-15	XRD	72.75	25.265367	-48.43330177	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-16	XRD	64.99	36.14448702	-97.42469236	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-16	XRD	64.99	36.14448702	-97.42469236	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-16	XRD	64.99	36.14448702	-97.42469236	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-16	XRD	64.99	36.14448702	-97.42469236	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-17	XRD	70.40	38.12966427	-117.3214724	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-17	XRD	70.40	38.12966427	-117.3214724	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-17	XRD	70.40	38.12966427	-117.3214724	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-17	XRD	70.40	38.12966427	-117.3214724	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-18	XRD	86.67	9.854241	16.28335781	Potential ϕ-sep	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
AH-5	5.48	6.95	0.00	0.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.40	3.16	0.00	0.00	3.77
AH-5	5.48	6.95	0.00	0.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.40	3.16	0.00	0.00	3.77
AH-5	5.48	6.95	0.00	0.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.40	3.16	0.00	0.00	3.77
AH-6	5.56	9.33	0.00	0.68	0.00	0.00	0.00	0.06	0.00	0.00	0.00	11.80	3.14	0.00	0.00	4.59
AH-6	5.56	9.33	0.00	0.68	0.00	0.00	0.00	0.06	0.00	0.00	0.00	11.80	3.14	0.00	0.00	4.59
AH-6	5.56	9.33	0.00	0.68	0.00	0.00	0.00	0.06	0.00	0.00	0.00	11.80	3.14	0.00	0.00	4.59
AH-7	6.27	11.50	0.00	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.30	3.15	0.00	0.00	3.15
AH-7	6.27	11.50	0.00	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.30	3.15	0.00	0.00	3.15
AH-7	6.27	11.50	0.00	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.30	3.15	0.00	0.00	3.15
AH-8	5.88	10.10	0.00	0.69	0.00	0.00	0.02	0.04	0.00	0.00	0.00	11.60	3.08	0.00	0.00	3.17
AH-8	5.88	10.10	0.00	0.69	0.00	0.00	0.02	0.04	0.00	0.00	0.00	11.60	3.08	0.00	0.00	3.17
AH-8	5.88	10.10	0.00	0.69	0.00	0.00	0.02	0.04	0.00	0.00	0.00	11.60	3.08	0.00	0.00	3.17
AH-9	6.04	8.75	0.00	0.69	0.00	0.00	0.01	0.06	0.00	0.00	0.00	11.60	3.13	0.00	0.00	3.47
AH-9	6.04	8.75	0.00	0.69	0.00	0.00	0.01	0.06	0.00	0.00	0.00	11.60	3.13	0.00	0.00	3.47
AH-9	6.04	8.75	0.00	0.69	0.00	0.00	0.01	0.06	0.00	0.00	0.00	11.60	3.13	0.00	0.00	3.47
MG-1	15.57	14.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-1	15.57	14.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-1	15.57	14.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-1	15.57	14.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-2	15.84	5.16	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-2	15.84	5.16	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-2	15.84	5.16	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-2	15.84	5.16	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-4	16.77	4.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-4	16.77	4.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-4	16.77	4.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-4	16.77	4.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-5	5.51	14.72	0.00	8.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-5	5.51	14.72	0.00	8.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-5	5.51	14.72	0.00	8.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-5	5.51	14.72	0.00	8.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-6	4.21	12.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.57	19.40	0.00	0.00	0.00	0.00
MG-6	4.21	12.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.57	19.40	0.00	0.00	0.00	0.00
MG-6	4.21	12.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.57	19.40	0.00	0.00	0.00	0.00
MG-6	4.21	12.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.57	19.40	0.00	0.00	0.00	0.00
MG-7	0.98	15.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-7	0.98	15.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-7	0.98	15.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-7	0.98	15.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-8	3.60	4.62	0.00	7.36	0.00	0.00	0.00	0.00	0.00	0.00	2.92	18.55	0.00	0.00	0.00	0.00
MG-8	3.60	4.62	0.00	7.36	0.00	0.00	0.00	0.00	0.00	0.00	2.92	18.55	0.00	0.00	0.00	0.00
MG-8	3.60	4.62	0.00	7.36	0.00	0.00	0.00	0.00	0.00	0.00	2.92	18.55	0.00	0.00	0.00	0.00
MG-8	3.60	4.62	0.00	7.36	0.00	0.00	0.00	0.00	0.00	0.00	2.92	18.55	0.00	0.00	0.00	0.00
MG-9	0.19	5.44	0.00	8.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-9	0.19	5.44	0.00	8.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-9	0.19	5.44	0.00	8.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-9	0.19	5.44	0.00	8.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-10	2.19	3.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.74	16.47	0.00	0.00	0.00	0.00
MG-10	2.19	3.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.74	16.47	0.00	0.00	0.00	0.00
MG-10	2.19	3.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.74	16.47	0.00	0.00	0.00	0.00
MG-10	2.19	3.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.74	16.47	0.00	0.00	0.00	0.00
MG-11	16.41	15.95	0.00	8.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-11	16.41	15.95	0.00	8.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-11	16.41	15.95	0.00	8.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-11	16.41	15.95	0.00	8.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-13	17.94	14.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-13	17.94	14.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-13	17.94	14.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-13	17.94	14.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-15	17.05	4.70	0.00	8.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-15	17.05	4.70	0.00	8.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-15	17.05	4.70	0.00	8.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-15	17.05	4.70	0.00	8.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-16	14.90	4.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.18	18.82	0.00	0.00	0.00	0.00
MG-16	14.90	4.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.18	18.82	0.00	0.00	0.00	0.00
MG-16	14.90	4.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.18	18.82	0.00	0.00	0.00	0.00
MG-16	14.90	4.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.18	18.82	0.00	0.00	0.00	0.00
MG-17	10.78	12.37	0.00	6.82	0.00	0.00	0.00	0.00	0.00	0.00	3.55	16.58	0.00	0.00	0.00	0.00
MG-17	10.78	12.37	0.00	6.82	0.00	0.00	0.00	0.00	0.00	0.00	3.55	16.58	0.00	0.00	0.00	0.00
MG-17	10.78	12.37	0.00	6.82	0.00	0.00	0.00	0.00	0.00	0.00	3.55	16.58	0.00	0.00	0.00	0.00
MG-17	10.78	12.37	0.00	6.82	0.00	0.00	0.00	0.00	0.00	0.00	3.55	16.58	0.00	0.00	0.00	0.00
MG-18	0.91	15.44	0.00	8.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
AH-5	0.60	2.64	0.00	0.00	9.24	0.00	0.96	0.00	0.00	0.00	0.00	0.00	0.00	53.08	0.00	0.00
AH-5	0.60	2.64	0.00	0.00	9.24	0.00	0.96	0.00	0.00	0.00	0.00	0.00	0.00	53.08	0.00	0.00
AH-5	0.60	2.64	0.00	0.00	9.24	0.00	0.96	0.00	0.00	0.00	0.00	0.00	0.00	53.08	0.00	0.00
AH-6	0.60	2.72	0.00	0.00	10.50	0.00	0.94	0.00	0.00	0.00	0.00	0.00	0.00	47.30	0.00	0.00
AH-6	0.60	2.72	0.00	0.00	10.50	0.00	0.94	0.00	0.00	0.00	0.00	0.00	0.00	47.30	0.00	0.00
AH-6	0.60	2.72	0.00	0.00	10.50	0.00	0.94	0.00	0.00	0.00	0.00	0.00	0.00	47.30	0.00	0.00
AH-7	0.59	2.62	0.00	0.00	9.24	0.00	0.95	0.00	0.00	0.00	0.00	0.00	0.00	49.00	0.00	0.00
AH-7	0.59	2.62	0.00	0.00	9.24	0.00	0.95	0.00	0.00	0.00	0.00	0.00	0.00	49.00	0.00	0.00
AH-7	0.59	2.62	0.00	0.00	9.24	0.00	0.95	0.00	0.00	0.00	0.00	0.00	0.00	49.00	0.00	0.00
AH-8	1.20	2.68	0.00	0.00	9.76	0.00	0.97	0.00	0.00	0.00	0.00	0.00	0.00	49.00	0.00	0.00
AH-8	1.20	2.68	0.00	0.00	9.76	0.00	0.97	0.00	0.00	0.00	0.00	0.00	0.00	49.00	0.00	0.00
AH-8	1.20	2.68	0.00	0.00	9.76	0.00	0.97	0.00	0.00	0.00	0.00	0.00	0.00	49.00	0.00	0.00
AH-9	0.58	2.64	0.00	0.00	9.20	0.00	0.97	0.00	0.00	0.00	0.00	0.00	0.00	50.88	0.00	0.00
AH-9	0.58	2.64	0.00	0.00	9.20	0.00	0.97	0.00	0.00	0.00	0.00	0.00	0.00	50.88	0.00	0.00
AH-9	0.58	2.64	0.00	0.00	9.20	0.00	0.97	0.00	0.00	0.00	0.00	0.00	0.00	50.88	0.00	0.00
MG-1	0.00	0.00	0.00	0.00	13.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.94	0.00	0.00
MG-1	0.00	0.00	0.00	0.00	13.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.94	0.00	0.00
MG-1	0.00	0.00	0.00	0.00	13.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.94	0.00	0.00
MG-1	0.00	0.00	0.00	0.00	13.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.94	0.00	0.00
MG-2	0.00	0.00	0.00	0.00	14.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.96	0.00	0.00
MG-2	0.00	0.00	0.00	0.00	14.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.96	0.00	0.00
MG-2	0.00	0.00	0.00	0.00	14.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.96	0.00	0.00
MG-2	0.00	0.00	0.00	0.00	14.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.96	0.00	0.00
MG-4	0.00	0.00	0.00	0.00	22.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54.53	0.00	0.00
MG-4	0.00	0.00	0.00	0.00	22.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54.53	0.00	0.00
MG-4	0.00	0.00	0.00	0.00	22.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54.53	0.00	0.00
MG-4	0.00	0.00	0.00	0.00	22.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54.53	0.00	0.00
MG-5	0.00	0.00	0.00	0.00	13.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.70	0.00	0.00
MG-5	0.00	0.00	0.00	0.00	13.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.70	0.00	0.00
MG-5	0.00	0.00	0.00	0.00	13.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.70	0.00	0.00
MG-5	0.00	0.00	0.00	0.00	13.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.70	0.00	0.00
MG-6	0.00	0.00	0.00	0.00	12.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.77	0.00	0.00
MG-6	0.00	0.00	0.00	0.00	12.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.77	0.00	0.00
MG-6	0.00	0.00	0.00	0.00	12.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.77	0.00	0.00
MG-6	0.00	0.00	0.00	0.00	12.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.77	0.00	0.00
MG-7	0.00	0.00	0.00	0.00	24.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.72	0.00	0.00
MG-7	0.00	0.00	0.00	0.00	24.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.72	0.00	0.00
MG-7	0.00	0.00	0.00	0.00	24.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.72	0.00	0.00
MG-7	0.00	0.00	0.00	0.00	24.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.72	0.00	0.00
MG-8	0.00	0.00	0.00	0.00	12.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.64	0.00	0.00
MG-8	0.00	0.00	0.00	0.00	12.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.64	0.00	0.00
MG-8	0.00	0.00	0.00	0.00	12.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.64	0.00	0.00
MG-8	0.00	0.00	0.00	0.00	12.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.64	0.00	0.00
MG-9	0.00	0.00	0.00	0.00	25.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57.93	0.00	0.00
MG-9	0.00	0.00	0.00	0.00	25.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57.93	0.00	0.00
MG-9	0.00	0.00	0.00	0.00	25.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57.93	0.00	0.00
MG-9	0.00	0.00	0.00	0.00	25.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57.93	0.00	0.00
MG-10	0.00	0.00	0.00	0.00	20.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.79	0.00	0.00
MG-10	0.00	0.00	0.00	0.00	20.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.79	0.00	0.00
MG-10	0.00	0.00	0.00	0.00	20.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.79	0.00	0.00
MG-10	0.00	0.00	0.00	0.00	20.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.79	0.00	0.00
MG-11	0.00	0.00	0.00	0.00	13.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.53	0.00	0.00
MG-11	0.00	0.00	0.00	0.00	13.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.53	0.00	0.00
MG-11	0.00	0.00	0.00	0.00	13.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.53	0.00	0.00
MG-11	0.00	0.00	0.00	0.00	13.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.53	0.00	0.00
MG-13	0.00	0.00	0.00	0.00	21.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.73	0.00	0.00
MG-13	0.00	0.00	0.00	0.00	21.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.73	0.00	0.00
MG-13	0.00	0.00	0.00	0.00	21.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.73	0.00	0.00
MG-13	0.00	0.00	0.00	0.00	21.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.73	0.00	0.00
MG-15	0.00	0.00	0.00	0.00	22.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.77	0.00	0.00
MG-15	0.00	0.00	0.00	0.00	22.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.77	0.00	0.00
MG-15	0.00	0.00	0.00	0.00	22.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.77	0.00	0.00
MG-15	0.00	0.00	0.00	0.00	22.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.77	0.00	0.00
MG-16	0.00	0.00	0.00	0.00	19.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.37	0.00	0.00
MG-16	0.00	0.00	0.00	0.00	19.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.37	0.00	0.00
MG-16	0.00	0.00	0.00	0.00	19.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.37	0.00	0.00
MG-16	0.00	0.00	0.00	0.00	19.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.37	0.00	0.00
MG-17	0.00	0.00	0.00	0.00	20.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.61	0.00	0.00
MG-17	0.00	0.00	0.00	0.00	20.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.61	0.00	0.00
MG-17	0.00	0.00	0.00	0.00	20.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.61	0.00	0.00
MG-17	0.00	0.00	0.00	0.00	20.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.61	0.00	0.00
MG-18	0.00	0.00	0.00	0.00	24.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.46	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
AH-5	0.00	0.00	0.00	1.31	0.00	0.00	0.00	0.01	0.00	99.26		
AH-5	0.00	0.00	0.00	1.31	0.00	0.00	0.00	0.01	0.00	99.26		
AH-5	0.00	0.00	0.00	1.31	0.00	0.00	0.00	0.01	0.00	99.26		
AH-6	0.04	0.00	0.00	1.40	0.00	0.00	0.00	0.67	0.00	99.33		
AH-6	0.04	0.00	0.00	1.40	0.00	0.00	0.00	0.67	0.00	99.33		
AH-6	0.04	0.00	0.00	1.40	0.00	0.00	0.00	0.67	0.00	99.33		
AH-7	0.00	0.00	0.00	1.29	0.00	0.00	0.00	0.02	0.00	99.72		
AH-7	0.00	0.00	0.00	1.29	0.00	0.00	0.00	0.02	0.00	99.72		
AH-7	0.00	0.00	0.00	1.29	0.00	0.00	0.00	0.02	0.00	99.72		
AH-8	0.05	0.00	0.00	1.32	0.00	0.00	0.00	0.01	0.00	99.57		
AH-8	0.05	0.00	0.00	1.32	0.00	0.00	0.00	0.01	0.00	99.57		
AH-8	0.05	0.00	0.00	1.32	0.00	0.00	0.00	0.01	0.00	99.57		
AH-9	0.05	0.00	0.00	1.33	0.00	0.00	0.00	0.01	0.00	99.41		
AH-9	0.05	0.00	0.00	1.33	0.00	0.00	0.00	0.01	0.00	99.41		
AH-9	0.05	0.00	0.00	1.33	0.00	0.00	0.00	0.01	0.00	99.41		
MG-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	97.38		
MG-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	97.38		
MG-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	97.38		
MG-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	97.38		
MG-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	97.84		
MG-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	97.84		
MG-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	97.84		
MG-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	97.84		
MG-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.37		
MG-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.37		
MG-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.37		
MG-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.37		
MG-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.10		
MG-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.10		
MG-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.10		
MG-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.10		
MG-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.83		
MG-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.83		
MG-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.83		
MG-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.83		
MG-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.20		
MG-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.20		
MG-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.20		
MG-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.20		
MG-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.08		
MG-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.08		
MG-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.08		
MG-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.08		
MG-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	97.60		
MG-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	97.60		
MG-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	97.60		
MG-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	97.60		
MG-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	91.53		
MG-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	91.53		
MG-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	91.53		
MG-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	91.53		
MG-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.52		
MG-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.52		
MG-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.52		
MG-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.52		
MG-13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.86		
MG-13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.86		
MG-13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.86		
MG-13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.86		
MG-15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.02		
MG-15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.02		
MG-15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.02		
MG-15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.02		
MG-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.89		
MG-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.89		
MG-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.89		
MG-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.89		
MG-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	108.14		
MG-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	108.14		
MG-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	108.14		
MG-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	108.14		
MG-18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96.53		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
MG-18	14.00	0.08	2.077	29.076	**2.591**	4.00	100-200	1.125E-04	0.040	ASTM I	90	12.00	6926.23	5408.03	6.97
MG-18	28.00	0.08	2.077	58.152	**2.591**	4.00	100-200	1.125E-04	0.040	ASTM I	90	12.00	7369.97	5631.47	6.50
MG-18	168.00	0.08	2.077	348.914	**2.591**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.97	7937.13	5822.67	5.97
MG-19	7.00	0.08	1.974	13.818	**2.726**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.30	159.52	410.99	
MG-19	14.00	0.08	1.974	27.636	**2.726**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.00	205.70	586.44	
MG-19	28.00	0.08	1.974	55.272	**2.726**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.00	220.91	685.54	
MG-19	168.00	0.08	1.974	331.635	**2.726**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.16	319.27	1229.17	
MG-20	7.00	0.08	1.912	13.386	**2.814**	4.00	100-200	1.125E-04	0.040	ASTM I	90	12.20	166.18	24.30	0.51
MG-20	14.00	0.08	1.912	26.772	**2.814**	4.00	100-200	1.125E-04	0.040	ASTM I	90	12.40	208.66	31.50	0.52
MG-20	28.00	0.08	1.912	53.544	**2.814**	4.00	100-200	1.125E-04	0.040	ASTM I	90	12.40	236.16	38.73	0.38
MG-20	168.00	0.08	1.912	321.264	**2.814**	4.00	100-200	1.125E-04	0.040	ASTM I	90	12.53	361.59	55.30	0.51
MG-21	7.00	0.08	2.077	14.538	**2.591**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.60	67.27	14.77	0.92
MG-21	14.00	0.08	2.077	29.076	**2.591**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.20	72.39	17.97	1.08
MG-21	28.00	0.08	2.077	58.152	**2.591**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.10	78.95	21.06	1.09
MG-21	168.00	0.08	2.077	348.914	**2.591**	4.00	100-200	1.125E-04	0.040	ASTM I	90	12.53	361.59	55.30	0.51
MG-22	7.00	0.08	2.048	14.333	**2.628**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.30	37.03	10.05	0.48
MG-22	14.00	0.08	2.048	28.667	**2.628**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.80	42.38	11.40	0.43
MG-22	28.00	0.08	2.048	57.334	**2.628**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.80	44.59	13.89	0.48
MG-22	168.00	0.08	2.048	344.001	**2.628**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.00	58.69	21.52	0.93
MG-23	7.00	0.08	2.106	14.743	**2.555**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.80	41.00	7.36	0.56
MG-23	14.00	0.08	2.106	29.486	**2.555**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.60	37.55	6.13	0.61
MG-23	28.00	0.08	2.106	58.972	**2.555**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.70	49.50	9.42	0.79
MG-23	168.00	0.08	2.106	353.830	**2.555**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.80	54.85	11.78	0.90
MG-24	7.00	0.08	2.024	14.166	**2.659**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.20	63.62	28.15	1.08
MG-24	14.00	0.08	2.024	28.333	**2.659**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.30	65.73	28.53	1.00
MG-24	28.00	0.08	2.024	56.665	**2.659**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.30	75.39	37.65	1.13
MG-24	168.00	0.08	2.024	339.991	**2.659**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.50	90.83	56.88	1.06
MG-25	7.00	0.08	2.127	14.889	**2.530**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.70	50.46	35.18	0.63
MG-25	14.00	0.08	2.127	29.777	**2.530**	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.10	50.57	44.57	0.69
MG-25	28.00	0.08	2.127	59.554	**2.530**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.90	50.52	59.39	0.62
MG-25	168.00	0.08	2.127	357.326	**2.530**	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.90	49.67	122.11	0.79
MG-26	7.00	0.08	1.945	13.618	**2.766**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.30	64.11	6.87	0.94
MG-26	14.00	0.08	1.945	27.237	**2.766**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.50	70.54	7.94	1.07
MG-26	28.00	0.08	1.945	54.473	**2.766**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.50	77.45	8.61	1.16
MG-26	168.00	0.08	1.945	326.839	**2.766**	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.80	102.46	12.07	1.86
MG-27	7.00	0.08	1.957	13.698	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.00	27.96	6.83	1.18
MG-27	14.00	0.08	1.957	27.395	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.10	32.68	7.83	1.20
MG-27	28.00	0.08	1.957	54.790	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.00	34.39	8.79	1.00
MG-27	168.00	0.08	1.957	328.740	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.40	46.17	12.30	0.93
MG-28	7.00	0.08	1.957	13.698	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.90	67.83	17.97	
MG-28	14.00	0.08	1.957	27.395	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.80	70.06	19.70	
MG-28	28.00	0.08	1.957	54.790	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.80	75.82	23.15	
MG-28	168.00	0.08	1.957	328.740	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.90	77.57	40.57	
MG-29	7.00	0.08	1.957	13.698	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.30	60.27	13.18	0.32
MG-29	14.00	0.08	1.957	27.395	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.10	63.08	15.04	0.38
MG-29	28.00	0.08	1.957	54.790	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.20	74.80	18.99	0.65
MG-29	168.00	0.08	1.957	328.740	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.60	105.00	47.05	1.45
MG-30	7.00	0.08	1.957	13.698	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.30	71.52	59.48	1.29
MG-30	14.00	0.08	1.957	27.395	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.40	84.06	76.48	1.83
MG-30	28.00	0.08	1.957	54.790	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.60	87.85	96.10	1.70
MG-30	168.00	0.08	1.957	328.740	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.80	111.27	157.61	1.74
MG-31	7.00	0.08	1.957	13.698	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.20	70.30	14.98	1.01
MG-31	14.00	0.08	1.957	27.395	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.50	79.24	18.79	1.50
MG-31	28.00	0.08	1.957	54.790	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.60	84.80	22.26	1.25
MG-31	168.00	0.08	1.957	328.740	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.90	106.69	35.59	1.71
MG-32	7.00	0.08	1.957	13.698	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.10	24.92	7.26	0.60
MG-32	14.00	0.08	1.957	27.395	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.50	27.08	9.27	0.62
MG-32	28.00	0.08	1.957	54.790	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.40	29.54	9.34	0.63
MG-32	168.00	0.08	1.957	328.740	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.60	35.73	12.30	0.68
MG-33	7.00	0.08	1.957	13.698	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.20	42.12	9.21	0.67
MG-33	14.00	0.08	1.957	27.395	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.80	44.93	10.29	0.73
MG-33	28.00	0.08	1.957	54.790	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	10.70	51.31	7.99	0.77
MG-33	168.00	0.08	1.957	328.740	2.750	4.00	100-200	1.125E-04	0.040	ASTM I	90	11.60	57.93	17.83	0.96
PSON-90 7day	7.00	0.16	19.568	136.975	**2.750**	8.00	100-200	1.125E-04	0.008	ASTM I	90	9.86	101.50	159.00	
PSON-90 28day	28.00	0.16	19.568	547.901	**2.750**	8.00	100-200	1.125E-04	0.008	ASTM I	90	9.93	118.00	207.50	
PSON-90 56day	56.00	0.16	19.568	1,095.801	**2.750**	8.00	100-200	1.125E-04	0.008	ASTM I	90	9.83	129.00	262.50	
PSON-90 91day	91.00	0.16	19.568	1,780.677	**2.750**	8.00	100-200	1.125E-04	0.008	ASTM I	90	9.80	124.50	295.12	
PSON-90 182 day	182.00	0.16	19.568	3,561.353	**2.750**	8.00	100-200	1.125E-04	0.008	ASTM I	90	9.79	133.00	319.00	
PSON-90 317 day	317.00	0.16	19.568	6,203.017	**2.750**	8.00	100-200	1.125E-04	0.008	ASTM I	90	9.70	144.00	404.00	0.25
PSON-90 450 day	450.00	0.16	19.568	8,805.544	**2.750**	8.00	100-200	1.125E-04	0.008	ASTM I	90	9.77	131.00	460.00	0.25
PSON-90 600 day	600.00	0.16	19.568	11,740.726	**2.750**	8.00	100-200	1.125E-04	0.008	ASTM I	90	9.82	147.00	478.00	0.25
PAFCI-90-7day	7.00	0.16	20.697	144.878	**2.600**	8.00	100-200	1.125E-04	0.008	ASTM I	90	11.15	87.90	25.50	5.30

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
MG-18			16186.33										amorphous
MG-18			16632.00										amorphous
MG-18			18464.00										amorphous
MG-19			1061.80			17.38							amorphous
MG-19			1356.43			23.48							amorphous
MG-19			1562.53			17.89							amorphous
MG-19			3014.83			0.08							amorphous
MG-20			638.11		9.47	1.15							amorphous
MG-20			815.94		11.60	1.45							amorphous
MG-20			912.19		12.51	1.46							amorphous
MG-20			1570.40			0.59							amorphous
MG-21			104.68		17.49	6.39							amorphous
MG-21			124.61		18.52	7.78							amorphous
MG-21			138.44		20.63	8.91							amorphous
MG-21			1570.40			0.59							amorphous
MG-22			65.90		23.05	2.24							amorphous
MG-22			71.55		26.02	2.09							amorphous
MG-22			85.14		27.51	2.74							amorphous
MG-22			140.90		21.75	13.73							amorphous
MG-23			54.82		27.43	4.21							amorphous
MG-23			42.57		23.33	3.43							amorphous
MG-23			71.09		33.07	6.21							amorphous
MG-23			106.56		36.50	7.61							amorphous
MG-24			150.32			6.58							amorphous
MG-24			153.33			7.02							amorphous
MG-24			191.16			9.26							amorphous
MG-24			301.40			12.88							amorphous
MG-25			90.12		17.80	6.72							amorphous
MG-25			106.07		17.57	7.33							amorphous
MG-25			128.50		17.85	7.30							amorphous
MG-25			244.28		16.82	9.59							amorphous
MG-26			137.42		23.36	4.41							amorphous
MG-26			150.15		26.83	4.73							amorphous
MG-26			171.15		32.07	5.42							amorphous
MG-26			288.79		45.34	11.29							amorphous
MG-27			71.17		17.15	1.13							amorphous
MG-27			81.00		20.89	1.17							amorphous
MG-27			94.66		24.04	1.01							amorphous
MG-27			158.39		35.55	0.97							amorphous
MG-28			89.27		25.12	21.20							amorphous
MG-28			97.72		26.00	22.84							amorphous
MG-28			110.10		27.56	25.28							amorphous
MG-28			181.15		28.43	27.11							amorphous
MG-29			93.03		16.35	3.21							amorphous
MG-29			108.88		16.27	1485.90							amorphous
MG-29			133.23		18.63	8.69							amorphous
MG-29			290.11		17.92	14.52							amorphous
MG-30			245.35		10.97								amorphous
MG-30			286.31		15.42								amorphous
MG-30			350.23		12.62								amorphous
MG-30			596.51		18.09								amorphous
MG-31			160.14		37.22	7.29							amorphous
MG-31			181.92		43.18	8.53							amorphous
MG-31			222.43		43.43	9.27							amorphous
MG-31			379.62		61.48	16.53							amorphous
MG-32			42.07		15.93	1.57							amorphous
MG-32			52.06		18.25	2.03							amorphous
MG-32			55.40		20.52	1.51							amorphous
MG-32			89.27		25.71	2.35							amorphous
MG-33			63.04		21.75	3.96							amorphous
MG-33			71.61		23.36	4.58							amorphous
MG-33			82.61		27.52	5.21							amorphous
MG-33			131.52		30.73	7.41							amorphous
PSON-90 7day		35.75	229.00		0.25		28.55						amorphous
PSON-90 28day		47.65	264.00		1.47		33.50						amorphous
PSON-90 56day		59.50	354.50		0.25		38.85						amorphous
PSON-90 91day		66.00	402.50		0.25		40.75						amorphous
PSON-90 182 day		74.00	439.00		1.06		41.20						amorphous
PSON-90 317 day		88.50	520.00		0.25	0.25	34.70						amorphous
PSON-90 450 day		104.00	590.00		0.25	0.25	45.70						amorphous
PSON-90 600 day		104.00			0.25	0.25	48.10						amorphous
PAFCI-90-7day		40.40	45.10		5.51		5.50						amorphous

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
MG-18	XRD	86.67	9.854241	16.28335781	Potential ϕ-sep	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-18	XRD	86.67	9.854241	16.28335781	Potential ϕ-sep	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-18	XRD	86.67	9.854241	16.28335781	Potential ϕ-sep	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-19	XRD	77.96	26.28292969	-62.53057309	HOMOGENEOUS	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-19	XRD	77.96	26.28292969	-62.53057309	HOMOGENEOUS	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-19	XRD	77.96	26.28292969	-62.53057309	HOMOGENEOUS	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-19	XRD	77.96	26.28292969	-62.53057309	HOMOGENEOUS	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-20	XRD	67.89	32.11575931	-79.33185366	HOMOGENEOUS	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-20	XRD	67.89	32.11575931	-79.33185366	HOMOGENEOUS	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-20	XRD	67.89	32.11575931	-79.33185366	HOMOGENEOUS	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-20	XRD	67.89	32.11575931	-79.33185366	HOMOGENEOUS	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MG-21	XRD	75.28	23.67362666	-43.49933633	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-21	XRD	75.28	23.67362666	-43.49933633	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-21	XRD	75.28	23.67362666	-43.49933633	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-21	XRD	75.28	23.67362666	-43.49933633	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-22	XRD	64.58	34.96574226	-90.114277	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-22	XRD	64.58	34.96574226	-90.114277	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-22	XRD	64.58	34.96574226	-90.114277	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-22	XRD	64.58	34.96574226	-90.114277	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-23	XRD	62.96	31.90815383	-70.24615027	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-23	XRD	62.96	31.90815383	-70.24615027	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-23	XRD	62.96	31.90815383	-70.24615027	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-23	XRD	62.96	31.90815383	-70.24615027	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-24	XRD	73.99	25.90580324	-54.03495179	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-24	XRD	73.99	25.90580324	-54.03495179	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-24	XRD	73.99	25.90580324	-54.03495179	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-24	XRD	73.99	25.90580324	-54.03495179	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-25	XRD	74.91	25.36891667	-52.47460852	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-25	XRD	74.91	25.36891667	-52.47460852	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-25	XRD	74.91	25.36891667	-52.47460852	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-25	XRD	74.91	25.36891667	-52.47460852	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-26	XRD	70.24	29.63311187	-69.07632631	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-26	XRD	70.24	29.63311187	-69.07632631	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-26	XRD	70.24	29.63311187	-69.07632631	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-26	XRD	70.24	29.63311187	-69.07632631	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-27	XRD	68.10	30.81044065	-72.28840202	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-27	XRD	68.10	30.81044065	-72.28840202	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-27	XRD	68.10	30.81044065	-72.28840202	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-27	XRD	68.10	30.81044065	-72.28840202	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-28	XRD	71.58	27.80074317	-60.8792078	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-28	XRD	71.58	27.80074317	-60.8792078	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-28	XRD	71.58	27.80074317	-60.8792078	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-28	XRD	71.58	27.80074317	-60.8792078	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-29	XRD	65.49	34.33753206	-88.02046151	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-29	XRD	65.49	34.33753206	-88.02046151	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-29	XRD	65.49	34.33753206	-88.02046151	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-29	XRD	65.49	34.33753206	-88.02046151	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-30	XRD	78.91	15.143273	-1.131487899	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-30	XRD	78.91	15.143273	-1.131487899	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-30	XRD	78.91	15.143273	-1.131487899	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-30	XRD	78.91	15.143273	-1.131487899	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-31	XRD	70.64	26.01789682	-49.29737363	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-31	XRD	70.64	26.01789682	-49.29737363	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-31	XRD	70.64	26.01789682	-49.29737363	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-31	XRD	70.64	26.01789682	-49.29737363	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-32	XRD	64.39	32.4794946	-75.76819454	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-32	XRD	64.39	32.4794946	-75.76819454	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-32	XRD	64.39	32.4794946	-75.76819454	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-32	XRD	64.39	32.4794946	-75.76819454	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-33	XRD	67.13	31.0871044	-72.29820395	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-33	XRD	67.13	31.0871044	-72.29820395	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-33	XRD	67.13	31.0871044	-72.29820395	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MG-33	XRD	67.13	31.0871044	-72.29820395	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PSON-90 7day	XRD	73.32	17.500128	-5.478367256	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PSON-90 28day	XRD	73.32	17.500128	-5.478367256	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PSON-90 56day	XRD	73.32	17.500128	-5.478367256	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PSON-90 91day	XRD	73.32	17.500128	-5.478367256	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PSON-90 182 day	XRD	73.32	17.500128	-5.478367256	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PSON-90 317 day	XRD	73.32	17.500128	-5.478367256	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PSON-90 450 day	XRD	73.32	17.500128	-5.478367256	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PSON-90 600 day	XRD	73.32	17.500128	-5.478367256	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PAFCI-90-7day	XRD	68.98	24.639731	-38.8443004	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
MG-18	0.91	15.44	0.00	8.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-18	0.91	15.44	0.00	8.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-18	0.91	15.44	0.00	8.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-19	3.83	13.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.51	20.77	0.00	0.00	0.00	0.00
MG-19	3.83	13.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.51	20.77	0.00	0.00	0.00	0.00
MG-19	3.83	13.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.51	20.77	0.00	0.00	0.00	0.00
MG-19	3.83	13.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.51	20.77	0.00	0.00	0.00	0.00
MG-20	0.96	4.85	0.00	7.81	0.00	0.00	0.00	0.00	0.00	0.00	1.34	21.86	0.00	0.00	0.00	0.00
MG-20	0.96	4.85	0.00	7.81	0.00	0.00	0.00	0.00	0.00	0.00	1.34	21.86	0.00	0.00	0.00	0.00
MG-20	0.96	4.85	0.00	7.81	0.00	0.00	0.00	0.00	0.00	0.00	1.34	21.86	0.00	0.00	0.00	0.00
MG-20	0.96	4.85	0.00	7.81	0.00	0.00	0.00	0.00	0.00	0.00	1.34	21.86	0.00	0.00	0.00	0.00
MG-21	11.04	8.65	0.00	3.11	0.00	0.00	0.00	0.00	0.00	0.00	0.83	8.61	0.00	0.00	0.00	0.00
MG-21	11.04	8.65	0.00	3.11	0.00	0.00	0.00	0.00	0.00	0.00	0.83	8.61	0.00	0.00	0.00	0.00
MG-21	11.04	8.65	0.00	3.11	0.00	0.00	0.00	0.00	0.00	0.00	0.83	8.61	0.00	0.00	0.00	0.00
MG-21	11.04	8.65	0.00	3.11	0.00	0.00	0.00	0.00	0.00	0.00	0.83	8.61	0.00	0.00	0.00	0.00
MG-22	18.23	9.36	0.00	4.12	0.00	0.00	0.00	0.00	0.00	0.00	1.65	10.78	0.00	0.00	0.00	0.00
MG-22	18.23	9.36	0.00	4.12	0.00	0.00	0.00	0.00	0.00	0.00	1.65	10.78	0.00	0.00	0.00	0.00
MG-22	18.23	9.36	0.00	4.12	0.00	0.00	0.00	0.00	0.00	0.00	1.65	10.78	0.00	0.00	0.00	0.00
MG-22	18.23	9.36	0.00	4.12	0.00	0.00	0.00	0.00	0.00	0.00	1.65	10.78	0.00	0.00	0.00	0.00
MG-23	21.29	7.18	0.00	2.63	0.00	0.00	0.00	0.00	0.00	0.00	1.55	6.27	0.00	0.00	0.00	0.00
MG-23	21.29	7.18	0.00	2.63	0.00	0.00	0.00	0.00	0.00	0.00	1.55	6.27	0.00	0.00	0.00	0.00
MG-23	21.29	7.18	0.00	2.63	0.00	0.00	0.00	0.00	0.00	0.00	1.55	6.27	0.00	0.00	0.00	0.00
MG-23	21.29	7.18	0.00	2.63	0.00	0.00	0.00	0.00	0.00	0.00	1.55	6.27	0.00	0.00	0.00	0.00
MG-24	7.35	10.40	0.00	4.52	0.00	0.00	0.00	0.00	0.00	0.00	1.72	12.12	0.00	0.00	0.00	0.00
MG-24	7.35	10.40	0.00	4.52	0.00	0.00	0.00	0.00	0.00	0.00	1.72	12.12	0.00	0.00	0.00	0.00
MG-24	7.35	10.40	0.00	4.52	0.00	0.00	0.00	0.00	0.00	0.00	1.72	12.12	0.00	0.00	0.00	0.00
MG-24	7.35	10.40	0.00	4.52	0.00	0.00	0.00	0.00	0.00	0.00	1.72	12.12	0.00	0.00	0.00	0.00
MG-25	12.90	13.65	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	8.19	0.00	0.00	0.00	0.00
MG-25	12.90	13.65	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	8.19	0.00	0.00	0.00	0.00
MG-25	12.90	13.65	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	8.19	0.00	0.00	0.00	0.00
MG-25	12.90	13.65	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	8.19	0.00	0.00	0.00	0.00
MG-26	11.03	4.31	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	2.52	11.28	0.00	0.00	0.00	0.00
MG-26	11.03	4.31	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	2.52	11.28	0.00	0.00	0.00	0.00
MG-26	11.03	4.31	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	2.52	11.28	0.00	0.00	0.00	0.00
MG-26	11.03	4.31	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	2.52	11.28	0.00	0.00	0.00	0.00
MG-27	14.24	7.95	0.00	7.54	0.00	0.00	0.00	0.00	0.00	0.00	1.26	7.63	0.00	0.00	0.00	0.00
MG-27	14.24	7.95	0.00	7.54	0.00	0.00	0.00	0.00	0.00	0.00	1.26	7.63	0.00	0.00	0.00	0.00
MG-27	14.24	7.95	0.00	7.54	0.00	0.00	0.00	0.00	0.00	0.00	1.26	7.63	0.00	0.00	0.00	0.00
MG-27	14.24	7.95	0.00	7.54	0.00	0.00	0.00	0.00	0.00	0.00	1.26	7.63	0.00	0.00	0.00	0.00
MG-28	14.42	9.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.12	11.02	0.00	0.00	0.00	0.00
MG-28	14.42	9.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.12	11.02	0.00	0.00	0.00	0.00
MG-28	14.42	9.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.12	11.02	0.00	0.00	0.00	0.00
MG-28	14.42	9.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.12	11.02	0.00	0.00	0.00	0.00
MG-29	11.36	7.26	0.00	2.63	0.00	0.00	0.00	0.00	0.00	0.00	2.95	17.07	0.00	0.00	0.00	0.00
MG-29	11.36	7.26	0.00	2.63	0.00	0.00	0.00	0.00	0.00	0.00	2.95	17.07	0.00	0.00	0.00	0.00
MG-29	11.36	7.26	0.00	2.63	0.00	0.00	0.00	0.00	0.00	0.00	2.95	17.07	0.00	0.00	0.00	0.00
MG-29	11.36	7.26	0.00	2.63	0.00	0.00	0.00	0.00	0.00	0.00	2.95	17.07	0.00	0.00	0.00	0.00
MG-30	9.98	11.45	0.00	5.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-30	9.98	11.45	0.00	5.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-30	9.98	11.45	0.00	5.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-30	9.98	11.45	0.00	5.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MG-31	14.24	7.53	0.00	2.87	0.00	0.00	0.00	0.00	0.00	0.00	1.09	7.69	0.00	0.00	0.00	0.00
MG-31	14.24	7.53	0.00	2.87	0.00	0.00	0.00	0.00	0.00	0.00	1.09	7.69	0.00	0.00	0.00	0.00
MG-31	14.24	7.53	0.00	2.87	0.00	0.00	0.00	0.00	0.00	0.00	1.09	7.69	0.00	0.00	0.00	0.00
MG-31	14.24	7.53	0.00	2.87	0.00	0.00	0.00	0.00	0.00	0.00	1.09	7.69	0.00	0.00	0.00	0.00
MG-32	15.68	8.94	0.00	4.13	0.00	0.00	0.00	0.00	0.00	0.00	2.76	9.60	0.00	0.00	0.00	0.00
MG-32	15.68	8.94	0.00	4.13	0.00	0.00	0.00	0.00	0.00	0.00	2.76	9.60	0.00	0.00	0.00	0.00
MG-32	15.68	8.94	0.00	4.13	0.00	0.00	0.00	0.00	0.00	0.00	2.76	9.60	0.00	0.00	0.00	0.00
MG-32	15.68	8.94	0.00	4.13	0.00	0.00	0.00	0.00	0.00	0.00	2.76	9.60	0.00	0.00	0.00	0.00
MG-33	17.48	8.48	0.00	3.35	0.00	0.00	0.00	0.00	0.00	0.00	1.81	8.25	0.00	0.00	0.00	0.00
MG-33	17.48	8.48	0.00	3.35	0.00	0.00	0.00	0.00	0.00	0.00	1.81	8.25	0.00	0.00	0.00	0.00
MG-33	17.48	8.48	0.00	3.35	0.00	0.00	0.00	0.00	0.00	0.00	1.81	8.25	0.00	0.00	0.00	0.00
MG-33	17.48	8.48	0.00	3.35	0.00	0.00	0.00	0.00	0.00	0.00	1.81	8.25	0.00	0.00	0.00	0.00
PSON-90 7day	5.14	14.01	0.41	4.32	0.00	0.45	0.47	0.46	0.00	0.00	0.00	2.99	0.01	0.00	0.74	2.05
PSON-90 28day	5.14	14.01	0.41	4.32	0.00	0.45	0.47	0.46	0.00	0.00	0.00	2.99	0.01	0.00	0.74	2.05
PSON-90 56day	5.14	14.01	0.41	4.32	0.00	0.45	0.47	0.46	0.00	0.00	0.00	2.99	0.01	0.00	0.74	2.05
PSON-90 91day	5.14	14.01	0.41	4.32	0.00	0.45	0.47	0.46	0.00	0.00	0.00	2.99	0.01	0.00	0.74	2.05
PSON-90 182 day	5.14	14.01	0.41	4.32	0.00	0.45	0.47	0.46	0.00	0.00	0.00	2.99	0.01	0.00	0.74	2.05
PSON-90 317 day	5.14	14.01	0.41	4.32	0.00	0.45	0.47	0.46	0.00	0.00	0.00	2.99	0.01	0.00	0.74	2.05
PSON-90 450 day	5.14	14.01	0.41	4.32	0.00	0.45	0.47	0.46	0.00	0.00	0.00	2.99	0.01	0.00	0.74	2.05
PSON-90 600 day	5.14	14.01	0.41	4.32	0.00	0.45	0.47	0.46	0.00	0.00	0.00	2.99	0.01	0.00	0.74	2.05
PAFCI-90-7day	9.37	9.66	0.83	5.44	0.00	0.53	0.00	0.41	0.00	0.00	0.00	0.01	0.01	0.00	0.48	4.41

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
MG-18	0.00	0.00	0.00	0.00	24.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.46	0.00	0.00
MG-18	0.00	0.00	0.00	0.00	24.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.46	0.00	0.00
MG-18	0.00	0.00	0.00	0.00	24.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.46	0.00	0.00
MG-19	0.00	0.00	0.00	0.00	24.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.28	0.00	0.00
MG-19	0.00	0.00	0.00	0.00	24.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.28	0.00	0.00
MG-19	0.00	0.00	0.00	0.00	24.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.28	0.00	0.00
MG-19	0.00	0.00	0.00	0.00	24.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.28	0.00	0.00
MG-20	0.00	0.00	0.00	0.00	21.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.63	0.00	0.00
MG-20	0.00	0.00	0.00	0.00	21.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.63	0.00	0.00
MG-20	0.00	0.00	0.00	0.00	21.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.63	0.00	0.00
MG-20	0.00	0.00	0.00	0.00	21.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.63	0.00	0.00
MG-21	0.00	0.00	0.00	0.00	16.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.97	0.00	0.00
MG-21	0.00	0.00	0.00	0.00	16.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.97	0.00	0.00
MG-21	0.00	0.00	0.00	0.00	16.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.97	0.00	0.00
MG-21	0.00	0.00	0.00	0.00	16.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.97	0.00	0.00
MG-22	0.00	0.00	0.00	0.00	15.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.39	0.00	0.00
MG-22	0.00	0.00	0.00	0.00	15.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.39	0.00	0.00
MG-22	0.00	0.00	0.00	0.00	15.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.39	0.00	0.00
MG-22	0.00	0.00	0.00	0.00	15.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.39	0.00	0.00
MG-23	0.00	0.00	0.00	0.00	14.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.91	0.00	0.00
MG-23	0.00	0.00	0.00	0.00	14.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.91	0.00	0.00
MG-23	0.00	0.00	0.00	0.00	14.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.91	0.00	0.00
MG-23	0.00	0.00	0.00	0.00	14.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.91	0.00	0.00
MG-24	0.00	0.00	0.00	0.00	17.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.54	0.00	0.00
MG-24	0.00	0.00	0.00	0.00	17.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.54	0.00	0.00
MG-24	0.00	0.00	0.00	0.00	17.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.54	0.00	0.00
MG-24	0.00	0.00	0.00	0.00	17.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.54	0.00	0.00
MG-25	0.00	0.00	0.00	0.00	15.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.86	0.00	0.00
MG-25	0.00	0.00	0.00	0.00	15.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.86	0.00	0.00
MG-25	0.00	0.00	0.00	0.00	15.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.86	0.00	0.00
MG-25	0.00	0.00	0.00	0.00	15.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.86	0.00	0.00
MG-26	0.00	0.00	0.00	0.00	17.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.52	0.00	0.00
MG-26	0.00	0.00	0.00	0.00	17.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.52	0.00	0.00
MG-26	0.00	0.00	0.00	0.00	17.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.52	0.00	0.00
MG-26	0.00	0.00	0.00	0.00	17.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.52	0.00	0.00
MG-27	0.00	0.00	0.00	0.00	15.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.73	0.00	0.00
MG-27	0.00	0.00	0.00	0.00	15.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.73	0.00	0.00
MG-27	0.00	0.00	0.00	0.00	15.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.73	0.00	0.00
MG-27	0.00	0.00	0.00	0.00	15.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.73	0.00	0.00
MG-28	0.00	0.00	0.00	0.00	16.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.88	0.00	0.00
MG-28	0.00	0.00	0.00	0.00	16.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.88	0.00	0.00
MG-28	0.00	0.00	0.00	0.00	16.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.88	0.00	0.00
MG-28	0.00	0.00	0.00	0.00	16.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.88	0.00	0.00
MG-29	0.00	0.00	0.00	0.00	13.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.37	0.00	0.00
MG-29	0.00	0.00	0.00	0.00	13.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.37	0.00	0.00
MG-29	0.00	0.00	0.00	0.00	13.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.37	0.00	0.00
MG-29	0.00	0.00	0.00	0.00	13.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.37	0.00	0.00
MG-30	0.00	0.00	0.00	0.00	18.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.20	0.00	0.00
MG-30	0.00	0.00	0.00	0.00	18.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.20	0.00	0.00
MG-30	0.00	0.00	0.00	0.00	18.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.20	0.00	0.00
MG-30	0.00	0.00	0.00	0.00	18.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.20	0.00	0.00
MG-31	0.00	0.00	0.00	0.00	19.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.25	0.00	0.00
MG-31	0.00	0.00	0.00	0.00	19.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.25	0.00	0.00
MG-31	0.00	0.00	0.00	0.00	19.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.25	0.00	0.00
MG-31	0.00	0.00	0.00	0.00	19.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.25	0.00	0.00
MG-32	0.00	0.00	0.00	0.00	11.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.64	0.00	0.00
MG-32	0.00	0.00	0.00	0.00	11.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.64	0.00	0.00
MG-32	0.00	0.00	0.00	0.00	11.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.64	0.00	0.00
MG-32	0.00	0.00	0.00	0.00	11.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.64	0.00	0.00
MG-33	0.00	0.00	0.00	0.00	15.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.25	0.00	0.00
MG-33	0.00	0.00	0.00	0.00	15.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.25	0.00	0.00
MG-33	0.00	0.00	0.00	0.00	15.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.25	0.00	0.00
MG-33	0.00	0.00	0.00	0.00	15.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.25	0.00	0.00
PSON-90 7day	0.02	0.30	0.00	1.64	10.77	2.05	0.36	0.00	0.23	0.00	0.00	0.00	0.00	46.02	0.00	0.00
PSON-90 28day	0.02	0.30	0.00	1.64	10.77	2.05	0.36	0.00	0.23	0.00	0.00	0.00	0.00	46.02	0.00	0.00
PSON-90 56day	0.02	0.30	0.00	1.64	10.77	2.05	0.36	0.00	0.23	0.00	0.00	0.00	0.00	46.02	0.00	0.00
PSON-90 91day	0.02	0.30	0.00	1.64	10.77	2.05	0.36	0.00	0.23	0.00	0.00	0.00	0.00	46.02	0.00	0.00
PSON-90 182 day	0.02	0.30	0.00	1.64	10.77	2.05	0.36	0.00	0.23	0.00	0.00	0.00	0.00	46.02	0.00	0.00
PSON-90 317 day	0.02	0.30	0.00	1.64	10.77	2.05	0.36	0.00	0.23	0.00	0.00	0.00	0.00	46.02	0.00	0.00
PSON-90 450 day	0.02	0.30	0.00	1.64	10.77	2.05	0.36	0.00	0.23	0.00	0.00	0.00	0.00	46.02	0.00	0.00
PSON-90 600 day	0.02	0.30	0.00	1.64	10.77	2.05	0.36	0.00	0.23	0.00	0.00	0.00	0.00	46.02	0.00	0.00
PAFCI-90-7day	0.02	0.00	0.00	0.00	1.40	8.59	2.01	0.00	0.00	0.00	0.00	0.00	0.00	53.08	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
MG-18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96.53		
MG-18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96.53		
MG-18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96.53		
MG-19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	104.08		
MG-19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	104.08		
MG-19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	104.08		
MG-19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	104.08		
MG-20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.86		
MG-20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.86		
MG-20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.86		
MG-20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.86		
MG-21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.86		
MG-21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.86		
MG-21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.86		
MG-21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.86		
MG-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.36		
MG-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.36		
MG-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.36		
MG-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.36		
MG-23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	94.70		
MG-23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	94.70		
MG-23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	94.70		
MG-23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	94.70		
MG-24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.70		
MG-24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.70		
MG-24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.70		
MG-24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.70		
MG-25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.15		
MG-25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.15		
MG-25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.15		
MG-25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.15		
MG-26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.60		
MG-26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.60		
MG-26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.60		
MG-26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.60		
MG-27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.77		
MG-27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.77		
MG-27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.77		
MG-27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.77		
MG-28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.15		
MG-28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.15		
MG-28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.15		
MG-28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.15		
MG-29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.50		
MG-29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.50		
MG-29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.50		
MG-29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.50		
MG-30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	94.05		
MG-30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	94.05		
MG-30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	94.05		
MG-30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	94.05		
MG-31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96.54		
MG-31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96.54		
MG-31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96.54		
MG-31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96.54		
MG-32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96.56		
MG-32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96.56		
MG-32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96.56		
MG-32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96.56		
MG-33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.02		
MG-33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.02		
MG-33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.02		
MG-33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.02		
PSON-90 7day	0.38	0.00	0.00	0.00	0.00	0.18	2.12	2.66	0.00	97.75		
PSON-90 28day	0.38	0.00	0.00	0.00	0.00	0.18	2.12	2.66	0.00	97.75		
PSON-90 56day	0.38	0.00	0.00	0.00	0.00	0.18	2.12	2.66	0.00	97.75		
PSON-90 91day	0.38	0.00	0.00	0.00	0.00	0.18	2.12	2.66	0.00	97.75		
PSON-90 182 day	0.38	0.00	0.00	0.00	0.00	0.18	2.12	2.66	0.00	97.75		
PSON-90 317 day	0.38	0.00	0.00	0.00	0.00	0.18	2.12	2.66	0.00	97.75		
PSON-90 450 day	0.38	0.00	0.00	0.00	0.00	0.18	2.12	2.66	0.00	97.75		
PSON-90 600 day	0.38	0.00	0.00	0.00	0.00	0.18	2.12	2.66	0.00	97.75		
PAFCI-90-7day	0.40	0.00	0.00	0.00	0.00	0.22	0.00	1.08	0.00	97.94		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
PAFCI-90-28day	28.00	0.16	20.697	579.510	**2.600**	8.00	100-200	1.125E-04	0.008	ASTM I	90	11.39	121.50	38.90	
PAFCI-90-56day	56.00	0.16	20.697	1,159.020	**2.600**	8.00	100-200	1.125E-04	0.008	ASTM I	90	11.22	155.00	49.75	
PAFCI-90-91day	91.00	0.16	20.697	1,883.408	**2.600**	8.00	100-200	1.125E-04	0.008	ASTM I	90	11.26	159.50	56.15	
PAFCI-90-182 day	182.00	0.16	20.697	3,766.816	**2.600**	8.00	100-200	1.125E-04	0.008	ASTM I	90	11.28	217.00	75.50	
PAFCI-90-317 day	317.00	0.16	20.697	6,560.883	**2.600**	8.00	100-200	1.125E-04	0.008	ASTM I	90	11.16	605.00	347.00	0.25
PAFCI-90-450 day	450.00	0.16	20.697	9,313.556	**2.600**	8.00	100-200	1.125E-04	0.008	ASTM I	90	11.31	1065.00	2840.00	0.25
PAFCI-90-600 day	600.00	0.16	20.697	12,418.075	**2.600**	8.00	100-200	1.125E-04	0.008	ASTM I	90	11.00	2245.00	13100.00	33.75
PSON-200 7day	7.00	0.18	36.980	258.860	**2.750**	5.00	200-325	5.900E-05	0.005	ASTM I	200	9.66	458.29	1502.31	5.48
PSON-200 28day	28.00	0.18	36.980	1,035.439	**2.750**	5.00	200-325	5.900E-05	0.005	ASTM I	200	9.55	414.55	4706.79	20.78
PSON-200 90day	90.00	0.18	36.980	3,328.197	**2.750**	5.00	200-325	5.900E-05	0.005	ASTM I	200	9.54	188.65	6829.00	0.95
PSON-200 124 day	124.00	0.18	36.980	4,585.516	**2.750**	5.00	200-325	5.900E-05	0.005	ASTM I	200	9.59	321.50	10189.22	6.09
PSON-200 308 day	308.00	0.18	36.980	11,389.831	**2.750**	5.00	200-325	5.900E-05	0.005	ASTM I	200	9.58	523.74	17420.08	56.85
PSON-200 509 day	509.00	0.18	36.980	18,822.804	**2.750**	5.00	200-325	5.900E-05	0.005	ASTM I	200	9.36	603.63	12609.96	19.50
PSON-200 791 day	791.00	0.18	36.980	29,251.156	**2.750**	5.00	200-325	5.900E-05	0.005	ASTM I	200	9.36	375.55	8709.95	22.11
PAFCI-200 7day	7.00	0.20	39.113	273.794	**2.600**	5.00	200-325	5.900E-05	0.005	ASTM I	200	9.55	930.26	14292.60	19.77
PAFCI-200 28day	28.00	0.20	39.113	1,095.176	**2.600**	5.00	200-325	5.900E-05	0.005	ASTM I	200	9.19	807.71	19660.88	25.17
PAFCI-200 90day	90.00	0.20	39.113	3,520.209	**2.600**	5.00	200-325	5.900E-05	0.005	ASTM I	200	9.42	186.41	35230.62	0.93
PAFCI-200 124 day	124.00	0.20	39.113	4,850.065	**2.600**	5.00	200-325	5.900E-05	0.005	ASTM I	200	9.44	470.72	14751.84	0.93

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
PAFCI-90-28day		57.55	60.80		9.76		8.30						amorphous
PAFCI-90-56day		75.50	72.50		11.95		10.70						amorphous
PAFCI-90-91day		87.35	83.60		12.55		11.65						amorphous
PAFCI-90-182 day		110.00	107.00		9.10		17.70						amorphous
PAFCI-90-317 day		303.00	361.00		2.50	0.25	88.00						amorphous
PAFCI-90-450 day		1625.00	1905.00		0.25	0.25	1055.00						Na1.46Al2Si7.67O19.07.x H2O (49-0919); Albite NaAlSi3O8 (09-0466); 1A kaolinite Al2Si2O5(OH)4 (00-014-0164)
PAFCI-90-600 day		6750.00	10000.00		173.00	0.25	8700.00						Na6Al6Si10O32.12H2O (39-0219) a pseudocubic zeolite; Na Chabazite NaAlSi2O6.3H2O (00-019-1178)
PSON-200 7day		220.94	2308.86		1.90		178.64						amorphous
PSON-200 28day		438.18	4677.25		24.91		824.18						Analcime (041-1478) and Nontronite-15A (00-029-1497)
PSON-200 90day		631.97	7517.56		0.94		1826.10						Beidellite (00-043-0688)
PSON-200 124 day		877.82	10903.93		41.23		2932.15						Analcime C Na(Si2Al)O6.H2O (00-041-1478), Beidellite 12A (00-
PSON-200 308 day		1171.10	20575.53		119.71		6937.13						Analcime (041-1478); Nontronite 15A Na0.3Fe2Si4O10(OH)2.4 H2O (029-1497); Sodium Aluminosilicate similar to Phillipsite (0.95Na2OAl2O33.35SiO 2.4.79H2O,038-0327)
PSON-200 509 day		386.72	20762.32		160.73		7603.51						Analcime (041-1478); Nontronite 15A Na0.3Fe2Si4O10(OH)2.4 H2O (029-1497; Sodium Aluminosilicate similar to Phillipsite (0.95Na2OAl2O33.35SiO 2.4.79H2O,038-0327)
PSON-200 791 day		231.43	17349.89		125.66		2580.54						Analcime (041-1478); Nontronite 15A Na0.3Fe2Si4O10(OH)2.4 H2O; (029-1497); Sodium Aluminosilicate similar to Phillipsite (0.95Na2OAl2O33.35SiO 2.4.79H2O,038-0327); Halloysite 10A Al2Si2O5(OH4)2H2O 029-1429)
PAFCI-200 7day		4467.06	7619.40		91.38		8276.76						Analcime (041-1478), Clinotobermorite (04-012-1762) and Montmorillonite (013-0135)
PAFCI-200 28day		5033.40	8569.62		94.37		9219.73						Analcime (041-1478), Clinotobermorite (04-012-1762) and Montmorillonite (013-0135)
PAFCI-200 90day		4604.21	9031.35		26.47		7987.47						Analcime (041-1478), Clinotobermorite (04-012-1762), Beidellite (00-043-0688) , Li2Si2O5 (00-040-0376), Li2SiO3 (00-029-0829)
PAFCI-200 124 day		4697.98	5170.56		26.97		8562.00						Analcime (041-1478), Clinotobermorite (04-012-1762), Beidellite (00-043-0688) , Li2Si2O5 (00-040-0376), Li2SiO3 (00-029-0829)

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
PAFCI-90-28day	XRD	68.98	24.639731	-38.8443004	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PAFCI-90-56day	XRD	68.98	24.639731	-38.8443004	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PAFCI-90-91day	XRD	68.98	24.639731	-38.8443004	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PAFCI-90-182 day	XRD	68.98	24.639731	-38.8443004	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PAFCI-90-317 day	XRD	68.98	24.639731	-38.8443004	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PAFCI-90-450 day	XRD	68.98	24.639731	-38.8443004	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PAFCI-90-600 day	XRD	68.98	24.639731	-38.8443004	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PSON-200 7day		73.32	17.500128	-5.478367256	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PSON-200 28day		73.32	17.500128	-5.478367256	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PSON-200 90day		73.32	17.500128	-5.478367256	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PSON-200 124 day		73.32	17.500128	-5.478367256	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PSON-200 308 day		73.32	17.500128	-5.478367256	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PSON-200 509 day		73.32	17.500128	-5.478367256	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PSON-200 791 day		73.32	17.500128	-5.478367256	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PAFCI-200 7day		68.98	24.639731	-38.8443004	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PAFCI-200 28day		68.98	24.639731	-38.8443004	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PAFCI-200 90day		68.98	24.639731	-38.8443004	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PAFCI-200 124 day		68.98	24.639731	-38.8443004	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
PAFCI-90-28day	9.37	9.66	0.83	5.44	0.00	0.53	0.00	0.41	0.00	0.00	0.00	0.01	0.01	0.00	0.48	4.41
PAFCI-90-56day	9.37	9.66	0.83	5.44	0.00	0.53	0.00	0.41	0.00	0.00	0.00	0.01	0.01	0.00	0.48	4.41
PAFCI-90-91day	9.37	9.66	0.83	5.44	0.00	0.53	0.00	0.41	0.00	0.00	0.00	0.01	0.01	0.00	0.48	4.41
PAFCI-90-182 day	9.37	9.66	0.83	5.44	0.00	0.53	0.00	0.41	0.00	0.00	0.00	0.01	0.01	0.00	0.48	4.41
PAFCI-90-317 day	9.37	9.66	0.83	5.44	0.00	0.53	0.00	0.41	0.00	0.00	0.00	0.01	0.01	0.00	0.48	4.41
PAFCI-90-450 day	9.37	9.66	0.83	5.44	0.00	0.53	0.00	0.41	0.00	0.00	0.00	0.01	0.01	0.00	0.48	4.41
PAFCI-90-600 day	9.37	9.66	0.83	5.44	0.00	0.53	0.00	0.41	0.00	0.00	0.00	0.01	0.01	0.00	0.48	4.41
PSON-200 7day	5.14	14.01	0.41	4.32	0.00	0.45	0.47	0.46	0.00	0.00	0.00	2.99	0.01	0.00	0.74	2.05
PSON-200 28day	5.14	14.01	0.41	4.32	0.00	0.45	0.47	0.46	0.00	0.00	0.00	2.99	0.01	0.00	0.74	2.05
PSON-200 90day	5.14	14.01	0.41	4.32	0.00	0.45	0.47	0.46	0.00	0.00	0.00	2.99	0.01	0.00	0.74	2.05
PSON-200 124 day	5.14	14.01	0.41	4.32	0.00	0.45	0.47	0.46	0.00	0.00	0.00	2.99	0.01	0.00	0.74	2.05
PSON-200 308 day	5.14	14.01	0.41	4.32	0.00	0.45	0.47	0.46	0.00	0.00	0.00	2.99	0.01	0.00	0.74	2.05
PSON-200 509 day	5.14	14.01	0.41	4.32	0.00	0.45	0.47	0.46	0.00	0.00	0.00	2.99	0.01	0.00	0.74	2.05
PSON-200 791 day	5.14	14.01	0.41	4.32	0.00	0.45	0.47	0.46	0.00	0.00	0.00	2.99	0.01	0.00	0.74	2.05
PAFCI-200 7day	9.37	9.66	0.83	5.44	0.00	0.53	0.00	0.41	0.00	0.00	0.00	0.01	0.01	0.00	0.48	4.41
PAFCI-200 28day	9.37	9.66	0.83	5.44	0.00	0.53	0.00	0.41	0.00	0.00	0.00	0.01	0.01	0.00	0.48	4.41
PAFCI-200 90day	9.37	9.66	0.83	5.44	0.00	0.53	0.00	0.41	0.00	0.00	0.00	0.01	0.01	0.00	0.48	4.41
PAFCI-200 124 day	9.37	9.66	0.83	5.44	0.00	0.53	0.00	0.41	0.00	0.00	0.00	0.01	0.01	0.00	0.48	4.41

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
PAFCI-90-28day	0.02	0.00	0.00	0.00	1.40	8.59	2.01	0.00	0.00	0.00	0.00	0.00	0.00	53.08	0.00	0.00
PAFCI-90-56day	0.02	0.00	0.00	0.00	1.40	8.59	2.01	0.00	0.00	0.00	0.00	0.00	0.00	53.08	0.00	0.00
PAFCI-90-91day	0.02	0.00	0.00	0.00	1.40	8.59	2.01	0.00	0.00	0.00	0.00	0.00	0.00	53.08	0.00	0.00
PAFCI-90-182 day	0.02	0.00	0.00	0.00	1.40	8.59	2.01	0.00	0.00	0.00	0.00	0.00	0.00	53.08	0.00	0.00
PAFCI-90-317 day	0.02	0.00	0.00	0.00	1.40	8.59	2.01	0.00	0.00	0.00	0.00	0.00	0.00	53.08	0.00	0.00
PAFCI-90-450 day	0.02	0.00	0.00	0.00	1.40	8.59	2.01	0.00	0.00	0.00	0.00	0.00	0.00	53.08	0.00	0.00
PAFCI-90-600 day	0.02	0.00	0.00	0.00	1.40	8.59	2.01	0.00	0.00	0.00	0.00	0.00	0.00	53.08	0.00	0.00
PSON-200 7day	0.02	0.30	0.00	1.64	10.77	2.05	0.36	0.00	0.23	0.00	0.00	0.00	0.00	46.02	0.00	0.00
PSON-200 28day	0.02	0.30	0.00	1.64	10.77	2.05	0.36	0.00	0.23	0.00	0.00	0.00	0.00	46.02	0.00	0.00
PSON-200 90day	0.02	0.30	0.00	1.64	10.77	2.05	0.36	0.00	0.23	0.00	0.00	0.00	0.00	46.02	0.00	0.00
PSON-200 124 day	0.02	0.30	0.00	1.64	10.77	2.05	0.36	0.00	0.23	0.00	0.00	0.00	0.00	46.02	0.00	0.00
PSON-200 308 day	0.02	0.30	0.00	1.64	10.77	2.05	0.36	0.00	0.23	0.00	0.00	0.00	0.00	46.02	0.00	0.00
PSON-200 509 day	0.02	0.30	0.00	1.64	10.77	2.05	0.36	0.00	0.23	0.00	0.00	0.00	0.00	46.02	0.00	0.00
PSON-200 791 day	0.02	0.30	0.00	1.64	10.77	2.05	0.36	0.00	0.23	0.00	0.00	0.00	0.00	46.02	0.00	0.00
PAFCI-200 7day	0.02	0.00	0.00	0.00	1.40	8.59	2.01	0.00	0.00	0.00	0.00	0.00	0.00	53.08	0.00	0.00
PAFCI-200 28day	0.02	0.00	0.00	0.00	1.40	8.59	2.01	0.00	0.00	0.00	0.00	0.00	0.00	53.08	0.00	0.00
PAFCI-200 90day	0.02	0.00	0.00	0.00	1.40	8.59	2.01	0.00	0.00	0.00	0.00	0.00	0.00	53.08	0.00	0.00
PAFCI-200 124 day	0.02	0.00	0.00	0.00	1.40	8.59	2.01	0.00	0.00	0.00	0.00	0.00	0.00	53.08	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
PAFCI-90-28day	0.40	0.00	0.00	0.00	0.00	0.22	0.00	1.08	0.00	97.94		
PAFCI-90-56day	0.40	0.00	0.00	0.00	0.00	0.22	0.00	1.08	0.00	97.94		
PAFCI-90-91day	0.40	0.00	0.00	0.00	0.00	0.22	0.00	1.08	0.00	97.94		
PAFCI-90-182 day	0.40	0.00	0.00	0.00	0.00	0.22	0.00	1.08	0.00	97.94		
PAFCI-90-317 day	0.40	0.00	0.00	0.00	0.00	0.22	0.00	1.08	0.00	97.94		
PAFCI-90-450 day	0.40	0.00	0.00	0.00	0.00	0.22	0.00	1.08	0.00	97.94		
PAFCI-90-600 day	0.40	0.00	0.00	0.00	0.00	0.22	0.00	1.08	0.00	97.94		
PSON-200 7day	0.38	0.00	0.00	0.00	0.00	0.18	2.12	2.66	0.00	97.75		
PSON-200 28day	0.38	0.00	0.00	0.00	0.00	0.18	2.12	2.66	0.00	97.75		
PSON-200 90day	0.38	0.00	0.00	0.00	0.00	0.18	2.12	2.66	0.00	97.75		
PSON-200 124 day	0.38	0.00	0.00	0.00	0.00	0.18	2.12	2.66	0.00	97.75		
PSON-200 308 day	0.38	0.00	0.00	0.00	0.00	0.18	2.12	2.66	0.00	97.75		
PSON-200 509 day	0.38	0.00	0.00	0.00	0.00	0.18	2.12	2.66	0.00	97.75		
PSON-200 791 day	0.38	0.00	0.00	0.00	0.00	0.18	2.12	2.66	0.00	97.75		
PAFCI-200 7day	0.40	0.00	0.00	0.00	0.00	0.22	0.00	1.08	0.00	97.94		
PAFCI-200 28day	0.40	0.00	0.00	0.00	0.00	0.22	0.00	1.08	0.00	97.94		
PAFCI-200 90day	0.40	0.00	0.00	0.00	0.00	0.22	0.00	1.08	0.00	97.94		
PAFCI-200 124 day	0.40	0.00	0.00	0.00	0.00	0.22	0.00	1.08	0.00	97.94		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
PAFCI-200 308 day	308.00	0.20	39.113	12,046.936	**2.600**	5.00	200-325	5.900E-05	0.005	ASTM I	200	9.27	261.58	7413.83	7.23
PAFCI-200 509 day	509.00	0.20	39.113	19,908.735	**2.600**	5.00	200-325	5.900E-05	0.005	ASTM I	200	9.16	140.16	5016.06	13.67
PAFCI-200 805 day	791.00	0.20	39.113	30,938.722	**2.600**	5.00	200-325	5.900E-05	0.005	ASTM I	200	9.16	146.81	4474.63	3.97
WV203-18-Th Type IIIR	7.00	0.19	1.957	13.698	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.58	368.13	1056.67	
WV203-18-Th Type IIIR	28.00	0.19	1.957	54.790	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.73	380.63	1064.33	
WV203-18-Th Type IIIR	56.00	0.19	1.957	109.580	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.79	414.33	1226.33	
WV203-18-Th Type IIIR	119.00	0.19	1.957	232.858	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.70	443.67	1597.67	
WV203-18-Th Type IIIR	181.00	0.19	1.957	354.179	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.84	473.63	1882.67	
WV203-18-Th Type IIIR	273.00	0.19	1.957	534.203	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.98	472.63	1933.00	
WV203-18-Th Type IIIR	363.00	0.19	1.957	710.314	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.81	431.67	2196.67	
WV203-18-Th Type IIIR	549.00	0.19	1.957	1,074.276	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.86	514.77	2434.33	
WV203-18-Th Type IIIR	734.00	0.19	1.957	1,436.282	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.76	534.00	2332.67	
WV203-18-Th Type IIIR	1167.00	0.19	1.957	2,283.571	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.91	605.50	2692.19	
WV203-18-Th Type IIIR	1539.00	0.19	1.957	3,011.496	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.94	722.90	3162.51	
WV203-18-Th Type IIIR	1903.00	0.19	1.957	3,723.767	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.83	496.65	1941.15	
WV203-18-Th Type IIIR	2271.00	0.19	1.957	4,443.865	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.71	590.17	1967.70	
WV203-18-Th Type IIIR	2768.00	0.19	1.957	5,416.388	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.64	595.57	2263.63	
WV203-18-Th Type IIIR	3132.00	0.19	1.957	6,128.659	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.45	675.39	2181.43	
WV203-18-Th Type IIIR	3497.00	0.19	1.957	6,842.886	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.52	664.17	1833.50	
WV203-18-Th Type IIIR	3814.00	0.19	1.957	7,463.188	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.55	608.98	1668.03	
WV203-18-Th Type IIIR	4336.00	0.19	1.957	8,484.631	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.55	421.93	1864.80	
WVUTh198 Type IR	2.00	0.19	1.957	3.914	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.69	93.75	28.74	
WVUTh198 Type IR	7.00	0.19	1.957	13.698	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.69	70.85	27.40	
WVUTh198 Type IR	28.00	0.19	1.957	54.790	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.78	96.80	40.87	
WVUTh198 Type IR	56.00	0.19	1.957	109.580	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.93	104.80	46.78	
WVUTh198 Type IR	121.00	0.19	1.957	236.771	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.83	123.83	57.94	
WVUTh198 Type IR	181.00	0.19	1.957	354.179	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.14	128.17	63.88	
WVUTh198 Type IR	272.00	0.19	1.957	532.246	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.12	133.03	68.51	
WVUTh198 Type IR	372.00	0.19	1.957	727.925	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.06	139.47	70.31	
WVUTh198 Type IR	556.00	0.19	1.957	1,087.974	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.15	153.80	81.24	
WVUTh198 Type IR	730.00	0.19	1.957	1,428.455	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.16	167.60	86.18	

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
PAFCI-200 308 day		2138.88	2529.09		60.19		3454.01						Analcime Na(Si2Al)O6.H2O (41-1478); Diaoyudaoite Al10.35Mg0.65O16(Na1.65O) (73-9548);Montmorillonite 15A Ca0.2(Al,Mg)2Si4O10(OH)2.4H2O (013-0135)
PAFCI-200 509 day		1887.51	2271.35		52.21		2600.00						Analcime Na(Si2Al)O6.H2O (41-1478); Diaoyudaoite Al10.35Mg0.65O16(Na1.65O) (73-9548);Montmorillonite (15A Ca0.2(Al,Mg)2Si4O10(OH)2.4H2O (013-0135)
PAFCI-200 805 day		1789.85	1417.80		26.35		1327.31						Analcime Na(Si2Al)O6.H2O (41-1478); Diaoyudaoite Al10.35Mg0.65O16(Na1.65O) (73-9548); Montmorillonite (15A Ca0.2(Al,Mg)2Si4O10(OH)2.4H2O (013-0135)
WV203-18-Th Type IIIR		574.10	1062.33	478.07	3.33	0.24						0.70	Nontronite and zeolite (Phillipsite) and Analcime
WV203-18-Th Type IIIR		517.13	1050.33	454.43	4.39	0.24						4.64	Nontronite and zeolite (Phillipsite) and Analcime
WV203-18-Th Type IIIR		556.27	1227.67	513.90	4.20	2.16						3.52	Nontronite and zeolite (Phillipsite) and Analcime
WV203-18-Th Type IIIR		689.27	1551.33	659.30	3.56	0.20						3.35	Nontronite and zeolite (Phillipsite) and Analcime
WV203-18-Th Type IIIR		775.17	1818.67	777.37	2.55	0.13						3.74	Nontronite and zeolite (Phillipsite) and Analcime
WV203-18-Th Type IIIR		912.57	1838.00	851.30	2.88	0.03						3.26	Nontronite and zeolite (Phillipsite) and Analcime
WV203-18-Th Type IIIR		963.57	2345.00	987.57	1.80							3.23	Nontronite and zeolite (Phillipsite) and Analcime
WV203-18-Th Type IIIR		957.05	2198.33	1048.50	2.43	0.04						3.22	Nontronite and zeolite (Phillipsite) and Analcime
WV203-18-Th Type IIIR		1022.20	2733.33	1145.00	1.56	0.19						6.01	Nontronite and zeolite (Phillipsite) and Analcime
WV203-18-Th Type IIIR		1025.84	2859.21	1179.77	1.10	0.18						4.24	Nontronite and zeolite (Phillipsite) and Analcime
WV203-18-Th Type IIIR		1131.51	3233.23	1409.42	1.65	0.46						5.63	Nontronite and zeolite (Phillipsite) and Analcime
WV203-18-Th Type IIIR		713.97	2120.50	829.08	1.32	0.21						6.54	Nontronite and zeolite (Phillipsite) and Analcime
WV203-18-Th Type IIIR		714.90	2023.23	896.17	1.17							5.13	Nontronite and zeolite (Phillipsite) and Analcime
WV203-18-Th Type IIIR		878.83	2493.47	1021.57	1.10	0.10						3.71	Nontronite and zeolite (Phillipsite) and Analcime
WV203-18-Th Type IIIR		815.25	2211.43	913.18	1.15	0.46						8.31	Nontronite and zeolite (Phillipsite) and Analcime
WV203-18-Th Type IIIR		755.01	3052.57	903.26	1.11	0.59						5.44	Nontronite and zeolite (Phillipsite) and Analcime
WV203-18-Th Type IIIR		652.22	1839.63	853.77	1.32	0.19						4.99	Nontronite and zeolite (Phillipsite) and Analcime
WV203-18-Th Type IIIR		641.02	1890.10	852.99	5.95	0.13							Nontronite and zeolite (Phillipsite) and Analcime
WVUTh198 Type IR		16.23	102.12	23.68	13.90	1.24							Nontronite
WVUTh198 Type IR		14.87	94.69	22.21	10.63	1.86							Nontronite
WVUTh198 Type IR		19.52	139.60	28.57	11.57	3.82							Nontronite
WVUTh198 Type IR		23.54	142.77	33.20	11.80	4.56							Nontronite
WVUTh198 Type IR		25.89	191.80	32.54	10.72	5.92							Nontronite
WVUTh198 Type IR		28.21	210.57	34.79	10.43	5.53							Nontronite
WVUTh198 Type IR		28.16	209.83	35.83	9.76	6.02							Nontronite
WVUTh198 Type IR		29.14	199.17	37.05	9.71	6.50							Nontronite
WVUTh198 Type IR		31.67	249.85	39.29	9.02	5.69							Nontronite
WVUTh198 Type IR		33.92	243.37	42.00	8.29	5.03							Nontronite

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
PAFCI-200 308 day		68.98	24.639731	-38.8443004	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PAFCI-200 509 day		68.98	24.639731	-38.8443004	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PAFCI-200 805 day		68.98	24.639731	-38.8443004	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WV203-18-Th Type IIIR		72.06	17.49256	-3.422390368	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WV203-18-Th Type IIIR	XRD/SEM	72.06	17.49256	-3.422390368	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WV203-18-Th Type IIIR	XRD/SEM	72.06	17.49256	-3.422390368	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WV203-18-Th Type IIIR	XRD/SEM	72.06	17.49256	-3.422390368	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WV203-18-Th Type IIIR	XRD/SEM	72.06	17.49256	-3.422390368	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WV203-18-Th Type IIIR	XRD/SEM	72.06	17.49256	-3.422390368	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WV203-18-Th Type IIIR	XRD/SEM	72.06	17.49256	-3.422390368	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WV203-18-Th Type IIIR	XRD/SEM	72.06	17.49256	-3.422390368	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WV203-18-Th Type IIIR	XRD/SEM	72.06	17.49256	-3.422390368	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WV203-18-Th Type IIIR	XRD/SEM	72.06	17.49256	-3.422390368	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WV203-18-Th Type IIIR	XRD/SEM	72.06	17.49256	-3.422390368	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WV203-18-Th Type IIIR	XRD/SEM	72.06	17.49256	-3.422390368	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WV203-18-Th Type IIIR	XRD/SEM	72.06	17.49256	-3.422390368	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WV203-18-Th Type IIIR	XRD/SEM	72.06	17.49256	-3.422390368	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh198 Type IR	XRD/SEM	69.33	20.06745	-13.58729911	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh198 Type IR	XRD/SEM	69.33	20.06745	-13.58729911	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh198 Type IR	XRD/SEM	69.33	20.06745	-13.58729911	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh198 Type IR	XRD/SEM	69.33	20.06745	-13.58729911	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh198 Type IR	XRD/SEM	69.33	20.06745	-13.58729911	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh198 Type IR	XRD/SEM	69.33	20.06745	-13.58729911	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh198 Type IR	XRD/SEM	69.33	20.06745	-13.58729911	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh198 Type IR	XRD/SEM	69.33	20.06745	-13.58729911	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh198 Type IR	XRD/SEM	69.33	20.06745	-13.58729911	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
PAFCI-200 308 day	9.37	9.66	0.83	5.44	0.00	0.53	0.00	0.41	0.00	0.00	0.00	0.01	0.01	0.00	0.48	4.41
PAFCI-200 509 day	9.37	9.66	0.83	5.44	0.00	0.53	0.00	0.41	0.00	0.00	0.00	0.01	0.01	0.00	0.48	4.41
PAFCI-200 805 day	9.37	9.66	0.83	5.44	0.00	0.53	0.00	0.41	0.00	0.00	0.00	0.01	0.01	0.00	0.48	4.41
WV203-18-Th Type IIIR	4.60	12.89	0.16	0.48	0.00	0.15	0.14	0.08	0.03	0.00	0.00	12.02	5.00	0.00	0.04	7.91
WV203-18-Th Type IIIR	4.60	12.89	0.16	0.48	0.00	0.15	0.14	0.08	0.03	0.00	0.00	12.02	5.00	0.00	0.04	7.91
WV203-18-Th Type IIIR	4.60	12.89	0.16	0.48	0.00	0.15	0.14	0.08	0.03	0.00	0.00	12.02	5.00	0.00	0.04	7.91
WV203-18-Th Type IIIR	4.60	12.89	0.16	0.48	0.00	0.15	0.14	0.08	0.03	0.00	0.00	12.02	5.00	0.00	0.04	7.91
WV203-18-Th Type IIIR	4.60	12.89	0.16	0.48	0.00	0.15	0.14	0.08	0.03	0.00	0.00	12.02	5.00	0.00	0.04	7.91
WV203-18-Th Type IIIR	4.60	12.89	0.16	0.48	0.00	0.15	0.14	0.08	0.03	0.00	0.00	12.02	5.00	0.00	0.04	7.91
WV203-18-Th Type IIIR	4.60	12.89	0.16	0.48	0.00	0.15	0.14	0.08	0.03	0.00	0.00	12.02	5.00	0.00	0.04	7.91
WV203-18-Th Type IIIR	4.60	12.89	0.16	0.48	0.00	0.15	0.14	0.08	0.03	0.00	0.00	12.02	5.00	0.00	0.04	7.91
WV203-18-Th Type IIIR	4.60	12.89	0.16	0.48	0.00	0.15	0.14	0.08	0.03	0.00	0.00	12.02	5.00	0.00	0.04	7.91
WV203-18-Th Type IIIR	4.60	12.89	0.16	0.48	0.00	0.15	0.14	0.08	0.03	0.00	0.00	12.02	5.00	0.00	0.04	7.91
WV203-18-Th Type IIIR	4.60	12.89	0.16	0.48	0.00	0.15	0.14	0.08	0.03	0.00	0.00	12.02	5.00	0.00	0.04	7.91
WV203-18-Th Type IIIR	4.60	12.89	0.16	0.48	0.00	0.15	0.14	0.08	0.03	0.00	0.00	12.02	5.00	0.00	0.04	7.91
WV203-18-Th Type IIIR	4.60	12.89	0.16	0.48	0.00	0.15	0.14	0.08	0.03	0.00	0.00	12.02	5.00	0.00	0.04	7.91
WV203-18-Th Type IIIR	4.60	12.89	0.16	0.48	0.00	0.15	0.14	0.08	0.03	0.00	0.00	12.02	5.00	0.00	0.04	7.91
WVUTh198 Type IR	6.47	10.74	0.16	0.68	0.00	0.67	0.00	0.09	0.06	0.00	0.00	12.05	3.82	0.00	0.04	3.29
WVUTh198 Type IR	6.47	10.74	0.16	0.68	0.00	0.67	0.00	0.09	0.06	0.00	0.00	12.05	3.82	0.00	0.04	3.29
WVUTh198 Type IR	6.47	10.74	0.16	0.68	0.00	0.67	0.00	0.09	0.06	0.00	0.00	12.05	3.82	0.00	0.04	3.29
WVUTh198 Type IR	6.47	10.74	0.16	0.68	0.00	0.67	0.00	0.09	0.06	0.00	0.00	12.05	3.82	0.00	0.04	3.29
WVUTh198 Type IR	6.47	10.74	0.16	0.68	0.00	0.67	0.00	0.09	0.06	0.00	0.00	12.05	3.82	0.00	0.04	3.29
WVUTh198 Type IR	6.47	10.74	0.16	0.68	0.00	0.67	0.00	0.09	0.06	0.00	0.00	12.05	3.82	0.00	0.04	3.29
WVUTh198 Type IR	6.47	10.74	0.16	0.68	0.00	0.67	0.00	0.09	0.06	0.00	0.00	12.05	3.82	0.00	0.04	3.29
WVUTh198 Type IR	6.47	10.74	0.16	0.68	0.00	0.67	0.00	0.09	0.06	0.00	0.00	12.05	3.82	0.00	0.04	3.29
WVUTh198 Type IR	6.47	10.74	0.16	0.68	0.00	0.67	0.00	0.09	0.06	0.00	0.00	12.05	3.82	0.00	0.04	3.29
WVUTh198 Type IR	6.47	10.74	0.16	0.68	0.00	0.67	0.00	0.09	0.06	0.00	0.00	12.05	3.82	0.00	0.04	3.29

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
PAFCI-200 308 day	0.02	0.00	0.00	0.00	1.40	8.59	2.01	0.00	0.00	0.00	0.00	0.00	0.00	53.08	0.00	0.00
PAFCI-200 509 day	0.02	0.00	0.00	0.00	1.40	8.59	2.01	0.00	0.00	0.00	0.00	0.00	0.00	53.08	0.00	0.00
PAFCI-200 805 day	0.02	0.00	0.00	0.00	1.40	8.59	2.01	0.00	0.00	0.00	0.00	0.00	0.00	53.08	0.00	0.00
WV203-18-Th Type IIIR	0.89	0.90	0.00	0.04	8.00	0.14	0.25	0.00	1.20	0.00	0.00	0.00	0.00	38.18	0.00	0.00
WV203-18-Th Type IIIR	0.89	0.90	0.00	0.04	8.00	0.14	0.25	0.00	1.20	0.00	0.00	0.00	0.00	38.18	0.00	0.00
WV203-18-Th Type IIIR	0.89	0.90	0.00	0.04	8.00	0.14	0.25	0.00	1.20	0.00	0.00	0.00	0.00	38.18	0.00	0.00
WV203-18-Th Type IIIR	0.89	0.90	0.00	0.04	8.00	0.14	0.25	0.00	1.20	0.00	0.00	0.00	0.00	38.18	0.00	0.00
WV203-18-Th Type IIIR	0.89	0.90	0.00	0.04	8.00	0.14	0.25	0.00	1.20	0.00	0.00	0.00	0.00	38.18	0.00	0.00
WV203-18-Th Type IIIR	0.89	0.90	0.00	0.04	8.00	0.14	0.25	0.00	1.20	0.00	0.00	0.00	0.00	38.18	0.00	0.00
WV203-18-Th Type IIIR	0.89	0.90	0.00	0.04	8.00	0.14	0.25	0.00	1.20	0.00	0.00	0.00	0.00	38.18	0.00	0.00
WV203-18-Th Type IIIR	0.89	0.90	0.00	0.04	8.00	0.14	0.25	0.00	1.20	0.00	0.00	0.00	0.00	38.18	0.00	0.00
WV203-18-Th Type IIIR	0.89	0.90	0.00	0.04	8.00	0.14	0.25	0.00	1.20	0.00	0.00	0.00	0.00	38.18	0.00	0.00
WV203-18-Th Type IIIR	0.89	0.90	0.00	0.04	8.00	0.14	0.25	0.00	1.20	0.00	0.00	0.00	0.00	38.18	0.00	0.00
WV203-18-Th Type IIIR	0.89	0.90	0.00	0.04	8.00	0.14	0.25	0.00	1.20	0.00	0.00	0.00	0.00	38.18	0.00	0.00
WV203-18-Th Type IIIR	0.89	0.90	0.00	0.04	8.00	0.14	0.25	0.00	1.20	0.00	0.00	0.00	0.00	38.18	0.00	0.00
WV203-18-Th Type IIIR	0.89	0.90	0.00	0.04	8.00	0.14	0.25	0.00	1.20	0.00	0.00	0.00	0.00	38.18	0.00	0.00
WV203-18-Th Type IIIR	0.89	0.90	0.00	0.04	8.00	0.14	0.25	0.00	1.20	0.00	0.00	0.00	0.00	38.18	0.00	0.00
WVUTh198 Type IR	0.90	0.00	0.00	0.00	11.79	0.14	0.25	0.00	2.35	0.00	0.00	0.00	0.00	39.60	0.00	0.00
WVUTh198 Type IR	0.90	0.00	0.00	0.00	11.79	0.14	0.25	0.00	2.35	0.00	0.00	0.00	0.00	39.60	0.00	0.00
WVUTh198 Type IR	0.90	0.00	0.00	0.00	11.79	0.14	0.25	0.00	2.35	0.00	0.00	0.00	0.00	39.60	0.00	0.00
WVUTh198 Type IR	0.90	0.00	0.00	0.00	11.79	0.14	0.25	0.00	2.35	0.00	0.00	0.00	0.00	39.60	0.00	0.00
WVUTh198 Type IR	0.90	0.00	0.00	0.00	11.79	0.14	0.25	0.00	2.35	0.00	0.00	0.00	0.00	39.60	0.00	0.00
WVUTh198 Type IR	0.90	0.00	0.00	0.00	11.79	0.14	0.25	0.00	2.35	0.00	0.00	0.00	0.00	39.60	0.00	0.00
WVUTh198 Type IR	0.90	0.00	0.00	0.00	11.79	0.14	0.25	0.00	2.35	0.00	0.00	0.00	0.00	39.60	0.00	0.00
WVUTh198 Type IR	0.90	0.00	0.00	0.00	11.79	0.14	0.25	0.00	2.35	0.00	0.00	0.00	0.00	39.60	0.00	0.00
WVUTh198 Type IR	0.90	0.00	0.00	0.00	11.79	0.14	0.25	0.00	2.35	0.00	0.00	0.00	0.00	39.60	0.00	0.00
WVUTh198 Type IR	0.90	0.00	0.00	0.00	11.79	0.14	0.25	0.00	2.35	0.00	0.00	0.00	0.00	39.60	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
PAFCI-200 308 day	0.40	0.00	0.00	0.00	0.00	0.22	0.00	1.08	0.00	97.94		
PAFCI-200 509 day	0.40	0.00	0.00	0.00	0.00	0.22	0.00	1.08	0.00	97.94		
PAFCI-200 805 day	0.40	0.00	0.00	0.00	0.00	0.22	0.00	1.08	0.00	97.94		
WV203-18-Th Type IIIR	0.02	0.00	3.56	0.80	0.59	0.02	0.02	1.32	0.00	99.43		
WV203-18-Th Type IIIR	0.02	0.00	3.56	0.80	0.59	0.02	0.02	1.32	0.00	99.43		
WV203-18-Th Type IIIR	0.02	0.00	3.56	0.80	0.59	0.02	0.02	1.32	0.00	99.43		
WV203-18-Th Type IIIR	0.02	0.00	3.56	0.80	0.59	0.02	0.02	1.32	0.00	99.43		
WV203-18-Th Type IIIR	0.02	0.00	3.56	0.80	0.59	0.02	0.02	1.32	0.00	99.43		
WV203-18-Th Type IIIR	0.02	0.00	3.56	0.80	0.59	0.02	0.02	1.32	0.00	99.43		
WV203-18-Th Type IIIR	0.02	0.00	3.56	0.80	0.59	0.02	0.02	1.32	0.00	99.43		
WV203-18-Th Type IIIR	0.02	0.00	3.56	0.80	0.59	0.02	0.02	1.32	0.00	99.43		
WV203-18-Th Type IIIR	0.02	0.00	3.56	0.80	0.59	0.02	0.02	1.32	0.00	99.43		
WV203-18-Th Type IIIR	0.02	0.00	3.56	0.80	0.59	0.02	0.02	1.32	0.00	99.43		
WV203-18-Th Type IIIR	0.02	0.00	3.56	0.80	0.59	0.02	0.02	1.32	0.00	99.43		
WV203-18-Th Type IIIR	0.02	0.00	3.56	0.80	0.59	0.02	0.02	1.32	0.00	99.43		
WV203-18-Th Type IIIR	0.02	0.00	3.56	0.80	0.59	0.02	0.02	1.32	0.00	99.43		
WV203-18-Th Type IIIR	0.02	0.00	3.56	0.80	0.59	0.02	0.02	1.32	0.00	99.43		
WV203-18-Th Type IIIR	0.02	0.00	3.56	0.80	0.59	0.02	0.02	1.32	0.00	99.43		
WVUTh198 Type IR	0.03	0.00	3.55	0.77	0.60	0.02	0.02	0.32	0.00	98.41		
WVUTh198 Type IR	0.03	0.00	3.55	0.77	0.60	0.02	0.02	0.32	0.00	98.41		
WVUTh198 Type IR	0.03	0.00	3.55	0.77	0.60	0.02	0.02	0.32	0.00	98.41		
WVUTh198 Type IR	0.03	0.00	3.55	0.77	0.60	0.02	0.02	0.32	0.00	98.41		
WVUTh198 Type IR	0.03	0.00	3.55	0.77	0.60	0.02	0.02	0.32	0.00	98.41		
WVUTh198 Type IR	0.03	0.00	3.55	0.77	0.60	0.02	0.02	0.32	0.00	98.41		
WVUTh198 Type IR	0.03	0.00	3.55	0.77	0.60	0.02	0.02	0.32	0.00	98.41		
WVUTh198 Type IR	0.03	0.00	3.55	0.77	0.60	0.02	0.02	0.32	0.00	98.41		
WVUTh198 Type IR	0.03	0.00	3.55	0.77	0.60	0.02	0.02	0.32	0.00	98.41		
WVUTh198 Type IR	0.03	0.00	3.55	0.77	0.60	0.02	0.02	0.32	0.00	98.41		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
WVUTh198 Type IR	937.00	0.19	1.957	1,833.510	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.15	173.25	88.65	
WVUTh198 Type IR	1295.00	0.19	1.957	2,534.040	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.33	248.29	105.50	
WVUTh198 Type IR	1665.00	0.19	1.957	3,258.051	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.33	254.75	116.09	
WVUTh198 Type IR	2029.00	0.19	1.957	3,970.322	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.18	266.27	127.70	
WVUTh198 Type IR	2395.00	0.19	1.957	4,686.506	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.27	258.53	129.07	
WVUTh198 Type IR	2787.00	0.19	1.957	5,453.567	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.15	283.83	148.13	
WVUTh198 Type IR	3149.00	0.19	1.957	6,161.924	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.37	386.59	178.90	
WVUTh198 Type IR	3520.00	0.19	1.957	6,887.892	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.46	345.60	205.22	
WVUTh198 Type IR	3816.00	0.19	1.957	7,467.102	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.54	387.98	254.41	
WVCM59 Type 1R	7.00	0.19	1.957	13.698	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.86	78.39	31.39	
WVCM59 Type 1R	28.00	0.19	1.957	54.790	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.79	99.50	47.38	
WVCM59 Type 1R	56.00	0.19	1.957	109.580	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.88	102.01	55.73	
WVCM59 Type 1R	120.00	0.19	1.957	234.815	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.84	106.40	67.96	
WVCM59 Type 1R	183.00	0.19	1.957	358.092	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.91	130.13	80.48	
WVCM59 Type 1R	274.00	0.19	1.957	536.160	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.89	145.40	97.50	
WVCM59 Type 1R	363.00	0.19	1.957	710.314	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.76	139.23	104.27	
WVCM59 Type 1R	547.00	0.19	1.957	1,070.363	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.76	154.83	118.97	
WVCM59 Type 1R	730.00	0.19	1.957	1,428.455	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.82	174.97	133.00	
WVCM59 Type 1R	1097.00	0.19	1.957	2,146.596	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.69	207.30	161.70	
WVCM59 Type 1R	1280.00	0.19	1.957	2,504.688	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.91	216.70	169.53	
WVCM59 Type 1R	1463.00	0.19	1.957	2,862.780	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.99	222.87	174.27	
WVCM59 Type 1R	2198.00	0.19	1.957	4,301.019	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.88	295.38	212.40	
WVCM59 Type 1R	2556.00	0.19	1.957	5,001.549	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.82	307.91	227.55	
WVCM59 Type 1R	2910.00	0.19	1.957	5,694.252	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.66	317.68	238.91	
WVCM59 Type 1R	3271.00	0.19	1.957	6,400.652	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.33	310.50	266.13	
WVCM59 Type 1R	3613.00	0.19	1.957	7,069.874	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.22	348.17	315.33	
WVCM59 Type 1R	3974.00	0.19	1.957	7,776.274	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.27	369.53	380.13	
WVCM59 Type 1R	4345.00	0.19	1.957	8,502.242	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.35	436.16	536.92	
WVCM59 Type 1R	4641.00	0.19	1.957	9,081.451	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.43	449.11	720.93	
WVCM59 Type 1R	5038.00	0.19	1.957	9,858.296	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.47	435.73	1368.67	
WVCM59 Type 1R	5397.00	0.19	1.957	10,560.783	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.47	401.20	1540.30	
WVCM59 Type 1R	5802.00	0.19	1.957	11,353.282	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.46	392.70	944.97	
WVCM59 Type 1R	6159.00	0.19	1.957	12,051.855	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.43	408.50	1497.37	
WVCM59 Type 1R	6406.00	0.19	1.957	12,535.181	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.37	419.40	2158.00	
WVCM60 Type ES	2.00	0.19	1.957	3.914	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.30	123.93	82.04	
WVCM60 Type ES	7.00	0.19	1.957	13.698	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.52	169.80	265.97	
WVCM60 Type ES	28.00	0.19	1.957	54.790	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.55	257.60	382.83	
WVCM60 Type ES	56.00	0.19	1.957	109.580	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.57	249.90	368.27	
WVCM60 Type ES	121.00	0.19	1.957	236.771	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.47	261.17	371.40	
WVCM60 Type ES	181.00	0.19	1.957	354.179	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.63	244.07	355.73	

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
WVUTh198 Type IR		36.18	274.15	43.80	6.96	4.26							Nontronite
WVUTh198 Type IR		41.01	310.09	50.18	8.27	7.66							Nontronite
WVUTh198 Type IR		45.03	338.81	46.33	6.69	5.55							Nontronite
WVUTh198 Type IR		48.34	336.03	54.35	7.66	7.92							Nontronite
WVUTh198 Type IR		50.91	347.57	51.57	6.12	4.13							Nontronite
WVUTh198 Type IR		52.56	374.70	54.49	5.18	4.08							Nontronite
WVUTh198 Type IR		72.78	508.29	80.72	8.13	7.39							Nontronite
WVUTh198 Type IR		69.79	586.93	72.51	3.86	1.11							Nontronite
WVUTh198 Type IR		84.55	672.43	86.89	5.16	4.55							Nontronite
WVCM59 Type 1R		34.24	82.80	18.75	11.01	4.39							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		36.69	117.27	24.07	10.09	6.36							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		39.83	150.70	29.24	9.87	7.02							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		35.85	160.17	33.86	8.75	7.87							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		45.90	205.43	39.80	10.04	8.39							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		49.61	222.10	45.74	9.73	9.24							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		49.61	232.87	48.07	8.94	8.97							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		53.19	278.20	55.19	8.70	9.16							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		53.86	292.13	58.39	9.28	10.42							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		57.06	327.90	63.52	5.00	3.46							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		56.09	348.43	67.20	6.99	6.44							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		61.58	368.87	62.63	3.58	1.07							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		74.85	456.90	76.04	2.34	1.79							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		74.94	500.17	72.10	1.87	2.53							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		76.47	543.86	70.28	2.12	2.59							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		79.84	482.50	80.03	1.71	1.27							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		89.80	608.63	98.36	1.77	1.48							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		99.70	710.40	109.77	1.77	1.54							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		129.57	981.00	181.37	1.72	1.31							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		151.00	1275.63	198.93	1.30	1.11							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		231.04	2335.63	406.45	0.69	0.53							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		175.30	2592.00	404.70	3.00	0.38							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		150.50	1647.00	249.30	0.96	0.58							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		192.30	2619.00	381.10	3.62	0.39							Nontronite, Phillipsite, Analcime
WVCM59 Type 1R		210.90	3611.00	510.40	0.39	0.44							Nontronite, Phillipsite, Analcime
WVCM60 Type ES		22.18	205.77	52.01	2.70	2.04							Phyllosilicate (comp given in Muller 2005)
WVCM60 Type ES		60.35	535.77	149.10	0.92	4.91							Phyllosilicate (comp given in Muller 2005)
WVCM60 Type ES		79.87	826.40	205.17	1.15	8.87							Phyllosilicate (comp given in Muller 2005)
WVCM60 Type ES		81.19	674.30	181.70	1.33	5.52							Phyllosilicate (comp given in Muller 2005)
WVCM60 Type ES		70.34	757.87	198.10	0.99	4.35							Phyllosilicate (comp given in Muller 2005)
WVCM60 Type ES		69.73	782.70	184.20	0.66	0.41							Phyllosilicate (comp given in Muller 2005)

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
WVUTh198 Type IR	XRD/SEM	69.33	20.06745	-13.58729911	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh198 Type IR	XRD/SEM	69.33	20.06745	-13.58729911	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh198 Type IR	XRD/SEM	69.33	20.06745	-13.58729911	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh198 Type IR	XRD/SEM	69.33	20.06745	-13.58729911	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh198 Type IR	XRD/SEM	69.33	20.06745	-13.58729911	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh198 Type IR	XRD/SEM	69.33	20.06745	-13.58729911	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh198 Type IR	XRD/SEM	69.33	20.06745	-13.58729911	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh198 Type IR	XRD/SEM	69.33	20.06745	-13.58729911	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh198 Type IR	XRD/SEM	69.33	20.06745	-13.58729911	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM59 Type 1R	XRD/SEM	69.25	20.037437	-13.28949405	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM59 Type 1R	XRD/SEM	69.25	20.037437	-13.28949405	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM59 Type 1R	XRD/SEM	69.25	20.037437	-13.28949405	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM59 Type 1R	XRD/SEM	69.25	20.037437	-13.28949405	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM59 Type 1R	XRD/SEM	69.25	20.037437	-13.28949405	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM59 Type 1R	XRD/SEM	69.25	20.037437	-13.28949405	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM59 Type 1R	XRD/SEM	69.25	20.037437	-13.28949405	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM59 Type 1R	XRD/SEM	69.25	20.037437	-13.28949405	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM59 Type 1R	XRD/SEM	69.25	20.037437	-13.28949405	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM59 Type 1R	XRD/SEM	69.25	20.037437	-13.28949405	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM59 Type 1R	XRD/SEM	69.25	20.037437	-13.28949405	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM59 Type 1R	XRD/SEM	69.25	20.037437	-13.28949405	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM59 Type 1R	XRD/SEM	69.25	20.037437	-13.28949405	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM59 Type 1R	XRD/SEM	69.25	20.037437	-13.28949405	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM59 Type 1R	XRD/SEM	69.25	20.037437	-13.28949405	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM59 Type 1R	XRD/SEM	69.25	20.037437	-13.28949405	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM59 Type 1R	XRD/SEM	69.25	20.037437	-13.28949405	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM60 Type ES	XRD/SEM	69.78	18.39	-4.834972	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM60 Type ES	XRD/SEM	69.78	18.39	-4.834972	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM60 Type ES	XRD/SEM	69.78	18.39	-4.834972	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM60 Type ES	XRD/SEM	69.78	18.39	-4.834972	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM60 Type ES	XRD/SEM	69.78	18.39	-4.834972	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM60 Type ES	XRD/SEM	69.78	18.39	-4.834972	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
WVUTh198 Type IR	6.47	10.74	0.16	0.68	0.00	0.67	0.00	0.09	0.06	0.00	0.00	12.05	3.82	0.00	0.04	3.29
WVUTh198 Type IR	6.47	10.74	0.16	0.68	0.00	0.67	0.00	0.09	0.06	0.00	0.00	12.05	3.82	0.00	0.04	3.29
WVUTh198 Type IR	6.47	10.74	0.16	0.68	0.00	0.67	0.00	0.09	0.06	0.00	0.00	12.05	3.82	0.00	0.04	3.29
WVUTh198 Type IR	6.47	10.74	0.16	0.68	0.00	0.67	0.00	0.09	0.06	0.00	0.00	12.05	3.82	0.00	0.04	3.29
WVUTh198 Type IR	6.47	10.74	0.16	0.68	0.00	0.67	0.00	0.09	0.06	0.00	0.00	12.05	3.82	0.00	0.04	3.29
WVUTh198 Type IR	6.47	10.74	0.16	0.68	0.00	0.67	0.00	0.09	0.06	0.00	0.00	12.05	3.82	0.00	0.04	3.29
WVUTh198 Type IR	6.47	10.74	0.16	0.68	0.00	0.67	0.00	0.09	0.06	0.00	0.00	12.05	3.82	0.00	0.04	3.29
WVUTh198 Type IR	6.47	10.74	0.16	0.68	0.00	0.67	0.00	0.09	0.06	0.00	0.00	12.05	3.82	0.00	0.04	3.29
WVCM59 Type 1R	6.47	10.29	0.16	0.68	0.00	0.67	0.02	0.08	0.00	0.00	0.00	12.04	3.62	0.00	0.04	3.16
WVCM59 Type 1R	6.47	10.29	0.16	0.68	0.00	0.67	0.02	0.08	0.00	0.00	0.00	12.04	3.62	0.00	0.04	3.16
WVCM59 Type 1R	6.47	10.29	0.16	0.68	0.00	0.67	0.02	0.08	0.00	0.00	0.00	12.04	3.62	0.00	0.04	3.16
WVCM59 Type 1R	6.47	10.29	0.16	0.68	0.00	0.67	0.02	0.08	0.00	0.00	0.00	12.04	3.62	0.00	0.04	3.16
WVCM59 Type 1R	6.47	10.29	0.16	0.68	0.00	0.67	0.02	0.08	0.00	0.00	0.00	12.04	3.62	0.00	0.04	3.16
WVCM59 Type 1R	6.47	10.29	0.16	0.68	0.00	0.67	0.02	0.08	0.00	0.00	0.00	12.04	3.62	0.00	0.04	3.16
WVCM59 Type 1R	6.47	10.29	0.16	0.68	0.00	0.67	0.02	0.08	0.00	0.00	0.00	12.04	3.62	0.00	0.04	3.16
WVCM59 Type 1R	6.47	10.29	0.16	0.68	0.00	0.67	0.02	0.08	0.00	0.00	0.00	12.04	3.62	0.00	0.04	3.16
WVCM59 Type 1R	6.47	10.29	0.16	0.68	0.00	0.67	0.02	0.08	0.00	0.00	0.00	12.04	3.62	0.00	0.04	3.16
WVCM59 Type 1R	6.47	10.29	0.16	0.68	0.00	0.67	0.02	0.08	0.00	0.00	0.00	12.04	3.62	0.00	0.04	3.16
WVCM59 Type 1R	6.47	10.29	0.16	0.68	0.00	0.67	0.02	0.08	0.00	0.00	0.00	12.04	3.62	0.00	0.04	3.16
WVCM59 Type 1R	6.47	10.29	0.16	0.68	0.00	0.67	0.02	0.08	0.00	0.00	0.00	12.04	3.62	0.00	0.04	3.16
WVCM59 Type 1R	6.47	10.29	0.16	0.68	0.00	0.67	0.02	0.08	0.00	0.00	0.00	12.04	3.62	0.00	0.04	3.16
WVCM59 Type 1R	6.47	10.29	0.16	0.68	0.00	0.67	0.02	0.08	0.00	0.00	0.00	12.04	3.62	0.00	0.04	3.16
WVCM59 Type 1R	6.47	10.29	0.16	0.68	0.00	0.67	0.02	0.08	0.00	0.00	0.00	12.04	3.62	0.00	0.04	3.16
WVCM59 Type 1R	6.47	10.29	0.16	0.68	0.00	0.67	0.02	0.08	0.00	0.00	0.00	12.04	3.62	0.00	0.04	3.16
WVCM59 Type 1R	6.47	10.29	0.16	0.68	0.00	0.67	0.02	0.08	0.00	0.00	0.00	12.04	3.62	0.00	0.04	3.16
WVCM59 Type 1R	6.47	10.29	0.16	0.68	0.00	0.67	0.02	0.08	0.00	0.00	0.00	12.04	3.62	0.00	0.04	3.16
WVCM60 Type ES	3.32	10.42	0.18	0.76	0.00	0.74	0.16	0.09	0.00	0.00	0.00	13.36	3.68	0.00	0.05	2.05
WVCM60 Type ES	3.32	10.42	0.18	0.76	0.00	0.74	0.16	0.09	0.00	0.00	0.00	13.36	3.68	0.00	0.05	2.05
WVCM60 Type ES	3.32	10.42	0.18	0.76	0.00	0.74	0.16	0.09	0.00	0.00	0.00	13.36	3.68	0.00	0.05	2.05
WVCM60 Type ES	3.32	10.42	0.18	0.76	0.00	0.74	0.16	0.09	0.00	0.00	0.00	13.36	3.68	0.00	0.05	2.05
WVCM60 Type ES	3.32	10.42	0.18	0.76	0.00	0.74	0.16	0.09	0.00	0.00	0.00	13.36	3.68	0.00	0.05	2.05
WVCM60 Type ES	3.32	10.42	0.18	0.76	0.00	0.74	0.16	0.09	0.00	0.00	0.00	13.36	3.68	0.00	0.05	2.05

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
WVUTh198 Type IR	0.90	0.00	0.00	0.00	11.79	0.14	0.25	0.00	2.35	0.00	0.00	0.00	0.00	39.60	0.00	0.00
WVUTh198 Type IR	0.90	0.00	0.00	0.00	11.79	0.14	0.25	0.00	2.35	0.00	0.00	0.00	0.00	39.60	0.00	0.00
WVUTh198 Type IR	0.90	0.00	0.00	0.00	11.79	0.14	0.25	0.00	2.35	0.00	0.00	0.00	0.00	39.60	0.00	0.00
WVUTh198 Type IR	0.90	0.00	0.00	0.00	11.79	0.14	0.25	0.00	2.35	0.00	0.00	0.00	0.00	39.60	0.00	0.00
WVUTh198 Type IR	0.90	0.00	0.00	0.00	11.79	0.14	0.25	0.00	2.35	0.00	0.00	0.00	0.00	39.60	0.00	0.00
WVUTh198 Type IR	0.90	0.00	0.00	0.00	11.79	0.14	0.25	0.00	2.35	0.00	0.00	0.00	0.00	39.60	0.00	0.00
WVUTh198 Type IR	0.90	0.00	0.00	0.00	11.79	0.14	0.25	0.00	2.35	0.00	0.00	0.00	0.00	39.60	0.00	0.00
WVUTh198 Type IR	0.90	0.00	0.00	0.00	11.79	0.14	0.25	0.00	2.35	0.00	0.00	0.00	0.00	39.60	0.00	0.00
WVCM59 Type 1R	0.89	0.82	0.00	0.00	11.17	0.14	0.25	0.00	2.38	0.00	0.00	0.00	0.00	40.93	0.00	0.00
WVCM59 Type 1R	0.89	0.82	0.00	0.00	11.17	0.14	0.25	0.00	2.38	0.00	0.00	0.00	0.00	40.93	0.00	0.00
WVCM59 Type 1R	0.89	0.82	0.00	0.00	11.17	0.14	0.25	0.00	2.38	0.00	0.00	0.00	0.00	40.93	0.00	0.00
WVCM59 Type 1R	0.89	0.82	0.00	0.00	11.17	0.14	0.25	0.00	2.38	0.00	0.00	0.00	0.00	40.93	0.00	0.00
WVCM59 Type 1R	0.89	0.82	0.00	0.00	11.17	0.14	0.25	0.00	2.38	0.00	0.00	0.00	0.00	40.93	0.00	0.00
WVCM59 Type 1R	0.89	0.82	0.00	0.00	11.17	0.14	0.25	0.00	2.38	0.00	0.00	0.00	0.00	40.93	0.00	0.00
WVCM59 Type 1R	0.89	0.82	0.00	0.00	11.17	0.14	0.25	0.00	2.38	0.00	0.00	0.00	0.00	40.93	0.00	0.00
WVCM59 Type 1R	0.89	0.82	0.00	0.00	11.17	0.14	0.25	0.00	2.38	0.00	0.00	0.00	0.00	40.93	0.00	0.00
WVCM59 Type 1R	0.89	0.82	0.00	0.00	11.17	0.14	0.25	0.00	2.38	0.00	0.00	0.00	0.00	40.93	0.00	0.00
WVCM59 Type 1R	0.89	0.82	0.00	0.00	11.17	0.14	0.25	0.00	2.38	0.00	0.00	0.00	0.00	40.93	0.00	0.00
WVCM59 Type 1R	0.89	0.82	0.00	0.00	11.17	0.14	0.25	0.00	2.38	0.00	0.00	0.00	0.00	40.93	0.00	0.00
WVCM59 Type 1R	0.89	0.82	0.00	0.00	11.17	0.14	0.25	0.00	2.38	0.00	0.00	0.00	0.00	40.93	0.00	0.00
WVCM59 Type 1R	0.89	0.82	0.00	0.00	11.17	0.14	0.25	0.00	2.38	0.00	0.00	0.00	0.00	40.93	0.00	0.00
WVCM59 Type 1R	0.89	0.82	0.00	0.00	11.17	0.14	0.25	0.00	2.38	0.00	0.00	0.00	0.00	40.93	0.00	0.00
WVCM59 Type 1R	0.89	0.82	0.00	0.00	11.17	0.14	0.25	0.00	2.38	0.00	0.00	0.00	0.00	40.93	0.00	0.00
WVCM59 Type 1R	0.89	0.82	0.00	0.00	11.17	0.14	0.25	0.00	2.38	0.00	0.00	0.00	0.00	40.93	0.00	0.00
WVCM59 Type 1R	0.89	0.82	0.00	0.00	11.17	0.14	0.25	0.00	2.38	0.00	0.00	0.00	0.00	40.93	0.00	0.00
WVCM60 Type ES	0.99	0.91	0.00	0.00	11.37	0.16	0.28	0.00	2.64	0.00	0.00	0.00	0.00	42.17	0.00	0.00
WVCM60 Type ES	0.99	0.91	0.00	0.00	11.37	0.16	0.28	0.00	2.64	0.00	0.00	0.00	0.00	42.17	0.00	0.00
WVCM60 Type ES	0.99	0.91	0.00	0.00	11.37	0.16	0.28	0.00	2.64	0.00	0.00	0.00	0.00	42.17	0.00	0.00
WVCM60 Type ES	0.99	0.91	0.00	0.00	11.37	0.16	0.28	0.00	2.64	0.00	0.00	0.00	0.00	42.17	0.00	0.00
WVCM60 Type ES	0.99	0.91	0.00	0.00	11.37	0.16	0.28	0.00	2.64	0.00	0.00	0.00	0.00	42.17	0.00	0.00
WVCM60 Type ES	0.99	0.91	0.00	0.00	11.37	0.16	0.28	0.00	2.64	0.00	0.00	0.00	0.00	42.17	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
WVUTh198 Type IR	0.03	0.00	3.55	0.77	0.60	0.02	0.02	0.32	0.00	98.41		
WVUTh198 Type IR	0.03	0.00	3.55	0.77	0.60	0.02	0.02	0.32	0.00	98.41		
WVUTh198 Type IR	0.03	0.00	3.55	0.77	0.60	0.02	0.02	0.32	0.00	98.41		
WVUTh198 Type IR	0.03	0.00	3.55	0.77	0.60	0.02	0.02	0.32	0.00	98.41		
WVUTh198 Type IR	0.03	0.00	3.55	0.77	0.60	0.02	0.02	0.32	0.00	98.41		
WVUTh198 Type IR	0.03	0.00	3.55	0.77	0.60	0.02	0.02	0.32	0.00	98.41		
WVUTh198 Type IR	0.03	0.00	3.55	0.77	0.60	0.02	0.02	0.32	0.00	98.41		
WVUTh198 Type IR	0.03	0.00	3.55	0.77	0.60	0.02	0.02	0.32	0.00	98.41		
WVUTh198 Type IR	0.03	0.00	3.55	0.77	0.60	0.02	0.02	0.32	0.00	98.41		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM59 Type 1R	0.01	0.00	3.60	0.77	0.60	0.00	0.00	0.32	0.00	99.11		
WVCM60 Type ES	0.02	0.00	3.95	0.85	0.68	0.00	0.00	0.36	0.00	99.19		
WVCM60 Type ES	0.02	0.00	3.95	0.85	0.68	0.00	0.00	0.36	0.00	99.19		
WVCM60 Type ES	0.02	0.00	3.95	0.85	0.68	0.00	0.00	0.36	0.00	99.19		
WVCM60 Type ES	0.02	0.00	3.95	0.85	0.68	0.00	0.00	0.36	0.00	99.19		
WVCM60 Type ES	0.02	0.00	3.95	0.85	0.68	0.00	0.00	0.36	0.00	99.19		
WVCM60 Type ES	0.02	0.00	3.95	0.85	0.68	0.00	0.00	0.36	0.00	99.19		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
WVCM60 Type ES	272.00	0.19	1.957	532.246	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.60	239.10	346.70	
WVCM60 Type ES	372.00	0.19	1.957	727.925	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.60	229.23	317.27	
WVCM60 Type ES	556.00	0.19	1.957	1,087.974	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.58	239.43	320.00	
WVCM60 Type ES	730.00	0.19	1.957	1,428.455	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.65	239.57	313.17	
WVCM60 Type ES	937.00	0.19	1.957	1,833.510	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.64	236.05	297.35	
WVCM60 Type ES	1295.00	0.19	1.957	2,534.040	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.67	295.53	331.02	
WVCM60 Type ES	1665.00	0.19	1.957	3,258.051	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.63	293.56	322.09	
WVCM60 Type ES	2029.00	0.19	1.957	3,970.322	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.51	286.66	311.57	
WVCM60 Type ES	2395.00	0.19	1.957	4,686.506	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.43	283.57	330.53	
WVCM60 Type ES	2787.00	0.19	1.957	5,453.567	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.31	302.13	335.63	
WVCM60 Type ES	3149.00	0.19	1.957	6,161.924	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.42	369.77	387.39	
WVCM60 Type ES	3520.00	0.19	1.957	6,887.892	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.37	337.48	378.44	
WVCM60 Type ES	3816.00	0.19	1.957	7,467.102	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.35	315.92	389.63	
WVUTh122 Type IIR	7.00	0.19	1.957	13.698	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.68	73.15	20.77	
WVUTh122 Type IIR	28.00	0.19	1.957	54.790	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.79	90.70	26.99	
WVUTh122 Type IIR	56.00	0.19	1.957	109.580	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.86	106.43	32.43	
WVUTh122 Type IIR	120.00	0.19	1.957	234.815	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.96	124.80	35.54	
WVUTh122 Type IIR	183.00	0.19	1.957	358.092	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.95	140.20	36.03	
WVUTh122 Type IIR	274.00	0.19	1.957	536.160	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.98	153.53	39.96	
WVUTh122 Type IIR	363.00	0.19	1.957	710.314	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.88	157.73	45.42	
WVUTh122 Type IIR	547.00	0.19	1.957	1,070.363	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.88	180.17	45.88	
WVUTh122 Type IIR	730.00	0.19	1.957	1,428.455	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.94	199.50	48.28	
WVUTh122 Type IIR	1097.00	0.19	1.957	2,146.596	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.87	221.70	57.03	
WVUTh122 Type IIR	1280.00	0.19	1.957	2,504.688	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.05	233.23	57.78	
WVUTh122 Type IIR	1463.00	0.19	1.957	2,862.780	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.14	262.80	59.66	
WVUTh122 Type IIR	2198.00	0.19	1.957	4,301.019	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.08	327.71	85.87	
WVUTh122 Type IIR	2556.00	0.19	1.957	5,001.549	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.05	333.34	94.09	
WVUTh122 Type IIR	2910.00	0.19	1.957	5,694.252	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.87	324.80	113.65	
WVUTh122 Type IIR	3271.00	0.19	1.957	6,400.652	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.65	311.27	139.27	
WVUTh122 Type IIR	3613.00	0.19	1.957	7,069.874	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.56	320.30	165.80	
WVUTh122 Type IIR	3974.00	0.19	1.957	7,776.274	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.57	301.83	193.40	
WVUTh122 Type IIR	4345.00	0.19	1.957	8,502.242	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.55	356.33	299.20	
WVUTh122 Type IIR	4641.00	0.19	1.957	9,081.451	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.66	321.96	373.71	
WVUTh122 Type IIR	5060.00	0.19	1.957	9,901.345	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.75	257.60	487.72	
WVUTh122 Type IIR	5397.00	0.19	1.957	10,560.783	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.76	311.10	329.20	
WVUTh122 Type IIR	5802.00	0.19	1.957	11,353.282	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.62	273.30	414.81	
WVUTh122 Type IIR	6159.00	0.19	1.957	12,051.855	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.61	240.10	612.35	
WVUTh122 Type IIR	6406.00	0.19	1.957	12,535.181	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.54	232.30	1189.00	
WVUTh122 Type IIR	6705.00	0.19	1.957	13,120.261	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.56	284.91	1785.63	
WVUTh123 Type ESR	7.00	0.19	1.957	13.698	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.11	301.97	315.77	
WVUTh123 Type ESR	28.00	0.19	1.957	54.790	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.11	370.57	616.13	
WVUTh123 Type ESR	56.00	0.19	1.957	109.580	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.99	420.93	651.00	
WVUTh123 Type ESR	120.00	0.19	1.957	234.815	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.95	343.33	603.53	
WVUTh123 Type ESR	183.00	0.19	1.957	358.092	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.88	385.17	548.27	
WVUTh123 Type ESR	274.00	0.19	1.957	536.160	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.91	389.73	551.60	
WVUTh123 Type ESR	363.00	0.19	1.957	710.314	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.81	367.00	526.67	
WVUTh123 Type ESR	547.00	0.19	1.957	1,070.363	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.81	373.63	520.00	
WVUTh123 Type ESR	730.00	0.19	1.957	1,428.455	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.80	394.47	518.80	
WVUTh123 Type ESR	1097.00	0.19	1.957	2,146.596	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.70	387.80	493.17	

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
WVCM60 Type ES		65.38	736.43	170.90	0.72	0.43							Phyllosilicate (comp given in Muller 2005)
WVCM60 Type ES		64.74	628.90	135.60	0.90	0.74							Phyllosilicate (comp given in Muller 2005)
WVCM60 Type ES		62.65	720.67	125.50	0.67								Phyllosilicate (comp given in Muller 2005)
WVCM60 Type ES		59.68	629.23	130.87	0.66								Phyllosilicate (comp given in Muller 2005)
WVCM60 Type ES		58.47	638.10	126.35	0.59								Phyllosilicate (comp given in Muller 2005)
WVCM60 Type ES		63.89	680.29	140.03	0.80	0.04							Phyllosilicate (comp given in Muller 2005)
WVCM60 Type ES		64.31	680.54	124.64	0.59	0.22							Phyllosilicate (comp given in Muller 2005)
WVCM60 Type ES		59.82	586.22	120.18	0.70	0.10							Phyllosilicate (comp given in Muller 2005)
WVCM60 Type ES		64.63	635.37	128.20	0.53								Phyllosilicate (comp given in Muller 2005)
WVCM60 Type ES		64.44	614.33	130.50	0.95	0.48							Phyllosilicate (comp given in Muller 2005)
WVCM60 Type ES		75.65	730.62	159.96	0.81								Phyllosilicate (comp given in Muller 2005)
WVCM60 Type ES		73.81	801.74	147.39	0.48								Phyllosilicate (comp given in Muller 2005)
WVCM60 Type ES		76.24	781.56	153.67	0.75								Phyllosilicate (comp given in Muller 2005)
WVUTh122 Type IIR		12.93	65.56	8.83	12.10	4.76							
WVUTh122 Type IIR		17.08	86.38	10.77	11.00	7.18							
WVUTh122 Type IIR		21.91	105.50	11.37	12.22	8.81							
WVUTh122 Type IIR		23.92	117.63	11.07	12.78	10.15							
WVUTh122 Type IIR		27.77	131.03	10.96	12.61	10.57							
WVUTh122 Type IIR		29.61	141.77	10.64	11.99	11.30							
WVUTh122 Type IIR		31.67	150.10	11.71	12.01	11.16							
WVUTh122 Type IIR		35.08	163.73	14.55	12.54	11.24							
WVUTh122 Type IIR		34.75	165.00	13.27	11.54	11.14							
WVUTh122 Type IIR		38.70	194.53	14.47	8.42	6.89							
WVUTh122 Type IIR		38.80	180.20	14.56	10.29	9.91							
WVUTh122 Type IIR		39.52	197.80	12.56	8.45	7.43							
WVUTh122 Type IIR		53.23	248.40	14.80	5.91	8.85							
WVUTh122 Type IIR		58.10	301.89	16.72	6.60	13.77							
WVUTh122 Type IIR		60.06	306.36	19.62	7.22	15.81							
WVUTh122 Type IIR		65.78	290.40	27.46	5.94	13.64							
WVUTh122 Type IIR		71.36	364.50	40.35	5.55	12.53							
WVUTh122 Type IIR		72.45	393.40	42.96	4.14	8.78							
WVUTh122 Type IIR		103.20	524.72	78.45	4.95	6.53							
WVUTh122 Type IIR		115.40	656.56	91.23	4.06	5.99							
WVUTh122 Type IIR		124.70	831.11	121.40	1.87	0.52							
WVUTh122 Type IIR		100.40	572.80	75.76	4.07	3.05							
WVUTh122 Type IIR		115.50	714.40	103.30	2.40	2.11							
WVUTh122 Type IIR		138.70	949.00	123.00	3.55	0.59							
WVUTh122 Type IIR		168.10	1772.00	222.90	1.22	0.85							
WVUTh122 Type IIR		211.90	2796.10	414.01	1.25								
WVUTh123 Type ESR		104.10	671.40	132.93	1.15	4.37							Nontronite and zeolite (Phillipsite)
WVUTh123 Type ESR		144.30	1234.67	233.00	0.51	0.02							Nontronite and zeolite (Phillipsite)
WVUTh123 Type ESR		151.93	1256.00	234.90	0.35								Nontronite and zeolite (Phillipsite)
WVUTh123 Type ESR		120.90	1347.33	240.77	0.89	0.24							Nontronite and zeolite (Phillipsite)
WVUTh123 Type ESR		103.65	1151.33	219.97	0.55	0.03							Nontronite and zeolite (Phillipsite)
WVUTh123 Type ESR		117.93	1111.00	221.10	0.30								Nontronite and zeolite (Phillipsite)
WVUTh123 Type ESR		120.33	1030.17	205.00	0.52	0.11							Nontronite and zeolite (Phillipsite)
WVUTh123 Type ESR		99.97	1014.90	235.77	0.83	0.13							Nontronite and zeolite (Phillipsite)
WVUTh123 Type ESR		111.63	1000.40	202.07	0.72	0.64							Nontronite and zeolite (Phillipsite)
WVUTh123 Type ESR		94.78	925.50	225.63	0.49	1.87							Nontronite and zeolite (Phillipsite)

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
WVCM60 Type ES	XRD/SEM	69.78	18.39	-4.834972	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM60 Type ES	XRD/SEM	69.78	18.39	-4.834972	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM60 Type ES	XRD/SEM	69.78	18.39	-4.834972	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM60 Type ES	XRD/SEM	69.78	18.39	-4.834972	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM60 Type ES	XRD/SEM	69.78	18.39	-4.834972	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM60 Type ES	XRD/SEM	69.78	18.39	-4.834972	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM60 Type ES	XRD/SEM	69.78	18.39	-4.834972	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM60 Type ES	XRD/SEM	69.78	18.39	-4.834972	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM60 Type ES	XRD/SEM	69.78	18.39	-4.834972	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM60 Type ES	XRD/SEM	69.78	18.39	-4.834972	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM60 Type ES	XRD/SEM	69.78	18.39	-4.834972	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM60 Type ES	XRD/SEM	69.78	18.39	-4.834972	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVCM60 Type ES	XRD/SEM	69.78	18.39	-4.834972	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh122 Type IIR	XRD/SEM	67.55	21.788	-20.4503914	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh122 Type IIR	XRD/SEM	67.55	21.788	-20.4503914	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh122 Type IIR	XRD/SEM	67.55	21.788	-20.4503914	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh122 Type IIR	XRD/SEM	67.55	21.788	-20.4503914	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh122 Type IIR	XRD/SEM	67.55	21.788	-20.4503914	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh122 Type IIR	XRD/SEM	67.55	21.788	-20.4503914	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh122 Type IIR	XRD/SEM	67.55	21.788	-20.4503914	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh122 Type IIR	XRD/SEM	67.55	21.788	-20.4503914	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh122 Type IIR	XRD/SEM	67.55	21.788	-20.4503914	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh122 Type IIR	XRD/SEM	67.55	21.788	-20.4503914	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh122 Type IIR	XRD/SEM	67.55	21.788	-20.4503914	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh122 Type IIR	XRD/SEM	67.55	21.788	-20.4503914	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh122 Type IIR	XRD/SEM	67.55	21.788	-20.4503914	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh122 Type IIR	XRD/SEM	67.55	21.788	-20.4503914	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh122 Type IIR	XRD/SEM	67.55	21.788	-20.4503914	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh122 Type IIR	XRD/SEM	67.55	21.788	-20.4503914	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh122 Type IIR	XRD/SEM	67.55	21.788	-20.4503914	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh123 Type ESR	XRD/SEM	72.81	16.538	0.7661486	Indeterminate	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh123 Type ESR	XRD/SEM	72.81	16.538	0.7661486	Indeterminate	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh123 Type ESR	XRD/SEM	72.81	16.538	0.7661486	Indeterminate	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh123 Type ESR	XRD/SEM	72.81	16.538	0.7661486	Indeterminate	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh123 Type ESR	XRD/SEM	72.81	16.538	0.7661486	Indeterminate	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh123 Type ESR	XRD/SEM	72.81	16.538	0.7661486	Indeterminate	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh123 Type ESR	XRD/SEM	72.81	16.538	0.7661486	Indeterminate	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh123 Type ESR	XRD/SEM	72.81	16.538	0.7661486	Indeterminate	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh123 Type ESR	XRD/SEM	72.81	16.538	0.7661486	Indeterminate	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
WVCM60 Type ES	3.32	10.42	0.18	0.76	0.00	0.74	0.16	0.09	0.00	0.00	0.00	13.36	3.68	0.00	0.05	2.05
WVCM60 Type ES	3.32	10.42	0.18	0.76	0.00	0.74	0.16	0.09	0.00	0.00	0.00	13.36	3.68	0.00	0.05	2.05
WVCM60 Type ES	3.32	10.42	0.18	0.76	0.00	0.74	0.16	0.09	0.00	0.00	0.00	13.36	3.68	0.00	0.05	2.05
WVCM60 Type ES	3.32	10.42	0.18	0.76	0.00	0.74	0.16	0.09	0.00	0.00	0.00	13.36	3.68	0.00	0.05	2.05
WVCM60 Type ES	3.32	10.42	0.18	0.76	0.00	0.74	0.16	0.09	0.00	0.00	0.00	13.36	3.68	0.00	0.05	2.05
WVCM60 Type ES	3.32	10.42	0.18	0.76	0.00	0.74	0.16	0.09	0.00	0.00	0.00	13.36	3.68	0.00	0.05	2.05
WVCM60 Type ES	3.32	10.42	0.18	0.76	0.00	0.74	0.16	0.09	0.00	0.00	0.00	13.36	3.68	0.00	0.05	2.05
WVCM60 Type ES	3.32	10.42	0.18	0.76	0.00	0.74	0.16	0.09	0.00	0.00	0.00	13.36	3.68	0.00	0.05	2.05
WVCM60 Type ES	3.32	10.42	0.18	0.76	0.00	0.74	0.16	0.09	0.00	0.00	0.00	13.36	3.68	0.00	0.05	2.05
WVCM60 Type ES	3.32	10.42	0.18	0.76	0.00	0.74	0.16	0.09	0.00	0.00	0.00	13.36	3.68	0.00	0.05	2.05
WVCM60 Type ES	3.32	10.42	0.18	0.76	0.00	0.74	0.16	0.09	0.00	0.00	0.00	13.36	3.68	0.00	0.05	2.05
WVCM60 Type ES	3.32	10.42	0.18	0.76	0.00	0.74	0.16	0.09	0.00	0.00	0.00	13.36	3.68	0.00	0.05	2.05
WVUTh122 Type IIR	8.25	9.37	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.01	3.36	0.00	0.04	2.87
WVUTh122 Type IIR	8.25	9.37	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.01	3.36	0.00	0.04	2.87
WVUTh122 Type IIR	8.25	9.37	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.01	3.36	0.00	0.04	2.87
WVUTh122 Type IIR	8.25	9.37	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.01	3.36	0.00	0.04	2.87
WVUTh122 Type IIR	8.25	9.37	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.01	3.36	0.00	0.04	2.87
WVUTh122 Type IIR	8.25	9.37	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.01	3.36	0.00	0.04	2.87
WVUTh122 Type IIR	8.25	9.37	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.01	3.36	0.00	0.04	2.87
WVUTh122 Type IIR	8.25	9.37	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.01	3.36	0.00	0.04	2.87
WVUTh122 Type IIR	8.25	9.37	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.01	3.36	0.00	0.04	2.87
WVUTh122 Type IIR	8.25	9.37	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.01	3.36	0.00	0.04	2.87
WVUTh122 Type IIR	8.25	9.37	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.01	3.36	0.00	0.04	2.87
WVUTh122 Type IIR	8.25	9.37	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.01	3.36	0.00	0.04	2.87
WVUTh122 Type IIR	8.25	9.37	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.01	3.36	0.00	0.04	2.87
WVUTh122 Type IIR	8.25	9.37	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.01	3.36	0.00	0.04	2.87
WVUTh122 Type IIR	8.25	9.37	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.01	3.36	0.00	0.04	2.87
WVUTh122 Type IIR	8.25	9.37	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.01	3.36	0.00	0.04	2.87
WVUTh122 Type IIR	8.25	9.37	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.01	3.36	0.00	0.04	2.87
WVUTh122 Type IIR	8.25	9.37	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.01	3.36	0.00	0.04	2.87
WVUTh123 Type ESR	2.99	10.20	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.02	3.64	0.00	0.04	3.12
WVUTh123 Type ESR	2.99	10.20	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.02	3.64	0.00	0.04	3.12
WVUTh123 Type ESR	2.99	10.20	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.02	3.64	0.00	0.04	3.12
WVUTh123 Type ESR	2.99	10.20	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.02	3.64	0.00	0.04	3.12
WVUTh123 Type ESR	2.99	10.20	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.02	3.64	0.00	0.04	3.12
WVUTh123 Type ESR	2.99	10.20	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.02	3.64	0.00	0.04	3.12
WVUTh123 Type ESR	2.99	10.20	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.02	3.64	0.00	0.04	3.12
WVUTh123 Type ESR	2.99	10.20	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.02	3.64	0.00	0.04	3.12
WVUTh123 Type ESR	2.99	10.20	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.02	3.64	0.00	0.04	3.12

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
WVCM60 Type ES	0.99	0.91	0.00	0.00	11.37	0.16	0.28	0.00	2.64	0.00	0.00	0.00	0.00	42.17	0.00	0.00
WVCM60 Type ES	0.99	0.91	0.00	0.00	11.37	0.16	0.28	0.00	2.64	0.00	0.00	0.00	0.00	42.17	0.00	0.00
WVCM60 Type ES	0.99	0.91	0.00	0.00	11.37	0.16	0.28	0.00	2.64	0.00	0.00	0.00	0.00	42.17	0.00	0.00
WVCM60 Type ES	0.99	0.91	0.00	0.00	11.37	0.16	0.28	0.00	2.64	0.00	0.00	0.00	0.00	42.17	0.00	0.00
WVCM60 Type ES	0.99	0.91	0.00	0.00	11.37	0.16	0.28	0.00	2.64	0.00	0.00	0.00	0.00	42.17	0.00	0.00
WVCM60 Type ES	0.99	0.91	0.00	0.00	11.37	0.16	0.28	0.00	2.64	0.00	0.00	0.00	0.00	42.17	0.00	0.00
WVCM60 Type ES	0.99	0.91	0.00	0.00	11.37	0.16	0.28	0.00	2.64	0.00	0.00	0.00	0.00	42.17	0.00	0.00
WVCM60 Type ES	0.99	0.91	0.00	0.00	11.37	0.16	0.28	0.00	2.64	0.00	0.00	0.00	0.00	42.17	0.00	0.00
WVCM60 Type ES	0.99	0.91	0.00	0.00	11.37	0.16	0.28	0.00	2.64	0.00	0.00	0.00	0.00	42.17	0.00	0.00
WVCM60 Type ES	0.99	0.91	0.00	0.00	11.37	0.16	0.28	0.00	2.64	0.00	0.00	0.00	0.00	42.17	0.00	0.00
WVCM60 Type ES	0.99	0.91	0.00	0.00	11.37	0.16	0.28	0.00	2.64	0.00	0.00	0.00	0.00	42.17	0.00	0.00
WVCM60 Type ES	0.99	0.91	0.00	0.00	11.37	0.16	0.28	0.00	2.64	0.00	0.00	0.00	0.00	42.17	0.00	0.00
WVUTh122 Type IIR	0.89	0.82	0.00	0.00	10.29	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	41.58	0.00	0.00
WVUTh122 Type IIR	0.89	0.82	0.00	0.00	10.29	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	41.58	0.00	0.00
WVUTh122 Type IIR	0.89	0.82	0.00	0.00	10.29	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	41.58	0.00	0.00
WVUTh122 Type IIR	0.89	0.82	0.00	0.00	10.29	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	41.58	0.00	0.00
WVUTh122 Type IIR	0.89	0.82	0.00	0.00	10.29	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	41.58	0.00	0.00
WVUTh122 Type IIR	0.89	0.82	0.00	0.00	10.29	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	41.58	0.00	0.00
WVUTh122 Type IIR	0.89	0.82	0.00	0.00	10.29	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	41.58	0.00	0.00
WVUTh122 Type IIR	0.89	0.82	0.00	0.00	10.29	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	41.58	0.00	0.00
WVUTh122 Type IIR	0.89	0.82	0.00	0.00	10.29	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	41.58	0.00	0.00
WVUTh122 Type IIR	0.89	0.82	0.00	0.00	10.29	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	41.58	0.00	0.00
WVUTh122 Type IIR	0.89	0.82	0.00	0.00	10.29	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	41.58	0.00	0.00
WVUTh122 Type IIR	0.89	0.82	0.00	0.00	10.29	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	41.58	0.00	0.00
WVUTh122 Type IIR	0.89	0.82	0.00	0.00	10.29	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	41.58	0.00	0.00
WVUTh122 Type IIR	0.89	0.82	0.00	0.00	10.29	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	41.58	0.00	0.00
WVUTh122 Type IIR	0.89	0.82	0.00	0.00	10.29	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	41.58	0.00	0.00
WVUTh122 Type IIR	0.89	0.82	0.00	0.00	10.29	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	41.58	0.00	0.00
WVUTh122 Type IIR	0.89	0.82	0.00	0.00	10.29	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	41.58	0.00	0.00
WVUTh123 Type ESR	0.89	0.82	0.00	0.00	11.20	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	44.57	0.00	0.00
WVUTh123 Type ESR	0.89	0.82	0.00	0.00	11.20	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	44.57	0.00	0.00
WVUTh123 Type ESR	0.89	0.82	0.00	0.00	11.20	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	44.57	0.00	0.00
WVUTh123 Type ESR	0.89	0.82	0.00	0.00	11.20	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	44.57	0.00	0.00
WVUTh123 Type ESR	0.89	0.82	0.00	0.00	11.20	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	44.57	0.00	0.00
WVUTh123 Type ESR	0.89	0.82	0.00	0.00	11.20	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	44.57	0.00	0.00
WVUTh123 Type ESR	0.89	0.82	0.00	0.00	11.20	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	44.57	0.00	0.00
WVUTh123 Type ESR	0.89	0.82	0.00	0.00	11.20	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	44.57	0.00	0.00
WVUTh123 Type ESR	0.89	0.82	0.00	0.00	11.20	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	44.57	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
WVCM60 Type ES	0.02	0.00	3.95	0.85	0.68	0.00	0.00	0.36	0.00	99.19		
WVCM60 Type ES	0.02	0.00	3.95	0.85	0.68	0.00	0.00	0.36	0.00	99.19		
WVCM60 Type ES	0.02	0.00	3.95	0.85	0.68	0.00	0.00	0.36	0.00	99.19		
WVCM60 Type ES	0.02	0.00	3.95	0.85	0.68	0.00	0.00	0.36	0.00	99.19		
WVCM60 Type ES	0.02	0.00	3.95	0.85	0.68	0.00	0.00	0.36	0.00	99.19		
WVCM60 Type ES	0.02	0.00	3.95	0.85	0.68	0.00	0.00	0.36	0.00	99.19		
WVCM60 Type ES	0.02	0.00	3.95	0.85	0.68	0.00	0.00	0.36	0.00	99.19		
WVCM60 Type ES	0.02	0.00	3.95	0.85	0.68	0.00	0.00	0.36	0.00	99.19		
WVCM60 Type ES	0.02	0.00	3.95	0.85	0.68	0.00	0.00	0.36	0.00	99.19		
WVCM60 Type ES	0.02	0.00	3.95	0.85	0.68	0.00	0.00	0.36	0.00	99.19		
WVCM60 Type ES	0.02	0.00	3.95	0.85	0.68	0.00	0.00	0.36	0.00	99.19		
WVCM60 Type ES	0.02	0.00	3.95	0.85	0.68	0.00	0.00	0.36	0.00	99.19		
WVUTh122 Type IIR	0.02	0.00	3.55	0.76	0.58	0.00	0.00	0.32	0.00	99.24		
WVUTh122 Type IIR	0.02	0.00	3.55	0.76	0.58	0.00	0.00	0.32	0.00	99.24		
WVUTh122 Type IIR	0.02	0.00	3.55	0.76	0.58	0.00	0.00	0.32	0.00	99.24		
WVUTh122 Type IIR	0.02	0.00	3.55	0.76	0.58	0.00	0.00	0.32	0.00	99.24		
WVUTh122 Type IIR	0.02	0.00	3.55	0.76	0.58	0.00	0.00	0.32	0.00	99.24		
WVUTh122 Type IIR	0.02	0.00	3.55	0.76	0.58	0.00	0.00	0.32	0.00	99.24		
WVUTh122 Type IIR	0.02	0.00	3.55	0.76	0.58	0.00	0.00	0.32	0.00	99.24		
WVUTh122 Type IIR	0.02	0.00	3.55	0.76	0.58	0.00	0.00	0.32	0.00	99.24		
WVUTh122 Type IIR	0.02	0.00	3.55	0.76	0.58	0.00	0.00	0.32	0.00	99.24		
WVUTh122 Type IIR	0.02	0.00	3.55	0.76	0.58	0.00	0.00	0.32	0.00	99.24		
WVUTh122 Type IIR	0.02	0.00	3.55	0.76	0.58	0.00	0.00	0.32	0.00	99.24		
WVUTh122 Type IIR	0.02	0.00	3.55	0.76	0.58	0.00	0.00	0.32	0.00	99.24		
WVUTh122 Type IIR	0.02	0.00	3.55	0.76	0.58	0.00	0.00	0.32	0.00	99.24		
WVUTh122 Type IIR	0.02	0.00	3.55	0.76	0.58	0.00	0.00	0.32	0.00	99.24		
WVUTh122 Type IIR	0.02	0.00	3.55	0.76	0.58	0.00	0.00	0.32	0.00	99.24		
WVUTh122 Type IIR	0.02	0.00	3.55	0.76	0.58	0.00	0.00	0.32	0.00	99.24		
WVUTh122 Type IIR	0.02	0.00	3.55	0.76	0.58	0.00	0.00	0.32	0.00	99.24		
WVUTh122 Type IIR	0.02	0.00	3.55	0.76	0.58	0.00	0.00	0.32	0.00	99.24		
WVUTh122 Type IIR	0.02	0.00	3.55	0.76	0.58	0.00	0.00	0.32	0.00	99.24		
WVUTh123 Type ESR	0.02	0.00	3.55	0.76	0.60	0.00	0.00	0.32	0.00	99.28		
WVUTh123 Type ESR	0.02	0.00	3.55	0.76	0.60	0.00	0.00	0.32	0.00	99.28		
WVUTh123 Type ESR	0.02	0.00	3.55	0.76	0.60	0.00	0.00	0.32	0.00	99.28		
WVUTh123 Type ESR	0.02	0.00	3.55	0.76	0.60	0.00	0.00	0.32	0.00	99.28		
WVUTh123 Type ESR	0.02	0.00	3.55	0.76	0.60	0.00	0.00	0.32	0.00	99.28		
WVUTh123 Type ESR	0.02	0.00	3.55	0.76	0.60	0.00	0.00	0.32	0.00	99.28		
WVUTh123 Type ESR	0.02	0.00	3.55	0.76	0.60	0.00	0.00	0.32	0.00	99.28		
WVUTh123 Type ESR	0.02	0.00	3.55	0.76	0.60	0.00	0.00	0.32	0.00	99.28		
WVUTh123 Type ESR	0.02	0.00	3.55	0.76	0.60	0.00	0.00	0.32	0.00	99.28		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
WVUTh123 Type ESR	1280.00	0.19	1.957	2,504.688	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.86	348.93	481.27	
WVUTh123 Type ESR	1463.00	0.19	1.957	2,862.780	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.91	408.83	485.03	
WVUTh123 Type ESR	2198.00	0.19	1.957	4,301.019	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.83	444.49	494.31	
WVUTh123 Type ESR	2556.00	0.19	1.957	5,001.549	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.76	430.45	546.77	
WVUTh123 Type ESR	2910.00	0.19	1.957	5,694.252	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.61	482.21	845.78	
WVUTh123 Type ESR	3271.00	0.19	1.957	6,400.652	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.46	610.67	1559.03	
WVUTh123 Type ESR	3613.00	0.19	1.957	7,069.874	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.33	647.83	1924.37	
WVUTh123 Type ESR	3974.00	0.19	1.957	7,776.274	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.43	677.47	2119.93	
WVUTh123 Type ESR	4345.00	0.19	1.957	8,502.242	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.52	747.84	2422.27	
WVUTh123 Type ESR	4641.00	0.19	1.957	9,081.451	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.65	712.37	2325.33	
WVUTh157 Type ESR	7.00	0.19	1.957	13.698	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.00	292.70	578.43	
WVUTh157 Type ESR	28.00	0.19	1.957	54.790	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.77	323.77	714.20	
WVUTh157 Type ESR	56.00	0.19	1.957	109.580	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.68	304.70	664.00	
WVUTh157 Type ESR	120.00	0.19	1.957	234.815	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.70	339.23	721.73	
WVUTh157 Type ESR	183.00	0.19	1.957	358.092	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.79	315.83	678.33	
WVUTh157 Type ESR	273.00	0.19	1.957	534.203	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.76	272.77	614.83	
WVUTh157 Type ESR	365.00	0.19	1.957	714.227	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.79	275.87	619.27	
WVUTh157 Type ESR	554.00	0.19	1.957	1,084.060	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.78	310.27	647.13	
WVUTh157 Type ESR	730.00	0.19	1.957	1,428.455	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.65	266.43	590.97	
WVUTh157 Type ESR	918.00	0.19	1.957	1,796.331	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.81	264.23	618.90	
WVUTh157 Type ESR	1098.00	0.19	1.957	2,148.553	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.86	302.37	605.80	
WVUTh157 Type ESR	1282.00	0.19	1.957	2,508.602	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.82	293.00	589.70	
WVUTh157 Type ESR	1652.00	0.19	1.957	3,232.613	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.86	313.97	619.91	
WVUTh157 Type ESR	2044.00	0.19	1.957	3,999.674	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.88	391.77	1080.03	
WVUTh157 Type ESR	2401.00	0.19	1.957	4,698.247	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.74	404.48	1691.97	
WVUTh157 Type ESR	2771.00	0.19	1.957	5,422.258	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.63	509.47	2433.27	
WVUTh157 Type ESR	3131.00	0.19	1.957	6,126.702	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.53	508.03	2763.60	
WVUTh157 Type ESR	3738.00	0.19	1.957	7,314.472	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.13	575.36	3237.73	
WVUTh157 Type ESR	4112.00	0.19	1.957	8,046.311	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.03	580.91	3317.13	
WVUTh157 Type ESR	4405.00	0.19	1.957	8,619.649	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.17	580.37	3307.50	
WVUTh179 Type I	7.00	0.19	1.957	13.698	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.63	40.47	15.53	
WVUTh179 Type I	28.00	0.19	1.957	54.790	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.20	64.33	29.58	
WVUTh179 Type I	56.00	0.19	1.957	109.580	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.31	60.43	31.04	
WVUTh179 Type I	120.00	0.19	1.957	234.815	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.26	70.02	40.90	
WVUTh179 Type I	180.00	0.19	1.957	352.222	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.33	83.26	56.44	
WVUTh179 Type I	271.00	0.19	1.957	530.289	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.29	90.47	72.46	

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
WVUTh123 Type ESR		86.94	904.27	198.40	0.50								Nontronite and zeolite (Phillipsite)
WVUTh123 Type ESR		96.93	974.93	195.57	0.61								Nontronite and zeolite (Phillipsite)
WVUTh123 Type ESR		103.11	1004.80	227.36	0.37								Nontronite and zeolite (Phillipsite)
WVUTh123 Type ESR		115.65	1125.23	225.49	0.26	0.04							Nontronite and zeolite (Phillipsite)
WVUTh123 Type ESR		127.11	1675.47	328.16	0.24	0.01							Nontronite and zeolite (Phillipsite)
WVUTh123 Type ESR		158.97	2630.83	599.17	0.38	0.08							Nontronite and zeolite (Phillipsite)
WVUTh123 Type ESR		163.20	3556.30	702.37	0.32	0.38							Nontronite and zeolite (Phillipsite)
WVUTh123 Type ESR		164.23	3891.33	773.67	0.25	0.43							Nontronite and zeolite (Phillipsite)
WVUTh123 Type ESR		170.85	4438.13	986.36	0.39	0.71							Nontronite and zeolite (Phillipsite)
WVUTh123 Type ESR		166.95	4301.10	985.96	0.32	0.60							Nontronite and zeolite (Phillipsite)
WVUTh157 Type ESR		158.70	927.20	212.20	8.62	1.15							Nontronite and zeolite (Phillipsite)
WVUTh157 Type ESR		138.50	1293.67	276.70	0.69	1.04							Nontronite and zeolite (Phillipsite)
WVUTh157 Type ESR		122.60	1203.00	261.00	0.94	0.10							Nontronite and zeolite (Phillipsite)
WVUTh157 Type ESR		125.23	1221.67	276.13	1.11	0.07							Nontronite and zeolite (Phillipsite)
WVUTh157 Type ESR		129.23	1215.67	267.70	1.35	0.15							Nontronite and zeolite (Phillipsite)
WVUTh157 Type ESR		115.57	1050.67	267.47	0.84	0.08							Nontronite and zeolite (Phillipsite)
WVUTh157 Type ESR		111.67	1092.00	261.40	0.67	0.07							Nontronite and zeolite (Phillipsite)
WVUTh157 Type ESR		123.83	1030.30	286.60	1.06	0.25							Nontronite and zeolite (Phillipsite)
WVUTh157 Type ESR		110.23	1071.67	276.47	0.65	0.11							Nontronite and zeolite (Phillipsite)
WVUTh157 Type ESR		117.80	1138.33	268.57	0.58	0.17							Nontronite and zeolite (Phillipsite)
WVUTh157 Type ESR		105.33	1039.67	239.60	0.59	0.01							Nontronite and zeolite (Phillipsite)
WVUTh157 Type ESR		121.77	1133.67	242.80	0.64								Nontronite and zeolite (Phillipsite)
WVUTh157 Type ESR		115.43	1095.77	259.12	0.41	0.17							Nontronite and zeolite (Phillipsite)
WVUTh157 Type ESR		169.74	1833.60	423.06	0.42	0.09							Nontronite and zeolite (Phillipsite)
WVUTh157 Type ESR		186.23	2857.31	620.57	0.32	0.23							Nontronite and zeolite (Phillipsite)
WVUTh157 Type ESR		215.77	3806.70	814.27	0.35	0.05							Nontronite and zeolite (Phillipsite)
WVUTh157 Type ESR		217.13	4561.90	890.50	0.39	0.42							Nontronite and zeolite (Phillipsite)
WVUTh157 Type ESR		238.81	5620.63	1136.73	0.48	0.61							Nontronite and zeolite (Phillipsite)
WVUTh157 Type ESR		263.54	5419.57	1096.10	0.27								Nontronite and zeolite (Phillipsite)
WVUTh157 Type ESR		243.44	5401.43	1114.20	0.62	0.71							Nontronite and zeolite (Phillipsite)
WVUTh179 Type I		8.53	26.12	11.09	8.14	0.32							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		15.18	47.17	18.30	10.86	1.27							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		15.21	48.31	17.52	9.49	1.62							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		19.70	61.27	19.65	9.43	2.52							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		27.38	89.14	26.47	10.82	3.38							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		32.86	109.30	27.20	9.52	4.13							Phyllosilicate (comp given in Muller 2005)

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
WVUTh123 Type ESR	XRD/SEM	72.81	16.538	0.7661486	Indeterminate	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh123 Type ESR	XRD/SEM	72.81	16.538	0.7661486	Indeterminate	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh123 Type ESR	XRD/SEM	72.81	16.538	0.7661486	Indeterminate	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh123 Type ESR	XRD/SEM	72.81	16.538	0.7661486	Indeterminate	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh123 Type ESR	XRD/SEM	72.81	16.538	0.7661486	Indeterminate	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh123 Type ESR	XRD/SEM	72.81	16.538	0.7661486	Indeterminate	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh123 Type ESR	XRD/SEM	72.81	16.538	0.7661486	Indeterminate	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh123 Type ESR	XRD/SEM	72.81	16.538	0.7661486	Indeterminate	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh123 Type ESR	XRD/SEM	72.81	16.538	0.7661486	Indeterminate	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh123 Type ESR	XRD/SEM	72.81	16.538	0.7661486	Indeterminate	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh157 Type ESR	XRD/SEM	72.51	16.093	3.7604696	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh157 Type ESR	XRD/SEM	72.51	16.093	3.7604696	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh157 Type ESR	XRD/SEM	72.51	16.093	3.7604696	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh157 Type ESR	XRD/SEM	72.51	16.093	3.7604696	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh157 Type ESR	XRD/SEM	72.51	16.093	3.7604696	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh157 Type ESR	XRD/SEM	72.51	16.093	3.7604696	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh157 Type ESR	XRD/SEM	72.51	16.093	3.7604696	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh157 Type ESR	XRD/SEM	72.51	16.093	3.7604696	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh157 Type ESR	XRD/SEM	72.51	16.093	3.7604696	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh157 Type ESR	XRD/SEM	72.51	16.093	3.7604696	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh157 Type ESR	XRD/SEM	72.51	16.093	3.7604696	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh157 Type ESR	XRD/SEM	72.51	16.093	3.7604696	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh157 Type ESR	XRD/SEM	72.51	16.093	3.7604696	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh157 Type ESR	XRD/SEM	72.51	16.093	3.7604696	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
WVUTh123 Type ESR	2.99	10.20	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.02	3.64	0.00	0.04	3.12
WVUTh123 Type ESR	2.99	10.20	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.02	3.64	0.00	0.04	3.12
WVUTh123 Type ESR	2.99	10.20	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.02	3.64	0.00	0.04	3.12
WVUTh123 Type ESR	2.99	10.20	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.02	3.64	0.00	0.04	3.12
WVUTh123 Type ESR	2.99	10.20	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.02	3.64	0.00	0.04	3.12
WVUTh123 Type ESR	2.99	10.20	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.02	3.64	0.00	0.04	3.12
WVUTh123 Type ESR	2.99	10.20	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.02	3.64	0.00	0.04	3.12
WVUTh123 Type ESR	2.99	10.20	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.02	3.64	0.00	0.04	3.12
WVUTh123 Type ESR	2.99	10.20	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.02	3.64	0.00	0.04	3.12
WVUTh123 Type ESR	2.99	10.20	0.16	0.68	0.00	0.67	0.14	0.08	0.04	0.00	0.00	12.02	3.64	0.00	0.04	3.12
WVUTh157 Type ESR	2.96	12.47	0.20	0.82	0.00	0.15	0.14	0.07	0.04	0.00	0.00	11.97	3.82	0.00	0.05	3.30
WVUTh157 Type ESR	2.96	12.47	0.20	0.82	0.00	0.15	0.14	0.07	0.04	0.00	0.00	11.97	3.82	0.00	0.05	3.30
WVUTh157 Type ESR	2.96	12.47	0.20	0.82	0.00	0.15	0.14	0.07	0.04	0.00	0.00	11.97	3.82	0.00	0.05	3.30
WVUTh157 Type ESR	2.96	12.47	0.20	0.82	0.00	0.15	0.14	0.07	0.04	0.00	0.00	11.97	3.82	0.00	0.05	3.30
WVUTh157 Type ESR	2.96	12.47	0.20	0.82	0.00	0.15	0.14	0.07	0.04	0.00	0.00	11.97	3.82	0.00	0.05	3.30
WVUTh157 Type ESR	2.96	12.47	0.20	0.82	0.00	0.15	0.14	0.07	0.04	0.00	0.00	11.97	3.82	0.00	0.05	3.30
WVUTh157 Type ESR	2.96	12.47	0.20	0.82	0.00	0.15	0.14	0.07	0.04	0.00	0.00	11.97	3.82	0.00	0.05	3.30
WVUTh157 Type ESR	2.96	12.47	0.20	0.82	0.00	0.15	0.14	0.07	0.04	0.00	0.00	11.97	3.82	0.00	0.05	3.30
WVUTh157 Type ESR	2.96	12.47	0.20	0.82	0.00	0.15	0.14	0.07	0.04	0.00	0.00	11.97	3.82	0.00	0.05	3.30
WVUTh157 Type ESR	2.96	12.47	0.20	0.82	0.00	0.15	0.14	0.07	0.04	0.00	0.00	11.97	3.82	0.00	0.05	3.30
WVUTh157 Type ESR	2.96	12.47	0.20	0.82	0.00	0.15	0.14	0.07	0.04	0.00	0.00	11.97	3.82	0.00	0.05	3.30
WVUTh157 Type ESR	2.96	12.47	0.20	0.82	0.00	0.15	0.14	0.07	0.04	0.00	0.00	11.97	3.82	0.00	0.05	3.30
WVUTh157 Type ESR	2.96	12.47	0.20	0.82	0.00	0.15	0.14	0.07	0.04	0.00	0.00	11.97	3.82	0.00	0.05	3.30
WVUTh157 Type ESR	2.96	12.47	0.20	0.82	0.00	0.15	0.14	0.07	0.04	0.00	0.00	11.97	3.82	0.00	0.05	3.30
WVUTh157 Type ESR	2.96	12.47	0.20	0.82	0.00	0.15	0.14	0.07	0.04	0.00	0.00	11.97	3.82	0.00	0.05	3.30
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
WVUTh123 Type ESR	0.89	0.82	0.00	0.00	11.20	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	44.57	0.00	0.00
WVUTh123 Type ESR	0.89	0.82	0.00	0.00	11.20	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	44.57	0.00	0.00
WVUTh123 Type ESR	0.89	0.82	0.00	0.00	11.20	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	44.57	0.00	0.00
WVUTh123 Type ESR	0.89	0.82	0.00	0.00	11.20	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	44.57	0.00	0.00
WVUTh123 Type ESR	0.89	0.82	0.00	0.00	11.20	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	44.57	0.00	0.00
WVUTh123 Type ESR	0.89	0.82	0.00	0.00	11.20	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	44.57	0.00	0.00
WVUTh123 Type ESR	0.89	0.82	0.00	0.00	11.20	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	44.57	0.00	0.00
WVUTh123 Type ESR	0.89	0.82	0.00	0.00	11.20	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	44.57	0.00	0.00
WVUTh123 Type ESR	0.89	0.82	0.00	0.00	11.20	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	44.57	0.00	0.00
WVUTh123 Type ESR	0.89	0.82	0.00	0.00	11.20	0.14	0.25	0.00	2.37	0.00	0.00	0.00	0.00	44.57	0.00	0.00
WVUTh157 Type ESR	0.89	0.99	0.00	0.00	11.93	0.14	0.30	0.00	2.34	0.00	0.00	0.00	0.00	40.92	0.00	0.00
WVUTh157 Type ESR	0.89	0.99	0.00	0.00	11.93	0.14	0.30	0.00	2.34	0.00	0.00	0.00	0.00	40.92	0.00	0.00
WVUTh157 Type ESR	0.89	0.99	0.00	0.00	11.93	0.14	0.30	0.00	2.34	0.00	0.00	0.00	0.00	40.92	0.00	0.00
WVUTh157 Type ESR	0.89	0.99	0.00	0.00	11.93	0.14	0.30	0.00	2.34	0.00	0.00	0.00	0.00	40.92	0.00	0.00
WVUTh157 Type ESR	0.89	0.99	0.00	0.00	11.93	0.14	0.30	0.00	2.34	0.00	0.00	0.00	0.00	40.92	0.00	0.00
WVUTh157 Type ESR	0.89	0.99	0.00	0.00	11.93	0.14	0.30	0.00	2.34	0.00	0.00	0.00	0.00	40.92	0.00	0.00
WVUTh157 Type ESR	0.89	0.99	0.00	0.00	11.93	0.14	0.30	0.00	2.34	0.00	0.00	0.00	0.00	40.92	0.00	0.00
WVUTh157 Type ESR	0.89	0.99	0.00	0.00	11.93	0.14	0.30	0.00	2.34	0.00	0.00	0.00	0.00	40.92	0.00	0.00
WVUTh157 Type ESR	0.89	0.99	0.00	0.00	11.93	0.14	0.30	0.00	2.34	0.00	0.00	0.00	0.00	40.92	0.00	0.00
WVUTh157 Type ESR	0.89	0.99	0.00	0.00	11.93	0.14	0.30	0.00	2.34	0.00	0.00	0.00	0.00	40.92	0.00	0.00
WVUTh157 Type ESR	0.89	0.99	0.00	0.00	11.93	0.14	0.30	0.00	2.34	0.00	0.00	0.00	0.00	40.92	0.00	0.00
WVUTh157 Type ESR	0.89	0.99	0.00	0.00	11.93	0.14	0.30	0.00	2.34	0.00	0.00	0.00	0.00	40.92	0.00	0.00
WVUTh157 Type ESR	0.89	0.99	0.00	0.00	11.93	0.14	0.30	0.00	2.34	0.00	0.00	0.00	0.00	40.92	0.00	0.00
WVUTh157 Type ESR	0.89	0.99	0.00	0.00	11.93	0.14	0.30	0.00	2.34	0.00	0.00	0.00	0.00	40.92	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
WVUTh123 Type ESR	0.02	0.00	3.55	0.76	0.60	0.00	0.00	0.32	0.00	99.28		
WVUTh123 Type ESR	0.02	0.00	3.55	0.76	0.60	0.00	0.00	0.32	0.00	99.28		
WVUTh123 Type ESR	0.02	0.00	3.55	0.76	0.60	0.00	0.00	0.32	0.00	99.28		
WVUTh123 Type ESR	0.02	0.00	3.55	0.76	0.60	0.00	0.00	0.32	0.00	99.28		
WVUTh123 Type ESR	0.02	0.00	3.55	0.76	0.60	0.00	0.00	0.32	0.00	99.28		
WVUTh123 Type ESR	0.02	0.00	3.55	0.76	0.60	0.00	0.00	0.32	0.00	99.28		
WVUTh123 Type ESR	0.02	0.00	3.55	0.76	0.60	0.00	0.00	0.32	0.00	99.28		
WVUTh123 Type ESR	0.02	0.00	3.55	0.76	0.60	0.00	0.00	0.32	0.00	99.28		
WVUTh123 Type ESR	0.02	0.00	3.55	0.76	0.60	0.00	0.00	0.32	0.00	99.28		
WVUTh123 Type ESR	0.02	0.00	3.55	0.76	0.60	0.00	0.00	0.32	0.00	99.28		
WVUTh157 Type ESR	0.03	0.00	3.53	0.82	0.60	0.00	0.00	0.39	0.00	98.88		
WVUTh157 Type ESR	0.03	0.00	3.53	0.82	0.60	0.00	0.00	0.39	0.00	98.88		
WVUTh157 Type ESR	0.03	0.00	3.53	0.82	0.60	0.00	0.00	0.39	0.00	98.88		
WVUTh157 Type ESR	0.03	0.00	3.53	0.82	0.60	0.00	0.00	0.39	0.00	98.88		
WVUTh157 Type ESR	0.03	0.00	3.53	0.82	0.60	0.00	0.00	0.39	0.00	98.88		
WVUTh157 Type ESR	0.03	0.00	3.53	0.82	0.60	0.00	0.00	0.39	0.00	98.88		
WVUTh157 Type ESR	0.03	0.00	3.53	0.82	0.60	0.00	0.00	0.39	0.00	98.88		
WVUTh157 Type ESR	0.03	0.00	3.53	0.82	0.60	0.00	0.00	0.39	0.00	98.88		
WVUTh157 Type ESR	0.03	0.00	3.53	0.82	0.60	0.00	0.00	0.39	0.00	98.88		
WVUTh157 Type ESR	0.03	0.00	3.53	0.82	0.60	0.00	0.00	0.39	0.00	98.88		
WVUTh157 Type ESR	0.03	0.00	3.53	0.82	0.60	0.00	0.00	0.39	0.00	98.88		
WVUTh157 Type ESR	0.03	0.00	3.53	0.82	0.60	0.00	0.00	0.39	0.00	98.88		
WVUTh157 Type ESR	0.03	0.00	3.53	0.82	0.60	0.00	0.00	0.39	0.00	98.88		
WVUTh157 Type ESR	0.03	0.00	3.53	0.82	0.60	0.00	0.00	0.39	0.00	98.88		
WVUTh157 Type ESR	0.03	0.00	3.53	0.82	0.60	0.00	0.00	0.39	0.00	98.88		
WVUTh157 Type ESR	0.03	0.00	3.53	0.82	0.60	0.00	0.00	0.39	0.00	98.88		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
WVUTh179 Type I	365.00	0.19	1.957	714.227	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.42	94.23	81.12	
WVUTh179 Type I	547.00	0.19	1.957	1,070.363	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.46	105.09	97.14	
WVUTh179 Type I	729.00	0.19	1.957	1,426.498	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.51	108.33	100.38	
WVUTh179 Type I	909.00	0.19	1.957	1,778.720	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.57	109.27	106.70	
WVUTh179 Type I	1085.00	0.19	1.957	2,123.115	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.50	113.07	111.93	
WVUTh179 Type I	1453.00	0.19	1.957	2,843.212	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.54	142.54	137.83	
WVUTh179 Type I	1819.00	0.19	1.957	3,559.397	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.51	157.05	150.09	
WVUTh179 Type I	2185.00	0.19	1.957	4,275.581	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.41	171.29	167.39	
WVUTh179 Type I	2546.00	0.19	1.957	4,981.981	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.32	166.93	174.33	
WVUTh179 Type I	2926.00	0.19	1.957	5,725.561	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.23	178.97	177.27	
WVUTh179 Type I	3288.00	0.19	1.957	6,433.918	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.32	206.73	217.81	
WVUTh179 Type I	3660.00	0.19	1.957	7,161.843	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.26	191.04	213.80	
WVUTh179 Type I	3955.00	0.19	1.957	7,739.095	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.33	194.32	215.43	
WVUTh179 Type I	4351.00	0.19	1.957	8,513.983	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.45	173.52	197.25	
WVUTh179 Type I	4716.00	0.19	1.957	9,228.210	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.54	204.70	217.87	
WVUTh179 Type I	5108.00	0.19	1.957	9,995.271	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.55	180.50	195.04	
WVUTh179 Type I	5473.00	0.19	1.957	10,709.499	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.55	191.30	201.06	
WVUTh179 Type I	5719.00	0.19	1.957	11,190.868	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.52	226.60	208.40	
WVUTh179 Type I	6039.00	0.19	1.957	11,817.040	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.55	219.29	219.62	
WVUTh179 Type I	6417.00	0.19	1.957	12,556.706	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.64	231.94	242.69	
WVUTh179 Type I	6719.00	0.19	1.957	13,147.656	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.65	253.07	253.52	
WVUTh179 Type I	7426.00	0.19	1.957	14,531.105	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.61	263.94	268.10	
WVUTh186 Type III	7.00	0.19	1.957	13.698	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.81	77.60	201.10	
WVUTh186 Type III	28.00	0.19	1.957	54.790	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.88	107.73	297.53	
WVUTh186 Type III	56.00	0.19	1.957	109.580	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.05	110.30	362.03	
WVUTh186 Type III	120.00	0.19	1.957	234.815	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.18	117.30	417.43	
WVUTh186 Type III	183.00	0.19	1.957	358.092	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.23	116.77	443.93	
WVUTh186 Type III	274.00	0.19	1.957	536.160	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.18	128.33	485.07	
WVUTh186 Type III	363.00	0.19	1.957	710.314	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.25	130.37	494.23	
WVUTh186 Type III	547.00	0.19	1.957	1,070.363	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.22	139.17	543.97	
WVUTh186 Type III	730.00	0.19	1.957	1,428.455	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.27	152.43	606.50	
WVUTh186 Type III	1097.00	0.19	1.957	2,146.596	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.25	156.00	638.28	
WVUTh186 Type III	1280.00	0.19	1.957	2,504.688	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.28	220.54	738.68	
WVUTh186 Type III	1463.00	0.19	1.957	2,862.780	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.98	250.01	810.42	
WVUTh186 Type III	2198.00	0.19	1.957	4,301.019	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.92	271.50	1007.74	
WVUTh186 Type III	2556.00	0.19	1.957	5,001.549	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.95	229.67	943.80	
WVUTh186 Type III	2910.00	0.19	1.957	5,694.252	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.84	296.51	1310.90	
WVUTh186 Type III	3271.00	0.19	1.957	6,400.652	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.87	247.61	1270.33	
WVUTh186 Type III	3613.00	0.19	1.957	7,069.874	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.82	247.43	1250.37	
WVUTh186 Type III	3974.00	0.19	1.957	7,776.274	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.92	243.45	1240.83	
WVUTh186 Type III	4345.00	0.19	1.957	8,502.242	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.97	245.19	1246.53	
WVUTh186 Type III	4641.00	0.19	1.957	9,081.451	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.05	241.42	1162.33	
WVUTh186 Type III	5060.00	0.19	1.957	9,901.345	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.14	232.00	1270.00	
WVUTh186 Type III	5397.00	0.19	1.957	10,560.783	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.16	246.70	1155.00	
WVUTh186 Type III	5802.00	0.19	1.957	11,353.282	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	11.17	245.23	1239.40	
WVUTh193 Type II	7.00	0.19	1.957	13.698	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	9.83	70.28	89.38	
WVUTh193 Type II	14.00	0.19	1.957	27.395	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	9.82	60.23	98.64	

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
WVUTh179 Type I		33.11	109.63	27.71	8.36	4.01							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		40.12	129.15	32.88	8.54	4.52							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		40.44	115.77	32.01	6.89	2.72							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		48.00	142.70	35.08	7.10	2.77							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		48.30	137.30	36.52	5.52	1.69							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		56.87	166.36	46.79	6.99	4.47							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		61.39	178.90	44.60	4.50	2.33							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		66.16	176.81	49.03	6.95	6.50							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		66.86	190.33	48.15	6.32	5.93							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		71.54	200.93	53.49	5.82	4.68							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		87.30	233.56	64.75	7.77	7.39							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		84.63	252.79	62.53	7.31	6.94							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		82.75	231.05	63.14	7.53	8.22							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		79.78	220.95	56.04	3.76	1.22							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		85.55	241.80	62.76	5.51	4.47							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		79.12	216.50	51.55	3.13	1.86							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		78.33	224.50	51.97	3.40	1.43							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		66.04	222.80	55.52	2.83	0.60							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		87.05	236.02	58.88	2.72	1.21							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		92.26	255.80	63.48	2.82	1.38							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		101.59	290.21	66.65	2.71	1.41							Phyllosilicate (comp given in Muller 2005)
WVUTh179 Type I		103.27	314.63	64.18	2.67	1.47							Phyllosilicate (comp given in Muller 2005)
WVUTh186 Type III		59.76	300.17	85.66	8.07	4.50							
WVUTh186 Type III		94.20	411.03	119.53	8.05	6.66							
WVUTh186 Type III		111.87	527.20	138.97	7.61	6.75							
WVUTh186 Type III		129.27	577.67	177.20	7.33	4.97							
WVUTh186 Type III		129.50	503.87	171.40	6.16	2.57							
WVUTh186 Type III		142.80	602.00	179.93	6.50	1.12							
WVUTh186 Type III		138.83	596.43	189.70	6.43	0.93							
WVUTh186 Type III		145.00	687.43	199.53	5.60								
WVUTh186 Type III		162.87	733.07	203.60	4.46	0.17							
WVUTh186 Type III		171.24	836.29	237.49	2.59	0.04							
WVUTh186 Type III		203.95	893.88	256.14	0.99								
WVUTh186 Type III		215.77	1021.45	295.07	0.60	0.15							
WVUTh186 Type III		236.39	1291.88	341.40	0.45	0.18							
WVUTh186 Type III		207.53	1180.77	319.27	3.39								
WVUTh186 Type III		306.63	1691.90	460.36		0.35							
WVUTh186 Type III		262.46	1505.50	392.62	0.30	0.12							
WVUTh186 Type III		241.74	1498.47	409.83	0.18	0.04							
WVUTh186 Type III		245.54	1531.10	433.52	0.15								
WVUTh186 Type III		256.20	1605.10	410.60	0.34	0.16							
WVUTh186 Type III		246.50	1363.43	414.20	1.63	0.10							
WVUTh186 Type III		242.30	1464.00	400.20		0.08							
WVUTh186 Type III		233.30	1455.00	432.60	0.44	0.37							
WVUTh186 Type III		244.92	1528.77	443.16									
WVUTh193 Type II		20.05	91.71	51.60	8.28	3.20							Phyllosilicate (comp given in Muller 2005)
WVUTh193 Type II		20.18	99.77	58.00	5.58	4.93							Phyllosilicate (comp given in Muller 2005)

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh179 Type I	XRD/SEM	69.08	20.473	-15.4768894	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh186 Type III	XRD/SEM	76.79	12.723	15.9305756	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh186 Type III	XRD/SEM	76.79	12.723	15.9305756	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh186 Type III	XRD/SEM	76.79	12.723	15.9305756	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh186 Type III	XRD/SEM	76.79	12.723	15.9305756	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh186 Type III	XRD/SEM	76.79	12.723	15.9305756	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh186 Type III	XRD/SEM	76.79	12.723	15.9305756	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh186 Type III	XRD/SEM	76.79	12.723	15.9305756	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh186 Type III	XRD/SEM	76.79	12.723	15.9305756	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh186 Type III	XRD/SEM	76.79	12.723	15.9305756	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh186 Type III	XRD/SEM	76.79	12.723	15.9305756	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh186 Type III	XRD/SEM	76.79	12.723	15.9305756	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh186 Type III	XRD/SEM	76.79	12.723	15.9305756	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh186 Type III	XRD/SEM	76.79	12.723	15.9305756	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh186 Type III	XRD/SEM	76.79	12.723	15.9305756	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh186 Type III	XRD/SEM	76.79	12.723	15.9305756	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh193 Type II	XRD/SEM	68.57	20.134	-12.7445002	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh193 Type II	XRD/SEM	68.57	20.134	-12.7445002	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh179 Type I	7.62	11.93	0.04	0.92	0.00	0.14	0.35	0.07	0.04	0.00	0.00	11.66	4.66	0.00	0.00	4.09
WVUTh186 Type III	6.01	16.26	0.02	0.48	0.00	0.15	0.14	0.08	0.02	0.00	0.00	5.90	5.82	0.00	0.04	3.27
WVUTh186 Type III	6.01	16.26	0.02	0.48	0.00	0.15	0.14	0.08	0.02	0.00	0.00	5.90	5.82	0.00	0.04	3.27
WVUTh186 Type III	6.01	16.26	0.02	0.48	0.00	0.15	0.14	0.08	0.02	0.00	0.00	5.90	5.82	0.00	0.04	3.27
WVUTh186 Type III	6.01	16.26	0.02	0.48	0.00	0.15	0.14	0.08	0.02	0.00	0.00	5.90	5.82	0.00	0.04	3.27
WVUTh186 Type III	6.01	16.26	0.02	0.48	0.00	0.15	0.14	0.08	0.02	0.00	0.00	5.90	5.82	0.00	0.04	3.27
WVUTh186 Type III	6.01	16.26	0.02	0.48	0.00	0.15	0.14	0.08	0.02	0.00	0.00	5.90	5.82	0.00	0.04	3.27
WVUTh186 Type III	6.01	16.26	0.02	0.48	0.00	0.15	0.14	0.08	0.02	0.00	0.00	5.90	5.82	0.00	0.04	3.27
WVUTh186 Type III	6.01	16.26	0.02	0.48	0.00	0.15	0.14	0.08	0.02	0.00	0.00	5.90	5.82	0.00	0.04	3.27
WVUTh186 Type III	6.01	16.26	0.02	0.48	0.00	0.15	0.14	0.08	0.02	0.00	0.00	5.90	5.82	0.00	0.04	3.27
WVUTh186 Type III	6.01	16.26	0.02	0.48	0.00	0.15	0.14	0.08	0.02	0.00	0.00	5.90	5.82	0.00	0.04	3.27
WVUTh186 Type III	6.01	16.26	0.02	0.48	0.00	0.15	0.14	0.08	0.02	0.00	0.00	5.90	5.82	0.00	0.04	3.27
WVUTh186 Type III	6.01	16.26	0.02	0.48	0.00	0.15	0.14	0.08	0.02	0.00	0.00	5.90	5.82	0.00	0.04	3.27
WVUTh186 Type III	6.01	16.26	0.02	0.48	0.00	0.15	0.14	0.08	0.02	0.00	0.00	5.90	5.82	0.00	0.04	3.27
WVUTh186 Type III	6.01	16.26	0.02	0.48	0.00	0.15	0.14	0.08	0.02	0.00	0.00	5.90	5.82	0.00	0.04	3.27
WVUTh186 Type III	6.01	16.26	0.02	0.48	0.00	0.15	0.14	0.08	0.02	0.00	0.00	5.90	5.82	0.00	0.04	3.27
WVUTh186 Type III	6.01	16.26	0.02	0.48	0.00	0.15	0.14	0.08	0.02	0.00	0.00	5.90	5.82	0.00	0.04	3.27
WVUTh186 Type III	6.01	16.26	0.02	0.48	0.00	0.15	0.14	0.08	0.02	0.00	0.00	5.90	5.82	0.00	0.04	3.27
WVUTh193 Type II	4.91	15.35	0.07	0.60	0.00	0.12	0.23	0.06	0.00	0.00	0.00	14.35	6.67	0.00	0.04	2.31
WVUTh193 Type II	4.91	15.35	0.07	0.60	0.00	0.12	0.23	0.06	0.00	0.00	0.00	14.35	6.67	0.00	0.04	2.31

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh179 Type I	1.01	0.73	0.00	0.00	7.73	0.13	0.36	0.00	1.27	0.00	0.00	0.00	0.00	40.60	0.00	0.00
WVUTh186 Type III	0.85	0.78	0.00	0.00	11.72	0.14	0.25	0.00	1.18	0.00	0.00	0.00	0.00	39.64	0.00	0.00
WVUTh186 Type III	0.85	0.78	0.00	0.00	11.72	0.14	0.25	0.00	1.18	0.00	0.00	0.00	0.00	39.64	0.00	0.00
WVUTh186 Type III	0.85	0.78	0.00	0.00	11.72	0.14	0.25	0.00	1.18	0.00	0.00	0.00	0.00	39.64	0.00	0.00
WVUTh186 Type III	0.85	0.78	0.00	0.00	11.72	0.14	0.25	0.00	1.18	0.00	0.00	0.00	0.00	39.64	0.00	0.00
WVUTh186 Type III	0.85	0.78	0.00	0.00	11.72	0.14	0.25	0.00	1.18	0.00	0.00	0.00	0.00	39.64	0.00	0.00
WVUTh186 Type III	0.85	0.78	0.00	0.00	11.72	0.14	0.25	0.00	1.18	0.00	0.00	0.00	0.00	39.64	0.00	0.00
WVUTh186 Type III	0.85	0.78	0.00	0.00	11.72	0.14	0.25	0.00	1.18	0.00	0.00	0.00	0.00	39.64	0.00	0.00
WVUTh186 Type III	0.85	0.78	0.00	0.00	11.72	0.14	0.25	0.00	1.18	0.00	0.00	0.00	0.00	39.64	0.00	0.00
WVUTh186 Type III	0.85	0.78	0.00	0.00	11.72	0.14	0.25	0.00	1.18	0.00	0.00	0.00	0.00	39.64	0.00	0.00
WVUTh186 Type III	0.85	0.78	0.00	0.00	11.72	0.14	0.25	0.00	1.18	0.00	0.00	0.00	0.00	39.64	0.00	0.00
WVUTh186 Type III	0.85	0.78	0.00	0.00	11.72	0.14	0.25	0.00	1.18	0.00	0.00	0.00	0.00	39.64	0.00	0.00
WVUTh186 Type III	0.85	0.78	0.00	0.00	11.72	0.14	0.25	0.00	1.18	0.00	0.00	0.00	0.00	39.64	0.00	0.00
WVUTh186 Type III	0.85	0.78	0.00	0.00	11.72	0.14	0.25	0.00	1.18	0.00	0.00	0.00	0.00	39.64	0.00	0.00
WVUTh186 Type III	0.85	0.78	0.00	0.00	11.72	0.14	0.25	0.00	1.18	0.00	0.00	0.00	0.00	39.64	0.00	0.00
WVUTh186 Type III	0.85	0.78	0.00	0.00	11.72	0.14	0.25	0.00	1.18	0.00	0.00	0.00	0.00	39.64	0.00	0.00
WVUTh193 Type II	0.89	0.65	0.00	0.00	7.18	0.11	0.27	0.00	1.41	0.00	0.00	0.00	0.00	37.00	0.00	0.00
WVUTh193 Type II	0.89	0.65	0.00	0.00	7.18	0.11	0.27	0.00	1.41	0.00	0.00	0.00	0.00	37.00	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh179 Type I	0.02	0.00	3.34	0.85	0.55	0.00	0.00	1.28	0.00	99.40		
WVUTh186 Type III	0.02	0.00	3.51	0.75	0.60	0.00	0.00	1.72	0.00	99.36		
WVUTh186 Type III	0.02	0.00	3.51	0.75	0.60	0.00	0.00	1.72	0.00	99.36		
WVUTh186 Type III	0.02	0.00	3.51	0.75	0.60	0.00	0.00	1.72	0.00	99.36		
WVUTh186 Type III	0.02	0.00	3.51	0.75	0.60	0.00	0.00	1.72	0.00	99.36		
WVUTh186 Type III	0.02	0.00	3.51	0.75	0.60	0.00	0.00	1.72	0.00	99.36		
WVUTh186 Type III	0.02	0.00	3.51	0.75	0.60	0.00	0.00	1.72	0.00	99.36		
WVUTh186 Type III	0.02	0.00	3.51	0.75	0.60	0.00	0.00	1.72	0.00	99.36		
WVUTh186 Type III	0.02	0.00	3.51	0.75	0.60	0.00	0.00	1.72	0.00	99.36		
WVUTh186 Type III	0.02	0.00	3.51	0.75	0.60	0.00	0.00	1.72	0.00	99.36		
WVUTh186 Type III	0.02	0.00	3.51	0.75	0.60	0.00	0.00	1.72	0.00	99.36		
WVUTh186 Type III	0.02	0.00	3.51	0.75	0.60	0.00	0.00	1.72	0.00	99.36		
WVUTh186 Type III	0.02	0.00	3.51	0.75	0.60	0.00	0.00	1.72	0.00	99.36		
WVUTh186 Type III	0.02	0.00	3.51	0.75	0.60	0.00	0.00	1.72	0.00	99.36		
WVUTh186 Type III	0.02	0.00	3.51	0.75	0.60	0.00	0.00	1.72	0.00	99.36		
WVUTh186 Type III	0.02	0.00	3.51	0.75	0.60	0.00	0.00	1.72	0.00	99.36		
WVUTh186 Type III	0.02	0.00	3.51	0.75	0.60	0.00	0.00	1.72	0.00	99.36		
WVUTh193 Type II	0.02	0.00	4.50	0.80	0.66	0.00	0.00	1.30	0.00	99.49		
WVUTh193 Type II	0.02	0.00	4.50	0.80	0.66	0.00	0.00	1.30	0.00	99.49		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
WVUTh193 Type II	28.00	0.19	1.957	54.790	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	9.79	65.77	143.67	
WVUTh193 Type II	55.00	0.19	1.957	107.623	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	9.83	80.84	212.40	
WVUTh193 Type II	119.00	0.19	1.957	232.858	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	9.73	85.69	229.40	
WVUTh193 Type II	181.00	0.19	1.957	354.179	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	9.84	84.67	255.83	
WVUTh193 Type II	270.00	0.19	1.957	528.333	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	9.82	81.61	287.07	
WVUTh193 Type II	361.00	0.19	1.957	706.400	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	9.72	83.76	331.03	
WVUTh193 Type II	549.00	0.19	1.957	1,074.276	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	9.85	94.37	354.30	
WVUTh193 Type II	733.00	0.19	1.957	1,434.325	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	9.79	95.54	379.97	
WVUTh193 Type II	958.00	0.19	1.957	1,874.603	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	9.84	103.53	407.33	
WVUTh193 Type II	1301.00	0.19	1.957	2,545.781	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	9.86	126.59	464.72	
WVUTh193 Type II	1671.00	0.19	1.957	3,269.792	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	9.86	143.16	493.09	
WVUTh193 Type II	2035.00	0.19	1.957	3,982.063	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	9.73	137.19	495.05	
WVUTh193 Type II	2401.00	0.19	1.957	4,698.247	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	9.65	134.48	510.08	
WVUTh193 Type II	2811.00	0.19	1.957	5,500.530	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	9.84	146.63	554.70	
WVUTh193 Type II	3170.00	0.19	1.957	6,203.017	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	9.91	177.77	647.50	
WVUTh193 Type II	3542.00	0.19	1.957	6,930.942	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.06	153.91	598.24	
WVUTh193 Type II	3839.00	0.19	1.957	7,512.108	2.750	10.00	100-200	1.125E-04	0.100	ASTM I	90	10.14	153.10	618.70	
A100CC	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.41	67.77	22.14	0.82
A100CC	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.55	81.57	26.20	0.59
A100CC	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.67	82.50	29.37	0.52
A100CC	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	94.21	32.30	0.15
A100CC	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.93	95.14	33.37	0.56
A100CC	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.97	112.70	38.43	0.68
A100CC	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.98	158.17	56.94	0.45
A100CC	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	153.80	54.52	0.53
A100CC	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.18	173.54	63.73	0.56
A100CC	1085.00	0.81	2.031	2,203.232	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	158.36	61.58	0.74
A100CC	1463.00	0.81	2.031	2,970.810	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.36	190.52	76.40	0.71
A100CC	2198.00	0.81	2.031	4,463.322	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.54	416.52	854.18	3.50
A100CC	2645.00	0.81	2.031	5,371.013	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.56	547.34	1951.50	5.96
A100G115A	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.16	74.41	30.03	0.33
A100G115A	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.24	105.30	48.56	0.52
A100G115A	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.34	109.93	52.91	0.25
A100G115A	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.53	121.40	58.48	0.67
A100G115A	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	129.30	61.56	0.55
A100G115A	272.00	0.81	2.031	552.331	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.92	145.97	72.53	0.87
A100G115A	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.97	201.57	104.56	0.58
A100G115A	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	201.80	130.88	0.50
A100G115A	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.22	342.93	399.96	1.96
A100G115A	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	837.17	3304.40	5.78
A100G115A	1459.00	0.81	2.031	2,962.687	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	626.01	2788.57	4.44
A100G115A	1828.00	0.81	2.031	3,711.989	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.52	607.81	2721.67	4.25
A100G115A	2194.00	0.81	2.031	4,455.199	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.54	555.55	2763.30	4.32
A1-AN105R2	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.88	81.50	29.15	0.20
A1-AN105R2	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.96	95.16	42.50	0.29
A1-AN105R2	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	117.83	58.55	0.44
A1-AN105R2	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	133.09	73.88	0.61
A1-AN105R2	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	135.57	83.93	0.37
A1-AN105R2	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	145.28	97.99	0.38
A1-AN105R2	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	154.06	104.52	0.40
A1-AN105R2	548.00	0.81	2.031	1,112.784	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	206.78	119.78	0.31
A1-AN105R2	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.64	193.11	133.36	0.23
A1-AN105R2	1097.00	0.81	2.031	2,227.600	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.76	274.55	209.85	0.26
A1-AN105R2	1465.00	0.81	2.031	2,974.871	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.82	625.82	828.36	0.27
A1-AN105R2	1828.00	0.81	2.031	3,711.989	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.86	1075.70	1936.93	2.90

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
WVUTh193 Type II		28.92	143.73	75.24	4.35	7.39							Phyllosilicate (comp given in Muller 2005)
WVUTh193 Type II		40.01	211.27	99.65	4.15	11.26							Phyllosilicate (comp given in Muller 2005)
WVUTh193 Type II		43.88	215.87	103.50	3.84	11.32							Phyllosilicate (comp given in Muller 2005)
WVUTh193 Type II		50.26	230.00	116.67	3.39	8.82							Phyllosilicate (comp given in Muller 2005)
WVUTh193 Type II		53.27	266.97	117.70	2.12	4.37							Phyllosilicate (comp given in Muller 2005)
WVUTh193 Type II		61.45	266.63	129.97	2.65	6.69							Phyllosilicate (comp given in Muller 2005)
WVUTh193 Type II		60.91	302.23	133.43	3.44	7.85							Phyllosilicate (comp given in Muller 2005)
WVUTh193 Type II		82.28	375.10	170.83	2.57	3.79							Phyllosilicate (comp given in Muller 2005)
WVUTh193 Type II		82.05	352.63	169.57	1.91	3.15							Phyllosilicate (comp given in Muller 2005)
WVUTh193 Type II		93.86	383.97	197.27	1.53	1.81							Phyllosilicate (comp given in Muller 2005)
WVUTh193 Type II		95.54	411.19	203.14	1.09	1.26							Phyllosilicate (comp given in Muller 2005)
WVUTh193 Type II		99.27	422.56	195.07	1.17	1.16							Phyllosilicate (comp given in Muller 2005)
WVUTh193 Type II		96.23	459.22	199.78	1.33	1.06							Phyllosilicate (comp given in Muller 2005)
WVUTh193 Type II		101.38	455.43	220.10	1.38	1.25							Phyllosilicate (comp given in Muller 2005)
WVUTh193 Type II		123.35	588.38	289.73	1.48	1.61							Phyllosilicate (comp given in Muller 2005)
WVUTh193 Type II		119.19	527.33	250.31	1.39	1.19							Phyllosilicate (comp given in Muller 2005)
WVUTh193 Type II		120.02	549.11	268.57	1.54	1.38							Phyllosilicate (comp given in Muller 2005)
A100CC		6.95	70.02		4.69								Not Studied
A100CC		9.83	104.40		7.46					0.70			Not Studied
A100CC		9.66	104.71		7.86								Not Studied
A100CC		10.77	113.33		8.74			0.45		0.63			Not Studied
A100CC		11.26	145.30		8.74					0.79			Not Studied
A100CC		12.82	148.13		8.53					0.58			Not Studied
A100CC		18.83	217.53	2.98	12.95					0.54			Not Studied
A100CC		18.07	237.47	2.81	11.25					0.77			Not Studied
A100CC		20.94	264.66	3.19	11.77					0.75			Not Studied
A100CC		19.59	271.81	2.76	7.85								Not Studied
A100CC		23.85	278.42	3.42	3.80								Not Studied
A100CC		134.17	2116.10	29.75	1.15								Not Studied
A100CC		292.45	3912.30	85.55	6.81								Not Studied
A100G115A		9.76	96.27		3.77					0.47			Not Studied
A100G115A		14.89	149.20	1.96	3.96			0.25		0.59			Not Studied
A100G115A		15.28	165.80		3.10								Not Studied
A100G115A		17.81	188.73	2.07	3.58								Not Studied
A100G115A		19.10	200.23	2.66	3.69								Not Studied
A100G115A		22.44	232.17	2.94	3.68								Not Studied
A100G115A		31.70	325.28	4.11	5.36								Not Studied
A100G115A		38.25	390.42	4.92	4.11								Not Studied
A100G115A		102.19	988.78	11.90	3.00								Not Studied
A100G115A		510.51	6427.00	132.20	2.30								Not Studied
A100G115A		357.96	5229.10	119.14	1.72			0.23					Not Studied
A100G115A		379.30	6397.90	118.24	1.31								Not Studied
A100G115A		373.13	5509.37	121.90									Not Studied
A1-AN105R2			153.60	2.07	8.04	2.16		0.72		1.37			Not Studied
A1-AN105R2			196.40	2.33	9.47	2.74		0.94		2.25	0.83		Not Studied
A1-AN105R2			244.96	3.95	11.53	3.03		1.14	0.64	2.79	1.29		Not Studied
A1-AN105R2			338.28	3.77	10.97	1.48		0.95	0.54	1.97	0.99		Not Studied
A1-AN105R2			360.12	4.18	11.33	3.09		1.27	0.78	2.34	1.31		Not Studied
A1-AN105R2			397.48	5.24	10.61	1.35		0.47	0.83	1.10	0.83		Not Studied
A1-AN105R2			451.79	5.40	12.48	1.27		0.44	0.46	1.28	0.47		Not Studied
A1-AN105R2			515.55	5.88	12.53			0.51		0.77	0.44		Not Studied
A1-AN105R2			560.32	7.04	11.66	1.68		0.99		1.41	0.60		Not Studied
A1-AN105R2			840.25	9.51	5.24								Not Studied
A1-AN105R2			2598.63	36.83	1.35								Not Studied
A1-AN105R2		4.49	5372.23	105.17	0.82			0.39					Gobbinsite and Analcime

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
WVUTh193 Type II	XRD/SEM	68.57	20.134	-12.7445002	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh193 Type II	XRD/SEM	68.57	20.134	-12.7445002	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh193 Type II	XRD/SEM	68.57	20.134	-12.7445002	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh193 Type II	XRD/SEM	68.57	20.134	-12.7445002	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh193 Type II	XRD/SEM	68.57	20.134	-12.7445002	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh193 Type II	XRD/SEM	68.57	20.134	-12.7445002	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh193 Type II	XRD/SEM	68.57	20.134	-12.7445002	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh193 Type II	XRD/SEM	68.57	20.134	-12.7445002	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh193 Type II	XRD/SEM	68.57	20.134	-12.7445002	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh193 Type II	XRD/SEM	68.57	20.134	-12.7445002	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh193 Type II	XRD/SEM	68.57	20.134	-12.7445002	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh193 Type II	XRD/SEM	68.57	20.134	-12.7445002	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh193 Type II	XRD/SEM	68.57	20.134	-12.7445002	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh193 Type II	XRD/SEM	68.57	20.134	-12.7445002	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVUTh193 Type II	XRD/SEM	68.57	20.134	-12.7445002	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100CC		73.85	16.542	-0.9272896	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100CC		73.85	16.542	-0.9272896	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100CC		73.85	16.542	-0.9272896	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100CC		73.85	16.542	-0.9272896	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100CC		73.85	16.542	-0.9272896	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100CC		73.85	16.542	-0.9272896	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100CC		73.85	16.542	-0.9272896	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100CC		73.85	16.542	-0.9272896	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100CC		73.85	16.542	-0.9272896	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100CC		73.85	16.542	-0.9272896	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100CC		73.85	16.542	-0.9272896	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100G115A		73.84	16.539	-0.8846902	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100G115A		73.84	16.539	-0.8846902	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100G115A		73.84	16.539	-0.8846902	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100G115A		73.84	16.539	-0.8846902	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100G115A		73.84	16.539	-0.8846902	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100G115A		73.84	16.539	-0.8846902	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100G115A		73.84	16.539	-0.8846902	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100G115A		73.84	16.539	-0.8846902	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100G115A		73.84	16.539	-0.8846902	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100G115A		73.84	16.539	-0.8846902	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A100G115A		73.84	16.539	-0.8846902	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1-AN105R2		73.77	14.932	8.3019659	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1-AN105R2		73.77	14.932	8.3019659	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1-AN105R2		73.77	14.932	8.3019659	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1-AN105R2		73.77	14.932	8.3019659	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1-AN105R2		73.77	14.932	8.3019659	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1-AN105R2		73.77	14.932	8.3019659	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1-AN105R2		73.77	14.932	8.3019659	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1-AN105R2		73.77	14.932	8.3019659	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1-AN105R2		73.77	14.932	8.3019659	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1-AN105R2		73.77	14.932	8.3019659	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1-AN105R2		73.77	14.932	8.3019659	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1-AN105R2	XRD/SEM	73.77	14.932	8.3019659	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
WVUTh193 Type II	4.91	15.35	0.07	0.60	0.00	0.12	0.23	0.06	0.00	0.00	0.00	14.35	6.67	0.00	0.04	2.31
WVUTh193 Type II	4.91	15.35	0.07	0.60	0.00	0.12	0.23	0.06	0.00	0.00	0.00	14.35	6.67	0.00	0.04	2.31
WVUTh193 Type II	4.91	15.35	0.07	0.60	0.00	0.12	0.23	0.06	0.00	0.00	0.00	14.35	6.67	0.00	0.04	2.31
WVUTh193 Type II	4.91	15.35	0.07	0.60	0.00	0.12	0.23	0.06	0.00	0.00	0.00	14.35	6.67	0.00	0.04	2.31
WVUTh193 Type II	4.91	15.35	0.07	0.60	0.00	0.12	0.23	0.06	0.00	0.00	0.00	14.35	6.67	0.00	0.04	2.31
WVUTh193 Type II	4.91	15.35	0.07	0.60	0.00	0.12	0.23	0.06	0.00	0.00	0.00	14.35	6.67	0.00	0.04	2.31
WVUTh193 Type II	4.91	15.35	0.07	0.60	0.00	0.12	0.23	0.06	0.00	0.00	0.00	14.35	6.67	0.00	0.04	2.31
WVUTh193 Type II	4.91	15.35	0.07	0.60	0.00	0.12	0.23	0.06	0.00	0.00	0.00	14.35	6.67	0.00	0.04	2.31
WVUTh193 Type II	4.91	15.35	0.07	0.60	0.00	0.12	0.23	0.06	0.00	0.00	0.00	14.35	6.67	0.00	0.04	2.31
WVUTh193 Type II	4.91	15.35	0.07	0.60	0.00	0.12	0.23	0.06	0.00	0.00	0.00	14.35	6.67	0.00	0.04	2.31
WVUTh193 Type II	4.91	15.35	0.07	0.60	0.00	0.12	0.23	0.06	0.00	0.00	0.00	14.35	6.67	0.00	0.04	2.31
WVUTh193 Type II	4.91	15.35	0.07	0.60	0.00	0.12	0.23	0.06	0.00	0.00	0.00	14.35	6.67	0.00	0.04	2.31
WVUTh193 Type II	4.91	15.35	0.07	0.60	0.00	0.12	0.23	0.06	0.00	0.00	0.00	14.35	6.67	0.00	0.04	2.31
WVUTh193 Type II	4.91	15.35	0.07	0.60	0.00	0.12	0.23	0.06	0.00	0.00	0.00	14.35	6.67	0.00	0.04	2.31
WVUTh193 Type II	4.91	15.35	0.07	0.60	0.00	0.12	0.23	0.06	0.00	0.00	0.00	14.35	6.67	0.00	0.04	2.31
A100CC	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100CC	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100CC	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100CC	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100CC	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100CC	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100CC	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100CC	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100CC	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100CC	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100CC	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100G115A	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100G115A	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100G115A	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100G115A	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100G115A	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100G115A	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100G115A	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100G115A	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100G115A	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100G115A	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A100G115A	6.06	10.01	0.00	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	0.26	0.00	0.00	2.50
A1-AN105R2	6.10	8.84	0.00	1.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.87	0.44	0.00	0.00	0.00
A1-AN105R2	6.10	8.84	0.00	1.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.87	0.44	0.00	0.00	0.00
A1-AN105R2	6.10	8.84	0.00	1.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.87	0.44	0.00	0.00	0.00
A1-AN105R2	6.10	8.84	0.00	1.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.87	0.44	0.00	0.00	0.00
A1-AN105R2	6.10	8.84	0.00	1.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.87	0.44	0.00	0.00	0.00
A1-AN105R2	6.10	8.84	0.00	1.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.87	0.44	0.00	0.00	0.00
A1-AN105R2	6.10	8.84	0.00	1.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.87	0.44	0.00	0.00	0.00
A1-AN105R2	6.10	8.84	0.00	1.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.87	0.44	0.00	0.00	0.00
A1-AN105R2	6.10	8.84	0.00	1.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.87	0.44	0.00	0.00	0.00
A1-AN105R2	6.10	8.84	0.00	1.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.87	0.44	0.00	0.00	0.00
A1-AN105R2	6.10	8.84	0.00	1.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.87	0.44	0.00	0.00	0.00

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
WVUTh193 Type II	0.89	0.65	0.00	0.00	7.18	0.11	0.27	0.00	1.41	0.00	0.00	0.00	0.00	37.00	0.00	0.00
WVUTh193 Type II	0.89	0.65	0.00	0.00	7.18	0.11	0.27	0.00	1.41	0.00	0.00	0.00	0.00	37.00	0.00	0.00
WVUTh193 Type II	0.89	0.65	0.00	0.00	7.18	0.11	0.27	0.00	1.41	0.00	0.00	0.00	0.00	37.00	0.00	0.00
WVUTh193 Type II	0.89	0.65	0.00	0.00	7.18	0.11	0.27	0.00	1.41	0.00	0.00	0.00	0.00	37.00	0.00	0.00
WVUTh193 Type II	0.89	0.65	0.00	0.00	7.18	0.11	0.27	0.00	1.41	0.00	0.00	0.00	0.00	37.00	0.00	0.00
WVUTh193 Type II	0.89	0.65	0.00	0.00	7.18	0.11	0.27	0.00	1.41	0.00	0.00	0.00	0.00	37.00	0.00	0.00
WVUTh193 Type II	0.89	0.65	0.00	0.00	7.18	0.11	0.27	0.00	1.41	0.00	0.00	0.00	0.00	37.00	0.00	0.00
WVUTh193 Type II	0.89	0.65	0.00	0.00	7.18	0.11	0.27	0.00	1.41	0.00	0.00	0.00	0.00	37.00	0.00	0.00
WVUTh193 Type II	0.89	0.65	0.00	0.00	7.18	0.11	0.27	0.00	1.41	0.00	0.00	0.00	0.00	37.00	0.00	0.00
WVUTh193 Type II	0.89	0.65	0.00	0.00	7.18	0.11	0.27	0.00	1.41	0.00	0.00	0.00	0.00	37.00	0.00	0.00
WVUTh193 Type II	0.89	0.65	0.00	0.00	7.18	0.11	0.27	0.00	1.41	0.00	0.00	0.00	0.00	37.00	0.00	0.00
WVUTh193 Type II	0.89	0.65	0.00	0.00	7.18	0.11	0.27	0.00	1.41	0.00	0.00	0.00	0.00	37.00	0.00	0.00
WVUTh193 Type II	0.89	0.65	0.00	0.00	7.18	0.11	0.27	0.00	1.41	0.00	0.00	0.00	0.00	37.00	0.00	0.00
WVUTh193 Type II	0.89	0.65	0.00	0.00	7.18	0.11	0.27	0.00	1.41	0.00	0.00	0.00	0.00	37.00	0.00	0.00
WVUTh193 Type II	0.89	0.65	0.00	0.00	7.18	0.11	0.27	0.00	1.41	0.00	0.00	0.00	0.00	37.00	0.00	0.00
A100CC	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
A100CC	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
A100CC	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
A100CC	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
A100CC	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
A100CC	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
A100CC	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
A100CC	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
A100CC	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
A100CC	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
A100CC	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
A100CC	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
A100G115A	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.60	0.00	0.00
A100G115A	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.60	0.00	0.00
A100G115A	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.60	0.00	0.00
A100G115A	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.60	0.00	0.00
A100G115A	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.60	0.00	0.00
A100G115A	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.60	0.00	0.00
A100G115A	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.60	0.00	0.00
A100G115A	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.60	0.00	0.00
A100G115A	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.60	0.00	0.00
A100G115A	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.60	0.00	0.00
A100G115A	1.49	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.60	0.00	0.00
A1-AN105R2	1.96	0.00	0.00	0.00	20.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.82	0.00	0.00
A1-AN105R2	1.96	0.00	0.00	0.00	20.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.82	0.00	0.00
A1-AN105R2	1.96	0.00	0.00	0.00	20.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.82	0.00	0.00
A1-AN105R2	1.96	0.00	0.00	0.00	20.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.82	0.00	0.00
A1-AN105R2	1.96	0.00	0.00	0.00	20.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.82	0.00	0.00
A1-AN105R2	1.96	0.00	0.00	0.00	20.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.82	0.00	0.00
A1-AN105R2	1.96	0.00	0.00	0.00	20.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.82	0.00	0.00
A1-AN105R2	1.96	0.00	0.00	0.00	20.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.82	0.00	0.00
A1-AN105R2	1.96	0.00	0.00	0.00	20.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.82	0.00	0.00
A1-AN105R2	1.96	0.00	0.00	0.00	20.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.82	0.00	0.00
A1-AN105R2	1.96	0.00	0.00	0.00	20.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.82	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
WVUTh193 Type II	0.02	0.00	4.50	0.80	0.66	0.00	0.00	1.30	0.00	99.49		
WVUTh193 Type II	0.02	0.00	4.50	0.80	0.66	0.00	0.00	1.30	0.00	99.49		
WVUTh193 Type II	0.02	0.00	4.50	0.80	0.66	0.00	0.00	1.30	0.00	99.49		
WVUTh193 Type II	0.02	0.00	4.50	0.80	0.66	0.00	0.00	1.30	0.00	99.49		
WVUTh193 Type II	0.02	0.00	4.50	0.80	0.66	0.00	0.00	1.30	0.00	99.49		
WVUTh193 Type II	0.02	0.00	4.50	0.80	0.66	0.00	0.00	1.30	0.00	99.49		
WVUTh193 Type II	0.02	0.00	4.50	0.80	0.66	0.00	0.00	1.30	0.00	99.49		
WVUTh193 Type II	0.02	0.00	4.50	0.80	0.66	0.00	0.00	1.30	0.00	99.49		
WVUTh193 Type II	0.02	0.00	4.50	0.80	0.66	0.00	0.00	1.30	0.00	99.49		
WVUTh193 Type II	0.02	0.00	4.50	0.80	0.66	0.00	0.00	1.30	0.00	99.49		
WVUTh193 Type II	0.02	0.00	4.50	0.80	0.66	0.00	0.00	1.30	0.00	99.49		
WVUTh193 Type II	0.02	0.00	4.50	0.80	0.66	0.00	0.00	1.30	0.00	99.49		
WVUTh193 Type II	0.02	0.00	4.50	0.80	0.66	0.00	0.00	1.30	0.00	99.49		
WVUTh193 Type II	0.02	0.00	4.50	0.80	0.66	0.00	0.00	1.30	0.00	99.49		
WVUTh193 Type II	0.02	0.00	4.50	0.80	0.66	0.00	0.00	1.30	0.00	99.49		
A100CC	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.87	100.00		
A100CC	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.87	100.00		
A100CC	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.87	100.00		
A100CC	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.87	100.00		
A100CC	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.87	100.00		
A100CC	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.87	100.00		
A100CC	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.87	100.00		
A100CC	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.87	100.00		
A100CC	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.87	100.00		
A100CC	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.87	100.00		
A100CC	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.87	100.00		
A100CC	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.87	100.00		
A100G115A	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.89	100.00		
A100G115A	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.89	100.00		
A100G115A	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.89	100.00		
A100G115A	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.89	100.00		
A100G115A	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.89	100.00		
A100G115A	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.89	100.00		
A100G115A	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.89	100.00		
A100G115A	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.89	100.00		
A100G115A	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.89	100.00		
A100G115A	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.89	100.00		
A100G115A	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.89	100.00		
A1-AN105R2	0.00	0.00	0.00	1.96	0.00	0.00	2.92	2.94	1.52	100.00		
A1-AN105R2	0.00	0.00	0.00	1.96	0.00	0.00	2.92	2.94	1.52	100.00		
A1-AN105R2	0.00	0.00	0.00	1.96	0.00	0.00	2.92	2.94	1.52	100.00		
A1-AN105R2	0.00	0.00	0.00	1.96	0.00	0.00	2.92	2.94	1.52	100.00		
A1-AN105R2	0.00	0.00	0.00	1.96	0.00	0.00	2.92	2.94	1.52	100.00		
A1-AN105R2	0.00	0.00	0.00	1.96	0.00	0.00	2.92	2.94	1.52	100.00		
A1-AN105R2	0.00	0.00	0.00	1.96	0.00	0.00	2.92	2.94	1.52	100.00		
A1-AN105R2	0.00	0.00	0.00	1.96	0.00	0.00	2.92	2.94	1.52	100.00		
A1-AN105R2	0.00	0.00	0.00	1.96	0.00	0.00	2.92	2.94	1.52	100.00		
A1-AN105R2	0.00	0.00	0.00	1.96	0.00	0.00	2.92	2.94	1.52	100.00		
A1-AN105R2	0.00	0.00	0.00	1.96	0.00	0.00	2.92	2.94	1.52	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
A1C1-1	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.82	80.57	24.89	0.28
A1C1-1	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.96	103.20	31.93	0.59
A1C1-1	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	98.77	39.16	0.30
A1C1-1	267.00	0.81	2.031	542.178	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.36	123.37	63.05	0.31
A1C1-1	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	131.70	71.62	0.15
A1C1-1	549.00	0.81	2.031	1,114.815	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.53	137.61	79.71	0.24
A1C1-1	1098.00	0.81	2.031	2,229.630	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.64	324.80	599.04	0.40
A1C1-1	1448.00	0.81	2.031	2,940.350	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.74	542.66	941.52	0.70
A1C1-1	1871.00	0.81	2.031	3,799.306	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.76	887.27	1924.07	1.68
A1C1-2	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.71	78.19	24.22	0.31
A1C1-2	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.87	96.03	29.42	0.43
A1C1-2	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	89.66	30.27	0.18
A1C1-2	267.00	0.81	2.031	542.178	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	115.88	47.55	0.21
A1C1-2	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	124.30	56.59	
A1C1-2	549.00	0.81	2.031	1,114.815	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.44	133.16	66.72	0.19
A1C1-2	1098.00	0.81	2.031	2,229.630	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	146.85	92.85	0.18
A1C1-2	1448.00	0.81	2.031	2,940.350	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.75	187.61	117.21	0.46
A1C1-2	1871.00	0.81	2.031	3,799.306	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.85	421.65	886.29	0.68
A1C1-3	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.63	78.73	27.52	0.45
A1C1-3	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.78	97.96	35.96	0.55
A1C1-3	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.86	95.07	35.24	0.23
A1C1-3	267.00	0.81	2.031	542.178	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	129.69	57.99	0.27
A1C1-3	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	135.13	61.99	0.13
A1C1-3	549.00	0.81	2.031	1,114.815	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	146.99	72.46	0.20
A1C1-3	1098.00	0.81	2.031	2,229.630	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.54	428.86	1079.20	1.28
A1C1-3	1448.00	0.81	2.031	2,940.350	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	815.00	2526.43	3.47
A2-AP101	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.95	81.65	47.46	0.26
A2-AP101	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	98.75	78.48	0.22
A2-AP101	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.23	104.32	91.75	0.19
A2-AP101	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	116.00	115.00	0.53
A2-AP101	183.00	0.81	2.031	371.605	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.43	119.48	119.78	0.28
A2-AP101	272.00	0.81	2.031	552.331	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.53	140.96	146.85	0.32
A2-AP101	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	135.41	147.12	0.19
A2-AP101	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.75	147.04	158.44	0.20
A2-AP101	731.00	0.81	2.031	1,484.390	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.85	136.00	168.37	0.13
A2-AP101	1094.00	0.81	2.031	2,221.508	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.92	153.43	172.45	0.18
A2-AP101	1472.00	0.81	2.031	2,989.085	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.96	165.80	194.30	0.57
A2-AP101	1834.00	0.81	2.031	3,724.173	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.05	209.99	225.59	1.38
A2B1-1	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.75	68.79	21.89	0.40
A2B1-1	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.92	76.08	30.22	0.15
A2B1-1	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.97	83.23	39.18	
A2B1-1	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	90.33	47.53	0.38
A2B1-1	183.00	0.81	2.031	371.605	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	89.03	52.00	0.12
A2B1-1	272.00	0.81	2.031	552.331	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	107.01	61.45	0.23
A2B1-1	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	106.25	71.05	0.17
A2B1-1	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	118.83	80.05	0.23
A2B1-1	731.00	0.81	2.031	1,484.390	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.54	112.20	86.80	0.29
A2B1-1	1094.00	0.81	2.031	2,221.508	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.64	127.42	90.77	0.13
A2B1-1	1472.00	0.81	2.031	2,989.085	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.67	131.24	102.42	0.13
A2B1-1	1834.00	0.81	2.031	3,724.173	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.70	143.97	111.07	0.24
A2B1-2	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.54	65.87	20.97	0.60
A2B1-2	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.75	72.79	25.41	0.29
A2B1-2	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	79.60	30.69	0.26
A2B1-2	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.93	82.20	30.07	0.47
A2B1-2	183.00	0.81	2.031	371.605	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.03	83.51	34.32	0.19
A2B1-2	272.00	0.81	2.031	552.331	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.16	108.81	41.71	0.36
A2B1-2	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	102.11	47.66	0.23
A2B1-2	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	126.30	63.45	0.41
A2B1-2	731.00	0.81	2.031	1,484.390	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	121.73	75.39	0.33
A2B1-2	1094.00	0.81	2.031	2,221.508	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.53	274.95	983.39	2.58
A2B1-2	1472.00	0.81	2.031	2,989.085	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.57	321.97	2260.17	5.48
A2B1-2	1834.00	0.81	2.031	3,724.173	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	408.32	3027.50	11.91
A2B1-3	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.35	66.61	25.69	0.99
A2B1-3	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.53	86.25	39.79	0.61
A2B1-3	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.64	96.08	47.35	0.73
A2B1-3	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.74	107.67	51.57	1.11
A2B1-3	183.00	0.81	2.031	371.605	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.84	102.92	53.20	0.73
A2B1-3	272.00	0.81	2.031	552.331	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	144.19	70.18	1.40
A2B1-3	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	138.39	73.39	1.24
A2B1-3	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	146.84	74.25	1.76

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
A1C1-1		1.94	119.57		8.85	1.42		0.52		1.04			Not Studied
A1C1-1		1.67	155.63		8.89	1.47		0.55		1.32			Not Studied
A1C1-1		1.72	173.53		8.30	1.96		1.05		1.43			Not Studied
A1C1-1		1.98	347.23	2.83	9.10					0.94	0.57		Not Studied
A1C1-1		2.12	302.47	3.28	8.67				0.43	0.63			Not Studied
A1C1-1		2.52	342.15	3.24	9.86	2.11		0.77		1.88			Not Studied
A1C1-1		8.31	1664.33	17.05	6.16					1.10			Not Studied
A1C1-1		13.64	2793.43	29.78	2.68								Not Studied
A1C1-1		24.76	5610.93	82.04	3.45			0.34					Not Studied
A1C1-2		4.17	113.77		7.27			0.34		0.91			Not Studied
A1C1-2		3.89	124.33		6.80			0.39		1.03			Not Studied
A1C1-2		3.81	132.47		6.48	1.62		0.72		1.18			Not Studied
A1C1-2		4.80	252.70	2.52	6.88					0.64			Not Studied
A1C1-2		5.39	233.26	2.73	5.88					0.49			Not Studied
A1C1-2		6.37	287.41	2.51	7.40	1.52		0.46		1.30			Not Studied
A1C1-2		7.96	365.17	2.64	6.09					1.75			Not Studied
A1C1-2		9.92	473.24	3.04	6.20								Not Studied
A1C1-2		33.91	2042.63	16.68	6.79								Not Studied
A1C1-3		7.48	98.33		5.73			0.34		0.57			Not Studied
A1C1-3		7.86	123.07		4.78			0.29		0.97			Not Studied
A1C1-3		7.86	133.17		4.76	1.28		0.57		0.90			Not Studied
A1C1-3		11.21	257.27	2.27	5.08					0.49			Not Studied
A1C1-3		12.30	236.65	2.50	3.47								Not Studied
A1C1-3		14.35	286.41	2.37	5.21								Not Studied
A1C1-3		111.62	2512.87	17.62	2.71								Not Studied
A1C1-3		248.07	5983.37	49.10									Gobbinsite, Analcime, Stevensite and Hectorite 15A
A2-AP101			152.93	16.94	6.15	1.54		0.58		1.44	0.48		Not Studied
A2-AP101			259.10	29.07	7.82	2.74		0.94	0.80	2.22	1.45		Not Studied
A2-AP101			308.41	36.72	8.46	1.61		0.75		2.56	1.21		Not Studied
A2-AP101			361.00	40.93	8.95	1.24		0.63	0.60	1.91	0.91		Not Studied
A2-AP101			394.06	43.44	9.00	1.37		0.71		1.92	0.92		Not Studied
A2-AP101			451.40	52.60	10.67	1.26		0.38	0.49	0.83	0.87		Not Studied
A2-AP101			457.42	54.81	10.25			0.27		0.49	0.74		Not Studied
A2-AP101			564.56	60.90	10.78	1.36		0.76		1.61			Not Studied
A2-AP101			549.96	61.04	9.58			0.22					Not Studied
A2-AP101			581.08	63.55	10.53					0.53			Not Studied
A2-AP101		1.30	620.05	68.11	7.39								Not Studied
A2-AP101		1.86	734.80	82.82	5.21								Chabazite and Herschelite
A2B1-1		2.82	73.11	8.16	4.28			0.35		0.84			Not Studied
A2B1-1		3.65	103.20	11.53	5.01			0.40		0.88			Not Studied
A2B1-1		4.17	124.75	14.02	4.99			0.31		1.14			Not Studied
A2B1-1		4.90	151.67	16.37	5.50					0.74	0.58		Not Studied
A2B1-1		4.95	170.59	17.25	4.77			0.35		1.05			Not Studied
A2B1-1		6.22	194.81	20.88	6.15								Not Studied
A2B1-1		6.46	204.87	21.44	5.92								Not Studied
A2B1-1		7.68	256.38	25.71	5.62			0.29		0.94			Not Studied
A2B1-1		8.20	261.26	25.27	5.34			0.25			0.43		Not Studied
A2B1-1		8.53	294.43	26.70	6.18								Not Studied
A2B1-1		9.01	294.80	28.88	4.30								Not Studied
A2B1-1		10.02	352.42	31.73	4.35								Not Studied
A2B1-2		6.20	53.54	6.00	2.48								Not Studied
A2B1-2		7.84	72.38	7.95	2.82			0.30					Not Studied
A2B1-2		9.19	90.50	9.45	2.70					0.60			Not Studied
A2B1-2		8.93	88.67	9.92	2.89								Not Studied
A2B1-2		9.88	98.35	11.07	2.41								Not Studied
A2B1-2		13.18	122.20	13.55	3.82								Not Studied
A2B1-2		13.11	128.68	12.75	3.13								Not Studied
A2B1-2		19.30	184.42	17.94	2.85								Not Studied
A2B1-2		22.35	211.03	18.00	2.43								Not Studied
A2B1-2		152.24	1761.77	193.46	5.46								Not Studied
A2B1-2		239.36	3778.57	407.67									Not Studied
A2B1-2		331.26	5441.77	639.89	1.11								Not Studied
A2B1-3		10.84	42.45	3.64	1.37								Not Studied
A2B1-3		18.31	70.26	5.93	1.49								Not Studied
A2B1-3		22.97	91.15	7.23	1.04								Not Studied
A2B1-3		23.57	94.53	8.48	1.54								Not Studied
A2B1-3		23.55	92.52	9.10	1.05								Not Studied
A2B1-3		32.36	119.41	11.40	1.98								Not Studied
A2B1-3		32.03	121.58	10.80	1.59								Not Studied
A2B1-3		36.80	140.51	13.33	1.42								Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
A1C1-1		73.74	15.331	6.0869777	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-1		73.74	15.331	6.0869777	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-1		73.74	15.331	6.0869777	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-1		73.74	15.331	6.0869777	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-1		73.74	15.331	6.0869777	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-1		73.74	15.331	6.0869777	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-1		73.74	15.331	6.0869777	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-1		73.74	15.331	6.0869777	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-1		73.74	15.331	6.0869777	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-2		73.73	15.729	3.8567918	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-2		73.73	15.729	3.8567918	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-2		73.73	15.729	3.8567918	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-2		73.73	15.729	3.8567918	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-2		73.73	15.729	3.8567918	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-2		73.73	15.729	3.8567918	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-2		73.73	15.729	3.8567918	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-2		73.73	15.729	3.8567918	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-3		73.69	16.122	1.7045534	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-3		73.69	16.122	1.7045534	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-3		73.69	16.122	1.7045534	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-3		73.69	16.122	1.7045534	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-3		73.69	16.122	1.7045534	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-3		73.69	16.122	1.7045534	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-3		73.69	16.122	1.7045534	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1C1-3	XRD/SEM	73.69	16.122	1.7045534	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2-AP101		76.11	13.145	14.6359805	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2-AP101		76.11	13.145	14.6359805	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2-AP101		76.11	13.145	14.6359805	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2-AP101		76.11	13.145	14.6359805	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2-AP101		76.11	13.145	14.6359805	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2-AP101		76.11	13.145	14.6359805	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2-AP101		76.11	13.145	14.6359805	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2-AP101		76.11	13.145	14.6359805	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2-AP101		76.11	13.145	14.6359805	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2-AP101	XRD/SEM	76.11	13.145	14.6359805	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-1		74.27	14.419	10.3975373	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-1		74.27	14.419	10.3975373	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-1		74.27	14.419	10.3975373	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-1		74.27	14.419	10.3975373	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-1		74.27	14.419	10.3975373	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-1		74.27	14.419	10.3975373	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-1		74.27	14.419	10.3975373	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-1		74.27	14.419	10.3975373	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-1		74.27	14.419	10.3975373	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-1		74.27	14.419	10.3975373	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-1		74.27	14.419	10.3975373	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-2		72.35	15.674	6.3898718	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-2		72.35	15.674	6.3898718	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-2		72.35	15.674	6.3898718	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-2		72.35	15.674	6.3898718	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-2		72.35	15.674	6.3898718	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-2		72.35	15.674	6.3898718	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-2		72.35	15.674	6.3898718	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-2		72.35	15.674	6.3898718	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-2		72.35	15.674	6.3898718	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-2		72.35	15.674	6.3898718	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-3		70.45	16.959	2.1758918	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-3		70.45	16.959	2.1758918	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-3		70.45	16.959	2.1758918	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-3		70.45	16.959	2.1758918	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-3		70.45	16.959	2.1758918	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-3		70.45	16.959	2.1758918	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-3		70.45	16.959	2.1758918	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-3		70.45	16.959	2.1758918	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
A1C1-1	6.09	9.13	0.00	2.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.50	0.35	0.00	0.00	0.62
A1C1-1	6.09	9.13	0.00	2.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.50	0.35	0.00	0.00	0.62
A1C1-1	6.09	9.13	0.00	2.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.50	0.35	0.00	0.00	0.62
A1C1-1	6.09	9.13	0.00	2.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.50	0.35	0.00	0.00	0.62
A1C1-1	6.09	9.13	0.00	2.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.50	0.35	0.00	0.00	0.62
A1C1-1	6.09	9.13	0.00	2.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.50	0.35	0.00	0.00	0.62
A1C1-1	6.09	9.13	0.00	2.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.50	0.35	0.00	0.00	0.62
A1C1-1	6.09	9.13	0.00	2.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.50	0.35	0.00	0.00	0.62
A1C1-2	6.07	9.42	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.14	0.26	0.00	0.00	1.25
A1C1-2	6.07	9.42	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.14	0.26	0.00	0.00	1.25
A1C1-2	6.07	9.42	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.14	0.26	0.00	0.00	1.25
A1C1-2	6.07	9.42	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.14	0.26	0.00	0.00	1.25
A1C1-2	6.07	9.42	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.14	0.26	0.00	0.00	1.25
A1C1-2	6.07	9.42	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.14	0.26	0.00	0.00	1.25
A1C1-2	6.07	9.42	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.14	0.26	0.00	0.00	1.25
A1C1-2	6.07	9.42	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.14	0.26	0.00	0.00	1.25
A1C1-3	6.06	9.70	0.00	4.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	0.16	0.00	0.00	1.87
A1C1-3	6.06	9.70	0.00	4.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	0.16	0.00	0.00	1.87
A1C1-3	6.06	9.70	0.00	4.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	0.16	0.00	0.00	1.87
A1C1-3	6.06	9.70	0.00	4.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	0.16	0.00	0.00	1.87
A1C1-3	6.06	9.70	0.00	4.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	0.16	0.00	0.00	1.87
A1C1-3	6.06	9.70	0.00	4.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	0.16	0.00	0.00	1.87
A1C1-3	6.06	9.70	0.00	4.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	0.16	0.00	0.00	1.87
A1C1-3	6.06	9.70	0.00	4.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	0.16	0.00	0.00	1.87
A2-AP101	5.62	9.82	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	3.81	0.00	0.00	0.00
A2-AP101	5.62	9.82	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	3.81	0.00	0.00	0.00
A2-AP101	5.62	9.82	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	3.81	0.00	0.00	0.00
A2-AP101	5.62	9.82	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	3.81	0.00	0.00	0.00
A2-AP101	5.62	9.82	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	3.81	0.00	0.00	0.00
A2-AP101	5.62	9.82	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	3.81	0.00	0.00	0.00
A2-AP101	5.62	9.82	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	3.81	0.00	0.00	0.00
A2-AP101	5.62	9.82	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	3.81	0.00	0.00	0.00
A2-AP101	5.62	9.82	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	3.81	0.00	0.00	0.00
A2-AP101	5.62	9.82	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	3.81	0.00	0.00	0.00
A2B1-1	5.76	9.88	0.00	3.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.48	2.90	0.00	0.00	1.07
A2B1-1	5.76	9.88	0.00	3.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.48	2.90	0.00	0.00	1.07
A2B1-1	5.76	9.88	0.00	3.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.48	2.90	0.00	0.00	1.07
A2B1-1	5.76	9.88	0.00	3.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.48	2.90	0.00	0.00	1.07
A2B1-1	5.76	9.88	0.00	3.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.48	2.90	0.00	0.00	1.07
A2B1-1	5.76	9.88	0.00	3.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.48	2.90	0.00	0.00	1.07
A2B1-1	5.76	9.88	0.00	3.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.48	2.90	0.00	0.00	1.07
A2B1-1	5.76	9.88	0.00	3.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.48	2.90	0.00	0.00	1.07
A2B1-1	5.76	9.88	0.00	3.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.48	2.90	0.00	0.00	1.07
A2B1-1	5.76	9.88	0.00	3.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.48	2.90	0.00	0.00	1.07
A2B1-2	5.90	9.92	0.00	4.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	2.00	0.00	0.00	2.15
A2B1-2	5.90	9.92	0.00	4.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	2.00	0.00	0.00	2.15
A2B1-2	5.90	9.92	0.00	4.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	2.00	0.00	0.00	2.15
A2B1-2	5.90	9.92	0.00	4.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	2.00	0.00	0.00	2.15
A2B1-2	5.90	9.92	0.00	4.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	2.00	0.00	0.00	2.15
A2B1-2	5.90	9.92	0.00	4.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	2.00	0.00	0.00	2.15
A2B1-2	5.90	9.92	0.00	4.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	2.00	0.00	0.00	2.15
A2B1-2	5.90	9.92	0.00	4.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	2.00	0.00	0.00	2.15
A2B1-2	5.90	9.92	0.00	4.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	2.00	0.00	0.00	2.15
A2B1-2	5.90	9.92	0.00	4.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	2.00	0.00	0.00	2.15
A2B1-3	6.04	9.97	0.00	5.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	1.09	0.00	0.00	3.22
A2B1-3	6.04	9.97	0.00	5.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	1.09	0.00	0.00	3.22
A2B1-3	6.04	9.97	0.00	5.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	1.09	0.00	0.00	3.22
A2B1-3	6.04	9.97	0.00	5.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	1.09	0.00	0.00	3.22
A2B1-3	6.04	9.97	0.00	5.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	1.09	0.00	0.00	3.22
A2B1-3	6.04	9.97	0.00	5.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	1.09	0.00	0.00	3.22
A2B1-3	6.04	9.97	0.00	5.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	1.09	0.00	0.00	3.22
A2B1-3	6.04	9.97	0.00	5.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	1.09	0.00	0.00	3.22

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
A1C1-1	1.85	0.00	0.00	0.00	19.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.48	0.00	0.00
A1C1-1	1.85	0.00	0.00	0.00	19.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.48	0.00	0.00
A1C1-1	1.85	0.00	0.00	0.00	19.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.48	0.00	0.00
A1C1-1	1.85	0.00	0.00	0.00	19.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.48	0.00	0.00
A1C1-1	1.85	0.00	0.00	0.00	19.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.48	0.00	0.00
A1C1-1	1.85	0.00	0.00	0.00	19.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.48	0.00	0.00
A1C1-1	1.85	0.00	0.00	0.00	19.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.48	0.00	0.00
A1C1-1	1.85	0.00	0.00	0.00	19.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.48	0.00	0.00
A1C1-2	1.74	0.00	0.00	0.00	17.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.14	0.00	0.00
A1C1-2	1.74	0.00	0.00	0.00	17.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.14	0.00	0.00
A1C1-2	1.74	0.00	0.00	0.00	17.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.14	0.00	0.00
A1C1-2	1.74	0.00	0.00	0.00	17.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.14	0.00	0.00
A1C1-2	1.74	0.00	0.00	0.00	17.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.14	0.00	0.00
A1C1-2	1.74	0.00	0.00	0.00	17.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.14	0.00	0.00
A1C1-2	1.74	0.00	0.00	0.00	17.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.14	0.00	0.00
A1C1-2	1.74	0.00	0.00	0.00	17.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.14	0.00	0.00
A1C1-3	1.62	0.00	0.00	0.00	16.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.79	0.00	0.00
A1C1-3	1.62	0.00	0.00	0.00	16.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.79	0.00	0.00
A1C1-3	1.62	0.00	0.00	0.00	16.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.79	0.00	0.00
A1C1-3	1.62	0.00	0.00	0.00	16.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.79	0.00	0.00
A1C1-3	1.62	0.00	0.00	0.00	16.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.79	0.00	0.00
A1C1-3	1.62	0.00	0.00	0.00	16.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.79	0.00	0.00
A1C1-3	1.62	0.00	0.00	0.00	16.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.79	0.00	0.00
A2-AP101	1.48	0.00	0.00	0.00	18.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.01	0.00	0.00
A2-AP101	1.48	0.00	0.00	0.00	18.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.01	0.00	0.00
A2-AP101	1.48	0.00	0.00	0.00	18.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.01	0.00	0.00
A2-AP101	1.48	0.00	0.00	0.00	18.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.01	0.00	0.00
A2-AP101	1.48	0.00	0.00	0.00	18.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.01	0.00	0.00
A2-AP101	1.48	0.00	0.00	0.00	18.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.01	0.00	0.00
A2-AP101	1.48	0.00	0.00	0.00	18.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.01	0.00	0.00
A2-AP101	1.48	0.00	0.00	0.00	18.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.01	0.00	0.00
A2-AP101	1.48	0.00	0.00	0.00	18.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.01	0.00	0.00
A2-AP101	1.48	0.00	0.00	0.00	18.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.01	0.00	0.00
A2B1-1	1.85	0.00	0.00	0.00	15.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.18	0.00	0.00
A2B1-1	1.85	0.00	0.00	0.00	15.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.18	0.00	0.00
A2B1-1	1.85	0.00	0.00	0.00	15.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.18	0.00	0.00
A2B1-1	1.85	0.00	0.00	0.00	15.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.18	0.00	0.00
A2B1-1	1.85	0.00	0.00	0.00	15.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.18	0.00	0.00
A2B1-1	1.85	0.00	0.00	0.00	15.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.18	0.00	0.00
A2B1-1	1.85	0.00	0.00	0.00	15.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.18	0.00	0.00
A2B1-1	1.85	0.00	0.00	0.00	15.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.18	0.00	0.00
A2B1-1	1.85	0.00	0.00	0.00	15.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.18	0.00	0.00
A2B1-1	1.85	0.00	0.00	0.00	15.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.18	0.00	0.00
A2B1-2	2.23	0.00	0.00	0.00	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.29	0.00	0.00
A2B1-2	2.23	0.00	0.00	0.00	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.29	0.00	0.00
A2B1-2	2.23	0.00	0.00	0.00	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.29	0.00	0.00
A2B1-2	2.23	0.00	0.00	0.00	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.29	0.00	0.00
A2B1-2	2.23	0.00	0.00	0.00	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.29	0.00	0.00
A2B1-2	2.23	0.00	0.00	0.00	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.29	0.00	0.00
A2B1-2	2.23	0.00	0.00	0.00	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.29	0.00	0.00
A2B1-2	2.23	0.00	0.00	0.00	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.29	0.00	0.00
A2B1-2	2.23	0.00	0.00	0.00	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.29	0.00	0.00
A2B1-2	2.23	0.00	0.00	0.00	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.29	0.00	0.00
A2B1-3	2.60	0.00	0.00	0.00	8.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.43	0.00	0.00
A2B1-3	2.60	0.00	0.00	0.00	8.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.43	0.00	0.00
A2B1-3	2.60	0.00	0.00	0.00	8.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.43	0.00	0.00
A2B1-3	2.60	0.00	0.00	0.00	8.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.43	0.00	0.00
A2B1-3	2.60	0.00	0.00	0.00	8.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.43	0.00	0.00
A2B1-3	2.60	0.00	0.00	0.00	8.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.43	0.00	0.00
A2B1-3	2.60	0.00	0.00	0.00	8.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.43	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
A1C1-1	0.00	0.00	0.00	1.76	0.00	0.00	2.95	2.96	1.41	100.00		
A1C1-1	0.00	0.00	0.00	1.76	0.00	0.00	2.95	2.96	1.41	100.00		
A1C1-1	0.00	0.00	0.00	1.76	0.00	0.00	2.95	2.96	1.41	100.00		
A1C1-1	0.00	0.00	0.00	1.76	0.00	0.00	2.95	2.96	1.41	100.00		
A1C1-1	0.00	0.00	0.00	1.76	0.00	0.00	2.95	2.96	1.41	100.00		
A1C1-1	0.00	0.00	0.00	1.76	0.00	0.00	2.95	2.96	1.41	100.00		
A1C1-1	0.00	0.00	0.00	1.76	0.00	0.00	2.95	2.96	1.41	100.00		
A1C1-1	0.00	0.00	0.00	1.76	0.00	0.00	2.95	2.96	1.41	100.00		
A1C1-1	0.00	0.00	0.00	1.76	0.00	0.00	2.95	2.96	1.41	100.00		
A1C1-2	0.00	0.00	0.00	1.55	0.00	0.00	2.98	2.97	1.29	100.00		
A1C1-2	0.00	0.00	0.00	1.55	0.00	0.00	2.98	2.97	1.29	100.00		
A1C1-2	0.00	0.00	0.00	1.55	0.00	0.00	2.98	2.97	1.29	100.00		
A1C1-2	0.00	0.00	0.00	1.55	0.00	0.00	2.98	2.97	1.29	100.00		
A1C1-2	0.00	0.00	0.00	1.55	0.00	0.00	2.98	2.97	1.29	100.00		
A1C1-2	0.00	0.00	0.00	1.55	0.00	0.00	2.98	2.97	1.29	100.00		
A1C1-2	0.00	0.00	0.00	1.55	0.00	0.00	2.98	2.97	1.29	100.00		
A1C1-2	0.00	0.00	0.00	1.55	0.00	0.00	2.98	2.97	1.29	100.00		
A1C1-2	0.00	0.00	0.00	1.55	0.00	0.00	2.98	2.97	1.29	100.00		
A1C1-3	0.00	0.00	0.00	1.35	0.00	0.00	3.02	2.99	1.21	100.00		
A1C1-3	0.00	0.00	0.00	1.35	0.00	0.00	3.02	2.99	1.21	100.00		
A1C1-3	0.00	0.00	0.00	1.35	0.00	0.00	3.02	2.99	1.21	100.00		
A1C1-3	0.00	0.00	0.00	1.35	0.00	0.00	3.02	2.99	1.21	100.00		
A1C1-3	0.00	0.00	0.00	1.35	0.00	0.00	3.02	2.99	1.21	100.00		
A1C1-3	0.00	0.00	0.00	1.35	0.00	0.00	3.02	2.99	1.21	100.00		
A1C1-3	0.00	0.00	0.00	1.35	0.00	0.00	3.02	2.99	1.21	100.00		
A2-AP101	0.00	0.00	0.00	1.99	0.00	0.00	2.94	2.96	1.37	100.00		
A2-AP101	0.00	0.00	0.00	1.99	0.00	0.00	2.94	2.96	1.37	100.00		
A2-AP101	0.00	0.00	0.00	1.99	0.00	0.00	2.94	2.96	1.37	100.00		
A2-AP101	0.00	0.00	0.00	1.99	0.00	0.00	2.94	2.96	1.37	100.00		
A2-AP101	0.00	0.00	0.00	1.99	0.00	0.00	2.94	2.96	1.37	100.00		
A2-AP101	0.00	0.00	0.00	1.99	0.00	0.00	2.94	2.96	1.37	100.00		
A2-AP101	0.00	0.00	0.00	1.99	0.00	0.00	2.94	2.96	1.37	100.00		
A2-AP101	0.00	0.00	0.00	1.99	0.00	0.00	2.94	2.96	1.37	100.00		
A2-AP101	0.00	0.00	0.00	1.99	0.00	0.00	2.94	2.96	1.37	100.00		
A2-AP101	0.00	0.00	0.00	1.99	0.00	0.00	2.94	2.96	1.37	100.00		
A2B1-1	0.00	0.00	0.00	1.84	0.00	0.00	3.41	3.01	1.19	100.00		
A2B1-1	0.00	0.00	0.00	1.84	0.00	0.00	3.41	3.01	1.19	100.00		
A2B1-1	0.00	0.00	0.00	1.84	0.00	0.00	3.41	3.01	1.19	100.00		
A2B1-1	0.00	0.00	0.00	1.84	0.00	0.00	3.41	3.01	1.19	100.00		
A2B1-1	0.00	0.00	0.00	1.84	0.00	0.00	3.41	3.01	1.19	100.00		
A2B1-1	0.00	0.00	0.00	1.84	0.00	0.00	3.41	3.01	1.19	100.00		
A2B1-1	0.00	0.00	0.00	1.84	0.00	0.00	3.41	3.01	1.19	100.00		
A2B1-1	0.00	0.00	0.00	1.84	0.00	0.00	3.41	3.01	1.19	100.00		
A2B1-1	0.00	0.00	0.00	1.84	0.00	0.00	3.41	3.01	1.19	100.00		
A2B1-1	0.00	0.00	0.00	1.84	0.00	0.00	3.41	3.01	1.19	100.00		
A2B1-1	0.00	0.00	0.00	1.84	0.00	0.00	3.41	3.01	1.19	100.00		
A2B1-2	0.00	0.00	0.00	1.69	0.00	0.00	3.89	3.06	1.10	100.00		
A2B1-2	0.00	0.00	0.00	1.69	0.00	0.00	3.89	3.06	1.10	100.00		
A2B1-2	0.00	0.00	0.00	1.69	0.00	0.00	3.89	3.06	1.10	100.00		
A2B1-2	0.00	0.00	0.00	1.69	0.00	0.00	3.89	3.06	1.10	100.00		
A2B1-2	0.00	0.00	0.00	1.69	0.00	0.00	3.89	3.06	1.10	100.00		
A2B1-2	0.00	0.00	0.00	1.69	0.00	0.00	3.89	3.06	1.10	100.00		
A2B1-2	0.00	0.00	0.00	1.69	0.00	0.00	3.89	3.06	1.10	100.00		
A2B1-2	0.00	0.00	0.00	1.69	0.00	0.00	3.89	3.06	1.10	100.00		
A2B1-2	0.00	0.00	0.00	1.69	0.00	0.00	3.89	3.06	1.10	100.00		
A2B1-2	0.00	0.00	0.00	1.69	0.00	0.00	3.89	3.06	1.10	100.00		
A2B1-2	0.00	0.00	0.00	1.69	0.00	0.00	3.89	3.06	1.10	100.00		
A2B1-3	0.00	0.00	0.00	1.54	0.00	0.00	4.37	3.11	0.97	100.00		
A2B1-3	0.00	0.00	0.00	1.54	0.00	0.00	4.37	3.11	0.97	100.00		
A2B1-3	0.00	0.00	0.00	1.54	0.00	0.00	4.37	3.11	0.97	100.00		
A2B1-3	0.00	0.00	0.00	1.54	0.00	0.00	4.37	3.11	0.97	100.00		
A2B1-3	0.00	0.00	0.00	1.54	0.00	0.00	4.37	3.11	0.97	100.00		
A2B1-3	0.00	0.00	0.00	1.54	0.00	0.00	4.37	3.11	0.97	100.00		
A2B1-3	0.00	0.00	0.00	1.54	0.00	0.00	4.37	3.11	0.97	100.00		
A2B1-3	0.00	0.00	0.00	1.54	0.00	0.00	4.37	3.11	0.97	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
A2B1-3	731.00	0.81	2.031	1,484.390	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	144.83	79.63	1.77
A2B1-3	1094.00	0.81	2.031	2,221.508	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	163.43	81.34	2.11
A2B1-3	1472.00	0.81	2.031	2,989.085	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.46	193.85	153.05	1.29
A2B1-3	1834.00	0.81	2.031	3,724.173	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	229.70	754.02	2.82
A88AP101R1	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.64	84.97	41.90	0.17
A88AP101R1	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.93	104.37	77.41	
A88AP101R1	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.98	116.87	91.81	0.18
A88AP101R1	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.03	125.13	111.03	0.21
A88AP101R1	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.28	132.60	117.27	0.38
A88AP101R1	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.33	130.77	124.43	0.30
A88AP101R1	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	173.32	164.65	0.26
A88AP101R1	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.54	172.90	169.86	0.27
A88AP101R1	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	182.92	174.80	0.22
A88AP101R1	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.74	311.50	253.11	0.10
A88AP101R1	1829.00	0.81	2.031	3,714.020	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.94	604.34	678.09	0.14
A88AP101R1	2177.00	0.81	2.031	4,420.679	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.95	848.48	1113.23	0.71
A88Si+15	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.43	113.77	73.03	0.32
A88Si+15	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.64	114.40	102.40	
A88Si+15	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.75	149.63	121.57	0.20
A88Si+15	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.84	163.30	141.33	
A88Si+15	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.03	178.67	162.87	
A88Si+15	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.13	192.37	169.37	
A88Si+15	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.26	324.86	275.66	0.12
A88Si+15	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.37	810.66	745.73	0.40
A88Si+15	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.45	1092.43	1149.57	0.49
A88Si+15	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.55	1889.03	2481.87	0.53
A88Si+15	1829.00	0.81	2.031	3,714.020	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.75	2045.13	3094.23	0.43
A88Si-15	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.27	65.56	20.58	0.21
A88Si-15	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.36	79.75	48.01	
A88Si-15	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.45	86.44	62.37	0.14
A88Si-15	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.54	93.52	80.28	0.14
A88Si-15	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	100.30	90.47	0.27
A88Si-15	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.95	102.77	98.61	0.28
A88Si-15	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	131.98	129.31	0.32
A88Si-15	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	132.10	141.07	0.61
A88Si-15	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	118.82	136.91	0.24
A88Si-15	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	134.06	149.42	0.17
A88Si-15	1829.00	0.81	2.031	3,714.020	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	174.23	198.80	
A88Si-15	2177.00	0.81	2.031	4,420.679	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	175.25	200.41	0.31
B1-AZ101	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.35	58.04	24.30	1.74
B1-AZ101	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.55	86.72	46.62	1.26
B1-AZ101	272.00	0.81	2.031	552.331	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	158.59	287.01	4.50
B1-AZ101	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.04	143.14	437.19	6.99
B1-AZ101	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	141.30	691.61	16.01
B1-AZ101	731.00	0.81	2.031	1,484.390	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	130.93	765.93	12.90
B1-AZ101	1094.00	0.81	2.031	2,221.508	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	147.79	847.76	22.17
B1-AZ101	1472.00	0.81	2.031	2,989.085	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.42	143.27	851.85	17.03
B1-AZ101	1834.00	0.81	2.031	3,724.173	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.46	159.96	521.17	13.42
C100-G-136B	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.11	58.30	23.01	0.12
C100-G-136B	33.00	0.81	2.031	67.011	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.24	97.26	43.00	0.98
C100-G-136B	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.37	106.27	48.60	1.03
C100-G-136B	119.00	0.81	2.031	241.645	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.47	119.17	56.88	0.66
C100-G-136B	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.52	129.37	60.41	1.07
C100-G-136B	270.00	0.81	2.031	548.270	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.65	149.27	68.80	1.26
C100-G-136B	364.00	0.81	2.031	739.149	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.74	152.97	71.80	1.03
C100-G-136B	546.00	0.81	2.031	1,108.723	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.87	205.82	106.17	1.91
C100-G-136B	732.00	0.81	2.031	1,486.420	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.97	254.99	121.51	2.36
C100-G-136B	1098.00	0.81	2.031	2,229.630	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	287.24	488.30	3.38
C100-G-136B	1461.00	0.81	2.031	2,966.748	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.26	382.01	2094.20	8.37
C100-G-136B	1828.00	0.81	2.031	3,711.989	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.32	345.99	2463.70	11.98
C100-G-136B	2195.00	0.81	2.031	4,457.230	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.43	405.19	2623.63	14.20
C100GCC	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.06	46.28	14.51	
C100GCC	33.00	0.81	2.031	67.011	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.15	72.54	24.07	0.77
C100GCC	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.26	76.73	22.12	0.99
C100GCC	119.00	0.81	2.031	241.645	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.35	87.55	28.36	0.45
C100GCC	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.41	93.03	28.28	0.73
C100GCC	270.00	0.81	2.031	548.270	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.55	103.00	30.13	0.99
C100GCC	364.00	0.81	2.031	739.149	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.66	99.59	30.00	0.54
C100GCC	546.00	0.81	2.031	1,108.723	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.77	137.31	40.65	0.72
C100GCC	732.00	0.81	2.031	1,486.420	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.83	149.39	40.32	0.92
C100GCC	1098.00	0.81	2.031	2,229.630	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.97	164.29	39.25	0.95
C100GCC	1461.00	0.81	2.031	2,966.748	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	184.53	74.46	1.47

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
A2B1-3		39.74	141.02	11.49	1.11								Not Studied
A2B1-3		41.70	153.30	12.29	1.53								Not Studied
A2B1-3		54.41	257.18	27.66	0.70								Not Studied
A2B1-3		87.94	1339.70	133.31	1.61								Not Studied
A88AP101R1			173.50	10.77	9.52	1.40		0.62		1.27			Not Studied
A88AP101R1			282.37	17.72	10.64	1.81		0.79	0.46	1.82	1.02		Not Studied
A88AP101R1			333.97	20.33	10.59	2.04		0.84	0.64	1.72	1.40		Not Studied
A88AP101R1			398.40	24.04	11.42	2.10		0.82	0.67	1.96	1.32		Not Studied
A88AP101R1			389.30	28.29	12.12	2.32		0.85	0.54	1.84	1.10		Not Studied
A88AP101R1			418.83	27.45	11.21	1.70		0.73		1.58	0.83		Not Studied
A88AP101R1			634.49	37.93	16.90	2.36		0.99	0.48	2.49	1.16		Not Studied
A88AP101R1			572.41	36.54	14.76	1.52		0.52	0.47	1.23	0.85		Not Studied
A88AP101R1			568.76	37.68	9.68						0.43		Not Studied
A88AP101R1			889.21	54.40	7.64								Not Studied
A88AP101R1			2163.67	106.61									Not Studied
A88AP101R1			2905.40	206.21	0.73								Analcime only
A88Si+15			329.37	21.89	13.49	2.91		1.24		2.31			Not Studied
A88Si+15			441.23	29.21	14.82	3.01		1.22		2.66	0.59		Not Studied
A88Si+15			532.60	35.48	15.95	2.94		1.10		2.55	0.71		Not Studied
A88Si+15			617.83	41.73	16.95	2.07		0.68		1.75			Not Studied
A88Si+15			638.40	52.14	16.17			0.34		0.86			Not Studied
A88Si+15			680.63	51.27	10.95								Not Studied
A88Si+15			1097.47	81.77	10.05								Not Studied
A88Si+15			2573.40	251.81	3.79								Not Studied
A88Si+15			3569.83	318.82	3.56					0.55			Not Studied
A88Si+15			8966.33	640.35	3.09	2.41				1.61			Not Studied
A88Si+15			10798.00	812.01	1.01	1.19				1.69			Not Studied
A88Si-15			85.62	5.04	6.25			0.40		0.82			Not Studied
A88Si-15			157.10	8.49	6.75	1.23		0.54		1.51	0.72		Not Studied
A88Si-15			192.17	10.65	6.51	1.48		0.59	0.59	1.65	1.18		Not Studied
A88Si-15			238.93	13.08	6.74	1.44		0.71	0.57	1.88	1.16		Not Studied
A88Si-15			250.73	15.53	6.43	1.12		0.64	0.54	1.57	1.13		Not Studied
A88Si-15			268.97	15.68	6.91	1.39		0.74	0.60	1.74	1.10		Not Studied
A88Si-15			396.50	20.39	9.61	2.41		1.36	0.78	3.24	1.51		Not Studied
A88Si-15			384.21	21.55	9.15	2.09		1.06	0.76	2.61	1.49		Not Studied
A88Si-15			380.99	21.00	7.98				0.58		0.88		Not Studied
A88Si-15			459.39	23.75	9.42			0.58	0.71	1.34	0.57		Not Studied
A88Si-15			660.91	32.62	5.13						0.81		Not Studied
A88Si-15			546.83	29.15	4.03						0.94		Amorphous
B1-AZ101		13.12	21.52		0.95								Not Studied
B1-AZ101		28.60	48.29		1.02								Not Studied
B1-AZ101		115.95	246.44	5.65	1.82								Not Studied
B1-AZ101		175.05	425.84	8.53	1.47								Not Studied
B1-AZ101		216.13	634.44	14.52	0.76								Not Studied
B1-AZ101		237.84	671.47	14.05									Not Studied
B1-AZ101		252.56	826.44	21.37	4.80								Not Studied
B1-AZ101		286.13	849.88	23.17									Not Studied
B1-AZ101		187.13	530.08	14.97	0.77								Not Studied
C100-G-136B		8.42	61.38		2.31								Not Studied
C100-G-136B		15.82	108.33		2.97								Not Studied
C100-G-136B		17.24	132.60		3.28								Not Studied
C100-G-136B		21.48	157.20		2.71								Not Studied
C100-G-136B		23.64	180.13		2.99								Not Studied
C100-G-136B		27.66	205.37	2.24	3.12								Not Studied
C100-G-136B		28.12	219.53	1.80	2.82								Not Studied
C100-G-136B		39.23	317.17	2.34	2.01								Not Studied
C100-G-136B		45.65	321.94	2.57	1.25								Not Studied
C100-G-136B		104.84	1107.03	9.26	1.13								Not Studied
C100-G-136B		374.97	3620.00	45.70									Not Studied
C100-G-136B		488.59	4797.33	62.82									Not Studied
C100-G-136B		457.73	4504.70	76.65									Not Studied
C100GCC		5.83	42.65		3.15								Not Studied
C100GCC		9.40	70.15		5.78								Not Studied
C100GCC		9.72	73.03		6.51								Not Studied
C100GCC		12.24	93.35		7.10								Not Studied
C100GCC		13.58	102.87		7.94								Not Studied
C100GCC		15.13	112.80		8.63								Not Studied
C100GCC		14.94	120.17		8.22								Not Studied
C100GCC		18.81	155.97		9.60								Not Studied
C100GCC		22.09	163.55	1.88	7.88								Not Studied
C100GCC		24.03	198.63		2.69								Not Studied
C100GCC		30.42	225.69	2.59	1.51								Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
A2B1-3		70.45	16.959	2.1758918	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-3		70.45	16.959	2.1758918	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-3		70.45	16.959	2.1758918	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2B1-3		70.45	16.959	2.1758918	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88AP101R1		76.13	13.653	11.7300176	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88AP101R1		76.13	13.653	11.7300176	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88AP101R1		76.13	13.653	11.7300176	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88AP101R1		76.13	13.653	11.7300176	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88AP101R1		76.13	13.653	11.7300176	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88AP101R1		76.13	13.653	11.7300176	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88AP101R1		76.13	13.653	11.7300176	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88AP101R1		76.13	13.653	11.7300176	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88AP101R1		76.13	13.653	11.7300176	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88AP101R1		76.13	13.653	11.7300176	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88AP101R1		76.13	13.653	11.7300176	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88AP101R1	XRD/SEM	76.13	13.653	11.7300176	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88Si+15		76.59	13.422	12.3082739	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88Si+15		76.59	13.422	12.3082739	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88Si+15		76.59	13.422	12.3082739	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88Si+15		76.59	13.422	12.3082739	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88Si+15		76.59	13.422	12.3082739	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88Si+15		76.59	13.422	12.3082739	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88Si+15		76.59	13.422	12.3082739	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88Si+15		76.59	13.422	12.3082739	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88Si+15		76.59	13.422	12.3082739	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88Si+15		76.59	13.422	12.3082739	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A88Si-15		75.64	13.892	11.1707189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
A88Si-15		75.64	13.892	11.1707189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
A88Si-15		75.64	13.892	11.1707189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
A88Si-15		75.64	13.892	11.1707189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
A88Si-15		75.64	13.892	11.1707189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
A88Si-15		75.64	13.892	11.1707189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
A88Si-15		75.64	13.892	11.1707189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
A88Si-15		75.64	13.892	11.1707189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
A88Si-15		75.64	13.892	11.1707189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
A88Si-15		75.64	13.892	11.1707189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
A88Si-15	XRD/SEM	75.64	13.892	11.1707189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
B1-AZ101		68.57	18.229	-1.9854412	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
B1-AZ101		68.57	18.229	-1.9854412	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
B1-AZ101		68.57	18.229	-1.9854412	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
B1-AZ101		68.57	18.229	-1.9854412	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
B1-AZ101		68.57	18.229	-1.9854412	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
B1-AZ101		68.57	18.229	-1.9854412	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
B1-AZ101		68.57	18.229	-1.9854412	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
B1-AZ101		68.57	18.229	-1.9854412	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
B1-AZ101		68.57	18.229	-1.9854412	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100-G-136B		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100-G-136B		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100-G-136B		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100-G-136B		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100-G-136B		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100-G-136B		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100-G-136B		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100-G-136B		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100-G-136B		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100-G-136B		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100-G-136B		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100-G-136B		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100GCC		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100GCC		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100GCC		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100GCC		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100GCC		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100GCC		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100GCC		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100GCC		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100GCC		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100GCC		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100GCC		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
A2B1-3	6.04	9.97	0.00	5.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	1.09	0.00	0.00	3.22
A2B1-3	6.04	9.97	0.00	5.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	1.09	0.00	0.00	3.22
A2B1-3	6.04	9.97	0.00	5.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	1.09	0.00	0.00	3.22
A2B1-3	6.04	9.97	0.00	5.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	1.09	0.00	0.00	3.22
A88AP101R1	6.10	9.83	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.55	2.14	0.00	0.00	0.00
A88AP101R1	6.10	9.83	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.55	2.14	0.00	0.00	0.00
A88AP101R1	6.10	9.83	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.55	2.14	0.00	0.00	0.00
A88AP101R1	6.10	9.83	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.55	2.14	0.00	0.00	0.00
A88AP101R1	6.10	9.83	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.55	2.14	0.00	0.00	0.00
A88AP101R1	6.10	9.83	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.55	2.14	0.00	0.00	0.00
A88AP101R1	6.10	9.83	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.55	2.14	0.00	0.00	0.00
A88AP101R1	6.10	9.83	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.55	2.14	0.00	0.00	0.00
A88AP101R1	6.10	9.83	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.55	2.14	0.00	0.00	0.00
A88AP101R1	6.10	9.83	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.55	2.14	0.00	0.00	0.00
A88Si+15	6.14	9.48	0.00	1.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	2.37	0.00	0.00	0.00
A88Si+15	6.14	9.48	0.00	1.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	2.37	0.00	0.00	0.00
A88Si+15	6.14	9.48	0.00	1.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	2.37	0.00	0.00	0.00
A88Si+15	6.14	9.48	0.00	1.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	2.37	0.00	0.00	0.00
A88Si+15	6.14	9.48	0.00	1.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	2.37	0.00	0.00	0.00
A88Si+15	6.14	9.48	0.00	1.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	2.37	0.00	0.00	0.00
A88Si+15	6.14	9.48	0.00	1.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	2.37	0.00	0.00	0.00
A88Si+15	6.14	9.48	0.00	1.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	2.37	0.00	0.00	0.00
A88Si+15	6.14	9.48	0.00	1.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	2.37	0.00	0.00	0.00
A88Si+15	6.14	9.48	0.00	1.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.35	2.37	0.00	0.00	0.00
A88Si-15	6.06	10.22	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	1.88	0.00	0.00	0.00
A88Si-15	6.06	10.22	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	1.88	0.00	0.00	0.00
A88Si-15	6.06	10.22	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	1.88	0.00	0.00	0.00
A88Si-15	6.06	10.22	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	1.88	0.00	0.00	0.00
A88Si-15	6.06	10.22	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	1.88	0.00	0.00	0.00
A88Si-15	6.06	10.22	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	1.88	0.00	0.00	0.00
A88Si-15	6.06	10.22	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	1.88	0.00	0.00	0.00
A88Si-15	6.06	10.22	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	1.88	0.00	0.00	0.00
A88Si-15	6.06	10.22	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	1.88	0.00	0.00	0.00
A88Si-15	6.06	10.22	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	1.88	0.00	0.00	0.00
B1-AZ101	6.18	10.03	0.00	6.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28	0.18	0.00	0.00	4.31
B1-AZ101	6.18	10.03	0.00	6.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28	0.18	0.00	0.00	4.31
B1-AZ101	6.18	10.03	0.00	6.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28	0.18	0.00	0.00	4.31
B1-AZ101	6.18	10.03	0.00	6.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28	0.18	0.00	0.00	4.31
B1-AZ101	6.18	10.03	0.00	6.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28	0.18	0.00	0.00	4.31
B1-AZ101	6.18	10.03	0.00	6.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28	0.18	0.00	0.00	4.31
B1-AZ101	6.18	10.03	0.00	6.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28	0.18	0.00	0.00	4.31
B1-AZ101	6.18	10.03	0.00	6.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28	0.18	0.00	0.00	4.31
C100-G-136B	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100-G-136B	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100-G-136B	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100-G-136B	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100-G-136B	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100-G-136B	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100-G-136B	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100-G-136B	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100-G-136B	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100-G-136B	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100-G-136B	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100GCC	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100GCC	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100GCC	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100GCC	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100GCC	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100GCC	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100GCC	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100GCC	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100GCC	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100GCC	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100GCC	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
A2B1-3	2.60	0.00	0.00	0.00	8.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.43	0.00	0.00
A2B1-3	2.60	0.00	0.00	0.00	8.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.43	0.00	0.00
A2B1-3	2.60	0.00	0.00	0.00	8.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.43	0.00	0.00
A2B1-3	2.60	0.00	0.00	0.00	8.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.43	0.00	0.00
A88AP101R1	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.15	0.00	0.00
A88AP101R1	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.15	0.00	0.00
A88AP101R1	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.15	0.00	0.00
A88AP101R1	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.15	0.00	0.00
A88AP101R1	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.15	0.00	0.00
A88AP101R1	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.15	0.00	0.00
A88AP101R1	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.15	0.00	0.00
A88AP101R1	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.15	0.00	0.00
A88AP101R1	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.15	0.00	0.00
A88AP101R1	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.15	0.00	0.00
A88Si+15	1.43	0.00	0.00	0.00	22.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
A88Si+15	1.43	0.00	0.00	0.00	22.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
A88Si+15	1.43	0.00	0.00	0.00	22.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
A88Si+15	1.43	0.00	0.00	0.00	22.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
A88Si+15	1.43	0.00	0.00	0.00	22.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
A88Si+15	1.43	0.00	0.00	0.00	22.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
A88Si+15	1.43	0.00	0.00	0.00	22.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
A88Si+15	1.43	0.00	0.00	0.00	22.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
A88Si+15	1.43	0.00	0.00	0.00	22.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
A88Si-15	1.54	0.00	0.00	0.00	17.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.87	0.00	0.00
A88Si-15	1.54	0.00	0.00	0.00	17.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.87	0.00	0.00
A88Si-15	1.54	0.00	0.00	0.00	17.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.87	0.00	0.00
A88Si-15	1.54	0.00	0.00	0.00	17.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.87	0.00	0.00
A88Si-15	1.54	0.00	0.00	0.00	17.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.87	0.00	0.00
A88Si-15	1.54	0.00	0.00	0.00	17.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.87	0.00	0.00
A88Si-15	1.54	0.00	0.00	0.00	17.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.87	0.00	0.00
A88Si-15	1.54	0.00	0.00	0.00	17.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.87	0.00	0.00
A88Si-15	1.54	0.00	0.00	0.00	17.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.87	0.00	0.00
A88Si-15	1.54	0.00	0.00	0.00	17.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.87	0.00	0.00
B1-AZ101	2.99	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.58	0.00	0.00
B1-AZ101	2.99	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.58	0.00	0.00
B1-AZ101	2.99	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.58	0.00	0.00
B1-AZ101	2.99	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.58	0.00	0.00
B1-AZ101	2.99	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.58	0.00	0.00
B1-AZ101	2.99	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.58	0.00	0.00
B1-AZ101	2.99	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.58	0.00	0.00
B1-AZ101	2.99	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.58	0.00	0.00
C100-G-136B	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100-G-136B	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100-G-136B	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100-G-136B	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100-G-136B	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100-G-136B	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100-G-136B	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100-G-136B	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100-G-136B	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100-G-136B	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100-G-136B	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100GCC	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100GCC	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100GCC	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100GCC	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100GCC	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100GCC	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100GCC	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100GCC	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100GCC	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100GCC	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
A2B1-3	0.00	0.00	0.00	1.54	0.00	0.00	4.37	3.11	0.97	100.00		
A2B1-3	0.00	0.00	0.00	1.54	0.00	0.00	4.37	3.11	0.97	100.00		
A2B1-3	0.00	0.00	0.00	1.54	0.00	0.00	4.37	3.11	0.97	100.00		
A2B1-3	0.00	0.00	0.00	1.54	0.00	0.00	4.37	3.11	0.97	100.00		
A88AP101R1	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.78	100.00		
A88AP101R1	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.78	100.00		
A88AP101R1	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.78	100.00		
A88AP101R1	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.78	100.00		
A88AP101R1	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.78	100.00		
A88AP101R1	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.78	100.00		
A88AP101R1	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.78	100.00		
A88AP101R1	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.78	100.00		
A88AP101R1	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.78	100.00		
A88AP101R1	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.78	100.00		
A88AP101R1	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.78	100.00		
A88Si+15	0.00	0.00	0.00	1.93	0.00	0.00	2.85	2.89	0.89	100.00		
A88Si+15	0.00	0.00	0.00	1.93	0.00	0.00	2.85	2.89	0.89	100.00		
A88Si+15	0.00	0.00	0.00	1.93	0.00	0.00	2.85	2.89	0.89	100.00		
A88Si+15	0.00	0.00	0.00	1.93	0.00	0.00	2.85	2.89	0.89	100.00		
A88Si+15	0.00	0.00	0.00	1.93	0.00	0.00	2.85	2.89	0.89	100.00		
A88Si+15	0.00	0.00	0.00	1.93	0.00	0.00	2.85	2.89	0.89	100.00		
A88Si+15	0.00	0.00	0.00	1.93	0.00	0.00	2.85	2.89	0.89	100.00		
A88Si+15	0.00	0.00	0.00	1.93	0.00	0.00	2.85	2.89	0.89	100.00		
A88Si+15	0.00	0.00	0.00	1.93	0.00	0.00	2.85	2.89	0.89	100.00		
A88Si+15	0.00	0.00	0.00	1.93	0.00	0.00	2.85	2.89	0.89	100.00		
A88Si-15	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.67	100.00		
A88Si-15	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.67	100.00		
A88Si-15	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.67	100.00		
A88Si-15	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.67	100.00		
A88Si-15	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.67	100.00		
A88Si-15	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.67	100.00		
A88Si-15	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.67	100.00		
A88Si-15	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.67	100.00		
A88Si-15	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.67	100.00		
A88Si-15	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.67	100.00		
B1-AZ101	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.81	100.00		
B1-AZ101	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.81	100.00		
B1-AZ101	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.81	100.00		
B1-AZ101	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.81	100.00		
B1-AZ101	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.81	100.00		
B1-AZ101	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.81	100.00		
B1-AZ101	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.81	100.00		
B1-AZ101	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.81	100.00		
B1-AZ101	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.81	100.00		
C100-G-136B	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100-G-136B	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100-G-136B	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100-G-136B	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100-G-136B	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100-G-136B	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100-G-136B	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100-G-136B	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100-G-136B	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100-G-136B	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100-G-136B	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100GCC	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100GCC	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100GCC	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100GCC	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100GCC	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100GCC	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100GCC	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100GCC	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100GCC	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100GCC	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100GCC	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
C100GCC	1828.00	0.81	2.031	3,711.989	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	258.81	201.62	2.87
C100GCC	2195.00	0.81	2.031	4,457.230	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.26	380.64	789.86	4.24
C100GCC	2624.00	0.81	2.031	5,328.370	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	368.86	1428.77	7.63
C1-AN107	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.74	89.64	32.01	0.55
C1-AN107	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.87	119.87	46.93	0.91
C1-AN107	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.97	115.87	47.65	0.34
C1-AN107	267.00	0.81	2.031	542.178	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.28	167.16	73.85	0.56
C1-AN107	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.36	166.35	74.21	0.41
C1-AN107	549.00	0.81	2.031	1,114.815	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	174.26	78.22	0.48
C1-AN107	1098.00	0.81	2.031	2,229.630	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	504.32	1549.80	3.03
C1-AN107	1448.00	0.81	2.031	2,940.350	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.77	687.94	2853.30	4.83
C22AN107	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.46	89.75	35.50	0.27
C22AN107	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.62	129.87	59.37	0.26
C22AN107	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.95	147.80	70.92	0.20
C22AN107	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.03	173.33	90.84	0.52
C22AN107	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	179.37	96.96	1.00
C22AN107	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	206.07	116.27	1.22
C22AN107	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.43	278.59	135.07	0.89
C22AN107	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	377.22	309.98	1.71
C22AN107	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	771.97	2319.13	4.65
C22AN107	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.75	691.94	2729.97	5.21
C22AN107	1819.00	0.81	2.031	3,693.714	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.94	659.54	2635.10	4.75
C22Si+15	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	103.53	40.80	0.24
C22Si+15	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	151.90	70.51	0.20
C22Si+15	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.27	176.57	82.36	0.30
C22Si+15	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.32	204.70	102.00	0.63
C22Si+15	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.47	208.60	103.43	0.84
C22Si+15	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.75	233.33	108.37	0.79
C22Si+15	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.85	349.27	189.62	1.01
C22Si+15	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.94	997.94	2540.30	3.55
C22Si+15	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.06	1066.43	3104.67	3.32
C22Si+15	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.17	832.26	2711.80	2.15
C22Si+15	1819.00	0.81	2.031	3,693.714	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.34	817.37	2706.90	2.48
C22Si-15	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.54	75.62	28.27	0.30
C22Si-15	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.86	104.60	44.93	
C22Si-15	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.12	116.30	52.64	0.19
C22Si-15	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.22	131.80	64.92	0.46
C22Si-15	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.37	161.23	84.86	0.93
C22Si-15	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.53	163.90	90.29	0.94
C22Si-15	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.64	179.76	93.86	0.80
C22Si-15	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.74	194.01	102.45	0.79
C22Si-15	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.87	200.12	92.21	0.82
C22Si-15	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.96	214.97	131.94	0.97
C22Si-15	1819.00	0.81	2.031	3,693.714	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.15	514.68	2032.43	5.69
C22Si-15	2253.00	0.81	2.031	4,575.006	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.25	461.54	2809.67	12.94
LAWA102R1	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.92	78.43	26.74	0.46
LAWA102R1	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.04	102.73	41.94	0.30
LAWA102R1	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.17	113.83	46.87	0.28
LAWA102R1	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.35	121.63	53.76	0.56
LAWA102R1	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.65	126.07	55.00	0.57
LAWA102R1	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	129.30	58.29	0.65
LAWA102R1	364.00	0.81	2.031	739.149	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	174.24	72.74	0.90
LAWA102R1	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	183.43	88.01	0.61
LAWA102R1	733.00	0.81	2.031	1,488.451	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	191.19	90.84	0.71
LAWA102R1	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	188.36	86.05	0.50
LAWA102R1	2210.00	0.81	2.031	4,487.689	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.57	531.25	2343.63	7.36
LAWA104	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.23	84.59	30.99	
LAWA104	33.00	0.81	2.031	67.011	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.33	133.13	68.25	0.49
LAWA104	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	142.90	78.13	0.58
LAWA104	119.00	0.81	2.031	241.645	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.54	159.67	99.93	0.16
LAWA104	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	164.00	106.53	0.27
LAWA104	270.00	0.81	2.031	548.270	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.86	187.70	142.23	0.45
LAWA104	364.00	0.81	2.031	739.149	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.06	183.80	127.57	
LAWA104	546.00	0.81	2.031	1,108.723	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.12	416.92	382.22	0.25
LAWA104	732.00	0.81	2.031	1,486.420	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.23	1075.77	1431.00	0.58
LAWA104	1098.00	0.81	2.031	2,229.630	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.36	1669.77	2719.87	0.74
LAWA104	1461.00	0.81	2.031	2,966.748	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.45	1723.00	2619.43	1.29
LAWA104	1828.00	0.81	2.031	3,711.989	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.52	1594.40	2374.37	0.87
LAWA104	2195.00	0.81	2.031	4,457.230	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.64	1903.47	2500.43	0.45
LAWA105	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	108.43	49.27	
LAWA105	33.00	0.81	2.031	67.011	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.54	172.73	96.94	0.50
LAWA105	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.73	182.50	109.43	0.53

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
C100GCC		61.88	545.17	4.24									Not Studied
C100GCC		177.83	1670.97	13.79									Not Studied
C100GCC		241.81	2287.07	32.19	1.13								Analcime and Stevensite
C1-AN107		12.63	113.77		4.56			0.27		0.82			Not Studied
C1-AN107		16.17	156.43		3.45					0.78			Not Studied
C1-AN107		15.73	165.60		3.37								Not Studied
C1-AN107		22.43	288.88	2.69	3.84								Not Studied
C1-AN107		22.99	249.45		3.17								Not Studied
C1-AN107		24.22	294.40		3.58								Not Studied
C1-AN107		252.52	3174.20	13.44	1.57								Not Studied
C1-AN107		372.25	6187.63	30.02				0.89					Not Studied
C22AN107		11.99	119.07		3.77								Not Studied
C22AN107		19.11	194.50		3.71					0.54			Not Studied
C22AN107		22.37	228.40		3.66								Not Studied
C22AN107		26.92	264.23		3.29					0.53			Not Studied
C22AN107		27.50	276.03		3.48								Not Studied
C22AN107		32.11	319.97		2.83								Not Studied
C22AN107		42.49	408.16		4.26								Not Studied
C22AN107		86.44	771.34	2.69	3.73								Not Studied
C22AN107		519.08	4363.60	25.09	8.41			0.27					Not Studied
C22AN107		414.93	5896.90	37.89									Not Studied
C22AN107		351.84	5154.93	34.30									Not Studied
C22Si+15		12.91	154.60		4.35			0.25					Not Studied
C22Si+15		20.63	266.93		4.21					0.57			Not Studied
C22Si+15		23.79	304.80		4.10								Not Studied
C22Si+15		28.08	345.27		3.12								Not Studied
C22Si+15		26.69	343.87		4.34								Not Studied
C22Si+15		26.48	366.90	1.98	3.34								Not Studied
C22Si+15		47.56	569.61	2.22	4.58								Not Studied
C22Si+15		411.51	5664.17	39.23	8.72						0.67		Not Studied
C22Si+15		460.67	6047.07	47.53	9.48	1.13		0.33			0.47		Not Studied
C22Si+15		405.72	6659.57	45.10	1.22								Not Studied
C22Si+15		370.47	5903.00	41.10	0.92								Not Studied
C22Si-15		10.20	83.41		3.24								Not Studied
C22Si-15		15.75	127.47		3.24								Not Studied
C22Si-15		18.68	147.27		3.22								Not Studied
C22Si-15		20.92	165.93		3.13								Not Studied
C22Si-15		26.49	200.90		2.99								Not Studied
C22Si-15		27.33	209.10		2.09								Not Studied
C22Si-15		31.78	269.09		3.16								Not Studied
C22Si-15		34.66	278.84		3.61								Not Studied
C22Si-15		33.32	287.34	1.93	3.77								Not Studied
C22Si-15		38.87	347.66		1.37								Not Studied
C22Si-15		332.63	3308.77	17.25									Not Studied
C22Si-15		396.50	4858.97	29.14	1.92						0.63		Not Studied
LAWA102R1		8.04	78.61		3.29								Not Studied
LAWA102R1		12.97	126.33		4.26								Not Studied
LAWA102R1		14.95	147.50		3.86								Not Studied
LAWA102R1		16.68	161.07		3.18								Not Studied
LAWA102R1		17.39	178.73	1.81	3.48								Not Studied
LAWA102R1		19.16	182.43	1.76	3.26								Not Studied
LAWA102R1		22.70	240.48	2.55	4.30	1.37		0.37		1.09			Not Studied
LAWA102R1		28.46	262.55	3.38	4.06								Not Studied
LAWA102R1		27.00	263.94	3.46	2.50								Not Studied
LAWA102R1		26.90	287.51	2.78	3.31								Not Studied
LAWA102R1		347.69	4329.80	62.18									Not Studied
LAWA104			171.50	2.27	9.87	1.42		0.54		2.43	0.48		Not Studied
LAWA104			321.60	4.12	14.12	2.75		0.93	0.59	3.23	0.79		Not Studied
LAWA104			425.83	4.99	15.96	3.13		1.06	0.56	4.75	0.74		Not Studied
LAWA104			512.27	7.13	16.97	2.59		0.96		1.55			Not Studied
LAWA104			622.63	6.24	16.80	2.06		0.62		1.43			Not Studied
LAWA104			650.57	7.29	19.56	1.71		0.35	0.69	0.77			Not Studied
LAWA104			706.10	6.90	15.85								Not Studied
LAWA104			1617.77	22.47	8.97								Not Studied
LAWA104			4752.27	99.45	2.29					0.65			Not Studied
LAWA104			8828.90	206.64	1.73	1.55				1.89	0.55		Not Studied
LAWA104			8587.77	205.86	1.13					1.57			Not Studied
LAWA104			8841.73	203.31	0.83					1.15			Not Studied
LAWA104			8153.80	200.78	1.24	1.44				1.22			Not Studied
LAWA105			282.33	3.81	14.24	2.71		1.02		3.99	0.48		Not Studied
LAWA105		1.33	507.80	6.52	17.85	3.79		1.41	0.56	4.94	0.79		Not Studied
LAWA105			634.57	8.58	20.95	3.58		1.29	0.49	4.82	0.74		Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
C100GCC		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100GCC		71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C100GCC	XRD/SEM	71.58	19.013	-11.2318339	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C1-AN107		73.71	16.585	-0.9376375	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C1-AN107		73.71	16.585	-0.9376375	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C1-AN107		73.71	16.585	-0.9376375	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C1-AN107		73.71	16.585	-0.9376375	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C1-AN107		73.71	16.585	-0.9376375	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C1-AN107		73.71	16.585	-0.9376375	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C1-AN107		73.71	16.585	-0.9376375	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C1-AN107		73.71	16.585	-0.9376375	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22AN107		73.73	16.806	-2.2162678	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22AN107		73.73	16.806	-2.2162678	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22AN107		73.73	16.806	-2.2162678	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22AN107		73.73	16.806	-2.2162678	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22AN107		73.73	16.806	-2.2162678	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22AN107		73.73	16.806	-2.2162678	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22AN107		73.73	16.806	-2.2162678	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22AN107		73.73	16.806	-2.2162678	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22AN107		73.73	16.806	-2.2162678	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22AN107		73.73	16.806	-2.2162678	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22Si+15		74.17	16.395	-0.6053725	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22Si+15		74.17	16.395	-0.6053725	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22Si+15		74.17	16.395	-0.6053725	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22Si+15		74.17	16.395	-0.6053725	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22Si+15		74.17	16.395	-0.6053725	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22Si+15		74.17	16.395	-0.6053725	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22Si+15		74.17	16.395	-0.6053725	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22Si+15		74.17	16.395	-0.6053725	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22Si+15		74.17	16.395	-0.6053725	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22Si+15		74.17	16.395	-0.6053725	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22Si-15		73.43	16.933	-2.4605059	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22Si-15		73.43	16.933	-2.4605059	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22Si-15		73.43	16.933	-2.4605059	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22Si-15		73.43	16.933	-2.4605059	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22Si-15		73.43	16.933	-2.4605059	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22Si-15		73.43	16.933	-2.4605059	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22Si-15		73.43	16.933	-2.4605059	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22Si-15		73.43	16.933	-2.4605059	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22Si-15		73.43	16.933	-2.4605059	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
C22Si-15		73.43	16.933	-2.4605059	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA102R1		73.57	16.467	-0.0547246	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA102R1		73.57	16.467	-0.0547246	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA102R1		73.57	16.467	-0.0547246	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA102R1		73.57	16.467	-0.0547246	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA102R1		73.57	16.467	-0.0547246	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA102R1		73.57	16.467	-0.0547246	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA102R1		73.57	16.467	-0.0547246	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA102R1		73.57	16.467	-0.0547246	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA102R1		73.57	16.467	-0.0547246	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA102R1		73.57	16.467	-0.0547246	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA104		74.13	15.273	5.7907886	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA104		74.13	15.273	5.7907886	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA104		74.13	15.273	5.7907886	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA104		74.13	15.273	5.7907886	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA104		74.13	15.273	5.7907886	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA104		74.13	15.273	5.7907886	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA104		74.13	15.273	5.7907886	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA104		74.13	15.273	5.7907886	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA104		74.13	15.273	5.7907886	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA104		74.13	15.273	5.7907886	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA104		74.13	15.273	5.7907886	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA104		74.13	15.273	5.7907886	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA105		74.32	15.371	4.9374497	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA105		74.32	15.371	4.9374497	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA105		74.32	15.371	4.9374497	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
C100GCC	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100GCC	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C100GCC	6.13	10.09	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.48	0.15	0.00	0.00	2.73
C1-AN107	6.07	10.03	0.00	5.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.42	0.07	0.00	0.00	2.51
C1-AN107	6.07	10.03	0.00	5.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.42	0.07	0.00	0.00	2.51
C1-AN107	6.07	10.03	0.00	5.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.42	0.07	0.00	0.00	2.51
C1-AN107	6.07	10.03	0.00	5.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.42	0.07	0.00	0.00	2.51
C1-AN107	6.07	10.03	0.00	5.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.42	0.07	0.00	0.00	2.51
C1-AN107	6.07	10.03	0.00	5.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.42	0.07	0.00	0.00	2.51
C1-AN107	6.07	10.03	0.00	5.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.42	0.07	0.00	0.00	2.51
C1-AN107	6.07	10.03	0.00	5.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.42	0.07	0.00	0.00	2.51
C22AN107	6.11	10.08	0.00	5.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.59	0.09	0.00	0.00	2.51
C22AN107	6.11	10.08	0.00	5.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.59	0.09	0.00	0.00	2.51
C22AN107	6.11	10.08	0.00	5.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.59	0.09	0.00	0.00	2.51
C22AN107	6.11	10.08	0.00	5.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.59	0.09	0.00	0.00	2.51
C22AN107	6.11	10.08	0.00	5.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.59	0.09	0.00	0.00	2.51
C22AN107	6.11	10.08	0.00	5.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.59	0.09	0.00	0.00	2.51
C22AN107	6.11	10.08	0.00	5.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.59	0.09	0.00	0.00	2.51
C22AN107	6.11	10.08	0.00	5.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.59	0.09	0.00	0.00	2.51
C22AN107	6.11	10.08	0.00	5.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.59	0.09	0.00	0.00	2.51
C22Si+15	6.04	9.84	0.00	4.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.36	0.10	0.00	0.00	2.46
C22Si+15	6.04	9.84	0.00	4.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.36	0.10	0.00	0.00	2.46
C22Si+15	6.04	9.84	0.00	4.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.36	0.10	0.00	0.00	2.46
C22Si+15	6.04	9.84	0.00	4.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.36	0.10	0.00	0.00	2.46
C22Si+15	6.04	9.84	0.00	4.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.36	0.10	0.00	0.00	2.46
C22Si+15	6.04	9.84	0.00	4.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.36	0.10	0.00	0.00	2.46
C22Si+15	6.04	9.84	0.00	4.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.36	0.10	0.00	0.00	2.46
C22Si+15	6.04	9.84	0.00	4.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.36	0.10	0.00	0.00	2.46
C22Si+15	6.04	9.84	0.00	4.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.36	0.10	0.00	0.00	2.46
C22Si-15	6.16	10.29	0.00	5.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	0.08	0.00	0.00	2.57
C22Si-15	6.16	10.29	0.00	5.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	0.08	0.00	0.00	2.57
C22Si-15	6.16	10.29	0.00	5.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	0.08	0.00	0.00	2.57
C22Si-15	6.16	10.29	0.00	5.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	0.08	0.00	0.00	2.57
C22Si-15	6.16	10.29	0.00	5.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	0.08	0.00	0.00	2.57
C22Si-15	6.16	10.29	0.00	5.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	0.08	0.00	0.00	2.57
C22Si-15	6.16	10.29	0.00	5.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	0.08	0.00	0.00	2.57
C22Si-15	6.16	10.29	0.00	5.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	0.08	0.00	0.00	2.57
C22Si-15	6.16	10.29	0.00	5.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	0.08	0.00	0.00	2.57
C22Si-15	6.16	10.29	0.00	5.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	0.08	0.00	0.00	2.57
LAWA102R1	6.04	9.97	0.00	5.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.38	0.26	0.00	0.00	2.49
LAWA102R1	6.04	9.97	0.00	5.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.38	0.26	0.00	0.00	2.49
LAWA102R1	6.04	9.97	0.00	5.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.38	0.26	0.00	0.00	2.49
LAWA102R1	6.04	9.97	0.00	5.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.38	0.26	0.00	0.00	2.49
LAWA102R1	6.04	9.97	0.00	5.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.38	0.26	0.00	0.00	2.49
LAWA102R1	6.04	9.97	0.00	5.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.38	0.26	0.00	0.00	2.49
LAWA102R1	6.04	9.97	0.00	5.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.38	0.26	0.00	0.00	2.49
LAWA102R1	6.04	9.97	0.00	5.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.38	0.26	0.00	0.00	2.49
LAWA102R1	6.04	9.97	0.00	5.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.38	0.26	0.00	0.00	2.49
LAWA104	6.61	8.59	0.00	1.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.74	0.55	0.00	0.00	0.00
LAWA104	6.61	8.59	0.00	1.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.74	0.55	0.00	0.00	0.00
LAWA104	6.61	8.59	0.00	1.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.74	0.55	0.00	0.00	0.00
LAWA104	6.61	8.59	0.00	1.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.74	0.55	0.00	0.00	0.00
LAWA104	6.61	8.59	0.00	1.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.74	0.55	0.00	0.00	0.00
LAWA104	6.61	8.59	0.00	1.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.74	0.55	0.00	0.00	0.00
LAWA104	6.61	8.59	0.00	1.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.74	0.55	0.00	0.00	0.00
LAWA104	6.61	8.59	0.00	1.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.74	0.55	0.00	0.00	0.00
LAWA104	6.61	8.59	0.00	1.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.74	0.55	0.00	0.00	0.00
LAWA104	6.61	8.59	0.00	1.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.74	0.55	0.00	0.00	0.00
LAWA104	6.61	8.59	0.00	1.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.74	0.55	0.00	0.00	0.00
LAWA105	7.03	8.28	0.00	1.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.49	0.60	0.00	0.00	0.00
LAWA105	7.03	8.28	0.00	1.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.49	0.60	0.00	0.00	0.00
LAWA105	7.03	8.28	0.00	1.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.49	0.60	0.00	0.00	0.00

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
C100GCC	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100GCC	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C100GCC	1.51	0.00	0.00	0.00	11.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
C1-AN107	1.51	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
C1-AN107	1.51	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
C1-AN107	1.51	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
C1-AN107	1.51	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
C1-AN107	1.51	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
C1-AN107	1.51	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
C1-AN107	1.51	0.00	0.00	0.00	14.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
C22AN107	1.51	0.00	0.00	0.00	14.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
C22AN107	1.51	0.00	0.00	0.00	14.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
C22AN107	1.51	0.00	0.00	0.00	14.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
C22AN107	1.51	0.00	0.00	0.00	14.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
C22AN107	1.51	0.00	0.00	0.00	14.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
C22AN107	1.51	0.00	0.00	0.00	14.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
C22AN107	1.51	0.00	0.00	0.00	14.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
C22AN107	1.51	0.00	0.00	0.00	14.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
C22AN107	1.51	0.00	0.00	0.00	14.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
C22AN107	1.51	0.00	0.00	0.00	14.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.61	0.00	0.00
C22Si+15	1.48	0.00	0.00	0.00	16.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.58	0.00	0.00
C22Si+15	1.48	0.00	0.00	0.00	16.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.58	0.00	0.00
C22Si+15	1.48	0.00	0.00	0.00	16.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.58	0.00	0.00
C22Si+15	1.48	0.00	0.00	0.00	16.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.58	0.00	0.00
C22Si+15	1.48	0.00	0.00	0.00	16.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.58	0.00	0.00
C22Si+15	1.48	0.00	0.00	0.00	16.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.58	0.00	0.00
C22Si+15	1.48	0.00	0.00	0.00	16.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.58	0.00	0.00
C22Si+15	1.48	0.00	0.00	0.00	16.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.58	0.00	0.00
C22Si+15	1.48	0.00	0.00	0.00	16.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.58	0.00	0.00
C22Si+15	1.48	0.00	0.00	0.00	16.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.58	0.00	0.00
C22Si-15	1.55	0.00	0.00	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.68	0.00	0.00
C22Si-15	1.55	0.00	0.00	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.68	0.00	0.00
C22Si-15	1.55	0.00	0.00	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.68	0.00	0.00
C22Si-15	1.55	0.00	0.00	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.68	0.00	0.00
C22Si-15	1.55	0.00	0.00	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.68	0.00	0.00
C22Si-15	1.55	0.00	0.00	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.68	0.00	0.00
C22Si-15	1.55	0.00	0.00	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.68	0.00	0.00
C22Si-15	1.55	0.00	0.00	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.68	0.00	0.00
C22Si-15	1.55	0.00	0.00	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.68	0.00	0.00
C22Si-15	1.55	0.00	0.00	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.68	0.00	0.00
C22Si-15	1.55	0.00	0.00	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.68	0.00	0.00
LAWA102R1	1.49	0.00	0.00	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.35	0.00	0.00
LAWA102R1	1.49	0.00	0.00	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.35	0.00	0.00
LAWA102R1	1.49	0.00	0.00	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.35	0.00	0.00
LAWA102R1	1.49	0.00	0.00	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.35	0.00	0.00
LAWA102R1	1.49	0.00	0.00	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.35	0.00	0.00
LAWA102R1	1.49	0.00	0.00	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.35	0.00	0.00
LAWA102R1	1.49	0.00	0.00	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.35	0.00	0.00
LAWA102R1	1.49	0.00	0.00	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.35	0.00	0.00
LAWA102R1	1.49	0.00	0.00	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.35	0.00	0.00
LAWA104	1.92	0.00	0.00	0.00	22.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.99	0.00	0.00
LAWA104	1.92	0.00	0.00	0.00	22.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.99	0.00	0.00
LAWA104	1.92	0.00	0.00	0.00	22.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.99	0.00	0.00
LAWA104	1.92	0.00	0.00	0.00	22.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.99	0.00	0.00
LAWA104	1.92	0.00	0.00	0.00	22.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.99	0.00	0.00
LAWA104	1.92	0.00	0.00	0.00	22.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.99	0.00	0.00
LAWA104	1.92	0.00	0.00	0.00	22.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.99	0.00	0.00
LAWA104	1.92	0.00	0.00	0.00	22.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.99	0.00	0.00
LAWA104	1.92	0.00	0.00	0.00	22.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.99	0.00	0.00
LAWA104	1.92	0.00	0.00	0.00	22.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.99	0.00	0.00
LAWA104	1.92	0.00	0.00	0.00	22.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.99	0.00	0.00
LAWA104	1.92	0.00	0.00	0.00	22.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.99	0.00	0.00
LAWA105	1.85	0.00	0.00	0.00	24.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.43	0.00	0.00
LAWA105	1.85	0.00	0.00	0.00	24.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.43	0.00	0.00
LAWA105	1.85	0.00	0.00	0.00	24.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.43	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
C100GCC	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100GCC	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C100GCC	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.74	100.00		
C1-AN107	0.00	0.00	0.00	1.15	0.00	0.00	3.06	3.02	0.97	100.00		
C1-AN107	0.00	0.00	0.00	1.15	0.00	0.00	3.06	3.02	0.97	100.00		
C1-AN107	0.00	0.00	0.00	1.15	0.00	0.00	3.06	3.02	0.97	100.00		
C1-AN107	0.00	0.00	0.00	1.15	0.00	0.00	3.06	3.02	0.97	100.00		
C1-AN107	0.00	0.00	0.00	1.15	0.00	0.00	3.06	3.02	0.97	100.00		
C1-AN107	0.00	0.00	0.00	1.15	0.00	0.00	3.06	3.02	0.97	100.00		
C1-AN107	0.00	0.00	0.00	1.15	0.00	0.00	3.06	3.02	0.97	100.00		
C1-AN107	0.00	0.00	0.00	1.15	0.00	0.00	3.06	3.02	0.97	100.00		
C22AN107	0.00	0.00	0.00	1.14	0.00	0.00	3.06	3.02	0.73	100.00		
C22AN107	0.00	0.00	0.00	1.14	0.00	0.00	3.06	3.02	0.73	100.00		
C22AN107	0.00	0.00	0.00	1.14	0.00	0.00	3.06	3.02	0.73	100.00		
C22AN107	0.00	0.00	0.00	1.14	0.00	0.00	3.06	3.02	0.73	100.00		
C22AN107	0.00	0.00	0.00	1.14	0.00	0.00	3.06	3.02	0.73	100.00		
C22AN107	0.00	0.00	0.00	1.14	0.00	0.00	3.06	3.02	0.73	100.00		
C22AN107	0.00	0.00	0.00	1.14	0.00	0.00	3.06	3.02	0.73	100.00		
C22AN107	0.00	0.00	0.00	1.14	0.00	0.00	3.06	3.02	0.73	100.00		
C22AN107	0.00	0.00	0.00	1.14	0.00	0.00	3.06	3.02	0.73	100.00		
C22AN107	0.00	0.00	0.00	1.14	0.00	0.00	3.06	3.02	0.73	100.00		
C22Si+15	0.00	0.00	0.00	1.12	0.00	0.00	3.00	2.96	0.87	100.00		
C22Si+15	0.00	0.00	0.00	1.12	0.00	0.00	3.00	2.96	0.87	100.00		
C22Si+15	0.00	0.00	0.00	1.12	0.00	0.00	3.00	2.96	0.87	100.00		
C22Si+15	0.00	0.00	0.00	1.12	0.00	0.00	3.00	2.96	0.87	100.00		
C22Si+15	0.00	0.00	0.00	1.12	0.00	0.00	3.00	2.96	0.87	100.00		
C22Si+15	0.00	0.00	0.00	1.12	0.00	0.00	3.00	2.96	0.87	100.00		
C22Si+15	0.00	0.00	0.00	1.12	0.00	0.00	3.00	2.96	0.87	100.00		
C22Si+15	0.00	0.00	0.00	1.12	0.00	0.00	3.00	2.96	0.87	100.00		
C22Si+15	0.00	0.00	0.00	1.12	0.00	0.00	3.00	2.96	0.87	100.00		
C22Si+15	0.00	0.00	0.00	1.12	0.00	0.00	3.00	2.96	0.87	100.00		
C22Si-15	0.00	0.00	0.00	1.18	0.00	0.00	3.14	3.10	0.68	100.00		
C22Si-15	0.00	0.00	0.00	1.18	0.00	0.00	3.14	3.10	0.68	100.00		
C22Si-15	0.00	0.00	0.00	1.18	0.00	0.00	3.14	3.10	0.68	100.00		
C22Si-15	0.00	0.00	0.00	1.18	0.00	0.00	3.14	3.10	0.68	100.00		
C22Si-15	0.00	0.00	0.00	1.18	0.00	0.00	3.14	3.10	0.68	100.00		
C22Si-15	0.00	0.00	0.00	1.18	0.00	0.00	3.14	3.10	0.68	100.00		
C22Si-15	0.00	0.00	0.00	1.18	0.00	0.00	3.14	3.10	0.68	100.00		
C22Si-15	0.00	0.00	0.00	1.18	0.00	0.00	3.14	3.10	0.68	100.00		
C22Si-15	0.00	0.00	0.00	1.18	0.00	0.00	3.14	3.10	0.68	100.00		
C22Si-15	0.00	0.00	0.00	1.18	0.00	0.00	3.14	3.10	0.68	100.00		
C22Si-15	0.00	0.00	0.00	1.18	0.00	0.00	3.14	3.10	0.68	100.00		
LAWA102R1	0.00	0.00	0.00	1.14	0.00	0.00	3.05	3.01	1.28	100.00		
LAWA102R1	0.00	0.00	0.00	1.14	0.00	0.00	3.05	3.01	1.28	100.00		
LAWA102R1	0.00	0.00	0.00	1.14	0.00	0.00	3.05	3.01	1.28	100.00		
LAWA102R1	0.00	0.00	0.00	1.14	0.00	0.00	3.05	3.01	1.28	100.00		
LAWA102R1	0.00	0.00	0.00	1.14	0.00	0.00	3.05	3.01	1.28	100.00		
LAWA102R1	0.00	0.00	0.00	1.14	0.00	0.00	3.05	3.01	1.28	100.00		
LAWA102R1	0.00	0.00	0.00	1.14	0.00	0.00	3.05	3.01	1.28	100.00		
LAWA102R1	0.00	0.00	0.00	1.14	0.00	0.00	3.05	3.01	1.28	100.00		
LAWA102R1	0.00	0.00	0.00	1.14	0.00	0.00	3.05	3.01	1.28	100.00		
LAWA102R1	0.00	0.00	0.00	1.14	0.00	0.00	3.05	3.01	1.28	100.00		
LAWA104	0.00	0.00	0.00	1.92	0.00	0.00	2.86	2.89	1.00	100.00		
LAWA104	0.00	0.00	0.00	1.92	0.00	0.00	2.86	2.89	1.00	100.00		
LAWA104	0.00	0.00	0.00	1.92	0.00	0.00	2.86	2.89	1.00	100.00		
LAWA104	0.00	0.00	0.00	1.92	0.00	0.00	2.86	2.89	1.00	100.00		
LAWA104	0.00	0.00	0.00	1.92	0.00	0.00	2.86	2.89	1.00	100.00		
LAWA104	0.00	0.00	0.00	1.92	0.00	0.00	2.86	2.89	1.00	100.00		
LAWA104	0.00	0.00	0.00	1.92	0.00	0.00	2.86	2.89	1.00	100.00		
LAWA104	0.00	0.00	0.00	1.92	0.00	0.00	2.86	2.89	1.00	100.00		
LAWA104	0.00	0.00	0.00	1.92	0.00	0.00	2.86	2.89	1.00	100.00		
LAWA104	0.00	0.00	0.00	1.92	0.00	0.00	2.86	2.89	1.00	100.00		
LAWA104	0.00	0.00	0.00	1.92	0.00	0.00	2.86	2.89	1.00	100.00		
LAWA104	0.00	0.00	0.00	1.92	0.00	0.00	2.86	2.89	1.00	100.00		
LAWA105	0.00	0.00	0.00	1.85	0.00	0.00	2.76	2.78	1.06	100.00		
LAWA105	0.00	0.00	0.00	1.85	0.00	0.00	2.76	2.78	1.06	100.00		
LAWA105	0.00	0.00	0.00	1.85	0.00	0.00	2.76	2.78	1.06	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
LAWA105	119.00	0.81	2.031	241.645	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.84	201.13	134.23	
LAWA105	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.97	200.67	138.00	
LAWA105	270.00	0.81	2.031	548.270	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.15	229.57	174.80	0.35
LAWA105	364.00	0.81	2.031	739.149	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.26	733.57	699.27	0.38
LAWA105	546.00	0.81	2.031	1,108.723	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.35	1999.73	2963.20	0.93
LAWA105	732.00	0.81	2.031	1,486.420	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.44	2132.53	3100.13	0.78
LAWA105	1098.00	0.81	2.031	2,229.630	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.55	2131.63	2911.33	0.79
LAWA105	1461.00	0.81	2.031	2,966.748	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.65	2075.83	2422.83	0.85
LAWA105	1828.00	0.81	2.031	3,711.989	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.72	1959.70	2255.57	0.61
LAWA105	2195.00	0.81	2.031	4,457.230	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.84	2105.40	2249.90	0.15
LAWA112B14	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	75.49	23.83	1.42
LAWA112B14	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.33	104.63	37.16	0.87
LAWA112B14	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.64	132.03	46.67	1.02
LAWA112B14	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.74	177.73	62.29	1.26
LAWA112B14	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.84	177.93	65.80	1.12
LAWA112B14	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.94	298.41	128.76	0.37
LAWA112B14	364.00	0.81	2.031	739.149	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.05	455.94	326.39	1.32
LAWA112B14	544.00	0.81	2.031	1,104.662	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.15	1644.70	3345.40	1.18
LAWA112B14	728.00	0.81	2.031	1,478.298	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.24	1460.10	3074.53	0.53
LAWA112B14	1091.00	0.81	2.031	2,215.416	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.35	1355.27	2840.10	0.98
LAWA112B14	1449.00	0.81	2.031	2,942.381	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.43	1656.73	3169.90	1.24
LAWA112B14	1826.00	0.81	2.031	3,707.928	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.47	1630.50	2896.17	1.11
LAWA112B15	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	72.46	23.71	1.60
LAWA112B15	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	102.47	35.86	1.28
LAWA112B15	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	122.00	42.65	1.27
LAWA112B15	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.75	153.90	55.03	1.35
LAWA112B15	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.85	160.27	58.53	1.32
LAWA112B15	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.96	213.28	78.70	0.32
LAWA112B15	364.00	0.81	2.031	739.149	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.06	284.30	145.75	1.23
LAWA112B15	544.00	0.81	2.031	1,104.662	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.15	1356.87	2497.90	1.28
LAWA112B15	728.00	0.81	2.031	1,478.298	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.25	1445.53	3172.07	0.29
LAWA112B15	1091.00	0.81	2.031	2,215.416	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.34	1424.20	2936.30	1.30
LAWA112B15	1449.00	0.81	2.031	2,942.381	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.45	1599.87	3137.27	1.72
LAWA112B15	1826.00	0.81	2.031	3,707.928	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.52	1522.47	2902.53	0.91
LAWA125	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.21	88.74	57.18	
LAWA125	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.43	116.23	101.80	0.13
LAWA125	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.64	145.97	135.27	0.24
LAWA125	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.74	155.33	157.60	
LAWA125	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.92	164.47	169.13	
LAWA125	272.00	0.81	2.031	552.331	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.96	208.50	224.50	0.65
LAWA125	369.00	0.81	2.031	749.302	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.07	210.57	221.66	0.82
LAWA125	544.00	0.81	2.031	1,104.662	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.17	261.08	277.63	
LAWA125	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.24	463.69	492.26	0.28
LAWA125	1099.00	0.81	2.031	2,231.661	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.34	884.75	1000.74	
LAWA125	1462.00	0.81	2.031	2,968.779	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.43	1159.43	1485.53	0.15
LAWA125	1838.00	0.81	2.031	3,732.295	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.47	1790.03	2329.77	0.49
LAWA126	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.74	68.28	36.47	
LAWA126	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	93.56	75.28	0.22
LAWA126	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	107.47	97.07	0.30
LAWA126	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	122.13	119.60	0.15
LAWA126	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.64	123.53	124.43	
LAWA126	272.00	0.81	2.031	552.331	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.74	160.74	167.79	0.28
LAWA126	369.00	0.81	2.031	749.302	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.84	165.86	175.27	0.28
LAWA126	544.00	0.81	2.031	1,104.662	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.94	148.30	172.24	0.10
LAWA126	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.05	165.94	181.65	0.17
LAWA126	1099.00	0.81	2.031	2,231.661	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.14	276.88	318.51	
LAWA126	1462.00	0.81	2.031	2,968.779	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.24	521.44	704.93	
LAWA126	1838.00	0.81	2.031	3,732.295	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.34	894.76	1171.03	0.32
LAWA127R1	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.46	58.43	21.13	
LAWA127R1	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.58	72.80	45.16	0.25
LAWA127R1	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.77	84.64	64.86	0.21
LAWA127R1	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.87	98.64	88.49	0.12
LAWA127R1	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	102.40	97.70	0.16
LAWA127R1	272.00	0.81	2.031	552.331	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.37	124.38	130.77	0.60
LAWA127R1	369.00	0.81	2.031	749.302	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	119.18	128.86	0.23
LAWA127R1	544.00	0.81	2.031	1,104.662	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.57	115.84	140.19	0.20
LAWA127R1	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.66	113.86	139.83	0.30
LAWA127R1	1099.00	0.81	2.031	2,231.661	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.75	121.45	163.50	0.15
LAWA127R1	1462.00	0.81	2.031	2,968.779	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.85	133.27	171.77	
LAWA127R1	1838.00	0.81	2.031	3,732.295	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.97	162.19	196.33	0.09
LAWA127R2	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.33	62.08	23.17	
LAWA127R2	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.46	80.25	49.24	0.27

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
LAWA105			785.63	11.40	21.83			0.28					Not Studied
LAWA105			896.07	9.62	20.61								Not Studied
LAWA105			981.73	12.83	20.60								Not Studied
LAWA105			3057.17	55.29	3.64					0.73			Not Studied
LAWA105			11466.33	279.29	4.89	1.99				3.38			Not Studied
LAWA105			11205.00	354.59	3.36	1.99				3.10			Not Studied
LAWA105			10769.33	298.26	3.03	2.47				2.61	0.55		Not Studied
LAWA105			9647.50	254.89	2.01	1.45				1.66			Not Studied
LAWA105			9967.73	222.49	1.31	1.37				1.70			Not Studied
LAWA105			8579.27	246.90	2.00	1.69				1.76			Not Studied
LAWA112B14			160.13	10.82	4.30								Not Studied
LAWA112B14			251.77	15.60	6.19								Not Studied
LAWA112B14			334.07	19.75	7.60								Not Studied
LAWA112B14			507.80	27.56	9.79								Not Studied
LAWA112B14			544.03	27.98	8.83								Not Studied
LAWA112B14			691.76	48.34	6.81								Not Studied
LAWA112B14			1264.57	79.25	2.47								Not Studied
LAWA112B14			9531.50	754.85	2.48					1.04			Not Studied
LAWA112B14			8231.70	623.48	1.10					0.66			Not Studied
LAWA112B14			7825.87	585.44	4.83				47.00	0.76	0.65		Not Studied
LAWA112B14			8638.63	724.89		1.40		0.35	0.44	0.77	0.68		Not Studied
LAWA112B14			8142.60	645.46	0.85	1.39		0.26	0.53	0.77	0.67		Not Studied
LAWA112B15			154.80	14.06	4.26								Not Studied
LAWA112B15			238.77	19.63	6.13								Not Studied
LAWA112B15			306.53	23.74	7.03								Not Studied
LAWA112B15			434.27	31.59	9.36								Not Studied
LAWA112B15			492.93	32.99	9.00								Not Studied
LAWA112B15			564.28	46.12	11.28								Not Studied
LAWA112B15			675.37	60.88	2.66								Not Studied
LAWA112B15			6880.10	615.05	2.68								Not Studied
LAWA112B15		1.49	8493.77	638.00	1.87					1.01			Not Studied
LAWA112B15			7876.43	629.39	4.61	1.74				0.96			Not Studied
LAWA112B15			9075.73	783.02		1.44		0.34	0.65	0.88	1.07		Not Studied
LAWA112B15			8437.97	779.48	0.87	1.53		0.26		1.07			Not Studied
LAWA125			239.93	27.63	7.28	2.00		0.91	0.61	1.10			Not Studied
LAWA125			385.97	47.12	8.81	2.30		1.09		1.82			Not Studied
LAWA125			516.60	62.58	11.47	2.37		1.16		2.45			Not Studied
LAWA125			566.47	75.52	11.90	1.76		0.78		2.63			Not Studied
LAWA125			619.23	78.34	12.44			0.44		1.67			Not Studied
LAWA125			826.73	106.34	15.56			0.28		0.97			Not Studied
LAWA125			854.60	108.54	14.61					0.71			Not Studied
LAWA125			1012.37	124.93	10.25								Not Studied
LAWA125			1645.83	229.87	3.41								Not Studied
LAWA125			3352.73	399.85	0.70								Not Studied
LAWA125			4810.17	576.80		1.22							Not Studied
LAWA125			7206.77	839.84	1.06	1.33				2.35			Not Studied
LAWA126			143.50	18.33	6.07	1.24		0.60		1.36			Not Studied
LAWA126			255.33	32.41	6.94	1.87		1.15		2.10	0.83		Not Studied
LAWA126			321.07	40.47	8.73	2.06		1.07	0.54	2.36	0.94		Not Studied
LAWA126			381.77	52.62	9.23	2.30		1.05	0.67	2.41	1.07		Not Studied
LAWA126			395.97	52.13	9.10	2.08		1.07	0.55	2.21	1.05		Not Studied
LAWA126			546.68	72.87	12.24	2.91		1.34	0.74	3.23	1.00		Not Studied
LAWA126			579.41	76.27	11.74	1.44		0.72		2.40	0.75		Not Studied
LAWA126			539.84	71.08	10.39								Not Studied
LAWA126			573.77	74.00	6.17								Not Studied
LAWA126			998.00	128.27	3.11								Not Studied
LAWA126			2231.30	281.09									Not Studied
LAWA126			3414.57	411.04	0.70					0.63			Chabazite and Herschelite
LAWA127R1			82.72	8.86	4.96			0.29		1.04			Not Studied
LAWA127R1			140.20	14.30	4.86	1.18		0.68		1.55	0.56		Not Studied
LAWA127R1			204.27	18.69	5.60	1.27		0.81	0.50	1.82	0.80		Not Studied
LAWA127R1			242.83	25.54	5.84	1.55		0.90	0.65	1.91	1.05		Not Studied
LAWA127R1			243.73	26.31	5.61	1.16		0.81	0.65	1.58	1.11		Not Studied
LAWA127R1			368.28	35.64	7.25	1.53		0.98	0.79	2.40	1.24		Not Studied
LAWA127R1			358.22	33.85	6.11	1.16		0.58	0.53	1.43	0.96		Not Studied
LAWA127R1			367.97	36.16	7.29				0.52		0.82		Not Studied
LAWA127R1			372.47	35.37	5.59	1.27		0.64	0.63	1.37	0.78		Not Studied
LAWA127R1			457.00	43.21	5.16			0.40		1.46	0.45		Not Studied
LAWA127R1			495.61	43.75	4.16					1.77			Not Studied
LAWA127R1			554.05	50.88	4.03								Not Studied
LAWA127R2			85.36	10.57	5.34			0.40		0.89			Not Studied
LAWA127R2			134.80	15.53	5.49	1.31		0.62		1.41	0.79		Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
LAWA105		74.32	15.371	4.9374497	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA105		74.32	15.371	4.9374497	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA105		74.32	15.371	4.9374497	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA105		74.32	15.371	4.9374497	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA105		74.32	15.371	4.9374497	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA105		74.32	15.371	4.9374497	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA105		74.32	15.371	4.9374497	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA105		74.32	15.371	4.9374497	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA105		74.32	15.371	4.9374497	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B14		75.95	13.738	11.5433951	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B14		75.95	13.738	11.5433951	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B14		75.95	13.738	11.5433951	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B14		75.95	13.738	11.5433951	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B14		75.95	13.738	11.5433951	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B14		75.95	13.738	11.5433951	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B14		75.95	13.738	11.5433951	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B14		75.95	13.738	11.5433951	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B14		75.95	13.738	11.5433951	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B14		75.95	13.738	11.5433951	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B14		75.95	13.738	11.5433951	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B15		76.17	13.757	11.0833169	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B15		76.17	13.757	11.0833169	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B15		76.17	13.757	11.0833169	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B15		76.17	13.757	11.0833169	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B15		76.17	13.757	11.0833169	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B15		76.17	13.757	11.0833169	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B15		76.17	13.757	11.0833169	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B15		76.17	13.757	11.0833169	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B15		76.17	13.757	11.0833169	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA112B15		76.17	13.757	11.0833169	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA125		76.63	12.963	14.8300601	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA125		76.63	12.963	14.8300601	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA125		76.63	12.963	14.8300601	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA125		76.63	12.963	14.8300601	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA125		76.63	12.963	14.8300601	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA125		76.63	12.963	14.8300601	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA125		76.63	12.963	14.8300601	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA125		76.63	12.963	14.8300601	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA125		76.63	12.963	14.8300601	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA125		76.63	12.963	14.8300601	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA126		76.24	13.163	14.3242616	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA126		76.24	13.163	14.3242616	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA126		76.24	13.163	14.3242616	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA126		76.24	13.163	14.3242616	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA126		76.24	13.163	14.3242616	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA126		76.24	13.163	14.3242616	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA126		76.24	13.163	14.3242616	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA126		76.24	13.163	14.3242616	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA126		76.24	13.163	14.3242616	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA126		76.24	13.163	14.3242616	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA126	XRD/SEM	76.24	13.163	14.3242616	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA127R1		75.78	13.477	13.2996869	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA127R1		75.78	13.477	13.2996869	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA127R1		75.78	13.477	13.2996869	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA127R1		75.78	13.477	13.2996869	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA127R1		75.78	13.477	13.2996869	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA127R1		75.78	13.477	13.2996869	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA127R1		75.78	13.477	13.2996869	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA127R1		75.78	13.477	13.2996869	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA127R1		75.78	13.477	13.2996869	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA127R1		75.78	13.477	13.2996869	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA127R2		75.84	13.495	13.0986095	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA127R2		75.84	13.495	13.0986095	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
LAWA105	7.03	8.28	0.00	1.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.49	0.60	0.00	0.00	0.00
LAWA105	7.03	8.28	0.00	1.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.49	0.60	0.00	0.00	0.00
LAWA105	7.03	8.28	0.00	1.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.49	0.60	0.00	0.00	0.00
LAWA105	7.03	8.28	0.00	1.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.49	0.60	0.00	0.00	0.00
LAWA105	7.03	8.28	0.00	1.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.49	0.60	0.00	0.00	0.00
LAWA105	7.03	8.28	0.00	1.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.49	0.60	0.00	0.00	0.00
LAWA105	7.03	8.28	0.00	1.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.49	0.60	0.00	0.00	0.00
LAWA105	7.03	8.28	0.00	1.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.49	0.60	0.00	0.00	0.00
LAWA105	7.03	8.28	0.00	1.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.49	0.60	0.00	0.00	0.00
LAWA112B14	6.10	9.86	0.00	7.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	0.00	0.00	0.00
LAWA112B14	6.10	9.86	0.00	7.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	0.00	0.00	0.00
LAWA112B14	6.10	9.86	0.00	7.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	0.00	0.00	0.00
LAWA112B14	6.10	9.86	0.00	7.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	0.00	0.00	0.00
LAWA112B14	6.10	9.86	0.00	7.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	0.00	0.00	0.00
LAWA112B14	6.10	9.86	0.00	7.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	0.00	0.00	0.00
LAWA112B14	6.10	9.86	0.00	7.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	0.00	0.00	0.00
LAWA112B14	6.10	9.86	0.00	7.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	0.00	0.00	0.00
LAWA112B14	6.10	9.86	0.00	7.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	0.00	0.00	0.00
LAWA112B14	6.10	9.86	0.00	7.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	0.00	0.00	0.00
LAWA112B15	6.15	9.80	0.00	7.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.41	0.00	0.00	0.00
LAWA112B15	6.15	9.80	0.00	7.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.41	0.00	0.00	0.00
LAWA112B15	6.15	9.80	0.00	7.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.41	0.00	0.00	0.00
LAWA112B15	6.15	9.80	0.00	7.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.41	0.00	0.00	0.00
LAWA112B15	6.15	9.80	0.00	7.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.41	0.00	0.00	0.00
LAWA112B15	6.15	9.80	0.00	7.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.41	0.00	0.00	0.00
LAWA112B15	6.15	9.80	0.00	7.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.41	0.00	0.00	0.00
LAWA112B15	6.15	9.80	0.00	7.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.41	0.00	0.00	0.00
LAWA112B15	6.15	9.80	0.00	7.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.41	0.00	0.00	0.00
LAWA125	5.64	9.55	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.39	4.21	0.00	0.00	0.00
LAWA125	5.64	9.55	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.39	4.21	0.00	0.00	0.00
LAWA125	5.64	9.55	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.39	4.21	0.00	0.00	0.00
LAWA125	5.64	9.55	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.39	4.21	0.00	0.00	0.00
LAWA125	5.64	9.55	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.39	4.21	0.00	0.00	0.00
LAWA125	5.64	9.55	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.39	4.21	0.00	0.00	0.00
LAWA125	5.64	9.55	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.39	4.21	0.00	0.00	0.00
LAWA125	5.64	9.55	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.39	4.21	0.00	0.00	0.00
LAWA125	5.64	9.55	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.39	4.21	0.00	0.00	0.00
LAWA125	5.64	9.55	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.39	4.21	0.00	0.00	0.00
LAWA126	5.64	9.82	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.54	3.88	0.00	0.00	0.00
LAWA126	5.64	9.82	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.54	3.88	0.00	0.00	0.00
LAWA126	5.64	9.82	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.54	3.88	0.00	0.00	0.00
LAWA126	5.64	9.82	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.54	3.88	0.00	0.00	0.00
LAWA126	5.64	9.82	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.54	3.88	0.00	0.00	0.00
LAWA126	5.64	9.82	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.54	3.88	0.00	0.00	0.00
LAWA126	5.64	9.82	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.54	3.88	0.00	0.00	0.00
LAWA126	5.64	9.82	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.54	3.88	0.00	0.00	0.00
LAWA126	5.64	9.82	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.54	3.88	0.00	0.00	0.00
LAWA126	5.64	9.82	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.54	3.88	0.00	0.00	0.00
LAWA127R1	5.65	10.21	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.76	3.43	0.00	0.00	0.00
LAWA127R1	5.65	10.21	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.76	3.43	0.00	0.00	0.00
LAWA127R1	5.65	10.21	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.76	3.43	0.00	0.00	0.00
LAWA127R1	5.65	10.21	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.76	3.43	0.00	0.00	0.00
LAWA127R1	5.65	10.21	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.76	3.43	0.00	0.00	0.00
LAWA127R1	5.65	10.21	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.76	3.43	0.00	0.00	0.00
LAWA127R1	5.65	10.21	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.76	3.43	0.00	0.00	0.00
LAWA127R1	5.65	10.21	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.76	3.43	0.00	0.00	0.00
LAWA127R1	5.65	10.21	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.76	3.43	0.00	0.00	0.00
LAWA127R1	5.65	10.21	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.76	3.43	0.00	0.00	0.00
LAWA127R2	5.66	10.22	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	3.43	0.00	0.00	0.00
LAWA127R2	5.66	10.22	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	3.43	0.00	0.00	0.00

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
LAWA105	1.85	0.00	0.00	0.00	24.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.43	0.00	0.00
LAWA105	1.85	0.00	0.00	0.00	24.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.43	0.00	0.00
LAWA105	1.85	0.00	0.00	0.00	24.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.43	0.00	0.00
LAWA105	1.85	0.00	0.00	0.00	24.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.43	0.00	0.00
LAWA105	1.85	0.00	0.00	0.00	24.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.43	0.00	0.00
LAWA105	1.85	0.00	0.00	0.00	24.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.43	0.00	0.00
LAWA105	1.85	0.00	0.00	0.00	24.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.43	0.00	0.00
LAWA105	1.85	0.00	0.00	0.00	24.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.43	0.00	0.00
LAWA105	1.85	0.00	0.00	0.00	24.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.43	0.00	0.00
LAWA112B14	1.48	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.22	0.00	0.00
LAWA112B14	1.48	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.22	0.00	0.00
LAWA112B14	1.48	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.22	0.00	0.00
LAWA112B14	1.48	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.22	0.00	0.00
LAWA112B14	1.48	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.22	0.00	0.00
LAWA112B14	1.48	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.22	0.00	0.00
LAWA112B14	1.48	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.22	0.00	0.00
LAWA112B14	1.48	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.22	0.00	0.00
LAWA112B14	1.48	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.22	0.00	0.00
LAWA112B14	1.48	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.22	0.00	0.00
LAWA112B15	1.48	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.98	0.00	0.00
LAWA112B15	1.48	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.98	0.00	0.00
LAWA112B15	1.48	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.98	0.00	0.00
LAWA112B15	1.48	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.98	0.00	0.00
LAWA112B15	1.48	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.98	0.00	0.00
LAWA112B15	1.48	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.98	0.00	0.00
LAWA112B15	1.48	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.98	0.00	0.00
LAWA112B15	1.48	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.98	0.00	0.00
LAWA112B15	1.48	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.98	0.00	0.00
LAWA125	1.44	0.00	0.00	0.00	19.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.89	0.00	0.00
LAWA125	1.44	0.00	0.00	0.00	19.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.89	0.00	0.00
LAWA125	1.44	0.00	0.00	0.00	19.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.89	0.00	0.00
LAWA125	1.44	0.00	0.00	0.00	19.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.89	0.00	0.00
LAWA125	1.44	0.00	0.00	0.00	19.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.89	0.00	0.00
LAWA125	1.44	0.00	0.00	0.00	19.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.89	0.00	0.00
LAWA125	1.44	0.00	0.00	0.00	19.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.89	0.00	0.00
LAWA125	1.44	0.00	0.00	0.00	19.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.89	0.00	0.00
LAWA125	1.44	0.00	0.00	0.00	19.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.89	0.00	0.00
LAWA125	1.44	0.00	0.00	0.00	19.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.89	0.00	0.00
LAWA126	1.48	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.10	0.00	0.00
LAWA126	1.48	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.10	0.00	0.00
LAWA126	1.48	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.10	0.00	0.00
LAWA126	1.48	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.10	0.00	0.00
LAWA126	1.48	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.10	0.00	0.00
LAWA126	1.48	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.10	0.00	0.00
LAWA126	1.48	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.10	0.00	0.00
LAWA126	1.48	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.10	0.00	0.00
LAWA126	1.48	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.10	0.00	0.00
LAWA126	1.48	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.10	0.00	0.00
LAWA127R1	1.54	0.00	0.00	0.00	16.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.83	0.00	0.00
LAWA127R1	1.54	0.00	0.00	0.00	16.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.83	0.00	0.00
LAWA127R1	1.54	0.00	0.00	0.00	16.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.83	0.00	0.00
LAWA127R1	1.54	0.00	0.00	0.00	16.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.83	0.00	0.00
LAWA127R1	1.54	0.00	0.00	0.00	16.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.83	0.00	0.00
LAWA127R1	1.54	0.00	0.00	0.00	16.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.83	0.00	0.00
LAWA127R1	1.54	0.00	0.00	0.00	16.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.83	0.00	0.00
LAWA127R1	1.54	0.00	0.00	0.00	16.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.83	0.00	0.00
LAWA127R1	1.54	0.00	0.00	0.00	16.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.83	0.00	0.00
LAWA127R1	1.54	0.00	0.00	0.00	16.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.83	0.00	0.00
LAWA127R2	1.54	0.00	0.00	0.00	16.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.89	0.00	0.00
LAWA127R2	1.54	0.00	0.00	0.00	16.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.89	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
LAWA105	0.00	0.00	0.00	1.85	0.00	0.00	2.76	2.78	1.06	100.00		
LAWA105	0.00	0.00	0.00	1.85	0.00	0.00	2.76	2.78	1.06	100.00		
LAWA105	0.00	0.00	0.00	1.85	0.00	0.00	2.76	2.78	1.06	100.00		
LAWA105	0.00	0.00	0.00	1.85	0.00	0.00	2.76	2.78	1.06	100.00		
LAWA105	0.00	0.00	0.00	1.85	0.00	0.00	2.76	2.78	1.06	100.00		
LAWA105	0.00	0.00	0.00	1.85	0.00	0.00	2.76	2.78	1.06	100.00		
LAWA105	0.00	0.00	0.00	1.85	0.00	0.00	2.76	2.78	1.06	100.00		
LAWA105	0.00	0.00	0.00	1.85	0.00	0.00	2.76	2.78	1.06	100.00		
LAWA105	0.00	0.00	0.00	1.85	0.00	0.00	2.76	2.78	1.06	100.00		
LAWA105	0.00	0.00	0.00	1.85	0.00	0.00	2.76	2.78	1.06	100.00		
LAWA112B14	0.00	0.00	0.00	2.00	0.00	0.00	2.97	3.01	0.86	100.00		
LAWA112B14	0.00	0.00	0.00	2.00	0.00	0.00	2.97	3.01	0.86	100.00		
LAWA112B14	0.00	0.00	0.00	2.00	0.00	0.00	2.97	3.01	0.86	100.00		
LAWA112B14	0.00	0.00	0.00	2.00	0.00	0.00	2.97	3.01	0.86	100.00		
LAWA112B14	0.00	0.00	0.00	2.00	0.00	0.00	2.97	3.01	0.86	100.00		
LAWA112B14	0.00	0.00	0.00	2.00	0.00	0.00	2.97	3.01	0.86	100.00		
LAWA112B14	0.00	0.00	0.00	2.00	0.00	0.00	2.97	3.01	0.86	100.00		
LAWA112B14	0.00	0.00	0.00	2.00	0.00	0.00	2.97	3.01	0.86	100.00		
LAWA112B14	0.00	0.00	0.00	2.00	0.00	0.00	2.97	3.01	0.86	100.00		
LAWA112B14	0.00	0.00	0.00	2.00	0.00	0.00	2.97	3.01	0.86	100.00		
LAWA112B14	0.00	0.00	0.00	2.00	0.00	0.00	2.97	3.01	0.86	100.00		
LAWA112B15	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.67	100.00		
LAWA112B15	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.67	100.00		
LAWA112B15	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.67	100.00		
LAWA112B15	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.67	100.00		
LAWA112B15	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.67	100.00		
LAWA112B15	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.67	100.00		
LAWA112B15	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.67	100.00		
LAWA112B15	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.67	100.00		
LAWA112B15	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.67	100.00		
LAWA112B15	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.67	100.00		
LAWA112B15	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.67	100.00		
LAWA125	0.00	0.00	0.00	1.94	0.00	0.00	2.88	2.91	1.24	100.00		
LAWA125	0.00	0.00	0.00	1.94	0.00	0.00	2.88	2.91	1.24	100.00		
LAWA125	0.00	0.00	0.00	1.94	0.00	0.00	2.88	2.91	1.24	100.00		
LAWA125	0.00	0.00	0.00	1.94	0.00	0.00	2.88	2.91	1.24	100.00		
LAWA125	0.00	0.00	0.00	1.94	0.00	0.00	2.88	2.91	1.24	100.00		
LAWA125	0.00	0.00	0.00	1.94	0.00	0.00	2.88	2.91	1.24	100.00		
LAWA125	0.00	0.00	0.00	1.94	0.00	0.00	2.88	2.91	1.24	100.00		
LAWA125	0.00	0.00	0.00	1.94	0.00	0.00	2.88	2.91	1.24	100.00		
LAWA125	0.00	0.00	0.00	1.94	0.00	0.00	2.88	2.91	1.24	100.00		
LAWA125	0.00	0.00	0.00	1.94	0.00	0.00	2.88	2.91	1.24	100.00		
LAWA125	0.00	0.00	0.00	1.94	0.00	0.00	2.88	2.91	1.24	100.00		
LAWA126	0.00	0.00	0.00	2.00	0.00	0.00	2.96	2.99	1.17	100.00		
LAWA126	0.00	0.00	0.00	2.00	0.00	0.00	2.96	2.99	1.17	100.00		
LAWA126	0.00	0.00	0.00	2.00	0.00	0.00	2.96	2.99	1.17	100.00		
LAWA126	0.00	0.00	0.00	2.00	0.00	0.00	2.96	2.99	1.17	100.00		
LAWA126	0.00	0.00	0.00	2.00	0.00	0.00	2.96	2.99	1.17	100.00		
LAWA126	0.00	0.00	0.00	2.00	0.00	0.00	2.96	2.99	1.17	100.00		
LAWA126	0.00	0.00	0.00	2.00	0.00	0.00	2.96	2.99	1.17	100.00		
LAWA126	0.00	0.00	0.00	2.00	0.00	0.00	2.96	2.99	1.17	100.00		
LAWA126	0.00	0.00	0.00	2.00	0.00	0.00	2.96	2.99	1.17	100.00		
LAWA126	0.00	0.00	0.00	2.00	0.00	0.00	2.96	2.99	1.17	100.00		
LAWA126	0.00	0.00	0.00	2.00	0.00	0.00	2.96	2.99	1.17	100.00		
LAWA127R1	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.96	100.00		
LAWA127R1	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.96	100.00		
LAWA127R1	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.96	100.00		
LAWA127R1	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.96	100.00		
LAWA127R1	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.96	100.00		
LAWA127R1	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.96	100.00		
LAWA127R1	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.96	100.00		
LAWA127R1	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.96	100.00		
LAWA127R1	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.96	100.00		
LAWA127R1	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.96	100.00		
LAWA127R1	0.00	0.00	0.00	2.07	0.00	0.00	3.07	3.11	0.96	100.00		
LAWA127R2	0.00	0.00	0.00	2.08	0.00	0.00	3.08	3.12	0.85	100.00		
LAWA127R2	0.00	0.00	0.00	2.08	0.00	0.00	3.08	3.12	0.85	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
LAWA127R2	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.56	80.24	63.67	
LAWA127R2	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.84	99.47	105.00	0.52
LAWA127R2	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.97	101.52	112.65	0.32
LAWA127R2	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.04	108.87	118.30	0.28
LAWA127R2	1099.00	0.81	2.031	2,231.661	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	120.44	142.53	0.37
LAWA127R2	1854.00	0.81	2.031	3,764.786	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.36	149.35	193.21	0.29
LAWA128	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.03	75.47	13.95	
LAWA128	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	97.11	21.12	0.25
LAWA128	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.47	117.47	27.25	0.28
LAWA128	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	134.43	35.65	0.23
LAWA128	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.75	140.73	39.93	0.26
LAWA128	272.00	0.81	2.031	552.331	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.85	168.57	50.20	1.21
LAWA128	369.00	0.81	2.031	749.302	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.93	180.66	53.68	0.57
LAWA128	544.00	0.81	2.031	1,104.662	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.05	161.26	54.07	0.23
LAWA128	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.16	161.20	55.77	0.21
LAWA128	1099.00	0.81	2.031	2,231.661	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.26	207.67	93.42	
LAWA128	1462.00	0.81	2.031	2,968.779	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.32	693.29	441.01	
LAWA128	1838.00	0.81	2.031	3,732.295	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.46	1571.23	1124.70	0.24
LAWA129	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	62.28	14.30	
LAWA129	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.06	78.62	23.41	0.17
LAWA129	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	91.30	32.47	0.19
LAWA129	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	107.60	43.94	
LAWA129	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.53	114.57	50.79	
LAWA129	272.00	0.81	2.031	552.331	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	138.17	64.65	0.95
LAWA129	369.00	0.81	2.031	749.302	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.75	145.86	70.45	0.08
LAWA129	544.00	0.81	2.031	1,104.662	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.87	135.60	72.73	0.12
LAWA129	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.95	147.32	79.79	0.15
LAWA129	1099.00	0.81	2.031	2,231.661	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.04	814.70	769.08	0.57
LAWA129	1462.00	0.81	2.031	2,968.779	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.14	1849.13	2125.77	1.05
LAWA129	1838.00	0.81	2.031	3,732.295	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.25	2444.27	2766.03	1.32
LAWA130	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.65	76.74	25.59	
LAWA130	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.84	98.09	50.11	
LAWA130	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.04	109.47	64.01	0.30
LAWA130	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	142.37	92.65	0.70
LAWA130	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	137.30	94.21	0.55
LAWA130	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	169.78	120.41	
LAWA130	364.00	0.81	2.031	739.149	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.56	171.08	127.24	0.33
LAWA130	544.00	0.81	2.031	1,104.662	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.64	170.89	141.61	
LAWA130	728.00	0.81	2.031	1,478.298	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.74	166.12	132.62	
LAWA130	1091.00	0.81	2.031	2,215.416	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.85	358.04	252.42	0.24
LAWA130	1449.00	0.81	2.031	2,942.381	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.94	869.44	911.13	0.22
LAWA130	1826.00	0.81	2.031	3,707.928	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.03	1078.77	1033.90	0.54
LAWA133	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	92.72	29.89	0.40
LAWA133	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.22	126.07	45.59	0.49
LAWA133	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	133.73	52.51	
LAWA133	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.64	211.53	100.47	0.56
LAWA133	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.74	588.18	774.51	1.42
LAWA133	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.84	857.27	1222.93	0.94
LAWA133	1099.00	0.81	2.031	2,231.661	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.05	1266.47	1701.20	1.43
LAWA134	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.52	63.06	28.39	
LAWA134	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.66	92.28	62.56	0.26
LAWA134	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.97	91.35	74.71	
LAWA134	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	113.81	114.06	0.33
LAWA134	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	113.00	119.85	0.26
LAWA134	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.43	116.93	122.44	0.21
LAWA134	1099.00	0.81	2.031	2,231.661	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.64	132.69	144.45	0.32
LAWA134	1854.00	0.81	2.031	3,764.786	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.76	171.95	203.39	0.17
LAWA135	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.43	62.68	27.20	
LAWA135	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.57	86.07	57.54	0.20
LAWA135	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.67	85.58	70.24	
LAWA135	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	107.75	108.79	0.39
LAWA135	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.04	109.28	117.79	0.23
LAWA135	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	109.67	113.69	0.12
LAWA135	1099.00	0.81	2.031	2,231.661	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	137.61	146.21	0.38
LAWA135	1854.00	0.81	2.031	3,764.786	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.37	167.76	188.77	0.11
LAWA136	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.56	61.06	23.49	0.15
LAWA136	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.67	85.09	46.05	0.29
LAWA136	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.75	81.74	54.61	
LAWA136	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.04	108.39	87.35	0.43
LAWA136	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	107.02	92.03	0.20
LAWA136	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.26	120.45	111.96	0.21
LAWA136	1099.00	0.81	2.031	2,231.661	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	151.20	126.12	0.30

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
LAWA127R2			210.07	19.50	5.78	1.24		0.81		1.51	0.99		Not Studied
LAWA127R2			347.07	29.44	5.07				0.67		0.99		Not Studied
LAWA127R2			310.38	29.22	7.93				0.63		1.15		Not Studied
LAWA127R2			344.74	34.30	5.93	1.19		0.69	0.72	1.73	1.60		Not Studied
LAWA127R2			386.45	38.86	6.05				0.78		1.28		Not Studied
LAWA127R2			463.70	45.54	3.14				0.52		0.91		Not Studied
LAWA128			119.20	13.86	8.28	1.47		0.34		1.45			Not Studied
LAWA128			168.77	19.86	9.56	2.39		0.56		2.14	0.56		Not Studied
LAWA128			227.07	23.86	11.67	3.06		0.71	0.61	3.01	0.78		Not Studied
LAWA128			241.60	31.35	13.26	3.32		0.81	0.75	3.02	1.02		Not Studied
LAWA128			263.87	32.48	13.76	3.58		0.90	0.69	3.18	1.12		Not Studied
LAWA128			373.39	41.39	17.11	4.83		1.19	0.74	4.33	1.22		Not Studied
LAWA128			390.30	45.94	17.91	4.81		1.15	0.68	4.47	1.20		Not Studied
LAWA128			377.12	44.35	16.65	2.22		0.39	0.52	1.57	1.06		Not Studied
LAWA128			388.31	45.61	15.05	2.12		0.54		2.17			Not Studied
LAWA128			543.75	62.49	7.66	1.26				0.68			Not Studied
LAWA128			1811.87	244.52	1.06					0.47			Not Studied
LAWA128			4013.83	450.19	0.99	1.20				1.32			Not Studied
LAWA129			101.73	12.19	7.06								Not Studied
LAWA129			148.57	17.89	7.62								Not Studied
LAWA129			197.90	22.00	9.16								Not Studied
LAWA129			232.27	28.98	10.19								Not Studied
LAWA129			258.53	31.00	10.79								Not Studied
LAWA129			343.05	40.70	14.28			0.25		0.62			Not Studied
LAWA129			367.56	43.36	14.06					0.44			Not Studied
LAWA129			359.32	43.09	13.40								Not Studied
LAWA129			377.39	44.53	7.72								Not Studied
LAWA129			2434.53	317.53									Not Studied
LAWA129			6612.33	824.15		1.20							Not Studied
LAWA129			8093.73	860.88	0.93	1.70			0.53	2.18	0.67		Not Studied
LAWA130			126.53	14.81	6.11			0.73		1.80			Not Studied
LAWA130			217.10	22.55	7.87			0.52	0.54	2.69	0.87		Not Studied
LAWA130			286.90	28.13	8.75			0.70	0.63	2.77	1.15		Not Studied
LAWA130			419.00	40.79	11.40	1.15		0.91	0.89	3.58	1.41		Not Studied
LAWA130			469.83	38.76	10.53	1.70		0.96	0.79	3.67	1.53		Not Studied
LAWA130			474.77	53.94	13.82	1.84		1.12	0.72	4.41	1.24		Not Studied
LAWA130			506.83	55.35	13.39			0.71	0.67	3.34	1.08		Not Studied
LAWA130			592.36	55.96	12.51				0.45		0.81		Not Studied
LAWA130			573.09	57.64	9.93			0.31		1.20			Not Studied
LAWA130			946.64	112.73	2.97								Not Studied
LAWA130			2939.57	316.69									Not Studied
LAWA130			3220.03	378.62						0.59			Not Studied
LAWA133			168.33	3.39	6.39								Not Studied
LAWA133			230.77	3.20	6.07								Not Studied
LAWA133			333.10	3.62	6.41								Not Studied
LAWA133			566.67	7.80	5.26								Not Studied
LAWA133			2529.23	39.58	11.12			1.04		0.51			Not Studied
LAWA133			3832.07	71.75	0.74								Not Studied
LAWA133			5418.83	131.77	5.40					0.81			Not Studied
LAWA134			102.50	13.12	6.65					1.29	0.82		Not Studied
LAWA134			175.33	23.41	7.33	1.24		0.58		1.56	1.06		Not Studied
LAWA134			266.73	26.78	7.66	1.39		0.98	0.60		0.75		Not Studied
LAWA134			393.50	39.81	7.54				0.52		0.93		Not Studied
LAWA134			368.98	39.81	9.56				0.46	1.67	1.26		Not Studied
LAWA134			412.89	43.58	8.38	1.30		0.64		0.46	0.63		Not Studied
LAWA134			448.54	48.40	8.60								Not Studied
LAWA134			620.24	61.35	4.24					0.77			Not Studied
LAWA135			93.78	12.17	6.92					1.20	0.78		Not Studied
LAWA135			157.63	19.63	6.48	1.39		0.59	0.49	1.50	1.03		Not Studied
LAWA135			236.10	22.91	6.69	1.40		0.87			0.91		Not Studied
LAWA135			357.01	34.47	6.38				0.58		0.77		Not Studied
LAWA135			324.65	36.22	8.21				0.46	1.58	1.25		Not Studied
LAWA135			371.15	37.60	6.49	1.14		0.62	0.51		0.68		Not Studied
LAWA135			428.77	44.87	6.82						0.49		Not Studied
LAWA135			491.72	52.65	2.42					0.53			Not Studied
LAWA136			89.12	12.30	5.34					0.73			Not Studied
LAWA136			137.80	20.20	6.38			0.31		0.91			Not Studied
LAWA136			203.07	21.40	6.29			0.56					Not Studied
LAWA136			318.24	32.88	5.74								Not Studied
LAWA136			282.61	32.51	6.70					0.92	0.52		Not Studied
LAWA136			339.70	38.54	6.29			0.37					Not Studied
LAWA136			411.55	44.94	4.45					0.73			Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
LAWA127R2		75.84	13.495	13.0986095	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA127R2		75.84	13.495	13.0986095	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA127R2		75.84	13.495	13.0986095	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA127R2		75.84	13.495	13.0986095	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA127R2		75.84	13.495	13.0986095	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA127R2		75.84	13.495	13.0986095	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA128		75.46	13.893	11.4520976	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA128		75.46	13.893	11.4520976	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA128		75.46	13.893	11.4520976	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA128		75.46	13.893	11.4520976	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA128		75.46	13.893	11.4520976	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA128		75.46	13.893	11.4520976	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA128		75.46	13.893	11.4520976	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA128		75.46	13.893	11.4520976	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA128		75.46	13.893	11.4520976	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA128		75.46	13.893	11.4520976	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA128		75.46	13.893	11.4520976	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA129		78.35	10.994	23.1893513	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA129		78.35	10.994	23.1893513	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA129		78.35	10.994	23.1893513	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA129		78.35	10.994	23.1893513	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA129		78.35	10.994	23.1893513	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA129		78.35	10.994	23.1893513	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA129		78.35	10.994	23.1893513	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA129		78.35	10.994	23.1893513	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA129		78.35	10.994	23.1893513	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA129		78.35	10.994	23.1893513	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA129		78.35	10.994	23.1893513	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA130		77.32	10.961	25.0353512	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA130		77.32	10.961	25.0353512	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA130		77.32	10.961	25.0353512	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA130		77.32	10.961	25.0353512	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA130		77.32	10.961	25.0353512	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA130		77.32	10.961	25.0353512	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA130		77.32	10.961	25.0353512	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA130		77.32	10.961	25.0353512	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA130		77.32	10.961	25.0353512	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA133		73.85	15.176	6.7972262	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA133		73.85	15.176	6.7972262	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA133		73.85	15.176	6.7972262	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA133		73.85	15.176	6.7972262	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA133		73.85	15.176	6.7972262	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA133		73.85	15.176	6.7972262	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA133		73.85	15.176	6.7972262	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA134		76.17	13.293	13.6990856	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA134		76.17	13.293	13.6990856	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA134		76.17	13.293	13.6990856	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA134		76.17	13.293	13.6990856	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA134		76.17	13.293	13.6990856	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA134		76.17	13.293	13.6990856	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA134		76.17	13.293	13.6990856	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA134		76.17	13.293	13.6990856	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA135		75.99	13.398	13.4027141	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA135		75.99	13.398	13.4027141	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA135		75.99	13.398	13.4027141	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA135		75.99	13.398	13.4027141	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA135		75.99	13.398	13.4027141	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA135		75.99	13.398	13.4027141	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA135		75.99	13.398	13.4027141	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA136		74.99	14.398	9.3584141	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA136		74.99	14.398	9.3584141	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA136		74.99	14.398	9.3584141	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA136		74.99	14.398	9.3584141	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA136		74.99	14.398	9.3584141	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA136		74.99	14.398	9.3584141	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA136		74.99	14.398	9.3584141	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
LAWA127R2	5.66	10.22	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	3.43	0.00	0.00	0.00
LAWA127R2	5.66	10.22	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	3.43	0.00	0.00	0.00
LAWA127R2	5.66	10.22	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	3.43	0.00	0.00	0.00
LAWA127R2	5.66	10.22	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	3.43	0.00	0.00	0.00
LAWA127R2	5.66	10.22	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	3.43	0.00	0.00	0.00
LAWA127R2	5.66	10.22	0.00	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	3.43	0.00	0.00	0.00
LAWA128	6.03	7.07	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.79	3.88	0.00	0.00	0.00
LAWA128	6.03	7.07	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.79	3.88	0.00	0.00	0.00
LAWA128	6.03	7.07	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.79	3.88	0.00	0.00	0.00
LAWA128	6.03	7.07	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.79	3.88	0.00	0.00	0.00
LAWA128	6.03	7.07	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.79	3.88	0.00	0.00	0.00
LAWA128	6.03	7.07	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.79	3.88	0.00	0.00	0.00
LAWA128	6.03	7.07	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.79	3.88	0.00	0.00	0.00
LAWA128	6.03	7.07	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.79	3.88	0.00	0.00	0.00
LAWA128	6.03	7.07	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.79	3.88	0.00	0.00	0.00
LAWA128	6.03	7.07	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.79	3.88	0.00	0.00	0.00
LAWA129	7.47	8.52	0.00	3.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.88	0.00	0.00	0.00
LAWA129	7.47	8.52	0.00	3.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.88	0.00	0.00	0.00
LAWA129	7.47	8.52	0.00	3.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.88	0.00	0.00	0.00
LAWA129	7.47	8.52	0.00	3.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.88	0.00	0.00	0.00
LAWA129	7.47	8.52	0.00	3.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.88	0.00	0.00	0.00
LAWA129	7.47	8.52	0.00	3.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.88	0.00	0.00	0.00
LAWA129	7.47	8.52	0.00	3.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.88	0.00	0.00	0.00
LAWA129	7.47	8.52	0.00	3.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.88	0.00	0.00	0.00
LAWA129	7.47	8.52	0.00	3.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.88	0.00	0.00	0.00
LAWA129	7.47	8.52	0.00	3.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.88	0.00	0.00	0.00
LAWA129	7.47	8.52	0.00	3.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.88	0.00	0.00	0.00
LAWA130	6.03	8.94	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	3.88	0.00	0.00	0.00
LAWA130	6.03	8.94	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	3.88	0.00	0.00	0.00
LAWA130	6.03	8.94	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	3.88	0.00	0.00	0.00
LAWA130	6.03	8.94	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	3.88	0.00	0.00	0.00
LAWA130	6.03	8.94	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	3.88	0.00	0.00	0.00
LAWA130	6.03	8.94	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	3.88	0.00	0.00	0.00
LAWA130	6.03	8.94	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	3.88	0.00	0.00	0.00
LAWA130	6.03	8.94	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	3.88	0.00	0.00	0.00
LAWA130	6.03	8.94	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	3.88	0.00	0.00	0.00
LAWA130	6.03	8.94	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	3.88	0.00	0.00	0.00
LAWA133	6.20	8.90	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.43	0.00	0.00	0.00
LAWA133	6.20	8.90	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.43	0.00	0.00	0.00
LAWA133	6.20	8.90	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.43	0.00	0.00	0.00
LAWA133	6.20	8.90	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.43	0.00	0.00	0.00
LAWA133	6.20	8.90	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.43	0.00	0.00	0.00
LAWA133	6.20	8.90	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.43	0.00	0.00	0.00
LAWA133	6.20	8.90	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.43	0.00	0.00	0.00
LAWA134	5.65	9.96	0.00	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.63	3.73	0.00	0.00	0.00
LAWA134	5.65	9.96	0.00	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.63	3.73	0.00	0.00	0.00
LAWA134	5.65	9.96	0.00	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.63	3.73	0.00	0.00	0.00
LAWA134	5.65	9.96	0.00	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.63	3.73	0.00	0.00	0.00
LAWA134	5.65	9.96	0.00	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.63	3.73	0.00	0.00	0.00
LAWA134	5.65	9.96	0.00	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.63	3.73	0.00	0.00	0.00
LAWA134	5.65	9.96	0.00	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.63	3.73	0.00	0.00	0.00
LAWA135	5.66	10.09	0.00	2.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.70	3.58	0.00	0.00	0.00
LAWA135	5.66	10.09	0.00	2.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.70	3.58	0.00	0.00	0.00
LAWA135	5.66	10.09	0.00	2.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.70	3.58	0.00	0.00	0.00
LAWA135	5.66	10.09	0.00	2.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.70	3.58	0.00	0.00	0.00
LAWA135	5.66	10.09	0.00	2.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.70	3.58	0.00	0.00	0.00
LAWA135	5.66	10.09	0.00	2.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.70	3.58	0.00	0.00	0.00
LAWA135	5.66	10.09	0.00	2.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.70	3.58	0.00	0.00	0.00
LAWA136	5.66	10.09	0.00	3.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.70	3.58	0.00	0.00	0.00
LAWA136	5.66	10.09	0.00	3.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.70	3.58	0.00	0.00	0.00
LAWA136	5.66	10.09	0.00	3.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.70	3.58	0.00	0.00	0.00
LAWA136	5.66	10.09	0.00	3.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.70	3.58	0.00	0.00	0.00
LAWA136	5.66	10.09	0.00	3.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.70	3.58	0.00	0.00	0.00
LAWA136	5.66	10.09	0.00	3.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.70	3.58	0.00	0.00	0.00
LAWA136	5.66	10.09	0.00	3.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.70	3.58	0.00	0.00	0.00

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
LAWA127R2	1.54	0.00	0.00	0.00	16.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.89	0.00	0.00
LAWA127R2	1.54	0.00	0.00	0.00	16.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.89	0.00	0.00
LAWA127R2	1.54	0.00	0.00	0.00	16.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.89	0.00	0.00
LAWA127R2	1.54	0.00	0.00	0.00	16.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.89	0.00	0.00
LAWA127R2	1.54	0.00	0.00	0.00	16.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.89	0.00	0.00
LAWA127R2	1.54	0.00	0.00	0.00	16.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.89	0.00	0.00
LAWA128	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.07	0.00	0.00
LAWA128	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.07	0.00	0.00
LAWA128	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.07	0.00	0.00
LAWA128	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.07	0.00	0.00
LAWA128	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.07	0.00	0.00
LAWA128	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.07	0.00	0.00
LAWA128	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.07	0.00	0.00
LAWA128	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.07	0.00	0.00
LAWA128	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.07	0.00	0.00
LAWA128	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.07	0.00	0.00
LAWA129	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.51	0.00	0.00
LAWA129	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.51	0.00	0.00
LAWA129	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.51	0.00	0.00
LAWA129	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.51	0.00	0.00
LAWA129	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.51	0.00	0.00
LAWA129	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.51	0.00	0.00
LAWA129	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.51	0.00	0.00
LAWA129	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.51	0.00	0.00
LAWA129	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.51	0.00	0.00
LAWA129	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.51	0.00	0.00
LAWA129	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.51	0.00	0.00
LAWA130	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.05	0.00	0.00
LAWA130	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.05	0.00	0.00
LAWA130	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.05	0.00	0.00
LAWA130	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.05	0.00	0.00
LAWA130	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.05	0.00	0.00
LAWA130	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.05	0.00	0.00
LAWA130	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.05	0.00	0.00
LAWA130	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.05	0.00	0.00
LAWA130	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.05	0.00	0.00
LAWA130	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.05	0.00	0.00
LAWA130	1.18	0.00	0.00	0.00	18.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.05	0.00	0.00
LAWA133	2.00	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.54	0.00	0.00
LAWA133	2.00	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.54	0.00	0.00
LAWA133	2.00	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.54	0.00	0.00
LAWA133	2.00	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.54	0.00	0.00
LAWA133	2.00	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.54	0.00	0.00
LAWA133	2.00	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.54	0.00	0.00
LAWA133	2.00	0.00	0.00	0.00	19.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.54	0.00	0.00
LAWA134	1.50	0.00	0.00	0.00	17.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.75	0.00	0.00
LAWA134	1.50	0.00	0.00	0.00	17.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.75	0.00	0.00
LAWA134	1.50	0.00	0.00	0.00	17.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.75	0.00	0.00
LAWA134	1.50	0.00	0.00	0.00	17.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.75	0.00	0.00
LAWA134	1.50	0.00	0.00	0.00	17.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.75	0.00	0.00
LAWA134	1.50	0.00	0.00	0.00	17.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.75	0.00	0.00
LAWA134	1.50	0.00	0.00	0.00	17.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.75	0.00	0.00
LAWA134	1.50	0.00	0.00	0.00	17.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.75	0.00	0.00
LAWA135	1.52	0.00	0.00	0.00	17.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.30	0.00	0.00
LAWA135	1.52	0.00	0.00	0.00	17.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.30	0.00	0.00
LAWA135	1.52	0.00	0.00	0.00	17.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.30	0.00	0.00
LAWA135	1.52	0.00	0.00	0.00	17.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.30	0.00	0.00
LAWA135	1.52	0.00	0.00	0.00	17.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.30	0.00	0.00
LAWA135	1.52	0.00	0.00	0.00	17.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.30	0.00	0.00
LAWA135	1.52	0.00	0.00	0.00	17.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.30	0.00	0.00
LAWA136	1.52	0.00	0.00	0.00	17.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.30	0.00	0.00
LAWA136	1.52	0.00	0.00	0.00	17.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.30	0.00	0.00
LAWA136	1.52	0.00	0.00	0.00	17.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.30	0.00	0.00
LAWA136	1.52	0.00	0.00	0.00	17.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.30	0.00	0.00
LAWA136	1.52	0.00	0.00	0.00	17.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.30	0.00	0.00
LAWA136	1.52	0.00	0.00	0.00	17.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.30	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
LAWA127R2	0.00	0.00	0.00	2.08	0.00	0.00	3.08	3.12	0.85	100.00		
LAWA127R2	0.00	0.00	0.00	2.08	0.00	0.00	3.08	3.12	0.85	100.00		
LAWA127R2	0.00	0.00	0.00	2.08	0.00	0.00	3.08	3.12	0.85	100.00		
LAWA127R2	0.00	0.00	0.00	2.08	0.00	0.00	3.08	3.12	0.85	100.00		
LAWA127R2	0.00	0.00	0.00	2.08	0.00	0.00	3.08	3.12	0.85	100.00		
LAWA127R2	0.00	0.00	0.00	2.08	0.00	0.00	3.08	3.12	0.85	100.00		
LAWA128	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.16	100.00		
LAWA128	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.16	100.00		
LAWA128	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.16	100.00		
LAWA128	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.16	100.00		
LAWA128	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.16	100.00		
LAWA128	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.16	100.00		
LAWA128	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.16	100.00		
LAWA128	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.16	100.00		
LAWA128	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.16	100.00		
LAWA128	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.16	100.00		
LAWA128	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.16	100.00		
LAWA128	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.16	100.00		
LAWA129	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.17	100.00		
LAWA129	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.17	100.00		
LAWA129	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.17	100.00		
LAWA129	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.17	100.00		
LAWA129	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.17	100.00		
LAWA129	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.17	100.00		
LAWA129	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.17	100.00		
LAWA129	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.17	100.00		
LAWA129	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.17	100.00		
LAWA129	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.17	100.00		
LAWA129	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.17	100.00		
LAWA129	0.00	0.00	0.00	2.09	0.00	0.00	3.09	3.13	1.17	100.00		
LAWA130	0.00	0.00	0.00	2.09	0.00	0.00	4.14	3.13	1.19	100.00		
LAWA130	0.00	0.00	0.00	2.09	0.00	0.00	4.14	3.13	1.19	100.00		
LAWA130	0.00	0.00	0.00	2.09	0.00	0.00	4.14	3.13	1.19	100.00		
LAWA130	0.00	0.00	0.00	2.09	0.00	0.00	4.14	3.13	1.19	100.00		
LAWA130	0.00	0.00	0.00	2.09	0.00	0.00	4.14	3.13	1.19	100.00		
LAWA130	0.00	0.00	0.00	2.09	0.00	0.00	4.14	3.13	1.19	100.00		
LAWA130	0.00	0.00	0.00	2.09	0.00	0.00	4.14	3.13	1.19	100.00		
LAWA130	0.00	0.00	0.00	2.09	0.00	0.00	4.14	3.13	1.19	100.00		
LAWA130	0.00	0.00	0.00	2.09	0.00	0.00	4.14	3.13	1.19	100.00		
LAWA130	0.00	0.00	0.00	2.09	0.00	0.00	4.14	3.13	1.19	100.00		
LAWA133	0.00	0.00	0.00	2.00	0.00	0.00	2.97	3.00	1.02	100.00		
LAWA133	0.00	0.00	0.00	2.00	0.00	0.00	2.97	3.00	1.02	100.00		
LAWA133	0.00	0.00	0.00	2.00	0.00	0.00	2.97	3.00	1.02	100.00		
LAWA133	0.00	0.00	0.00	2.00	0.00	0.00	2.97	3.00	1.02	100.00		
LAWA133	0.00	0.00	0.00	2.00	0.00	0.00	2.97	3.00	1.02	100.00		
LAWA133	0.00	0.00	0.00	2.00	0.00	0.00	2.97	3.00	1.02	100.00		
LAWA133	0.00	0.00	0.00	2.00	0.00	0.00	2.97	3.00	1.02	100.00		
LAWA134	0.00	0.00	0.00	2.03	0.00	0.00	3.00	3.04	0.97	100.00		
LAWA134	0.00	0.00	0.00	2.03	0.00	0.00	3.00	3.04	0.97	100.00		
LAWA134	0.00	0.00	0.00	2.03	0.00	0.00	3.00	3.04	0.97	100.00		
LAWA134	0.00	0.00	0.00	2.03	0.00	0.00	3.00	3.04	0.97	100.00		
LAWA134	0.00	0.00	0.00	2.03	0.00	0.00	3.00	3.04	0.97	100.00		
LAWA134	0.00	0.00	0.00	2.03	0.00	0.00	3.00	3.04	0.97	100.00		
LAWA134	0.00	0.00	0.00	2.03	0.00	0.00	3.00	3.04	0.97	100.00		
LAWA134	0.00	0.00	0.00	2.03	0.00	0.00	3.00	3.04	0.97	100.00		
LAWA135	0.00	0.00	0.00	2.05	0.00	0.00	3.04	3.08	0.93	100.00		
LAWA135	0.00	0.00	0.00	2.05	0.00	0.00	3.04	3.08	0.93	100.00		
LAWA135	0.00	0.00	0.00	2.05	0.00	0.00	3.04	3.08	0.93	100.00		
LAWA135	0.00	0.00	0.00	2.05	0.00	0.00	3.04	3.08	0.93	100.00		
LAWA135	0.00	0.00	0.00	2.05	0.00	0.00	3.04	3.08	0.93	100.00		
LAWA135	0.00	0.00	0.00	2.05	0.00	0.00	3.04	3.08	0.93	100.00		
LAWA135	0.00	0.00	0.00	2.05	0.00	0.00	3.04	3.08	0.93	100.00		
LAWA135	0.00	0.00	0.00	2.05	0.00	0.00	3.04	3.08	0.93	100.00		
LAWA136	0.00	0.00	0.00	2.05	0.00	0.00	3.04	3.08	0.93	100.00		
LAWA136	0.00	0.00	0.00	2.05	0.00	0.00	3.04	3.08	0.93	100.00		
LAWA136	0.00	0.00	0.00	2.05	0.00	0.00	3.04	3.08	0.93	100.00		
LAWA136	0.00	0.00	0.00	2.05	0.00	0.00	3.04	3.08	0.93	100.00		
LAWA136	0.00	0.00	0.00	2.05	0.00	0.00	3.04	3.08	0.93	100.00		
LAWA136	0.00	0.00	0.00	2.05	0.00	0.00	3.04	3.08	0.93	100.00		
LAWA136	0.00	0.00	0.00	2.05	0.00	0.00	3.04	3.08	0.93	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
LAWA136	1854.00	0.81	2.031	3,764.786	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	211.18	192.75	0.28
LAWA41	7.00	0.80	2.008	14.055	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.11	80.83	21.95	0.45
LAWA41	13.00	0.80	2.008	26.103	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.17	105.50	33.76	0.54
LAWA41	56.00	0.80	2.008	112.442	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.27	117.67	43.71	0.95
LAWA41	120.00	0.80	2.008	240.948	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.54	128.59	51.43	0.40
LAWA41	180.00	0.80	2.008	361.422	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	143.80	61.72	0.89
LAWA41	271.00	0.80	2.008	544.140	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.75	150.73	65.57	0.31
LAWA41	365.00	0.80	2.008	732.883	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.85	170.73	77.46	0.32
LAWA41	547.00	0.80	2.008	1,098.320	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.93	182.20	83.90	0.34
LAWA41	730.00	0.80	2.008	1,465.765	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.12	200.77	93.30	0.66
LAWA41	1331.00	0.80	2.008	2,672.512	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.25	1467.50	1423.53	0.69
LAWA41	7.00	0.80	2.008	14.055	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.06	89.89	24.53	0.71
LAWA41	27.00	0.80	2.008	54.213	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.02	97.99	36.08	0.43
LAWA41	56.00	0.80	2.008	112.442	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.06	104.83	42.32	0.25
LAWA41	120.00	0.80	2.008	240.948	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.11	98.95	54.32	
LAWA41	181.00	0.80	2.008	363.429	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.43	86.43	60.11	0.22
LAWA41	259.00	0.80	2.008	520.046	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.14	88.64	80.68	0.34
LAWA42	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.27	77.24	43.65	0.42
LAWA42	13.00	0.81	2.031	26.398	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.42	101.77	63.78	0.68
LAWA42	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.57	108.50	76.46	0.55
LAWA42	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.72	120.12	91.18	0.42
LAWA42	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.82	131.13	99.76	0.65
LAWA42	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.87	136.20	107.10	0.57
LAWA42	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.93	150.03	119.07	0.19
LAWA42	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.98	158.67	124.33	0.30
LAWA42	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.15	279.53	307.47	0.53
LAWA42	1331.00	0.81	2.031	2,702.767	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.26	1117.33	2433.93	0.96
LAWA42	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.31	78.95	42.20	0.23
LAWA42	27.00	0.81	2.031	54.827	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	90.01	64.37	0.21
LAWA42	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.28	96.64	74.09	0.17
LAWA42	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.28	89.52	88.13	
LAWA42	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.65	78.79	95.17	0.12
LAWA42	259.00	0.81	2.031	525.933	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.35	70.28	115.47	0.18
LAWA43-1	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.21	57.66	17.59	0.37
LAWA43-1	13.00	0.81	2.031	26.398	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.27	78.02	26.60	0.56
LAWA43-1	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.43	83.42	35.00	0.74
LAWA43-1	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.51	90.44	44.77	0.50
LAWA43-1	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.64	98.33	52.84	1.14
LAWA43-1	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.76	106.40	59.83	0.40
LAWA43-1	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.84	116.33	68.96	0.44
LAWA43-1	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.92	121.10	77.78	0.56
LAWA43-1	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.12	130.00	91.57	0.66
LAWA43-1	1331.00	0.81	2.031	2,702.767	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.24	717.31	2907.10	1.70
LAWA43-1	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.11	59.47	18.14	0.40
LAWA43-1	27.00	0.81	2.031	54.827	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.04	65.16	26.68	0.41
LAWA43-1	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.06	70.62	33.44	0.28
LAWA43-1	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.12	64.88	45.92	
LAWA43-1	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.43	55.25	52.62	0.16
LAWA43-1	259.00	0.81	2.031	525.933	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.13	43.30	65.01	0.20
LAWA44	7.00	0.80	2.015	14.108	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.27	68.11	20.51	0.36
LAWA44	28.00	0.80	2.015	56.432	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.33	83.46	36.20	0.39
LAWA44	56.00	0.80	2.015	112.863	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.43	92.22	45.62	0.67
LAWA44	120.00	0.80	2.015	241.850	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.66	106.43	59.32	0.46
LAWA44	180.00	0.80	2.015	362.775	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.84	115.37	67.95	0.38
LAWA44	270.00	0.80	2.015	544.163	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	127.67	78.74	0.40
LAWA44	371.00	0.80	2.015	747.720	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.27	134.50	86.12	0.26
LAWA44	547.00	0.80	2.015	1,102.434	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.32	135.43	90.23	0.13
LAWA44	727.00	0.80	2.015	1,465.209	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.43	153.37	101.07	0.47
LAWA44	1296.00	0.80	2.015	2,611.982	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	254.97	174.92	0.17
LAWA44	7.00	0.80	2.015	14.108	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.43	64.48	20.79	0.31
LAWA44	28.00	0.80	2.015	56.432	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.41	78.36	35.18	0.29
LAWA44	56.00	0.80	2.015	112.863	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.38	77.29	44.73	0.39
LAWA44	120.00	0.80	2.015	241.850	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.37	74.50	60.35	0.17
LAWA44	180.00	0.80	2.015	362.775	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.16	73.65	73.09	0.38
LAWA44	240.00	0.80	2.015	483.700	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.95	69.17	97.43	0.19
LAWA44R10	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.27	90.30	29.81	
LAWA44R10	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.33	115.13	63.46	0.17
LAWA44R10	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.46	142.07	76.69	0.22
LAWA44R10	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.64	149.60	88.72	0.53
LAWA44R10	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.92	144.20	88.35	0.53
LAWA44R10	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.07	142.83	89.34	0.36
LAWA44R10	364.00	0.81	2.031	739.149	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.12	184.35	115.63	0.47

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
LAWA136			515.17	60.71	1.97			0.26					Not Studied
LAWA41			154.13	15.90	10.44	1.27		0.46		0.91			Not Studied
LAWA41			194.40	17.27	11.67	2.10		0.57		1.41	0.81		Not Studied
LAWA41			255.90	26.06	13.96	2.48		0.70	0.56	1.77	0.95		Not Studied
LAWA41			345.02	29.97	15.60	2.80		0.78	0.62	1.92	1.05		Not Studied
LAWA41			433.60	37.73	15.75	2.87		0.79	0.48	1.80	0.80		Not Studied
LAWA41			409.47	36.63	16.28	2.62		0.86		2.10	0.60		Not Studied
LAWA41			471.00	43.12	17.76	2.46		0.77		1.70	0.64		Not Studied
LAWA41			507.50	52.07	16.99	1.53		0.38		0.92			Not Studied
LAWA41			562.33	51.60	15.86								Not Studied
LAWA41			5120.00	460.92	2.38					1.13			Not Studied
LAWA41			172.27	16.75	11.17	1.34		0.47		0.93			Not Studied
LAWA41			228.03	22.00	11.50	1.36		0.63		1.15	0.71		Not Studied
LAWA41			270.77	22.46	11.45	1.58		0.63		0.96	0.83		Not Studied
LAWA41			359.40	30.55	8.99	1.62		0.77		1.79	76.00		Not Studied
LAWA41			335.63	29.58	5.78			0.66		3.33	0.59		Not Studied
LAWA41			451.37	41.73	4.94	1.28		0.84		3.14	0.65		Not Studied
LAWA42			206.40	22.49	9.72			0.38		0.99			Not Studied
LAWA42			264.23	26.82	11.49	1.60		0.45		1.26	0.46		Not Studied
LAWA42			315.20	37.45	13.07	1.69		0.51		1.53	0.55		Not Studied
LAWA42			424.36	43.97	15.45	1.78		0.45		1.37			Not Studied
LAWA42			494.33	50.06	14.61	1.39		0.36		0.78			Not Studied
LAWA42			487.67	49.70	15.04			0.39		0.82			Not Studied
LAWA42			537.10	54.38	15.46								Not Studied
LAWA42			546.90	62.02	14.55								Not Studied
LAWA42			1093.80	119.43	9.52								Not Studied
LAWA42			6907.70	657.01	4.24					1.64			Not Studied
LAWA42			205.27	22.06	9.55			0.38		0.86			Not Studied
LAWA42			279.87	30.78	10.43			0.56		1.13	0.05		Not Studied
LAWA42			339.30	33.07	10.81	1.17		0.51		0.75	0.57		Not Studied
LAWA42			423.27	41.78	8.73			0.50		0.83	0.48		Not Studied
LAWA42			390.33	40.29	6.23			0.45		2.36			Not Studied
LAWA42			496.83	51.60	4.16			0.37		1.55			Not Studied
LAWA43-1			127.80	12.98	22.22			0.25		0.77			Not Studied
LAWA43-1			168.20	14.15	25.36	1.89		0.31		1.16	0.77		Not Studied
LAWA43-1			207.57	21.10	29.76	2.44		0.53	0.57	1.71	1.01		Not Studied
LAWA43-1			287.09	25.03	32.28	2.83		0.73	0.70	2.22	1.02		Not Studied
LAWA43-1			339.50	30.89	32.73	2.94		0.77	0.70	2.04	1.03		Not Studied
LAWA43-1			361.70	30.44	35.20	3.07		1.01	0.57	3.01	0.95		Not Studied
LAWA43-1			393.87	35.53	38.06	3.18		1.00	0.67	3.09	1.14		Not Studied
LAWA43-1			417.90	41.77	36.38	1.90		0.45		1.26	0.77		Not Studied
LAWA43-1			500.70	41.42	30.56	1.57		0.30		0.87			Not Studied
LAWA43-1			8554.17	1226.20	10.30	1.26				2.93			Not Studied
LAWA43-1			132.47	12.52	23.18			0.26					Not Studied
LAWA43-1			177.57	16.85	24.84	1.24		0.41		1.26	0.59		Not Studied
LAWA43-1			214.37	17.95	25.09	1.50		0.51	0.45	1.09	0.83		Not Studied
LAWA43-1			295.43	24.88	22.13	1.47		0.77	0.50	1.79	0.83		Not Studied
LAWA43-1			184.53	23.80	16.78	1.31		0.97		3.57	0.77		Not Studied
LAWA43-1			338.93	25.99	10.28	1.59		1.18	0.50	4.50	0.81		Not Studied
LAWA44			106.07		10.51	1.10		0.49					Not Studied
LAWA44			162.17		11.86	1.53		0.61		1.35	0.65		Not Studied
LAWA44			223.97	3.09	12.12	2.02		0.79	0.54	0.98	0.86		Not Studied
LAWA44			261.37	3.30	13.86	2.29		0.82	0.68	0.84	0.97		Not Studied
LAWA44			304.47	4.31	12.60	2.75		1.22	0.94	2.33	1.42		Not Studied
LAWA44			313.77	4.18	13.21	2.52		1.14	0.74	2.73	1.05		Not Studied
LAWA44			335.10	4.20	13.01	2.62		1.17	0.78	2.81	1.16		Not Studied
LAWA44			464.83	6.50	11.58	2.18		0.85	0.64	1.76	1.13		Not Studied
LAWA44			429.30	5.74	12.04	2.31		0.92	0.44	2.53	0.79		Not Studied
LAWA44			679.49	8.57	6.81	1.36		0.34		1.05	0.62		Not Studied
LAWA44			100.63		8.36			0.32					Not Studied
LAWA44			165.60	2.35	8.76	1.15		0.52		0.59	0.51		Not Studied
LAWA44			219.63	2.86	7.54	1.38		0.61		0.98	0.81		Not Studied
LAWA44			273.10	2.48	4.62			0.37		0.84	0.75		Not Studied
LAWA44			283.27	2.81	3.01			0.34		1.33	0.78		Not Studied
LAWA44			462.50	2.50						0.63			Not Studied
LAWA44R10			139.90	2.33	8.94	1.56		0.59		1.11			Not Studied
LAWA44R10			273.37	3.79	13.12	2.70		1.01	0.61	1.87	1.21		Not Studied
LAWA44R10			332.63	4.53	13.12	2.33		0.92	0.70	1.81	1.21		Not Studied
LAWA44R10			376.10	4.41	12.81	2.59		1.05	0.69	2.06	1.31		Not Studied
LAWA44R10			398.33	4.82	12.79	2.58		0.98	0.74	2.00	1.38		Not Studied
LAWA44R10			389.43	4.28	12.24	2.19		0.94	0.57	1.79	1.06		Not Studied
LAWA44R10			498.47	6.32	15.67	3.83		1.51	0.89	2.70	1.23		Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
LAWA136		74.99	14.398	9.3584141	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44R10		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44R10		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44R10		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44R10		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44R10		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44R10		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44R10		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
LAWA136	5.66	10.09	0.00	3.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.70	3.58	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44R10	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44R10	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44R10	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44R10	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44R10	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44R10	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44R10	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
LAWA136	1.52	0.00	0.00	0.00	17.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.30	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44R10	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44R10	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44R10	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44R10	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44R10	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44R10	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44R10	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
LAWA136	0.00	0.00	0.00	2.05	0.00	0.00	3.04	3.08	0.93	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44R10	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44R10	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44R10	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44R10	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44R10	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44R10	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44R10	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
LAWA44R10	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	181.41	120.75	0.50
LAWA44R10	733.00	0.81	2.031	1,488.451	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.33	162.80	115.91	0.25
LAWA44R10	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.43	204.26	150.37	0.11
LAWA44R10	2210.00	0.81	2.031	4,487.689	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.66	941.46	1570.17	0.55
LAWA45	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.17	64.00	56.83	0.29
LAWA45	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.22	80.68	127.90	0.10
LAWA45	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.34	88.01	168.40	0.41
LAWA45	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.47	93.94	226.53	0.24
LAWA45	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.58	104.47	268.67	0.20
LAWA45	270.00	0.81	2.031	548.270	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.72	111.00	303.37	0.16
LAWA45	371.00	0.81	2.031	753.363	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.87	117.97	345.40	
LAWA45	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	115.53	366.73	
LAWA45	727.00	0.81	2.031	1,476.267	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.06	131.57	421.83	0.22
LAWA45	1296.00	0.81	2.031	2,631.695	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.17	191.19	576.51	0.10
LAWA45	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.33	61.69	59.53	0.18
LAWA45	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.27	76.76	128.73	
LAWA45	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.27	74.36	163.87	0.25
LAWA45	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.26	75.19	227.87	0.19
LAWA45	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.06	74.30	267.90	0.31
LAWA45	240.00	0.81	2.031	487.351	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.82	68.09	325.50	
LAWA49	7.00	0.81	2.038	14.268	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.51	63.38	17.18	0.17
LAWA49	28.00	0.81	2.038	57.073	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.60	79.41	33.82	
LAWA49	56.00	0.81	2.038	114.146	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.82	90.37	48.75	0.23
LAWA49	120.00	0.81	2.038	244.598	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.11	103.83	65.13	0.20
LAWA49	180.00	0.81	2.038	366.898	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.22	117.63	75.49	0.29
LAWA49	271.00	0.81	2.038	552.385	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.32	126.87	92.09	
LAWA49	365.00	0.81	2.038	743.987	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.42	135.90	104.40	
LAWA49	545.00	0.81	2.038	1,110.885	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.53	134.03	108.47	0.34
LAWA49	729.00	0.81	2.038	1,485.936	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.64	202.92	170.34	0.12
LAWA49	1272.00	0.81	2.038	2,592.744	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.77	197.59	183.28	0.28
LAWA50	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.62	61.00	17.28	0.28
LAWA50	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.71	75.85	34.46	0.18
LAWA50	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.92	86.47	48.93	0.20
LAWA50	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.21	101.07	66.90	0.36
LAWA50	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	115.57	78.70	0.14
LAWA50	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	121.70	92.03	
LAWA50	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.52	133.47	104.73	
LAWA50	545.00	0.81	2.031	1,106.693	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	138.77	116.47	0.20
LAWA50	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.75	207.60	183.08	0.13
LAWA50	1272.00	0.81	2.031	2,582.960	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.85	205.33	201.37	0.31
LAWA51	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.03	52.50	26.24	0.10
LAWA51	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.12	63.67	75.34	
LAWA51	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.22	71.23	115.63	0.22
LAWA51	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.26	76.60	158.53	0.30
LAWA51	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.22	88.16	190.57	0.96
LAWA51	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	93.47	237.33	0.15
LAWA51	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.43	97.47	273.73	
LAWA51	545.00	0.81	2.031	1,106.693	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.52	102.53	303.53	1.78
LAWA51	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	152.31	510.19	0.53
LAWA51	1272.00	0.81	2.031	2,582.960	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.75	135.51	516.27	0.20
LAWA52	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.82	67.82	16.36	1.19
LAWA52	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.33	109.63	28.94	0.47
LAWA52	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.77	125.40	37.70	0.95
LAWA52	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.85	147.80	42.61	0.50
LAWA52	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.96	168.13	48.86	0.51
LAWA52	269.00	0.81	2.031	546.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.04	171.17	51.73	0.47
LAWA52	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.17	590.70	651.33	
LAWA52	546.00	0.81	2.031	1,108.723	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.36	726.00	880.10	1.08
LAWA52	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.56	1019.47	1299.77	1.05
LAWA52	1827.00	0.81	2.031	3,709.959	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.92	1026.33	1995.47	0.68
LAWA52	2190.00	0.81	2.031	4,447.077	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.92	922.63	1686.53	0.62
LAWA52	2558.00	0.81	2.031	5,194.348	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.96	972.95	1735.87	0.93
LAWA53	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.52	68.32	15.40	0.79
LAWA53	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.62	110.30	25.62	0.48
LAWA53	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.76	124.50	30.05	0.80
LAWA53	263.00	0.81	2.031	534.055	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.04	184.26	46.76	0.74
LAWA53	362.00	0.81	2.031	735.088	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.15	194.36	52.63	0.68
LAWA53	552.00	0.81	2.031	1,120.907	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.25	356.83	249.71	0.65
LAWA53	1448.00	0.81	2.031	2,940.350	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.55	882.50	1507.23	1.02
LAWA53	1896.00	0.81	2.031	3,850.072	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.57	952.04	1950.60	1.48
LAWA56	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.97	64.09	64.70	0.23
LAWA56	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.74	90.37	140.00	0.16

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
LAWA44R10			511.40	6.45	14.55	2.51		0.72	0.62	1.48	1.37		Not Studied
LAWA44R10			445.19	6.70	11.13								Not Studied
LAWA44R10			535.94	7.25	9.36								Not Studied
LAWA44R10			4420.57	77.85	0.93					0.54			Analcime only
LAWA45			152.37		7.85	1.42		0.50		0.54	0.56		Not Studied
LAWA45			298.40	2.68	7.40	2.47		1.11	0.75	2.32	1.41		Not Studied
LAWA45			433.37	4.84	6.74	3.09		1.36	0.93	2.34	1.59		Not Studied
LAWA45			521.97	5.59	6.74	2.69		1.16	0.90	1.67	1.55		Not Studied
LAWA45			640.50	6.75	6.09	2.75		1.37	1.03	2.34	1.52		Not Studied
LAWA45			702.97	7.71	5.83	2.82		1.27	0.23	2.61	2.15		Not Studied
LAWA45			723.37	8.60	5.96	1.58		0.72	0.70	1.45	1.20		Not Studied
LAWA45			954.43	11.26	5.08						0.90		Not Studied
LAWA45			914.30	11.28	5.29								Not Studied
LAWA45			1302.57	16.29	7.38								Not Studied
LAWA45			154.90		7.71	1.54		0.56		0.91	0.57		Not Studied
LAWA45			324.97	3.39	6.61	2.64		1.33	0.69	2.18	1.18		Not Studied
LAWA45			444.57	4.44	5.00	2.62		1.32	0.78	2.58	1.43		Not Studied
LAWA45			561.70	4.91	2.72	1.30		0.63	0.71	1.38	1.20		Not Studied
LAWA45			578.07	4.58	1.85	1.13		0.46	0.55	2.12	1.03		Not Studied
LAWA45			867.07	3.74				0.41		1.11			Not Studied
LAWA49			86.71		9.63	2.09		0.49		1.04			Not Studied
LAWA49			144.70	1.79	10.61	4.11		0.92	0.60	2.31	1.05		Not Studied
LAWA49			192.17	2.13	11.47	5.59		1.23	0.96	3.02	1.52		Not Studied
LAWA49			247.50	2.44	11.92	7.01		1.50	1.41	4.01	2.22		Not Studied
LAWA49			276.27	3.15	12.39	8.30		1.80	1.60	4.84	2.55		Not Studied
LAWA49			314.33	3.61	13.80	9.86		2.38	1.99	5.92	2.94		Not Studied
LAWA49			348.80	4.12	13.58	10.05		2.19	1.93	6.17	3.08		Not Studied
LAWA49			414.23	4.82	12.55	9.14		2.00	1.86	5.90	2.55		Not Studied
LAWA49			542.34	7.70	19.98	12.68		2.76	2.87	7.43	4.37		Not Studied
LAWA49			617.19	8.15	15.82	10.05		2.51	2.26	7.38	3.32		Not Studied
LAWA50			88.98		10.93	1.89		0.44		0.86			Not Studied
LAWA50			149.03	1.82	11.87	4.16		0.83	0.47	1.89	0.82		Not Studied
LAWA50			193.17	2.18	12.51	5.99		1.12	0.86	2.41	1.31		Not Studied
LAWA50			255.07	2.71	13.51	8.06		1.38	1.37	3.50	2.02		Not Studied
LAWA50			283.20	3.56	13.76	10.47		1.73	1.77	4.60	2.52		Not Studied
LAWA50			318.70	3.65	14.98	12.47		2.21	2.12	5.47	2.95		Not Studied
LAWA50			360.33	4.59	14.85	13.10		2.11	2.20	5.91	3.20		Not Studied
LAWA50			424.60	5.39	14.83	12.75		2.02	2.30	5.82	2.75		Not Studied
LAWA50			592.18	8.16	21.94	17.31		2.61	3.30	7.24	4.69		Not Studied
LAWA50			666.89	8.45	18.98	13.13		2.06	2.60	6.69	3.77		Not Studied
LAWA51			69.32		8.37	1.57		0.41		0.83			Not Studied
LAWA51			169.13		7.53	2.91		1.22	0.63	2.66	1.10		Not Studied
LAWA51			254.27	2.32	6.62	3.46		1.79	0.92	3.44	1.50		Not Studied
LAWA51			333.50	2.96	4.80	2.59		1.21	1.00	2.43	1.90		Not Studied
LAWA51			375.37	3.80	4.54	2.87		1.57	1.08	3.32	1.98		Not Studied
LAWA51			456.33	3.90	4.58	2.89		1.33	1.31	2.41	2.42		Not Studied
LAWA51			528.20	5.21	3.55	2.44		1.15	1.25	2.62	2.40		Not Studied
LAWA51			642.47	6.36	3.43	2.78		1.60	1.26	3.39	2.02		Not Studied
LAWA51			943.76	11.22	5.23	3.53		1.80	1.79	3.37	2.98		Not Studied
LAWA51			977.76	9.99	3.29	1.67		0.46	1.17	1.39	1.83		Not Studied
LAWA52			163.60	3.15	5.56								Not Studied
LAWA52			271.10	4.54	7.63								Not Studied
LAWA52			333.87	6.00	8.01								Not Studied
LAWA52			378.20	6.30	8.96								Not Studied
LAWA52			443.90	6.55	9.92								Not Studied
LAWA52			496.17	7.32	9.01								Not Studied
LAWA52			3131.40	82.97	2.22								Not Studied
LAWA52			3922.50	121.50						0.62			Not Studied
LAWA52			6269.80	195.89	2.56	1.86				1.56			Not Studied
LAWA52			7525.27	315.67	2.95	1.53				1.49			Not Studied
LAWA52			6808.13	239.31	2.37	1.56				1.36			Not Studied
LAWA52			6859.77	243.20	2.27	1.58				1.11			Not Studied
LAWA53			156.27	2.57	6.76								Not Studied
LAWA53			248.03	4.28	11.77								Not Studied
LAWA53			316.20	4.87	10.73								Not Studied
LAWA53			487.79	7.10	10.53								Not Studied
LAWA53			478.45	7.94	10.90								Not Studied
LAWA53			1220.97	27.16	8.42								Not Studied
LAWA53			5969.13	221.80	2.51	1.28				1.26			Not Studied
LAWA53			7300.27	275.99	7.47	2.38				1.21			Analcime only
LAWA56			172.57	2.26	8.37			0.65		0.86			Not Studied
LAWA56			329.20	4.28	9.84	2.44		0.88		2.26	0.98		Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
LAWA44R10		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44R10		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44R10		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44R10	XRD/SEM	73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA49		73.98	16.185	0.8917445	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA49		73.98	16.185	0.8917445	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA49		73.98	16.185	0.8917445	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA49		73.98	16.185	0.8917445	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA49		73.98	16.185	0.8917445	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA49		73.98	16.185	0.8917445	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA49		73.98	16.185	0.8917445	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA49		73.98	16.185	0.8917445	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA49		73.98	16.185	0.8917445	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA49		73.98	16.185	0.8917445	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA50		71.95	18.182	-7.1446351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA50		71.95	18.182	-7.1446351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA50		71.95	18.182	-7.1446351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA50		71.95	18.182	-7.1446351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA50		71.95	18.182	-7.1446351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA50		71.95	18.182	-7.1446351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA50		71.95	18.182	-7.1446351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA50		71.95	18.182	-7.1446351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA51		77.01	13.201	12.8797607	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA51		77.01	13.201	12.8797607	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA51		77.01	13.201	12.8797607	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA51		77.01	13.201	12.8797607	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA51		77.01	13.201	12.8797607	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA51		77.01	13.201	12.8797607	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA51		77.01	13.201	12.8797607	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA51		77.01	13.201	12.8797607	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA51		77.01	13.201	12.8797607	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA52		68.94	21.566	-21.4222378	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA52		68.94	21.566	-21.4222378	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA52		68.94	21.566	-21.4222378	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA52		68.94	21.566	-21.4222378	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA52		68.94	21.566	-21.4222378	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA52		68.94	21.566	-21.4222378	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA52		68.94	21.566	-21.4222378	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA52		68.94	21.566	-21.4222378	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA52		68.94	21.566	-21.4222378	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA52		68.94	21.566	-21.4222378	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA53		68.59	21.452	-20.2251811	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA53		68.59	21.452	-20.2251811	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA53		68.59	21.452	-20.2251811	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA53		68.59	21.452	-20.2251811	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA53		68.59	21.452	-20.2251811	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA53		68.59	21.452	-20.2251811	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA53		68.59	21.452	-20.2251811	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA53	XRD/SEM	68.59	21.452	-20.2251811	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA56		74.54	15.595	3.314762	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA56		74.54	15.595	3.314762	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
LAWA44R10	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44R10	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44R10	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44R10	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA49	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.98	0.50	0.00	0.00	0.00
LAWA49	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.98	0.50	0.00	0.00	0.00
LAWA49	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.98	0.50	0.00	0.00	0.00
LAWA49	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.98	0.50	0.00	0.00	0.00
LAWA49	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.98	0.50	0.00	0.00	0.00
LAWA49	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.98	0.50	0.00	0.00	0.00
LAWA49	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.98	0.50	0.00	0.00	0.00
LAWA49	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.98	0.50	0.00	0.00	0.00
LAWA49	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.98	0.50	0.00	0.00	0.00
LAWA49	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.98	0.50	0.00	0.00	0.00
LAWA50	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98	0.50	0.00	0.00	0.00
LAWA50	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98	0.50	0.00	0.00	0.00
LAWA50	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98	0.50	0.00	0.00	0.00
LAWA50	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98	0.50	0.00	0.00	0.00
LAWA50	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98	0.50	0.00	0.00	0.00
LAWA50	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98	0.50	0.00	0.00	0.00	
LAWA50	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98	0.50	0.00	0.00	0.00
LAWA50	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98	0.50	0.00	0.00	0.00
LAWA50	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98	0.50	0.00	0.00	0.00
LAWA51	6.20	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.45	0.00	0.00	0.00
LAWA51	6.20	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.45	0.00	0.00	0.00
LAWA51	6.20	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.45	0.00	0.00	0.00
LAWA51	6.20	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.45	0.00	0.00	0.00
LAWA51	6.20	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.45	0.00	0.00	0.00
LAWA51	6.20	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.45	0.00	0.00	0.00
LAWA51	6.20	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.45	0.00	0.00	0.00
LAWA51	6.20	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.45	0.00	0.00	0.00
LAWA51	6.20	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.45	0.00	0.00	0.00
LAWA52	6.18	6.19	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.51	0.50	0.00	0.00	0.00
LAWA52	6.18	6.19	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.51	0.50	0.00	0.00	0.00
LAWA52	6.18	6.19	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.51	0.50	0.00	0.00	0.00
LAWA52	6.18	6.19	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.51	0.50	0.00	0.00	0.00
LAWA52	6.18	6.19	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.51	0.50	0.00	0.00	0.00
LAWA52	6.18	6.19	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.51	0.50	0.00	0.00	0.00
LAWA52	6.18	6.19	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.51	0.50	0.00	0.00	0.00
LAWA52	6.18	6.19	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.51	0.50	0.00	0.00	0.00
LAWA52	6.18	6.19	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.51	0.50	0.00	0.00	0.00
LAWA52	6.18	6.19	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.51	0.50	0.00	0.00	0.00
LAWA53	6.15	6.17	0.00	7.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.47	0.49	0.00	0.00	0.00
LAWA53	6.15	6.17	0.00	7.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.47	0.49	0.00	0.00	0.00
LAWA53	6.15	6.17	0.00	7.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.47	0.49	0.00	0.00	0.00
LAWA53	6.15	6.17	0.00	7.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.47	0.49	0.00	0.00	0.00
LAWA53	6.15	6.17	0.00	7.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.47	0.49	0.00	0.00	0.00
LAWA53	6.15	6.17	0.00	7.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.47	0.49	0.00	0.00	0.00
LAWA53	6.15	6.17	0.00	7.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.47	0.49	0.00	0.00	0.00
LAWA56	6.15	12.05	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.47	0.50	0.00	0.00	0.00
LAWA56	6.15	12.05	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.47	0.50	0.00	0.00	0.00

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
LAWA44R10	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44R10	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44R10	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44R10	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA49	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.57	0.00	0.00
LAWA49	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.57	0.00	0.00
LAWA49	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.57	0.00	0.00
LAWA49	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.57	0.00	0.00
LAWA49	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.57	0.00	0.00
LAWA49	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.57	0.00	0.00
LAWA49	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.57	0.00	0.00
LAWA49	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.57	0.00	0.00
LAWA49	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.57	0.00	0.00
LAWA49	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.57	0.00	0.00
LAWA50	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
LAWA50	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
LAWA50	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
LAWA50	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
LAWA50	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
LAWA50	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
LAWA50	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
LAWA50	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
LAWA50	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
LAWA50	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
LAWA51	1.48	0.00	0.00	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.58	0.00	0.00
LAWA51	1.48	0.00	0.00	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.58	0.00	0.00
LAWA51	1.48	0.00	0.00	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.58	0.00	0.00
LAWA51	1.48	0.00	0.00	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.58	0.00	0.00
LAWA51	1.48	0.00	0.00	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.58	0.00	0.00
LAWA51	1.48	0.00	0.00	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.58	0.00	0.00
LAWA51	1.48	0.00	0.00	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.58	0.00	0.00
LAWA51	1.48	0.00	0.00	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.58	0.00	0.00
LAWA51	1.48	0.00	0.00	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.58	0.00	0.00
LAWA52	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.25	0.00	0.00
LAWA52	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.25	0.00	0.00
LAWA52	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.25	0.00	0.00
LAWA52	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.25	0.00	0.00
LAWA52	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.25	0.00	0.00
LAWA52	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.25	0.00	0.00
LAWA52	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.25	0.00	0.00
LAWA52	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.25	0.00	0.00
LAWA52	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.25	0.00	0.00
LAWA52	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.25	0.00	0.00
LAWA53	1.47	0.00	0.00	0.00	19.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.04	0.00	0.00
LAWA53	1.47	0.00	0.00	0.00	19.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.04	0.00	0.00
LAWA53	1.47	0.00	0.00	0.00	19.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.04	0.00	0.00
LAWA53	1.47	0.00	0.00	0.00	19.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.04	0.00	0.00
LAWA53	1.47	0.00	0.00	0.00	19.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.04	0.00	0.00
LAWA53	1.47	0.00	0.00	0.00	19.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.04	0.00	0.00
LAWA53	1.47	0.00	0.00	0.00	19.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.04	0.00	0.00
LAWA53	1.47	0.00	0.00	0.00	19.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.04	0.00	0.00
LAWA56	1.48	0.00	0.00	0.00	19.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.08	0.00	0.00
LAWA56	1.48	0.00	0.00	0.00	19.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.08	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
LAWA44R10	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44R10	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44R10	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44R10	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA49	0.00	0.00	0.00	2.00	0.00	0.00	2.48	2.99	0.90	100.00		
LAWA49	0.00	0.00	0.00	2.00	0.00	0.00	2.48	2.99	0.90	100.00		
LAWA49	0.00	0.00	0.00	2.00	0.00	0.00	2.48	2.99	0.90	100.00		
LAWA49	0.00	0.00	0.00	2.00	0.00	0.00	2.48	2.99	0.90	100.00		
LAWA49	0.00	0.00	0.00	2.00	0.00	0.00	2.48	2.99	0.90	100.00		
LAWA49	0.00	0.00	0.00	2.00	0.00	0.00	2.48	2.99	0.90	100.00		
LAWA49	0.00	0.00	0.00	2.00	0.00	0.00	2.48	2.99	0.90	100.00		
LAWA49	0.00	0.00	0.00	2.00	0.00	0.00	2.48	2.99	0.90	100.00		
LAWA49	0.00	0.00	0.00	2.00	0.00	0.00	2.48	2.99	0.90	100.00		
LAWA49	0.00	0.00	0.00	2.00	0.00	0.00	2.48	2.99	0.90	100.00		
LAWA50	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA50	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA50	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA50	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA50	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA50	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA50	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA50	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA50	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA51	0.00	0.00	0.00	2.00	0.00	0.00	2.49	3.00	0.82	100.00		
LAWA51	0.00	0.00	0.00	2.00	0.00	0.00	2.49	3.00	0.82	100.00		
LAWA51	0.00	0.00	0.00	2.00	0.00	0.00	2.49	3.00	0.82	100.00		
LAWA51	0.00	0.00	0.00	2.00	0.00	0.00	2.49	3.00	0.82	100.00		
LAWA51	0.00	0.00	0.00	2.00	0.00	0.00	2.49	3.00	0.82	100.00		
LAWA51	0.00	0.00	0.00	2.00	0.00	0.00	2.49	3.00	0.82	100.00		
LAWA51	0.00	0.00	0.00	2.00	0.00	0.00	2.49	3.00	0.82	100.00		
LAWA51	0.00	0.00	0.00	2.00	0.00	0.00	2.49	3.00	0.82	100.00		
LAWA51	0.00	0.00	0.00	2.00	0.00	0.00	2.49	3.00	0.82	100.00		
LAWA51	0.00	0.00	0.00	2.00	0.00	0.00	2.49	3.00	0.82	100.00		
LAWA52	0.00	0.00	0.00	1.11	0.00	0.00	2.99	2.99	0.92	100.00		
LAWA52	0.00	0.00	0.00	1.11	0.00	0.00	2.99	2.99	0.92	100.00		
LAWA52	0.00	0.00	0.00	1.11	0.00	0.00	2.99	2.99	0.92	100.00		
LAWA52	0.00	0.00	0.00	1.11	0.00	0.00	2.99	2.99	0.92	100.00		
LAWA52	0.00	0.00	0.00	1.11	0.00	0.00	2.99	2.99	0.92	100.00		
LAWA52	0.00	0.00	0.00	1.11	0.00	0.00	2.99	2.99	0.92	100.00		
LAWA52	0.00	0.00	0.00	1.11	0.00	0.00	2.99	2.99	0.92	100.00		
LAWA52	0.00	0.00	0.00	1.11	0.00	0.00	2.99	2.99	0.92	100.00		
LAWA52	0.00	0.00	0.00	1.11	0.00	0.00	2.99	2.99	0.92	100.00		
LAWA52	0.00	0.00	0.00	1.11	0.00	0.00	2.99	2.99	0.92	100.00		
LAWA53	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.43	100.00		
LAWA53	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.43	100.00		
LAWA53	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.43	100.00		
LAWA53	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.43	100.00		
LAWA53	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.43	100.00		
LAWA53	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.43	100.00		
LAWA53	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.43	100.00		
LAWA53	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.43	100.00		
LAWA56	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.33	100.00		
LAWA56	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.33	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
LAWA56	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.86	99.34	161.40	0.32
LAWA56	263.00	0.81	2.031	534.055	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	121.11	216.28	0.27
LAWA56	362.00	0.81	2.031	735.088	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	117.83	238.51	
LAWA56	552.00	0.81	2.031	1,120.907	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	118.49	254.17	
LAWA56	1448.00	0.81	2.031	2,940.350	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.66	134.51	310.34	0.29
LAWA56	1896.00	0.81	2.031	3,850.072	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.75	182.81	376.46	0.41
LAWA60	7.00	0.81	2.038	14.268	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.21	47.72	20.11	0.63
LAWA60	28.00	0.81	2.038	57.073	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.52	57.61	42.44	0.25
LAWA60	56.00	0.81	2.038	114.146	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.82	71.80	60.00	0.94
LAWA60	120.00	0.81	2.038	244.598	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.12	79.71	72.60	0.35
LAWA60	180.00	0.81	2.038	366.898	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.23	89.94	83.33	0.50
LAWA60	269.00	0.81	2.038	548.308	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	92.37	88.43	0.23
LAWA60	365.00	0.81	2.038	743.987	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	93.64	94.55	
LAWA60	546.00	0.81	2.038	1,112.923	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	121.53	113.10	0.62
LAWA60	730.00	0.81	2.038	1,487.974	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	242.39	177.15	1.51
LAWA60	1827.00	0.81	2.038	3,724.011	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.07	1095.00	3637.07	3.03
LAWA60	2190.00	0.81	2.038	4,463.922	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.02	968.78	3086.57	3.18
LAWA60	2558.00	0.81	2.038	5,214.024	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.14	980.25	3244.47	3.05
LAWA65	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.42	93.65	27.02	0.27
LAWA65	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.54	125.13	42.58	0.11
LAWA65	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	150.80	54.64	0.21
LAWA65	263.00	0.81	2.031	534.055	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.93	550.65	451.16	0.53
LAWA65	362.00	0.81	2.031	735.088	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.04	871.23	823.11	0.42
LAWA65	552.00	0.81	2.031	1,120.907	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.14	873.42	1026.10	0.49
LAWA65	1448.00	0.81	2.031	2,940.350	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.45	1046.40	1341.67	1.37
LAWA76	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.82	76.23	47.77	0.78
LAWA76	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	169.67	161.63	2.25
LAWA76	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.26	200.83	223.03	2.66
LAWA76	119.00	0.81	2.031	241.645	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	239.13	327.30	3.21
LAWA76	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.53	277.23	583.63	1.95
LAWA76	270.00	0.81	2.031	548.270	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.84	289.77	1871.00	5.20
LAWA76	364.00	0.81	2.031	739.149	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.97	269.87	2670.57	10.01
LAWA81	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.88	61.73	21.54	0.54
LAWA81	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.91	76.29	30.15	
LAWA81	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.98	92.50	42.88	0.47
LAWA81	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	105.70	52.85	0.21
LAWA81	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	119.73	64.76	0.28
LAWA81	269.00	0.81	2.031	546.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	131.87	77.67	0.40
LAWA81	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.56	146.47	86.66	0.17
LAWA81	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.74	168.30	103.50	0.59
LAWA81	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.92	217.45	137.56	0.28
LAWA81	1101.00	0.81	2.031	2,235.722	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.05	782.69	1022.60	1.51
LAWA81	1472.00	0.81	2.031	2,989.085	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.15	1263.77	1753.77	1.29
LAWA81	2200.00	0.81	2.031	4,467.383	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.22	1154.43	1787.90	1.55
LAWA81	2562.00	0.81	2.031	5,202.471	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.27	1499.83	2178.87	1.05
LAWA82	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.51	69.19	18.83	0.21
LAWA82	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.65	81.95	33.74	
LAWA82	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.76	100.18	51.44	0.39
LAWA82	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.97	112.50	70.80	
LAWA82	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	125.93	87.69	
LAWA82	269.00	0.81	2.031	546.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	130.47	95.91	0.17
LAWA82	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	136.87	104.67	
LAWA82	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.36	147.00	115.33	0.31
LAWA82	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.62	191.15	152.45	0.23
LAWA82	1101.00	0.81	2.031	2,235.722	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.75	182.07	152.50	0.30
LAWA82	1472.00	0.81	2.031	2,989.085	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.87	224.09	156.35	
LAWA82	2200.00	0.81	2.031	4,467.383	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.07	307.84	242.53	0.28
LAWA82	2562.00	0.81	2.031	5,202.471	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.15	491.60	413.46	
LAWA82	2886.00	0.81	2.031	5,860.394	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.17	621.60	648.74	0.09
LAWA82	3044.00	0.81	2.031	6,181.234	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.22	750.39	819.18	0.09
LAWA82	3405.00	0.81	2.031	6,914.291	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.24	1356.40	1721.03	0.24
LAWA83	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.57	66.95	17.09	0.34
LAWA83	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.68	79.92	22.00	0.13
LAWA83	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.83	94.69	30.58	0.46
LAWA83	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.93	103.00	41.03	0.28
LAWA83	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.02	113.90	52.71	0.35
LAWA83	269.00	0.81	2.031	546.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.12	116.80	59.21	0.57
LAWA83	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.23	125.23	69.00	0.22
LAWA83	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.32	138.23	78.95	0.64
LAWA83	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.57	183.98	105.96	0.31
LAWA83	1101.00	0.81	2.031	2,235.722	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	158.03	96.83	1.65
LAWA83	1472.00	0.81	2.031	2,989.085	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.76	177.66	107.64	0.09

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
LAWA56			409.33	4.78	6.81	2.50		1.05	0.51	2.40	1.15		Not Studied
LAWA56			578.13	7.33	6.43	2.18		0.90		2.54	0.79		Not Studied
LAWA56			566.57	6.84	6.76						0.54		Not Studied
LAWA56			596.32	6.75	7.58	1.83		0.68		1.89	0.47		Not Studied
LAWA56			754.98	10.18	4.28								Not Studied
LAWA56			980.33	17.02	5.88								Not Studied
LAWA60			92.50		8.88								Not Studied
LAWA60			172.73	2.48	10.54								Not Studied
LAWA60			216.37	3.43	10.86								Not Studied
LAWA60			239.47	3.32	10.73			0.25					Not Studied
LAWA60			274.27	3.57	11.28								Not Studied
LAWA60			302.03	4.44	11.54			0.37					Not Studied
LAWA60			323.80	4.82	11.14								Not Studied
LAWA60			364.53	6.45	7.65								Not Studied
LAWA60			584.94	12.08	2.71								Not Studied
LAWA60			8128.30	191.28	0.85								Not Studied
LAWA60			7350.37	193.70									Not Studied
LAWA60			7540.23	181.41									Not Studied
LAWA65			194.73	3.22	10.21								Not Studied
LAWA65			275.30	4.41	14.67			0.44					Not Studied
LAWA65			363.43	5.30	13.44			0.37					Not Studied
LAWA65			2232.60	40.15	7.97								Not Studied
LAWA65			3367.53	75.41	6.36								Not Studied
LAWA65			3879.37	97.45	8.15								Not Studied
LAWA65			5162.53	171.94	1.48								Not Studied
LAWA76		32.96	98.61	3.70	3.06								Not Studied
LAWA76		98.91	319.77	11.23	2.93								Not Studied
LAWA76		115.53	390.97	14.39	2.79								Not Studied
LAWA76		170.83	541.93	20.96	2.76								Not Studied
LAWA76		285.20	878.00	36.68	3.44								Not Studied
LAWA76		687.80	2958.10	127.93	3.99								Not Studied
LAWA76		987.07	3593.13	191.03	4.72								Not Studied
LAWA81			124.30		7.17								Not Studied
LAWA81			161.63	3.83	9.68								Not Studied
LAWA81			234.20	2.99	9.85			0.28					Not Studied
LAWA81			264.50	3.87	10.11			0.46		0.84			Not Studied
LAWA81			316.80	4.99	11.25			0.43		0.99			Not Studied
LAWA81			356.50	4.79	10.69	1.43		0.48		1.09			Not Studied
LAWA81			400.53	5.42	11.14			0.41					Not Studied
LAWA81			465.77	5.65	11.82					0.66			Not Studied
LAWA81			647.34	8.70	12.45					0.47			Not Studied
LAWA81			3478.83	78.79						0.47			Not Studied
LAWA81			5041.03	118.35	0.81								Not Studied
LAWA81			5366.00	150.98	4.85			0.58					Not Studied
LAWA81			6543.77	154.53	1.07								Not Studied
LAWA82			99.37		9.10	1.18		0.60		0.87	0.47		Not Studied
LAWA82			143.10	2.91	10.18	2.03		1.10	0.97	1.89	1.03		Not Studied
LAWA82			225.93	3.16	10.72	2.90		1.39	1.09	2.38	1.07		Not Studied
LAWA82			259.73	3.07	10.82	2.91		1.70	1.20	3.63	1.34		Not Studied
LAWA82			326.17	4.30	12.15	2.72		1.72	0.81	3.52	0.85		Not Studied
LAWA82			347.07	3.45	11.28	3.38		1.68	0.93	3.87	1.07		Not Studied
LAWA82			374.23	3.72	11.13	2.06		1.80	0.79	2.65	0.95		Not Studied
LAWA82			404.47	3.66	11.31	2.61		1.14	0.65	2.63	0.86		Not Studied
LAWA82			550.60	10.16	14.64	2.46		1.12	0.72	2.92	0.97		Not Studied
LAWA82			590.91	6.22	13.23	1.18		0.63	0.65	1.64			Not Studied
LAWA82			541.53	4.94	6.54						0.47		Not Studied
LAWA82			790.87	10.53	3.77								Not Studied
LAWA82			1143.63	13.32	1.04								Not Studied
LAWA82			1827.00	27.70	0.68								Not Studied
LAWA82			2375.87	34.47									Not Studied
LAWA82			4535.53	72.04									Not Studied
LAWA83			100.80		6.67			0.43		0.74			Not Studied
LAWA83			126.47	2.26	8.55			0.59		1.09	0.71		Not Studied
LAWA83			177.37		9.38	1.64		0.78	0.51	0.97	0.91		Not Studied
LAWA83			204.43	2.57	9.87	1.59		0.99	0.69	1.94	1.54		Not Studied
LAWA83			252.80	2.87	10.93			1.02		1.97			Not Studied
LAWA83			267.00	2.88	9.96	2.04		1.08	0.81	2.26	1.30		Not Studied
LAWA83			302.63	3.07	10.54			1.25	0.71	1.53	0.88		Not Studied
LAWA83			331.60	3.34	11.06	1.88		0.95	0.65	1.99	1.08		Not Studied
LAWA83			526.61	5.58	14.83	2.33		1.33	0.96	2.86	0.66		Not Studied
LAWA83			458.27	4.95	12.19	2.08		1.36	0.87	3.25	0.99		Not Studied
LAWA83			464.92	4.71	10.68					0.53	0.92		Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
LAWA56		74.54	15.595	3.314762	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA56		74.54	15.595	3.314762	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA56		74.54	15.595	3.314762	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA56		74.54	15.595	3.314762	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA56		74.54	15.595	3.314762	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA56		74.54	15.595	3.314762	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA60		76.28	12.849	16.0383413	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA60		76.28	12.849	16.0383413	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA60		76.28	12.849	16.0383413	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA60		76.28	12.849	16.0383413	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA60		76.28	12.849	16.0383413	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA60		76.28	12.849	16.0383413	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA60		76.28	12.849	16.0383413	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA60		76.28	12.849	16.0383413	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA60		76.28	12.849	16.0383413	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA60		76.28	12.849	16.0383413	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA60		76.28	12.849	16.0383413	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA65		68.68	16.92	5.2359545	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA65		68.68	16.92	5.2359545	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA65		68.68	16.92	5.2359545	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA65		68.68	16.92	5.2359545	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA65		68.68	16.92	5.2359545	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA65		68.68	16.92	5.2359545	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA65		68.68	16.92	5.2359545	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA76		68.42	21.402	-19.6573681	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA76		68.42	21.402	-19.6573681	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA76		68.42	21.402	-19.6573681	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA76		68.42	21.402	-19.6573681	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA76		68.42	21.402	-19.6573681	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA76		68.42	21.402	-19.6573681	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA76		68.42	21.402	-19.6573681	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA81		73.96	17.17	-4.6392685	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA81		73.96	17.17	-4.6392685	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA81		73.96	17.17	-4.6392685	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA81		73.96	17.17	-4.6392685	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA81		73.96	17.17	-4.6392685	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA81		73.96	17.17	-4.6392685	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA81		73.96	17.17	-4.6392685	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA81		73.96	17.17	-4.6392685	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA81		73.96	17.17	-4.6392685	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA81		73.96	17.17	-4.6392685	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA82		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA82		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA82		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA82		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA82		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA82		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA82		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA82		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA82		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA82		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA82		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA82		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA82		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA83		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA83		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA83		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA83		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA83		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA83		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA83		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA83		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA83		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA83		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA83		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
LAWA56	6.15	12.05	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.47	0.50	0.00	0.00	0.00
LAWA56	6.15	12.05	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.47	0.50	0.00	0.00	0.00
LAWA56	6.15	12.05	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.47	0.50	0.00	0.00	0.00
LAWA56	6.15	12.05	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.47	0.50	0.00	0.00	0.00
LAWA56	6.15	12.05	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.47	0.50	0.00	0.00	0.00
LAWA56	6.15	12.05	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.47	0.50	0.00	0.00	0.00
LAWA60	8.53	11.23	0.00	4.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00
LAWA60	8.53	11.23	0.00	4.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00
LAWA60	8.53	11.23	0.00	4.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00
LAWA60	8.53	11.23	0.00	4.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00
LAWA60	8.53	11.23	0.00	4.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00
LAWA60	8.53	11.23	0.00	4.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00
LAWA60	8.53	11.23	0.00	4.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00
LAWA60	8.53	11.23	0.00	4.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00
LAWA60	8.53	11.23	0.00	4.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00
LAWA60	8.53	11.23	0.00	4.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00
LAWA65	6.16	6.17	0.00	3.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.48	0.50	0.00	0.00	0.00
LAWA65	6.16	6.17	0.00	3.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.48	0.50	0.00	0.00	0.00
LAWA65	6.16	6.17	0.00	3.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.48	0.50	0.00	0.00	0.00
LAWA65	6.16	6.17	0.00	3.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.48	0.50	0.00	0.00	0.00
LAWA65	6.16	6.17	0.00	3.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.48	0.50	0.00	0.00	0.00
LAWA65	6.16	6.17	0.00	3.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.48	0.50	0.00	0.00	0.00
LAWA65	6.16	6.17	0.00	3.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.48	0.50	0.00	0.00	0.00
LAWA76	6.13	10.92	0.00	7.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.45	0.50	0.00	0.00	4.99
LAWA76	6.13	10.92	0.00	7.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.45	0.50	0.00	0.00	4.99
LAWA76	6.13	10.92	0.00	7.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.45	0.50	0.00	0.00	4.99
LAWA76	6.13	10.92	0.00	7.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.45	0.50	0.00	0.00	4.99
LAWA76	6.13	10.92	0.00	7.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.45	0.50	0.00	0.00	4.99
LAWA76	6.13	10.92	0.00	7.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.45	0.50	0.00	0.00	4.99
LAWA76	6.13	10.92	0.00	7.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.45	0.50	0.00	0.00	4.99
LAWA81	6.20	8.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA81	6.20	8.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA81	6.20	8.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA81	6.20	8.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA81	6.20	8.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA81	6.20	8.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA81	6.20	8.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA81	6.20	8.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA81	6.20	8.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA81	6.20	8.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA81	6.20	8.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA82	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA82	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA82	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA82	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA82	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA82	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA82	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA82	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA82	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA82	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA82	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA82	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA83	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.50	0.00	0.00	0.00
LAWA83	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.50	0.00	0.00	0.00
LAWA83	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.50	0.00	0.00	0.00
LAWA83	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.50	0.00	0.00	0.00
LAWA83	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.50	0.00	0.00	0.00
LAWA83	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.50	0.00	0.00	0.00
LAWA83	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.50	0.00	0.00	0.00
LAWA83	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.50	0.00	0.00	0.00
LAWA83	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.50	0.00	0.00	0.00
LAWA83	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.50	0.00	0.00	0.00
LAWA83	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.50	0.00	0.00	0.00

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
LAWA56	1.48	0.00	0.00	0.00	19.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.08	0.00	0.00
LAWA56	1.48	0.00	0.00	0.00	19.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.08	0.00	0.00
LAWA56	1.48	0.00	0.00	0.00	19.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.08	0.00	0.00
LAWA56	1.48	0.00	0.00	0.00	19.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.08	0.00	0.00
LAWA56	1.48	0.00	0.00	0.00	19.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.08	0.00	0.00
LAWA56	1.48	0.00	0.00	0.00	19.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.08	0.00	0.00
LAWA60	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA60	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA60	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA60	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA60	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA60	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA60	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA60	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA60	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA60	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA65	6.03	0.00	0.00	0.00	19.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.09	0.00	0.00
LAWA65	6.03	0.00	0.00	0.00	19.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.09	0.00	0.00
LAWA65	6.03	0.00	0.00	0.00	19.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.09	0.00	0.00
LAWA65	6.03	0.00	0.00	0.00	19.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.09	0.00	0.00
LAWA65	6.03	0.00	0.00	0.00	19.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.09	0.00	0.00
LAWA65	6.03	0.00	0.00	0.00	19.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.09	0.00	0.00
LAWA65	6.03	0.00	0.00	0.00	19.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.09	0.00	0.00
LAWA76	1.47	0.00	0.00	0.00	10.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.92	0.00	0.00
LAWA76	1.47	0.00	0.00	0.00	10.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.92	0.00	0.00
LAWA76	1.47	0.00	0.00	0.00	10.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.92	0.00	0.00
LAWA76	1.47	0.00	0.00	0.00	10.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.92	0.00	0.00
LAWA76	1.47	0.00	0.00	0.00	10.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.92	0.00	0.00
LAWA76	1.47	0.00	0.00	0.00	10.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.92	0.00	0.00
LAWA81	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA81	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA81	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA81	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA81	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA81	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA81	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA81	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA81	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA81	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA81	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA82	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA82	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA82	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA82	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA82	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA82	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA82	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA82	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA82	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA82	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA82	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA82	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA83	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA83	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA83	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA83	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA83	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA83	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA83	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA83	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA83	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA83	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
LAWA56	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.33	100.00		
LAWA56	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.33	100.00		
LAWA56	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.33	100.00		
LAWA56	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.33	100.00		
LAWA56	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.33	100.00		
LAWA56	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.33	100.00		
LAWA60	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.93	100.00		
LAWA60	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.93	100.00		
LAWA60	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.93	100.00		
LAWA60	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.93	100.00		
LAWA60	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.93	100.00		
LAWA60	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.93	100.00		
LAWA60	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.93	100.00		
LAWA60	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.93	100.00		
LAWA60	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.93	100.00		
LAWA60	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.93	100.00		
LAWA60	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.93	100.00		
LAWA65	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.30	100.00		
LAWA65	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.30	100.00		
LAWA65	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.30	100.00		
LAWA65	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.30	100.00		
LAWA65	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.30	100.00		
LAWA65	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.30	100.00		
LAWA65	0.00	0.00	0.00	1.10	0.00	0.00	2.98	2.98	1.30	100.00		
LAWA76	0.00	0.00	0.00	1.10	0.00	0.00	2.97	2.97	1.68	100.00		
LAWA76	0.00	0.00	0.00	1.10	0.00	0.00	2.97	2.97	1.68	100.00		
LAWA76	0.00	0.00	0.00	1.10	0.00	0.00	2.97	2.97	1.68	100.00		
LAWA76	0.00	0.00	0.00	1.10	0.00	0.00	2.97	2.97	1.68	100.00		
LAWA76	0.00	0.00	0.00	1.10	0.00	0.00	2.97	2.97	1.68	100.00		
LAWA76	0.00	0.00	0.00	1.10	0.00	0.00	2.97	2.97	1.68	100.00		
LAWA76	0.00	0.00	0.00	1.10	0.00	0.00	2.97	2.97	1.68	100.00		
LAWA81	0.00	0.00	0.00	0.00	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA81	0.00	0.00	0.00	0.00	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA81	0.00	0.00	0.00	0.00	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA81	0.00	0.00	0.00	0.00	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA81	0.00	0.00	0.00	0.00	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA81	0.00	0.00	0.00	0.00	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA81	0.00	0.00	0.00	0.00	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA81	0.00	0.00	0.00	0.00	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA81	0.00	0.00	0.00	0.00	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA81	0.00	0.00	0.00	0.00	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA82	0.00	0.00	0.00	3.99	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA82	0.00	0.00	0.00	3.99	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA82	0.00	0.00	0.00	3.99	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA82	0.00	0.00	0.00	3.99	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA82	0.00	0.00	0.00	3.99	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA82	0.00	0.00	0.00	3.99	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA82	0.00	0.00	0.00	3.99	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA82	0.00	0.00	0.00	3.99	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA82	0.00	0.00	0.00	3.99	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA82	0.00	0.00	0.00	3.99	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA82	0.00	0.00	0.00	3.99	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA82	0.00	0.00	0.00	3.99	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA82	0.00	0.00	0.00	3.99	0.00	0.00	2.97	2.99	0.92	100.00		
LAWA83	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	2.92	100.00		
LAWA83	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	2.92	100.00		
LAWA83	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	2.92	100.00		
LAWA83	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	2.92	100.00		
LAWA83	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	2.92	100.00		
LAWA83	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	2.92	100.00		
LAWA83	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	2.92	100.00		
LAWA83	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	2.92	100.00		
LAWA83	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	2.92	100.00		
LAWA83	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	2.92	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
LAWA83	2200.00	0.81	2.031	4,467.383	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.95	297.00	224.68	0.43
LAWA83	2562.00	0.81	2.031	5,202.471	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.96	563.95	590.98	
LAWA83	2886.00	0.81	2.031	5,860.394	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.05	794.28	1022.97	0.18
LAWA83	3044.00	0.81	2.031	6,181.234	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.12	948.02	1290.70	0.20
LAWA83	3405.00	0.81	2.031	6,914.291	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.14	1346.50	2095.00	0.22
LAWA84	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.41	66.25	16.33	0.43
LAWA84	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.52	76.36	19.27	0.17
LAWA84	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.72	91.51	23.42	0.58
LAWA84	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.95	100.94	29.44	0.30
LAWA84	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.06	109.87	40.01	0.27
LAWA84	269.00	0.81	2.031	546.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.13	115.57	52.45	0.27
LAWA84	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.27	121.60	60.11	
LAWA84	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.37	138.30	74.59	0.64
LAWA84	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.64	180.68	105.16	0.21
LAWA84	1101.00	0.81	2.031	2,235.722	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.76	172.07	102.89	0.69
LAWA84	1472.00	0.81	2.031	2,989.085	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.85	209.86	125.89	0.14
LAWA84	2200.00	0.81	2.031	4,467.383	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.97	342.34	235.38	0.27
LAWA84	2562.00	0.81	2.031	5,202.471	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.97	474.91	357.03	
LAWA84	2886.00	0.81	2.031	5,860.394	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.05	559.00	605.29	0.11
LAWA84	3044.00	0.81	2.031	6,181.234	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.16	625.43	777.81	0.17
LAWA84	3405.00	0.81	2.031	6,914.291	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.22	1016.37	1584.03	0.28
LAWA87	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.97	102.07	32.85	0.15
LAWA87	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.23	142.00	55.36	0.46
LAWA87	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.37	155.70	65.80	0.69
LAWA87	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.53	166.28	76.77	0.47
LAWA87	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	177.83	86.97	0.51
LAWA87	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.77	208.40	98.90	
LAWA87	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.83	197.67	96.89	0.25
LAWA87	545.00	0.81	2.031	1,106.693	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.94	202.87	90.30	0.24
LAWA87	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.97	281.89	137.41	0.15
LAWA87	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.06	406.37	237.67	0.27
LAWA87	1455.00	0.81	2.031	2,954.565	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.14	922.32	716.62	0.20
LAWA87	1832.00	0.81	2.031	3,720.112	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.25	1252.90	1059.43	0.21
LAWA87	2198.00	0.81	2.031	4,463.322	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.23	1589.17	1504.80	0.32
LAWA87	2556.00	0.81	2.031	5,190.287	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.34	1715.70	1546.93	0.27
LAWA88	7.00	0.80	2.015	14.108	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.91	70.24	26.11	0.14
LAWA88	28.00	0.80	2.015	56.432	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.18	99.52	56.37	0.66
LAWA88	56.00	0.80	2.015	112.863	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.31	109.30	70.29	0.88
LAWA88	120.00	0.80	2.015	241.850	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.51	122.57	85.10	0.55
LAWA88	180.00	0.80	2.015	362.775	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.61	124.57	97.44	0.52
LAWA88	271.00	0.80	2.015	546.178	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.72	144.27	111.10	
LAWA88	365.00	0.80	2.015	735.628	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.84	138.13	110.93	0.42
LAWA88	545.00	0.80	2.015	1,098.403	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.93	146.67	112.47	0.42
LAWA88	730.00	0.80	2.015	1,471.255	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.95	197.20	164.57	0.12
LAWA88	1093.00	0.80	2.015	2,202.852	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.04	205.61	174.59	0.24
LAWA88	1455.00	0.80	2.015	2,932.433	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.15	267.12	211.00	0.23
LAWA88	1832.00	0.80	2.015	3,692.246	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.25	549.80	405.27	
LAWA88	2198.00	0.80	2.015	4,429.889	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.24	875.63	824.09	0.34
LAWA88	2556.00	0.80	2.015	5,151.408	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.35	1144.67	1126.47	0.36
LAWA88	3023.00	0.80	2.015	6,092.608	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.44	1519.37	2174.60	0.51
LAWA88	3389.00	0.80	2.015	6,830.251	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.46	2023.57	2774.77	0.67
LAWA88R1	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.92	93.01	49.18	
LAWA88R1	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	114.47	96.86	0.13
LAWA88R1	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.33	136.57	112.30	0.26
LAWA88R1	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.52	149.27	128.67	0.41
LAWA88R1	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.85	151.03	134.63	0.31
LAWA88R1	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.98	151.87	138.93	0.28
LAWA88R1	364.00	0.81	2.031	739.149	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.15	193.42	177.76	0.40
LAWA88R1	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.26	192.31	192.99	0.43
LAWA88R1	733.00	0.81	2.031	1,488.451	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.35	177.40	177.75	0.12
LAWA88R1	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.44	319.81	327.52	0.10
LAWA88R1	2210.00	0.81	2.031	4,487.689	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.67	1264.07	1781.00	0.48
LAWA89	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.81	74.45	35.12	
LAWA89	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.12	97.49	67.84	0.25
LAWA89	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.26	109.87	88.46	0.57
LAWA89	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.37	123.94	110.58	0.21
LAWA89	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.43	127.70	131.37	0.19
LAWA89	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	145.73	154.13	
LAWA89	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	141.27	153.00	0.16
LAWA89	545.00	0.81	2.031	1,106.693	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.74	149.53	166.07	0.32
LAWA89	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.83	194.89	217.19	
LAWA89	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.95	204.51	236.59	0.13

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
LAWA83			789.85	10.82	4.37			0.26					Not Studied
LAWA83			1637.77	21.66	1.04								Not Studied
LAWA83			2690.70	42.97	0.74								Not Studied
LAWA83			3864.23	60.18	0.70								Not Studied
LAWA83			5398.17	99.86									Not Studied
LAWA84			99.20		6.96			0.41		0.71			Not Studied
LAWA84			118.17		8.91			0.55		1.00			Not Studied
LAWA84			159.97		9.65			0.65			0.71		Not Studied
LAWA84			175.73	2.23	10.26			0.87	0.47	1.42	1.01		Not Studied
LAWA84			225.30	2.89	11.03			0.92		1.48			Not Studied
LAWA84			243.13	2.51	10.19	1.20		0.93	0.60	1.62	0.98		Not Studied
LAWA84			272.07	2.87	9.84			0.99	0.56	0.94			Not Studied
LAWA84			311.30	3.09	9.94	1.25		0.85	0.68	1.51	0.54		Not Studied
LAWA84			437.09	4.68	11.61			0.67	0.97	1.22			Not Studied
LAWA84			422.18	4.59	9.26	1.13		0.98	0.73	1.78			Not Studied
LAWA84			478.55	5.04	4.05								Not Studied
LAWA84			877.61	12.06	2.76			0.25					Not Studied
LAWA84			1156.60	14.21									Not Studied
LAWA84			1791.63	25.70									Not Studied
LAWA84			2420.67	34.93									Not Studied
LAWA84			4408.63	70.95									Not Studied
LAWA87			163.67	14.42	4.01	1.91		0.82		1.45			Not Studied
LAWA87			298.80	21.64	4.53	2.88		0.95		1.22			Not Studied
LAWA87			317.60	24.03	5.18	3.62		1.11		2.42	0.48		Not Studied
LAWA87			337.79	28.73	5.03	3.33		1.05		2.69	0.48		Not Studied
LAWA87			424.17	29.84	5.53	3.85		1.13		2.65			Not Studied
LAWA87			411.30	35.01	6.25	2.91		1.06		2.10			Not Studied
LAWA87			446.90	33.14	5.80	3.04		1.06		2.36			Not Studied
LAWA87			550.80	37.89	5.73			0.36		0.99			Not Studied
LAWA87			619.58	49.13	7.18	1.65		0.33		0.51			Not Studied
LAWA87			975.65	87.44	5.10								Not Studied
LAWA87			2520.63	224.95	1.27								Not Studied
LAWA87			3429.43	321.57	3.24								Not Studied
LAWA87			5383.63	440.80						0.84			Not Studied
LAWA87			5244.90	454.20	1.83					0.78			Not Studied
LAWA88			126.50	10.49	8.16	1.14		0.47		1.21			Not Studied
LAWA88			265.70	17.30	10.51	2.27		0.77	0.50	1.19	1.01		Not Studied
LAWA88			297.07	20.15	11.40	2.41		0.91	0.57	2.33	1.17		Not Studied
LAWA88			315.81	25.25	11.37	2.18		0.90	0.57	2.66	1.12		Not Studied
LAWA88			397.70	26.56	11.94	2.50		0.99	0.62	3.74	1.07		Not Studied
LAWA88			399.20	29.88	13.32	1.65		0.78		1.86			Not Studied
LAWA88			439.70	29.90	12.47	1.96		0.93		2.35	0.82		Not Studied
LAWA88			526.23	33.07	13.09	1.50		0.63		1.86	0.78		Not Studied
LAWA88			614.98	46.41	17.15	1.84		0.56	0.57	1.36			Not Studied
LAWA88			696.36	48.52	15.55			0.26		0.85			Not Studied
LAWA88			827.25	54.98	7.57								Not Studied
LAWA88			1349.30	118.48	3.11								Not Studied
LAWA88			2967.23	198.85	0.73								Not Studied
LAWA88			3679.03	268.78	1.29					0.49			Not Studied
LAWA88			5815.70	601.13	0.95								Not Studied
LAWA88			7109.93	681.30	0.92								Not Studied
LAWA88R1			192.17	17.02	9.33	1.44		0.61		1.27	0.46		Not Studied
LAWA88R1			353.53	27.90	14.00	2.26		1.05		2.02	1.16		Not Studied
LAWA88R1			421.27	31.89	13.96	2.31		0.91	0.58	2.01	1.16		Not Studied
LAWA88R1			496.27	34.53	14.65	2.31		0.99	0.56	1.98	1.08		Not Studied
LAWA88R1			546.63	38.48	15.31	2.18		0.80	0.59	1.96	1.02		Not Studied
LAWA88R1			539.87	37.30	14.69	1.75		0.72	0.45	1.62	0.84		Not Studied
LAWA88R1			684.29	48.75	18.57	2.78		1.05	0.50	2.38	0.89		Not Studied
LAWA88R1			699.45	54.26	15.19	1.67		0.27		0.87	0.65		Not Studied
LAWA88R1			597.87	48.56	9.27								Not Studied
LAWA88R1			964.43	85.53	6.76								Not Studied
LAWA88R1			4919.13	436.14	0.75					0.82			Analcime only
LAWA89			138.10	9.91	9.07	1.86		0.66	1.03	1.78	1.12		Not Studied
LAWA89			268.73	15.93	10.26	2.83		1.11	1.43	2.16	1.58		Not Studied
LAWA89			308.77	19.19	11.33	3.09		1.39	1.40	3.61	1.68		Not Studied
LAWA89			348.09	25.30	10.93	2.87		1.38	1.17	4.07	1.55		Not Studied
LAWA89			459.20	28.10	11.72	2.96		1.36	1.19	3.94	1.39		Not Studied
LAWA89			454.07	31.35	12.93	1.62		1.00	0.76	2.88	0.78		Not Studied
LAWA89			490.20	32.15	12.13	1.78		1.01	0.94	2.78	1.13		Not Studied
LAWA89			607.37	34.57	11.92			0.47	0.61	1.44	0.83		Not Studied
LAWA89			707.69	50.10	15.10	1.11		0.22	0.94		0.44		Not Studied
LAWA89			767.86	55.59	14.18								Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
LAWA83		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA83		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA83		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA83		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA83		73.96	13.181	17.8898057	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA84		73.96	11.187	29.1515189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA84		73.96	11.187	29.1515189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA84		73.96	11.187	29.1515189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA84		73.96	11.187	29.1515189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA84		73.96	11.187	29.1515189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA84		73.96	11.187	29.1515189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA84		73.96	11.187	29.1515189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA84		73.96	11.187	29.1515189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA84		73.96	11.187	29.1515189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA84		73.96	11.187	29.1515189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA84		73.96	11.187	29.1515189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA84		73.96	11.187	29.1515189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA84		73.96	11.187	29.1515189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA84		73.96	11.187	29.1515189	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA87		75.93	13.444	13.2391253	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA87		75.93	13.444	13.2391253	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA87		75.93	13.444	13.2391253	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA87		75.93	13.444	13.2391253	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA87		75.93	13.444	13.2391253	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA87		75.93	13.444	13.2391253	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA87		75.93	13.444	13.2391253	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA87		75.93	13.444	13.2391253	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA87		75.93	13.444	13.2391253	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA87		75.93	13.444	13.2391253	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA87		75.93	13.444	13.2391253	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA87		75.93	13.444	13.2391253	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA87		75.93	13.444	13.2391253	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA87		75.93	13.444	13.2391253	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88		76.29	13.607	11.7396704	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88		76.29	13.607	11.7396704	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88		76.29	13.607	11.7396704	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88		76.29	13.607	11.7396704	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88		76.29	13.607	11.7396704	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88		76.29	13.607	11.7396704	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88		76.29	13.607	11.7396704	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88		76.29	13.607	11.7396704	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88		76.29	13.607	11.7396704	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88		76.29	13.607	11.7396704	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88		76.29	13.607	11.7396704	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88		76.29	13.607	11.7396704	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88		76.29	13.607	11.7396704	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88		76.29	13.607	11.7396704	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88R1		76.29	13.605	11.7493625	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88R1		76.29	13.605	11.7493625	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88R1		76.29	13.605	11.7493625	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88R1		76.29	13.605	11.7493625	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88R1		76.29	13.605	11.7493625	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88R1		76.29	13.605	11.7493625	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88R1		76.29	13.605	11.7493625	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88R1		76.29	13.605	11.7493625	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88R1		76.29	13.605	11.7493625	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88R1		76.29	13.605	11.7493625	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA88R1	XRD/SEM	76.29	13.605	11.7493625	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA89		76.29	11.615	22.990088	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA89		76.29	11.615	22.990088	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA89		76.29	11.615	22.990088	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA89		76.29	11.615	22.990088	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA89		76.29	11.615	22.990088	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA89		76.29	11.615	22.990088	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA89		76.29	11.615	22.990088	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA89		76.29	11.615	22.990088	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA89		76.29	11.615	22.990088	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
LAWA83	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.50	0.00	0.00	0.00
LAWA83	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.50	0.00	0.00	0.00
LAWA83	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.50	0.00	0.00	0.00
LAWA83	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.50	0.00	0.00	0.00
LAWA83	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.50	0.00	0.00	0.00
LAWA84	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA84	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA84	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA84	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA84	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA84	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA84	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA84	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA84	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA84	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA84	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA84	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA87	4.48	8.87	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.97	2.58	0.00	0.00	0.00
LAWA87	4.48	8.87	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.97	2.58	0.00	0.00	0.00
LAWA87	4.48	8.87	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.97	2.58	0.00	0.00	0.00
LAWA87	4.48	8.87	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.97	2.58	0.00	0.00	0.00
LAWA87	4.48	8.87	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.97	2.58	0.00	0.00	0.00
LAWA87	4.48	8.87	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.97	2.58	0.00	0.00	0.00
LAWA87	4.48	8.87	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.97	2.58	0.00	0.00	0.00
LAWA87	4.48	8.87	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.97	2.58	0.00	0.00	0.00
LAWA87	4.48	8.87	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.97	2.58	0.00	0.00	0.00
LAWA87	4.48	8.87	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.97	2.58	0.00	0.00	0.00
LAWA87	4.48	8.87	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.97	2.58	0.00	0.00	0.00
LAWA87	4.48	8.87	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.97	2.58	0.00	0.00	0.00
LAWA87	4.48	8.87	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.97	2.58	0.00	0.00	0.00
LAWA88	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88R1	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88R1	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88R1	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88R1	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88R1	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88R1	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88R1	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88R1	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA88R1	6.08	9.70	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA89	6.08	9.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA89	6.08	9.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA89	6.08	9.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA89	6.08	9.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA89	6.08	9.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA89	6.08	9.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA89	6.08	9.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA89	6.08	9.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA89	6.08	9.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA89	6.08	9.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
LAWA83	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA83	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA83	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA83	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA83	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA84	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA84	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA84	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA84	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA84	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA84	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA84	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA84	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA84	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA84	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA84	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA84	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA87	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.47	0.00	0.00
LAWA87	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.47	0.00	0.00
LAWA87	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.47	0.00	0.00
LAWA87	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.47	0.00	0.00
LAWA87	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.47	0.00	0.00
LAWA87	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.47	0.00	0.00
LAWA87	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.47	0.00	0.00
LAWA87	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.47	0.00	0.00
LAWA87	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.47	0.00	0.00
LAWA87	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.47	0.00	0.00
LAWA87	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.47	0.00	0.00
LAWA87	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.47	0.00	0.00
LAWA88	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88R1	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88R1	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88R1	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88R1	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88R1	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88R1	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88R1	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88R1	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA88R1	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA89	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA89	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA89	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA89	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA89	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA89	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA89	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA89	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA89	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA89	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
LAWA83	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	2.92	100.00		
LAWA83	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	2.92	100.00		
LAWA83	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	2.92	100.00		
LAWA83	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	2.92	100.00		
LAWA83	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	2.92	100.00		
LAWA84	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA84	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA84	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA84	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA84	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA84	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA84	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA84	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA84	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA84	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA84	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA84	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA84	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA87	0.00	0.00	0.00	1.99	0.00	0.00	2.96	2.99	0.70	100.00		
LAWA87	0.00	0.00	0.00	1.99	0.00	0.00	2.96	2.99	0.70	100.00		
LAWA87	0.00	0.00	0.00	1.99	0.00	0.00	2.96	2.99	0.70	100.00		
LAWA87	0.00	0.00	0.00	1.99	0.00	0.00	2.96	2.99	0.70	100.00		
LAWA87	0.00	0.00	0.00	1.99	0.00	0.00	2.96	2.99	0.70	100.00		
LAWA87	0.00	0.00	0.00	1.99	0.00	0.00	2.96	2.99	0.70	100.00		
LAWA87	0.00	0.00	0.00	1.99	0.00	0.00	2.96	2.99	0.70	100.00		
LAWA87	0.00	0.00	0.00	1.99	0.00	0.00	2.96	2.99	0.70	100.00		
LAWA87	0.00	0.00	0.00	1.99	0.00	0.00	2.96	2.99	0.70	100.00		
LAWA87	0.00	0.00	0.00	1.99	0.00	0.00	2.96	2.99	0.70	100.00		
LAWA87	0.00	0.00	0.00	1.99	0.00	0.00	2.96	2.99	0.70	100.00		
LAWA87	0.00	0.00	0.00	1.99	0.00	0.00	2.96	2.99	0.70	100.00		
LAWA87	0.00	0.00	0.00	1.99	0.00	0.00	2.96	2.99	0.70	100.00		
LAWA87	0.00	0.00	0.00	1.99	0.00	0.00	2.96	2.99	0.70	100.00		
LAWA88	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88R1	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88R1	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88R1	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88R1	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88R1	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88R1	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88R1	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88R1	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88R1	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA88R1	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA89	0.00	0.00	0.00	3.98	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA89	0.00	0.00	0.00	3.98	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA89	0.00	0.00	0.00	3.98	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA89	0.00	0.00	0.00	3.98	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA89	0.00	0.00	0.00	3.98	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA89	0.00	0.00	0.00	3.98	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA89	0.00	0.00	0.00	3.98	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA89	0.00	0.00	0.00	3.98	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA89	0.00	0.00	0.00	3.98	0.00	0.00	2.95	2.99	0.70	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
LAWA89	1455.00	0.81	2.031	2,954.565	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.05	212.54	234.83	
LAWA89	1832.00	0.81	2.031	3,720.112	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.15	325.22	271.77	
LAWA89	2198.00	0.81	2.031	4,463.322	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.14	440.23	393.16	0.13
LAWA89	2556.00	0.81	2.031	5,190.287	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.26	659.62	564.21	
LAWA89	3023.00	0.81	2.031	6,138.590	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.45	1023.90	959.84	0.11
LAWA89	3389.00	0.81	2.031	6,881.800	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.47	1272.03	1223.07	0.12
LAWA90	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.98	73.74	29.35	0.26
LAWA90	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.18	97.52	47.47	0.60
LAWA90	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.31	108.93	57.08	0.74
LAWA90	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.51	120.19	65.96	0.59
LAWA90	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.62	128.77	79.54	0.53
LAWA90	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.71	149.30	95.98	0.19
LAWA90	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.84	148.67	100.05	0.20
LAWA90	545.00	0.81	2.031	1,106.693	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.95	164.10	114.87	0.39
LAWA90	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.96	212.07	157.67	0.19
LAWA90	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.06	668.19	622.88	0.65
LAWA90	1455.00	0.81	2.031	2,954.565	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.15	1130.77	1317.50	0.77
LAWA90	1832.00	0.81	2.031	3,720.112	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.26	1403.07	1925.80	0.94
LAWA90	2198.00	0.81	2.031	4,463.322	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.24	1478.97	2215.63	1.56
LAWA90	2556.00	0.81	2.031	5,190.287	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.34	1704.23	2403.40	0.76
LAWA93	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.86	67.04	36.25	0.85
LAWA93	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	154.27	121.37	2.08
LAWA93	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.27	181.23	166.07	2.29
LAWA93	119.00	0.81	2.031	241.645	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.36	237.47	254.13	2.83
LAWA93	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.58	271.30	430.60	1.39
LAWA93	270.00	0.81	2.031	548.270	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.95	328.77	1754.87	3.85
LAWA93	364.00	0.81	2.031	739.149	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.13	319.77	2735.13	6.11
LAWA96	7.00	0.80	2.015	14.108	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.63	70.07	15.14	0.35
LAWA96	28.00	0.80	2.015	56.432	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.84	88.46	19.56	0.94
LAWA96	56.00	0.80	2.015	112.863	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.92	99.31	19.99	0.19
LAWA96	120.00	0.80	2.015	241.850	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.96	115.67	23.76	0.22
LAWA96	181.00	0.80	2.015	364.791	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.12	123.87	26.96	0.15
LAWA96	269.00	0.80	2.015	542.147	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.22	143.73	32.32	
LAWA96	365.00	0.80	2.015	735.628	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.33	132.00	31.08	0.22
LAWA96	547.00	0.80	2.015	1,102.434	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.42	197.34	49.50	0.10
LAWA96	730.00	0.80	2.015	1,471.255	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.52	186.87	49.30	0.48
LAWA96	1087.00	0.80	2.015	2,190.759	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.66	630.92	604.63	0.29
LAWA96	1455.00	0.80	2.015	2,932.433	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.75	876.68	1009.03	0.17
LAWA96	2191.00	0.80	2.015	4,415.781	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.87	1400.47	1675.57	0.12
LAWA96	2551.00	0.80	2.015	5,141.331	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.94	1827.73	2096.63	
LAWB30	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.11	35.13	15.09	2.65
LAWB30	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.18	42.93	21.33	1.84
LAWB30	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.32	53.93	28.99	2.62
LAWB30	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.55	62.20	35.31	2.11
LAWB30	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.02	72.96	44.46	2.46
LAWB30	269.00	0.81	2.031	546.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	87.22	66.12	2.11
LAWB30	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.27	105.40	111.33	2.67
LAWB30	546.00	0.81	2.031	1,108.723	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	127.57	280.07	4.01
LAWB30	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.77	190.96	798.15	7.28
LAWB30	1827.00	0.81	2.031	3,709.959	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.04	95.83	3164.50	36.29
LAWB30	2190.00	0.81	2.031	4,447.077	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.03	74.24	2493.73	28.85
LAWB30	2558.00	0.81	2.031	5,194.348	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.16	104.77	2766.83	35.29
LAWB31	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.41	44.22	15.65	0.35
LAWB31	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.51	55.71	21.49	0.21
LAWB31	86.00	0.81	2.031	174.634	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.63	67.82	24.62	0.37
LAWB31	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.73	65.23	28.53	0.29
LAWB31	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.82	72.19	31.79	0.54
LAWB31	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.95	65.62	30.70	
LAWB31	366.00	0.81	2.031	743.210	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.08	73.83	34.51	
LAWB31	546.00	0.81	2.031	1,108.723	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.12	80.92	43.04	0.60
LAWB31	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.27	105.98	53.65	0.17
LAWB31	1091.00	0.81	2.031	2,215.416	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.35	122.03	64.06	0.36
LAWB31	1458.00	0.81	2.031	2,960.657	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.45	122.02	67.61	0.15
LAWB31	2186.00	0.81	2.031	4,438.954	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.55	107.38	65.96	0.23
LAWB31	2548.00	0.81	2.031	5,174.042	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.57	127.75	76.88	0.23
LAWB31	3030.00	0.81	2.031	6,152.805	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.75	138.05	87.67	0.42
LAWB31	3393.00	0.81	2.031	6,889.923	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.82	132.52	88.36	0.40
LAWB32	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.33	46.28	23.15	0.21
LAWB32	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.42	57.11	35.69	0.20
LAWB32	86.00	0.81	2.031	174.634	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.61	70.77	50.05	0.35
LAWB32	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.75	76.67	75.03	0.26
LAWB32	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.85	84.78	100.70	0.40

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
LAWA89			771.27	51.32	7.30								Not Studied
LAWA89			879.90	60.87	3.63								Not Studied
LAWA89			1313.90	87.83	0.95								Not Studied
LAWA89			1907.07	153.71	1.04								Not Studied
LAWA89			2660.50	227.60									Not Studied
LAWA89			3358.40	238.04									Not Studied
LAWA90			144.53	12.93	6.42	1.30		0.45		1.10			Not Studied
LAWA90			243.63	18.85	8.39	1.79		0.58					Not Studied
LAWA90			266.27	20.54	9.20	1.99		0.68		1.67			Not Studied
LAWA90			285.09	24.64	8.77	2.05		0.69		2.08			Not Studied
LAWA90			379.83	28.56	9.53	2.33		0.74		2.18			Not Studied
LAWA90			407.63	30.54	10.46	1.22		0.62		1.26			Not Studied
LAWA90			423.43	32.81	10.35	1.91		0.85		2.00			Not Studied
LAWA90			519.90	36.70	10.48	1.19		0.38		1.06			Not Studied
LAWA90			642.76	52.72	12.09								Not Studied
LAWA90			2022.97	189.12	3.55								Not Studied
LAWA90			4098.90	342.17									Not Studied
LAWA90			5543.90	456.25	3.93								Not Studied
LAWA90			6930.10	514.78						0.93			Not Studied
LAWA90			6836.07	550.80	1.74	1.29				0.78			Not Studied
LAWA93		26.92	79.66	3.22	3.29								Not Studied
LAWA93		79.15	247.47	9.46	3.45								Not Studied
LAWA93		103.63	302.93	11.39	2.95								Not Studied
LAWA93		150.40	459.33	18.70	3.35								Not Studied
LAWA93		219.60	702.13	28.48	4.53								Not Studied
LAWA93		644.03	2690.30	104.89	5.31								Not Studied
LAWA93		998.30	3653.93	169.90	5.54								Not Studied
LAWA96			111.40		6.35								Not Studied
LAWA96			166.10	2.43	8.64					0.54			Not Studied
LAWA96			169.32	1.76	9.86					0.49			Not Studied
LAWA96			221.80	2.62	11.30			0.26		0.50			Not Studied
LAWA96			217.57	2.80	11.51			0.23					Not Studied
LAWA96			250.60	3.32	12.72								Not Studied
LAWA96			254.47	2.91	11.58								Not Studied
LAWA96			396.10	4.84	16.23			0.23					Not Studied
LAWA96			390.14	4.23	12.44			0.29		0.55			Not Studied
LAWA96			1964.33	30.31	10.79			0.25		0.61			Not Studied
LAWA96			3073.30	56.77	5.94					0.57			Not Studied
LAWA96			6270.20	94.74						0.75			Not Studied
LAWA96			6906.50	124.37	4.40								Not Studied
LAWB30		9.91	27.90		3.37								Not Studied
LAWB30		15.08	41.01		4.04								Not Studied
LAWB30		19.93	54.86	1.96	3.98								Not Studied
LAWB30		23.34	65.13		3.85								Not Studied
LAWB30		29.27	81.20	2.34	3.81								Not Studied
LAWB30		44.70	125.07	4.00	3.76								Not Studied
LAWB30		64.59	189.27	6.59	3.64								Not Studied
LAWB30		117.43	431.93	12.76	3.43								Not Studied
LAWB30		299.04	1055.27	36.08	6.67								Not Studied
LAWB30		846.07	3258.60	120.97	3.23								Not Studied
LAWB30		687.36	3033.03	92.37	1.83								Not Studied
LAWB30		694.86	3041.27	122.93	2.54								Not Studied
LAWB31		7.01	12.32		1.45								Not Studied
LAWB31		10.66	22.85		3.16								Not Studied
LAWB31		11.83	22.90		3.27								Not Studied
LAWB31		14.30	24.86		3.21								Not Studied
LAWB31		16.48	26.38		3.46								Not Studied
LAWB31		17.68	26.17		3.00								Not Studied
LAWB31		19.01	27.45		2.94								Not Studied
LAWB31		20.99	34.61		2.97								Not Studied
LAWB31		28.93	44.63		3.78								Not Studied
LAWB31		32.98	48.38		3.76								Not Studied
LAWB31		34.82	49.55		3.38								Not Studied
LAWB31		30.87	44.81		2.36								Not Studied
LAWB31		34.16	48.13		3.31								Not Studied
LAWB31		40.03	57.17		2.71								Not Studied
LAWB31		40.83	58.06		2.36								amorphous
LAWB32		7.74	16.70		1.41								Not Studied
LAWB32		12.40	31.75		2.97								Not Studied
LAWB32		15.13	38.22		2.54								Not Studied
LAWB32		23.34	59.45		1.75								Not Studied
LAWB32		30.43	76.83		1.73						0.45		Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
LAWA89		76.29	11.615	22.990088	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA89		76.29	11.615	22.990088	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA89		76.29	11.615	22.990088	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA89		76.29	11.615	22.990088	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA89		76.29	11.615	22.990088	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA89		76.29	11.615	22.990088	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA90		76.29	15.598	0.4949006	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA90		76.29	15.598	0.4949006	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA90		76.29	15.598	0.4949006	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA90		76.29	15.598	0.4949006	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA90		76.29	15.598	0.4949006	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA90		76.29	15.598	0.4949006	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA90		76.29	15.598	0.4949006	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA90		76.29	15.598	0.4949006	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA90		76.29	15.598	0.4949006	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA90		76.29	15.598	0.4949006	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA90		76.29	15.598	0.4949006	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA90		76.29	15.598	0.4949006	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA90		76.29	15.598	0.4949006	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA90		76.29	15.598	0.4949006	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA93		68.94	21.566	-21.4206343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA93		68.94	21.566	-21.4206343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA93		68.94	21.566	-21.4206343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA93		68.94	21.566	-21.4206343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA93		68.94	21.566	-21.4206343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA93		68.94	21.566	-21.4206343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA93		68.94	21.566	-21.4206343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA96		71.96	13.182	21.0831404	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA96		71.96	13.182	21.0831404	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA96		71.96	13.182	21.0831404	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA96		71.96	13.182	21.0831404	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA96		71.96	13.182	21.0831404	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA96		71.96	13.182	21.0831404	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA96		71.96	13.182	21.0831404	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA96		71.96	13.182	21.0831404	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA96		71.96	13.182	21.0831404	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA96		71.96	13.182	21.0831404	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA96		71.96	13.182	21.0831404	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA96		71.96	13.182	21.0831404	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB30		65.06	24.115	-29.606521	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB30		65.06	24.115	-29.606521	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB30		65.06	24.115	-29.606521	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB30		65.06	24.115	-29.606521	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB30		65.06	24.115	-29.606521	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB30		65.06	24.115	-29.606521	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB30		65.06	24.115	-29.606521	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB30		65.06	24.115	-29.606521	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB30		65.06	24.115	-29.606521	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB30		65.06	24.115	-29.606521	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB31		70.46	17.425	-0.478432	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB31		70.46	17.425	-0.478432	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB31		70.46	17.425	-0.478432	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB31		70.46	17.425	-0.478432	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB31		70.46	17.425	-0.478432	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB31		70.46	17.425	-0.478432	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB31		70.46	17.425	-0.478432	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB31		70.46	17.425	-0.478432	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB31		70.46	17.425	-0.478432	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB31		70.46	17.425	-0.478432	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB31		70.46	17.425	-0.478432	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB31		70.46	17.425	-0.478432	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB31	XRD/SEM	70.46	17.425	-0.478432	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB32		73.44	14.405	11.8075115	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB32		73.44	14.405	11.8075115	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB32		73.44	14.405	11.8075115	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB32		73.44	14.405	11.8075115	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB32		73.44	14.405	11.8075115	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
LAWA89	6.08	9.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA89	6.08	9.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA89	6.08	9.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA89	6.08	9.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA89	6.08	9.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA89	6.08	9.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA90	6.08	9.70	0.00	3.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA90	6.08	9.70	0.00	3.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA90	6.08	9.70	0.00	3.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA90	6.08	9.70	0.00	3.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA90	6.08	9.70	0.00	3.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA90	6.08	9.70	0.00	3.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA90	6.08	9.70	0.00	3.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA90	6.08	9.70	0.00	3.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA90	6.08	9.70	0.00	3.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA90	6.08	9.70	0.00	3.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA90	6.08	9.70	0.00	3.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA90	6.08	9.70	0.00	3.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.53	2.58	0.00	0.00	0.00
LAWA93	6.18	11.10	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.51	0.50	0.00	0.00	5.07
LAWA93	6.18	11.10	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.51	0.50	0.00	0.00	5.07
LAWA93	6.18	11.10	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.51	0.50	0.00	0.00	5.07
LAWA93	6.18	11.10	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.51	0.50	0.00	0.00	5.07
LAWA93	6.18	11.10	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.51	0.50	0.00	0.00	5.07
LAWA93	6.18	11.10	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.51	0.50	0.00	0.00	5.07
LAWA93	6.18	11.10	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.51	0.50	0.00	0.00	5.07
LAWA96	6.20	7.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA96	6.20	7.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA96	6.20	7.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA96	6.20	7.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA96	6.20	7.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA96	6.20	7.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA96	6.20	7.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA96	6.20	7.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA96	6.20	7.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA96	6.20	7.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWA96	6.20	7.90	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99	0.50	0.00	0.00	0.00
LAWB30	8.60	10.04	0.00	7.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.28	0.32	0.00	0.00	4.07
LAWB30	8.60	10.04	0.00	7.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.28	0.32	0.00	0.00	4.07
LAWB30	8.60	10.04	0.00	7.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.28	0.32	0.00	0.00	4.07
LAWB30	8.60	10.04	0.00	7.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.28	0.32	0.00	0.00	4.07
LAWB30	8.60	10.04	0.00	7.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.28	0.32	0.00	0.00	4.07
LAWB30	8.60	10.04	0.00	7.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.28	0.32	0.00	0.00	4.07
LAWB30	8.60	10.04	0.00	7.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.28	0.32	0.00	0.00	4.07
LAWB30	8.60	10.04	0.00	7.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.28	0.32	0.00	0.00	4.07
LAWB30	8.60	10.04	0.00	7.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.28	0.32	0.00	0.00	4.07
LAWB30	8.60	10.04	0.00	7.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.28	0.32	0.00	0.00	4.07
LAWB31	6.18	12.14	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.20	0.32	0.00	0.00	2.97
LAWB31	6.18	12.14	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.20	0.32	0.00	0.00	2.97
LAWB31	6.18	12.14	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.20	0.32	0.00	0.00	2.97
LAWB31	6.18	12.14	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.20	0.32	0.00	0.00	2.97
LAWB31	6.18	12.14	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.20	0.32	0.00	0.00	2.97
LAWB31	6.18	12.14	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.20	0.32	0.00	0.00	2.97
LAWB31	6.18	12.14	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.20	0.32	0.00	0.00	2.97
LAWB31	6.18	12.14	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.20	0.32	0.00	0.00	2.97
LAWB31	6.18	12.14	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.20	0.32	0.00	0.00	2.97
LAWB31	6.18	12.14	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.20	0.32	0.00	0.00	2.97
LAWB31	6.18	12.14	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.20	0.32	0.00	0.00	2.97
LAWB31	6.18	12.14	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.20	0.32	0.00	0.00	2.97
LAWB31	6.18	12.14	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.20	0.32	0.00	0.00	2.97
LAWB32	6.18	15.15	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.18	0.32	0.00	0.00	2.97
LAWB32	6.18	15.15	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.18	0.32	0.00	0.00	2.97
LAWB32	6.18	15.15	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.18	0.32	0.00	0.00	2.97
LAWB32	6.18	15.15	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.18	0.32	0.00	0.00	2.97
LAWB32	6.18	15.15	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.18	0.32	0.00	0.00	2.97

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
LAWA89	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA89	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA89	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA89	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA89	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA89	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA90	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA90	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA90	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA90	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA90	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA90	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA90	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA90	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA90	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA90	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA90	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA90	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
LAWA93	1.48	0.00	0.00	0.00	10.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.25	0.00	0.00
LAWA93	1.48	0.00	0.00	0.00	10.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.25	0.00	0.00
LAWA93	1.48	0.00	0.00	0.00	10.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.25	0.00	0.00
LAWA93	1.48	0.00	0.00	0.00	10.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.25	0.00	0.00
LAWA93	1.48	0.00	0.00	0.00	10.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.25	0.00	0.00
LAWA93	1.48	0.00	0.00	0.00	10.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.25	0.00	0.00
LAWA93	1.48	0.00	0.00	0.00	10.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.25	0.00	0.00
LAWA96	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.56	0.00	0.00
LAWA96	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.56	0.00	0.00
LAWA96	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.56	0.00	0.00
LAWA96	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.56	0.00	0.00
LAWA96	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.56	0.00	0.00
LAWA96	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.56	0.00	0.00
LAWA96	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.56	0.00	0.00
LAWA96	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.56	0.00	0.00
LAWA96	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.56	0.00	0.00
LAWA96	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.56	0.00	0.00
LAWA96	1.99	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.56	0.00	0.00
LAWB30	3.08	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.73	0.00	0.00
LAWB30	3.08	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.73	0.00	0.00
LAWB30	3.08	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.73	0.00	0.00
LAWB30	3.08	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.73	0.00	0.00
LAWB30	3.08	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.73	0.00	0.00
LAWB30	3.08	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.73	0.00	0.00
LAWB30	3.08	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.73	0.00	0.00
LAWB30	3.08	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.73	0.00	0.00
LAWB30	3.08	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.73	0.00	0.00
LAWB30	3.08	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.73	0.00	0.00
LAWB30	3.08	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.73	0.00	0.00
LAWB31	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.10	0.00	0.00
LAWB31	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.10	0.00	0.00
LAWB31	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.10	0.00	0.00
LAWB31	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.10	0.00	0.00
LAWB31	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.10	0.00	0.00
LAWB31	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.10	0.00	0.00
LAWB31	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.10	0.00	0.00
LAWB31	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.10	0.00	0.00
LAWB31	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.10	0.00	0.00
LAWB31	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.10	0.00	0.00
LAWB31	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.10	0.00	0.00
LAWB31	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.10	0.00	0.00
LAWB32	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB32	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB32	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB32	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB32	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
LAWA89	0.00	0.00	0.00	3.98	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA89	0.00	0.00	0.00	3.98	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA89	0.00	0.00	0.00	3.98	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA89	0.00	0.00	0.00	3.98	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA89	0.00	0.00	0.00	3.98	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA89	0.00	0.00	0.00	3.98	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA90	0.00	0.00	0.00	0.00	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA90	0.00	0.00	0.00	0.00	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA90	0.00	0.00	0.00	0.00	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA90	0.00	0.00	0.00	0.00	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA90	0.00	0.00	0.00	0.00	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA90	0.00	0.00	0.00	0.00	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA90	0.00	0.00	0.00	0.00	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA90	0.00	0.00	0.00	0.00	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA90	0.00	0.00	0.00	0.00	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA90	0.00	0.00	0.00	0.00	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA90	0.00	0.00	0.00	0.00	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA90	0.00	0.00	0.00	0.00	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA90	0.00	0.00	0.00	0.00	0.00	0.00	2.95	2.99	0.70	100.00		
LAWA93	0.00	0.00	0.00	1.11	0.00	0.00	2.99	2.99	0.93	100.00		
LAWA93	0.00	0.00	0.00	1.11	0.00	0.00	2.99	2.99	0.93	100.00		
LAWA93	0.00	0.00	0.00	1.11	0.00	0.00	2.99	2.99	0.93	100.00		
LAWA93	0.00	0.00	0.00	1.11	0.00	0.00	2.99	2.99	0.93	100.00		
LAWA93	0.00	0.00	0.00	1.11	0.00	0.00	2.99	2.99	0.93	100.00		
LAWA93	0.00	0.00	0.00	1.11	0.00	0.00	2.99	2.99	0.93	100.00		
LAWA93	0.00	0.00	0.00	1.11	0.00	0.00	2.99	2.99	0.93	100.00		
LAWA96	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA96	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA96	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA96	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA96	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA96	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA96	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA96	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA96	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA96	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWA96	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	4.91	100.00		
LAWB30	0.00	0.00	0.00	0.00	0.00	0.00	4.12	3.12	0.51	100.00		
LAWB30	0.00	0.00	0.00	0.00	0.00	0.00	4.12	3.12	0.51	100.00		
LAWB30	0.00	0.00	0.00	0.00	0.00	0.00	4.12	3.12	0.51	100.00		
LAWB30	0.00	0.00	0.00	0.00	0.00	0.00	4.12	3.12	0.51	100.00		
LAWB30	0.00	0.00	0.00	0.00	0.00	0.00	4.12	3.12	0.51	100.00		
LAWB30	0.00	0.00	0.00	0.00	0.00	0.00	4.12	3.12	0.51	100.00		
LAWB30	0.00	0.00	0.00	0.00	0.00	0.00	4.12	3.12	0.51	100.00		
LAWB30	0.00	0.00	0.00	0.00	0.00	0.00	4.12	3.12	0.51	100.00		
LAWB30	0.00	0.00	0.00	0.00	0.00	0.00	4.12	3.12	0.51	100.00		
LAWB30	0.00	0.00	0.00	0.00	0.00	0.00	4.12	3.12	0.51	100.00		
LAWB30	0.00	0.00	0.00	0.00	0.00	0.00	4.12	3.12	0.51	100.00		
LAWB30	0.00	0.00	0.00	0.00	0.00	0.00	4.12	3.12	0.51	100.00		
LAWB31	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.66	100.00		
LAWB31	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.66	100.00		
LAWB31	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.66	100.00		
LAWB31	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.66	100.00		
LAWB31	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.66	100.00		
LAWB31	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.66	100.00		
LAWB31	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.66	100.00		
LAWB31	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.66	100.00		
LAWB31	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.66	100.00		
LAWB31	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.66	100.00		
LAWB31	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.66	100.00		
LAWB31	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.66	100.00		
LAWB31	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.66	100.00		
LAWB31	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.66	100.00		
LAWB32	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.71	100.00		
LAWB32	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.71	100.00		
LAWB32	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.71	100.00		
LAWB32	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.71	100.00		
LAWB32	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.71	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
LAWB32	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.98	75.29	116.17	
LAWB32	366.00	0.81	2.031	743.210	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.12	87.06	147.50	0.70
LAWB32	546.00	0.81	2.031	1,108.723	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.22	89.54	180.90	0.66
LAWB32	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.34	117.66	255.46	0.46
LAWB32	1091.00	0.81	2.031	2,215.416	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.45	112.79	298.89	0.56
LAWB32	1458.00	0.81	2.031	2,960.657	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.55	113.61	325.74	0.86
LAWB32	2186.00	0.81	2.031	4,438.954	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.64	100.25	304.81	1.26
LAWB32	2548.00	0.81	2.031	5,174.042	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.75	116.33	328.62	1.51
LAWB32	3030.00	0.81	2.031	6,152.805	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.84	131.90	392.50	1.77
LAWB32	3393.00	0.81	2.031	6,889.923	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.86	133.05	389.28	2.31
LAWB33	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.18	43.22	14.29	0.43
LAWB33	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.26	51.26	19.01	0.21
LAWB33	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.37	60.96	21.71	
LAWB33	119.00	0.81	2.031	241.645	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.53	66.02	27.26	0.18
LAWB33	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.74	66.27	28.73	0.59
LAWB33	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.82	69.03	30.32	0.21
LAWB33	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.93	94.35	46.33	0.15
LAWB33	546.00	0.81	2.031	1,108.723	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.05	80.18	45.86	0.16
LAWB33	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.12	87.02	51.61	0.33
LAWB33	1096.00	0.81	2.031	2,225.569	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.25	100.96	67.29	0.23
LAWB33	1460.00	0.81	2.031	2,964.718	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.38	84.44	61.64	0.18
LAWB33	1827.00	0.81	2.031	3,709.959	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.43	94.52	71.64	0.34
LAWB33	2195.00	0.81	2.031	4,457.230	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.52	93.29	74.35	0.52
LAWB33	2666.00	0.81	2.031	5,413.656	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.56	90.90	78.67	4.71
LAWB34	7.00	0.81	2.046	14.322	**2.630**	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.51	43.77	16.22	0.36
LAWB34	28.00	0.81	2.046	57.290	**2.630**	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.58	53.03	21.49	0.29
LAWB34	86.00	0.81	2.046	175.962	**2.630**	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.72	61.29	24.27	0.77
LAWB34	120.00	0.81	2.046	245.528	**2.630**	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.85	61.76	27.55	0.48
LAWB34	180.00	0.81	2.046	368.293	**2.630**	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.93	69.80	30.87	0.99
LAWB34	271.00	0.81	2.046	554.485	**2.630**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.03	62.93	30.95	
LAWB34	366.00	0.81	2.046	748.862	**2.630**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.17	71.57	34.89	1.06
LAWB34	546.00	0.81	2.046	1,117.155	**2.630**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.32	77.05	40.32	1.16
LAWB34	730.00	0.81	2.046	1,493.632	**2.630**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.45	104.61	50.16	1.05
LAWB34	1091.00	0.81	2.046	2,232.263	**2.630**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.56	103.63	55.71	1.54
LAWB34	1458.00	0.81	2.046	2,983.171	**2.630**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.64	102.30	55.41	1.40
LAWB34	2186.00	0.81	2.046	4,472.711	**2.630**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.75	96.29	58.29	1.69
LAWB34	2548.00	0.81	2.046	5,213.388	**2.630**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	110.23	70.44	1.34
LAWB34	3030.00	0.81	2.046	6,199.594	**2.630**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	122.52	84.19	2.07
LAWB34	3393.00	0.81	2.046	6,942.318	**2.630**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.96	131.63	95.51	2.12
LAWB35	7.00	0.81	2.038	14.268	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.56	62.19	37.43	0.25
LAWB35	28.00	0.81	2.038	57.073	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.64	80.15	57.71	0.18
LAWB35	86.00	0.81	2.038	175.296	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.84	89.05	60.57	0.37
LAWB35	120.00	0.81	2.038	244.598	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.94	87.66	62.74	0.32
LAWB35	180.00	0.81	2.038	366.898	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.97	94.14	69.21	0.44
LAWB35	271.00	0.81	2.038	552.385	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.07	79.08	63.22	
LAWB35	366.00	0.81	2.038	746.025	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.22	88.55	69.31	
LAWB35	546.00	0.81	2.038	1,112.923	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.37	103.60	80.12	0.71
LAWB35	730.00	0.81	2.038	1,487.974	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.48	124.66	98.74	0.12
LAWB35	1091.00	0.81	2.038	2,223.808	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.57	137.68	122.44	0.18
LAWB35	1458.00	0.81	2.038	2,971.871	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.67	130.55	113.43	0.10
LAWB35	2186.00	0.81	2.038	4,455.768	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.76	137.35	119.60	0.20
LAWB35	2548.00	0.81	2.038	5,193.640	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.83	162.81	133.03	1.09
LAWB35	3030.00	0.81	2.038	6,176.111	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	172.51	154.22	1.77
LAWB35	3393.00	0.81	2.038	6,916.021	**2.640**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.97	160.26	156.90	0.88
LAWB37	7.00	0.82	2.062	14.432	**2.610**	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.43	47.44	19.16	0.57
LAWB37	28.00	0.82	2.062	57.729	**2.610**	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.66	54.33	23.69	0.66
LAWB37	56.00	0.82	2.062	115.458	**2.610**	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.77	54.66	23.91	0.21
LAWB37	120.00	0.82	2.062	247.410	**2.610**	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.86	63.24	28.79	0.22
LAWB37	181.00	0.82	2.062	373.177	**2.610**	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.92	69.79	31.65	
LAWB37	269.00	0.82	2.062	554.611	**2.610**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.06	74.84	36.13	
LAWB37	365.00	0.82	2.062	752.539	**2.610**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.12	71.17	36.80	0.23
LAWB37	547.00	0.82	2.062	1,127.777	**2.610**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.25	103.31	58.62	0.25
LAWB37	730.00	0.82	2.062	1,505.077	**2.610**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.32	89.94	58.29	0.21
LAWB37	1087.00	0.82	2.062	2,241.122	**2.610**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.45	116.05	73.69	0.43
LAWB37	1455.00	0.82	2.062	2,999.845	**2.610**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.55	106.91	73.75	0.20
LAWB37	2191.00	0.82	2.062	4,517.293	**2.610**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.64	102.26	83.42	0.30
LAWB37	2551.00	0.82	2.062	5,259.523	**2.610**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.74	157.56	137.45	0.32
LAWB37	2830.00	0.82	2.062	5,834.751	**2.610**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.76	121.56	105.65	7.14
LAWB37	2990.00	0.82	2.062	6,164.631	**2.610**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.82	177.49	127.27	0.41
LAWB37	3356.00	0.82	2.062	6,919.231	**2.610**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	197.75	155.43	0.34
LAWB38	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.56	49.79	18.72	0.44
LAWB38	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.74	55.85	23.48	0.84

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
LAWB32		35.32	85.30		1.42								Not Studied
LAWB32		41.76	102.67		1.54								Not Studied
LAWB32		49.80	113.17		1.38								Not Studied
LAWB32		75.26	167.96	2.90	2.12								Not Studied
LAWB32		82.84	191.09	3.06	1.48								Not Studied
LAWB32		92.18	207.91	3.20	1.56								Not Studied
LAWB32		83.40	187.63	2.34	1.75								Not Studied
LAWB32		85.44	194.06	3.16	2.53								Not Studied
LAWB32		106.69	225.39	3.18	1.30								Not Studied
LAWB32		110.80	230.24	3.32	1.37								amorphous
LAWB33		6.33	13.65		2.58								Not Studied
LAWB33		8.51	15.30		2.61								Not Studied
LAWB33		11.04	17.67		3.03								Not Studied
LAWB33		13.92	20.35		3.44								Not Studied
LAWB33		14.82	19.88		3.25								Not Studied
LAWB33		16.85	21.66		3.26								Not Studied
LAWB33		25.95	33.39		4.72								Not Studied
LAWB33		24.32	30.59		3.74								Not Studied
LAWB33		27.06	33.99		4.05								Not Studied
LAWB33		33.48	41.36		3.74								Not Studied
LAWB33		27.78	34.33		2.69								Not Studied
LAWB33		32.51	42.13		3.02								Not Studied
LAWB33		34.43	44.91		2.61								Not Studied
LAWB33		33.54	60.20		2.46			1.02					Not Studied
LAWB34		6.72	14.69		0.86								Not Studied
LAWB34		9.86	25.67		2.43								Not Studied
LAWB34		10.08	24.30		2.30								Not Studied
LAWB34		12.67	28.04		2.53								Not Studied
LAWB34		14.91	31.48		2.90								Not Studied
LAWB34		15.44	29.88		2.52								Not Studied
LAWB34		16.75	31.87		2.59								Not Studied
LAWB34		18.14	33.92		2.64								Not Studied
LAWB34		24.78	47.05		3.94								Not Studied
LAWB34		26.45	48.05	1.72	3.17								Not Studied
LAWB34		28.15	49.82	1.85	3.08								Not Studied
LAWB34		25.79	46.91		2.29								Not Studied
LAWB34		28.19	52.42		3.20								Not Studied
LAWB34		33.39	64.14		2.82						0.82		Not Studied
LAWB34		39.30	72.87		2.72								Not Studied
LAWB35		12.71	40.06										Not Studied
LAWB35		20.55	64.91		1.50								Not Studied
LAWB35		20.18	60.34		1.41								Not Studied
LAWB35		22.31	62.47		1.66								Not Studied
LAWB35		25.94	68.04		1.76								Not Studied
LAWB35		24.79	60.29		1.52								Not Studied
LAWB35		26.39	62.60		1.60								Not Studied
LAWB35		29.00	69.37		1.66								Not Studied
LAWB35		37.20	87.43	1.93	2.16								Not Studied
LAWB35		46.48	101.08	2.10	2.06								Not Studied
LAWB35		44.15	96.46	2.13	2.15								Not Studied
LAWB35		41.58	95.27	1.85	1.46								Not Studied
LAWB35		44.61	103.29	2.34	2.88								Not Studied
LAWB35		53.20	117.99	2.02	2.49			1.45					Not Studied
LAWB35		55.23	115.86	1.99	1.33								amorphous
LAWB37		7.46	20.79		2.02								Not Studied
LAWB37		9.87	23.05		2.26								Not Studied
LAWB37		10.97	22.50		2.31								Not Studied
LAWB37		14.34	26.36		2.61								Not Studied
LAWB37		14.53	25.77		2.49								Not Studied
LAWB37		16.94	27.99		2.57								Not Studied
LAWB37		17.44	28.22		2.43								Not Studied
LAWB37		28.70	44.90		3.91								Not Studied
LAWB37		27.43	41.86		2.80								Not Studied
LAWB37		33.84	54.75		3.37								Not Studied
LAWB37		33.53	56.65		2.72								Not Studied
LAWB37		39.02	64.46		1.97								Not Studied
LAWB37		39.29	213.61	3.13	3.02								Not Studied
LAWB37		42.26	96.91	2.59	2.38			1.63					Not Studied
LAWB37		40.02	175.09	4.10	1.96								Not Studied
LAWB37		45.74	252.48	4.98	1.91								Not Studied
LAWB38		9.59	20.73		2.48								Not Studied
LAWB38		12.10	22.70		2.58								Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
LAWB32		73.44	14.405	11.8075115	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB32		73.44	14.405	11.8075115	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB32		73.44	14.405	11.8075115	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB32		73.44	14.405	11.8075115	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB32		73.44	14.405	11.8075115	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB32		73.44	14.405	11.8075115	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB32		73.44	14.405	11.8075115	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB32		73.44	14.405	11.8075115	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB32		73.44	14.405	11.8075115	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB32	XRD/SEM	73.44	14.405	11.8075115	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB33		70.37	15.381	11.2147967	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB33		70.37	15.381	11.2147967	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB33		70.37	15.381	11.2147967	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB33		70.37	15.381	11.2147967	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB33		70.37	15.381	11.2147967	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB33		70.37	15.381	11.2147967	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB33		70.37	15.381	11.2147967	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB33		70.37	15.381	11.2147967	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB33		70.37	15.381	11.2147967	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB33		70.37	15.381	11.2147967	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB33		70.37	15.381	11.2147967	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB33		70.37	15.381	11.2147967	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB34		70.40	17.41	-0.300712	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB34		70.40	17.41	-0.300712	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB34		70.40	17.41	-0.300712	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB34		70.40	17.41	-0.300712	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB34		70.40	17.41	-0.300712	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB34		70.40	17.41	-0.300712	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB34		70.40	17.41	-0.300712	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB34		70.40	17.41	-0.300712	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB34		70.40	17.41	-0.300712	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB34		70.40	17.41	-0.300712	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB34		70.40	17.41	-0.300712	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB34		70.40	17.41	-0.300712	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB35		70.41	15.389	11.1022673	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB35		70.41	15.389	11.1022673	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB35		70.41	15.389	11.1022673	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB35		70.41	15.389	11.1022673	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB35		70.41	15.389	11.1022673	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB35		70.41	15.389	11.1022673	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB35		70.41	15.389	11.1022673	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB35		70.41	15.389	11.1022673	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB35		70.41	15.389	11.1022673	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB35		70.41	15.389	11.1022673	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB35		70.41	15.389	11.1022673	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB35		70.41	15.389	11.1022673	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB35	XRD/SEM	70.41	15.389	11.1022673	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB37		70.27	16.032	7.6968254	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB37		70.27	16.032	7.6968254	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB37		70.27	16.032	7.6968254	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB37		70.27	16.032	7.6968254	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB37		70.27	16.032	7.6968254	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB37		70.27	16.032	7.6968254	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB37		70.27	16.032	7.6968254	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB37		70.27	16.032	7.6968254	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB37		70.27	16.032	7.6968254	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB37		70.27	16.032	7.6968254	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB37		70.27	16.032	7.6968254	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB37		70.27	16.032	7.6968254	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB37		70.27	16.032	7.6968254	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB38		71.01	16.051	6.4077377	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB38		71.01	16.051	6.4077377	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
LAWB32	6.18	15.15	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.18	0.32	0.00	0.00	2.97
LAWB32	6.18	15.15	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.18	0.32	0.00	0.00	2.97
LAWB32	6.18	15.15	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.18	0.32	0.00	0.00	2.97
LAWB32	6.18	15.15	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.18	0.32	0.00	0.00	2.97
LAWB32	6.18	15.15	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.18	0.32	0.00	0.00	2.97
LAWB32	6.18	15.15	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.18	0.32	0.00	0.00	2.97
LAWB32	6.18	15.15	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.18	0.32	0.00	0.00	2.97
LAWB32	6.18	15.15	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.18	0.32	0.00	0.00	2.97
LAWB32	6.18	15.15	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.18	0.32	0.00	0.00	2.97
LAWB33	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB33	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB33	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB33	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB33	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB33	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB33	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB33	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB33	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB33	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB33	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB33	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB34	6.18	12.13	0.00	6.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB34	6.18	12.13	0.00	6.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB34	6.18	12.13	0.00	6.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB34	6.18	12.13	0.00	6.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB34	6.18	12.13	0.00	6.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB34	6.18	12.13	0.00	6.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB34	6.18	12.13	0.00	6.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB34	6.18	12.13	0.00	6.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB34	6.18	12.13	0.00	6.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB34	6.18	12.13	0.00	6.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB34	6.18	12.13	0.00	6.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB34	6.18	12.13	0.00	6.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB35	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB35	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB35	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB35	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB35	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB35	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB35	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB35	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB35	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB35	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB35	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB35	6.18	12.13	0.00	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.32	0.00	0.00	2.97
LAWB37	6.17	12.11	0.00	4.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB37	6.17	12.11	0.00	4.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB37	6.17	12.11	0.00	4.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB37	6.17	12.11	0.00	4.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB37	6.17	12.11	0.00	4.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB37	6.17	12.11	0.00	4.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB37	6.17	12.11	0.00	4.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB37	6.17	12.11	0.00	4.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB37	6.17	12.11	0.00	4.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB37	6.17	12.11	0.00	4.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB37	6.17	12.11	0.00	4.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB37	6.17	12.11	0.00	4.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.32	0.00	0.00	2.96
LAWB38	6.16	12.09	0.00	4.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.15	0.32	0.00	0.00	3.81
LAWB38	6.16	12.09	0.00	4.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.15	0.32	0.00	0.00	3.81

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
LAWB32	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB32	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB32	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB32	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB32	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB32	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB32	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB32	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB32	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB33	2.25	0.00	0.00	0.00	7.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.04	0.00	0.00
LAWB33	2.25	0.00	0.00	0.00	7.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.04	0.00	0.00
LAWB33	2.25	0.00	0.00	0.00	7.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.04	0.00	0.00
LAWB33	2.25	0.00	0.00	0.00	7.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.04	0.00	0.00
LAWB33	2.25	0.00	0.00	0.00	7.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.04	0.00	0.00
LAWB33	2.25	0.00	0.00	0.00	7.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.04	0.00	0.00
LAWB33	2.25	0.00	0.00	0.00	7.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.04	0.00	0.00
LAWB33	2.25	0.00	0.00	0.00	7.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.04	0.00	0.00
LAWB33	2.25	0.00	0.00	0.00	7.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.04	0.00	0.00
LAWB33	2.25	0.00	0.00	0.00	7.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.04	0.00	0.00
LAWB33	2.25	0.00	0.00	0.00	7.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.04	0.00	0.00
LAWB33	2.25	0.00	0.00	0.00	7.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.04	0.00	0.00
LAWB33	2.25	0.00	0.00	0.00	7.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.04	0.00	0.00
LAWB34	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.06	0.00	0.00
LAWB34	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.06	0.00	0.00
LAWB34	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.06	0.00	0.00
LAWB34	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.06	0.00	0.00
LAWB34	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.06	0.00	0.00
LAWB34	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.06	0.00	0.00
LAWB34	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.06	0.00	0.00
LAWB34	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.06	0.00	0.00
LAWB34	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.06	0.00	0.00
LAWB34	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.06	0.00	0.00
LAWB34	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.06	0.00	0.00
LAWB34	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.06	0.00	0.00
LAWB34	2.25	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.06	0.00	0.00
LAWB35	4.27	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.07	0.00	0.00
LAWB35	4.27	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.07	0.00	0.00
LAWB35	4.27	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.07	0.00	0.00
LAWB35	4.27	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.07	0.00	0.00
LAWB35	4.27	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.07	0.00	0.00
LAWB35	4.27	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.07	0.00	0.00
LAWB35	4.27	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.07	0.00	0.00
LAWB35	4.27	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.07	0.00	0.00
LAWB35	4.27	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.07	0.00	0.00
LAWB35	4.27	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.07	0.00	0.00
LAWB35	4.27	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.07	0.00	0.00
LAWB35	4.27	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.07	0.00	0.00
LAWB35	4.27	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.07	0.00	0.00
LAWB37	2.92	0.00	0.00	0.00	7.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.97	0.00	0.00
LAWB37	2.92	0.00	0.00	0.00	7.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.97	0.00	0.00
LAWB37	2.92	0.00	0.00	0.00	7.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.97	0.00	0.00
LAWB37	2.92	0.00	0.00	0.00	7.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.97	0.00	0.00
LAWB37	2.92	0.00	0.00	0.00	7.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.97	0.00	0.00
LAWB37	2.92	0.00	0.00	0.00	7.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.97	0.00	0.00
LAWB37	2.92	0.00	0.00	0.00	7.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.97	0.00	0.00
LAWB37	2.92	0.00	0.00	0.00	7.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.97	0.00	0.00
LAWB37	2.92	0.00	0.00	0.00	7.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.97	0.00	0.00
LAWB37	2.92	0.00	0.00	0.00	7.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.97	0.00	0.00
LAWB37	2.92	0.00	0.00	0.00	7.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.97	0.00	0.00
LAWB37	2.92	0.00	0.00	0.00	7.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.97	0.00	0.00
LAWB38	2.24	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.90	0.00	0.00
LAWB38	2.24	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.90	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
LAWB32	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.71	100.00		
LAWB32	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.71	100.00		
LAWB32	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.71	100.00		
LAWB32	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.71	100.00		
LAWB32	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.71	100.00		
LAWB32	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.71	100.00		
LAWB32	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.71	100.00		
LAWB32	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.71	100.00		
LAWB32	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.71	100.00		
LAWB32	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.71	100.00		
LAWB33	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	5.81	100.00		
LAWB33	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	5.81	100.00		
LAWB33	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	5.81	100.00		
LAWB33	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	5.81	100.00		
LAWB33	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	5.81	100.00		
LAWB33	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	5.81	100.00		
LAWB33	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	5.81	100.00		
LAWB33	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	5.81	100.00		
LAWB33	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	5.81	100.00		
LAWB33	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	5.81	100.00		
LAWB33	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	5.81	100.00		
LAWB33	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	5.81	100.00		
LAWB34	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.74	100.00		
LAWB34	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.74	100.00		
LAWB34	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.74	100.00		
LAWB34	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.74	100.00		
LAWB34	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.74	100.00		
LAWB34	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.74	100.00		
LAWB34	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.74	100.00		
LAWB34	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.74	100.00		
LAWB34	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.74	100.00		
LAWB34	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.74	100.00		
LAWB34	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.74	100.00		
LAWB34	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.74	100.00		
LAWB34	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.74	100.00		
LAWB35	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.73	100.00		
LAWB35	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.73	100.00		
LAWB35	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.73	100.00		
LAWB35	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.73	100.00		
LAWB35	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.73	100.00		
LAWB35	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.73	100.00		
LAWB35	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.73	100.00		
LAWB35	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.73	100.00		
LAWB35	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.73	100.00		
LAWB35	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.73	100.00		
LAWB35	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.73	100.00		
LAWB35	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.73	100.00		
LAWB35	0.00	0.00	0.00	0.00	0.00	0.00	3.10	3.10	3.73	100.00		
LAWB37	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.60	100.00		
LAWB37	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.60	100.00		
LAWB37	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.60	100.00		
LAWB37	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.60	100.00		
LAWB37	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.60	100.00		
LAWB37	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.60	100.00		
LAWB37	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.60	100.00		
LAWB37	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.60	100.00		
LAWB37	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.60	100.00		
LAWB37	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.60	100.00		
LAWB37	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.60	100.00		
LAWB37	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.60	100.00		
LAWB37	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.60	100.00		
LAWB37	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.60	100.00		
LAWB38	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.53	100.00		
LAWB38	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.53	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
LAWB38	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.85	55.87	23.65	0.21
LAWB38	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.94	66.30	29.50	0.30
LAWB38	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.97	69.93	31.16	
LAWB38	269.00	0.81	2.031	546.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.12	80.87	38.57	
LAWB38	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.22	74.92	38.00	0.39
LAWB38	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.34	109.19	60.23	0.22
LAWB38	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.43	102.51	63.62	0.14
LAWB38	1087.00	0.81	2.031	2,207.293	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.55	144.14	87.34	0.30
LAWB38	1455.00	0.81	2.031	2,954.565	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.65	117.93	81.36	0.15
LAWB38	2191.00	0.81	2.031	4,449.107	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.76	113.21	85.92	0.26
LAWB38	2551.00	0.81	2.031	5,180.134	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.84	133.33	98.87	0.18
LAWB38	2830.00	0.81	2.031	5,746.679	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.87	129.08	107.25	9.46
LAWB38	2990.00	0.81	2.031	6,071.580	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	142.75	103.40	0.34
LAWB38	3356.00	0.81	2.031	6,814.790	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.96	146.69	111.45	0.10
LAWB40	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.41	142.13	119.23	0.52
LAWB40	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.52	266.60	461.87	2.17
LAWB40	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.64	264.23	1155.60	4.36
LAWB40	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.82	243.07	1969.07	18.03
LAWB40	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.97	251.03	2519.70	24.63
LAWB40	267.00	0.81	2.031	542.178	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.96	233.27	2585.03	26.01
LAWB40	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.04	247.93	2782.50	25.30
LAWB40	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.12	253.71	3508.00	36.93
LAWB40	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.37	256.87	3627.40	43.89
LAWB40	1104.00	0.81	2.031	2,241.814	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	256.19	3679.57	45.32
LAWB40	1462.00	0.81	2.031	2,968.779	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.54	165.82	2831.10	32.59
LAWB40	1826.00	0.81	2.031	3,707.928	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.61	183.48	2810.23	30.65
LAWB40	2206.00	0.81	2.031	4,479.567	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.74	186.55	3012.53	33.50
LAWB41	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.17	83.63	63.73	1.33
LAWB41	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.27	141.87	165.00	2.92
LAWB41	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.34	163.80	256.20	3.54
LAWB41	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.54	177.23	459.50	6.14
LAWB41	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.75	189.27	791.17	11.53
LAWB41	267.00	0.81	2.031	542.178	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	147.23	1288.10	22.11
LAWB41	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.96	151.13	1661.20	32.05
LAWB41	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.04	158.74	2331.47	57.75
LAWB41	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	196.34	2760.57	76.10
LAWB41	1104.00	0.81	2.031	2,241.814	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	202.46	3243.40	81.85
LAWB41	1462.00	0.81	2.031	2,968.779	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	193.78	2561.90	67.07
LAWB41	1826.00	0.81	2.031	3,707.928	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	143.07	2576.13	59.25
LAWB41	2206.00	0.81	2.031	4,479.567	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.56	172.60	2773.10	73.89
LAWB60	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.36	42.83	16.95	11.44
LAWB60	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.57	48.92	19.77	13.50
LAWB60	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.65	52.51	21.43	12.82
LAWB60	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.77	61.83	23.66	15.18
LAWB60	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.84	63.18	23.16	16.23
LAWB60	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.92	84.77	33.51	16.34
LAWB60	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.23	78.10	32.85	9.40
LAWB60	733.00	0.81	2.031	1,488.451	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	82.36	38.93	7.63
LAWB60	1094.00	0.81	2.031	2,221.508	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.42	110.65	55.37	7.09
LAWB60	1457.00	0.81	2.031	2,958.626	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.52	120.90	70.33	6.80
LAWB60	1820.00	0.81	2.031	3,695.744	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.57	153.47	97.27	6.82
LAWB61	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.45	63.49	24.13	
LAWB61	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.64	114.93	67.47	0.88
LAWB61	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	165.63	126.20	1.44
LAWB61	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	233.97	403.23	3.86
LAWB61	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.27	219.43	1145.03	10.69
LAWB61	269.00	0.81	2.031	546.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	230.93	2675.10	26.81
LAWB61	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.86	234.73	2825.23	27.19
LAWB61	545.00	0.81	2.031	1,106.693	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.95	192.84	2813.27	30.59
LAWB61	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	183.04	2424.30	26.79
LAWB61	1094.00	0.81	2.031	2,221.508	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	170.04	2506.40	23.63
LAWB61	1462.00	0.81	2.031	2,968.779	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	158.33	2488.80	29.49
LAWB61	1830.00	0.81	2.031	3,716.050	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	156.87	2282.87	28.50
LAWB62	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.35	37.81	10.02	7.93
LAWB62	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.55	45.02	13.47	9.52
LAWB62	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.74	56.44	16.18	11.72
LAWB62	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.97	68.55	24.03	12.63
LAWB62	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.16	71.64	33.96	9.53
LAWB62	269.00	0.81	2.031	546.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	101.70	45.90	8.33
LAWB62	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	101.15	41.79	6.14
LAWB62	545.00	0.81	2.031	1,106.693	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.23	126.01	48.85	4.16

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
LAWB38		13.11	22.00		2.72								Not Studied
LAWB38		17.95	26.96		3.05								Not Studied
LAWB38		16.78	24.53		2.59								Not Studied
LAWB38		21.02	29.48		3.05								Not Studied
LAWB38		21.76	29.23		2.71								Not Studied
LAWB38		34.42	46.63		4.23								Not Studied
LAWB38		35.91	47.59		3.15								Not Studied
LAWB38		48.57	67.29		4.43								Not Studied
LAWB38		45.54	62.26		2.51								Not Studied
LAWB38		49.94	66.70		2.23								Not Studied
LAWB38		48.29	69.36		2.99								Not Studied
LAWB38		50.91	98.69	3.45	2.45			2.22					Not Studied
LAWB38		51.79	72.55		2.41								Not Studied
LAWB38		54.19	75.53		1.93								Not Studied
LAWB40		80.96	137.63	3.36	1.66								Not Studied
LAWB40		231.90	456.60	10.74	0.98								Not Studied
LAWB40		505.67	1139.70	31.47	0.81								Not Studied
LAWB40		696.03	2134.40	73.60	1.34								Not Studied
LAWB40		872.80	2570.60	98.17	1.59								Not Studied
LAWB40		939.83	2852.37	107.83	0.98								Not Studied
LAWB40		960.20	2941.03	110.07	1.41								Not Studied
LAWB40		1259.23	3615.67	144.90	0.65								Not Studied
LAWB40		1327.77	3784.30	173.87	1.42								Not Studied
LAWB40		1279.03	3689.30	178.54	2.08								Not Studied
LAWB40		967.04	2984.50	114.27	0.84								Not Studied
LAWB40		943.55	2967.67	117.67	2.79								Not Studied
LAWB40		877.93	3100.07	135.01	0.75								Not Studied
LAWB41		31.40	82.37	2.41	0.91								Not Studied
LAWB41		77.95	197.10	5.28	0.79								Not Studied
LAWB41		111.50	307.47	8.05									Not Studied
LAWB41		178.03	507.57	12.66									Not Studied
LAWB41		296.37	880.33	26.44									Not Studied
LAWB41		395.20	1551.47	43.35									Not Studied
LAWB41		464.53	1882.00	61.95	0.70								Not Studied
LAWB41		687.88	2742.90	104.92									Not Studied
LAWB41		756.19	3215.47	142.90									Not Studied
LAWB41		881.47	3563.87	161.15	1.04								Not Studied
LAWB41		707.53	3182.20	126.50				0.23					Not Studied
LAWB41		628.21	3113.43	115.37	2.17								Not Studied
LAWB41		675.20	3332.13	175.37									Not Studied
LAWB60		10.81	21.83		0.84								Not Studied
LAWB60		14.34	26.49		1.23								Not Studied
LAWB60		14.98	28.25		1.25								Not Studied
LAWB60		20.06	36.16		1.41								Not Studied
LAWB60		20.44	36.53		1.60								Not Studied
LAWB60		27.88	51.75	1.90	1.80								Not Studied
LAWB60		25.96	48.15		2.58								Not Studied
LAWB60		29.44	53.38	2.36	1.56								Not Studied
LAWB60		42.46	78.86	2.45	1.47								Not Studied
LAWB60		47.26	92.28	2.88	1.09								Not Studied
LAWB60		65.80	131.50	3.51	1.18			0.30					Stevensonite and Saponite 15A
LAWB61		20.98	27.36		1.51								Not Studied
LAWB61		53.07	72.90	2.38	1.10								Not Studied
LAWB61		95.62	138.57	3.86	1.07								Not Studied
LAWB61		224.97	383.20	10.59	1.27								Not Studied
LAWB61		504.80	1009.33	38.70	2.32								Not Studied
LAWB61		1141.43	2366.60	108.71	2.57						0.62		Not Studied
LAWB61		1165.73	2553.90	117.47	2.17								Not Studied
LAWB61		1014.77	2434.53	112.98	13.52								Not Studied
LAWB61		875.16	2294.03	107.99	1.62								Not Studied
LAWB61		902.86	2143.70	104.36	1.03								Not Studied
LAWB61		910.03	2255.53	90.28	0.84								Not Studied
LAWB61		865.06	2176.83	93.84	1.14								Not Studied
LAWB62		11.53	14.47		1.24								Not Studied
LAWB62		16.55	19.34		1.18								Not Studied
LAWB62		21.17	23.28		1.68								Not Studied
LAWB62		25.12	28.01		1.77								Not Studied
LAWB62		29.76	32.72		1.92								Not Studied
LAWB62		45.54	51.38	2.34	3.00								Not Studied
LAWB62		47.17	52.41	1.71	2.88								Not Studied
LAWB62		65.19	74.49	3.28	5.08								Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
LAWB38		71.01	16.051	6.4077377	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB38		71.01	16.051	6.4077377	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB38		71.01	16.051	6.4077377	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB38		71.01	16.051	6.4077377	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB38		71.01	16.051	6.4077377	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB38		71.01	16.051	6.4077377	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB38		71.01	16.051	6.4077377	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB38		71.01	16.051	6.4077377	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB38		71.01	16.051	6.4077377	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB38		71.01	16.051	6.4077377	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB38		71.01	16.051	6.4077377	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB38		71.01	16.051	6.4077377	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB40		73.29	15.957	3.2746334	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB40		73.29	15.957	3.2746334	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB40		73.29	15.957	3.2746334	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB40		73.29	15.957	3.2746334	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB40		73.29	15.957	3.2746334	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB40		73.29	15.957	3.2746334	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB40		73.29	15.957	3.2746334	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB40		73.29	15.957	3.2746334	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB40		73.29	15.957	3.2746334	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB40		73.29	15.957	3.2746334	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB40		73.29	15.957	3.2746334	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB40		73.29	15.957	3.2746334	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB41		71.60	17.766	-4.2275113	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB41		71.60	17.766	-4.2275113	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB41		71.60	17.766	-4.2275113	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB41		71.60	17.766	-4.2275113	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB41		71.60	17.766	-4.2275113	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB41		71.60	17.766	-4.2275113	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB41		71.60	17.766	-4.2275113	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB41		71.60	17.766	-4.2275113	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB41		71.60	17.766	-4.2275113	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB41		71.60	17.766	-4.2275113	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB41		71.60	17.766	-4.2275113	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB60		71.73	18.048	-6.0334564	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB60		71.73	18.048	-6.0334564	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB60		71.73	18.048	-6.0334564	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB60		71.73	18.048	-6.0334564	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB60		71.73	18.048	-6.0334564	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB60		71.73	18.048	-6.0334564	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB60		71.73	18.048	-6.0334564	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB60		71.73	18.048	-6.0334564	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB60		71.73	18.048	-6.0334564	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB60	XRD/SEM	71.73	18.048	-6.0334564	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB61		70.18	18.223	-4.5251719	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB61		70.18	18.223	-4.5251719	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB61		70.18	18.223	-4.5251719	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB61		70.18	18.223	-4.5251719	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB61		70.18	18.223	-4.5251719	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB61		70.18	18.223	-4.5251719	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB61		70.18	18.223	-4.5251719	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB61		70.18	18.223	-4.5251719	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB61		70.18	18.223	-4.5251719	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB61		70.18	18.223	-4.5251719	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB61		70.18	18.223	-4.5251719	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB62		70.05	18.19	-4.13515	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB62		70.05	18.19	-4.13515	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB62		70.05	18.19	-4.13515	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB62		70.05	18.19	-4.13515	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB62		70.05	18.19	-4.13515	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB62		70.05	18.19	-4.13515	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB62		70.05	18.19	-4.13515	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB62		70.05	18.19	-4.13515	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
LAWB38	6.16	12.09	0.00	4.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.15	0.32	0.00	0.00	3.81
LAWB38	6.16	12.09	0.00	4.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.15	0.32	0.00	0.00	3.81
LAWB38	6.16	12.09	0.00	4.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.15	0.32	0.00	0.00	3.81
LAWB38	6.16	12.09	0.00	4.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.15	0.32	0.00	0.00	3.81
LAWB38	6.16	12.09	0.00	4.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.15	0.32	0.00	0.00	3.81
LAWB38	6.16	12.09	0.00	4.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.15	0.32	0.00	0.00	3.81
LAWB38	6.16	12.09	0.00	4.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.15	0.32	0.00	0.00	3.81
LAWB38	6.16	12.09	0.00	4.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.15	0.32	0.00	0.00	3.81
LAWB38	6.16	12.09	0.00	4.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.15	0.32	0.00	0.00	3.81
LAWB38	6.16	12.09	0.00	4.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.15	0.32	0.00	0.00	3.81
LAWB38	6.16	12.09	0.00	4.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.15	0.32	0.00	0.00	3.81
LAWB40	6.14	12.05	0.00	4.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.13	0.32	0.00	0.00	6.29
LAWB40	6.14	12.05	0.00	4.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.13	0.32	0.00	0.00	6.29
LAWB40	6.14	12.05	0.00	4.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.13	0.32	0.00	0.00	6.29
LAWB40	6.14	12.05	0.00	4.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.13	0.32	0.00	0.00	6.29
LAWB40	6.14	12.05	0.00	4.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.13	0.32	0.00	0.00	6.29
LAWB40	6.14	12.05	0.00	4.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.13	0.32	0.00	0.00	6.29
LAWB40	6.14	12.05	0.00	4.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.13	0.32	0.00	0.00	6.29
LAWB40	6.14	12.05	0.00	4.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.13	0.32	0.00	0.00	6.29
LAWB40	6.14	12.05	0.00	4.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.13	0.32	0.00	0.00	6.29
LAWB40	6.14	12.05	0.00	4.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.13	0.32	0.00	0.00	6.29
LAWB40	6.14	12.05	0.00	4.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.13	0.32	0.00	0.00	6.29
LAWB41	6.15	12.07	0.00	6.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.14	0.32	0.00	0.00	4.51
LAWB41	6.15	12.07	0.00	6.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.14	0.32	0.00	0.00	4.51
LAWB41	6.15	12.07	0.00	6.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.14	0.32	0.00	0.00	4.51
LAWB41	6.15	12.07	0.00	6.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.14	0.32	0.00	0.00	4.51
LAWB41	6.15	12.07	0.00	6.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.14	0.32	0.00	0.00	4.51
LAWB41	6.15	12.07	0.00	6.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.14	0.32	0.00	0.00	4.51
LAWB41	6.15	12.07	0.00	6.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.14	0.32	0.00	0.00	4.51
LAWB41	6.15	12.07	0.00	6.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.14	0.32	0.00	0.00	4.51
LAWB41	6.15	12.07	0.00	6.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.14	0.32	0.00	0.00	4.51
LAWB41	6.15	12.07	0.00	6.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.14	0.32	0.00	0.00	4.51
LAWB60	6.14	12.37	0.00	11.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	4.63
LAWB60	6.14	12.37	0.00	11.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	4.63
LAWB60	6.14	12.37	0.00	11.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	4.63
LAWB60	6.14	12.37	0.00	11.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	4.63
LAWB60	6.14	12.37	0.00	11.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	4.63
LAWB60	6.14	12.37	0.00	11.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	4.63
LAWB60	6.14	12.37	0.00	11.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	4.63
LAWB60	6.14	12.37	0.00	11.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	4.63
LAWB60	6.14	12.37	0.00	11.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	4.63
LAWB60	6.14	12.37	0.00	11.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	4.63
LAWB61	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.31	0.26	0.00	0.00	5.82
LAWB61	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.31	0.26	0.00	0.00	5.82
LAWB61	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.31	0.26	0.00	0.00	5.82
LAWB61	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.31	0.26	0.00	0.00	5.82
LAWB61	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.31	0.26	0.00	0.00	5.82
LAWB61	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.31	0.26	0.00	0.00	5.82
LAWB61	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.31	0.26	0.00	0.00	5.82
LAWB61	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.31	0.26	0.00	0.00	5.82
LAWB61	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.31	0.26	0.00	0.00	5.82
LAWB61	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.31	0.26	0.00	0.00	5.82
LAWB62	6.19	9.95	0.00	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.81
LAWB62	6.19	9.95	0.00	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.81
LAWB62	6.19	9.95	0.00	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.81
LAWB62	6.19	9.95	0.00	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.81
LAWB62	6.19	9.95	0.00	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.81
LAWB62	6.19	9.95	0.00	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.81
LAWB62	6.19	9.95	0.00	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.81
LAWB62	6.19	9.95	0.00	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.81

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
LAWB38	2.24	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.90	0.00	0.00
LAWB38	2.24	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.90	0.00	0.00
LAWB38	2.24	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.90	0.00	0.00
LAWB38	2.24	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.90	0.00	0.00
LAWB38	2.24	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.90	0.00	0.00
LAWB38	2.24	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.90	0.00	0.00
LAWB38	2.24	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.90	0.00	0.00
LAWB38	2.24	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.90	0.00	0.00
LAWB38	2.24	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.90	0.00	0.00
LAWB38	2.24	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.90	0.00	0.00
LAWB38	2.24	0.00	0.00	0.00	7.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.90	0.00	0.00
LAWB40	2.90	0.00	0.00	0.00	7.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWB40	2.90	0.00	0.00	0.00	7.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWB40	2.90	0.00	0.00	0.00	7.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWB40	2.90	0.00	0.00	0.00	7.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWB40	2.90	0.00	0.00	0.00	7.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWB40	2.90	0.00	0.00	0.00	7.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWB40	2.90	0.00	0.00	0.00	7.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWB40	2.90	0.00	0.00	0.00	7.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWB40	2.90	0.00	0.00	0.00	7.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWB40	2.90	0.00	0.00	0.00	7.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWB40	2.90	0.00	0.00	0.00	7.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWB41	2.91	0.00	0.00	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.82	0.00	0.00
LAWB41	2.91	0.00	0.00	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.82	0.00	0.00
LAWB41	2.91	0.00	0.00	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.82	0.00	0.00
LAWB41	2.91	0.00	0.00	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.82	0.00	0.00
LAWB41	2.91	0.00	0.00	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.82	0.00	0.00
LAWB41	2.91	0.00	0.00	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.82	0.00	0.00
LAWB41	2.91	0.00	0.00	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.82	0.00	0.00
LAWB41	2.91	0.00	0.00	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.82	0.00	0.00
LAWB41	2.91	0.00	0.00	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.82	0.00	0.00
LAWB41	2.91	0.00	0.00	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.82	0.00	0.00
LAWB41	2.91	0.00	0.00	0.00	7.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.82	0.00	0.00
LAWB60	2.98	0.00	0.00	0.00	6.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.96	0.00	0.00
LAWB60	2.98	0.00	0.00	0.00	6.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.96	0.00	0.00
LAWB60	2.98	0.00	0.00	0.00	6.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.96	0.00	0.00
LAWB60	2.98	0.00	0.00	0.00	6.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.96	0.00	0.00
LAWB60	2.98	0.00	0.00	0.00	6.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.96	0.00	0.00
LAWB60	2.98	0.00	0.00	0.00	6.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.96	0.00	0.00
LAWB60	2.98	0.00	0.00	0.00	6.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.96	0.00	0.00
LAWB60	2.98	0.00	0.00	0.00	6.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.96	0.00	0.00
LAWB60	2.98	0.00	0.00	0.00	6.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.96	0.00	0.00
LAWB60	2.98	0.00	0.00	0.00	6.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.96	0.00	0.00
LAWB61	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00
LAWB61	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00
LAWB61	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00
LAWB61	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00
LAWB61	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00
LAWB61	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00
LAWB61	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00
LAWB61	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00
LAWB61	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00
LAWB61	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00
LAWB62	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.54	0.00	0.00
LAWB62	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.54	0.00	0.00
LAWB62	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.54	0.00	0.00
LAWB62	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.54	0.00	0.00
LAWB62	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.54	0.00	0.00
LAWB62	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.54	0.00	0.00
LAWB62	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.54	0.00	0.00
LAWB62	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.54	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
LAWB38	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.53	100.00		
LAWB38	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.53	100.00		
LAWB38	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.53	100.00		
LAWB38	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.53	100.00		
LAWB38	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.53	100.00		
LAWB38	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.53	100.00		
LAWB38	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.53	100.00		
LAWB38	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.53	100.00		
LAWB38	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.53	100.00		
LAWB38	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.53	100.00		
LAWB38	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.53	100.00		
LAWB38	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.53	100.00		
LAWB38	0.00	0.00	0.00	0.00	0.00	0.00	3.09	3.09	4.53	100.00		
LAWB40	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.69	100.00		
LAWB40	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.69	100.00		
LAWB40	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.69	100.00		
LAWB40	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.69	100.00		
LAWB40	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.69	100.00		
LAWB40	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.69	100.00		
LAWB40	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.69	100.00		
LAWB40	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.69	100.00		
LAWB40	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.69	100.00		
LAWB40	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.69	100.00		
LAWB40	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.69	100.00		
LAWB40	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.69	100.00		
LAWB41	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.56	100.00		
LAWB41	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.56	100.00		
LAWB41	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.56	100.00		
LAWB41	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.56	100.00		
LAWB41	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.56	100.00		
LAWB41	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.56	100.00		
LAWB41	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.56	100.00		
LAWB41	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.56	100.00		
LAWB41	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.56	100.00		
LAWB41	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.56	100.00		
LAWB41	0.00	0.00	0.00	0.00	0.00	0.00	3.08	3.08	1.56	100.00		
LAWB60	0.00	0.00	0.00	0.00	0.00	0.00	3.16	3.16	0.93	100.00		
LAWB60	0.00	0.00	0.00	0.00	0.00	0.00	3.16	3.16	0.93	100.00		
LAWB60	0.00	0.00	0.00	0.00	0.00	0.00	3.16	3.16	0.93	100.00		
LAWB60	0.00	0.00	0.00	0.00	0.00	0.00	3.16	3.16	0.93	100.00		
LAWB60	0.00	0.00	0.00	0.00	0.00	0.00	3.16	3.16	0.93	100.00		
LAWB60	0.00	0.00	0.00	0.00	0.00	0.00	3.16	3.16	0.93	100.00		
LAWB60	0.00	0.00	0.00	0.00	0.00	0.00	3.16	3.16	0.93	100.00		
LAWB60	0.00	0.00	0.00	0.00	0.00	0.00	3.16	3.16	0.93	100.00		
LAWB60	0.00	0.00	0.00	0.00	0.00	0.00	3.16	3.16	0.93	100.00		
LAWB60	0.00	0.00	0.00	0.00	0.00	0.00	3.16	3.16	0.93	100.00		
LAWB61	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.89	100.00		
LAWB61	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.89	100.00		
LAWB61	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.89	100.00		
LAWB61	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.89	100.00		
LAWB61	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.89	100.00		
LAWB61	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.89	100.00		
LAWB61	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.89	100.00		
LAWB61	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.89	100.00		
LAWB61	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.89	100.00		
LAWB61	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.89	100.00		
LAWB61	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.89	100.00		
LAWB62	0.00	0.00	0.00	1.40	0.00	0.00	3.16	3.16	1.07	100.00		
LAWB62	0.00	0.00	0.00	1.40	0.00	0.00	3.16	3.16	1.07	100.00		
LAWB62	0.00	0.00	0.00	1.40	0.00	0.00	3.16	3.16	1.07	100.00		
LAWB62	0.00	0.00	0.00	1.40	0.00	0.00	3.16	3.16	1.07	100.00		
LAWB62	0.00	0.00	0.00	1.40	0.00	0.00	3.16	3.16	1.07	100.00		
LAWB62	0.00	0.00	0.00	1.40	0.00	0.00	3.16	3.16	1.07	100.00		
LAWB62	0.00	0.00	0.00	1.40	0.00	0.00	3.16	3.16	1.07	100.00		
LAWB62	0.00	0.00	0.00	1.40	0.00	0.00	3.16	3.16	1.07	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
LAWB62	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	242.18	300.56	2.73
LAWB62	1094.00	0.81	2.031	2,221.508	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	158.32	3007.27	10.83
LAWB62	1462.00	0.81	2.031	2,968.779	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.53	157.10	3303.13	12.01
LAWB62	1830.00	0.81	2.031	3,716.050	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.62	172.77	2797.53	11.78
LAWB63	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.35	37.70	11.15	4.28
LAWB63	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.55	50.04	16.55	5.97
LAWB63	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.76	58.34	18.64	6.61
LAWB63	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.96	73.32	25.47	7.26
LAWB63	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.17	79.36	27.04	6.98
LAWB63	269.00	0.81	2.031	546.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	97.24	39.15	7.95
LAWB63	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.64	107.13	39.47	7.43
LAWB63	545.00	0.81	2.031	1,106.693	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.76	104.79	33.52	6.35
LAWB63	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.84	112.98	37.81	5.30
LAWB63	1094.00	0.81	2.031	2,221.508	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.95	125.91	46.70	4.42
LAWB63	1462.00	0.81	2.031	2,968.779	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.03	166.49	72.65	3.80
LAWB63	1830.00	0.81	2.031	3,716.050	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.15	194.13	1133.00	14.62
LAWB64	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.27	47.79	17.25	
LAWB64	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.45	104.67	52.42	0.94
LAWB64	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.55	146.30	87.74	1.28
LAWB64	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.77	246.57	320.73	3.65
LAWB64	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	240.80	1060.47	9.15
LAWB64	269.00	0.81	2.031	546.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	242.76	3076.50	22.11
LAWB64	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	205.22	3262.23	23.18
LAWB64	545.00	0.81	2.031	1,106.693	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	138.71	2970.00	23.14
LAWB64	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	140.37	2527.30	22.25
LAWB64	1094.00	0.81	2.031	2,221.508	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	118.60	2668.33	23.02
LAWB64	1462.00	0.81	2.031	2,968.779	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.54	150.57	2743.37	23.77
LAWB64	1830.00	0.81	2.031	3,716.050	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	148.61	2341.10	21.01
LAWB65	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.24	46.73	17.14	
LAWB65	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.45	80.07	44.92	1.09
LAWB65	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.57	102.27	71.11	1.27
LAWB65	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.76	139.60	145.40	3.12
LAWB65	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	159.83	227.90	3.99
LAWB65	269.00	0.81	2.031	546.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	186.80	649.04	8.87
LAWB65	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.43	170.45	1073.80	15.24
LAWB65	545.00	0.81	2.031	1,106.693	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.54	130.21	1725.83	37.19
LAWB65	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	136.29	1934.70	45.73
LAWB65	1094.00	0.81	2.031	2,221.508	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.74	121.87	2173.87	49.10
LAWB65	1462.00	0.81	2.031	2,968.779	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.84	133.67	2377.73	50.22
LAWB65	1830.00	0.81	2.031	3,716.050	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.94	144.06	2070.40	52.97
LAWB66	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.17	48.55	18.11	2.47
LAWB66	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.35	77.53	39.60	2.41
LAWB66	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.45	93.43	53.23	2.28
LAWB66	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.57	111.43	65.12	2.86
LAWB66	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.67	116.80	71.65	3.09
LAWB66	269.00	0.81	2.031	546.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.76	149.66	87.26	3.87
LAWB66	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.84	153.46	94.14	3.86
LAWB66	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	158.10	98.66	1.81
LAWB66	735.00	0.81	2.031	1,492.512	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.04	175.06	101.60	2.07
LAWB66	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	165.97	103.07	3.77
LAWB66	1456.00	0.81	2.031	2,956.595	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.22	183.87	154.20	3.63
LAWB66	1827.00	0.81	2.031	3,709.959	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	184.76	764.28	13.46
LAWB67	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.24	50.91	14.97	0.11
LAWB67	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.43	59.86	18.84	0.12
LAWB67	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.54	65.61	21.34	
LAWB67	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.64	85.27	27.90	0.14
LAWB67	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.75	92.70	30.88	0.37
LAWB67	269.00	0.81	2.031	546.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.87	113.32	36.13	0.51
LAWB67	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.95	117.23	42.20	0.28
LAWB67	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.04	125.12	47.36	
LAWB67	735.00	0.81	2.031	1,492.512	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	137.07	46.39	
LAWB67	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	142.11	51.11	0.32
LAWB67	1456.00	0.81	2.031	2,956.595	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	149.88	62.33	0.32
LAWB67	1827.00	0.81	2.031	3,709.959	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.42	166.98	64.66	0.44
LAWB68	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.34	44.78	13.19	2.81
LAWB68	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.54	69.04	26.16	2.19
LAWB68	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.65	84.80	37.33	2.02
LAWB68	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.76	121.13	59.82	2.82
LAWB68	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.87	129.10	66.69	2.88
LAWB68	269.00	0.81	2.031	546.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.95	164.47	88.09	3.34
LAWB68	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.04	154.60	91.31	3.00
LAWB68	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.16	201.90	144.68	1.40

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
LAWB62		211.27	349.55	11.75	1.97								Not Studied
LAWB62		1214.87	2417.80	79.75	1.35								Not Studied
LAWB62		1288.90	2547.37	71.02	1.05								Not Studied
LAWB62		1158.57	2498.27	68.86	1.32								Not Studied
LAWB63		9.87	14.12		1.21								Not Studied
LAWB63		15.52	20.35		1.23								Not Studied
LAWB63		19.44	23.59		1.63								Not Studied
LAWB63		23.63	28.67	1.86	1.71								Not Studied
LAWB63		28.43	32.51	1.80	1.97								Not Studied
LAWB63		36.11	41.89	3.11	2.48								Not Studied
LAWB63		40.31	44.81	2.10	2.35								Not Studied
LAWB63		41.56	47.16	3.02	3.69								Not Studied
LAWB63		43.01	46.76	3.29	2.00								Not Studied
LAWB63		56.81	60.57	2.90	2.10								Not Studied
LAWB63		75.29	91.55	4.40	1.80								Not Studied
LAWB63		479.14	1129.97	41.95	1.23								Not Studied
LAWB64		15.41	19.89		0.97								Not Studied
LAWB64		43.17	57.99	2.02	1.15								Not Studied
LAWB64		72.92	102.63	2.84	1.25								Not Studied
LAWB64		187.07	314.80	8.83	1.26								Not Studied
LAWB64		479.03	968.30	37.28	1.98								Not Studied
LAWB64		1319.93	2897.03	130.46	2.92								Not Studied
LAWB64		1275.47	3182.13	135.77	1.64								Not Studied
LAWB64		1016.97	3066.63	116.90	12.60								Not Studied
LAWB64		890.35	2368.23	109.11	1.02								Not Studied
LAWB64		967.18	2307.00	94.93	0.75								Not Studied
LAWB64		973.54	2434.87	104.69									Not Studied
LAWB64		853.60	2106.77	84.37	0.73								Not Studied
LAWB65		11.60	19.39		0.94								Not Studied
LAWB65		27.42	47.63		0.82								Not Studied
LAWB65		43.53	78.41	2.08	0.75								Not Studied
LAWB65		76.69	145.93	4.00	0.96								Not Studied
LAWB65		101.37	204.47	5.94	0.97								Not Studied
LAWB65		283.52	624.72	16.28	1.05								Not Studied
LAWB65		374.01	971.26	28.31	0.72								Not Studied
LAWB65		496.64	1484.03	60.98	10.91								Not Studied
LAWB65		576.23	1845.83	75.98	0.69								Not Studied
LAWB65		622.69	1975.97	83.90									Not Studied
LAWB65		613.96	2100.87	96.08									Not Studied
LAWB65		582.75	2040.93	85.81									Not Studied
LAWB66		13.35	22.20		0.81								Not Studied
LAWB66		26.52	46.52		1.02								Not Studied
LAWB66		35.19	61.41	1.83	1.08								Not Studied
LAWB66		44.70	75.84	3.02	1.44								Not Studied
LAWB66		46.51	76.48	2.68	1.04								Not Studied
LAWB66		60.50	100.01	4.41	1.08								Not Studied
LAWB66		63.69	100.30	5.39	1.08								Not Studied
LAWB66		68.64	102.63	5.09	1.06								Not Studied
LAWB66		71.57	105.30	5.63	0.92								Not Studied
LAWB66		73.24	105.29	5.39	1.17								Not Studied
LAWB66		94.32	164.75	6.04	0.84								Not Studied
LAWB66		325.24	799.27	25.03	0.97								Not Studied
LAWB67		11.76	11.51		1.94								Not Studied
LAWB67		15.24	11.21		2.34								Not Studied
LAWB67		17.92	10.98		2.45								Not Studied
LAWB67		24.79	12.85		4.08								Not Studied
LAWB67		27.61	13.51		3.54								Not Studied
LAWB67		33.10	15.77	1.75	4.06					0.52			Not Studied
LAWB67		37.54	15.41	2.49	3.87								Not Studied
LAWB67		42.64	15.90	2.48	4.02								Not Studied
LAWB67		42.14	15.24	3.77	3.97			0.24					Not Studied
LAWB67		46.24	16.10	2.60	3.97								Not Studied
LAWB67		48.87	18.34		3.18								Not Studied
LAWB67		54.00	23.72	2.13	3.10								Not Studied
LAWB68		11.66	19.28		1.03								Not Studied
LAWB68		21.40	36.38		0.95								Not Studied
LAWB68		29.14	49.98	1.99	1.14								Not Studied
LAWB68		48.42	82.52	3.30	1.64								Not Studied
LAWB68		53.31	90.40	3.53	1.23								Not Studied
LAWB68		68.47	121.86	4.95	1.37								Not Studied
LAWB68		71.19	127.44	6.42	0.95								Not Studied
LAWB68		103.55	182.92	8.29	1.22								Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
LAWB62		70.05	18.19	-4.13515	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB62		70.05	18.19	-4.13515	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB62		70.05	18.19	-4.13515	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB62		70.05	18.19	-4.13515	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB63		69.70	15.93	9.183689	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB63		69.70	15.93	9.183689	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB63		69.70	15.93	9.183689	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB63		69.70	15.93	9.183689	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB63		69.70	15.93	9.183689	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB63		69.70	15.93	9.183689	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB63		69.70	15.93	9.183689	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB63		69.70	15.93	9.183689	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB63		69.70	15.93	9.183689	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB63		69.70	15.93	9.183689	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB64		70.20	16.217	6.7674344	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB64		70.20	16.217	6.7674344	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB64		70.20	16.217	6.7674344	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB64		70.20	16.217	6.7674344	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB64		70.20	16.217	6.7674344	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB64		70.20	16.217	6.7674344	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB64		70.20	16.217	6.7674344	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB64		70.20	16.217	6.7674344	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB64		70.20	16.217	6.7674344	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB64		70.20	16.217	6.7674344	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB64		70.20	16.217	6.7674344	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB65		68.47	18.173	-1.5104179	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB65		68.47	18.173	-1.5104179	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB65		68.47	18.173	-1.5104179	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB65		68.47	18.173	-1.5104179	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB65		68.47	18.173	-1.5104179	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB65		68.47	18.173	-1.5104179	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB65		68.47	18.173	-1.5104179	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB65		68.47	18.173	-1.5104179	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB65		68.47	18.173	-1.5104179	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB65		68.47	18.173	-1.5104179	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB66		68.64	19.725	-10.5387775	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB66		68.64	19.725	-10.5387775	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB66		68.64	19.725	-10.5387775	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB66		68.64	19.725	-10.5387775	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB66		68.64	19.725	-10.5387775	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB66		68.64	19.725	-10.5387775	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB66		68.64	19.725	-10.5387775	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB66		68.64	19.725	-10.5387775	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB66		68.64	19.725	-10.5387775	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB66		68.64	19.725	-10.5387775	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB67		68.49	16.671	6.9453182	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB67		68.49	16.671	6.9453182	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB67		68.49	16.671	6.9453182	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB67		68.49	16.671	6.9453182	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB67		68.49	16.671	6.9453182	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB67		68.49	16.671	6.9453182	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB67		68.49	16.671	6.9453182	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB67		68.49	16.671	6.9453182	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB67		68.49	16.671	6.9453182	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB67		68.49	16.671	6.9453182	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB67		68.49	16.671	6.9453182	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB68		67.01	19.69	-7.729003	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB68		67.01	19.69	-7.729003	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB68		67.01	19.69	-7.729003	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB68		67.01	19.69	-7.729003	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB68		67.01	19.69	-7.729003	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB68		67.01	19.69	-7.729003	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB68		67.01	19.69	-7.729003	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB68		67.01	19.69	-7.729003	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
LAWB62	6.19	9.95	0.00	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.81
LAWB62	6.19	9.95	0.00	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.81
LAWB62	6.19	9.95	0.00	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.81
LAWB62	6.19	9.95	0.00	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.81
LAWB63	6.58	9.95	0.00	9.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.05
LAWB63	6.58	9.95	0.00	9.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.05
LAWB63	6.58	9.95	0.00	9.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.05
LAWB63	6.58	9.95	0.00	9.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.05
LAWB63	6.58	9.95	0.00	9.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.05
LAWB63	6.58	9.95	0.00	9.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.05
LAWB63	6.58	9.95	0.00	9.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.05
LAWB63	6.58	9.95	0.00	9.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.05
LAWB63	6.58	9.95	0.00	9.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.05
LAWB63	6.58	9.95	0.00	9.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	5.05
LAWB64	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30	0.26	0.00	0.00	5.83
LAWB64	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30	0.26	0.00	0.00	5.83
LAWB64	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30	0.26	0.00	0.00	5.83
LAWB64	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30	0.26	0.00	0.00	5.83
LAWB64	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30	0.26	0.00	0.00	5.83
LAWB64	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30	0.26	0.00	0.00	5.83
LAWB64	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30	0.26	0.00	0.00	5.83
LAWB64	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30	0.26	0.00	0.00	5.83
LAWB64	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30	0.26	0.00	0.00	5.83
LAWB64	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30	0.26	0.00	0.00	5.83
LAWB64	6.21	9.97	0.00	6.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30	0.26	0.00	0.00	5.83
LAWB65	6.19	9.94	0.00	6.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.30
LAWB65	6.19	9.94	0.00	6.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.30
LAWB65	6.19	9.94	0.00	6.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.30
LAWB65	6.19	9.94	0.00	6.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.30
LAWB65	6.19	9.94	0.00	6.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.30
LAWB65	6.19	9.94	0.00	6.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.30
LAWB65	6.19	9.94	0.00	6.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.30
LAWB65	6.19	9.94	0.00	6.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.30
LAWB65	6.19	9.94	0.00	6.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.30
LAWB66	6.20	9.96	0.00	8.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.31	0.26	0.00	0.00	4.31
LAWB66	6.20	9.96	0.00	8.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.31	0.26	0.00	0.00	4.31
LAWB66	6.20	9.96	0.00	8.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.31	0.26	0.00	0.00	4.31
LAWB66	6.20	9.96	0.00	8.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.31	0.26	0.00	0.00	4.31
LAWB66	6.20	9.96	0.00	8.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.31	0.26	0.00	0.00	4.31
LAWB66	6.20	9.96	0.00	8.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.31	0.26	0.00	0.00	4.31
LAWB66	6.20	9.96	0.00	8.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.31	0.26	0.00	0.00	4.31
LAWB66	6.20	9.96	0.00	8.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.31	0.26	0.00	0.00	4.31
LAWB66	6.20	9.96	0.00	8.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.31	0.26	0.00	0.00	4.31
LAWB66	6.20	9.96	0.00	8.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.31	0.26	0.00	0.00	4.31
LAWB67	6.19	9.94	0.00	5.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.30
LAWB67	6.19	9.94	0.00	5.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.30
LAWB67	6.19	9.94	0.00	5.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.30
LAWB67	6.19	9.94	0.00	5.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.30
LAWB67	6.19	9.94	0.00	5.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.30
LAWB67	6.19	9.94	0.00	5.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.30
LAWB67	6.19	9.94	0.00	5.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.30
LAWB67	6.19	9.94	0.00	5.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.30
LAWB67	6.19	9.94	0.00	5.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.30
LAWB67	6.19	9.94	0.00	5.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.30
LAWB67	6.19	9.94	0.00	5.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.30
LAWB68	6.19	8.44	0.00	8.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.31
LAWB68	6.19	8.44	0.00	8.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.31
LAWB68	6.19	8.44	0.00	8.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.31
LAWB68	6.19	8.44	0.00	8.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.31
LAWB68	6.19	8.44	0.00	8.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.31
LAWB68	6.19	8.44	0.00	8.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.31
LAWB68	6.19	8.44	0.00	8.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.31
LAWB68	6.19	8.44	0.00	8.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.31

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
LAWB62	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.54	0.00	0.00
LAWB62	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.54	0.00	0.00
LAWB62	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.54	0.00	0.00
LAWB62	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.54	0.00	0.00
LAWB63	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.94	0.00	0.00
LAWB63	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.94	0.00	0.00
LAWB63	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.94	0.00	0.00
LAWB63	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.94	0.00	0.00
LAWB63	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.94	0.00	0.00
LAWB63	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.94	0.00	0.00
LAWB63	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.94	0.00	0.00
LAWB63	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.94	0.00	0.00
LAWB63	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.94	0.00	0.00
LAWB63	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.94	0.00	0.00
LAWB64	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.64	0.00	0.00
LAWB64	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.64	0.00	0.00
LAWB64	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.64	0.00	0.00
LAWB64	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.64	0.00	0.00
LAWB64	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.64	0.00	0.00
LAWB64	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.64	0.00	0.00
LAWB64	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.64	0.00	0.00
LAWB64	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.64	0.00	0.00
LAWB64	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.64	0.00	0.00
LAWB64	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.64	0.00	0.00
LAWB64	2.98	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.64	0.00	0.00
LAWB65	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.49	0.00	0.00
LAWB65	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.49	0.00	0.00
LAWB65	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.49	0.00	0.00
LAWB65	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.49	0.00	0.00
LAWB65	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.49	0.00	0.00
LAWB65	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.49	0.00	0.00
LAWB65	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.49	0.00	0.00
LAWB65	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.49	0.00	0.00
LAWB65	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.49	0.00	0.00
LAWB65	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.49	0.00	0.00
LAWB66	2.98	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.61	0.00	0.00
LAWB66	2.98	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.61	0.00	0.00
LAWB66	2.98	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.61	0.00	0.00
LAWB66	2.98	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.61	0.00	0.00
LAWB66	2.98	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.61	0.00	0.00
LAWB66	2.98	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.61	0.00	0.00
LAWB66	2.98	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.61	0.00	0.00
LAWB66	2.98	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.61	0.00	0.00
LAWB66	2.98	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.61	0.00	0.00
LAWB66	2.98	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.61	0.00	0.00
LAWB67	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.50	0.00	0.00
LAWB67	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.50	0.00	0.00
LAWB67	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.50	0.00	0.00
LAWB67	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.50	0.00	0.00
LAWB67	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.50	0.00	0.00
LAWB67	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.50	0.00	0.00
LAWB67	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.50	0.00	0.00
LAWB67	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.50	0.00	0.00
LAWB67	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.50	0.00	0.00
LAWB67	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.50	0.00	0.00
LAWB68	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.52	0.00	0.00
LAWB68	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.52	0.00	0.00
LAWB68	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.52	0.00	0.00
LAWB68	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.52	0.00	0.00
LAWB68	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.52	0.00	0.00
LAWB68	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.52	0.00	0.00
LAWB68	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.52	0.00	0.00
LAWB68	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.52	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
LAWB62	0.00	0.00	0.00	1.40	0.00	0.00	3.16	3.16	1.07	100.00		
LAWB62	0.00	0.00	0.00	1.40	0.00	0.00	3.16	3.16	1.07	100.00		
LAWB62	0.00	0.00	0.00	1.40	0.00	0.00	3.16	3.16	1.07	100.00		
LAWB62	0.00	0.00	0.00	1.40	0.00	0.00	3.16	3.16	1.07	100.00		
LAWB63	0.00	0.00	0.00	1.40	0.00	0.00	5.82	3.16	1.02	100.00		
LAWB63	0.00	0.00	0.00	1.40	0.00	0.00	5.82	3.16	1.02	100.00		
LAWB63	0.00	0.00	0.00	1.40	0.00	0.00	5.82	3.16	1.02	100.00		
LAWB63	0.00	0.00	0.00	1.40	0.00	0.00	5.82	3.16	1.02	100.00		
LAWB63	0.00	0.00	0.00	1.40	0.00	0.00	5.82	3.16	1.02	100.00		
LAWB63	0.00	0.00	0.00	1.40	0.00	0.00	5.82	3.16	1.02	100.00		
LAWB63	0.00	0.00	0.00	1.40	0.00	0.00	5.82	3.16	1.02	100.00		
LAWB63	0.00	0.00	0.00	1.40	0.00	0.00	5.82	3.16	1.02	100.00		
LAWB63	0.00	0.00	0.00	1.40	0.00	0.00	5.82	3.16	1.02	100.00		
LAWB63	0.00	0.00	0.00	1.40	0.00	0.00	5.82	3.16	1.02	100.00		
LAWB64	0.00	0.00	0.00	1.40	0.00	0.00	5.18	3.17	0.86	100.00		
LAWB64	0.00	0.00	0.00	1.40	0.00	0.00	5.18	3.17	0.86	100.00		
LAWB64	0.00	0.00	0.00	1.40	0.00	0.00	5.18	3.17	0.86	100.00		
LAWB64	0.00	0.00	0.00	1.40	0.00	0.00	5.18	3.17	0.86	100.00		
LAWB64	0.00	0.00	0.00	1.40	0.00	0.00	5.18	3.17	0.86	100.00		
LAWB64	0.00	0.00	0.00	1.40	0.00	0.00	5.18	3.17	0.86	100.00		
LAWB64	0.00	0.00	0.00	1.40	0.00	0.00	5.18	3.17	0.86	100.00		
LAWB64	0.00	0.00	0.00	1.40	0.00	0.00	5.18	3.17	0.86	100.00		
LAWB64	0.00	0.00	0.00	1.40	0.00	0.00	5.18	3.17	0.86	100.00		
LAWB64	0.00	0.00	0.00	1.40	0.00	0.00	5.18	3.17	0.86	100.00		
LAWB64	0.00	0.00	0.00	1.40	0.00	0.00	5.18	3.17	0.86	100.00		
LAWB65	0.00	0.00	0.00	1.39	0.00	0.00	4.66	3.16	1.17	100.00		
LAWB65	0.00	0.00	0.00	1.39	0.00	0.00	4.66	3.16	1.17	100.00		
LAWB65	0.00	0.00	0.00	1.39	0.00	0.00	4.66	3.16	1.17	100.00		
LAWB65	0.00	0.00	0.00	1.39	0.00	0.00	4.66	3.16	1.17	100.00		
LAWB65	0.00	0.00	0.00	1.39	0.00	0.00	4.66	3.16	1.17	100.00		
LAWB65	0.00	0.00	0.00	1.39	0.00	0.00	4.66	3.16	1.17	100.00		
LAWB65	0.00	0.00	0.00	1.39	0.00	0.00	4.66	3.16	1.17	100.00		
LAWB65	0.00	0.00	0.00	1.39	0.00	0.00	4.66	3.16	1.17	100.00		
LAWB65	0.00	0.00	0.00	1.39	0.00	0.00	4.66	3.16	1.17	100.00		
LAWB65	0.00	0.00	0.00	1.39	0.00	0.00	4.66	3.16	1.17	100.00		
LAWB66	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.93	100.00		
LAWB66	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.93	100.00		
LAWB66	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.93	100.00		
LAWB66	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.93	100.00		
LAWB66	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.93	100.00		
LAWB66	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.93	100.00		
LAWB66	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.93	100.00		
LAWB66	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.93	100.00		
LAWB66	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.93	100.00		
LAWB66	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.93	100.00		
LAWB66	0.00	0.00	0.00	1.40	0.00	0.00	3.17	3.17	0.93	100.00		
LAWB67	0.00	0.00	0.00	1.39	0.00	0.00	3.16	3.16	4.16	100.00		
LAWB67	0.00	0.00	0.00	1.39	0.00	0.00	3.16	3.16	4.16	100.00		
LAWB67	0.00	0.00	0.00	1.39	0.00	0.00	3.16	3.16	4.16	100.00		
LAWB67	0.00	0.00	0.00	1.39	0.00	0.00	3.16	3.16	4.16	100.00		
LAWB67	0.00	0.00	0.00	1.39	0.00	0.00	3.16	3.16	4.16	100.00		
LAWB67	0.00	0.00	0.00	1.39	0.00	0.00	3.16	3.16	4.16	100.00		
LAWB67	0.00	0.00	0.00	1.39	0.00	0.00	3.16	3.16	4.16	100.00		
LAWB67	0.00	0.00	0.00	1.39	0.00	0.00	3.16	3.16	4.16	100.00		
LAWB67	0.00	0.00	0.00	1.39	0.00	0.00	3.16	3.16	4.16	100.00		
LAWB67	0.00	0.00	0.00	1.39	0.00	0.00	3.16	3.16	4.16	100.00		
LAWB67	0.00	0.00	0.00	1.39	0.00	0.00	3.16	3.16	4.16	100.00		
LAWB68	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.11	100.00		
LAWB68	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.11	100.00		
LAWB68	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.11	100.00		
LAWB68	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.11	100.00		
LAWB68	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.11	100.00		
LAWB68	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.11	100.00		
LAWB68	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.11	100.00		
LAWB68	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.11	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
LAWB68	735.00	0.81	2.031	1,492.512	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	206.63	292.19	1.93
LAWB68	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	159.19	1615.77	21.84
LAWB68	1456.00	0.81	2.031	2,956.595	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.43	146.31	2061.50	36.74
LAWB68	1827.00	0.81	2.031	3,709.959	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	156.02	1926.07	42.57
LAWB69	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.36	44.25	18.82	8.96
LAWB69	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.56	50.94	22.90	10.24
LAWB69	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.64	56.52	25.63	10.16
LAWB69	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.76	70.31	27.37	12.64
LAWB69	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	68.60	27.89	12.45
LAWB69	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	94.39	40.25	14.93
LAWB69	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.26	79.60	35.31	8.52
LAWB69	733.00	0.81	2.031	1,488.451	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	90.00	43.66	7.69
LAWB69	1094.00	0.81	2.031	2,221.508	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.41	117.00	59.24	6.21
LAWB69	1457.00	0.81	2.031	2,958.626	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.52	132.06	73.59	6.11
LAWB69	1820.00	0.81	2.031	3,695.744	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.62	167.25	94.97	5.91
LAWB70	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.32	69.01	42.81	1.65
LAWB70	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.55	115.00	110.87	2.21
LAWB70	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.65	149.63	180.80	2.93
LAWB70	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.76	194.63	361.40	6.14
LAWB70	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.87	173.40	559.97	9.28
LAWB70	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.95	238.89	1254.30	24.57
LAWB70	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.26	174.09	1942.00	51.73
LAWB70	733.00	0.81	2.031	1,488.451	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.33	167.94	2143.00	52.93
LAWB70	1094.00	0.81	2.031	2,221.508	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.38	136.33	2583.17	58.26
LAWB70	1457.00	0.81	2.031	2,958.626	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.43	146.97	3017.00	62.33
LAWB70	1820.00	0.81	2.031	3,695.744	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.52	169.72	2902.67	72.61
LAWB71	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.28	52.44	21.50	1.29
LAWB71	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.51	93.76	57.66	1.17
LAWB71	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.64	127.83	92.42	1.44
LAWB71	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.77	174.97	159.87	2.57
LAWB71	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.84	178.50	283.50	3.35
LAWB71	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	269.75	979.85	9.76
LAWB71	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.26	169.49	2226.37	38.38
LAWB71	733.00	0.81	2.031	1,488.451	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	164.64	2478.83	41.64
LAWB71	1094.00	0.81	2.031	2,221.508	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.42	135.17	2641.80	41.19
LAWB71	1457.00	0.81	2.031	2,958.626	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.53	146.18	2704.13	44.11
LAWB71	1820.00	0.81	2.031	3,695.744	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.57	161.98	2738.30	47.67
LAWB72	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.24	58.14	33.65	2.71
LAWB72	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.42	90.23	76.16	2.74
LAWB72	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.54	106.63	95.80	2.99
LAWB72	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.68	125.77	116.20	4.08
LAWB72	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.76	118.03	110.87	4.18
LAWB72	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.84	167.93	157.77	5.94
LAWB72	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	151.36	153.84	5.26
LAWB72	733.00	0.81	2.031	1,488.451	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	164.09	155.05	6.58
LAWB72	1094.00	0.81	2.031	2,221.508	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.26	192.64	168.40	7.25
LAWB72	1457.00	0.81	2.031	2,958.626	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.37	201.49	193.95	5.93
LAWB72	1820.00	0.81	2.031	3,695.744	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	234.66	272.49	6.68
LAWB73	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.25	39.51	12.74	5.89
LAWB73	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.43	53.02	19.14	5.43
LAWB73	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.58	61.95	22.91	5.11
LAWB73	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.67	74.47	28.00	5.59
LAWB73	182.00	0.81	2.031	369.574	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.74	83.02	31.29	5.99
LAWB73	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	101.19	38.34	5.24
LAWB73	1097.00	0.81	2.031	2,227.600	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	131.79	48.26	5.32
LAWB73	1454.00	0.81	2.031	2,952.534	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	153.91	64.24	4.88
LAWB73	1833.00	0.81	2.031	3,722.142	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.42	168.97	75.68	4.20
LAWB74	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.23	42.20	14.72	4.89
LAWB74	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.45	61.45	24.56	4.00
LAWB74	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.57	70.48	29.88	3.51
LAWB74	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.66	84.54	36.16	4.07
LAWB74	182.00	0.81	2.031	369.574	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.77	95.53	42.04	4.31
LAWB74	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	128.50	54.59	4.95
LAWB74	1097.00	0.81	2.031	2,227.600	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.22	149.39	64.52	4.72
LAWB74	1454.00	0.81	2.031	2,952.534	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	182.92	81.23	4.52
LAWB74	1833.00	0.81	2.031	3,722.142	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.41	217.50	136.90	4.15
LAWB75	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.16	36.10	12.57	3.97
LAWB75	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.34	51.43	20.40	3.40
LAWB75	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.52	60.40	25.29	3.09
LAWB75	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.66	75.57	32.71	3.60
LAWB75	182.00	0.81	2.031	369.574	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.76	79.99	35.50	3.67
LAWB75	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.07	103.95	46.25	3.39

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
LAWB68		149.06	332.11	12.88	1.15								Not Studied
LAWB68		552.06	1862.53	71.04	2.12								Not Studied
LAWB68		616.74	2399.10	98.08	0.95				0.45				Not Studied
LAWB68		679.89	2208.70	99.97	1.06								Not Studied
LAWB69		11.65	23.44		0.77								Not Studied
LAWB69		16.10	29.38		1.32								Not Studied
LAWB69		17.58	33.01		1.24								Not Studied
LAWB69		24.22	43.48		1.47								Not Studied
LAWB69		23.89	41.89		1.53								Not Studied
LAWB69		32.08	58.27	2.14	1.74								Not Studied
LAWB69		27.84	49.03	1.84	2.57								Not Studied
LAWB69		31.60	55.24	2.78	1.63								Not Studied
LAWB69		45.80	81.97	3.05	1.39								Not Studied
LAWB69		50.60	93.12	3.06	1.11								Not Studied
LAWB69		65.18	125.67	3.38	1.30			0.70					Not Studied
LAWB70		21.95	46.00		0.74								Not Studied
LAWB70		57.02	116.40	2.26	1.19								Not Studied
LAWB70		87.42	178.60	3.52	0.99								Not Studied
LAWB70		166.33	414.10	6.85									Not Studied
LAWB70		223.77	544.50	10.45									Not Studied
LAWB70		414.50	1165.27	32.13	0.85								Not Studied
LAWB70		619.03	1773.30	62.88	9.26			0.51					Not Studied
LAWB70		647.71	2137.57	71.85	0.67			0.27					Not Studied
LAWB70		716.15	2647.23	80.74									Not Studied
LAWB70		857.98	3479.63	100.23									Not Studied
LAWB70		845.32	3547.13	96.38	0.76			0.88					Not Studied
LAWB71		13.35	27.19		0.93								Not Studied
LAWB71		33.63	69.81		1.36								Not Studied
LAWB71		50.41	106.23	2.32	1.18								Not Studied
LAWB71		90.14	209.13	3.47	0.82								Not Studied
LAWB71		140.57	322.27	5.80									Not Studied
LAWB71		347.41	971.23	24.10	1.19								Not Studied
LAWB71		705.15	2345.87	84.23	10.23			0.49	0.43				Not Studied
LAWB71		735.18	2730.60	95.72	1.12			0.27					Not Studied
LAWB71		770.52	3033.87	90.07									Not Studied
LAWB71		824.82	3516.63	102.57									Not Studied
LAWB71		747.65	3334.47	89.27	0.99			0.81					Not Studied
LAWB72		15.88	37.78										Not Studied
LAWB72		35.12	83.36		0.92								Not Studied
LAWB72		42.44	100.97	2.41	0.87								Not Studied
LAWB72		54.48	123.13	2.79									Not Studied
LAWB72		53.20	127.43	2.58	0.78								Not Studied
LAWB72		72.90	163.47	4.73	0.74								Not Studied
LAWB72		67.54	158.38	4.25	1.92								Not Studied
LAWB72		67.32	158.60	4.91									Not Studied
LAWB72		84.18	186.62	4.87									Not Studied
LAWB72		89.80	244.32	5.31									Not Studied
LAWB72		111.84	268.02	5.92				0.68					Not Studied
LAWB73		10.76	15.47		0.90								Not Studied
LAWB73		16.38	24.20		1.16								Not Studied
LAWB73		20.39	28.95		1.07								Not Studied
LAWB73		24.72	33.67		1.08								Not Studied
LAWB73		28.83	38.25		1.26								Not Studied
LAWB73		39.31	50.45	2.48	1.51								Not Studied
LAWB73		52.60	66.62	2.68	1.93								Not Studied
LAWB73		63.08	82.30	3.30	1.26								Not Studied
LAWB73		70.94	92.49	3.50	1.15								Not Studied
LAWB74		12.26	16.50		0.98								Not Studied
LAWB74		20.71	29.03		1.20								Not Studied
LAWB74		25.42	34.21		1.13								Not Studied
LAWB74		30.92	40.18	1.77	1.00								Not Studied
LAWB74		36.03	46.12		1.36								Not Studied
LAWB74		51.80	65.25	3.12	1.31								Not Studied
LAWB74		64.61	78.99	3.19	1.80								Not Studied
LAWB74		80.76	102.09	4.19	1.10								Not Studied
LAWB74		101.58	146.96	5.49	0.92								Not Studied
LAWB75		9.70	11.73		1.10								Not Studied
LAWB75		16.17	19.70		1.16								Not Studied
LAWB75		20.90	23.72		1.18								Not Studied
LAWB75		25.78	27.33		1.20								Not Studied
LAWB75		28.38	29.08		1.42								Not Studied
LAWB75		42.15	40.31	2.09	1.71								Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
LAWB68		67.01	19.69	-7.729003	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB68		67.01	19.69	-7.729003	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB68		67.01	19.69	-7.729003	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB68		67.01	19.69	-7.729003	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB69		71.75	16.613	2.0358596	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB69		71.75	16.613	2.0358596	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB69		71.75	16.613	2.0358596	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB69		71.75	16.613	2.0358596	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB69		71.75	16.613	2.0358596	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB69		71.75	16.613	2.0358596	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB69		71.75	16.613	2.0358596	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB69		71.75	16.613	2.0358596	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB69		71.75	16.613	2.0358596	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB69		71.75	16.613	2.0358596	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB70		71.84	16.043	5.1172046	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB70		71.84	16.043	5.1172046	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB70		71.84	16.043	5.1172046	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB70		71.84	16.043	5.1172046	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB70		71.84	16.043	5.1172046	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB70		71.84	16.043	5.1172046	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB70		71.84	16.043	5.1172046	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB70		71.84	16.043	5.1172046	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB70		71.84	16.043	5.1172046	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB70		71.84	16.043	5.1172046	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB70		71.84	16.043	5.1172046	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB71		70.33	16.052	7.4860559	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB71		70.33	16.052	7.4860559	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB71		70.33	16.052	7.4860559	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB71		70.33	16.052	7.4860559	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB71		70.33	16.052	7.4860559	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB71		70.33	16.052	7.4860559	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB71		70.33	16.052	7.4860559	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB71		70.33	16.052	7.4860559	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB71		70.33	16.052	7.4860559	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB71		70.33	16.052	7.4860559	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB72		71.29	16.531	3.2413997	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB72		71.29	16.531	3.2413997	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB72		71.29	16.531	3.2413997	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB72		71.29	16.531	3.2413997	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB72		71.29	16.531	3.2413997	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB72		71.29	16.531	3.2413997	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB72		71.29	16.531	3.2413997	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB72		71.29	16.531	3.2413997	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB72		71.29	16.531	3.2413997	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB73		69.28	17.445	1.307156	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB73		69.28	17.445	1.307156	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB73		69.28	17.445	1.307156	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB73		69.28	17.445	1.307156	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB73		69.28	17.445	1.307156	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB73		69.28	17.445	1.307156	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB73		69.28	17.445	1.307156	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB73		69.28	17.445	1.307156	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB73		69.28	17.445	1.307156	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB74		69.94	16.861	3.5407472	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB74		69.94	16.861	3.5407472	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB74		69.94	16.861	3.5407472	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB74		69.94	16.861	3.5407472	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB74		69.94	16.861	3.5407472	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB74		69.94	16.861	3.5407472	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB74		69.94	16.861	3.5407472	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB74		69.94	16.861	3.5407472	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB74		69.94	16.861	3.5407472	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB75		71.32	16.776	1.8047732	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB75		71.32	16.776	1.8047732	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB75		71.32	16.776	1.8047732	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB75		71.32	16.776	1.8047732	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB75		71.32	16.776	1.8047732	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB75		71.32	16.776	1.8047732	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
LAWB68	6.19	8.44	0.00	8.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.31
LAWB68	6.19	8.44	0.00	8.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.31
LAWB68	6.19	8.44	0.00	8.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.31
LAWB68	6.19	8.44	0.00	8.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.26	0.00	0.00	4.31
LAWB69	6.15	12.33	0.00	10.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	4.61
LAWB69	6.15	12.33	0.00	10.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	4.61
LAWB69	6.15	12.33	0.00	10.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	4.61
LAWB69	6.15	12.33	0.00	10.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	4.61
LAWB69	6.15	12.33	0.00	10.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	4.61
LAWB69	6.15	12.33	0.00	10.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	4.61
LAWB69	6.15	12.33	0.00	10.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	4.61
LAWB69	6.15	12.33	0.00	10.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	4.61
LAWB69	6.15	12.33	0.00	10.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	4.61
LAWB70	6.16	12.35	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	4.62
LAWB70	6.16	12.35	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	4.62
LAWB70	6.16	12.35	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	4.62
LAWB70	6.16	12.35	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	4.62
LAWB70	6.16	12.35	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	4.62
LAWB70	6.16	12.35	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	4.62
LAWB70	6.16	12.35	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	4.62
LAWB70	6.16	12.35	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	4.62
LAWB70	6.16	12.35	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	4.62
LAWB70	6.16	12.35	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	4.62
LAWB71	6.16	10.80	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	4.62
LAWB71	6.16	10.80	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	4.62
LAWB71	6.16	10.80	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	4.62
LAWB71	6.16	10.80	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	4.62
LAWB71	6.16	10.80	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	4.62
LAWB71	6.16	10.80	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	4.62
LAWB71	6.16	10.80	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	4.62
LAWB71	6.16	10.80	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	4.62
LAWB71	6.16	10.80	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	4.62
LAWB72	6.15	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	4.11
LAWB72	6.15	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	4.11
LAWB72	6.15	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	4.11
LAWB72	6.15	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	4.11
LAWB72	6.15	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	4.11
LAWB72	6.15	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	4.11
LAWB72	6.15	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	4.11
LAWB72	6.15	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	4.11
LAWB72	6.15	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	4.11
LAWB73	6.19	9.95	0.00	9.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.05
LAWB73	6.19	9.95	0.00	9.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.05
LAWB73	6.19	9.95	0.00	9.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.05
LAWB73	6.19	9.95	0.00	9.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.05
LAWB73	6.19	9.95	0.00	9.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.05
LAWB73	6.19	9.95	0.00	9.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.05
LAWB73	6.19	9.95	0.00	9.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.05
LAWB73	6.19	9.95	0.00	9.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.05
LAWB74	6.22	10.11	0.00	8.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	0.26	0.00	0.00	5.33
LAWB74	6.22	10.11	0.00	8.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	0.26	0.00	0.00	5.33
LAWB74	6.22	10.11	0.00	8.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	0.26	0.00	0.00	5.33
LAWB74	6.22	10.11	0.00	8.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	0.26	0.00	0.00	5.33
LAWB74	6.22	10.11	0.00	8.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	0.26	0.00	0.00	5.33
LAWB74	6.22	10.11	0.00	8.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	0.26	0.00	0.00	5.33
LAWB74	6.22	10.11	0.00	8.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	0.26	0.00	0.00	5.33
LAWB74	6.22	10.11	0.00	8.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	0.26	0.00	0.00	5.33
LAWB75	6.19	11.79	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.30
LAWB75	6.19	11.79	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.30
LAWB75	6.19	11.79	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.30
LAWB75	6.19	11.79	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.30
LAWB75	6.19	11.79	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.30
LAWB75	6.19	11.79	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.30

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
LAWB68	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.52	0.00	0.00
LAWB68	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.52	0.00	0.00
LAWB68	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.52	0.00	0.00
LAWB68	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.52	0.00	0.00
LAWB69	2.97	0.00	0.00	0.00	6.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.96	0.00	0.00
LAWB69	2.97	0.00	0.00	0.00	6.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.96	0.00	0.00
LAWB69	2.97	0.00	0.00	0.00	6.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.96	0.00	0.00
LAWB69	2.97	0.00	0.00	0.00	6.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.96	0.00	0.00
LAWB69	2.97	0.00	0.00	0.00	6.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.96	0.00	0.00
LAWB69	2.97	0.00	0.00	0.00	6.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.96	0.00	0.00
LAWB69	2.97	0.00	0.00	0.00	6.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.96	0.00	0.00
LAWB69	2.97	0.00	0.00	0.00	6.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.96	0.00	0.00
LAWB69	2.97	0.00	0.00	0.00	6.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.96	0.00	0.00
LAWB70	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.02	0.00	0.00
LAWB70	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.02	0.00	0.00
LAWB70	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.02	0.00	0.00
LAWB70	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.02	0.00	0.00
LAWB70	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.02	0.00	0.00
LAWB70	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.02	0.00	0.00
LAWB70	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.02	0.00	0.00
LAWB70	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.02	0.00	0.00
LAWB70	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.02	0.00	0.00
LAWB70	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.02	0.00	0.00
LAWB71	2.98	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.05	0.00	0.00
LAWB71	2.98	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.05	0.00	0.00
LAWB71	2.98	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.05	0.00	0.00
LAWB71	2.98	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.05	0.00	0.00
LAWB71	2.98	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.05	0.00	0.00
LAWB71	2.98	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.05	0.00	0.00
LAWB71	2.98	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.05	0.00	0.00
LAWB71	2.98	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.05	0.00	0.00
LAWB71	2.98	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.05	0.00	0.00
LAWB71	2.98	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.05	0.00	0.00
LAWB72	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.98	0.00	0.00
LAWB72	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.98	0.00	0.00
LAWB72	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.98	0.00	0.00
LAWB72	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.98	0.00	0.00
LAWB72	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.98	0.00	0.00
LAWB72	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.98	0.00	0.00
LAWB72	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.98	0.00	0.00
LAWB72	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.98	0.00	0.00
LAWB72	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.98	0.00	0.00
LAWB73	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.53	0.00	0.00
LAWB73	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.53	0.00	0.00
LAWB73	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.53	0.00	0.00
LAWB73	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.53	0.00	0.00
LAWB73	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.53	0.00	0.00
LAWB73	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.53	0.00	0.00
LAWB73	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.53	0.00	0.00
LAWB73	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.53	0.00	0.00
LAWB73	2.97	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.53	0.00	0.00
LAWB74	2.98	0.00	0.00	0.00	5.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.73	0.00	0.00
LAWB74	2.98	0.00	0.00	0.00	5.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.73	0.00	0.00
LAWB74	2.98	0.00	0.00	0.00	5.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.73	0.00	0.00
LAWB74	2.98	0.00	0.00	0.00	5.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.73	0.00	0.00
LAWB74	2.98	0.00	0.00	0.00	5.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.73	0.00	0.00
LAWB74	2.98	0.00	0.00	0.00	5.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.73	0.00	0.00
LAWB74	2.98	0.00	0.00	0.00	5.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.73	0.00	0.00
LAWB74	2.98	0.00	0.00	0.00	5.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.73	0.00	0.00
LAWB74	2.98	0.00	0.00	0.00	5.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.73	0.00	0.00
LAWB75	1.50	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.48	0.00	0.00
LAWB75	1.50	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.48	0.00	0.00
LAWB75	1.50	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.48	0.00	0.00
LAWB75	1.50	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.48	0.00	0.00
LAWB75	1.50	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.48	0.00	0.00
LAWB75	1.50	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.48	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
LAWB68	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.11	100.00		
LAWB68	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.11	100.00		
LAWB68	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.11	100.00		
LAWB68	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.11	100.00		
LAWB69	0.00	0.00	0.00	0.00	0.00	0.00	4.57	3.15	0.94	100.00		
LAWB69	0.00	0.00	0.00	0.00	0.00	0.00	4.57	3.15	0.94	100.00		
LAWB69	0.00	0.00	0.00	0.00	0.00	0.00	4.57	3.15	0.94	100.00		
LAWB69	0.00	0.00	0.00	0.00	0.00	0.00	4.57	3.15	0.94	100.00		
LAWB69	0.00	0.00	0.00	0.00	0.00	0.00	4.57	3.15	0.94	100.00		
LAWB69	0.00	0.00	0.00	0.00	0.00	0.00	4.57	3.15	0.94	100.00		
LAWB69	0.00	0.00	0.00	0.00	0.00	0.00	4.57	3.15	0.94	100.00		
LAWB69	0.00	0.00	0.00	0.00	0.00	0.00	4.57	3.15	0.94	100.00		
LAWB69	0.00	0.00	0.00	0.00	0.00	0.00	4.57	3.15	0.94	100.00		
LAWB69	0.00	0.00	0.00	0.00	0.00	0.00	4.57	3.15	0.94	100.00		
LAWB70	0.00	0.00	0.00	0.00	0.00	0.00	5.16	3.15	0.83	100.00		
LAWB70	0.00	0.00	0.00	0.00	0.00	0.00	5.16	3.15	0.83	100.00		
LAWB70	0.00	0.00	0.00	0.00	0.00	0.00	5.16	3.15	0.83	100.00		
LAWB70	0.00	0.00	0.00	0.00	0.00	0.00	5.16	3.15	0.83	100.00		
LAWB70	0.00	0.00	0.00	0.00	0.00	0.00	5.16	3.15	0.83	100.00		
LAWB70	0.00	0.00	0.00	0.00	0.00	0.00	5.16	3.15	0.83	100.00		
LAWB70	0.00	0.00	0.00	0.00	0.00	0.00	5.16	3.15	0.83	100.00		
LAWB70	0.00	0.00	0.00	0.00	0.00	0.00	5.16	3.15	0.83	100.00		
LAWB70	0.00	0.00	0.00	0.00	0.00	0.00	5.16	3.15	0.83	100.00		
LAWB70	0.00	0.00	0.00	0.00	0.00	0.00	5.16	3.15	0.83	100.00		
LAWB71	0.00	0.00	0.00	1.55	0.00	0.00	5.16	3.16	0.77	100.00		
LAWB71	0.00	0.00	0.00	1.55	0.00	0.00	5.16	3.16	0.77	100.00		
LAWB71	0.00	0.00	0.00	1.55	0.00	0.00	5.16	3.16	0.77	100.00		
LAWB71	0.00	0.00	0.00	1.55	0.00	0.00	5.16	3.16	0.77	100.00		
LAWB71	0.00	0.00	0.00	1.55	0.00	0.00	5.16	3.16	0.77	100.00		
LAWB71	0.00	0.00	0.00	1.55	0.00	0.00	5.16	3.16	0.77	100.00		
LAWB71	0.00	0.00	0.00	1.55	0.00	0.00	5.16	3.16	0.77	100.00		
LAWB71	0.00	0.00	0.00	1.55	0.00	0.00	5.16	3.16	0.77	100.00		
LAWB71	0.00	0.00	0.00	1.55	0.00	0.00	5.16	3.16	0.77	100.00		
LAWB71	0.00	0.00	0.00	1.55	0.00	0.00	5.16	3.16	0.77	100.00		
LAWB72	0.00	0.00	0.00	0.00	0.00	0.00	5.15	3.15	0.90	100.00		
LAWB72	0.00	0.00	0.00	0.00	0.00	0.00	5.15	3.15	0.90	100.00		
LAWB72	0.00	0.00	0.00	0.00	0.00	0.00	5.15	3.15	0.90	100.00		
LAWB72	0.00	0.00	0.00	0.00	0.00	0.00	5.15	3.15	0.90	100.00		
LAWB72	0.00	0.00	0.00	0.00	0.00	0.00	5.15	3.15	0.90	100.00		
LAWB72	0.00	0.00	0.00	0.00	0.00	0.00	5.15	3.15	0.90	100.00		
LAWB72	0.00	0.00	0.00	0.00	0.00	0.00	5.15	3.15	0.90	100.00		
LAWB72	0.00	0.00	0.00	0.00	0.00	0.00	5.15	3.15	0.90	100.00		
LAWB72	0.00	0.00	0.00	0.00	0.00	0.00	5.15	3.15	0.90	100.00		
LAWB72	0.00	0.00	0.00	0.00	0.00	0.00	5.15	3.15	0.90	100.00		
LAWB73	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.08	100.00		
LAWB73	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.08	100.00		
LAWB73	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.08	100.00		
LAWB73	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.08	100.00		
LAWB73	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.08	100.00		
LAWB73	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.08	100.00		
LAWB73	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.08	100.00		
LAWB73	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.08	100.00		
LAWB73	0.00	0.00	0.00	1.40	0.00	0.00	4.67	3.16	1.08	100.00		
LAWB74	0.00	0.00	0.00	1.40	0.00	0.00	4.69	3.18	0.95	100.00		
LAWB74	0.00	0.00	0.00	1.40	0.00	0.00	4.69	3.18	0.95	100.00		
LAWB74	0.00	0.00	0.00	1.40	0.00	0.00	4.69	3.18	0.95	100.00		
LAWB74	0.00	0.00	0.00	1.40	0.00	0.00	4.69	3.18	0.95	100.00		
LAWB74	0.00	0.00	0.00	1.40	0.00	0.00	4.69	3.18	0.95	100.00		
LAWB74	0.00	0.00	0.00	1.40	0.00	0.00	4.69	3.18	0.95	100.00		
LAWB74	0.00	0.00	0.00	1.40	0.00	0.00	4.69	3.18	0.95	100.00		
LAWB74	0.00	0.00	0.00	1.40	0.00	0.00	4.69	3.18	0.95	100.00		
LAWB74	0.00	0.00	0.00	1.40	0.00	0.00	4.69	3.18	0.95	100.00		
LAWB75	0.00	0.00	0.00	1.39	0.00	0.00	4.66	3.16	1.18	100.00		
LAWB75	0.00	0.00	0.00	1.39	0.00	0.00	4.66	3.16	1.18	100.00		
LAWB75	0.00	0.00	0.00	1.39	0.00	0.00	4.66	3.16	1.18	100.00		
LAWB75	0.00	0.00	0.00	1.39	0.00	0.00	4.66	3.16	1.18	100.00		
LAWB75	0.00	0.00	0.00	1.39	0.00	0.00	4.66	3.16	1.18	100.00		
LAWB75	0.00	0.00	0.00	1.39	0.00	0.00	4.66	3.16	1.18	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
LAWB75	1097.00	0.81	2.031	2,227.600	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	113.88	45.47	3.59
LAWB75	1454.00	0.81	2.031	2,952.534	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	149.68	58.46	4.30
LAWB75	1833.00	0.81	2.031	3,722.142	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.44	151.92	63.14	4.26
LAWB76	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.24	42.69	15.37	5.27
LAWB76	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.43	56.97	22.21	4.81
LAWB76	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.58	63.40	24.80	4.44
LAWB76	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.67	76.05	30.75	5.31
LAWB76	182.00	0.81	2.031	369.574	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.77	78.04	30.79	5.26
LAWB76	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.06	100.81	38.73	5.64
LAWB76	1097.00	0.81	2.031	2,227.600	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.27	112.98	42.56	6.27
LAWB76	1454.00	0.81	2.031	2,952.534	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.37	129.34	41.86	6.12
LAWB76	1833.00	0.81	2.031	3,722.142	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.46	131.86	45.49	6.24
LAWB77	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.04	52.03	27.73	1.79
LAWB77	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.24	97.25	87.78	1.36
LAWB77	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.37	116.43	120.37	1.64
LAWB77	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.47	140.80	149.87	2.87
LAWB77	182.00	0.81	2.031	369.574	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.55	143.27	151.93	3.09
LAWB77	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.84	161.66	208.55	4.04
LAWB77	1097.00	0.81	2.031	2,227.600	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.07	154.40	603.99	11.04
LAWB77	1454.00	0.81	2.031	2,952.534	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	163.76	1043.43	21.54
LAWB77	1833.00	0.81	2.031	3,722.142	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	197.41	1061.63	23.06
LAWB78	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.58	70.59	46.94	2.25
LAWB78	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.74	100.80	82.23	2.54
LAWB78	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.84	97.18	87.37	2.91
LAWB78	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.93	120.93	95.80	3.43
LAWB78	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	129.42	104.62	4.24
LAWB78	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.26	138.72	101.72	3.91
LAWB78	1095.00	0.81	2.031	2,223.538	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.43	141.24	114.06	4.56
LAWB78	1477.00	0.81	2.031	2,999.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.54	152.47	132.96	4.65
LAWB78	1842.00	0.81	2.031	3,740.418	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.54	215.40	171.98	7.77
LAWB79	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.35	67.28	41.78	2.39
LAWB79	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.56	98.16	75.37	2.30
LAWB79	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.66	98.84	77.37	2.86
LAWB79	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.77	111.33	84.58	3.40
LAWB79	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	135.25	106.84	4.37
LAWB79	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	144.03	106.22	4.38
LAWB79	1095.00	0.81	2.031	2,223.538	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	150.65	116.01	5.77
LAWB79	1477.00	0.81	2.031	2,999.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.42	169.44	126.04	6.69
LAWB79	1842.00	0.81	2.031	3,740.418	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	183.49	122.64	7.69
LAWB80	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.25	56.41	33.76	3.16
LAWB80	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.43	76.67	56.28	3.00
LAWB80	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.57	77.37	57.75	3.46
LAWB80	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.65	81.59	62.66	4.26
LAWB80	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	95.15	71.01	4.57
LAWB80	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	109.47	73.45	5.10
LAWB80	1095.00	0.81	2.031	2,223.538	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	112.31	79.43	6.17
LAWB80	1477.00	0.81	2.031	2,999.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	114.97	80.91	5.92
LAWB80	1842.00	0.81	2.031	3,740.418	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.36	136.34	80.39	7.70
LAWB81	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.24	59.15	34.46	2.77
LAWB81	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.45	93.90	73.19	2.56
LAWB81	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.56	100.90	87.12	3.06
LAWB81	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.66	122.53	112.77	3.85
LAWB81	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.95	133.67	128.10	4.60
LAWB81	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	168.80	146.88	5.89
LAWB81	1095.00	0.81	2.031	2,223.538	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.27	150.05	150.24	6.16
LAWB81	1477.00	0.81	2.031	2,999.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.27	163.10	189.37	6.33
LAWB81	1842.00	0.81	2.031	3,740.418	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.32	187.65	407.15	12.66
LAWB82	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.22	39.85	15.58	1.09
LAWB82	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.48	84.39	53.06	1.13
LAWB82	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.57	102.77	85.43	1.60
LAWB82	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.64	141.43	156.57	3.15
LAWB82	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.97	176.48	320.33	5.83
LAWB82	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.07	193.93	428.68	6.89
LAWB82	1095.00	0.81	2.031	2,223.538	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	144.01	1296.20	18.41
LAWB82	1477.00	0.81	2.031	2,999.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	150.80	2065.77	31.61
LAWB82	1842.00	0.81	2.031	3,740.418	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.36	146.63	2209.33	41.49
LAWB83	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.16	52.35	19.06	1.66
LAWB83	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.33	84.45	44.99	0.98
LAWB83	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.53	103.37	70.56	1.26
LAWB83	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.67	133.53	136.10	2.50
LAWB83	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.75	171.99	290.16	3.54
LAWB83	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.84	172.52	484.63	7.27

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
LAWB75		50.65	44.36	2.23	2.40								Not Studied
LAWB75		67.82	59.82	3.06	1.76								Not Studied
LAWB75		63.39	54.68	3.22	1.49								Not Studied
LAWB76		12.57	14.64		1.00								Not Studied
LAWB76		19.08	22.41		1.08								Not Studied
LAWB76		21.59	24.11		1.16								Not Studied
LAWB76		24.88	26.48		1.14								Not Studied
LAWB76		27.40	27.59		1.20								Not Studied
LAWB76		38.66	37.19	2.11	1.56								Not Studied
LAWB76		44.47	39.57	1.98	2.03			0.33					Not Studied
LAWB76		53.43	47.32	2.64	1.60								Not Studied
LAWB76		52.89	44.32	2.24	1.43								Not Studied
LAWB77		13.68	29.53		0.89								Not Studied
LAWB77		40.27	93.38	1.81	0.78								Not Studied
LAWB77		52.00	126.50	2.23									Not Studied
LAWB77		64.00	136.20	3.28									Not Studied
LAWB77		65.52	139.17	2.79									Not Studied
LAWB77		91.45	212.44	4.59									Not Studied
LAWB77		197.37	560.43	12.29	2.21								Not Studied
LAWB77		313.38	1079.03	24.54									Not Studied
LAWB77		304.31	1109.00	26.01									Not Studied
LAWB78		16.24	80.68		0.88								Not Studied
LAWB78		28.71	133.87	2.08	0.79								Not Studied
LAWB78		30.02	130.97										Not Studied
LAWB78		31.79	161.07	2.44	0.97								Not Studied
LAWB78		37.30	191.18	3.42									Not Studied
LAWB78		34.35	180.42	3.01	0.75								Not Studied
LAWB78		40.28	180.77	3.19	1.39								Not Studied
LAWB78		48.51	225.08	3.99	0.73								Not Studied
LAWB78		68.35	327.20	6.32									Not Studied
LAWB79		16.58	62.59		0.70								Not Studied
LAWB79		30.90	108.80	2.09	0.83								Not Studied
LAWB79		31.42	102.83										Not Studied
LAWB79		34.03	125.47	2.23	0.84								Not Studied
LAWB79		45.84	171.50	3.84									Not Studied
LAWB79		42.43	154.21	3.33									Not Studied
LAWB79		47.66	158.61	3.60	1.37								Not Studied
LAWB79		55.54	189.25	4.65	0.73								Not Studied
LAWB79		60.52	214.54	5.61									Not Studied
LAWB80		13.33	35.79	9.45									Not Studied
LAWB80		23.40	60.81	14.33									Not Studied
LAWB80		23.45	60.58	13.44									Not Studied
LAWB80		24.76	63.36	14.22									Not Studied
LAWB80		29.28	75.34	18.78									Not Studied
LAWB80		29.71	74.98	19.02									Not Studied
LAWB80		33.48	80.59	20.51	1.20								Not Studied
LAWB80		35.75	86.39	23.28	0.69								Not Studied
LAWB80		41.72	99.97	24.54									Not Studied
LAWB81		16.70	38.59		0.76								Not Studied
LAWB81		36.28	81.52	1.81	0.76								Not Studied
LAWB81		42.24	94.58	3.49									Not Studied
LAWB81		50.74	112.87	2.60	0.82								Not Studied
LAWB81		60.35	142.49	3.80									Not Studied
LAWB81		70.05	161.52	3.85	0.68								Not Studied
LAWB81		72.35	152.84	3.54	1.23								Not Studied
LAWB81		87.81	187.49	4.96	0.72						0.75		Not Studied
LAWB81		151.49	463.82	12.68									Not Studied
LAWB82		10.36	22.43		1.57								Not Studied
LAWB82		31.60	73.71		1.32								Not Studied
LAWB82		45.80	105.23	2.79	1.03								Not Studied
LAWB82		76.40	201.57	4.24	1.33								Not Studied
LAWB82		159.50	424.94	8.76	0.72								Not Studied
LAWB82		190.17	548.39	11.40	1.72								Not Studied
LAWB82		470.01	1391.30	33.05	4.42								Not Studied
LAWB82		644.14	1991.43	60.58	1.99								Not Studied
LAWB82		715.48	2795.03	66.04	1.02								Not Studied
LAWB83		13.03	21.38		1.06								Not Studied
LAWB83		27.93	48.61		0.93								Not Studied
LAWB83		40.85	74.59		2.11								Not Studied
LAWB83		72.52	151.27	2.40	0.70								Not Studied
LAWB83		121.34	266.84	6.01									Not Studied
LAWB83		198.36	477.16	8.63									Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
LAWB75		71.32	16.776	1.8047732	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB75		71.32	16.776	1.8047732	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB75		71.32	16.776	1.8047732	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB76		72.71	16.773	-0.3927169	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB76		72.71	16.773	-0.3927169	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB76		72.71	16.773	-0.3927169	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB76		72.71	16.773	-0.3927169	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB76		72.71	16.773	-0.3927169	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB76		72.71	16.773	-0.3927169	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB76		72.71	16.773	-0.3927169	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB76		72.71	16.773	-0.3927169	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB77		71.36	14.995	11.8137965	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB77		71.36	14.995	11.8137965	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB77		71.36	14.995	11.8137965	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB77		71.36	14.995	11.8137965	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB77		71.36	14.995	11.8137965	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB77		71.36	14.995	11.8137965	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB77		71.36	14.995	11.8137965	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB77		71.36	14.995	11.8137965	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB78		72.51	16.549	1.1802623	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB78		72.51	16.549	1.1802623	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB78		72.51	16.549	1.1802623	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB78		72.51	16.549	1.1802623	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB78		72.51	16.549	1.1802623	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB78		72.51	16.549	1.1802623	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB78		72.51	16.549	1.1802623	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB78		72.51	16.549	1.1802623	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB79		72.46	16.536	1.3338587	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB79		72.46	16.536	1.3338587	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB79		72.46	16.536	1.3338587	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB79		72.46	16.536	1.3338587	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB79		72.46	16.536	1.3338587	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB79		72.46	16.536	1.3338587	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB79		72.46	16.536	1.3338587	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB79		72.46	16.536	1.3338587	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB80		72.47	16.535	1.3362995	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB80		72.47	16.535	1.3362995	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB80		72.47	16.535	1.3362995	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB80		72.47	16.535	1.3362995	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB80		72.47	16.535	1.3362995	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB80		72.47	16.535	1.3362995	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB80		72.47	16.535	1.3362995	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB80		72.47	16.535	1.3362995	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB81		71.45	16.534	2.9743103	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB81		71.45	16.534	2.9743103	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB81		71.45	16.534	2.9743103	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB81		71.45	16.534	2.9743103	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB81		71.45	16.534	2.9743103	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB81		71.45	16.534	2.9743103	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB81		71.45	16.534	2.9743103	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB81		71.45	16.534	2.9743103	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB82		66.76	22.815	-24.990331	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB82		66.76	22.815	-24.990331	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB82		66.76	22.815	-24.990331	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB82		66.76	22.815	-24.990331	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB82		66.76	22.815	-24.990331	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB82		66.76	22.815	-24.990331	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB82		66.76	22.815	-24.990331	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB82		66.76	22.815	-24.990331	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB83		68.63	18.259	-2.2574992	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB83		68.63	18.259	-2.2574992	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB83		68.63	18.259	-2.2574992	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB83		68.63	18.259	-2.2574992	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB83		68.63	18.259	-2.2574992	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB83		68.63	18.259	-2.2574992	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
LAWB75	6.19	11.79	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.30
LAWB75	6.19	11.79	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.30
LAWB75	6.19	11.79	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.30
LAWB76	6.19	11.79	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.81
LAWB76	6.19	11.79	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.81
LAWB76	6.19	11.79	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.81
LAWB76	6.19	11.79	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.81
LAWB76	6.19	11.79	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.81
LAWB76	6.19	11.79	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.81
LAWB76	6.19	11.79	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.81
LAWB76	6.19	11.79	0.00	8.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.26	0.00	0.00	5.81
LAWB77	6.16	12.35	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20	0.23	0.00	0.00	4.12
LAWB77	6.16	12.35	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20	0.23	0.00	0.00	4.12
LAWB77	6.16	12.35	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20	0.23	0.00	0.00	4.12
LAWB77	6.16	12.35	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20	0.23	0.00	0.00	4.12
LAWB77	6.16	12.35	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20	0.23	0.00	0.00	4.12
LAWB77	6.16	12.35	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20	0.23	0.00	0.00	4.12
LAWB77	6.16	12.35	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20	0.23	0.00	0.00	4.12
LAWB77	6.16	12.35	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20	0.23	0.00	0.00	4.12
LAWB78	6.16	12.35	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	3.06
LAWB78	6.16	12.35	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	3.06
LAWB78	6.16	12.35	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	3.06
LAWB78	6.16	12.35	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	3.06
LAWB78	6.16	12.35	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	3.06
LAWB78	6.16	12.35	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	3.06
LAWB78	6.16	12.35	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	3.06
LAWB78	6.16	12.35	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	0.23	0.00	0.00	3.06
LAWB79	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	3.51
LAWB79	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	3.51
LAWB79	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	3.51
LAWB79	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	3.51
LAWB79	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	3.51
LAWB79	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	3.51
LAWB79	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	3.51
LAWB79	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	3.51
LAWB80	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	1.99	0.00	0.00	3.51
LAWB80	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	1.99	0.00	0.00	3.51
LAWB80	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	1.99	0.00	0.00	3.51
LAWB80	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	1.99	0.00	0.00	3.51
LAWB80	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	1.99	0.00	0.00	3.51
LAWB80	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	1.99	0.00	0.00	3.51
LAWB80	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	1.99	0.00	0.00	3.51
LAWB81	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	4.26
LAWB81	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	4.26
LAWB81	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	4.26
LAWB81	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	4.26
LAWB81	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	4.26
LAWB81	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	4.26
LAWB81	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	4.26
LAWB81	6.16	12.34	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.23	0.00	0.00	4.26
LAWB82	6.16	10.10	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.52	0.23	0.00	0.00	4.27
LAWB82	6.16	10.10	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.52	0.23	0.00	0.00	4.27
LAWB82	6.16	10.10	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.52	0.23	0.00	0.00	4.27
LAWB82	6.16	10.10	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.52	0.23	0.00	0.00	4.27
LAWB82	6.16	10.10	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.52	0.23	0.00	0.00	4.27
LAWB82	6.16	10.10	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.52	0.23	0.00	0.00	4.27
LAWB82	6.16	10.10	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.52	0.23	0.00	0.00	4.27
LAWB82	6.16	10.10	0.00	7.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.52	0.23	0.00	0.00	4.27
LAWB83	6.18	10.04	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31
LAWB83	6.18	10.04	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31
LAWB83	6.18	10.04	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31
LAWB83	6.18	10.04	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31
LAWB83	6.18	10.04	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31
LAWB83	6.18	10.04	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
LAWB75	1.50	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.48	0.00	0.00
LAWB75	1.50	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.48	0.00	0.00
LAWB75	1.50	0.00	0.00	0.00	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.48	0.00	0.00
LAWB76	1.50	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.37	0.00	0.00
LAWB76	1.50	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.37	0.00	0.00
LAWB76	1.50	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.37	0.00	0.00
LAWB76	1.50	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.37	0.00	0.00
LAWB76	1.50	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.37	0.00	0.00
LAWB76	1.50	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.37	0.00	0.00
LAWB76	1.50	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.37	0.00	0.00
LAWB76	1.50	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.37	0.00	0.00
LAWB77	2.98	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.03	0.00	0.00
LAWB77	2.98	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.03	0.00	0.00
LAWB77	2.98	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.03	0.00	0.00
LAWB77	2.98	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.03	0.00	0.00
LAWB77	2.98	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.03	0.00	0.00
LAWB77	2.98	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.03	0.00	0.00
LAWB77	2.98	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.03	0.00	0.00
LAWB77	2.98	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.03	0.00	0.00
LAWB78	2.98	0.00	0.00	0.00	9.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB78	2.98	0.00	0.00	0.00	9.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB78	2.98	0.00	0.00	0.00	9.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB78	2.98	0.00	0.00	0.00	9.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB78	2.98	0.00	0.00	0.00	9.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB78	2.98	0.00	0.00	0.00	9.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB78	2.98	0.00	0.00	0.00	9.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB78	2.98	0.00	0.00	0.00	9.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.08	0.00	0.00
LAWB79	2.97	0.00	0.00	0.00	8.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.75	0.00	0.00
LAWB79	2.97	0.00	0.00	0.00	8.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.75	0.00	0.00
LAWB79	2.97	0.00	0.00	0.00	8.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.75	0.00	0.00
LAWB79	2.97	0.00	0.00	0.00	8.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.75	0.00	0.00
LAWB79	2.97	0.00	0.00	0.00	8.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.75	0.00	0.00
LAWB79	2.97	0.00	0.00	0.00	8.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.75	0.00	0.00
LAWB79	2.97	0.00	0.00	0.00	8.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.75	0.00	0.00
LAWB79	2.97	0.00	0.00	0.00	8.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.75	0.00	0.00
LAWB80	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.99	0.00	0.00
LAWB80	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.99	0.00	0.00
LAWB80	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.99	0.00	0.00
LAWB80	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.99	0.00	0.00
LAWB80	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.99	0.00	0.00
LAWB80	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.99	0.00	0.00
LAWB80	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.99	0.00	0.00
LAWB80	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.99	0.00	0.00
LAWB81	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.99	0.00	0.00
LAWB81	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.99	0.00	0.00
LAWB81	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.99	0.00	0.00
LAWB81	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.99	0.00	0.00
LAWB81	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.99	0.00	0.00
LAWB81	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.99	0.00	0.00
LAWB81	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.99	0.00	0.00
LAWB81	2.97	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.99	0.00	0.00
LAWB82	1.48	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.53	0.00	0.00
LAWB82	1.48	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.53	0.00	0.00
LAWB82	1.48	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.53	0.00	0.00
LAWB82	1.48	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.53	0.00	0.00
LAWB82	1.48	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.53	0.00	0.00
LAWB82	1.48	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.53	0.00	0.00
LAWB82	1.48	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.53	0.00	0.00
LAWB82	1.48	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.53	0.00	0.00
LAWB82	1.48	0.00	0.00	0.00	6.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.53	0.00	0.00
LAWB83	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00
LAWB83	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00
LAWB83	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00
LAWB83	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00
LAWB83	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00
LAWB83	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
LAWB75	0.00	0.00	0.00	1.39	0.00	0.00	4.66	3.16	1.18	100.00		
LAWB75	0.00	0.00	0.00	1.39	0.00	0.00	4.66	3.16	1.18	100.00		
LAWB75	0.00	0.00	0.00	1.39	0.00	0.00	4.66	3.16	1.18	100.00		
LAWB76	0.00	0.00	0.00	0.00	0.00	0.00	4.66	3.16	1.20	100.00		
LAWB76	0.00	0.00	0.00	0.00	0.00	0.00	4.66	3.16	1.20	100.00		
LAWB76	0.00	0.00	0.00	0.00	0.00	0.00	4.66	3.16	1.20	100.00		
LAWB76	0.00	0.00	0.00	0.00	0.00	0.00	4.66	3.16	1.20	100.00		
LAWB76	0.00	0.00	0.00	0.00	0.00	0.00	4.66	3.16	1.20	100.00		
LAWB76	0.00	0.00	0.00	0.00	0.00	0.00	4.66	3.16	1.20	100.00		
LAWB76	0.00	0.00	0.00	0.00	0.00	0.00	4.66	3.16	1.20	100.00		
LAWB76	0.00	0.00	0.00	0.00	0.00	0.00	4.66	3.16	1.20	100.00		
LAWB76	0.00	0.00	0.00	0.00	0.00	0.00	4.66	3.16	1.20	100.00		
LAWB77	0.00	0.00	0.00	1.55	0.00	0.00	5.16	3.16	0.81	100.00		
LAWB77	0.00	0.00	0.00	1.55	0.00	0.00	5.16	3.16	0.81	100.00		
LAWB77	0.00	0.00	0.00	1.55	0.00	0.00	5.16	3.16	0.81	100.00		
LAWB77	0.00	0.00	0.00	1.55	0.00	0.00	5.16	3.16	0.81	100.00		
LAWB77	0.00	0.00	0.00	1.55	0.00	0.00	5.16	3.16	0.81	100.00		
LAWB77	0.00	0.00	0.00	1.55	0.00	0.00	5.16	3.16	0.81	100.00		
LAWB77	0.00	0.00	0.00	1.55	0.00	0.00	5.16	3.16	0.81	100.00		
LAWB77	0.00	0.00	0.00	1.55	0.00	0.00	5.16	3.16	0.81	100.00		
LAWB78	0.00	0.00	0.00	0.00	0.00	0.00	4.01	3.16	0.80	100.00		
LAWB78	0.00	0.00	0.00	0.00	0.00	0.00	4.01	3.16	0.80	100.00		
LAWB78	0.00	0.00	0.00	0.00	0.00	0.00	4.01	3.16	0.80	100.00		
LAWB78	0.00	0.00	0.00	0.00	0.00	0.00	4.01	3.16	0.80	100.00		
LAWB78	0.00	0.00	0.00	0.00	0.00	0.00	4.01	3.16	0.80	100.00		
LAWB78	0.00	0.00	0.00	0.00	0.00	0.00	4.01	3.16	0.80	100.00		
LAWB78	0.00	0.00	0.00	0.00	0.00	0.00	4.01	3.16	0.80	100.00		
LAWB78	0.00	0.00	0.00	0.00	0.00	0.00	4.01	3.16	0.80	100.00		
LAWB78	0.00	0.00	0.00	0.00	0.00	0.00	4.01	3.16	0.80	100.00		
LAWB79	0.00	0.00	0.00	0.00	0.00	0.00	4.00	3.15	0.87	100.00		
LAWB79	0.00	0.00	0.00	0.00	0.00	0.00	4.00	3.15	0.87	100.00		
LAWB79	0.00	0.00	0.00	0.00	0.00	0.00	4.00	3.15	0.87	100.00		
LAWB79	0.00	0.00	0.00	0.00	0.00	0.00	4.00	3.15	0.87	100.00		
LAWB79	0.00	0.00	0.00	0.00	0.00	0.00	4.00	3.15	0.87	100.00		
LAWB79	0.00	0.00	0.00	0.00	0.00	0.00	4.00	3.15	0.87	100.00		
LAWB79	0.00	0.00	0.00	0.00	0.00	0.00	4.00	3.15	0.87	100.00		
LAWB79	0.00	0.00	0.00	0.00	0.00	0.00	4.00	3.15	0.87	100.00		
LAWB79	0.00	0.00	0.00	0.00	0.00	0.00	4.00	3.15	0.87	100.00		
LAWB80	0.00	0.00	0.00	0.00	0.00	0.00	4.00	3.15	0.87	100.00		
LAWB80	0.00	0.00	0.00	0.00	0.00	0.00	4.00	3.15	0.87	100.00		
LAWB80	0.00	0.00	0.00	0.00	0.00	0.00	4.00	3.15	0.87	100.00		
LAWB80	0.00	0.00	0.00	0.00	0.00	0.00	4.00	3.15	0.87	100.00		
LAWB80	0.00	0.00	0.00	0.00	0.00	0.00	4.00	3.15	0.87	100.00		
LAWB80	0.00	0.00	0.00	0.00	0.00	0.00	4.00	3.15	0.87	100.00		
LAWB80	0.00	0.00	0.00	0.00	0.00	0.00	4.00	3.15	0.87	100.00		
LAWB80	0.00	0.00	0.00	0.00	0.00	0.00	4.00	3.15	0.87	100.00		
LAWB81	0.00	0.00	0.00	0.00	0.00	0.00	5.00	3.15	0.89	100.00		
LAWB81	0.00	0.00	0.00	0.00	0.00	0.00	5.00	3.15	0.89	100.00		
LAWB81	0.00	0.00	0.00	0.00	0.00	0.00	5.00	3.15	0.89	100.00		
LAWB81	0.00	0.00	0.00	0.00	0.00	0.00	5.00	3.15	0.89	100.00		
LAWB81	0.00	0.00	0.00	0.00	0.00	0.00	5.00	3.15	0.89	100.00		
LAWB81	0.00	0.00	0.00	0.00	0.00	0.00	5.00	3.15	0.89	100.00		
LAWB81	0.00	0.00	0.00	0.00	0.00	0.00	5.00	3.15	0.89	100.00		
LAWB81	0.00	0.00	0.00	0.00	0.00	0.00	5.00	3.15	0.89	100.00		
LAWB81	0.00	0.00	0.00	0.00	0.00	0.00	5.00	3.15	0.89	100.00		
LAWB82	0.00	0.00	0.00	0.00	0.00	0.00	5.01	3.16	0.77	100.00		
LAWB82	0.00	0.00	0.00	0.00	0.00	0.00	5.01	3.16	0.77	100.00		
LAWB82	0.00	0.00	0.00	0.00	0.00	0.00	5.01	3.16	0.77	100.00		
LAWB82	0.00	0.00	0.00	0.00	0.00	0.00	5.01	3.16	0.77	100.00		
LAWB82	0.00	0.00	0.00	0.00	0.00	0.00	5.01	3.16	0.77	100.00		
LAWB82	0.00	0.00	0.00	0.00	0.00	0.00	5.01	3.16	0.77	100.00		
LAWB82	0.00	0.00	0.00	0.00	0.00	0.00	5.01	3.16	0.77	100.00		
LAWB82	0.00	0.00	0.00	0.00	0.00	0.00	5.01	3.16	0.77	100.00		
LAWB82	0.00	0.00	0.00	0.00	0.00	0.00	5.01	3.16	0.77	100.00		
LAWB83	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		
LAWB83	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		
LAWB83	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		
LAWB83	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		
LAWB83	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		
LAWB83	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
LAWB83	363.00	0.81	2.031	737.118	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.93	161.41	690.16	9.12
LAWB83	544.00	0.81	2.031	1,104.662	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.07	138.59	1278.57	24.25
LAWB83	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	111.76	1604.40	32.21
LAWB83	1455.00	0.81	2.031	2,954.565	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.26	109.47	1893.27	51.62
LAWB83	1821.00	0.81	2.031	3,697.775	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.32	110.87	1959.33	47.28
LAWB84	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.16	55.73	21.02	1.53
LAWB84	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.34	88.87	48.99	0.92
LAWB84	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.57	108.33	78.49	1.67
LAWB84	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.66	140.70	155.13	2.66
LAWB84	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.76	172.48	343.54	4.04
LAWB84	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	186.85	655.48	9.31
LAWB84	363.00	0.81	2.031	737.118	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.96	147.55	860.37	10.85
LAWB84	544.00	0.81	2.031	1,104.662	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.06	136.29	1491.00	28.46
LAWB84	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.18	116.35	1810.67	34.80
LAWB84	1455.00	0.81	2.031	2,954.565	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.32	110.88	1872.80	54.60
LAWB84	1821.00	0.81	2.031	3,697.775	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	109.81	1990.80	47.27
LAWB85	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.11	55.69	23.29	0.69
LAWB85	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.27	88.47	61.62	0.34
LAWB85	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.42	114.33	163.30	1.38
LAWB85	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.57	129.67	386.07	3.58
LAWB85	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.65	147.63	631.70	5.31
LAWB85	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.76	133.53	830.90	9.16
LAWB85	363.00	0.81	2.031	737.118	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	121.98	1094.17	11.26
LAWB85	544.00	0.81	2.031	1,104.662	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.95	115.74	1892.20	30.60
LAWB85	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	99.25	2051.40	39.39
LAWB85	1455.00	0.81	2.031	2,954.565	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.27	98.37	2337.87	60.52
LAWB85	1821.00	0.81	2.031	3,697.775	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.37	92.20	2694.83	53.27
LAWB86	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.14	75.22	48.31	1.07
LAWB86	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.26	114.87	161.57	1.55
LAWB86	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.43	121.00	265.40	3.26
LAWB86	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.56	136.53	492.47	7.86
LAWB86	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.65	150.47	820.94	10.95
LAWB86	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.75	142.13	1153.97	22.50
LAWB86	363.00	0.81	2.031	737.118	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	121.84	1262.57	22.68
LAWB86	544.00	0.81	2.031	1,104.662	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.97	119.54	1792.27	44.42
LAWB86	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	106.70	1884.03	52.58
LAWB86	1455.00	0.81	2.031	2,954.565	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	105.12	2008.30	64.89
LAWB86	1821.00	0.81	2.031	3,697.775	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.37	96.57	2257.57	61.90
LAWB87	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.03	50.52	21.40	0.98
LAWB87	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.22	71.71	40.03	0.78
LAWB87	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.34	72.25	42.86	0.86
LAWB87	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.46	81.67	48.14	1.08
LAWB87	538.00	0.81	2.031	1,092.478	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	101.80	66.68	1.24
LAWB87	1458.00	0.81	2.031	2,960.657	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	112.57	71.90	1.74
LAWB87	1925.00	0.81	2.031	3,908.960	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.23	147.52	97.35	2.48
LAWB88	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.04	43.30	15.86	3.72
LAWB88	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.23	52.58	20.81	3.50
LAWB88	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.33	56.49	22.49	4.39
LAWB88	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.45	63.64	24.91	3.89
LAWB88	538.00	0.81	2.031	1,092.478	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.86	76.69	29.77	3.87
LAWB88	1458.00	0.81	2.031	2,960.657	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	90.92	29.76	4.52
LAWB88	1925.00	0.81	2.031	3,908.960	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.26	109.45	39.79	4.76
LAWB89	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.22	58.47	18.60	2.06
LAWB89	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.35	86.09	39.49	1.16
LAWB89	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.46	90.89	48.92	1.39
LAWB89	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.74	141.60	209.01	3.51
LAWB89	364.00	0.81	2.031	739.149	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	129.22	419.59	4.61
LAWB89	546.00	0.81	2.031	1,108.723	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.96	126.45	563.83	11.17
LAWB89	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.03	138.99	805.89	18.90
LAWB89	1097.00	0.81	2.031	2,227.600	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.12	134.65	771.42	18.02
LAWB89	1849.00	0.81	2.031	3,754.632	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.26	148.75	1027.23	28.27
LAWB90	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.28	57.26	19.41	2.10
LAWB90	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.37	81.51	39.39	1.15
LAWB90	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.45	88.52	50.11	1.34
LAWB90	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.76	136.12	88.08	2.48
LAWB90	364.00	0.81	2.031	739.149	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.86	135.36	86.49	2.20
LAWB90	546.00	0.81	2.031	1,108.723	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.97	134.52	87.56	2.19
LAWB90	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	158.46	91.06	2.73
LAWB90	1097.00	0.81	2.031	2,227.600	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	165.08	108.94	3.54
LAWB90	1849.00	0.81	2.031	3,754.632	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	192.32	163.29	4.67
LAWB91	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.34	62.79	24.65	1.77
LAWB91	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.45	92.68	55.22	1.08

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
LAWB83		266.87	605.87	14.16	0.71								Not Studied
LAWB83		397.05	1047.13	27.60	1.17								Not Studied
LAWB83		484.87	1517.97	33.67									Not Studied
LAWB83		543.51	1998.20	43.95									Not Studied
LAWB83		539.06	1876.70	50.40									Not Studied
LAWB84		14.16	22.72		1.10								Not Studied
LAWB84		30.91	52.92		0.87								Not Studied
LAWB84		45.13	81.25		2.27								Not Studied
LAWB84		83.42	166.13	2.64	0.65								Not Studied
LAWB84		144.60	297.51	6.81									Not Studied
LAWB84		257.23	633.07	11.27	0.71								Not Studied
LAWB84		290.61	712.75	15.36									Not Studied
LAWB84		432.14	1162.67	31.76	1.19								Not Studied
LAWB84		543.62	1698.17	38.96									Not Studied
LAWB84		560.72	2038.80	43.23									Not Studied
LAWB84		533.91	1991.73	51.74									Not Studied
LAWB85		12.37	20.30		1.28								Not Studied
LAWB85		30.84	53.38		0.86								Not Studied
LAWB85		72.10	127.77	1.92	2.50								Not Studied
LAWB85		150.27	291.70	3.99									Not Studied
LAWB85		208.68	410.94	7.91									Not Studied
LAWB85		287.17	650.11	9.64									Not Studied
LAWB85		342.06	721.30	14.05									Not Studied
LAWB85		476.90	1337.43	27.51	1.08								Not Studied
LAWB85		567.81	1656.70	34.04									Not Studied
LAWB85		596.68	2085.17	38.86									Not Studied
LAWB85		544.21	1914.97	43.64									Not Studied
LAWB86		23.17	41.00		0.83								Not Studied
LAWB86		70.31	128.87	2.16									Not Studied
LAWB86		102.33	203.13	3.02	3.36								Not Studied
LAWB86		172.03	347.37	5.25									Not Studied
LAWB86		259.65	508.25	10.88									Not Studied
LAWB86		361.73	892.67	14.07									Not Studied
LAWB86		367.98	823.38	17.96									Not Studied
LAWB86		467.00	1298.57	26.78	1.20								Not Studied
LAWB86		538.91	1424.30	30.49									Not Studied
LAWB86		549.50	1730.10	31.07									Not Studied
LAWB86		536.34	1735.17	36.46									Not Studied
LAWB87		13.44	15.47		1.56								Not Studied
LAWB87		22.78	24.81		1.42								Not Studied
LAWB87		25.33	25.53		1.17								Not Studied
LAWB87		28.74	27.82		1.31								Not Studied
LAWB87		38.86	31.94		1.23								Not Studied
LAWB87		42.89	30.87		0.73								Not Studied
LAWB87		58.03	42.15	1.88	1.04								Not Studied
LAWB88		10.67	11.90		1.17								Not Studied
LAWB88		13.82	12.81		1.10								Not Studied
LAWB88		15.51	13.37		0.99								Not Studied
LAWB88		17.36	14.50		1.14								Not Studied
LAWB88		21.36	14.29		1.05								Not Studied
LAWB88		23.66	12.87		0.74								Not Studied
LAWB88		30.13	16.62		0.95								Not Studied
LAWB89		13.97	14.08		1.36								Not Studied
LAWB89		28.09	29.83		1.08								Not Studied
LAWB89		34.81	35.80		1.03						0.73		Not Studied
LAWB89		117.84	159.22	4.56	0.77								Not Studied
LAWB89		203.23	307.32	7.06									Not Studied
LAWB89		240.90	408.27	13.33									Not Studied
LAWB89		324.11	616.22	19.33	1.45								Not Studied
LAWB89		304.46	568.56	20.35	2.89								Not Studied
LAWB89		412.41	784.36	27.18									Not Studied
LAWB90		10.57	27.78		1.33								Not Studied
LAWB90		20.61	55.95		1.04								Not Studied
LAWB90		25.34	68.10		1.08						0.63		Not Studied
LAWB90		45.71	122.41	2.62	0.79								Not Studied
LAWB90		45.61	126.67	2.53	0.86								Not Studied
LAWB90		48.01	121.75	2.58	0.64								Not Studied
LAWB90		55.53	128.75	2.15									Not Studied
LAWB90		56.42	143.86	2.82	1.15								Not Studied
LAWB90		86.58	198.91	4.09									Not Studied
LAWB91		10.20	44.92		1.37								Not Studied
LAWB91		21.39	97.66		1.11								Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
LAWB83		68.63	18.259	-2.2574992	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB83		68.63	18.259	-2.2574992	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB83		68.63	18.259	-2.2574992	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB83		68.63	18.259	-2.2574992	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB83		68.63	18.259	-2.2574992	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB84		68.77	18.17	-1.966507	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB84		68.77	18.17	-1.966507	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB84		68.77	18.17	-1.966507	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB84		68.77	18.17	-1.966507	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB84		68.77	18.17	-1.966507	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB84		68.77	18.17	-1.966507	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB84		68.77	18.17	-1.966507	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB84		68.77	18.17	-1.966507	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB84		68.77	18.17	-1.966507	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB84		68.77	18.17	-1.966507	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB85		70.13	16.76	3.80651	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB85		70.13	16.76	3.80651	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB85		70.13	16.76	3.80651	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB85		70.13	16.76	3.80651	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB85		70.13	16.76	3.80651	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB85		70.13	16.76	3.80651	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB85		70.13	16.76	3.80651	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB85		70.13	16.76	3.80651	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB85		70.13	16.76	3.80651	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB85		70.13	16.76	3.80651	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB86		71.11	17.222	-0.3758071	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB86		71.11	17.222	-0.3758071	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB86		71.11	17.222	-0.3758071	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB86		71.11	17.222	-0.3758071	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB86		71.11	17.222	-0.3758071	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB86		71.11	17.222	-0.3758071	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB86		71.11	17.222	-0.3758071	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB86		71.11	17.222	-0.3758071	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB86		71.11	17.222	-0.3758071	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB87		72.15	17.641	-4.4002543	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB87		72.15	17.641	-4.4002543	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB87		72.15	17.641	-4.4002543	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB87		72.15	17.641	-4.4002543	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB87		72.15	17.641	-4.4002543	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB87		72.15	17.641	-4.4002543	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB87		72.15	17.641	-4.4002543	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB88		73.01	16.681	-0.3605833	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB88		73.01	16.681	-0.3605833	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB88		73.01	16.681	-0.3605833	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB88		73.01	16.681	-0.3605833	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB88		73.01	16.681	-0.3605833	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB88		73.01	16.681	-0.3605833	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB88		73.01	16.681	-0.3605833	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB89		68.67	18.268	-2.3644519	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB89		68.67	18.268	-2.3644519	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB89		68.67	18.268	-2.3644519	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB89		68.67	18.268	-2.3644519	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB89		68.67	18.268	-2.3644519	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB89		68.67	18.268	-2.3644519	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB89		68.67	18.268	-2.3644519	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB89		68.67	18.268	-2.3644519	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB90		68.74	18.287	-2.5807981	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB90		68.74	18.287	-2.5807981	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB90		68.74	18.287	-2.5807981	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB90		68.74	18.287	-2.5807981	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB90		68.74	18.287	-2.5807981	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB90		68.74	18.287	-2.5807981	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB90		68.74	18.287	-2.5807981	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB90		68.74	18.287	-2.5807981	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB91		68.72	18.282	-2.5204891	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB91		68.72	18.282	-2.5204891	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
LAWB83	6.18	10.04	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31
LAWB83	6.18	10.04	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31
LAWB83	6.18	10.04	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31
LAWB83	6.18	10.04	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31
LAWB83	6.18	10.04	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31
LAWB84	6.19	10.04	0.00	6.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.41
LAWB84	6.19	10.04	0.00	6.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.41
LAWB84	6.19	10.04	0.00	6.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.41
LAWB84	6.19	10.04	0.00	6.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.41
LAWB84	6.19	10.04	0.00	6.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.41
LAWB84	6.19	10.04	0.00	6.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.41
LAWB84	6.19	10.04	0.00	6.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.41
LAWB84	6.19	10.04	0.00	6.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.41
LAWB84	6.19	10.04	0.00	6.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.41
LAWB85	6.18	11.53	0.00	5.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31
LAWB85	6.18	11.53	0.00	5.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31
LAWB85	6.18	11.53	0.00	5.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31
LAWB85	6.18	11.53	0.00	5.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31
LAWB85	6.18	11.53	0.00	5.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31
LAWB85	6.18	11.53	0.00	5.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31
LAWB85	6.18	11.53	0.00	5.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31
LAWB85	6.18	11.53	0.00	5.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31
LAWB85	6.18	11.53	0.00	5.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31
LAWB85	6.18	11.53	0.00	5.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.29	0.19	0.00	0.00	4.31
LAWB86	6.19	12.43	0.00	5.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.36
LAWB86	6.19	12.43	0.00	5.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.36
LAWB86	6.19	12.43	0.00	5.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.36
LAWB86	6.19	12.43	0.00	5.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.36
LAWB86	6.19	12.43	0.00	5.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.36
LAWB86	6.19	12.43	0.00	5.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.36
LAWB86	6.19	12.43	0.00	5.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.36
LAWB86	6.19	12.43	0.00	5.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.36
LAWB86	6.19	12.43	0.00	5.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.36
LAWB87	6.50	13.02	0.00	6.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.03	0.20	0.00	0.00	4.70
LAWB87	6.50	13.02	0.00	6.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.03	0.20	0.00	0.00	4.70
LAWB87	6.50	13.02	0.00	6.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.03	0.20	0.00	0.00	4.70
LAWB87	6.50	13.02	0.00	6.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.03	0.20	0.00	0.00	4.70
LAWB87	6.50	13.02	0.00	6.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.03	0.20	0.00	0.00	4.70
LAWB87	6.50	13.02	0.00	6.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.03	0.20	0.00	0.00	4.70
LAWB87	6.50	13.02	0.00	6.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.03	0.20	0.00	0.00	4.70
LAWB88	6.49	13.01	0.00	7.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20	0.20	0.00	0.00	4.70
LAWB88	6.49	13.01	0.00	7.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20	0.20	0.00	0.00	4.70
LAWB88	6.49	13.01	0.00	7.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20	0.20	0.00	0.00	4.70
LAWB88	6.49	13.01	0.00	7.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20	0.20	0.00	0.00	4.70
LAWB88	6.49	13.01	0.00	7.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20	0.20	0.00	0.00	4.70
LAWB88	6.49	13.01	0.00	7.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20	0.20	0.00	0.00	4.70
LAWB88	6.49	13.01	0.00	7.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20	0.20	0.00	0.00	4.70
LAWB89	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.01
LAWB89	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.01
LAWB89	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.01
LAWB89	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.01
LAWB89	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.01
LAWB89	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.01
LAWB89	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.01
LAWB89	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.01
LAWB90	6.19	10.05	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	3.62
LAWB90	6.19	10.05	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	3.62
LAWB90	6.19	10.05	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	3.62
LAWB90	6.19	10.05	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	3.62
LAWB90	6.19	10.05	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	3.62
LAWB90	6.19	10.05	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	3.62
LAWB90	6.19	10.05	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	3.62
LAWB90	6.19	10.05	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	3.62
LAWB91	6.19	10.05	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	2.93
LAWB91	6.19	10.05	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	2.93

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
LAWB83	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00
LAWB83	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00
LAWB83	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00
LAWB83	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00
LAWB83	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.62	0.00	0.00
LAWB84	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.65	0.00	0.00
LAWB84	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.65	0.00	0.00
LAWB84	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.65	0.00	0.00
LAWB84	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.65	0.00	0.00
LAWB84	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.65	0.00	0.00
LAWB84	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.65	0.00	0.00
LAWB84	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.65	0.00	0.00
LAWB84	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.65	0.00	0.00
LAWB84	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.65	0.00	0.00
LAWB85	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.63	0.00	0.00
LAWB85	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.63	0.00	0.00
LAWB85	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.63	0.00	0.00
LAWB85	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.63	0.00	0.00
LAWB85	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.63	0.00	0.00
LAWB85	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.63	0.00	0.00
LAWB85	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.63	0.00	0.00
LAWB85	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.63	0.00	0.00
LAWB85	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.63	0.00	0.00
LAWB85	2.97	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.63	0.00	0.00
LAWB86	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.66	0.00	0.00
LAWB86	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.66	0.00	0.00
LAWB86	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.66	0.00	0.00
LAWB86	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.66	0.00	0.00
LAWB86	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.66	0.00	0.00
LAWB86	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.66	0.00	0.00
LAWB86	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.66	0.00	0.00
LAWB86	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.66	0.00	0.00
LAWB86	2.97	0.00	0.00	0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.66	0.00	0.00
LAWB87	1.41	0.00	0.00	0.00	5.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00
LAWB87	1.41	0.00	0.00	0.00	5.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00
LAWB87	1.41	0.00	0.00	0.00	5.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00
LAWB87	1.41	0.00	0.00	0.00	5.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00
LAWB87	1.41	0.00	0.00	0.00	5.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00
LAWB87	1.41	0.00	0.00	0.00	5.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00
LAWB87	1.41	0.00	0.00	0.00	5.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00
LAWB88	1.41	0.00	0.00	0.00	5.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.10	0.00	0.00
LAWB88	1.41	0.00	0.00	0.00	5.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.10	0.00	0.00
LAWB88	1.41	0.00	0.00	0.00	5.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.10	0.00	0.00
LAWB88	1.41	0.00	0.00	0.00	5.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.10	0.00	0.00
LAWB88	1.41	0.00	0.00	0.00	5.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.10	0.00	0.00
LAWB88	1.41	0.00	0.00	0.00	5.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.10	0.00	0.00
LAWB88	1.41	0.00	0.00	0.00	5.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.10	0.00	0.00
LAWB89	2.97	0.00	0.00	0.00	4.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.35	0.00	0.00
LAWB89	2.97	0.00	0.00	0.00	4.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.35	0.00	0.00
LAWB89	2.97	0.00	0.00	0.00	4.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.35	0.00	0.00
LAWB89	2.97	0.00	0.00	0.00	4.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.35	0.00	0.00
LAWB89	2.97	0.00	0.00	0.00	4.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.35	0.00	0.00
LAWB89	2.97	0.00	0.00	0.00	4.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.35	0.00	0.00
LAWB89	2.97	0.00	0.00	0.00	4.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.35	0.00	0.00
LAWB89	2.97	0.00	0.00	0.00	4.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.35	0.00	0.00
LAWB90	2.98	0.00	0.00	0.00	6.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.00	0.00	0.00
LAWB90	2.98	0.00	0.00	0.00	6.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.00	0.00	0.00
LAWB90	2.98	0.00	0.00	0.00	6.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.00	0.00	0.00
LAWB90	2.98	0.00	0.00	0.00	6.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.00	0.00	0.00
LAWB90	2.98	0.00	0.00	0.00	6.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.00	0.00	0.00
LAWB90	2.98	0.00	0.00	0.00	6.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.00	0.00	0.00
LAWB90	2.98	0.00	0.00	0.00	6.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.00	0.00	0.00
LAWB90	2.98	0.00	0.00	0.00	6.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.00	0.00	0.00
LAWB90	2.98	0.00	0.00	0.00	6.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.00	0.00	0.00
LAWB91	2.98	0.00	0.00	0.00	8.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.82	0.00	0.00
LAWB91	2.98	0.00	0.00	0.00	8.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.82	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
LAWB83	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		
LAWB83	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		
LAWB83	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		
LAWB83	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		
LAWB83	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		
LAWB84	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.69	100.00		
LAWB84	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.69	100.00		
LAWB84	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.69	100.00		
LAWB84	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.69	100.00		
LAWB84	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.69	100.00		
LAWB84	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.69	100.00		
LAWB84	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.69	100.00		
LAWB84	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.69	100.00		
LAWB84	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.69	100.00		
LAWB84	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.69	100.00		
LAWB85	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		
LAWB85	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		
LAWB85	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		
LAWB85	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		
LAWB85	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		
LAWB85	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		
LAWB85	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		
LAWB85	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		
LAWB85	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		
LAWB85	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.74	100.00		
LAWB86	0.00	0.00	0.00	0.00	0.00	0.00	4.85	3.16	0.68	100.00		
LAWB86	0.00	0.00	0.00	0.00	0.00	0.00	4.85	3.16	0.68	100.00		
LAWB86	0.00	0.00	0.00	0.00	0.00	0.00	4.85	3.16	0.68	100.00		
LAWB86	0.00	0.00	0.00	0.00	0.00	0.00	4.85	3.16	0.68	100.00		
LAWB86	0.00	0.00	0.00	0.00	0.00	0.00	4.85	3.16	0.68	100.00		
LAWB86	0.00	0.00	0.00	0.00	0.00	0.00	4.85	3.16	0.68	100.00		
LAWB86	0.00	0.00	0.00	0.00	0.00	0.00	4.85	3.16	0.68	100.00		
LAWB86	0.00	0.00	0.00	0.00	0.00	0.00	4.85	3.16	0.68	100.00		
LAWB86	0.00	0.00	0.00	0.00	0.00	0.00	4.85	3.16	0.68	100.00		
LAWB86	0.00	0.00	0.00	0.00	0.00	0.00	4.85	3.16	0.68	100.00		
LAWB87	0.00	0.00	0.00	0.00	0.00	0.00	4.89	3.20	0.71	100.00		
LAWB87	0.00	0.00	0.00	0.00	0.00	0.00	4.89	3.20	0.71	100.00		
LAWB87	0.00	0.00	0.00	0.00	0.00	0.00	4.89	3.20	0.71	100.00		
LAWB87	0.00	0.00	0.00	0.00	0.00	0.00	4.89	3.20	0.71	100.00		
LAWB87	0.00	0.00	0.00	0.00	0.00	0.00	4.89	3.20	0.71	100.00		
LAWB87	0.00	0.00	0.00	0.00	0.00	0.00	4.89	3.20	0.71	100.00		
LAWB87	0.00	0.00	0.00	0.00	0.00	0.00	4.89	3.20	0.71	100.00		
LAWB88	0.00	0.00	0.00	0.00	0.00	0.00	4.89	3.19	0.82	100.00		
LAWB88	0.00	0.00	0.00	0.00	0.00	0.00	4.89	3.19	0.82	100.00		
LAWB88	0.00	0.00	0.00	0.00	0.00	0.00	4.89	3.19	0.82	100.00		
LAWB88	0.00	0.00	0.00	0.00	0.00	0.00	4.89	3.19	0.82	100.00		
LAWB88	0.00	0.00	0.00	0.00	0.00	0.00	4.89	3.19	0.82	100.00		
LAWB88	0.00	0.00	0.00	0.00	0.00	0.00	4.89	3.19	0.82	100.00		
LAWB88	0.00	0.00	0.00	0.00	0.00	0.00	4.89	3.19	0.82	100.00		
LAWB89	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.69	100.00		
LAWB89	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.69	100.00		
LAWB89	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.69	100.00		
LAWB89	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.69	100.00		
LAWB89	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.69	100.00		
LAWB89	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.69	100.00		
LAWB89	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.69	100.00		
LAWB89	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.69	100.00		
LAWB89	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.69	100.00		
LAWB90	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.59	100.00		
LAWB90	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.59	100.00		
LAWB90	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.59	100.00		
LAWB90	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.59	100.00		
LAWB90	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.59	100.00		
LAWB90	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.59	100.00		
LAWB90	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.59	100.00		
LAWB90	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.59	100.00		
LAWB91	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.62	100.00		
LAWB91	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.62	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
LAWB91	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.56	101.73	74.90	1.36
LAWB91	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.84	181.16	248.83	3.75
LAWB91	364.00	0.81	2.031	739.149	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.95	180.03	317.28	3.90
LAWB91	546.00	0.81	2.031	1,108.723	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.06	193.84	486.33	6.21
LAWB91	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.12	198.44	886.52	10.03
LAWB91	1097.00	0.81	2.031	2,227.600	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	168.53	1313.27	20.97
LAWB92	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.38	64.66	28.43	1.74
LAWB92	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.48	96.52	63.98	1.09
LAWB92	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.56	101.97	78.40	1.47
LAWB92	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	150.20	148.35	2.38
LAWB92	364.00	0.81	2.031	739.149	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.95	176.22	182.68	2.76
LAWB92	546.00	0.81	2.031	1,108.723	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.07	185.78	197.55	3.43
LAWB92	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	206.48	239.41	4.04
LAWB92	1097.00	0.81	2.031	2,227.600	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.26	176.95	704.15	9.45
LAWB92	1849.00	0.81	2.031	3,754.632	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.36	256.47	740.57	12.43
LAWB93	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.27	52.00	26.69	2.09
LAWB93	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.37	72.12	38.32	1.29
LAWB93	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.45	91.28	51.76	1.48
LAWB93	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.55	99.06	64.32	1.67
LAWB93	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.64	109.79	71.61	1.67
LAWB93	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.77	137.44	84.52	2.26
LAWB93	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	154.19	89.78	2.73
LAWB93	548.00	0.81	2.031	1,112.784	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.95	170.40	101.92	3.48
LAWB93	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.04	152.16	107.25	3.37
LAWB93	1097.00	0.81	2.031	2,227.600	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	160.75	99.70	3.34
LAWB93	1465.00	0.81	2.031	2,974.871	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	207.38	126.25	3.04
LAWB93	1828.00	0.81	2.031	3,711.989	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.27	264.14	165.28	4.81
LAWB94	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.76	52.87	22.12	2.06
LAWB94	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.95	75.73	34.67	1.37
LAWB94	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.97	102.18	50.80	1.62
LAWB94	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.04	114.61	61.51	2.14
LAWB94	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	119.81	63.97	1.76
LAWB94	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	127.58	71.70	1.98
LAWB94	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	149.97	80.36	2.36
LAWB94	548.00	0.81	2.031	1,112.784	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	154.92	81.39	2.80
LAWB94	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	174.93	118.14	3.54
LAWB94	1097.00	0.81	2.031	2,227.600	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.64	188.10	121.58	3.62
LAWB94	1465.00	0.81	2.031	2,974.871	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.67	220.14	136.98	4.36
LAWB94	1828.00	0.81	2.031	3,711.989	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.74	217.74	344.64	5.98
LAWB95	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.26	51.49	20.85	2.02
LAWB95	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.36	82.90	40.78	1.16
LAWB95	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.45	114.48	72.69	2.12
LAWB95	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.54	162.64	207.63	3.13
LAWB95	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.64	148.15	413.95	4.34
LAWB95	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.77	134.30	1069.57	16.25
LAWB95	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.86	112.66	1527.97	37.61
LAWB95	548.00	0.81	2.031	1,112.784	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.92	101.71	1921.57	51.32
LAWB95	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.06	89.32	2246.97	47.75
LAWB95	1097.00	0.81	2.031	2,227.600	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.12	106.46	2116.73	67.41
LAWB95	1465.00	0.81	2.031	2,974.871	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.26	109.59	2109.70	63.97
LAWC12	7.00	0.79	2.000	14.003	**2.690**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.81	67.79	23.81	0.59
LAWC12	13.00	0.79	2.000	26.006	**2.690**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.88	87.97	41.63	0.42
LAWC12	56.00	0.79	2.000	112.024	**2.690**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.95	93.93	56.58	0.51
LAWC12	120.00	0.79	2.000	240.052	**2.690**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.06	101.33	71.73	0.25
LAWC12	180.00	0.79	2.000	360.078	**2.690**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.23	108.90	82.06	0.51
LAWC12	271.00	0.79	2.000	542.117	**2.690**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	118.13	96.04	0.27
LAWC12	365.00	0.79	2.000	730.158	**2.690**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.42	126.23	106.70	0.20
LAWC12	547.00	0.79	2.000	1,094.237	**2.690**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.54	130.80	117.10	0.53
LAWC12	730.00	0.79	2.000	1,460.316	**2.690**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.64	158.07	135.73	0.51
LAWC12	1331.00	0.79	2.000	2,662.577	**2.690**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.75	998.61	3087.20	1.25
LAWC15	7.00	0.80	2.008	14.055	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.45	67.59	18.29	
LAWC15	28.00	0.80	2.008	56.221	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.55	86.53	31.09	0.28
LAWC15	56.00	0.80	2.008	112.442	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.64	101.47	41.67	
LAWC15	120.00	0.80	2.008	240.948	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.77	100.28	47.93	0.39
LAWC15	180.00	0.80	2.008	361.422	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	115.67	52.75	0.65
LAWC15	267.00	0.80	2.008	536.109	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.98	109.43	57.66	0.56
LAWC15	365.00	0.80	2.008	732.883	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.07	124.63	66.55	0.45
LAWC15	547.00	0.80	2.008	1,098.320	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.12	155.16	84.96	0.63
LAWC15	729.00	0.80	2.008	1,463.757	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.37	169.19	93.48	0.46
LAWC15	1104.00	0.80	2.008	2,216.719	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	224.12	156.61	0.24
LAWC15	1462.00	0.80	2.008	2,935.546	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.56	409.60	521.48	0.33
LAWC15	1826.00	0.80	2.008	3,666.421	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	800.91	1370.73	0.43

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
LAWB91		28.56	135.50		0.95								Not Studied
LAWB91		81.74	467.27	5.30	0.82								Not Studied
LAWB91		97.36	542.91	6.76	0.71								Not Studied
LAWB91		123.56	790.66	10.38									Not Studied
LAWB91		186.84	1243.23	17.32	1.27								Not Studied
LAWB91		275.87	1799.33	31.59	4.15								Not Studied
LAWB92		8.41	59.63		1.35								Not Studied
LAWB92		17.96	128.17	1.71	1.14								Not Studied
LAWB92		21.95	167.80		0.93								Not Studied
LAWB92		38.15	318.60	3.48	0.89								Not Studied
LAWB92		47.63	386.18	4.57	0.91								Not Studied
LAWB92		51.51	376.35	4.74									Not Studied
LAWB92		65.08	459.57	5.18	0.79								Not Studied
LAWB92		129.87	1085.37	16.28	2.65								Not Studied
LAWB92		143.89	1240.33	17.53	0.69								Not Studied
LAWB93		12.85	17.55		1.39								Not Studied
LAWB93		22.83	30.50		1.03								Not Studied
LAWB93		30.38	44.14		0.97								Not Studied
LAWB93		38.31	54.76										Not Studied
LAWB93		40.59	55.18	1.77									Not Studied
LAWB93		48.00	66.21	2.62	1.09								Not Studied
LAWB93		56.77	78.55	2.48	1.06								Not Studied
LAWB93		68.92	95.08	2.87									Not Studied
LAWB93		71.96	92.37	3.05									Not Studied
LAWB93		69.23	87.59	2.64	1.22								Not Studied
LAWB93		75.56	165.09	10.17									Not Studied
LAWB93		98.45	194.50	13.25									Not Studied
LAWB94		14.59	11.75		1.14								Not Studied
LAWB94		26.27	20.89		0.94								Not Studied
LAWB94		38.33	32.90	1.86	0.96								Not Studied
LAWB94		47.75	38.73										Not Studied
LAWB94		47.47	37.55	1.81	0.97								Not Studied
LAWB94		47.48	37.56	2.35	0.81								Not Studied
LAWB94		59.26	47.40	2.55	0.98								Not Studied
LAWB94		65.61	50.40	2.69									Not Studied
LAWB94		90.54	72.24	2.91									Not Studied
LAWB94		92.08	72.49	3.07	1.31								Not Studied
LAWB94		105.31	84.76	3.20									Not Studied
LAWB94		189.60	196.54	6.26									Not Studied
LAWB95		15.12	8.02		1.24								Not Studied
LAWB95		33.26	17.72		0.90								Not Studied
LAWB95		55.72	34.26	2.15	0.84								Not Studied
LAWB95		132.29	102.13	3.45									Not Studied
LAWB95		222.48	177.38	6.19	0.79								Not Studied
LAWB95		474.66	438.01	19.54	2.49								Not Studied
LAWB95		675.62	663.36	36.98	2.18								Not Studied
LAWB95		768.84	875.10	49.93	1.72								Not Studied
LAWB95		897.43	979.24	51.59									Not Studied
LAWB95		919.75	986.99	64.88	3.20								Not Studied
LAWB95		885.93	994.87	59.39									Not Studied
LAWC12			121.43		14.11			0.33		1.11			Not Studied
LAWC12			171.70		14.89	1.13		0.34		1.88	0.46		Not Studied
LAWC12			215.37		17.10	1.39		0.47	0.55	2.48	0.51		Not Studied
LAWC12			306.20		19.24	1.48		0.58		2.94			Not Studied
LAWC12			350.73		18.74	1.61		0.52	0.42	2.55			Not Studied
LAWC12			356.63		20.54	1.43		0.73		3.52			Not Studied
LAWC12			418.53		21.78	1.25		0.62		3.19			Not Studied
LAWC12			434.20		20.62	1.25		0.46		2.49			Not Studied
LAWC12			505.93	1.92	14.55					0.91			Not Studied
LAWC12			7230.87	78.89	2.10					1.08			Not Studied
LAWC15			99.49		7.68			0.32		0.59			Not Studied
LAWC15			146.27		8.77	1.67		0.56		1.13	0.67		Not Studied
LAWC15			198.60		9.74	1.63		0.52		1.11	0.94		Not Studied
LAWC15			209.67		8.83	2.13		0.72	0.74	3.30	0.90		Not Studied
LAWC15			229.07		10.35	1.91		0.76		1.20	1.39		Not Studied
LAWC15			263.67		9.14	2.09		0.78	0.66	1.91			Not Studied
LAWC15			289.30		10.52	2.40		0.93	0.62	1.95	1.21		Not Studied
LAWC15			364.64		12.16	2.37		1.10	0.68	2.84	1.03		Not Studied
LAWC15			376.74	2.20	12.67	2.49		0.94	0.71	2.13	1.36		Not Studied
LAWC15			560.70	2.40	4.57				0.60		0.75		Not Studied
LAWC15			1655.97	7.82	1.23								Not Studied
LAWC15			3812.20	19.71	2.00								Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
LAWB91		68.72	18.282	-2.5204891	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB91		68.72	18.282	-2.5204891	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB91		68.72	18.282	-2.5204891	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB91		68.72	18.282	-2.5204891	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB91		68.72	18.282	-2.5204891	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB91		68.72	18.282	-2.5204891	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB92		68.68	18.27	-2.3853685	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB92		68.68	18.27	-2.3853685	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB92		68.68	18.27	-2.3853685	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB92		68.68	18.27	-2.3853685	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB92		68.68	18.27	-2.3853685	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB92		68.68	18.27	-2.3853685	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB92		68.68	18.27	-2.3853685	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB92		68.68	18.27	-2.3853685	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB93		68.66	18.267	-2.3459761	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB93		68.66	18.267	-2.3459761	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB93		68.66	18.267	-2.3459761	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB93		68.66	18.267	-2.3459761	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB93		68.66	18.267	-2.3459761	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB93		68.66	18.267	-2.3459761	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB93		68.66	18.267	-2.3459761	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB93		68.66	18.267	-2.3459761	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB93		68.66	18.267	-2.3459761	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB93		68.66	18.267	-2.3459761	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB93		68.66	18.267	-2.3459761	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB94		68.63	18.261	-2.2639843	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB94		68.63	18.261	-2.2639843	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB94		68.63	18.261	-2.2639843	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB94		68.63	18.261	-2.2639843	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB94		68.63	18.261	-2.2639843	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB94		68.63	18.261	-2.2639843	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB94		68.63	18.261	-2.2639843	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB94		68.63	18.261	-2.2639843	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB94		68.63	18.261	-2.2639843	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB95		68.66	18.269	-2.3524612	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB95		68.66	18.269	-2.3524612	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB95		68.66	18.269	-2.3524612	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB95		68.66	18.269	-2.3524612	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB95		68.66	18.269	-2.3524612	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB95		68.66	18.269	-2.3524612	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB95		68.66	18.269	-2.3524612	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB95		68.66	18.269	-2.3524612	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB95		68.66	18.269	-2.3524612	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWB95		68.66	18.269	-2.3524612	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC12		68.69	19.301	-8.2371133	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWC12		68.69	19.301	-8.2371133	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWC12		68.69	19.301	-8.2371133	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWC12		68.69	19.301	-8.2371133	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWC12		68.69	19.301	-8.2371133	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWC12		68.69	19.301	-8.2371133	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWC12		68.69	19.301	-8.2371133	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWC12		68.69	19.301	-8.2371133	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWC12		68.69	19.301	-8.2371133	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWC15		73.75	15.234	6.6284003	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWC15		73.75	15.234	6.6284003	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWC15		73.75	15.234	6.6284003	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWC15		73.75	15.234	6.6284003	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWC15		73.75	15.234	6.6284003	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWC15		73.75	15.234	6.6284003	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWC15		73.75	15.234	6.6284003	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWC15		73.75	15.234	6.6284003	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWC15		73.75	15.234	6.6284003	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWC15		73.75	15.234	6.6284003	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWC15		73.75	15.234	6.6284003	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
LAWB91	6.19	10.05	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	2.93
LAWB91	6.19	10.05	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	2.93
LAWB91	6.19	10.05	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	2.93
LAWB91	6.19	10.05	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	2.93
LAWB91	6.19	10.05	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	2.93
LAWB91	6.19	10.05	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	2.93
LAWB92	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	2.22
LAWB92	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	2.22
LAWB92	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	2.22
LAWB92	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	2.22
LAWB92	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	2.22
LAWB92	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	2.22
LAWB92	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	2.22
LAWB92	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	2.22
LAWB93	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.66
LAWB93	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.66
LAWB93	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.66
LAWB93	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.66
LAWB93	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.66
LAWB93	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.66
LAWB93	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.66
LAWB93	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.66
LAWB93	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.66
LAWB93	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.66
LAWB93	6.19	10.04	0.00	6.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	4.66
LAWB94	6.19	10.03	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.36
LAWB94	6.19	10.03	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.36
LAWB94	6.19	10.03	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.36
LAWB94	6.19	10.03	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.36
LAWB94	6.19	10.03	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.36
LAWB94	6.19	10.03	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.36
LAWB94	6.19	10.03	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.36
LAWB94	6.19	10.03	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.36
LAWB94	6.19	10.03	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.36
LAWB94	6.19	10.03	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.36
LAWB95	6.19	10.04	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.76
LAWB95	6.19	10.04	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.76
LAWB95	6.19	10.04	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.76
LAWB95	6.19	10.04	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.76
LAWB95	6.19	10.04	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.76
LAWB95	6.19	10.04	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.76
LAWB95	6.19	10.04	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.76
LAWB95	6.19	10.04	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.30	0.19	0.00	0.00	5.76
LAWC12	11.99	9.14	0.00	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.72	0.14	0.00	0.00	0.00
LAWC12	11.99	9.14	0.00	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.72	0.14	0.00	0.00	0.00
LAWC12	11.99	9.14	0.00	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.72	0.14	0.00	0.00	0.00
LAWC12	11.99	9.14	0.00	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.72	0.14	0.00	0.00	0.00
LAWC12	11.99	9.14	0.00	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.72	0.14	0.00	0.00	0.00
LAWC12	11.99	9.14	0.00	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.72	0.14	0.00	0.00	0.00
LAWC12	11.99	9.14	0.00	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.72	0.14	0.00	0.00	0.00
LAWC12	11.99	9.14	0.00	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.72	0.14	0.00	0.00	0.00
LAWC12	11.99	9.14	0.00	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.72	0.14	0.00	0.00	0.00
LAWC15	6.22	8.93	0.00	2.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.01	0.14	0.00	0.00	0.00
LAWC15	6.22	8.93	0.00	2.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.01	0.14	0.00	0.00	0.00
LAWC15	6.22	8.93	0.00	2.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.01	0.14	0.00	0.00	0.00
LAWC15	6.22	8.93	0.00	2.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.01	0.14	0.00	0.00	0.00
LAWC15	6.22	8.93	0.00	2.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.01	0.14	0.00	0.00	0.00
LAWC15	6.22	8.93	0.00	2.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.01	0.14	0.00	0.00	0.00
LAWC15	6.22	8.93	0.00	2.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.01	0.14	0.00	0.00	0.00
LAWC15	6.22	8.93	0.00	2.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.01	0.14	0.00	0.00	0.00
LAWC15	6.22	8.93	0.00	2.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.01	0.14	0.00	0.00	0.00
LAWC15	6.22	8.93	0.00	2.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.01	0.14	0.00	0.00	0.00
LAWC15	6.22	8.93	0.00	2.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.01	0.14	0.00	0.00	0.00

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
LAWB91	2.98	0.00	0.00	0.00	8.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.82	0.00	0.00
LAWB91	2.98	0.00	0.00	0.00	8.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.82	0.00	0.00
LAWB91	2.98	0.00	0.00	0.00	8.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.82	0.00	0.00
LAWB91	2.98	0.00	0.00	0.00	8.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.82	0.00	0.00
LAWB91	2.98	0.00	0.00	0.00	8.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.82	0.00	0.00
LAWB91	2.98	0.00	0.00	0.00	8.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.82	0.00	0.00
LAWB92	2.97	0.00	0.00	0.00	10.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.10	0.00	0.00
LAWB92	2.97	0.00	0.00	0.00	10.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.10	0.00	0.00
LAWB92	2.97	0.00	0.00	0.00	10.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.10	0.00	0.00
LAWB92	2.97	0.00	0.00	0.00	10.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.10	0.00	0.00
LAWB92	2.97	0.00	0.00	0.00	10.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.10	0.00	0.00
LAWB92	2.97	0.00	0.00	0.00	10.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.10	0.00	0.00
LAWB92	2.97	0.00	0.00	0.00	10.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.10	0.00	0.00
LAWB92	2.97	0.00	0.00	0.00	10.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.10	0.00	0.00
LAWB93	2.97	0.00	0.00	0.00	4.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.98	0.00	0.00
LAWB93	2.97	0.00	0.00	0.00	4.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.98	0.00	0.00
LAWB93	2.97	0.00	0.00	0.00	4.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.98	0.00	0.00
LAWB93	2.97	0.00	0.00	0.00	4.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.98	0.00	0.00
LAWB93	2.97	0.00	0.00	0.00	4.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.98	0.00	0.00
LAWB93	2.97	0.00	0.00	0.00	4.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.98	0.00	0.00
LAWB93	2.97	0.00	0.00	0.00	4.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.98	0.00	0.00
LAWB93	2.97	0.00	0.00	0.00	4.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.98	0.00	0.00
LAWB93	2.97	0.00	0.00	0.00	4.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.98	0.00	0.00
LAWB93	2.97	0.00	0.00	0.00	4.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.98	0.00	0.00
LAWB93	2.97	0.00	0.00	0.00	4.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.98	0.00	0.00
LAWB94	2.97	0.00	0.00	0.00	3.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.66	0.00	0.00
LAWB94	2.97	0.00	0.00	0.00	3.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.66	0.00	0.00
LAWB94	2.97	0.00	0.00	0.00	3.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.66	0.00	0.00
LAWB94	2.97	0.00	0.00	0.00	3.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.66	0.00	0.00
LAWB94	2.97	0.00	0.00	0.00	3.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.66	0.00	0.00
LAWB94	2.97	0.00	0.00	0.00	3.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.66	0.00	0.00
LAWB94	2.97	0.00	0.00	0.00	3.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.66	0.00	0.00
LAWB94	2.97	0.00	0.00	0.00	3.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.66	0.00	0.00
LAWB94	2.97	0.00	0.00	0.00	3.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.66	0.00	0.00
LAWB94	2.97	0.00	0.00	0.00	3.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.66	0.00	0.00
LAWB95	2.97	0.00	0.00	0.00	2.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.21	0.00	0.00
LAWB95	2.97	0.00	0.00	0.00	2.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.21	0.00	0.00
LAWB95	2.97	0.00	0.00	0.00	2.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.21	0.00	0.00
LAWB95	2.97	0.00	0.00	0.00	2.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.21	0.00	0.00
LAWB95	2.97	0.00	0.00	0.00	2.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.21	0.00	0.00
LAWB95	2.97	0.00	0.00	0.00	2.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.21	0.00	0.00
LAWB95	2.97	0.00	0.00	0.00	2.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.21	0.00	0.00
LAWB95	2.97	0.00	0.00	0.00	2.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.21	0.00	0.00
LAWB95	2.97	0.00	0.00	0.00	2.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.21	0.00	0.00
LAWB95	2.97	0.00	0.00	0.00	2.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.21	0.00	0.00
LAWC12	1.39	0.00	0.00	0.00	20.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.38	0.00	0.00
LAWC12	1.39	0.00	0.00	0.00	20.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.38	0.00	0.00
LAWC12	1.39	0.00	0.00	0.00	20.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.38	0.00	0.00
LAWC12	1.39	0.00	0.00	0.00	20.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.38	0.00	0.00
LAWC12	1.39	0.00	0.00	0.00	20.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.38	0.00	0.00
LAWC12	1.39	0.00	0.00	0.00	20.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.38	0.00	0.00
LAWC12	1.39	0.00	0.00	0.00	20.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.38	0.00	0.00
LAWC12	1.39	0.00	0.00	0.00	20.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.38	0.00	0.00
LAWC12	1.39	0.00	0.00	0.00	20.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.38	0.00	0.00
LAWC12	1.39	0.00	0.00	0.00	20.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.38	0.00	0.00
LAWC15	2.01	0.00	0.00	0.00	19.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.71	0.00	0.00
LAWC15	2.01	0.00	0.00	0.00	19.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.71	0.00	0.00
LAWC15	2.01	0.00	0.00	0.00	19.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.71	0.00	0.00
LAWC15	2.01	0.00	0.00	0.00	19.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.71	0.00	0.00
LAWC15	2.01	0.00	0.00	0.00	19.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.71	0.00	0.00
LAWC15	2.01	0.00	0.00	0.00	19.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.71	0.00	0.00
LAWC15	2.01	0.00	0.00	0.00	19.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.71	0.00	0.00
LAWC15	2.01	0.00	0.00	0.00	19.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.71	0.00	0.00
LAWC15	2.01	0.00	0.00	0.00	19.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.71	0.00	0.00
LAWC15	2.01	0.00	0.00	0.00	19.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.71	0.00	0.00
LAWC15	2.01	0.00	0.00	0.00	19.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.71	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
LAWB91	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.62	100.00		
LAWB91	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.62	100.00		
LAWB91	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.62	100.00		
LAWB91	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.62	100.00		
LAWB91	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.62	100.00		
LAWB91	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.17	0.62	100.00		
LAWB92	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.68	100.00		
LAWB92	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.68	100.00		
LAWB92	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.68	100.00		
LAWB92	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.68	100.00		
LAWB92	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.68	100.00		
LAWB92	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.68	100.00		
LAWB92	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.68	100.00		
LAWB92	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.68	100.00		
LAWB92	0.00	0.00	0.00	1.39	0.00	0.00	4.85	3.16	0.68	100.00		
LAWB93	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.70	100.00		
LAWB93	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.70	100.00		
LAWB93	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.70	100.00		
LAWB93	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.70	100.00		
LAWB93	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.70	100.00		
LAWB93	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.70	100.00		
LAWB93	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.70	100.00		
LAWB93	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.70	100.00		
LAWB93	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.70	100.00		
LAWB93	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.70	100.00		
LAWB93	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.70	100.00		
LAWB94	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.75	100.00		
LAWB94	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.75	100.00		
LAWB94	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.75	100.00		
LAWB94	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.75	100.00		
LAWB94	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.75	100.00		
LAWB94	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.75	100.00		
LAWB94	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.75	100.00		
LAWB94	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.75	100.00		
LAWB94	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.75	100.00		
LAWB94	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.75	100.00		
LAWB95	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.71	100.00		
LAWB95	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.71	100.00		
LAWB95	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.71	100.00		
LAWB95	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.71	100.00		
LAWB95	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.71	100.00		
LAWB95	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.71	100.00		
LAWB95	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.71	100.00		
LAWB95	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.71	100.00		
LAWB95	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.71	100.00		
LAWB95	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.71	100.00		
LAWC12	0.00	0.00	0.00	3.42	0.00	0.00	4.27	2.46	0.47	100.00		
LAWC12	0.00	0.00	0.00	3.42	0.00	0.00	4.27	2.46	0.47	100.00		
LAWC12	0.00	0.00	0.00	3.42	0.00	0.00	4.27	2.46	0.47	100.00		
LAWC12	0.00	0.00	0.00	3.42	0.00	0.00	4.27	2.46	0.47	100.00		
LAWC12	0.00	0.00	0.00	3.42	0.00	0.00	4.27	2.46	0.47	100.00		
LAWC12	0.00	0.00	0.00	3.42	0.00	0.00	4.27	2.46	0.47	100.00		
LAWC12	0.00	0.00	0.00	3.42	0.00	0.00	4.27	2.46	0.47	100.00		
LAWC12	0.00	0.00	0.00	3.42	0.00	0.00	4.27	2.46	0.47	100.00		
LAWC12	0.00	0.00	0.00	3.42	0.00	0.00	4.27	2.46	0.47	100.00		
LAWC12	0.00	0.00	0.00	3.42	0.00	0.00	4.27	2.46	0.47	100.00		
LAWC15	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.01	1.01	100.00		
LAWC15	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.01	1.01	100.00		
LAWC15	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.01	1.01	100.00		
LAWC15	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.01	1.01	100.00		
LAWC15	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.01	1.01	100.00		
LAWC15	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.01	1.01	100.00		
LAWC15	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.01	1.01	100.00		
LAWC15	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.01	1.01	100.00		
LAWC15	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.01	1.01	100.00		
LAWC15	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.01	1.01	100.00		
LAWC15	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.01	1.01	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
LAWC15	2206.00	0.80	2.008	4,429.422	**2.680**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.74	955.73	2203.97	0.67
LAWC21rev2	7.00	0.80	2.023	14.161	**2.660**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.27	60.18	21.63	0.52
LAWC21rev2	28.00	0.80	2.023	56.644	**2.660**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.44	92.71	40.52	0.50
LAWC21rev2	56.00	0.80	2.023	113.288	**2.660**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.65	110.93	50.23	1.25
LAWC21rev2	120.00	0.80	2.023	242.759	**2.660**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.77	139.03	68.48	1.21
LAWC21rev2	180.00	0.80	2.023	364.139	**2.660**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.87	142.13	70.23	1.20
LAWC21rev2	271.00	0.80	2.023	548.232	**2.660**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.95	190.13	95.91	1.02
LAWC21rev2	364.00	0.80	2.023	736.370	**2.660**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	183.49	93.44	1.13
LAWC21rev2	544.00	0.80	2.023	1,100.509	**2.660**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	198.53	100.30	1.15
LAWC21rev2	728.00	0.80	2.023	1,472.740	**2.660**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	211.01	107.11	1.49
LAWC21rev2	1091.00	0.80	2.023	2,207.087	**2.660**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	251.19	142.58	2.13
LAWC21rev2	1449.00	0.80	2.023	2,931.319	**2.660**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.46	371.19	241.50	2.95
LAWC21rev2	1826.00	0.80	2.023	3,693.988	**2.660**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.54	423.94	1303.17	5.35
LAWC22	7.00	0.80	2.015	14.108	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.53	78.92	32.32	0.57
LAWC22	28.00	0.80	2.015	56.432	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.62	116.87	56.14	0.53
LAWC22	56.00	0.80	2.015	112.863	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.77	136.53	65.07	0.32
LAWC22	119.00	0.80	2.015	239.835	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.93	144.27	72.89	0.68
LAWC22	180.00	0.80	2.015	362.775	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.22	159.13	82.25	0.69
LAWC22	271.00	0.80	2.015	546.178	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.33	191.20	98.61	1.10
LAWC22	365.00	0.80	2.015	735.628	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	243.90	139.65	0.90
LAWC22	546.00	0.80	2.015	1,100.418	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.52	257.82	155.69	1.28
LAWC22	729.00	0.80	2.015	1,469.240	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	298.46	246.70	1.79
LAWC22	1096.00	0.80	2.015	2,208.898	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.72	678.10	2803.93	6.42
LAWC22	1460.00	0.80	2.015	2,942.510	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.84	724.79	2592.60	4.92
LAWC22	1827.00	0.80	2.015	3,682.169	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.95	600.44	2547.70	5.19
LAWC22	2195.00	0.80	2.015	4,423.842	**2.670**	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.05	523.74	2438.57	3.92
LAWC23	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.74	41.75	14.98	0.70
LAWC23	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.83	61.83	27.27	1.00
LAWC23	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.97	61.44	28.69	1.01
LAWC23	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.12	67.24	31.67	1.09
LAWC23	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.35	72.68	32.25	1.22
LAWC23	272.00	0.81	2.031	552.331	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.43	80.22	36.59	1.49
LAWC23	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.55	107.02	49.30	1.15
LAWC23	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.63	93.98	45.49	0.90
LAWC23	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.87	96.21	41.93	1.04
LAWC23	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.93	113.82	51.30	1.22
LAWC23	1459.00	0.81	2.031	2,962.687	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.12	111.10	47.35	1.15
LAWC23	1828.00	0.81	2.031	3,711.989	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.21	128.99	65.00	1.47
LAWC23	2194.00	0.81	2.031	4,455.199	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	137.64	79.22	1.64
LAWC23	2653.00	0.81	2.031	5,387.258	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.26	166.79	107.16	8.82
LAWC24	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.62	38.94	13.45	0.63
LAWC24	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.72	54.33	23.41	0.82
LAWC24	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.85	56.80	27.39	1.12
LAWC24	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.02	65.48	31.19	0.85
LAWC24	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.25	72.25	32.81	0.76
LAWC24	272.00	0.81	2.031	552.331	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.33	83.69	38.33	1.07
LAWC24	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.46	104.48	49.27	0.65
LAWC24	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.54	103.20	50.15	0.60
LAWC24	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.73	112.24	52.33	0.58
LAWC24	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	136.18	67.89	0.68
LAWC24	1459.00	0.81	2.031	2,962.687	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.93	116.97	53.04	0.44
LAWC24	1828.00	0.81	2.031	3,711.989	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	130.03	68.46	0.64
LAWC24	2194.00	0.81	2.031	4,455.199	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.07	161.15	103.01	1.23
LAWC24	2653.00	0.81	2.031	5,387.258	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	230.78	207.60	16.82
LAWC25	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.76	45.12	18.93	0.40
LAWC25	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	9.86	63.21	32.90	0.52
LAWC25	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.04	66.60	38.94	0.37
LAWC25	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.22	76.72	47.82	0.59
LAWC25	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.45	85.47	52.82	0.53
LAWC25	272.00	0.81	2.031	552.331	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.54	93.52	60.00	0.69
LAWC25	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.65	121.07	81.87	0.48
LAWC25	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.74	133.20	94.99	0.43
LAWC25	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	142.40	101.61	0.55
LAWC25	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.03	157.24	113.58	0.45
LAWC25	1459.00	0.81	2.031	2,962.687	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.17	132.77	96.88	0.23
LAWC25	1828.00	0.81	2.031	3,711.989	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.23	258.76	306.80	0.85
LAWC25	2194.00	0.81	2.031	4,455.199	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.32	418.87	904.08	1.69
LAWC25	2653.00	0.81	2.031	5,387.258	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.37	464.05	1106.93	16.73
LAWC26	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.17	60.07	28.16	
LAWC26	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.36	79.20	41.55	1.16
LAWC26	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.46	85.46	46.43	1.17
LAWC26	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.56	92.27	52.41	1.05

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
LAWC15			6018.03	35.20									Not Studied
LAWC21rev2		9.03	63.84		2.15								Not Studied
LAWC21rev2		15.41	107.67		2.39								Not Studied
LAWC21rev2		20.63	146.37		2.36								Not Studied
LAWC21rev2		26.05	204.07		2.55								Not Studied
LAWC21rev2		26.16	225.77		2.43								Not Studied
LAWC21rev2		37.73	260.17	1.83	2.68								Not Studied
LAWC21rev2		35.49	250.64		2.63								Not Studied
LAWC21rev2		41.72	302.03	2.68	1.85								Not Studied
LAWC21rev2		42.43	311.13	3.11	1.35								Not Studied
LAWC21rev2		51.61	353.28	2.52	1.44								Not Studied
LAWC21rev2		74.54	582.08	3.68	0.76								Not Studied
LAWC21rev2		276.73	2397.53	26.14	1.07								Not Studied
LAWC22		10.29	100.17		2.93					0.57			Not Studied
LAWC22		16.84	167.40		2.84					0.55			Not Studied
LAWC22		20.44	178.93		2.99								Not Studied
LAWC22		21.65	223.50		3.10								Not Studied
LAWC22		24.21	250.47		2.80								Not Studied
LAWC22		29.40	311.07		2.54								Not Studied
LAWC22		40.76	432.79	1.88	3.30								Not Studied
LAWC22		45.36	440.83		2.95								Not Studied
LAWC22		65.82	630.72	2.28	1.34								Not Studied
LAWC22		416.83	5898.10	31.83	0.96								Not Studied
LAWC22		387.83	5214.50	32.01									Not Studied
LAWC22		368.53	5059.67	31.22	1.29								Not Studied
LAWC22		341.61	4898.03	25.85									Not Studied
LAWC23			48.19	8.13	1.76								Not Studied
LAWC23			78.22	12.85	2.04								Not Studied
LAWC23			87.32	12.70	1.80								Not Studied
LAWC23			99.34	14.68	1.83								Not Studied
LAWC23			103.10	16.48	1.84								Not Studied
LAWC23			113.50	18.66	1.98								Not Studied
LAWC23			162.20	25.07	2.46								Not Studied
LAWC23			177.84	21.28	2.41								Not Studied
LAWC23			184.03	21.95	2.41								Not Studied
LAWC23			181.65	25.99	2.34								Not Studied
LAWC23			180.08	24.82	1.31								Not Studied
LAWC23			213.16	29.20	1.20								Not Studied
LAWC23			249.48	34.71									Not Studied
LAWC23			353.76	43.74	0.76			1.81					Not Studied
LAWC24			48.22	16.36	2.95								Not Studied
LAWC24			73.72	24.28	3.07								Not Studied
LAWC24			88.45	25.86	2.79								Not Studied
LAWC24			104.40	31.67	3.02								Not Studied
LAWC24			118.53	37.04	3.13								Not Studied
LAWC24			134.67	43.39	3.28								Not Studied
LAWC24			184.82	56.40	3.59								Not Studied
LAWC24			218.25	53.10	3.96								Not Studied
LAWC24			209.58	57.89	4.14								Not Studied
LAWC24			242.94	72.65	4.39								Not Studied
LAWC24			227.28	60.37	3.27								Not Studied
LAWC24			255.57	66.96	2.85								Not Studied
LAWC24			340.22	97.02	1.00								Not Studied
LAWC24			587.71	170.25	1.18			3.50					Not Studied
LAWC25			64.06	32.99	4.26								Not Studied
LAWC25			101.97	51.19	4.28								Not Studied
LAWC25			126.40	59.22	3.75								Not Studied
LAWC25			144.83	69.56	4.05								Not Studied
LAWC25			170.13	83.86	3.99								Not Studied
LAWC25			184.97	93.29	4.15								Not Studied
LAWC25			261.06	132.69	5.29								Not Studied
LAWC25			354.21	145.42	5.88								Not Studied
LAWC25			318.10	151.55	5.47								Not Studied
LAWC25			354.21	171.57	5.18								Not Studied
LAWC25			330.74	146.48	2.85								Not Studied
LAWC25			817.28	362.69	1.45								Not Studied
LAWC25			2002.70	846.44									Not Studied
LAWC25			2276.20	1024.30	1.07			3.10					Not Studied
LAWC26		8.66	58.95		0.85								Not Studied
LAWC26		13.07	87.61		1.14								Not Studied
LAWC26		13.93	93.75		1.49								Not Studied
LAWC26		17.68	113.63		1.89								Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
LAWC15		73.75	15.234	6.6284003	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWC21rev2		71.68	18.975	-11.182378	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC21rev2		71.68	18.975	-11.182378	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC21rev2		71.68	18.975	-11.182378	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC21rev2		71.68	18.975	-11.182378	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC21rev2		71.68	18.975	-11.182378	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC21rev2		71.68	18.975	-11.182378	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC21rev2		71.68	18.975	-11.182378	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC21rev2		71.68	18.975	-11.182378	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC21rev2		71.68	18.975	-11.182378	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC21rev2		71.68	18.975	-11.182378	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC22		73.70	16.612	-1.0708861	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC22		73.70	16.612	-1.0708861	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC22		73.70	16.612	-1.0708861	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC22		73.70	16.612	-1.0708861	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC22		73.70	16.612	-1.0708861	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC22		73.70	16.612	-1.0708861	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC22		73.70	16.612	-1.0708861	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC22		73.70	16.612	-1.0708861	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC22		73.70	16.612	-1.0708861	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC22		73.70	16.612	-1.0708861	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC22		73.70	16.612	-1.0708861	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC23		71.58	18.989	-11.0978902	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC23		71.58	18.989	-11.0978902	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC23		71.58	18.989	-11.0978902	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC23		71.58	18.989	-11.0978902	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC23		71.58	18.989	-11.0978902	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC23		71.58	18.989	-11.0978902	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC23		71.58	18.989	-11.0978902	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC23		71.58	18.989	-11.0978902	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC23		71.58	18.989	-11.0978902	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC23		71.58	18.989	-11.0978902	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC23		71.58	18.989	-11.0978902	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC24		72.34	18.483	-9.4587634	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC24		72.34	18.483	-9.4587634	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC24		72.34	18.483	-9.4587634	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC24		72.34	18.483	-9.4587634	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC24		72.34	18.483	-9.4587634	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC24		72.34	18.483	-9.4587634	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC24		72.34	18.483	-9.4587634	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC24		72.34	18.483	-9.4587634	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC24		72.34	18.483	-9.4587634	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC24		72.34	18.483	-9.4587634	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC24		72.34	18.483	-9.4587634	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC24		72.34	18.483	-9.4587634	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC25		72.94	17.952	-7.4218816	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC25		72.94	17.952	-7.4218816	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC25		72.94	17.952	-7.4218816	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC25		72.94	17.952	-7.4218816	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC25		72.94	17.952	-7.4218816	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC25		72.94	17.952	-7.4218816	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC25		72.94	17.952	-7.4218816	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC25		72.94	17.952	-7.4218816	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC25		72.94	17.952	-7.4218816	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC25		72.94	17.952	-7.4218816	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC25		72.94	17.952	-7.4218816	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC25		72.94	17.952	-7.4218816	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC26		78.06	12.542	14.9227964	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC26		78.06	12.542	14.9227964	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC26		78.06	12.542	14.9227964	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC26		78.06	12.542	14.9227964	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
LAWC15	6.22	8.93	0.00	2.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.01	0.14	0.00	0.00	0.00
LAWC21rev2	6.13	10.06	0.00	6.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.44	0.14	0.00	0.00	2.73
LAWC21rev2	6.13	10.06	0.00	6.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.44	0.14	0.00	0.00	2.73
LAWC21rev2	6.13	10.06	0.00	6.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.44	0.14	0.00	0.00	2.73
LAWC21rev2	6.13	10.06	0.00	6.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.44	0.14	0.00	0.00	2.73
LAWC21rev2	6.13	10.06	0.00	6.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.44	0.14	0.00	0.00	2.73
LAWC21rev2	6.13	10.06	0.00	6.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.44	0.14	0.00	0.00	2.73
LAWC21rev2	6.13	10.06	0.00	6.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.44	0.14	0.00	0.00	2.73
LAWC21rev2	6.13	10.06	0.00	6.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.44	0.14	0.00	0.00	2.73
LAWC21rev2	6.13	10.06	0.00	6.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.44	0.14	0.00	0.00	2.73
LAWC21rev2	6.13	10.06	0.00	6.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.44	0.14	0.00	0.00	2.73
LAWC22	6.08	10.06	0.00	5.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.43	0.08	0.00	0.00	2.51
LAWC22	6.08	10.06	0.00	5.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.43	0.08	0.00	0.00	2.51
LAWC22	6.08	10.06	0.00	5.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.43	0.08	0.00	0.00	2.51
LAWC22	6.08	10.06	0.00	5.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.43	0.08	0.00	0.00	2.51
LAWC22	6.08	10.06	0.00	5.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.43	0.08	0.00	0.00	2.51
LAWC22	6.08	10.06	0.00	5.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.43	0.08	0.00	0.00	2.51
LAWC22	6.08	10.06	0.00	5.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.43	0.08	0.00	0.00	2.51
LAWC22	6.08	10.06	0.00	5.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.43	0.08	0.00	0.00	2.51
LAWC22	6.08	10.06	0.00	5.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.43	0.08	0.00	0.00	2.51
LAWC22	6.08	10.06	0.00	5.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.43	0.08	0.00	0.00	2.51
LAWC22	6.08	10.06	0.00	5.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.43	0.08	0.00	0.00	2.51
LAWC22	6.08	10.06	0.00	5.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.43	0.08	0.00	0.00	2.51
LAWC23	6.12	10.08	0.00	6.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.47	2.88	0.00	0.00	0.00
LAWC23	6.12	10.08	0.00	6.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.47	2.88	0.00	0.00	0.00
LAWC23	6.12	10.08	0.00	6.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.47	2.88	0.00	0.00	0.00
LAWC23	6.12	10.08	0.00	6.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.47	2.88	0.00	0.00	0.00
LAWC23	6.12	10.08	0.00	6.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.47	2.88	0.00	0.00	0.00
LAWC23	6.12	10.08	0.00	6.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.47	2.88	0.00	0.00	0.00
LAWC23	6.12	10.08	0.00	6.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.47	2.88	0.00	0.00	0.00
LAWC23	6.12	10.08	0.00	6.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.47	2.88	0.00	0.00	0.00
LAWC23	6.12	10.08	0.00	6.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.47	2.88	0.00	0.00	0.00
LAWC23	6.12	10.08	0.00	6.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.47	2.88	0.00	0.00	0.00
LAWC23	6.12	10.08	0.00	6.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.47	2.88	0.00	0.00	0.00
LAWC24	5.96	9.81	0.00	6.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.30	5.56	0.00	0.00	0.00
LAWC24	5.96	9.81	0.00	6.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.30	5.56	0.00	0.00	0.00
LAWC24	5.96	9.81	0.00	6.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.30	5.56	0.00	0.00	0.00
LAWC24	5.96	9.81	0.00	6.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.30	5.56	0.00	0.00	0.00
LAWC24	5.96	9.81	0.00	6.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.30	5.56	0.00	0.00	0.00
LAWC24	5.96	9.81	0.00	6.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.30	5.56	0.00	0.00	0.00
LAWC24	5.96	9.81	0.00	6.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.30	5.56	0.00	0.00	0.00
LAWC24	5.96	9.81	0.00	6.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.30	5.56	0.00	0.00	0.00
LAWC24	5.96	9.81	0.00	6.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.30	5.56	0.00	0.00	0.00
LAWC24	5.96	9.81	0.00	6.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.30	5.56	0.00	0.00	0.00
LAWC24	5.96	9.81	0.00	6.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.30	5.56	0.00	0.00	0.00
LAWC24	5.96	9.81	0.00	6.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.30	5.56	0.00	0.00	0.00
LAWC25	5.78	9.53	0.00	6.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.12	8.08	0.00	0.00	0.00
LAWC25	5.78	9.53	0.00	6.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.12	8.08	0.00	0.00	0.00
LAWC25	5.78	9.53	0.00	6.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.12	8.08	0.00	0.00	0.00
LAWC25	5.78	9.53	0.00	6.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.12	8.08	0.00	0.00	0.00
LAWC25	5.78	9.53	0.00	6.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.12	8.08	0.00	0.00	0.00
LAWC25	5.78	9.53	0.00	6.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.12	8.08	0.00	0.00	0.00	
LAWC25	5.78	9.53	0.00	6.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.12	8.08	0.00	0.00	0.00
LAWC25	5.78	9.53	0.00	6.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.12	8.08	0.00	0.00	0.00
LAWC25	5.78	9.53	0.00	6.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.12	8.08	0.00	0.00	0.00
LAWC25	5.78	9.53	0.00	6.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.12	8.08	0.00	0.00	0.00
LAWC25	5.78	9.53	0.00	6.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.12	8.08	0.00	0.00	0.00
LAWC26	6.12	13.26	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC26	6.12	13.26	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC26	6.12	13.26	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC26	6.12	13.26	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
LAWC15	2.01	0.00	0.00	0.00	19.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.71	0.00	0.00
LAWC21rev2	1.50	0.00	0.00	0.00	11.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.78	0.00	0.00
LAWC21rev2	1.50	0.00	0.00	0.00	11.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.78	0.00	0.00
LAWC21rev2	1.50	0.00	0.00	0.00	11.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.78	0.00	0.00
LAWC21rev2	1.50	0.00	0.00	0.00	11.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.78	0.00	0.00
LAWC21rev2	1.50	0.00	0.00	0.00	11.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.78	0.00	0.00
LAWC21rev2	1.50	0.00	0.00	0.00	11.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.78	0.00	0.00
LAWC21rev2	1.50	0.00	0.00	0.00	11.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.78	0.00	0.00
LAWC21rev2	1.50	0.00	0.00	0.00	11.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.78	0.00	0.00
LAWC21rev2	1.50	0.00	0.00	0.00	11.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.78	0.00	0.00
LAWC21rev2	1.50	0.00	0.00	0.00	11.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.78	0.00	0.00
LAWC22	1.51	0.00	0.00	0.00	14.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
LAWC22	1.51	0.00	0.00	0.00	14.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
LAWC22	1.51	0.00	0.00	0.00	14.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
LAWC22	1.51	0.00	0.00	0.00	14.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
LAWC22	1.51	0.00	0.00	0.00	14.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
LAWC22	1.51	0.00	0.00	0.00	14.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
LAWC22	1.51	0.00	0.00	0.00	14.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
LAWC22	1.51	0.00	0.00	0.00	14.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
LAWC22	1.51	0.00	0.00	0.00	14.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
LAWC22	1.51	0.00	0.00	0.00	14.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
LAWC22	1.51	0.00	0.00	0.00	14.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
LAWC22	1.51	0.00	0.00	0.00	14.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
LAWC23	1.51	0.00	0.00	0.00	11.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWC23	1.51	0.00	0.00	0.00	11.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWC23	1.51	0.00	0.00	0.00	11.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWC23	1.51	0.00	0.00	0.00	11.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWC23	1.51	0.00	0.00	0.00	11.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWC23	1.51	0.00	0.00	0.00	11.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWC23	1.51	0.00	0.00	0.00	11.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWC23	1.51	0.00	0.00	0.00	11.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWC23	1.51	0.00	0.00	0.00	11.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWC23	1.51	0.00	0.00	0.00	11.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWC23	1.51	0.00	0.00	0.00	11.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.76	0.00	0.00
LAWC24	1.47	0.00	0.00	0.00	11.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.43	0.00	0.00
LAWC24	1.47	0.00	0.00	0.00	11.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.43	0.00	0.00
LAWC24	1.47	0.00	0.00	0.00	11.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.43	0.00	0.00
LAWC24	1.47	0.00	0.00	0.00	11.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.43	0.00	0.00
LAWC24	1.47	0.00	0.00	0.00	11.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.43	0.00	0.00
LAWC24	1.47	0.00	0.00	0.00	11.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.43	0.00	0.00
LAWC24	1.47	0.00	0.00	0.00	11.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.43	0.00	0.00
LAWC24	1.47	0.00	0.00	0.00	11.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.43	0.00	0.00
LAWC24	1.47	0.00	0.00	0.00	11.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.43	0.00	0.00
LAWC24	1.47	0.00	0.00	0.00	11.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.43	0.00	0.00
LAWC24	1.47	0.00	0.00	0.00	11.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.43	0.00	0.00
LAWC24	1.47	0.00	0.00	0.00	11.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.43	0.00	0.00
LAWC25	1.43	0.00	0.00	0.00	11.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.12	0.00	0.00
LAWC25	1.43	0.00	0.00	0.00	11.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.12	0.00	0.00
LAWC25	1.43	0.00	0.00	0.00	11.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.12	0.00	0.00
LAWC25	1.43	0.00	0.00	0.00	11.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.12	0.00	0.00
LAWC25	1.43	0.00	0.00	0.00	11.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.12	0.00	0.00
LAWC25	1.43	0.00	0.00	0.00	11.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.12	0.00	0.00
LAWC25	1.43	0.00	0.00	0.00	11.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.12	0.00	0.00
LAWC25	1.43	0.00	0.00	0.00	11.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.12	0.00	0.00
LAWC25	1.43	0.00	0.00	0.00	11.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.12	0.00	0.00
LAWC25	1.43	0.00	0.00	0.00	11.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.12	0.00	0.00
LAWC25	1.43	0.00	0.00	0.00	11.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.12	0.00	0.00
LAWC26	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.96	0.00	0.00
LAWC26	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.96	0.00	0.00
LAWC26	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.96	0.00	0.00
LAWC26	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.96	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
LAWC15	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.01	1.01	100.00		
LAWC21rev2	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.68	100.00		
LAWC21rev2	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.68	100.00		
LAWC21rev2	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.68	100.00		
LAWC21rev2	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.68	100.00		
LAWC21rev2	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.68	100.00		
LAWC21rev2	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.68	100.00		
LAWC21rev2	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.68	100.00		
LAWC21rev2	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.68	100.00		
LAWC21rev2	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.68	100.00		
LAWC21rev2	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.68	100.00		
LAWC21rev2	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.68	100.00		
LAWC22	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.94	100.00		
LAWC22	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.94	100.00		
LAWC22	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.94	100.00		
LAWC22	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.94	100.00		
LAWC22	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.94	100.00		
LAWC22	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.94	100.00		
LAWC22	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.94	100.00		
LAWC22	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.94	100.00		
LAWC22	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.94	100.00		
LAWC22	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.94	100.00		
LAWC22	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.94	100.00		
LAWC22	0.00	0.00	0.00	1.14	0.00	0.00	3.07	3.03	0.94	100.00		
LAWC23	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.78	100.00		
LAWC23	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.78	100.00		
LAWC23	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.78	100.00		
LAWC23	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.78	100.00		
LAWC23	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.78	100.00		
LAWC23	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.78	100.00		
LAWC23	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.78	100.00		
LAWC23	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.78	100.00		
LAWC23	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.78	100.00		
LAWC23	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.78	100.00		
LAWC23	0.00	0.00	0.00	1.12	0.00	0.00	3.01	3.02	0.78	100.00		
LAWC24	0.00	0.00	0.00	1.09	0.00	0.00	2.93	2.94	0.75	100.00		
LAWC24	0.00	0.00	0.00	1.09	0.00	0.00	2.93	2.94	0.75	100.00		
LAWC24	0.00	0.00	0.00	1.09	0.00	0.00	2.93	2.94	0.75	100.00		
LAWC24	0.00	0.00	0.00	1.09	0.00	0.00	2.93	2.94	0.75	100.00		
LAWC24	0.00	0.00	0.00	1.09	0.00	0.00	2.93	2.94	0.75	100.00		
LAWC24	0.00	0.00	0.00	1.09	0.00	0.00	2.93	2.94	0.75	100.00		
LAWC24	0.00	0.00	0.00	1.09	0.00	0.00	2.93	2.94	0.75	100.00		
LAWC24	0.00	0.00	0.00	1.09	0.00	0.00	2.93	2.94	0.75	100.00		
LAWC24	0.00	0.00	0.00	1.09	0.00	0.00	2.93	2.94	0.75	100.00		
LAWC24	0.00	0.00	0.00	1.09	0.00	0.00	2.93	2.94	0.75	100.00		
LAWC24	0.00	0.00	0.00	1.09	0.00	0.00	2.93	2.94	0.75	100.00		
LAWC24	0.00	0.00	0.00	1.09	0.00	0.00	2.93	2.94	0.75	100.00		
LAWC25	0.00	0.00	0.00	1.06	0.00	0.00	2.85	2.85	0.93	100.00		
LAWC25	0.00	0.00	0.00	1.06	0.00	0.00	2.85	2.85	0.93	100.00		
LAWC25	0.00	0.00	0.00	1.06	0.00	0.00	2.85	2.85	0.93	100.00		
LAWC25	0.00	0.00	0.00	1.06	0.00	0.00	2.85	2.85	0.93	100.00		
LAWC25	0.00	0.00	0.00	1.06	0.00	0.00	2.85	2.85	0.93	100.00		
LAWC25	0.00	0.00	0.00	1.06	0.00	0.00	2.85	2.85	0.93	100.00		
LAWC25	0.00	0.00	0.00	1.06	0.00	0.00	2.85	2.85	0.93	100.00		
LAWC25	0.00	0.00	0.00	1.06	0.00	0.00	2.85	2.85	0.93	100.00		
LAWC25	0.00	0.00	0.00	1.06	0.00	0.00	2.85	2.85	0.93	100.00		
LAWC25	0.00	0.00	0.00	1.06	0.00	0.00	2.85	2.85	0.93	100.00		
LAWC25	0.00	0.00	0.00	1.06	0.00	0.00	2.85	2.85	0.93	100.00		
LAWC25	0.00	0.00	0.00	1.06	0.00	0.00	2.85	2.85	0.93	100.00		
LAWC26	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.74	100.00		
LAWC26	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.74	100.00		
LAWC26	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.74	100.00		
LAWC26	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.74	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
LAWC26	179.00	0.81	2.031	363.483	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.66	101.43	59.37	1.25
LAWC26	270.00	0.81	2.031	548.270	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.75	135.59	80.34	2.31
LAWC26	368.00	0.81	2.031	747.271	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.84	135.29	84.21	1.69
LAWC26	557.00	0.81	2.031	1,131.060	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.95	123.65	79.90	1.24
LAWC26	728.00	0.81	2.031	1,478.298	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.07	137.39	89.06	1.32
LAWC26	1098.00	0.81	2.031	2,229.630	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.12	145.49	96.29	1.29
LAWC26	1461.00	0.81	2.031	2,966.748	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	175.40	123.94	1.71
LAWC26	1832.00	0.81	2.031	3,720.112	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	259.53	184.39	2.79
LAWC27	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.35	41.86	14.27	2.50
LAWC27	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.53	56.11	21.25	3.28
LAWC27	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.75	65.65	25.90	3.14
LAWC27	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.86	76.30	29.99	2.99
LAWC27	179.00	0.81	2.031	363.483	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.98	75.99	31.35	2.62
LAWC27	270.00	0.81	2.031	548.270	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	115.22	41.86	3.76
LAWC27	368.00	0.81	2.031	747.271	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	116.32	45.87	3.55
LAWC27	557.00	0.81	2.031	1,131.060	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	108.86	39.78	3.19
LAWC27	728.00	0.81	2.031	1,478.298	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.37	117.22	43.23	3.27
LAWC27	1098.00	0.81	2.031	2,229.630	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	124.53	44.04	2.97
LAWC27	1461.00	0.81	2.031	2,966.748	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.54	150.67	56.00	2.95
LAWC27	1832.00	0.81	2.031	3,720.112	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.64	235.17	96.37	3.48
LAWC28	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.74	35.72	8.92	7.63
LAWC28	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	45.08	11.76	9.76
LAWC28	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.28	49.46	12.74	9.86
LAWC28	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	56.57	14.13	10.11
LAWC28	179.00	0.81	2.031	363.483	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	56.75	16.41	7.13
LAWC28	270.00	0.81	2.031	548.270	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.54	84.45	18.40	8.62
LAWC28	368.00	0.81	2.031	747.271	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	95.76	29.12	5.61
LAWC28	557.00	0.81	2.031	1,131.060	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.78	103.70	29.39	3.95
LAWC28	728.00	0.81	2.031	1,478.298	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.84	119.85	36.11	3.08
LAWC28	1098.00	0.81	2.031	2,229.630	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.95	152.26	54.10	2.18
LAWC28	1461.00	0.81	2.031	2,966.748	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.04	252.32	132.80	1.71
LAWC28	1832.00	0.81	2.031	3,720.112	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	12.14	512.18	2522.73	6.59
LAWC29	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.36	36.23	9.46	3.82
LAWC29	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.57	49.91	13.53	5.23
LAWC29	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.77	56.74	16.08	5.33
LAWC29	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	68.31	19.13	5.58
LAWC29	179.00	0.81	2.031	363.483	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	74.26	20.85	5.67
LAWC29	270.00	0.81	2.031	548.270	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.06	100.55	27.98	7.22
LAWC29	368.00	0.81	2.031	747.271	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	100.39	27.88	6.13
LAWC29	557.00	0.81	2.031	1,131.060	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	93.79	26.89	5.05
LAWC29	728.00	0.81	2.031	1,478.298	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	103.43	23.97	4.79
LAWC29	1098.00	0.81	2.031	2,229.630	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.43	112.31	28.53	3.59
LAWC29	1461.00	0.81	2.031	2,966.748	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	123.17	35.48	3.23
LAWC29	1832.00	0.81	2.031	3,720.112	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.62	158.69	90.29	3.42
LAWC30	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.55	56.64	18.64	
LAWC30	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.77	95.74	40.70	0.58
LAWC30	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.95	117.97	53.53	0.82
LAWC30	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	149.53	69.93	1.02
LAWC30	179.00	0.81	2.031	363.483	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	157.47	74.53	1.29
LAWC30	270.00	0.81	2.031	548.270	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.35	209.53	105.89	1.68
LAWC30	368.00	0.81	2.031	747.271	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.43	220.10	110.33	1.61
LAWC30	557.00	0.81	2.031	1,131.060	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.54	204.29	101.78	1.63
LAWC30	728.00	0.81	2.031	1,478.298	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	240.20	110.81	2.60
LAWC30	1098.00	0.81	2.031	2,229.630	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.74	308.15	161.35	3.37
LAWC30	1461.00	0.81	2.031	2,966.748	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.84	302.74	199.30	2.10
LAWC30	1832.00	0.81	2.031	3,720.112	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.87	454.02	958.28	4.84
LAWC31	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.43	52.25	17.14	1.19
LAWC31	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.63	77.19	29.68	0.96
LAWC31	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.74	89.60	36.03	1.00
LAWC31	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.95	122.10	51.46	1.50
LAWC31	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.06	132.80	55.36	1.54
LAWC31	269.00	0.81	2.031	546.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.18	168.14	73.58	1.78
LAWC31	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	168.71	72.39	1.69
LAWC31	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.37	177.85	80.94	
LAWC31	735.00	0.81	2.031	1,492.512	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.43	205.62	100.53	
LAWC31	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	270.98	185.52	2.06
LAWC31	1456.00	0.81	2.031	2,956.595	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	358.35	932.64	3.87
LAWC31	1827.00	0.81	2.031	3,709.959	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.67	417.74	1870.23	10.49
LAWC32	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.57	45.34	13.05	3.66
LAWC32	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.74	53.48	16.88	3.44
LAWC32	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.86	59.46	19.04	3.23
LAWC32	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.98	80.27	26.00	3.68

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
LAWC26		15.59	123.80		1.75								Not Studied
LAWC26		25.40	169.75		2.83								Not Studied
LAWC26		24.70	169.23		2.48								Not Studied
LAWC26		24.37	175.98		3.56								Not Studied
LAWC26		26.73	171.09	1.98	2.18								Not Studied
LAWC26		29.30	186.77		2.50								Not Studied
LAWC26		36.95	256.18	2.36	0.85								Not Studied
LAWC26		57.77	337.56	2.58	0.88								Not Studied
LAWC27		5.48	39.02		1.18								Not Studied
LAWC27		8.49	60.51		1.38								Not Studied
LAWC27		10.11	71.94		1.92								Not Studied
LAWC27		13.50	94.77		2.29								Not Studied
LAWC27		13.14	83.42		2.34								Not Studied
LAWC27		20.19	143.47	1.71	3.66								Not Studied
LAWC27		19.44	143.59		3.40								Not Studied
LAWC27		19.06	141.53		4.06								Not Studied
LAWC27		19.84	139.29	2.71	3.27								Not Studied
LAWC27		21.03	149.58		3.13								Not Studied
LAWC27		24.71	189.55	2.32	1.35								Not Studied
LAWC27		39.06	264.59	2.59	1.36								Not Studied
LAWC28		5.44	38.91		1.65								Not Studied
LAWC28		7.81	57.40		2.04								Not Studied
LAWC28		8.81	65.51		2.54								Not Studied
LAWC28		12.01	90.61		3.02								Not Studied
LAWC28		11.73	85.76		3.36								Not Studied
LAWC28		18.14	139.77	2.20	4.90								Not Studied
LAWC28		19.31	152.96		4.84								Not Studied
LAWC28		21.95	178.06	1.91	5.95								Not Studied
LAWC28		25.38	188.18	2.05	5.90								Not Studied
LAWC28		32.33	232.35	2.16	5.30								Not Studied
LAWC28		59.38	445.49	4.59	2.54								Not Studied
LAWC28		585.41	4171.53	37.53	2.66			0.47					Not Studied
LAWC29		5.10	36.73		1.80								Not Studied
LAWC29		8.11	58.90		2.21								Not Studied
LAWC29		9.13	66.90		2.57								Not Studied
LAWC29		13.11	94.46		3.37								Not Studied
LAWC29		11.78	96.92		2.91								Not Studied
LAWC29		18.42	136.63		4.72								Not Studied
LAWC29		17.60	138.59		4.47								Not Studied
LAWC29		16.83	145.64		5.79								Not Studied
LAWC29		18.61	143.52	2.02	4.59								Not Studied
LAWC29		19.62	153.88		4.96								Not Studied
LAWC29		21.08	169.23		3.93								Not Studied
LAWC29		35.30	271.97	2.77	4.00								Not Studied
LAWC30		8.39	58.26		1.77								Not Studied
LAWC30		17.24	115.23		1.78								Not Studied
LAWC30		20.95	143.90		2.12								Not Studied
LAWC30		28.83	202.07		2.39								Not Studied
LAWC30		27.93	197.70		2.32								Not Studied
LAWC30		43.18	299.34	2.53	2.87								Not Studied
LAWC30		43.77	309.35	2.26	2.29								Not Studied
LAWC30		38.94	296.13	2.42	5.37								Not Studied
LAWC30		47.86	340.14	3.32	1.20								Not Studied
LAWC30		60.99	398.33	3.63	1.58								Not Studied
LAWC30		66.78	466.48	3.74	0.78								Not Studied
LAWC30		215.23	1811.87	13.15	2.11								Not Studied
LAWC31		7.96	55.57		1.83								Not Studied
LAWC31		12.86	91.99		1.85								Not Studied
LAWC31		15.84	112.37		2.16								Not Studied
LAWC31		22.70	153.03		3.24								Not Studied
LAWC31		25.84	186.80		3.42								Not Studied
LAWC31		33.67	243.09	2.56	3.55								Not Studied
LAWC31		33.43	249.16	2.60	3.37								Not Studied
LAWC31		35.98	256.85	2.75	2.71								Not Studied
LAWC31		41.22	305.28	3.37	1.77								Not Studied
LAWC31		69.92	518.12	3.87	1.51								Not Studied
LAWC31		180.42	1667.43	14.53	1.08								Not Studied
LAWC31		365.37	3404.77	38.43	1.24	1.29							Not Studied
LAWC32		6.73	49.04		2.14								Not Studied
LAWC32		8.78	65.54		2.16								Not Studied
LAWC32		10.46	77.63		2.54								Not Studied
LAWC32		14.75	103.20		4.05								Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
LAWC26		78.06	12.542	14.9227964	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC26		78.06	12.542	14.9227964	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC26		78.06	12.542	14.9227964	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC26		78.06	12.542	14.9227964	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC26		78.06	12.542	14.9227964	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC26		78.06	12.542	14.9227964	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC26		78.06	12.542	14.9227964	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC26		78.06	12.542	14.9227964	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC27		75.87	14.67	6.4047185	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC27		75.87	14.67	6.4047185	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC27		75.87	14.67	6.4047185	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC27		75.87	14.67	6.4047185	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC27		75.87	14.67	6.4047185	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC27		75.87	14.67	6.4047185	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC27		75.87	14.67	6.4047185	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC27		75.87	14.67	6.4047185	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC27		75.87	14.67	6.4047185	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC27		75.87	14.67	6.4047185	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC28		71.59	18.941	-10.8412273	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC28		71.59	18.941	-10.8412273	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC28		71.59	18.941	-10.8412273	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC28		71.59	18.941	-10.8412273	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC28		71.59	18.941	-10.8412273	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC28		71.59	18.941	-10.8412273	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC28		71.59	18.941	-10.8412273	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC28		71.59	18.941	-10.8412273	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC28		71.59	18.941	-10.8412273	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC28		71.59	18.941	-10.8412273	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC28		71.59	18.941	-10.8412273	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC29		72.06	16.177	4.0108364	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC29		72.06	16.177	4.0108364	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC29		72.06	16.177	4.0108364	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC29		72.06	16.177	4.0108364	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC29		72.06	16.177	4.0108364	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC29		72.06	16.177	4.0108364	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC29		72.06	16.177	4.0108364	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC29		72.06	16.177	4.0108364	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC29		72.06	16.177	4.0108364	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC29		72.06	16.177	4.0108364	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC30		71.64	16.635	2.0912	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC30		71.64	16.635	2.0912	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC30		71.64	16.635	2.0912	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC30		71.64	16.635	2.0912	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC30		71.64	16.635	2.0912	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC30		71.64	16.635	2.0912	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC30		71.64	16.635	2.0912	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC30		71.64	16.635	2.0912	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC30		71.64	16.635	2.0912	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC30		71.64	16.635	2.0912	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC30		71.64	16.635	2.0912	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC31		71.61	17.957	-5.3174656	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC31		71.61	17.957	-5.3174656	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC31		71.61	17.957	-5.3174656	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC31		71.61	17.957	-5.3174656	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC31		71.61	17.957	-5.3174656	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC31		71.61	17.957	-5.3174656	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC31		71.61	17.957	-5.3174656	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC31		71.61	17.957	-5.3174656	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC31		71.61	17.957	-5.3174656	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC31		71.61	17.957	-5.3174656	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC31		71.61	17.957	-5.3174656	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC32		71.62	17.952	-5.3068651	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC32		71.62	17.952	-5.3068651	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC32		71.62	17.952	-5.3068651	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC32		71.62	17.952	-5.3068651	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
LAWC26	6.12	13.26	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC26	6.12	13.26	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC26	6.12	13.26	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC26	6.12	13.26	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC26	6.12	13.26	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC26	6.12	13.26	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC26	6.12	13.26	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC26	6.12	13.26	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC27	6.12	12.18	0.00	8.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC27	6.12	12.18	0.00	8.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC27	6.12	12.18	0.00	8.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC27	6.12	12.18	0.00	8.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC27	6.12	12.18	0.00	8.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC27	6.12	12.18	0.00	8.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC27	6.12	12.18	0.00	8.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC27	6.12	12.18	0.00	8.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC27	6.12	12.18	0.00	8.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC27	6.12	12.18	0.00	8.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC28	6.12	10.05	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC28	6.12	10.05	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC28	6.12	10.05	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC28	6.12	10.05	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC28	6.12	10.05	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC28	6.12	10.05	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC28	6.12	10.05	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC28	6.12	10.05	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC28	6.12	10.05	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC28	6.12	10.05	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC28	6.12	10.05	0.00	12.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC29	6.55	10.05	0.00	9.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC29	6.55	10.05	0.00	9.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC29	6.55	10.05	0.00	9.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC29	6.55	10.05	0.00	9.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC29	6.55	10.05	0.00	9.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC29	6.55	10.05	0.00	9.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC29	6.55	10.05	0.00	9.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC29	6.55	10.05	0.00	9.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC29	6.55	10.05	0.00	9.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC29	6.55	10.05	0.00	9.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	2.73
LAWC30	6.12	10.05	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.10	0.14	0.00	0.00	2.73
LAWC30	6.12	10.05	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.10	0.14	0.00	0.00	2.73
LAWC30	6.12	10.05	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.10	0.14	0.00	0.00	2.73
LAWC30	6.12	10.05	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.10	0.14	0.00	0.00	2.73
LAWC30	6.12	10.05	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.10	0.14	0.00	0.00	2.73
LAWC30	6.12	10.05	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.10	0.14	0.00	0.00	2.73
LAWC30	6.12	10.05	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.10	0.14	0.00	0.00	2.73
LAWC30	6.12	10.05	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.10	0.14	0.00	0.00	2.73
LAWC30	6.12	10.05	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.10	0.14	0.00	0.00	2.73
LAWC30	6.12	10.05	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.10	0.14	0.00	0.00	2.73
LAWC30	6.12	10.05	0.00	6.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.10	0.14	0.00	0.00	2.73
LAWC31	6.12	10.05	0.00	7.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.43	0.14	0.00	0.00	2.73
LAWC31	6.12	10.05	0.00	7.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.43	0.14	0.00	0.00	2.73
LAWC31	6.12	10.05	0.00	7.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.43	0.14	0.00	0.00	2.73
LAWC31	6.12	10.05	0.00	7.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.43	0.14	0.00	0.00	2.73
LAWC31	6.12	10.05	0.00	7.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.43	0.14	0.00	0.00	2.73
LAWC31	6.12	10.05	0.00	7.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.43	0.14	0.00	0.00	2.73
LAWC31	6.12	10.05	0.00	7.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.43	0.14	0.00	0.00	2.73
LAWC31	6.12	10.05	0.00	7.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.43	0.14	0.00	0.00	2.73
LAWC31	6.12	10.05	0.00	7.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.43	0.14	0.00	0.00	2.73
LAWC31	6.12	10.05	0.00	7.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.43	0.14	0.00	0.00	2.73
LAWC32	6.49	10.05	0.00	9.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42	0.14	0.00	0.00	2.73
LAWC32	6.49	10.05	0.00	9.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42	0.14	0.00	0.00	2.73
LAWC32	6.49	10.05	0.00	9.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42	0.14	0.00	0.00	2.73
LAWC32	6.49	10.05	0.00	9.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42	0.14	0.00	0.00	2.73

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
LAWC26	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.96	0.00	0.00
LAWC26	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.96	0.00	0.00
LAWC26	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.96	0.00	0.00
LAWC26	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.96	0.00	0.00
LAWC26	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.96	0.00	0.00
LAWC26	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.96	0.00	0.00
LAWC26	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.96	0.00	0.00
LAWC27	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.87	0.00	0.00
LAWC27	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.87	0.00	0.00
LAWC27	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.87	0.00	0.00
LAWC27	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.87	0.00	0.00
LAWC27	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.87	0.00	0.00
LAWC27	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.87	0.00	0.00
LAWC27	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.87	0.00	0.00
LAWC27	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.87	0.00	0.00
LAWC27	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.87	0.00	0.00
LAWC27	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.87	0.00	0.00
LAWC28	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.72	0.00	0.00
LAWC28	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.72	0.00	0.00
LAWC28	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.72	0.00	0.00
LAWC28	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.72	0.00	0.00
LAWC28	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.72	0.00	0.00
LAWC28	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.72	0.00	0.00
LAWC28	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.72	0.00	0.00
LAWC28	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.72	0.00	0.00
LAWC28	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.72	0.00	0.00
LAWC28	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.72	0.00	0.00
LAWC28	1.50	0.00	0.00	0.00	11.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.72	0.00	0.00
LAWC29	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.18	0.00	0.00
LAWC29	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.18	0.00	0.00
LAWC29	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.18	0.00	0.00
LAWC29	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.18	0.00	0.00
LAWC29	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.18	0.00	0.00
LAWC29	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.18	0.00	0.00
LAWC29	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.18	0.00	0.00
LAWC29	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.18	0.00	0.00
LAWC29	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.18	0.00	0.00
LAWC29	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.18	0.00	0.00
LAWC30	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.75	0.00	0.00
LAWC30	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.75	0.00	0.00
LAWC30	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.75	0.00	0.00
LAWC30	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.75	0.00	0.00
LAWC30	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.75	0.00	0.00
LAWC30	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.75	0.00	0.00
LAWC30	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.75	0.00	0.00
LAWC30	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.75	0.00	0.00
LAWC30	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.75	0.00	0.00
LAWC30	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.75	0.00	0.00
LAWC31	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
LAWC31	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
LAWC31	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
LAWC31	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
LAWC31	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
LAWC31	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
LAWC31	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
LAWC31	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
LAWC31	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
LAWC31	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.73	0.00	0.00
LAWC32	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.74	0.00	0.00
LAWC32	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.74	0.00	0.00
LAWC32	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.74	0.00	0.00
LAWC32	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.74	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
LAWC26	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.74	100.00		
LAWC26	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.74	100.00		
LAWC26	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.74	100.00		
LAWC26	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.74	100.00		
LAWC26	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.74	100.00		
LAWC26	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.74	100.00		
LAWC26	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.74	100.00		
LAWC26	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.74	100.00		
LAWC27	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.80	100.00		
LAWC27	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.80	100.00		
LAWC27	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.80	100.00		
LAWC27	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.80	100.00		
LAWC27	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.80	100.00		
LAWC27	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.80	100.00		
LAWC27	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.80	100.00		
LAWC27	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.80	100.00		
LAWC27	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.80	100.00		
LAWC27	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.80	100.00		
LAWC28	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.82	100.00		
LAWC28	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.82	100.00		
LAWC28	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.82	100.00		
LAWC28	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.82	100.00		
LAWC28	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.82	100.00		
LAWC28	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.82	100.00		
LAWC28	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.82	100.00		
LAWC28	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.82	100.00		
LAWC28	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.82	100.00		
LAWC28	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.82	100.00		
LAWC28	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.82	100.00		
LAWC28	0.00	0.00	0.00	1.12	0.00	0.00	3.02	3.02	0.82	100.00		
LAWC29	0.00	0.00	0.00	1.12	0.00	0.00	5.37	3.02	0.76	100.00		
LAWC29	0.00	0.00	0.00	1.12	0.00	0.00	5.37	3.02	0.76	100.00		
LAWC29	0.00	0.00	0.00	1.12	0.00	0.00	5.37	3.02	0.76	100.00		
LAWC29	0.00	0.00	0.00	1.12	0.00	0.00	5.37	3.02	0.76	100.00		
LAWC29	0.00	0.00	0.00	1.12	0.00	0.00	5.37	3.02	0.76	100.00		
LAWC29	0.00	0.00	0.00	1.12	0.00	0.00	5.37	3.02	0.76	100.00		
LAWC29	0.00	0.00	0.00	1.12	0.00	0.00	5.37	3.02	0.76	100.00		
LAWC29	0.00	0.00	0.00	1.12	0.00	0.00	5.37	3.02	0.76	100.00		
LAWC29	0.00	0.00	0.00	1.12	0.00	0.00	5.37	3.02	0.76	100.00		
LAWC29	0.00	0.00	0.00	1.12	0.00	0.00	5.37	3.02	0.76	100.00		
LAWC29	0.00	0.00	0.00	1.12	0.00	0.00	5.37	3.02	0.76	100.00		
LAWC30	0.00	0.00	0.00	1.12	0.00	0.00	5.35	3.02	0.73	100.00		
LAWC30	0.00	0.00	0.00	1.12	0.00	0.00	5.35	3.02	0.73	100.00		
LAWC30	0.00	0.00	0.00	1.12	0.00	0.00	5.35	3.02	0.73	100.00		
LAWC30	0.00	0.00	0.00	1.12	0.00	0.00	5.35	3.02	0.73	100.00		
LAWC30	0.00	0.00	0.00	1.12	0.00	0.00	5.35	3.02	0.73	100.00		
LAWC30	0.00	0.00	0.00	1.12	0.00	0.00	5.35	3.02	0.73	100.00		
LAWC30	0.00	0.00	0.00	1.12	0.00	0.00	5.35	3.02	0.73	100.00		
LAWC30	0.00	0.00	0.00	1.12	0.00	0.00	5.35	3.02	0.73	100.00		
LAWC30	0.00	0.00	0.00	1.12	0.00	0.00	5.35	3.02	0.73	100.00		
LAWC30	0.00	0.00	0.00	1.12	0.00	0.00	5.35	3.02	0.73	100.00		
LAWC30	0.00	0.00	0.00	1.12	0.00	0.00	5.35	3.02	0.73	100.00		
LAWC31	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.78	100.00		
LAWC31	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.78	100.00		
LAWC31	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.78	100.00		
LAWC31	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.78	100.00		
LAWC31	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.78	100.00		
LAWC31	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.78	100.00		
LAWC31	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.78	100.00		
LAWC31	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.78	100.00		
LAWC31	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.78	100.00		
LAWC31	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.78	100.00		
LAWC31	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.78	100.00		
LAWC32	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.77	100.00		
LAWC32	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.77	100.00		
LAWC32	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.77	100.00		
LAWC32	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.77	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
LAWC32	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.11	87.94	26.96	3.46
LAWC32	269.00	0.81	2.031	546.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.25	114.68	39.20	3.70
LAWC32	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.36	106.58	35.12	3.14
LAWC32	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.44	129.99	42.76	0.83
LAWC32	735.00	0.81	2.031	1,492.512	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	134.03	43.08	0.64
LAWC32	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	156.03	43.91	2.07
LAWC32	1456.00	0.81	2.031	2,956.595	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.76	212.64	85.24	1.82
LAWC32	1827.00	0.81	2.031	3,709.959	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.77	355.21	255.28	1.74
LAWC33	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.53	66.05	22.03	1.01
LAWC33	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.64	89.61	35.16	0.82
LAWC33	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.74	108.53	44.12	1.44
LAWC33	263.00	0.81	2.031	534.055	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.04	142.68	62.32	1.57
LAWC33	362.00	0.81	2.031	735.088	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	170.29	67.32	1.72
LAWC33	552.00	0.81	2.031	1,120.907	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	146.33	58.36	1.58
LAWC33	1448.00	0.81	2.031	2,940.350	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	282.33	152.99	3.77
LAWC33	1896.00	0.81	2.031	3,850.072	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.62	280.40	312.00	3.17
PNLA126CC	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.56	64.91	27.40	
PNLA126CC	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.65	85.70	63.09	
PNLA126CC	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.74	99.25	82.52	0.21
PNLA126CC	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.84	109.23	103.97	
PNLA126CC	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.92	110.97	112.81	0.13
PNLA126CC	269.00	0.81	2.031	546.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.05	110.30	131.55	0.25
PNLA126CC	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.17	126.69	139.12	0.18
PNLA126CC	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	141.10	169.48	0.19
PNLA126CC	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	195.94	209.19	0.10
PNLA126CC	1456.00	0.81	2.031	2,956.595	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	394.25	430.67	0.18
PNLA126CC	1799.00	0.81	2.031	3,653.101	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	639.63	909.11	0.69
TFA-BASE	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.21	73.52	24.39	0.17
TFA-BASE	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.28	92.13	56.17	0.22
TFA-BASE	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.72	102.50	75.77	0.29
TFA-BASE	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.82	108.47	97.82	0.23
TFA-BASE	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.03	119.17	112.17	0.20
TFA-BASE	270.00	0.81	2.031	548.270	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	119.30	121.80	0.11
TFA-BASE	371.00	0.81	2.031	753.363	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.41	143.63	157.70	
TFA-BASE	547.00	0.81	2.031	1,110.754	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.54	129.90	149.53	0.19
TFA-BASE	727.00	0.81	2.031	1,476.267	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	157.27	185.63	0.38
TFA-BASE	1296.00	0.81	2.031	2,631.695	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.77	233.42	264.71	0.26
TFA-BASE	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.35	68.57	24.79	0.22
TFA-BASE	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.27	82.18	56.52	0.12
TFA-BASE	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.27	82.93	76.46	0.25
TFA-BASE	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.62	79.34	108.37	0.58
TFA-BASE	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.43	78.47	129.87	0.21
TFA-BASE	240.00	0.81	2.031	487.351	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.24	72.90	161.93	
WVF-G-21B	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.67	66.35	25.39	
WVF-G-21B	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.76	86.68	50.60	0.10
WVF-G-21B	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.84	105.05	79.26	0.26
WVF-G-21B	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.94	114.54	94.95	
WVF-G-21B	181.00	0.81	2.031	367.544	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.14	114.35	102.01	0.13
WVF-G-21B	269.00	0.81	2.031	546.239	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.24	121.23	121.06	0.35
WVF-G-21B	365.00	0.81	2.031	741.179	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.36	128.60	123.00	0.28
WVF-G-21B	730.00	0.81	2.031	1,482.359	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	147.71	149.04	0.22
WVF-G-21B	1093.00	0.81	2.031	2,219.477	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.65	237.32	226.17	0.25
WVF-G-21B	1456.00	0.81	2.031	2,956.595	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.74	464.08	511.53	0.17
WVF-G-21B	1799.00	0.81	2.031	3,653.101	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.82	773.16	1276.63	0.38
WVH-G-57B	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.35	44.52	14.97	1.01
WVH-G-57B	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.43	77.37	30.03	0.99
WVH-G-57B	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.54	88.19	37.55	1.17
WVH-G-57B	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.64	101.28	41.28	1.01
WVH-G-57B	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.75	103.94	45.00	1.01
WVH-G-57B	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.85	120.56	53.52	1.40
WVH-G-57B	362.00	0.81	2.031	735.088	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.95	128.11	53.37	1.64
WVH-G-57B	546.00	0.81	2.031	1,108.723	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	128.33	56.03	1.58
WVH-G-57B	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.26	148.71	62.81	1.90
WVH-G-57B	1092.00	0.81	2.031	2,217.446	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.34	215.13	144.56	2.07
WVH-G-57B	1435.00	0.81	2.031	2,913.952	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.45	327.64	325.84	3.85
WVH-G-57B	1778.00	0.81	2.031	3,610.458	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.55	433.06	1150.63	5.60
WVJ-G-109D	7.00	0.81	2.031	14.214	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.27	44.33	15.35	1.20
WVJ-G-109D	28.00	0.81	2.031	56.858	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.34	70.14	31.11	1.13
WVJ-G-109D	56.00	0.81	2.031	113.715	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.43	83.39	43.49	1.37
WVJ-G-109D	120.00	0.81	2.031	243.675	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.54	94.50	53.46	1.15
WVJ-G-109D	180.00	0.81	2.031	365.513	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.64	95.20	56.29	1.22
WVJ-G-109D	271.00	0.81	2.031	550.300	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.76	115.56	74.29	1.67

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
LAWC32		16.70	134.50		3.57								Not Studied
LAWC32		23.19	179.85	2.42	4.94								Not Studied
LAWC32		21.27	173.92	2.09	4.32								Not Studied
LAWC32		26.52	201.46	2.58	5.28								Not Studied
LAWC32		26.16	202.62	2.93	5.15								Not Studied
LAWC32		30.89	248.50	2.35	5.27								Not Studied
LAWC32		41.88	321.76	2.31	3.55								Not Studied
LAWC32		90.55	695.18	5.27	1.79								Not Studied
LAWC33		9.86	67.86		2.49								Not Studied
LAWC33		15.67	102.73		3.03								Not Studied
LAWC33		19.17	127.23		2.61								Not Studied
LAWC33		24.96	183.47	2.02	2.56								Not Studied
LAWC33		29.48	203.10	2.12	3.95								Not Studied
LAWC33		24.97	180.61	1.81	2.64								Not Studied
LAWC33		55.17	373.97	3.26									Not Studied
LAWC33		109.14	697.92	6.03	2.72								Not Studied
PNLA126CC			107.50	14.27	5.93			0.97		1.39			Not Studied
PNLA126CC			207.43	26.66	7.70			0.84		2.11	0.55		Not Studied
PNLA126CC			264.29	32.69	8.16	2.46		1.02	0.55	2.27	0.97		Not Studied
PNLA126CC			318.74	41.75	8.65					2.06	0.72		Not Studied
PNLA126CC			330.48	42.29	8.16			0.36		0.70	0.75		Not Studied
PNLA126CC			382.38	50.23	9.72	2.14		1.05		2.35	0.80		Not Studied
PNLA126CC			412.77	51.71	9.55			0.34		0.64	0.64		Not Studied
PNLA126CC			523.48	67.21	10.86					1.06			Not Studied
PNLA126CC			643.23	79.62	4.66								Not Studied
PNLA126CC			1230.27	162.62	1.82								Not Studied
PNLA126CC			2368.07	323.30	1.68								Not Studied
TFA-BASE			96.56		11.75	4.83		1.27	2.04	1.56	1.10		Not Studied
TFA-BASE			178.67		12.96	5.92		2.09	2.58	3.01	1.48		Not Studied
TFA-BASE			254.17	2.14	13.04	6.21		2.59	2.61	3.48	1.40		Not Studied
TFA-BASE			297.77	2.66	13.56	5.79		2.58	2.39	3.15	1.08		Not Studied
TFA-BASE			362.43	2.93	12.07	5.92		3.05	2.39	3.67	1.34		Not Studied
TFA-BASE			417.47	2.63	10.38	5.76		3.03	2.50	4.58	1.68		Not Studied
TFA-BASE			414.87	3.78	12.58	5.91		3.34	2.50	4.13	1.43		Not Studied
TFA-BASE			585.43		10.66	4.83		2.85	1.75	2.85	0.76		Not Studied
TFA-BASE			533.00	6.16	10.83	3.67		1.94	1.38	2.59	0.75		Not Studied
TFA-BASE			757.00	6.98	11.40	3.15		1.70	1.19	2.17	0.79		Not Studied
TFA-BASE			93.70		12.50	5.33		1.15	2.41	1.98	1.43		Not Studied
TFA-BASE			186.27		12.30	6.23		2.32	2.76	2.84	1.47		Not Studied
TFA-BASE			266.10	2.01	11.42	6.07		2.68	2.66	3.66	1.50		Not Studied
TFA-BASE			337.27	2.29	7.29	4.78		2.45	2.12	3.69	1.22		Not Studied
TFA-BASE			370.67		5.64	3.91		2.26	1.71	3.98	1.12		Not Studied
TFA-BASE			576.57	2.68	4.18	2.91		2.44	1.59	4.51	1.17		Not Studied
WVF-G-21B			108.80	7.45	6.86			0.82		1.24			Not Studied
WVF-G-21B			209.99	12.42	8.03	1.57		0.70		1.85	1.01		Not Studied
WVF-G-21B			266.32	17.41	9.77	1.95		0.97	0.72	2.03	1.16		Not Studied
WVF-G-21B			285.98	21.39	10.22	1.26			0.59	2.04	1.06		Not Studied
WVF-G-21B			300.13	21.41	9.98			0.38	0.64	0.68	0.87		Not Studied
WVF-G-21B			416.45	25.59	12.15	1.67		0.97	0.54	2.22	0.89		Not Studied
WVF-G-21B			457.22	26.09	11.83			0.44		0.69	1.21		Not Studied
WVF-G-21B			519.02	31.45	13.03			0.49		0.89	0.53		Not Studied
WVF-G-21B			832.55	52.11	5.33								Not Studied
WVF-G-21B			1698.73	106.28	4.28					0.58			Not Studied
WVF-G-21B			3441.50	234.35	1.87					0.47			Not Studied
WVH-G-57B		6.51	43.01		1.78								Not Studied
WVH-G-57B		11.54	78.05		1.86								Not Studied
WVH-G-57B		14.39	100.21		2.10								Not Studied
WVH-G-57B		17.29	114.02		1.94								Not Studied
WVH-G-57B		18.00	119.89	1.99	1.21								Not Studied
WVH-G-57B		21.02	139.93	1.84	2.36								Not Studied
WVH-G-57B		23.37	145.86	2.28	2.32								Not Studied
WVH-G-57B		24.12	166.56		2.23								Not Studied
WVH-G-57B		26.79	172.53	2.44	2.32								Not Studied
WVH-G-57B		58.78	346.64	3.55	1.02								Not Studied
WVH-G-57B		108.28	705.15	6.20	1.52								Not Studied
WVH-G-57B		235.65	2179.67	20.42	0.74								Not Studied
WVJ-G-109D		10.15	17.72		1.44								Not Studied
WVJ-G-109D		17.84	33.23		1.09								Not Studied
WVJ-G-109D		23.65	44.28	2.02	1.38								Not Studied
WVJ-G-109D		28.68	53.66		1.08								Not Studied
WVJ-G-109D		32.97	58.77	2.52									Not Studied
WVJ-G-109D		41.47	77.34	2.93	1.27								Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
LAWC32		71.62	17.952	-5.3068651	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC32		71.62	17.952	-5.3068651	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC32		71.62	17.952	-5.3068651	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC32		71.62	17.952	-5.3068651	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC32		71.62	17.952	-5.3068651	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC32		71.62	17.952	-5.3068651	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC32		71.62	17.952	-5.3068651	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC32		71.62	17.952	-5.3068651	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC33		71.98	17.537	-3.5483056	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC33		71.98	17.537	-3.5483056	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC33		71.98	17.537	-3.5483056	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC33		71.98	17.537	-3.5483056	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC33		71.98	17.537	-3.5483056	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC33		71.98	17.537	-3.5483056	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWC33		71.98	17.537	-3.5483056	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PNLA126CC		76.44	13.215	13.7114795	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
PNLA126CC		76.44	13.215	13.7114795	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
PNLA126CC		76.44	13.215	13.7114795	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
PNLA126CC		76.44	13.215	13.7114795	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
PNLA126CC		76.44	13.215	13.7114795	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
PNLA126CC		76.44	13.215	13.7114795	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
PNLA126CC		76.44	13.215	13.7114795	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
PNLA126CC		76.44	13.215	13.7114795	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
PNLA126CC		76.44	13.215	13.7114795	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
PNLA126CC		76.44	13.215	13.7114795	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
WVF-G-21B		75.93	13.608	12.3064721	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVF-G-21B		75.93	13.608	12.3064721	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVF-G-21B		75.93	13.608	12.3064721	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVF-G-21B		75.93	13.608	12.3064721	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVF-G-21B		75.93	13.608	12.3064721	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVF-G-21B		75.93	13.608	12.3064721	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVF-G-21B		75.93	13.608	12.3064721	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVF-G-21B		75.93	13.608	12.3064721	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVF-G-21B		75.93	13.608	12.3064721	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVF-G-21B		75.93	13.608	12.3064721	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVH-G-57B		71.47	17.915	-4.865389	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVH-G-57B		71.47	17.915	-4.865389	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVH-G-57B		71.47	17.915	-4.865389	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVH-G-57B		71.47	17.915	-4.865389	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVH-G-57B		71.47	17.915	-4.865389	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVH-G-57B		71.47	17.915	-4.865389	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVH-G-57B		71.47	17.915	-4.865389	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVH-G-57B		71.47	17.915	-4.865389	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVH-G-57B		71.47	17.915	-4.865389	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVH-G-57B		71.47	17.915	-4.865389	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVH-G-57B		71.47	17.915	-4.865389	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVJ-G-109D		68.57	18.231	-1.9983403	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVJ-G-109D		68.57	18.231	-1.9983403	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVJ-G-109D		68.57	18.231	-1.9983403	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVJ-G-109D		68.57	18.231	-1.9983403	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVJ-G-109D		68.57	18.231	-1.9983403	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVJ-G-109D		68.57	18.231	-1.9983403	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
LAWC32	6.49	10.05	0.00	9.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42	0.14	0.00	0.00	2.73
LAWC32	6.49	10.05	0.00	9.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42	0.14	0.00	0.00	2.73
LAWC32	6.49	10.05	0.00	9.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42	0.14	0.00	0.00	2.73
LAWC32	6.49	10.05	0.00	9.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42	0.14	0.00	0.00	2.73
LAWC32	6.49	10.05	0.00	9.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42	0.14	0.00	0.00	2.73
LAWC32	6.49	10.05	0.00	9.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42	0.14	0.00	0.00	2.73
LAWC32	6.49	10.05	0.00	9.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42	0.14	0.00	0.00	2.73
LAWC32	6.49	10.05	0.00	9.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42	0.14	0.00	0.00	2.73
LAWC33	6.15	10.10	0.00	6.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.44	0.14	0.00	0.00	2.75
LAWC33	6.15	10.10	0.00	6.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.44	0.14	0.00	0.00	2.75
LAWC33	6.15	10.10	0.00	6.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.44	0.14	0.00	0.00	2.75
LAWC33	6.15	10.10	0.00	6.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.44	0.14	0.00	0.00	2.75
LAWC33	6.15	10.10	0.00	6.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.44	0.14	0.00	0.00	2.75
LAWC33	6.15	10.10	0.00	6.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.44	0.14	0.00	0.00	2.75
LAWC33	6.15	10.10	0.00	6.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.44	0.14	0.00	0.00	2.75
PNLA126CC	5.65	9.85	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	3.88	0.00	0.00	0.00
PNLA126CC	5.65	9.85	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	3.88	0.00	0.00	0.00
PNLA126CC	5.65	9.85	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	3.88	0.00	0.00	0.00
PNLA126CC	5.65	9.85	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	3.88	0.00	0.00	0.00
PNLA126CC	5.65	9.85	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	3.88	0.00	0.00	0.00
PNLA126CC	5.65	9.85	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	3.88	0.00	0.00	0.00
PNLA126CC	5.65	9.85	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	3.88	0.00	0.00	0.00
PNLA126CC	5.65	9.85	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	3.88	0.00	0.00	0.00
PNLA126CC	5.65	9.85	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	3.88	0.00	0.00	0.00
PNLA126CC	5.65	9.85	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	3.88	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
WVF-G-21B	6.08	9.80	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.54	2.13	0.00	0.00	0.00
WVF-G-21B	6.08	9.80	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.54	2.13	0.00	0.00	0.00
WVF-G-21B	6.08	9.80	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.54	2.13	0.00	0.00	0.00
WVF-G-21B	6.08	9.80	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.54	2.13	0.00	0.00	0.00
WVF-G-21B	6.08	9.80	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.54	2.13	0.00	0.00	0.00
WVF-G-21B	6.08	9.80	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.54	2.13	0.00	0.00	0.00
WVF-G-21B	6.08	9.80	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.54	2.13	0.00	0.00	0.00
WVF-G-21B	6.08	9.80	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.54	2.13	0.00	0.00	0.00
WVF-G-21B	6.08	9.80	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.54	2.13	0.00	0.00	0.00
WVH-G-57B	6.10	10.02	0.00	7.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.42	0.14	0.00	0.00	2.73
WVH-G-57B	6.10	10.02	0.00	7.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.42	0.14	0.00	0.00	2.73
WVH-G-57B	6.10	10.02	0.00	7.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.42	0.14	0.00	0.00	2.73
WVH-G-57B	6.10	10.02	0.00	7.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.42	0.14	0.00	0.00	2.73
WVH-G-57B	6.10	10.02	0.00	7.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.42	0.14	0.00	0.00	2.73
WVH-G-57B	6.10	10.02	0.00	7.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.42	0.14	0.00	0.00	2.73
WVH-G-57B	6.10	10.02	0.00	7.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.42	0.14	0.00	0.00	2.73
WVH-G-57B	6.10	10.02	0.00	7.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.42	0.14	0.00	0.00	2.73
WVH-G-57B	6.10	10.02	0.00	7.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.42	0.14	0.00	0.00	2.73
WVH-G-57B	6.10	10.02	0.00	7.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.42	0.14	0.00	0.00	2.73
WVJ-G-109D	6.17	10.02	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28	0.19	0.00	0.00	4.31
WVJ-G-109D	6.17	10.02	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28	0.19	0.00	0.00	4.31
WVJ-G-109D	6.17	10.02	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28	0.19	0.00	0.00	4.31
WVJ-G-109D	6.17	10.02	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28	0.19	0.00	0.00	4.31
WVJ-G-109D	6.17	10.02	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28	0.19	0.00	0.00	4.31
WVJ-G-109D	6.17	10.02	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28	0.19	0.00	0.00	4.31

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
LAWC32	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.74	0.00	0.00
LAWC32	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.74	0.00	0.00
LAWC32	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.74	0.00	0.00
LAWC32	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.74	0.00	0.00
LAWC32	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.74	0.00	0.00
LAWC32	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.74	0.00	0.00
LAWC32	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.74	0.00	0.00
LAWC32	1.50	0.00	0.00	0.00	11.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.74	0.00	0.00
LAWC33	1.51	0.00	0.00	0.00	12.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.98	0.00	0.00
LAWC33	1.51	0.00	0.00	0.00	12.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.98	0.00	0.00
LAWC33	1.51	0.00	0.00	0.00	12.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.98	0.00	0.00
LAWC33	1.51	0.00	0.00	0.00	12.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.98	0.00	0.00
LAWC33	1.51	0.00	0.00	0.00	12.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.98	0.00	0.00
LAWC33	1.51	0.00	0.00	0.00	12.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.98	0.00	0.00
LAWC33	1.51	0.00	0.00	0.00	12.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.98	0.00	0.00
PNLA126CC	1.48	0.00	0.00	0.00	18.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.24	0.00	0.00
PNLA126CC	1.48	0.00	0.00	0.00	18.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.24	0.00	0.00
PNLA126CC	1.48	0.00	0.00	0.00	18.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.24	0.00	0.00
PNLA126CC	1.48	0.00	0.00	0.00	18.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.24	0.00	0.00
PNLA126CC	1.48	0.00	0.00	0.00	18.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.24	0.00	0.00
PNLA126CC	1.48	0.00	0.00	0.00	18.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.24	0.00	0.00
PNLA126CC	1.48	0.00	0.00	0.00	18.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.24	0.00	0.00
PNLA126CC	1.48	0.00	0.00	0.00	18.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.24	0.00	0.00
PNLA126CC	1.48	0.00	0.00	0.00	18.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.24	0.00	0.00
PNLA126CC	1.48	0.00	0.00	0.00	18.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.24	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
WVF-G-21B	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
WVF-G-21B	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
WVF-G-21B	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
WVF-G-21B	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
WVF-G-21B	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
WVF-G-21B	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
WVF-G-21B	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
WVF-G-21B	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
WVF-G-21B	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.00	0.00	0.00
WVH-G-57B	1.50	0.00	0.00	0.00	11.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
WVH-G-57B	1.50	0.00	0.00	0.00	11.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
WVH-G-57B	1.50	0.00	0.00	0.00	11.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
WVH-G-57B	1.50	0.00	0.00	0.00	11.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
WVH-G-57B	1.50	0.00	0.00	0.00	11.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
WVH-G-57B	1.50	0.00	0.00	0.00	11.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
WVH-G-57B	1.50	0.00	0.00	0.00	11.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
WVH-G-57B	1.50	0.00	0.00	0.00	11.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
WVH-G-57B	1.50	0.00	0.00	0.00	11.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
WVH-G-57B	1.50	0.00	0.00	0.00	11.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.64	0.00	0.00
WVJ-G-109D	2.98	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.58	0.00	0.00
WVJ-G-109D	2.98	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.58	0.00	0.00
WVJ-G-109D	2.98	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.58	0.00	0.00
WVJ-G-109D	2.98	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.58	0.00	0.00
WVJ-G-109D	2.98	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.58	0.00	0.00
WVJ-G-109D	2.98	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.58	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
LAWC32	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.77	100.00		
LAWC32	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.77	100.00		
LAWC32	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.77	100.00		
LAWC32	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.77	100.00		
LAWC32	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.77	100.00		
LAWC32	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.77	100.00		
LAWC32	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.77	100.00		
LAWC32	0.00	0.00	0.00	1.12	0.00	0.00	4.02	3.02	0.77	100.00		
LAWC33	0.00	0.00	0.00	1.13	0.00	0.00	4.04	3.03	0.76	100.00		
LAWC33	0.00	0.00	0.00	1.13	0.00	0.00	4.04	3.03	0.76	100.00		
LAWC33	0.00	0.00	0.00	1.13	0.00	0.00	4.04	3.03	0.76	100.00		
LAWC33	0.00	0.00	0.00	1.13	0.00	0.00	4.04	3.03	0.76	100.00		
LAWC33	0.00	0.00	0.00	1.13	0.00	0.00	4.04	3.03	0.76	100.00		
LAWC33	0.00	0.00	0.00	1.13	0.00	0.00	4.04	3.03	0.76	100.00		
LAWC33	0.00	0.00	0.00	1.13	0.00	0.00	4.04	3.03	0.76	100.00		
LAWC33	0.00	0.00	0.00	1.13	0.00	0.00	4.04	3.03	0.76	100.00		
PNLA126CC	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.90	100.00		
PNLA126CC	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.90	100.00		
PNLA126CC	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.90	100.00		
PNLA126CC	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.90	100.00		
PNLA126CC	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.90	100.00		
PNLA126CC	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.90	100.00		
PNLA126CC	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.90	100.00		
PNLA126CC	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.90	100.00		
PNLA126CC	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.90	100.00		
PNLA126CC	0.00	0.00	0.00	2.00	0.00	0.00	2.96	3.00	0.90	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
WVF-G-21B	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	1.05	100.00		
WVF-G-21B	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	1.05	100.00		
WVF-G-21B	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	1.05	100.00		
WVF-G-21B	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	1.05	100.00		
WVF-G-21B	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	1.05	100.00		
WVF-G-21B	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	1.05	100.00		
WVF-G-21B	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	1.05	100.00		
WVF-G-21B	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	1.05	100.00		
WVF-G-21B	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	1.05	100.00		
WVF-G-21B	0.00	0.00	0.00	1.99	0.00	0.00	2.95	2.99	1.05	100.00		
WVH-G-57B	0.00	0.00	0.00	1.12	0.00	0.00	4.01	3.01	0.97	100.00		
WVH-G-57B	0.00	0.00	0.00	1.12	0.00	0.00	4.01	3.01	0.97	100.00		
WVH-G-57B	0.00	0.00	0.00	1.12	0.00	0.00	4.01	3.01	0.97	100.00		
WVH-G-57B	0.00	0.00	0.00	1.12	0.00	0.00	4.01	3.01	0.97	100.00		
WVH-G-57B	0.00	0.00	0.00	1.12	0.00	0.00	4.01	3.01	0.97	100.00		
WVH-G-57B	0.00	0.00	0.00	1.12	0.00	0.00	4.01	3.01	0.97	100.00		
WVH-G-57B	0.00	0.00	0.00	1.12	0.00	0.00	4.01	3.01	0.97	100.00		
WVH-G-57B	0.00	0.00	0.00	1.12	0.00	0.00	4.01	3.01	0.97	100.00		
WVH-G-57B	0.00	0.00	0.00	1.12	0.00	0.00	4.01	3.01	0.97	100.00		
WVH-G-57B	0.00	0.00	0.00	1.12	0.00	0.00	4.01	3.01	0.97	100.00		
WVH-G-57B	0.00	0.00	0.00	1.12	0.00	0.00	4.01	3.01	0.97	100.00		
WVJ-G-109D	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.83	100.00		
WVJ-G-109D	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.83	100.00		
WVJ-G-109D	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.83	100.00		
WVJ-G-109D	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.83	100.00		
WVJ-G-109D	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.83	100.00		
WVJ-G-109D	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.83	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
WVJ-G-109D	362.00	0.81	2.031	735.088	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.84	136.61	127.75	2.90
WVJ-G-109D	546.00	0.81	2.031	1,108.723	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	10.98	121.31	266.70	4.83
WVJ-G-109D	729.00	0.81	2.031	1,480.328	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.07	130.44	370.50	6.06
WVJ-G-109D	1092.00	0.81	2.031	2,217.446	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.15	125.37	634.09	15.43
WVJ-G-109D	1435.00	0.81	2.031	2,913.952	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.22	130.87	680.07	15.15
WVJ-G-109D	1778.00	0.81	2.031	3,610.458	2.650	40.00	100-200	1.125E-04	0.400	ASTM I	90	11.26	179.07	974.95	23.55
LAWA41	7.00	0.80	20.230	141.610	**2.660**	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.86	185.13	95.31	0.45
LAWA41	28.00	0.80	20.230	566.439	**2.660**	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.16	231.90	136.00	0.26
LAWA41	56.00	0.80	20.230	1,132.877	**2.660**	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.21	270.33	156.80	0.80
LAWA41	120.00	0.80	20.230	2,427.594	**2.660**	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.32	334.73	190.73	0.68
LAWA41	181.00	0.80	20.230	3,661.620	**2.660**	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.48	486.13	250.50	0.38
LAWA41	266.00	0.80	20.230	5,381.166	**2.660**	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.76	1404.70	972.30	0.50
LAWA41	365.00	0.80	20.230	7,383.931	**2.660**	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.82	1975.07	2448.03	0.41
LAWA41	547.00	0.80	20.230	11,065.781	**2.660**	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.96	6105.57	12784.30	3.91
LAWA41	730.00	0.80	20.230	14,767.861	**2.660**	40.00	100-200	1.125E-04	0.040	ASTM I	90	13.06	7506.30	17344.10	4.93
LAWA41	1325.00	0.80	20.230	26,804.680	**2.660**	40.00	100-200	1.125E-04	0.040	ASTM I	90	13.15	10456.33	21064.33	6.96
LAWA41	7.00	0.80	20.230	141.610	**2.660**	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.71	162.83	89.04	0.39
LAWA41	28.00	0.80	20.230	566.439	**2.660**	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.12	210.17	138.43	0.27
LAWA41	56.00	0.80	20.230	1,132.877	**2.660**	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.23	249.23	157.37	
LAWA41	120.00	0.80	20.230	2,427.594	**2.660**	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.41	280.43	196.87	
LAWA41	180.00	0.80	20.230	3,641.390	**2.660**	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.14	250.70	204.60	0.25
LAWA41	272.00	0.80	20.230	5,502.546	**2.660**	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.24	820.17	774.37	0.58
LAWA42	7.00	0.81	20.306	142.144	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.32	402.00	651.53	0.39
LAWA42	28.00	0.81	20.306	568.576	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.55	558.30	1062.53	0.50
LAWA42	56.00	0.81	20.306	1,137.152	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.62	590.07	1058.37	1.12
LAWA42	120.00	0.81	20.306	2,436.754	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.71	889.80	2898.27	1.22
LAWA42	181.00	0.81	20.306	3,675.438	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	13.04	1439.83	7331.70	2.06
LAWA42	266.00	0.81	20.306	5,401.472	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	13.24	1943.50	10442.97	2.49
LAWA42	365.00	0.81	20.306	7,411.795	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	13.33	2496.97	15607.13	3.72
LAWA42	547.00	0.81	20.306	11,107.539	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	13.42	3340.57	20851.13	7.03
LAWA42	730.00	0.81	20.306	14,823.589	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	13.55	3561.50	19310.27	7.47
LAWA42	1325.00	0.81	20.306	26,905.830	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	13.66	3613.80	20947.33	4.85
LAWA42	7.00	0.81	20.306	142.144	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.24	341.87	582.07	0.33
LAWA42	28.00	0.81	20.306	568.576	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.52	579.37	1175.40	0.94
LAWA42	56.00	0.81	20.306	1,137.152	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.57	586.20	1113.80	0.17
LAWA42	120.00	0.81	20.306	2,436.754	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.72	593.13	1318.23	
LAWA42	180.00	0.81	20.306	3,655.132	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.65	670.03	2158.77	0.82
LAWA42	272.00	0.81	20.306	5,523.310	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.85	1060.07	4866.83	1.49
LAWA43-1	7.00	0.81	20.306	142.144	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.83	99.71	72.16	0.50
LAWA43-1	28.00	0.81	20.306	568.576	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.15	127.90	109.83	0.44
LAWA43-1	56.00	0.81	20.306	1,137.152	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.22	153.07	140.57	0.51
LAWA43-1	120.00	0.81	20.306	2,436.754	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.31	184.10	176.57	0.36
LAWA43-1	181.00	0.81	20.306	3,675.438	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.45	251.70	321.27	0.64
LAWA43-1	266.00	0.81	20.306	5,401.472	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.65	2801.33	31487.77	6.59
LAWA43-1	365.00	0.81	20.306	7,411.795	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.77	2664.57	30551.03	5.50
LAWA43-1	547.00	0.81	20.306	11,107.539	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	13.15	2638.80	22120.70	6.30
LAWA43-1	730.00	0.81	20.306	14,823.589	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	13.25	2653.00	16664.53	6.38
LAWA43-1	1325.00	0.81	20.306	26,905.830	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	13.35	2855.63	21033.33	6.08
LAWA43-1	7.00	0.81	20.306	142.144	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.72	86.27	66.18	0.53
LAWA43-1	28.00	0.81	20.306	568.576	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.11	120.20	118.60	0.30
LAWA43-1	56.00	0.81	20.306	1,137.152	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.17	128.27	136.97	
LAWA43-1	120.00	0.81	20.306	2,436.754	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.41	135.97	168.37	
LAWA43-1	180.00	0.81	20.306	3,655.132	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.12	125.40	199.77	0.25
LAWA43-1	272.00	0.81	20.306	5,523.310	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.35	131.07	247.20	
LAWA44	7.00	0.80	20.154	141.079	**2.670**	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.42	139.57	97.87	0.59
LAWA44	28.00	0.80	20.154	564.317	**2.670**	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.91	166.33	144.67	1.03
LAWA44	56.00	0.80	20.154	1,128.634	**2.670**	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.97	187.70	162.90	0.77
LAWA44	120.00	0.80	20.154	2,418.502	**2.670**	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.12	231.30	207.40	0.28
LAWA44	181.00	0.80	20.154	3,647.906	**2.670**	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.22	282.30	232.13	
LAWA44	269.00	0.80	20.154	5,421.474	**2.670**	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.35	476.47	349.97	0.37
LAWA44	371.00	0.80	20.154	7,477.201	**2.670**	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.43	1232.17	1901.33	1.55
LAWA44	547.00	0.80	20.154	11,024.336	**2.670**	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.52	1425.33	3808.57	3.02
LAWA44	730.00	0.80	20.154	14,712.551	**2.670**	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.65	2019.93	8903.03	3.57
LAWA44	1291.00	0.80	20.154	26,019.046	**2.670**	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.77	3023.37	15439.00	6.88
LAWA44	7.00	0.80	20.154	141.079	**2.670**	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.66	124.30	89.29	0.53
LAWA44	28.00	0.80	20.154	564.317	**2.670**	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.81	160.60	137.10	0.39
LAWA44	56.00	0.80	20.154	1,128.634	**2.670**	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.77	171.73	162.53	0.44
LAWA44	120.00	0.80	20.154	2,418.502	**2.670**	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.95	185.70	194.20	0.63
LAWA44	179.00	0.80	20.154	3,607.598	**2.670**	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.66	198.53	251.00	0.17
LAWA44	239.00	0.80	20.154	4,816.849	**2.670**	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.57	216.97	287.63	
LAWA45	7.00	0.81	20.306	142.144	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	10.64	137.23	357.63	
LAWA45	28.00	0.81	20.306	568.576	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	10.84	176.80	625.23	0.43

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
WVJ-G-109D		55.00	119.10	3.31	0.88								Not Studied
WVJ-G-109D		111.77	275.33	7.38	0.83								Not Studied
WVJ-G-109D		136.07	347.28	10.14	1.49								Not Studied
WVJ-G-109D		217.36	645.40	22.38	0.65								Not Studied
WVJ-G-109D		212.66	762.87	22.16	1.69								Not Studied
WVJ-G-109D		307.80	1045.07	34.94	0.79								Not Studied
LAWA41			606.43	59.88	19.24	6.41		3.03	0.57	4.99	0.57		Not Studied
LAWA41			971.80	78.00	21.52			0.44		0.58			Not Studied
LAWA41			969.57	91.62	21.28								Not Studied
LAWA41			1328.63	110.03	20.40								Not Studied
LAWA41			1493.93	144.37	9.45								Not Studied
LAWA41			1926.03	374.63	2.24					1.03			Not Studied
LAWA41			8204.50	696.63	3.32	1.37				2.26			Not Studied
LAWA41		1.47	32360.90	3073.13	16.27	11.32			1.78	27.83	1.91		Not Studied
LAWA41		2.82	45184.47	3658.07	20.52	14.93			3.13	45.00	3.97		Not Studied
LAWA41		3.57	56689.67	4079.77	30.30	28.64		1.14	9.48	58.82			Not Studied
LAWA41			649.77	58.98	15.65	2.92		0.96		1.70			Not Studied
LAWA41			899.63	85.15	19.34			0.23					Not Studied
LAWA41			1021.83	88.78	18.39								Not Studied
LAWA41			1443.87	100.90	14.02					0.74			Not Studied
LAWA41			1326.17	128.33	15.34					0.73			Not Studied
LAWA41			3281.93	365.10	2.15					0.51			Not Studied
LAWA42			2218.30	276.03	7.12					0.52			Not Studied
LAWA42			3798.13	395.00	8.06					0.62			Not Studied
LAWA42			3378.43	399.73	8.51					0.65			Not Studied
LAWA42			8865.60	936.70	5.22	1.46				2.83			Not Studied
LAWA42			19110.33	1869.27	7.86	2.88				9.94			Not Studied
LAWA42		2.08	24173.20	2719.90	12.44	3.73			0.73	17.19			Not Studied
LAWA42		3.54	36074.13	3527.47	15.22	4.97		0.27	1.37	23.31	0.86		Not Studied
LAWA42		2.15	40008.57	4259.27	17.71	7.38			1.33	37.43	1.13		Not Studied
LAWA42		3.55	45056.53	4413.30	16.31	7.43			1.60	36.54	1.78		Not Studied
LAWA42		2.44	48448.67	4203.47	12.59	4.14		0.40	1.10	33.52			Not Studied
LAWA42			2247.17	243.00	6.87								Not Studied
LAWA42			3752.13	451.03	8.72					0.68			Not Studied
LAWA42			3657.47	410.60	7.73								Not Studied
LAWA42			5902.80	442.83	4.48								Not Studied
LAWA42			6251.10	680.33	15.62					3.04			Not Studied
LAWA42		1.11	11719.10	1445.33	7.61	2.18				4.39			Not Studied
LAWA43-1			482.73	42.64	54.19	2.82		1.30		3.26	0.65		Not Studied
LAWA43-1			788.47	57.21	64.84	2.46		1.16		2.73			Not Studied
LAWA43-1			835.83	69.25	61.88			0.25		0.63			Not Studied
LAWA43-1			1127.37	85.03	62.81								Not Studied
LAWA43-1			1542.20	131.40	48.03					0.58			Not Studied
LAWA43-1		4.54	51960.73	10223.10	33.71	9.91			2.92	115.33	1.59		Not Studied
LAWA43-1		5.33	76318.23	8599.80	28.31	7.16		0.34	2.50	86.09	1.59		Not Studied
LAWA43-1		2.27	44777.93	8064.67	24.37	6.61			1.15	68.02	1.01		Not Studied
LAWA43-1		2.96	41002.63	6837.27	19.20	6.21			1.16	48.64	1.67		Not Studied
LAWA43-1		2.80	51067.00	8046.00	26.07	6.00		0.82	1.31	50.51			Not Studied
LAWA43-1			517.33	45.08	53.62	1.75		0.44		0.81			Not Studied
LAWA43-1			760.63	69.43	64.92	1.16		0.59		1.38			Not Studied
LAWA43-1			828.97	70.71	63.12								Not Studied
LAWA43-1			1113.43	87.76	58.12								Not Studied
LAWA43-1			1098.63	98.65	52.18					1.04			Not Studied
LAWA43-1			1346.00	135.83	44.32								Not Studied
LAWA44			505.27	5.68	21.88	7.81		4.92	0.91	7.28	0.84		Not Studied
LAWA44			654.37	8.03	24.93	8.26		6.02	1.06	8.93	0.86		Not Studied
LAWA44			793.33	7.25	22.34	5.16		4.06	0.74	5.58	0.63		Not Studied
LAWA44			1003.30	9.39	15.85			0.39		0.47			Not Studied
LAWA44			975.53	10.24	17.08								Not Studied
LAWA44			1352.03	16.93	4.13								Not Studied
LAWA44			5312.33	70.15	0.96					0.59			Not Studied
LAWA44			9435.17	166.33	1.83	1.41				1.19			Not Studied
LAWA44		1.68	20393.80	416.50	2.68	1.87				2.18	1.10		Not Studied
LAWA44		2.95	37605.67	909.21	7.99	3.07			0.43	4.85	1.00		Not Studied
LAWA44			465.93	4.94	14.85	4.96		2.74	0.48	4.10	0.49		Not Studied
LAWA44			630.83	6.74	19.15	6.33		4.02	0.72	5.61	0.73		Not Studied
LAWA44			696.37	9.28	17.27	4.15		2.77	0.58	3.34			Not Studied
LAWA44			882.80	11.81	10.69			0.37					Not Studied
LAWA44			1053.43	10.42	5.46								Not Studied
LAWA44			1396.70	13.18	1.26								Not Studied
LAWA45			810.33	9.01	7.05	12.67		10.44	1.84	12.12	1.82		Not Studied
LAWA45			1383.67	16.73	2.29	2.49		2.25		2.58			Not Studied

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
WVJ-G-109D		68.57	18.231	-1.9983403	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVJ-G-109D		68.57	18.231	-1.9983403	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVJ-G-109D		68.57	18.231	-1.9983403	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVJ-G-109D		68.57	18.231	-1.9983403	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVJ-G-109D		68.57	18.231	-1.9983403	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
WVJ-G-109D		68.57	18.231	-1.9983403	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA41		74.02	15.186	6.4649462	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA42		70.15	17.019	2.3196773	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA43-1		68.50	20.85	-16.682494	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA44		73.97	15.175	6.600833	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
WVJ-G-109D	6.17	10.02	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28	0.19	0.00	0.00	4.31
WVJ-G-109D	6.17	10.02	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28	0.19	0.00	0.00	4.31
WVJ-G-109D	6.17	10.02	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28	0.19	0.00	0.00	4.31
WVJ-G-109D	6.17	10.02	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28	0.19	0.00	0.00	4.31
WVJ-G-109D	6.17	10.02	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28	0.19	0.00	0.00	4.31
WVJ-G-109D	6.17	10.02	0.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28	0.19	0.00	0.00	4.31
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA41	6.20	7.50	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA42	6.20	9.03	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.41	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA43-1	12.00	7.39	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.88	3.10	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA44	6.20	8.90	0.00	1.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
WVJ-G-109D	2.98	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.58	0.00	0.00
WVJ-G-109D	2.98	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.58	0.00	0.00
WVJ-G-109D	2.98	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.58	0.00	0.00
WVJ-G-109D	2.98	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.58	0.00	0.00
WVJ-G-109D	2.98	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.58	0.00	0.00
WVJ-G-109D	2.98	0.00	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.58	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA41	2.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA42	2.40	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA43-1	1.97	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.01	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA44	1.99	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
WVJ-G-109D	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.83	100.00		
WVJ-G-109D	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.83	100.00		
WVJ-G-109D	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.83	100.00		
WVJ-G-109D	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.83	100.00		
WVJ-G-109D	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.83	100.00		
WVJ-G-109D	0.00	0.00	0.00	1.39	0.00	0.00	4.84	3.16	0.83	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA41	0.00	0.00	0.00	2.00	0.00	0.00	2.99	3.00	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA42	0.00	0.00	0.00	2.40	0.00	0.00	3.61	3.61	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA43-1	0.00	0.00	0.00	1.97	0.00	0.00	2.95	2.95	0.82	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA44	0.00	0.00	0.00	1.99	0.00	0.00	2.97	2.99	0.91	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
LAWA45	56.00	0.81	20.306	1,137.152	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	10.94	206.90	777.60	0.41
LAWA45	120.00	0.81	20.306	2,436.754	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	10.97	225.63	899.47	0.36
LAWA45	181.00	0.81	20.306	3,675.438	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.05	246.93	1027.17	0.14
LAWA45	269.00	0.81	20.306	5,462.391	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.14	274.83	1184.57	0.27
LAWA45	371.00	0.81	20.306	7,533.632	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.25	293.17	1444.90	1.24
LAWA45	547.00	0.81	20.306	11,107.539	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.45	377.23	1458.03	0.58
LAWA45	730.00	0.81	20.306	14,823.589	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.52	509.93	1658.90	0.23
LAWA45	1291.00	0.81	20.306	26,215.416	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.65	778.95	2825.17	
LAWA45	7.00	0.81	20.306	142.144	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	10.75	116.43	338.57	0.49
LAWA45	28.00	0.81	20.306	568.576	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	10.94	170.40	610.23	
LAWA45	56.00	0.81	20.306	1,137.152	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	10.92	196.63	715.53	0.24
LAWA45	120.00	0.81	20.306	2,436.754	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	10.92	229.73		0.39
LAWA45	179.00	0.81	20.306	3,634.825	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	10.58	212.13	873.67	0.37
LAWA45	239.00	0.81	20.306	4,853.202	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	10.46	196.93	1280.33	0.52
LAWA49	7.00	0.81	20.306	142.144	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.57	136.10	93.17	0.50
LAWA49	28.00	0.81	20.306	568.576	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.70	173.60	141.63	0.44
LAWA49	56.00	0.81	20.306	1,137.152	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.76	198.00	174.77	0.40
LAWA49	120.00	0.81	20.306	2,436.754	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.91	199.57	202.40	0.50
LAWA49	180.00	0.81	20.306	3,655.132	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.02	281.53	267.17	0.17
LAWA49	271.00	0.81	20.306	5,503.004	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.13	338.60	328.63	
LAWA49	365.00	0.81	20.306	7,411.795	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.22	656.23	626.30	
LAWA49	545.00	0.81	20.306	11,066.926	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.35	2123.67	6433.17	1.54
LAWA49	728.00	0.81	20.306	14,782.977	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.45	2760.17	12366.00	0.93
LAWA49	1271.00	0.81	20.306	25,809.290	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.56	2846.93	18492.67	0.95
LAWA50	7.00	0.81	20.306	142.144	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.60	115.97	92.62	0.20
LAWA50	28.00	0.81	20.306	568.576	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.76	149.50	140.43	0.33
LAWA50	56.00	0.81	20.306	1,137.152	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.78	176.10	180.63	0.35
LAWA50	120.00	0.81	20.306	2,436.754	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.96	234.27	250.00	0.20
LAWA50	180.00	0.81	20.306	3,655.132	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.14	248.07	266.03	0.16
LAWA50	271.00	0.81	20.306	5,503.004	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.26	332.73	344.37	
LAWA50	365.00	0.81	20.306	7,411.795	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.35	417.80	409.03	
LAWA50	545.00	0.81	20.306	11,066.926	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.47	1481.23	6241.23	0.83
LAWA50	728.00	0.81	20.306	14,782.977	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.54	2732.67	17705.33	1.04
LAWA50	1271.00	0.81	20.306	25,809.290	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.65	2957.40	27515.33	1.13
LAWA51	7.00	0.81	20.306	142.144	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	10.22	81.71	210.00	0.23
LAWA51	28.00	0.81	20.306	568.576	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	10.33	112.53	415.63	0.47
LAWA51	56.00	0.81	20.306	1,137.152	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	10.38	126.20	545.47	0.69
LAWA51	120.00	0.81	20.306	2,436.754	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	10.42	136.73	731.93	0.45
LAWA51	180.00	0.81	20.306	3,655.132	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.05	160.43	863.93	1.73
LAWA51	271.00	0.81	20.306	5,503.004	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.15	160.53	1031.33	
LAWA51	365.00	0.81	20.306	7,411.795	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.25	159.27	1140.07	
LAWA51	545.00	0.81	20.306	11,066.926	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.37	174.80	1273.23	0.64
LAWA51	728.00	0.81	20.306	14,782.977	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.46	316.65	1741.90	0.30
LAWA51	1271.00	0.81	20.306	25,809.290	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.54	406.58	2167.57	0.23
TFA-BASE	7.00	0.81	20.306	142.144	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.31	143.07	140.70	0.27
TFA-BASE	28.00	0.81	20.306	568.576	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.53	191.17	244.97	0.34
TFA-BASE	56.00	0.81	20.306	1,137.152	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.58	209.03	294.03	0.40
TFA-BASE	120.00	0.81	20.306	2,436.754	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.63	239.87	359.43	0.30
TFA-BASE	181.00	0.81	20.306	3,675.438	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.83	274.67	413.77	
TFA-BASE	269.00	0.81	20.306	5,462.391	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.93	339.37	517.00	0.61
TFA-BASE	371.00	0.81	20.306	7,533.632	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.13	487.13	618.77	0.31
TFA-BASE	547.00	0.81	20.306	11,107.539	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.22	1051.90	1052.67	1.24
TFA-BASE	730.00	0.81	20.306	14,823.589	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.34	1835.13	2808.37	0.30
TFA-BASE	1291.00	0.81	20.306	26,215.416	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	12.46	3735.50	12417.67	0.81
TFA-BASE	7.00	0.81	20.306	142.144	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.43	102.90	140.23	0.30
TFA-BASE	28.00	0.81	20.306	568.576	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.62	144.87	265.47	0.19
TFA-BASE	56.00	0.81	20.306	1,137.152	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.62	147.33	321.13	0.21
TFA-BASE	120.00	0.81	20.306	2,436.754	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.65	170.43	430.43	0.40
TFA-BASE	179.00	0.81	20.306	3,634.825	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.55	151.70	493.87	
TFA-BASE	239.00	0.81	20.306	4,853.202	2.650	40.00	100-200	1.125E-04	0.040	ASTM I	90	11.45	146.50	606.97	0.14
ANL on EA	7.00	0.02	2.094	14.661	**2.650**	1.15	100-200	1.125E-04	0.011	J13	90	11.61	633.00	314.00	5.29
ANL on EA	30.00	0.02	2.031	60.919	**2.650**	1.14	100-200	1.125E-04	0.011	J13	90	11.80	833.50	504.00	
ANL on EA	70.00	0.02	2.031	142.144	**2.650**	1.07	100-200	1.125E-04	0.011	J13	90	11.73	669.50	354.50	
ANL on EA	313.00	0.02	2.029	635.030	**2.650**	1.14	100-200	1.125E-04	0.011	J13	90	12.07	1820.00	402.00	19.00
ANL on EA	470.00	0.02	2.031	954.395	**2.650**	1.22	100-200	1.125E-04	0.012	J13	90	12.04	1840.00	2390.00	12.30
ANL on EA	592.00	0.03	2.031	1,202.132	**2.650**	1.25	100-200	1.125E-04	0.013	J13	90	11.97	2580.00	2520.00	16.40
ANL on EA	600.00	0.02	2.031	1,218.377	**2.650**	1.12	100-200	1.125E-04	0.011	J13	90	12.05	2410.00	2350.00	24.50
ANL on EA	7.00	0.10	20.306	142.144	**2.650**	5.00	100-200	1.125E-04	0.005	J13	90	11.86	3470.00	3550.00	
ANL on EA	14.00	0.10	20.306	284.288	**2.650**	5.01	100-200	1.125E-04	0.005	J13	90	11.71	3610.00	3870.00	
ANL on EA	20.00	0.10	20.306	406.126	**2.650**	5.05	100-200	1.125E-04	0.005	J13	90	11.87	1190.00	5660.00	
ANL on EA	22.00	0.10	20.306	446.738	**2.650**	5.07	100-200	1.125E-04	0.005	J13	90	11.96	527.00	7550.00	
ANL on EA	35.00	0.10	20.306	710.720	**2.650**	5.02	100-200	1.125E-04	0.005	J13	90	11.91	3920.00	9910.00	

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
LAWA45			1774.23	17.13	1.03								Not Studied
LAWA45			2130.17	20.53	0.85								Not Studied
LAWA45			2165.30	22.85	1.37								Not Studied
LAWA45			2386.93	30.71	2.02								Not Studied
LAWA45			2846.83	32.20	1.42								Not Studied
LAWA45			3138.80	38.90	0.65								Not Studied
LAWA45			3492.50	47.00									Not Studied
LAWA45			6197.40	80.80	2.44								Not Studied
LAWA45			802.77	8.77	5.49	6.46		5.13	0.96	6.14	1.13		Not Studied
LAWA45			1358.13	14.31	2.09	1.79		1.55		1.31			Not Studied
LAWA45			1551.73	19.35	0.90								Not Studied
LAWA45			2090.63	25.17	0.65								Not Studied
LAWA45			2378.60	23.73									Not Studied
LAWA45			3036.07	28.45									Not Studied
LAWA49			417.87	3.83	16.56	13.32		4.83	1.65	9.13	2.06		Not Studied
LAWA49			597.07	5.79	18.55	17.04		6.58	2.21	13.06	2.56		Not Studied
LAWA49			705.80	7.48	18.74	14.92		6.31	2.02	12.08	2.80		Not Studied
LAWA49			797.73	9.12	13.52	1.47		0.61		1.27	0.55		Not Studied
LAWA49			1018.37	10.31	12.53	1.88		0.81			0.54		Not Studied
LAWA49			1177.67	13.01	10.46								Not Studied
LAWA49			2038.30	25.21	0.99								Not Studied
LAWA49			15622.93	208.63	1.60	1.82				1.80			Not Studied
LAWA49			27620.00	368.55	3.26	3.18		0.59	0.78	3.82	0.91		Not Studied
LAWA49		1.89	40349.33	786.51	3.86	2.93		0.48	0.98	6.02	1.16		Not Studied
LAWA50			409.40	4.00	21.37	13.53		4.96	1.36	9.09	1.77		Not Studied
LAWA50			585.07	5.74	24.41	18.61		6.99	1.91	13.81	2.13		Not Studied
LAWA50			725.47	7.85	24.46	17.44		7.07	1.80	13.21	2.36		Not Studied
LAWA50			921.47	10.02	15.86			0.33		0.60			Not Studied
LAWA50			958.90	10.77	16.40	1.85		0.90		0.62			Not Studied
LAWA50			1127.57	13.15	13.24			0.34					Not Studied
LAWA50			1383.23	14.98	5.17								Not Studied
LAWA50			15413.80	190.47	1.76	1.77				1.28			Not Studied
LAWA50		1.38	39349.67	749.10	3.45	3.09		0.67	0.78	4.47	1.01		Not Studied
LAWA50		2.75	52797.33	959.44	4.73	3.47		0.58	1.42	5.99	1.77		Not Studied
LAWA51			462.00	3.71	8.58	7.64		7.17	1.40	10.51	1.66		Not Studied
LAWA51			826.37	6.70	7.85	10.61		10.88	2.31	16.70	2.41		Not Studied
LAWA51			1095.40	9.09	5.37	8.01		8.68	1.78	12.35	2.21		Not Studied
LAWA51			1347.97	11.75	1.02			0.99		1.27			Not Studied
LAWA51			1706.00	21.72									Not Studied
LAWA51			1626.83	16.40	0.99								Not Studied
LAWA51			1906.67	16.56									Not Studied
LAWA51			2340.90	23.14	0.70								Not Studied
LAWA51			3233.10	35.42	1.47			0.26		2.26			Not Studied
LAWA51			3541.70	37.00	1.13								Not Studied
TFA-BASE			475.67	3.54	16.05	8.72		6.68	2.98	5.93	1.40		Not Studied
TFA-BASE			729.23	5.99	13.97	9.33		8.93	2.88	7.90	1.34		Not Studied
TFA-BASE			937.20	5.93	9.53	4.28		4.35	1.38	3.72	0.56		Not Studied
TFA-BASE			1161.27	6.49	6.39			0.68					Not Studied
TFA-BASE			1166.87	7.16	8.46								Not Studied
TFA-BASE			1473.23	13.73	7.39								Not Studied
TFA-BASE			1562.90	16.01	4.68								Not Studied
TFA-BASE			3469.53	28.72									Not Studied
TFA-BASE			6718.77	71.77	0.83					0.97			Not Studied
TFA-BASE		1.54	27598.00	463.27	5.97	3.10			1.25	3.89			Not Studied
TFA-BASE			480.00	3.74	25.01	6.32		3.47	2.43	3.63	1.42		Not Studied
TFA-BASE			814.40	5.65	18.64	5.61		4.27	1.90	4.08	1.09		Not Studied
TFA-BASE			957.47	7.70	14.01	2.45		1.91	0.79	1.82			Not Studied
TFA-BASE			1274.03	9.57	9.85								Not Studied
TFA-BASE			1336.73	9.75	5.69								Not Studied
TFA-BASE			1395.90	10.78	4.00								Not Studied
ANL on EA		108.00	948.00	13.60	1.51	0.04		0.01	0.01	0.01			No Zeolite
ANL on EA		153.50	1036.00		1.14	0.09				0.03			No Zeolite
ANL on EA		115.00	1207.00	9.05	2.79	0.23					0.28		No Zeolite
ANL on EA		215.00	4075.00	12.50	0.85				0.01	0.02			No Zeolite
ANL on EA		348.00	6316.00	6.23	0.89						0.01		Zeolite
ANL on EA		375.00	6375.00	20.00	0.61	0.02		0.02			0.01		Zeolite
ANL on EA		362.00	5414.00	173.00	1.13			0.54		1.80			Zeolite
ANL on EA		995.00	15950.00	108.00									Zeolite
ANL on EA		1013.00	16633.00	106.00									Zeolite
ANL on EA		1357.00	24571.00	144.00									Zeolite
ANL on EA		1114.00	21030.00	94.20									Zeolite
ANL on EA		1337.00	26033.00	113.00									Zeolite

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA45		76.95	13.181	13.0809092	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA49		73.98	16.185	0.8917445	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA49		73.98	16.185	0.8917445	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA49		73.98	16.185	0.8917445	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA49		73.98	16.185	0.8917445	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA49		73.98	16.185	0.8917445	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA49		73.98	16.185	0.8917445	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA49		73.98	16.185	0.8917445	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA49		73.98	16.185	0.8917445	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA49		73.98	16.185	0.8917445	Indeterminate	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA50		71.95	18.182	-7.1446351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA50		71.95	18.182	-7.1446351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA50		71.95	18.182	-7.1446351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA50		71.95	18.182	-7.1446351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA50		71.95	18.182	-7.1446351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA50		71.95	18.182	-7.1446351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA50		71.95	18.182	-7.1446351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA50		71.95	18.182	-7.1446351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA50		71.95	18.182	-7.1446351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA51		77.01	13.201	12.8797607	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA51		77.01	13.201	12.8797607	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA51		77.01	13.201	12.8797607	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA51		77.01	13.201	12.8797607	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA51		77.01	13.201	12.8797607	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA51		77.01	13.201	12.8797607	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA51		77.01	13.201	12.8797607	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA51		77.01	13.201	12.8797607	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA51		77.01	13.201	12.8797607	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
LAWA51		77.01	13.201	12.8797607	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
TFA-BASE		79.47	12.508	12.8442656	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA45	6.20	11.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.98	0.50	0.00	0.00	0.00
LAWA49	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.98	0.50	0.00	0.00	0.00
LAWA49	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.98	0.50	0.00	0.00	0.00
LAWA49	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.98	0.50	0.00	0.00	0.00
LAWA49	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.98	0.50	0.00	0.00	0.00
LAWA49	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.98	0.50	0.00	0.00	0.00
LAWA49	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.98	0.50	0.00	0.00	0.00
LAWA49	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.98	0.50	0.00	0.00	0.00
LAWA49	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.98	0.50	0.00	0.00	0.00
LAWA49	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.98	0.50	0.00	0.00	0.00
LAWA50	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98	0.50	0.00	0.00	0.00
LAWA50	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98	0.50	0.00	0.00	0.00
LAWA50	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98	0.50	0.00	0.00	0.00
LAWA50	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98	0.50	0.00	0.00	0.00
LAWA50	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98	0.50	0.00	0.00	0.00
LAWA50	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98	0.50	0.00	0.00	0.00
LAWA50	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98	0.50	0.00	0.00	0.00
LAWA50	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98	0.50	0.00	0.00	0.00
LAWA50	6.20	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98	0.50	0.00	0.00	0.00
LAWA51	6.20	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.45	0.00	0.00	0.00
LAWA51	6.20	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.45	0.00	0.00	0.00
LAWA51	6.20	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.45	0.00	0.00	0.00
LAWA51	6.20	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.45	0.00	0.00	0.00
LAWA51	6.20	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.45	0.00	0.00	0.00
LAWA51	6.20	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.45	0.00	0.00	0.00
LAWA51	6.20	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.45	0.00	0.00	0.00	
LAWA51	6.20	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.45	0.00	0.00	0.00
LAWA51	6.20	11.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.45	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
TFA-BASE	7.00	10.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.41	0.00	0.00	0.00
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA45	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55	0.00	0.00
LAWA49	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.57	0.00	0.00
LAWA49	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.57	0.00	0.00
LAWA49	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.57	0.00	0.00
LAWA49	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.57	0.00	0.00
LAWA49	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.57	0.00	0.00
LAWA49	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.57	0.00	0.00
LAWA49	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.57	0.00	0.00
LAWA49	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.57	0.00	0.00
LAWA49	1.48	0.00	0.00	0.00	20.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.57	0.00	0.00
LAWA50	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
LAWA50	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
LAWA50	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
LAWA50	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
LAWA50	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
LAWA50	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
LAWA50	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
LAWA50	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
LAWA50	1.48	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.55	0.00	0.00
LAWA51	1.48	0.00	0.00	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.58	0.00	0.00
LAWA51	1.48	0.00	0.00	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.58	0.00	0.00
LAWA51	1.48	0.00	0.00	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.58	0.00	0.00
LAWA51	1.48	0.00	0.00	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.58	0.00	0.00
LAWA51	1.48	0.00	0.00	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.58	0.00	0.00
LAWA51	1.48	0.00	0.00	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.58	0.00	0.00
LAWA51	1.48	0.00	0.00	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.58	0.00	0.00
LAWA51	1.48	0.00	0.00	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.58	0.00	0.00
LAWA51	1.48	0.00	0.00	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.58	0.00	0.00
LAWA51	1.48	0.00	0.00	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.58	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
TFA-BASE	1.50	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.07	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA45	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA49	0.00	0.00	0.00	2.00	0.00	0.00	2.48	2.99	0.90	100.00		
LAWA49	0.00	0.00	0.00	2.00	0.00	0.00	2.48	2.99	0.90	100.00		
LAWA49	0.00	0.00	0.00	2.00	0.00	0.00	2.48	2.99	0.90	100.00		
LAWA49	0.00	0.00	0.00	2.00	0.00	0.00	2.48	2.99	0.90	100.00		
LAWA49	0.00	0.00	0.00	2.00	0.00	0.00	2.48	2.99	0.90	100.00		
LAWA49	0.00	0.00	0.00	2.00	0.00	0.00	2.48	2.99	0.90	100.00		
LAWA49	0.00	0.00	0.00	2.00	0.00	0.00	2.48	2.99	0.90	100.00		
LAWA49	0.00	0.00	0.00	2.00	0.00	0.00	2.48	2.99	0.90	100.00		
LAWA49	0.00	0.00	0.00	2.00	0.00	0.00	2.48	2.99	0.90	100.00		
LAWA50	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA50	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA50	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA50	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA50	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA50	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA50	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA50	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA50	0.00	0.00	0.00	1.99	0.00	0.00	2.48	2.99	0.92	100.00		
LAWA51	0.00	0.00	0.00	2.00	0.00	0.00	2.49	3.00	0.82	100.00		
LAWA51	0.00	0.00	0.00	2.00	0.00	0.00	2.49	3.00	0.82	100.00		
LAWA51	0.00	0.00	0.00	2.00	0.00	0.00	2.49	3.00	0.82	100.00		
LAWA51	0.00	0.00	0.00	2.00	0.00	0.00	2.49	3.00	0.82	100.00		
LAWA51	0.00	0.00	0.00	2.00	0.00	0.00	2.49	3.00	0.82	100.00		
LAWA51	0.00	0.00	0.00	2.00	0.00	0.00	2.49	3.00	0.82	100.00		
LAWA51	0.00	0.00	0.00	2.00	0.00	0.00	2.49	3.00	0.82	100.00		
LAWA51	0.00	0.00	0.00	2.00	0.00	0.00	2.49	3.00	0.82	100.00		
LAWA51	0.00	0.00	0.00	2.00	0.00	0.00	2.49	3.00	0.82	100.00		
LAWA51	0.00	0.00	0.00	2.00	0.00	0.00	2.49	3.00	0.82	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
TFA-BASE	0.00	0.00	0.00	3.00	0.00	0.00	1.50	1.50	0.52	100.00		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
ANL on EA	42.00	0.10	20.347	854.570	**2.650**	5.01	100-200	1.125E-04	0.005	J13	90	11.92	973.00	9920.00	
ANL on EA	56.00	0.14	20.364	1,140.378	**2.650**	7.07	100-200	1.125E-04	0.007	J13	90	12.26	957.00	7630.00	0.85
ANL on EA	98.00	0.14	20.249	1,984.402	**2.650**	7.07	100-200	1.125E-04	0.007	J13	90	12.37	1185.00	11175.00	0.60
ANL on EA	182.00	0.14	20.335	3,700.986	**2.650**	7.06	100-200	1.125E-04	0.007	J13	90	12.23	7555.00	17325.00	1.23
ANL on EA	367.00	0.14	20.306	7,452.407	**2.650**	7.13	100-200	1.125E-04	0.007	J13	90	11.69	20300.00	23805.00	136.10
ANL on EA	407.00	0.15	20.306	8,264.659	**2.650**	7.24	100-200	1.125E-04	0.007	J13	90	11.58	17460.00	24740.00	63.90
ANL on EA	470.00	0.14	20.335	9,557.266	**2.650**	7.18	100-200	1.125E-04	0.007	J13	90	--	12140.00	28500.00	96.60
ANL on EA	525.00	0.14	20.249	10,630.514	**2.650**	7.02	100-200	1.125E-04	0.007	J13	90	11.41	9560.00	31330.00	19.50
ANL on EA	1155.00	0.14	20.306	23,453.761	**2.650**	7.05	100-200	1.125E-04	0.007	J13	90	--	14673.33	25570.00	127.66
ANL on EA	56.00	0.14	19.162	1,073.052	**2.650**	3.68	200-325	5.900E-05	0.007	J13	90	12.25	883.00	6365.00	0.50
ANL on EA	98.00	0.14	19.201	1,881.671	**2.650**	3.69	200-325	5.900E-05	0.007	J13	90	12.29	1990.00	9640.00	0.34
ANL on EA	182.00	0.14	19.177	3,490.255	**2.650**	3.66	200-325	5.900E-05	0.007	J13	90	12.23	6640.00	11340.00	0.62
ANL on EA	367.00	0.14	19.188	7,041.893	**2.650**	3.64	200-325	5.900E-05	0.007	J13	90	11.77	6700.00	16775.00	70.50
ANL on EA	525.00	0.14	19.175	10,066.833	**2.650**	3.75	200-325	5.900E-05	0.007	J13	90	11.60	6245.00	16985.00	48.50
ANL on EA	1155.00	0.14	19.188	22,161.816	**2.650**	3.74	200-325	5.900E-05	0.007	J13	90	11.70	6175.00	13665.00	48.35
M-Area HSi-5-A	14.00	0.02	1.081	15.132	2.600	2.00	60-80	2.135E-04	0.020	E-Area	25	9.27	2.76	0.25	2.43
M-Area HSi-5-B	14.00	0.02	2.162	30.265	2.600	2.00	60-80	2.135E-04	0.010	E-Area	25	8.82	3.04	0.41	2.10
M-Area HSi-5-E	28.00	0.02	1.081	30.265	2.600	2.00	60-80	2.135E-04	0.020	E-Area	25	7.39	2.97	0.32	2.47
M-Area HSi-5-F	28.00	0.02	2.162	60.530	2.600	2.00	60-80	2.135E-04	0.010	E-Area	25	7.96	3.82	0.52	2.09
M-Area HSi-5-G	28.00	0.04	1.817	50.878	2.600	2.00	100-140	1.270E-04	0.020	E-Area	25	10.87	34.68	17.91	0.10
M-Area HSi-5-H	28.00	0.04	3.634	101.757	2.600	2.00	100-140	1.270E-04	0.010	E-Area	25	8.72	3.28	1.45	0.10
M-Area HSi-5-I	42.00	0.10	5.128	215.385	2.600	2.00	270-400	4.500E-05	0.020	E-Area	25	8.61	3.78	1.01	1.00
M-Area HSi-5J	42.00	0.10	10.256	430.769	2.600	2.00	270-400	4.500E-05	0.010	E-Area	25	8.68	4.12	1.28	1.19
M-Area MN-12-A	14.00	0.02	1.081	15.132	2.600	2.00	60-80	2.135E-04	0.020	E-Area	25	9.59	3.32	1.16	1.16
M-Area MN-12-B	14.00	0.02	2.162	30.265	2.600	2.00	60-80	2.135E-04	0.010	E-Area	25	9.72	4.35	2.06	0.36
M-Area MN-12-E	28.00	0.02	1.081	30.265	2.600	2.00	60-80	2.135E-04	0.020	E-Area	25	9.48	3.56	1.45	1.03
M-Area MN-12-F	28.00	0.02	2.162	60.530	2.600	2.00	60-80	2.135E-04	0.010	E-Area	25	9.78	4.87	2.27	0.59
M-Area MN-12-G	28.00	0.04	1.817	50.878	2.600	2.00	100-140	1.270E-04	0.020	E-Area	25	8.79	2.43	0.92	0.54
M-Area MN-12-H	28.00	0.04	3.634	101.757	2.600	2.00	100-140	1.270E-04	0.010	E-Area	25	10.87	39.56	22.72	0.11
M-Area MN-12-I	42.00	0.10	5.128	215.385	2.600	2.00	270-400	4.500E-05	0.020	E-Area	25	10.89	33.94	20.39	0.18
M-Area MN-12-J	42.00	0.10	10.256	430.769	2.600	2.00	270-400	4.500E-05	0.010	E-Area	25	10.00	11.42	5.39	0.11
M-Area MN-13-A	14.00	0.02	1.081	15.132	2.600	2.00	60-80	2.135E-04	0.020	E-Area	25	9.68	2.26	0.08	1.67
M-Area MN-13-B	14.00	0.02	2.162	30.265	2.600	2.00	60-80	2.135E-04	0.010	E-Area	25	9.73	3.75	0.19	1.71
M-Area MN-13-E	28.00	0.02	1.081	30.265	2.600	2.00	60-80	2.135E-04	0.020	E-Area	25	9.29	3.30	0.14	2.27
M-Area MN-13-F	28.00	0.02	2.162	60.530	2.600	2.00	60-80	2.135E-04	0.010	E-Area	25	9.59	3.75	0.21	1.88
M-Area MN-13-G	28.00	0.04	1.817	50.878	2.600	2.00	100-140	1.270E-04	0.020	E-Area	25	9.65	4.13	0.24	1.94
M-Area MN-13-H	28.00	0.04	3.634	101.757	2.600	2.00	100-140	1.270E-04	0.010	E-Area	25	10.28	9.83	0.86	0.59
M-Area MN-13-I	42.00	0.10	5.128	215.385	2.600	2.00	270-400	4.500E-05	0.020	E-Area	25	10.54	11.24	1.10	0.29
M-Area MN-13-J	42.00	0.10	10.256	430.769	2.600	2.00	270-400	4.500E-05	0.010	E-Area	25	10.33	8.61	0.84	0.46
PUREX AVG	7.00	0.02	2.019	14.134	2.665	1.00	100-200	1.125E-04	0.010	ASTM I	90	10.55	159.14	59.46	
PUREX AVG	28.00	0.04	4.038	113.075	2.665	2.00	100-200	1.125E-04	0.010	ASTM I	90	11.27	386.41	168.81	1.71
PUREX AVG	60.00	0.10	10.096	605.760	2.665	5.00	100-200	1.125E-04	0.010	ASTM I	90	11.97	230.97	2833.33	
PUREX AVG	90.00	0.12	20.192	1,817.279	2.665	6.00	100-200	1.125E-04	0.006	ASTM I	90	12.41	2553.38	12256.30	
BATCH 1 AVG	7.00	0.02	2.066	14.460	2.605	1.00	100-200	1.125E-04	0.010	ASTM I	90	10.23	89.15	15.00	
BATCH 1 AVG	28.00	0.04	4.131	115.680	2.605	2.00	100-200	1.125E-04	0.010	ASTM I	90	10.91	162.51	33.34	
BATCH 1 AVG	60.00	0.10	10.329	619.712	2.605	5.00	100-200	1.125E-04	0.010	ASTM I	90	11.41	326.51	104.29	
BATCH 1 AVG	90.00	0.12	20.657	1,859.136	2.605	6.00	100-200	1.125E-04	0.006	ASTM I	90	11.52	481.13	314.84	
BLEND 1 AVG	7.00	0.02	2.066	14.460	2.605	1.00	100-200	1.125E-04	0.010	ASTM I	90	10.17	93.80	16.33	

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
ANL on EA		1340.00	26416.00	151.00									Zeolite
ANL on EA		953.50	24414.00	30.50	4.10	0.53							Zeolite
ANL on EA		1205.50	29848.50			0.25							Zeolite
ANL on EA		1893.00	53319.50	58.30	11.54	0.62							Zeolite
ANL on EA		2027.00	74594.00	137.50	35.70	2.50		0.14	0.34	0.40	52.50		Zeolite
ANL on EA		1894.00	57013.00	93.80	7.91				0.02		0.50		Zeolite
ANL on EA		1730.00	58710.00	113.00	30.10			0.02	0.17	1.10	30.00		Zeolite
ANL on EA		2261.00	72247.00	147.00	19.80	0.76		0.11	0.08		0.24		Zeolite
ANL on EA		1683.00	55598.00	85.93	22.80				0.15		28.70		Zeolite
ANL on EA		747.00	18994.00	25.00	1.95	0.34							Zeolite
ANL on EA		1040.00	25663.00			0.17							Zeolite
ANL on EA		1317.00	36069.00	45.05	6.61	0.40					1.15		Zeolite
ANL on EA		1362.00	42967.00	115.00	17.35	0.28		0.14	0.03	0.03	1.70		Zeolite
ANL on EA		1331.00	39698.00	83.00	7.80	0.28		0.02	0.01	0.01	0.20		Zeolite
ANL on EA		715.50	34728.00	63.55	6.87	0.72			0.02	0.01	1.50		Zeolite
M-Area HSi-5-A			6.52		0.03			0.35				0.08	Not Studied
M-Area HSi-5-B		0.04	7.69		0.03			0.34				0.16	Not Studied
M-Area HSi-5-E		0.03	6.89		0.03	0.02		0.35				0.09	Not Studied
M-Area HSi-5-F		0.06	8.30		0.03	0.02		0.33				0.14	Not Studied
M-Area HSi-5-G		25.94	16.51		28.75	0.98		0.03				4.85	Not Studied
M-Area HSi-5-H		0.10	5.57		1.13	0.02		0.02				0.37	Not Studied
M-Area HSi-5-I		0.13	11.84		0.44	0.02		0.22				0.43	Not Studied
M-Area HSi-5J		0.17	12.39		0.59	0.03		0.19				0.51	Not Studied
M-Area MN-12-A		3.22	6.23		1.46			0.23				0.45	Not Studied
M-Area MN-12-B		5.92	7.69		2.62			0.10				0.72	Not Studied
M-Area MN-12-E		3.92	6.66		2.26	0.01		0.21				0.49	Not Studied
M-Area MN-12-F		5.75	7.80		3.97	0.07		0.12				0.75	Not Studied
M-Area MN-12-G		0.06	3.45		0.97	0.01		0.01				0.20	Not Studied
M-Area MN-12-H		32.79	20.01		34.25	1.05		0.03					Not Studied
M-Area MN-12-I		31.30	23.35		35.49	0.65		0.05				4.01	Not Studied
M-Area MN-12-J		10.96	11.00		11.74	0.12		0.02				1.70	Not Studied
M-Area MN-13-A		1.29	4.16		0.15	0.01		0.25				0.23	Not Studied
M-Area MN-13-B		2.82	6.12		0.43			0.29				0.36	Not Studied
M-Area MN-13-E		1.90	5.62		0.54	0.02		0.32				0.25	Not Studied
M-Area MN-13-F		2.97	6.22		0.78	0.03		0.29				0.43	Not Studied
M-Area MN-13-G		2.87	6.12		0.93	0.04		0.29				0.40	Not Studied
M-Area MN-13-H		5.48	6.69		4.81	0.08		0.10				1.14	Not Studied
M-Area MN-13-I		9.02	10.41		6.77	0.06		0.05				1.15	Not Studied
M-Area MN-13-J		7.97	9.16		4.61	0.04		0.08				1.10	Not Studied
PUREX AVG		24.50	167.50	30.20	3.02	9.45		1.30		0.19			
PUREX AVG		58.22	454.75	79.36	8.64	58.95	1.96	7.86					
PUREX AVG		139.79	7158.33	1332.50	2.29		54.79						
PUREX AVG		389.05	24590.75	3752.38			228.74						
BATCH 1 AVG		13.86	42.82	11.96	5.10	3.31							
BATCH 1 AVG		30.99	97.67	22.36	5.52	9.49	0.81						
BATCH 1 AVG		69.87	256.06	59.52	10.42	40.79	1.81		0.99				
BATCH 1 AVG		108.24	581.29	139.29									
BLEND 1 AVG		44.60	46.29	13.95	4.06	2.30							

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
ANL on EA		81.10	14.231385	0.500433797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
M-Area HSi-5-A		71.90	21.46	-25.573138	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area HSi-5-B		71.90	21.46	-25.573138	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area HSi-5-E		71.90	21.46	-25.573138	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area HSi-5-F		71.90	21.46	-25.573138	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area HSi-5-G		71.90	21.46	-25.573138	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area HSi-5-H		71.90	21.46	-25.573138	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area HSi-5-I		71.90	21.46	-25.573138	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area HSi-5J		71.90	21.46	-25.573138	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area MN-12-A		69.60	20.23	-14.938294	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area MN-12-B		69.60	20.23	-14.938294	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area MN-12-E		69.60	20.23	-14.938294	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area MN-12-F		69.60	20.23	-14.938294	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area MN-12-G		69.60	20.23	-14.938294	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area MN-12-H		69.60	20.23	-14.938294	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area MN-12-I		69.60	20.23	-14.938294	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area MN-12-J		69.60	20.23	-14.938294	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area MN-13-A		68.51	19.72	-10.310101	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area MN-13-B		68.51	19.72	-10.310101	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area MN-13-E		68.51	19.72	-10.310101	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area MN-13-F		68.51	19.72	-10.310101	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area MN-13-G		68.51	19.72	-10.310101	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area MN-13-H		68.51	19.72	-10.310101	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area MN-13-I		68.51	19.72	-10.310101	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M-Area MN-13-J		68.51	19.72	-10.310101	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
PUREX AVG		76.14	17.47	-9.837256	HOMOGENEOUS	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
PUREX AVG		76.14	17.47	-9.837256	HOMOGENEOUS	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
PUREX AVG		76.14	17.47	-9.837256	HOMOGENEOUS	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
PUREX AVG		76.14	17.47	-9.837256	HOMOGENEOUS	High alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
BATCH 1 AVG		74.80	19.2	-17.45926	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
BATCH 1 AVG		74.80	19.2	-17.45926	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
BATCH 1 AVG		74.80	19.2	-17.45926	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
BATCH 1 AVG		74.80	19.2	-17.45926	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
BLEND 1 AVG		77.28	16.47	-6.017446	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
ANL on EA	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
M-Area HSi-5-A	19.36	11.95	0.01	0.38	0.00	0.02	0.08	0.00	0.03	0.00	0.00	1.68	1.83	0.00	0.00	0.00
M-Area HSi-5-B	19.36	11.95	0.01	0.38	0.00	0.02	0.08	0.00	0.03	0.00	0.00	1.68	1.83	0.00	0.00	0.00
M-Area HSi-5-E	19.36	11.95	0.01	0.38	0.00	0.02	0.08	0.00	0.03	0.00	0.00	1.68	1.83	0.00	0.00	0.00
M-Area HSi-5-F	19.36	11.95	0.01	0.38	0.00	0.02	0.08	0.00	0.03	0.00	0.00	1.68	1.83	0.00	0.00	0.00
M-Area HSi-5-G	19.36	11.95	0.01	0.38	0.00	0.02	0.08	0.00	0.03	0.00	0.00	1.68	1.83	0.00	0.00	0.00
M-Area HSi-5-H	19.36	11.95	0.01	0.38	0.00	0.02	0.08	0.00	0.03	0.00	0.00	1.68	1.83	0.00	0.00	0.00
M-Area HSi-5-I	19.36	11.95	0.01	0.38	0.00	0.02	0.08	0.00	0.03	0.00	0.00	1.68	1.83	0.00	0.00	0.00
M-Area HSi-5J	19.36	11.95	0.01	0.38	0.00	0.02	0.08	0.00	0.03	0.00	0.00	1.68	1.83	0.00	0.00	0.00
M-Area MN-12-A	18.33	14.26	0.00	0.30	0.00	0.02	0.09	0.00	0.01	0.00	0.00	1.56	1.10	0.00	0.00	14.67
M-Area MN-12-B	18.33	14.26	0.00	0.30	0.00	0.02	0.09	0.00	0.01	0.00	0.00	1.56	1.10	0.00	0.00	14.67
M-Area MN-12-E	18.33	14.26	0.00	0.30	0.00	0.02	0.09	0.00	0.01	0.00	0.00	1.56	1.10	0.00	0.00	14.67
M-Area MN-12-F	18.33	14.26	0.00	0.30	0.00	0.02	0.09	0.00	0.01	0.00	0.00	1.56	1.10	0.00	0.00	14.67
M-Area MN-12-G	18.33	14.26	0.00	0.30	0.00	0.02	0.09	0.00	0.01	0.00	0.00	1.56	1.10	0.00	0.00	14.67
M-Area MN-12-H	18.33	14.26	0.00	0.30	0.00	0.02	0.09	0.00	0.01	0.00	0.00	1.56	1.10	0.00	0.00	14.67
M-Area MN-12-I	18.33	14.26	0.00	0.30	0.00	0.02	0.09	0.00	0.01	0.00	0.00	1.56	1.10	0.00	0.00	14.67
M-Area MN-12-J	18.33	14.26	0.00	0.30	0.00	0.02	0.09	0.00	0.01	0.00	0.00	1.56	1.10	0.00	0.00	14.67
M-Area MN-13-A	17.52	5.09	0.01	0.35	0.00	0.02	0.08	0.00	0.02	0.00	0.00	1.81	1.40	0.00	0.00	11.15
M-Area MN-13-B	17.52	5.09	0.01	0.35	0.00	0.02	0.08	0.00	0.02	0.00	0.00	1.81	1.40	0.00	0.00	11.15
M-Area MN-13-E	17.52	5.09	0.01	0.35	0.00	0.02	0.08	0.00	0.02	0.00	0.00	1.81	1.40	0.00	0.00	11.15
M-Area MN-13-F	17.52	5.09	0.01	0.35	0.00	0.02	0.08	0.00	0.02	0.00	0.00	1.81	1.40	0.00	0.00	11.15
M-Area MN-13-G	17.52	5.09	0.01	0.35	0.00	0.02	0.08	0.00	0.02	0.00	0.00	1.81	1.40	0.00	0.00	11.15
M-Area MN-13-H	17.52	5.09	0.01	0.35	0.00	0.02	0.08	0.00	0.02	0.00	0.00	1.81	1.40	0.00	0.00	11.15
M-Area MN-13-I	17.52	5.09	0.01	0.35	0.00	0.02	0.08	0.00	0.02	0.00	0.00	1.81	1.40	0.00	0.00	11.15
M-Area MN-13-J	17.52	5.09	0.01	0.35	0.00	0.02	0.08	0.00	0.02	0.00	0.00	1.81	1.40	0.00	0.00	11.15
PUREX AVG	2.99	10.33	0.20	1.09	0.00	0.00	0.15	0.06	0.21	0.19	0.00	13.25	3.41	0.00	0.00	3.22
PUREX AVG	2.99	10.33	0.20	1.09	0.00	0.00	0.15	0.06	0.21	0.19	0.00	13.25	3.41	0.00	0.00	3.22
PUREX AVG	2.99	10.33	0.20	1.09	0.00	0.00	0.15	0.06	0.21	0.19	0.00	13.25	3.41	0.00	0.00	3.22
PUREX AVG	2.99	10.33	0.20	1.09	0.00	0.00	0.15	0.06	0.21	0.19	0.00	13.25	3.41	0.00	0.00	3.22
BATCH 1 AVG	4.88	7.78	0.15	1.22	0.00	0.00	0.11	0.06	0.20	0.18	0.00	12.84	3.33	0.00	0.00	4.43
BATCH 1 AVG	4.88	7.78	0.15	1.22	0.00	0.00	0.11	0.06	0.20	0.18	0.00	12.84	3.33	0.00	0.00	4.43
BATCH 1 AVG	4.88	7.78	0.15	1.22	0.00	0.00	0.11	0.06	0.20	0.18	0.00	12.84	3.33	0.00	0.00	4.43
BATCH 1 AVG	4.88	7.78	0.15	1.22	0.00	0.00	0.11	0.06	0.20	0.18	0.00	12.84	3.33	0.00	0.00	4.43
BLEND 1 AVG	4.16	8.05	0.18	1.03	0.00	0.00	0.13	0.08	0.22	0.20	0.00	10.91	3.68	0.00	0.00	4.44

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
ANL on EA	1.72	1.09	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.70	0.00	0.00
M-Area HSi-5-A	0.22	0.04	0.00	0.01	13.58	0.01	0.62	0.00	1.82	0.03	0.00	0.00	0.00	44.54	0.00	0.00
M-Area HSi-5-B	0.22	0.04	0.00	0.01	13.58	0.01	0.62	0.00	1.82	0.03	0.00	0.00	0.00	44.54	0.00	0.00
M-Area HSi-5-E	0.22	0.04	0.00	0.01	13.58	0.01	0.62	0.00	1.82	0.03	0.00	0.00	0.00	44.54	0.00	0.00
M-Area HSi-5-F	0.22	0.04	0.00	0.01	13.58	0.01	0.62	0.00	1.82	0.03	0.00	0.00	0.00	44.54	0.00	0.00
M-Area HSi-5-G	0.22	0.04	0.00	0.01	13.58	0.01	0.62	0.00	1.82	0.03	0.00	0.00	0.00	44.54	0.00	0.00
M-Area HSi-5-H	0.22	0.04	0.00	0.01	13.58	0.01	0.62	0.00	1.82	0.03	0.00	0.00	0.00	44.54	0.00	0.00
M-Area HSi-5-I	0.22	0.04	0.00	0.01	13.58	0.01	0.62	0.00	1.82	0.03	0.00	0.00	0.00	44.54	0.00	0.00
M-Area HSi-5J	0.22	0.04	0.00	0.01	13.58	0.01	0.62	0.00	1.82	0.03	0.00	0.00	0.00	44.54	0.00	0.00
M-Area MN-12-A	0.20	0.03	0.00	0.01	6.80	0.01	0.47	0.00	1.78	0.02	0.00	0.00	0.00	32.77	0.00	0.00
M-Area MN-12-B	0.20	0.03	0.00	0.01	6.80	0.01	0.47	0.00	1.78	0.02	0.00	0.00	0.00	32.77	0.00	0.00
M-Area MN-12-E	0.20	0.03	0.00	0.01	6.80	0.01	0.47	0.00	1.78	0.02	0.00	0.00	0.00	32.77	0.00	0.00
M-Area MN-12-F	0.20	0.03	0.00	0.01	6.80	0.01	0.47	0.00	1.78	0.02	0.00	0.00	0.00	32.77	0.00	0.00
M-Area MN-12-G	0.20	0.03	0.00	0.01	6.80	0.01	0.47	0.00	1.78	0.02	0.00	0.00	0.00	32.77	0.00	0.00
M-Area MN-12-H	0.20	0.03	0.00	0.01	6.80	0.01	0.47	0.00	1.78	0.02	0.00	0.00	0.00	32.77	0.00	0.00
M-Area MN-12-I	0.20	0.03	0.00	0.01	6.80	0.01	0.47	0.00	1.78	0.02	0.00	0.00	0.00	32.77	0.00	0.00
M-Area MN-12-J	0.20	0.03	0.00	0.01	6.80	0.01	0.47	0.00	1.78	0.02	0.00	0.00	0.00	32.77	0.00	0.00
M-Area MN-13-A	0.25	0.03	0.00	0.01	7.87	0.01	0.59	0.00	2.16	0.02	0.00	0.00	0.00	43.00	0.00	0.00
M-Area MN-13-B	0.25	0.03	0.00	0.01	7.87	0.01	0.59	0.00	2.16	0.02	0.00	0.00	0.00	43.00	0.00	0.00
M-Area MN-13-E	0.25	0.03	0.00	0.01	7.87	0.01	0.59	0.00	2.16	0.02	0.00	0.00	0.00	43.00	0.00	0.00
M-Area MN-13-F	0.25	0.03	0.00	0.01	7.87	0.01	0.59	0.00	2.16	0.02	0.00	0.00	0.00	43.00	0.00	0.00
M-Area MN-13-G	0.25	0.03	0.00	0.01	7.87	0.01	0.59	0.00	2.16	0.02	0.00	0.00	0.00	43.00	0.00	0.00
M-Area MN-13-H	0.25	0.03	0.00	0.01	7.87	0.01	0.59	0.00	2.16	0.02	0.00	0.00	0.00	43.00	0.00	0.00
M-Area MN-13-I	0.25	0.03	0.00	0.01	7.87	0.01	0.59	0.00	2.16	0.02	0.00	0.00	0.00	43.00	0.00	0.00
M-Area MN-13-J	0.25	0.03	0.00	0.01	7.87	0.01	0.59	0.00	2.16	0.02	0.00	0.00	0.00	43.00	0.00	0.00
PUREX AVG	1.41	1.69	0.00	0.08	12.62	0.06	1.19	0.00	0.00	0.00	0.00	0.00	0.00	46.50	0.00	0.00
PUREX AVG	1.41	1.69	0.00	0.08	12.62	0.06	1.19	0.00	0.00	0.00	0.00	0.00	0.00	46.50	0.00	0.00
PUREX AVG	1.41	1.69	0.00	0.08	12.62	0.06	1.19	0.00	0.00	0.00	0.00	0.00	0.00	46.50	0.00	0.00
PUREX AVG	1.41	1.69	0.00	0.08	12.62	0.06	1.19	0.00	0.00	0.00	0.00	0.00	0.00	46.50	0.00	0.00
BATCH 1 AVG	1.42	1.72	0.00	0.11	9.00	0.15	0.75	0.00	0.00	0.00	0.00	0.00	0.00	50.20	0.00	0.00
BATCH 1 AVG	1.42	1.72	0.00	0.11	9.00	0.15	0.75	0.00	0.00	0.00	0.00	0.00	0.00	50.20	0.00	0.00
BATCH 1 AVG	1.42	1.72	0.00	0.11	9.00	0.15	0.75	0.00	0.00	0.00	0.00	0.00	0.00	50.20	0.00	0.00
BATCH 1 AVG	1.42	1.72	0.00	0.11	9.00	0.15	0.75	0.00	0.00	0.00	0.00	0.00	0.00	50.20	0.00	0.00
BLEND 1 AVG	1.41	1.67	0.00	0.15	9.13	0.22	0.89	0.00	0.00	0.00	0.00	0.00	0.00	51.90	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
ANL on EA	0.00	0.00	0.00	0.70	0.00	0.00	0.26	0.46	0.00	99.97		
M-Area HSi-5-A	0.00	0.00	0.00	0.08	3.39	0.00	0.03	0.01	0.00	99.72		
M-Area HSi-5-B	0.00	0.00	0.00	0.08	3.39	0.00	0.03	0.01	0.00	99.72		
M-Area HSi-5-E	0.00	0.00	0.00	0.08	3.39	0.00	0.03	0.01	0.00	99.72		
M-Area HSi-5-F	0.00	0.00	0.00	0.08	3.39	0.00	0.03	0.01	0.00	99.72		
M-Area HSi-5-G	0.00	0.00	0.00	0.08	3.39	0.00	0.03	0.01	0.00	99.72		
M-Area HSi-5-H	0.00	0.00	0.00	0.08	3.39	0.00	0.03	0.01	0.00	99.72		
M-Area HSi-5-I	0.00	0.00	0.00	0.08	3.39	0.00	0.03	0.01	0.00	99.72		
M-Area HSi-5J	0.00	0.00	0.00	0.08	3.39	0.00	0.03	0.01	0.00	99.72		
M-Area MN-12-A	0.00	0.00	0.00	0.06	3.72	0.00	0.02	0.02	0.00	96.25		
M-Area MN-12-B	0.00	0.00	0.00	0.06	3.72	0.00	0.02	0.02	0.00	96.25		
M-Area MN-12-E	0.00	0.00	0.00	0.06	3.72	0.00	0.02	0.02	0.00	96.25		
M-Area MN-12-F	0.00	0.00	0.00	0.06	3.72	0.00	0.02	0.02	0.00	96.25		
M-Area MN-12-G	0.00	0.00	0.00	0.06	3.72	0.00	0.02	0.02	0.00	96.25		
M-Area MN-12-H	0.00	0.00	0.00	0.06	3.72	0.00	0.02	0.02	0.00	96.25		
M-Area MN-12-I	0.00	0.00	0.00	0.06	3.72	0.00	0.02	0.02	0.00	96.25		
M-Area MN-12-J	0.00	0.00	0.00	0.06	3.72	0.00	0.02	0.02	0.00	96.25		
M-Area MN-13-A	0.08	0.00	0.00	0.08	4.42	0.00	0.03	0.02	0.00	96.02		
M-Area MN-13-B	0.08	0.00	0.00	0.08	4.42	0.00	0.03	0.02	0.00	96.02		
M-Area MN-13-E	0.08	0.00	0.00	0.08	4.42	0.00	0.03	0.02	0.00	96.02		
M-Area MN-13-F	0.08	0.00	0.00	0.08	4.42	0.00	0.03	0.02	0.00	96.02		
M-Area MN-13-G	0.08	0.00	0.00	0.08	4.42	0.00	0.03	0.02	0.00	96.02		
M-Area MN-13-H	0.08	0.00	0.00	0.08	4.42	0.00	0.03	0.02	0.00	96.02		
M-Area MN-13-I	0.08	0.00	0.00	0.08	4.42	0.00	0.03	0.02	0.00	96.02		
M-Area MN-13-J	0.08	0.00	0.00	0.08	4.42	0.00	0.03	0.02	0.00	96.02		
PUREX AVG	0.00	0.00	0.00	0.68	0.00	0.00	0.00	0.05	0.00	99.38		
PUREX AVG	0.00	0.00	0.00	0.68	0.00	0.00	0.00	0.05	0.00	99.38		
PUREX AVG	0.00	0.00	0.00	0.68	0.00	0.00	0.00	0.05	0.00	99.38		
PUREX AVG	0.00	0.00	0.00	0.68	0.00	0.00	0.00	0.05	0.00	99.38		
BATCH 1 AVG	0.00	0.00	0.00	0.68	0.00	0.00	0.00	0.10	0.00	99.31		
BATCH 1 AVG	0.00	0.00	0.00	0.68	0.00	0.00	0.00	0.10	0.00	99.31		
BATCH 1 AVG	0.00	0.00	0.00	0.68	0.00	0.00	0.00	0.10	0.00	99.31		
BATCH 1 AVG	0.00	0.00	0.00	0.68	0.00	0.00	0.00	0.10	0.00	99.31		
BLEND 1 AVG	0.00	0.00	0.00	0.89	0.00	0.00	0.00	0.14	0.00	99.48		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
BLEND 1 AVG	28.00	0.04	4.131	115.680	2.605	2.00	100-200	1.125E-04	0.010	ASTM I	90	10.96	177.32	35.60	
BLEND 1 AVG	60.00	0.10	10.329	619.712	2.605	5.00	100-200	1.125E-04	0.010	ASTM I	90	11.30	349.92	99.93	
BLEND 1 AVG	90.00	0.12	20.657	1,859.136	2.605	6.00	100-200	1.125E-04	0.006	ASTM I	90	11.45	485.73	216.63	
HM AVG	7.00	0.02	2.069	14.482	2.601	1.00	100-200	1.125E-04	0.010	ASTM I	90	10.24	75.70	9.13	0.35
HM AVG	28.00	0.04	4.138	115.857	2.601	2.00	100-200	1.125E-04	0.010	ASTM I	90	10.95	126.40	12.14	
HM AVG	60.00	0.10	10.344	620.665	2.601	5.00	100-200	1.125E-04	0.010	ASTM I	90	11.20	238.46	50.77	
HM AVG	90.00	0.12	20.689	1,861.995	2.601	6.00	100-200	1.125E-04	0.006	ASTM I	90	11.36	374.01	100.63	
EA AVG	7.00	0.02	2.031	14.214	2.650	1.00	100-200	1.125E-04	0.010	ASTM I	90	11.66	879.56	526.30	
EA AVG	28.00	0.04	4.061	113.715	2.650	2.00	100-200	1.125E-04	0.010	ASTM I	90	11.94	1517.78	1372.41	
EA AVG	60.00	0.10	10.153	609.189	2.650	5.00	100-200	1.125E-04	0.010	ASTM I	90	12.45	2110.76	3515.79	
EA AVG	90.00	0.12	20.306	1,827.566	2.650	6.00	100-200	1.125E-04	0.006	ASTM I	90	12.72	7650.56	16046.25	
BLP 17 wt% Blend	7.00	0.06	1.979	13.852	2.697	3.00	100-200	1.125E-04	0.030	ASTM I	90		239.91	684.85	
BLP 17 wt% Blend	14.00	0.06	1.979	27.704	2.697	3.00	100-200	1.125E-04	0.030	ASTM I	90	9.82	217.45	718.93	
BLP 17 wt% Blend	21.00	0.06	1.979	41.555	2.697	3.00	100-200	1.125E-04	0.030	ASTM I	90		218.22	824.79	
BLP 17 wt% Blend	28.00	0.06	1.979	55.407	2.697	3.00	100-200	1.125E-04	0.030	ASTM I	90		220.90	822.51	
BLP 17 wt% Blend	42.00	0.06	1.979	83.111	2.697	3.00	100-200	1.125E-04	0.030	ASTM I	90	9.62	234.41	871.64	
MSP 28 wt% Magnox	7.00	0.06	1.987	13.908	2.686	3.00	100-200	1.125E-04	0.030	ASTM I	90		98.48	442.33	
MSP 28 wt% Magnox	14.00	0.06	1.987	27.817	2.686	3.00	100-200	1.125E-04	0.030	ASTM I	90	9.94	123.38	675.21	
MSP 28 wt% Magnox	21.00	0.06	1.987	41.725	2.686	3.00	100-200	1.125E-04	0.030	ASTM I	90		80.69	982.11	
MSP 28 wt% Magnox	28.00	0.06	1.987	55.634	2.686	3.00	100-200	1.125E-04	0.030	ASTM I	90		76.37	1108.39	
MSP 28 wt% Magnox	42.00	0.06	1.987	83.451	2.686	3.00	100-200	1.125E-04	0.030	ASTM I	90	9.70	88.34	1367.17	
G1 25 wt% Magnox 4% Li2O	7.00	0.08	2.006	14.040	2.659	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.85	113.39	541.05	
G1 25 wt% Magnox 4% Li2O	14.00	0.08	2.006	28.081	2.659	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.79	132.16	1087.71	
G1 25 wt% Magnox 4% Li2O	21.00	0.08	2.006	42.121	2.659	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.86	126.65	1081.86	
G1 25 wt% Magnox 4% Li2O	26.00	0.08	2.006	52.150	2.659	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.76	125.49	1374.64	
G1 25 wt% Magnox 4% Li2O	28.00	0.08	2.006	56.161	2.659	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.75	122.07	1278.64	
G1 25 wt% Magnox 4% Li2O	42.00	0.08	2.006	84.242	2.659	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.75	121.35	1584.03	
G1 25 wt% Magnox 4% Li2O	56.00	0.08	2.006	112.323	2.659	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.73	115.38	1727.55	
G1 25 wt% Magnox 4% Li2O	84.00	0.08	2.006	168.484	2.659	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.65	140.70	1845.80	
G4 32 wt% Magnox 4% Li2O	7.00	0.08	1.945	13.615	2.742	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.91	68.61	204.82	
G4 32 wt% Magnox 4% Li2O	14.00	0.08	1.945	27.231	2.742	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.87	78.40	333.85	
G4 32 wt% Magnox 4% Li2O	21.00	0.08	1.945	40.846	2.742	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.87	63.87	413.45	
G4 32 wt% Magnox 4% Li2O	28.00	0.08	1.945	54.461	2.742	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.77	63.24	436.86	
G4 32 wt% Magnox 4% Li2O	42.00	0.08	1.945	81.692	2.742	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.77	62.77	559.55	
G4 32 wt% Magnox 4% Li2O	56.00	0.08	1.945	108.923	2.742	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.78	60.21	517.55	
G4 32 wt% Magnox 4% Li2O	84.00	0.08	1.945	163.384	2.742	4.00	100-200	1.125E-04	0.040	ASTM I	90	9.76	59.90	605.77	
MMP 38% Magnox MW	7.00	0.06	1.912	13.381	2.790	3.00	100-200	1.125E-04	0.030	ASTM I	90		36.96	40.05	0.07
MMP 38% Magnox MW	14.00	0.06	1.912	26.762	2.790	3.00	100-200	1.125E-04	0.030	ASTM I	90		39.54	56.63	0.04
MMP 38% Magnox MW	21.00	0.06	1.912	40.143	2.790	3.00	100-200	1.125E-04	0.030	ASTM I	90		35.54	63.11	0.00
MMP 38% Magnox MW	28.00	0.06	1.912	53.524	2.790	3.00	100-200	1.125E-04	0.030	ASTM I	90		37.30	82.12	0.01
MMP 38% Magnox MW	42.00	0.06	1.912	80.287	2.790	3.00	100-200	1.125E-04	0.030	ASTM I	90		31.34	93.66	0.04
MCP 38% Magnox Ca/Zn	7.00	0.06	1.871	13.099	**2.850**	3.00	**100-200**	1.125E-04	0.030	**ASTM I**	**90**		42.64	195.52	0.25
MCP 38% Magnox Ca/Zn	14.00	0.06	1.871	26.199	**2.850**	3.00	**100-200**	1.125E-04	0.030	**ASTM I**	**90**		43.26	405.49	0.72
MCP 38% Magnox Ca/Zn	21.00	0.06	1.871	39.298	**2.850**	3.00	**100-200**	1.125E-04	0.030	**ASTM I**	**90**		34.30	533.38	0.02
MCP 38% Magnox Ca/Zn	28.00	0.06	1.871	52.398	**2.850**	3.00	**100-200**	1.125E-04	0.030	**ASTM I**	**90**		35.06	694.45	1.28
MCP 38% Magnox Ca/Zn	42.00	0.06	1.871	78.596	**2.850**	3.00	**100-200**	1.125E-04	0.030	**ASTM I**	**90**		25.82	912.23	3.87
MCP 38% Magnox Ca/Zn	56.00	0.06	1.871	104.795	**2.850**	3.00	**100-200**	1.125E-04	0.030	**ASTM I**	**90**		16.38	996.15	3.22
M28R 28 wt% Magnox	7.00	0.06	1.990	13.930	**2.680**	3.00	**100-200**	1.125E-04	0.030	**ASTM I**	**90**	9.693	46.80	179.42	
M28R 28 wt% Magnox	14.00	0.06	1.990	27.861	**2.680**	3.00	**100-200**	1.125E-04	0.030	**ASTM I**	**90**	9.723	71.67	313.30	
M28R 28 wt% Magnox	21.00	0.06	1.990	41.791	**2.680**	3.00	**100-200**	1.125E-04	0.030	**ASTM I**	**90**		62.12	461.06	
M28R 28 wt% Magnox	28.00	0.06	1.990	55.721	**2.680**	3.00	**100-200**	1.125E-04	0.030	**ASTM I**	**90**	9.597	55.12	483.89	
M28R 28 wt% Magnox	42.00	0.06	1.990	83.582	**2.680**	3.00	**100-200**	1.125E-04	0.030	**ASTM I**	**90**	9.687	78.68	607.23	
M28R 28 wt% Magnox	112.00	0.06	1.990	222.886	**2.680**	3.00	**100-200**	1.125E-04	0.030	**ASTM I**	**90**	9.817	44.16	744.02	
M32 32 wt% Magnox	7.00	0.06	2.018	14.125	**2.643**	3.00	**100-200**	1.125E-04	0.030	**ASTM I**	**90**	9.810	32.59	68.55	
M32 32 wt% Magnox	14.00	0.06	2.018	28.251	**2.643**	3.00	**100-200**	1.125E-04	0.030	**ASTM I**	**90**	9.810	71.64	137.86	
M32 32 wt% Magnox	21.00	0.06	2.018	42.376	**2.643**	3.00	**100-200**	1.125E-04	0.030	**ASTM I**	**90**		47.87	203.70	
M32 32 wt% Magnox	28.00	0.06	2.018	56.501	**2.643**	3.00	**100-200**	1.125E-04	0.030	**ASTM I**	**90**	9.707	42.17	245.44	
M32 32 wt% Magnox	42.00	0.06	2.018	84.752	**2.643**	3.00	**100-200**	1.125E-04	0.030	**ASTM I**	**90**	9.773	62.50	325.00	
M32 32 wt% Magnox	56.00	0.06	2.018	113.003	**2.643**	3.00	**100-200**	1.125E-04	0.030	**ASTM I**	**90**	9.90	63.08	345.07	
G3 25 wt% Magnox 5.0% Li2O	7.00	0.08	2.003	14.019	**2.663**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	10.09	201.69	810.34	
G3 25 wt% Magnox 5.0% Li2O	14.00	0.08	2.003	28.039	**2.663**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	10.07	221.02	1538.37	
G3 25 wt% Magnox 5.0% Li2O	21.00	0.08	2.003	42.058	**2.663**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	10.11	192.81	1909.75	
G3 25 wt% Magnox 5.0% Li2O	28.00	0.08	2.003	56.077	**2.663**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	10.03	172.65	1997.79	
G3 25 wt% Magnox 5.0% Li2O	42.00	0.08	2.003	84.116	**2.663**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	10.05	174.99	2611.70	
G3 25 wt% Magnox 5.0% Li2O	56.00	0.08	2.003	112.154	**2.663**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	10.02	214.34	2736.73	
G6 32 wt% Magnox 5.0% Li2O	**7.00**	**0.08**	1.938	13.566	**2.752**	**4.00**	**100-200**	1.125E-04	**0.040**	**ASTM I**	**90**	**10.25**	**101.56**	**330.10**	
G6 32 wt% Magnox 5.0% Li2O	**14.00**	**0.08**	1.938	27.132	**2.752**	**4.00**	**100-200**	1.125E-04	**0.040**	**ASTM I**	**90**	**10.24**	**104.42**	**668.71**	
G6 32 wt% Magnox 5.0% Li2O	**21.00**	**0.08**	1.938	40.698	**2.752**	**4.00**	**100-200**	1.125E-04	**0.040**	**ASTM I**	**90**	**10.20**	**97.56**	**1155.66**	
G6 32 wt% Magnox 5.0% Li2O	**28.00**	**0.08**	1.938	54.264	**2.752**	**4.00**	**100-200**	1.125E-04	**0.040**	**ASTM I**	**90**	**10.16**	**81.08**	**1176.41**	
G6 32 wt% Magnox 5.0% Li2O	**42.00**	**0.08**	1.938	81.395	**2.752**	**4.00**	**100-200**	1.125E-04	**0.040**	**ASTM I**	**90**	**10.10**	**71.17**	**1764.64**	
G6 32 wt% Magnox 5.0% Li2O	**56.00**	**0.08**	1.938	108.527	**2.752**	**4.00**	**100-200**	1.125E-04	**0.040**	**ASTM I**	**90**	**10.04**	**84.35**	**2809.84**	
G6 32 wt% Magnox 5.0% Li2O	**84.00**	**0.08**	1.938	162.791	**2.752**	**4.00**	**100-200**	1.125E-04	**0.040**	**ASTM I**	**90**	**10.03**	**82.50**	**3870.36**	

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
BLEND 1 AVG		33.97	112.02	26.87	4.30	7.04	1.21						
BLEND 1 AVG		73.73	273.29	67.29	9.91	40.04	2.63		1.95				
BLEND 1 AVG		100.91	478.37	121.10									
HM AVG		11.84	27.62	5.40	8.25	1.32							
HM AVG		27.67	53.02	6.98	9.64	3.31	0.96						
HM AVG		64.85	117.56	14.82	11.41	12.06	1.88		0.17				
HM AVG		104.52	193.12	20.47	22.96	20.58							
EA AVG		179.79	1571.37										
EA AVG		246.37	3834.47										
EA AVG		369.13	2110.76										
EA AVG		1641.49	36819.55	45.81									
BLP 17 wt% Blend		195.35	633.67				139.06	0.59					
BLP 17 wt% Blend		208.29	718.44				146.42	0.06					
BLP 17 wt% Blend		237.88	805.13				161.18	0.10					
BLP 17 wt% Blend		247.02	810.61				157.97	0.01					
BLP 17 wt% Blend		250.83	799.90				167.58	0.00					
MSP 28 wt% Magnox		174.52	363.74				100.31	0.05					
MSP 28 wt% Magnox		301.69	661.03				121.69	0.01					
MSP 28 wt% Magnox		377.56	774.60				227.63	0.03					
MSP 28 wt% Magnox		430.30	876.96				262.75	0.02					
MSP 28 wt% Magnox		491.68	1018.64				343.04	0.00					
G1 25 wt% Magnox 4% Li2O	13.37	173.83	435.91				88.70	0.09					
G1 25 wt% Magnox 4% Li2O	27.63	340.63	838.98				183.18	0.03					
G1 25 wt% Magnox 4% Li2O	27.65	344.53	845.20				190.05	0.02					
G1 25 wt% Magnox 4% Li2O	35.81	436.05	1053.40				232.79	0.04					
G1 25 wt% Magnox 4% Li2O	33.33	407.20	990.29				214.99	0.03					
G1 25 wt% Magnox 4% Li2O	41.64	488.03	1216.36				277.83	0.02					
G1 25 wt% Magnox 4% Li2O	45.51	523.90	1337.58				304.79	0.09					
G1 25 wt% Magnox 4% Li2O	47.22	530.74	1463.43				323.93	0.01					
G4 32 wt% Magnox 4% Li2O	4.84	77.79	179.27				42.99	0.06					
G4 32 wt% Magnox 4% Li2O	7.96	142.24	322.45				55.64	0.06					
G4 32 wt% Magnox 4% Li2O	9.61	146.31	324.31				86.26	0.03					
G4 32 wt% Magnox 4% Li2O	10.31	154.42	342.52				90.74	0.01					
G4 32 wt% Magnox 4% Li2O	13.30	189.19	434.85				117.10	0.03					
G4 32 wt% Magnox 4% Li2O	12.39	177.96	405.61				110.24	0.06					
G4 32 wt% Magnox 4% Li2O	14.20	199.30	475.95				122.17	0.01					
MMP 38% Magnox MW		13.58	42.60				12.43	0.30		0.01			
MMP 38% Magnox MW		19.08	58.01				15.76	0.04		0.00			
MMP 38% Magnox MW		21.13	64.32				16.03	0.00		0.00			
MMP 38% Magnox MW		26.95	81.10				19.93	0.04		0.00			
MMP 38% Magnox MW		30.24	90.19				21.45	0.04		0.00			
MCP 38% Magnox Ca/Zn		67.85	195.13				70.93	0.06		0.00			
MCP 38% Magnox Ca/Zn		144.10	382.34				148.15	0.02		0.00			
MCP 38% Magnox Ca/Zn		174.50	458.26				177.98	0.00		0.00			
MCP 38% Magnox Ca/Zn		252.17	652.50				251.30	0.09		0.00			
MCP 38% Magnox Ca/Zn		317.85	822.23				316.70	0.21		0.00			
MCP 38% Magnox Ca/Zn		358.78	901.51				383.20	0.05		0.00			
M28R 28 wt% Magnox	1.40	59.56	157.97			0.06	39.66	0.12					
M28R 28 wt% Magnox	2.20	89.66	246.06			0.02	63.64	0.18					
M28R 28 wt% Magnox	3.29	140.60	330.23			0.00	90.43	0.42					
M28R 28 wt% Magnox	3.35	151.50	378.07			0.05	96.78	0.00					
M28R 28 wt% Magnox	4.18	162.45	440.87			0.02	118.08	0.00					
M28R 28 wt% Magnox	5.16	200.41	563.39			0.06	137.95	0.15					
M32 32 wt% Magnox	0.40	25.47	67.65			0.13	16.35	0.10					
M32 32 wt% Magnox	0.59	50.86	136.50			0.01	25.07	0.10					
M32 32 wt% Magnox	0.77	65.46	140.20			0.00	43.94	0.11					
M32 32 wt% Magnox	0.97	85.15	201.71			0.05	52.01	0.00					
M32 32 wt% Magnox	1.19	95.91	247.54			0.00	65.57	0.00					
M32 32 wt% Magnox	1.02	102.33	272.67			0.00	68.53	0.08					
G3 25 wt% Magnox 5.0% Li2O	22.22	315.01	637.46				135.48	0.00					
G3 25 wt% Magnox 5.0% Li2O	43.37	576.64	1160.26				272.37	0.00					
G3 25 wt% Magnox 5.0% Li2O	54.01	704.09	1401.06				352.63	0.00					
G3 25 wt% Magnox 5.0% Li2O	57.91	768.26	1527.47				391.29	0.00000000000					
G3 25 wt% Magnox 5.0% Li2O	79.59	908.38	1995.45				516.52	0.00000000000					
G3 25 wt% Magnox 5.0% Li2O	89.21	980.40	2088.75				532.95	0.00					
G6 32 wt% Magnox 5.0% Li2O	**10.03**	**145.53**	**264.84**				**82.01**	**0.29**					
G6 32 wt% Magnox 5.0% Li2O	**20.37**	**288.77**	**496.83**				**110.61**	**0.00**					
G6 32 wt% Magnox 5.0% Li2O	**35.82**	**490.13**	**832.00**				**296.58**	**0.00**					
G6 32 wt% Magnox 5.0% Li2O	**38.66**	**485.80**	**838.79**				**304.38**	**0.01**					
G6 32 wt% Magnox 5.0% Li2O	**59.36**	**694.41**	**1284.19**				**469.54**	**0.00**					
G6 32 wt% Magnox 5.0% Li2O	**102.57**	**967.69**	**2279.23**				**823.88**	**0.00**					
G6 32 wt% Magnox 5.0% Li2O	**144.73**	**1177.23**	**3483.77**				**1192.73**	**0.00**					

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
BLEND 1 AVG		77.28	16.47	-6.017446	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
BLEND 1 AVG		77.28	16.47	-6.017446	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
BLEND 1 AVG		77.28	16.47	-6.017446	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HM AVG		78.28	16.71	-8.976418	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HM AVG		78.28	16.71	-8.976418	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HM AVG		78.28	16.71	-8.976418	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HM AVG		78.28	16.71	-8.976418	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
EA AVG		81.13	14.231385	0.452328797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
EA AVG		81.13	14.231385	0.452328797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
EA AVG		81.13	14.231385	0.452328797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
EA AVG		81.13	14.231385	0.452328797	Indeterminate	High alkali	Mid Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
BLP 17 wt% Blend		83.06	8.1642	31.62761659	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
BLP 17 wt% Blend		83.06	8.1642	31.62761659	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
BLP 17 wt% Blend		83.06	8.1642	31.62761659	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
BLP 17 wt% Blend		83.06	8.1642	31.62761659	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
BLP 17 wt% Blend		83.06	8.1642	31.62761659	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
MSP 28 wt% Magnox		72.00	15.03955	10.52792951	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MSP 28 wt% Magnox		72.00	15.03955	10.52792951	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MSP 28 wt% Magnox		72.00	15.03955	10.52792951	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MSP 28 wt% Magnox		72.00	15.03955	10.52792951	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MSP 28 wt% Magnox		72.00	15.03955	10.52792951	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G1 25 wt% Magnox 4% Li2O		75.96	13.57192332	12.46918609	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G1 25 wt% Magnox 4% Li2O		75.96	13.57192332	12.46918609	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G1 25 wt% Magnox 4% Li2O		75.96	13.57192332	12.46918609	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G1 25 wt% Magnox 4% Li2O		75.96	13.57192332	12.46918609	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G1 25 wt% Magnox 4% Li2O		75.96	13.57192332	12.46918609	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G1 25 wt% Magnox 4% Li2O		75.96	13.57192332	12.46918609	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G1 25 wt% Magnox 4% Li2O		75.96	13.57192332	12.46918609	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G4 32 wt% Magnox 4% Li2O		69.27	17.37206186	1.73703574	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G4 32 wt% Magnox 4% Li2O		69.27	17.37206186	1.73703574	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G4 32 wt% Magnox 4% Li2O		69.27	17.37206186	1.73703574	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G4 32 wt% Magnox 4% Li2O		69.27	17.37206186	1.73703574	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G4 32 wt% Magnox 4% Li2O		69.27	17.37206186	1.73703574	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G4 32 wt% Magnox 4% Li2O		69.27	17.37206186	1.73703574	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G4 32 wt% Magnox 4% Li2O		69.27	17.37206186	1.73703574	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MMP 38% Magnox MW		64.20	20.2263	-6.25849714	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MMP 38% Magnox MW		64.20	20.2263	-6.25849714	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MMP 38% Magnox MW		64.20	20.2263	-6.25849714	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MMP 38% Magnox MW		64.20	20.2263	-6.25849714	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MMP 38% Magnox MW		64.20	20.2263	-6.25849714	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MCP 38% Magnox Ca/Zn		58.50	21.9563	**-6.88924114**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MCP 38% Magnox Ca/Zn		58.50	21.9563	**-6.88924114**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MCP 38% Magnox Ca/Zn		58.50	21.9563	**-6.88924114**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MCP 38% Magnox Ca/Zn		58.50	21.9563	**-6.88924114**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MCP 38% Magnox Ca/Zn		58.50	21.9563	**-6.88924114**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
MCP 38% Magnox Ca/Zn		58.50	21.9563	**-6.88924114**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M28R 28 wt% Magnox		72.00	15.15955	**9.85019351**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M28R 28 wt% Magnox		72.00	15.15955	**9.85019351**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M28R 28 wt% Magnox		72.00	15.15955	**9.85019351**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M28R 28 wt% Magnox		72.00	15.15955	**9.85019351**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M28R 28 wt% Magnox		72.00	15.15955	**9.85019351**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M28R 28 wt% Magnox		72.00	15.15955	**9.85019351**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M32 32 wt% Magnox		67.80	17.6156	**2.71361432**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M32 32 wt% Magnox		67.80	17.6156	**2.71361432**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M32 32 wt% Magnox		67.80	17.6156	**2.71361432**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M32 32 wt% Magnox		67.80	17.6156	**2.71361432**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M32 32 wt% Magnox		67.80	17.6156	**2.71361432**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M32 32 wt% Magnox		67.80	17.6156	**2.71361432**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G3 25 wt% Magnox 5.0% Li2O		75.96	13.57192332	**12.46642141**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G3 25 wt% Magnox 5.0% Li2O		75.96	13.57192332	**12.46642141**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G3 25 wt% Magnox 5.0% Li2O		75.96	13.57192332	**12.46642141**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G3 25 wt% Magnox 5.0% Li2O		75.96	13.57192332	**12.46642141**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G3 25 wt% Magnox 5.0% Li2O		75.96	13.57192332	**12.46642141**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G3 25 wt% Magnox 5.0% Li2O		75.96	13.57192332	**12.46642141**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G6 32 wt% Magnox 5.0% Li2O		67.40	17.0349	**6.63469178**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G6 32 wt% Magnox 5.0% Li2O		67.40	17.0349	**6.63469178**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G6 32 wt% Magnox 5.0% Li2O		67.40	17.0349	**6.63469178**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G6 32 wt% Magnox 5.0% Li2O		67.40	17.0349	**6.63469178**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G6 32 wt% Magnox 5.0% Li2O		67.40	17.0349	**6.63469178**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G6 32 wt% Magnox 5.0% Li2O		67.40	17.0349	**6.63469178**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G6 32 wt% Magnox 5.0% Li2O		67.40	17.0349	**6.63469178**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
BLEND 1 AVG	4.16	8.05	0.18	1.03	0.00	0.00	0.13	0.08	0.22	0.20	0.00	10.91	3.68	0.00	0.00	4.44
BLEND 1 AVG	4.16	8.05	0.18	1.03	0.00	0.00	0.13	0.08	0.22	0.20	0.00	10.91	3.68	0.00	0.00	4.44
BLEND 1 AVG	4.16	8.05	0.18	1.03	0.00	0.00	0.13	0.08	0.22	0.20	0.00	10.91	3.68	0.00	0.00	4.44
HM AVG	7.15	7.03	0.11	1.01	0.00	0.00	0.09	0.06	0.13	0.11	0.00	7.78	2.21	0.00	0.00	4.62
HM AVG	7.15	7.03	0.11	1.01	0.00	0.00	0.09	0.06	0.13	0.11	0.00	7.78	2.21	0.00	0.00	4.62
HM AVG	7.15	7.03	0.11	1.01	0.00	0.00	0.09	0.06	0.13	0.11	0.00	7.78	2.21	0.00	0.00	4.62
HM AVG	7.15	7.03	0.11	1.01	0.00	0.00	0.09	0.06	0.13	0.11	0.00	7.78	2.21	0.00	0.00	4.62
EA AVG	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
EA AVG	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
EA AVG	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
EA AVG	3.70	11.30	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.45	7.38	0.04	0.00	0.42	4.26
BLP 17 wt% Blend	1.10	18.48	0.85	0.00	1.20	0.00	0.23	1.25	0.00	0.00	0.00	0.99	0.00	2.20	0.66	4.00
BLP 17 wt% Blend	1.10	18.48	0.85	0.00	1.20	0.00	0.23	1.25	0.00	0.00	0.00	0.99	0.00	2.20	0.66	4.00
BLP 17 wt% Blend	1.10	18.48	0.85	0.00	1.20	0.00	0.23	1.25	0.00	0.00	0.00	0.99	0.00	2.20	0.66	4.00
BLP 17 wt% Blend	1.10	18.48	0.85	0.00	1.20	0.00	0.23	1.25	0.00	0.00	0.00	0.99	0.00	2.20	0.66	4.00
BLP 17 wt% Blend	1.10	18.48	0.85	0.00	1.20	0.00	0.23	1.25	0.00	0.00	0.00	0.99	0.00	2.20	0.66	4.00
MSP 28 wt% Magnox	5.40	15.60	0.59	0.00	1.30	0.00	0.76	1.30	0.00	0.00	0.00	3.60	0.00	0.13	0.69	4.80
MSP 28 wt% Magnox	5.40	15.60	0.59	0.00	1.30	0.00	0.76	1.30	0.00	0.00	0.00	3.60	0.00	0.13	0.69	4.80
MSP 28 wt% Magnox	5.40	15.60	0.59	0.00	1.30	0.00	0.76	1.30	0.00	0.00	0.00	3.60	0.00	0.13	0.69	4.80
MSP 28 wt% Magnox	5.40	15.60	0.59	0.00	1.30	0.00	0.76	1.30	0.00	0.00	0.00	3.60	0.00	0.13	0.69	4.80
MSP 28 wt% Magnox	5.40	15.60	0.59	0.00	1.30	0.00	0.76	1.30	0.00	0.00	0.00	3.60	0.00	0.13	0.69	4.80
G1 25 wt% Magnox 4% Li2O	4.93	16.93	0.52	0.00	1.13	0.00	0.74	1.06	0.00	0.00	0.00	3.32	0.00	0.07	0.61	4.00
G1 25 wt% Magnox 4% Li2O	4.93	16.93	0.52	0.00	1.13	0.00	0.74	1.06	0.00	0.00	0.00	3.32	0.00	0.07	0.61	4.00
G1 25 wt% Magnox 4% Li2O	4.93	16.93	0.52	0.00	1.13	0.00	0.74	1.06	0.00	0.00	0.00	3.32	0.00	0.07	0.61	4.00
G1 25 wt% Magnox 4% Li2O	4.93	16.93	0.52	0.00	1.13	0.00	0.74	1.06	0.00	0.00	0.00	3.32	0.00	0.07	0.61	4.00
G1 25 wt% Magnox 4% Li2O	4.93	16.93	0.52	0.00	1.13	0.00	0.74	1.06	0.00	0.00	0.00	3.32	0.00	0.07	0.61	4.00
G1 25 wt% Magnox 4% Li2O	4.93	16.93	0.52	0.00	1.13	0.00	0.74	1.06	0.00	0.00	0.00	3.32	0.00	0.07	0.61	4.00
G1 25 wt% Magnox 4% Li2O	4.93	16.93	0.52	0.00	1.13	0.00	0.74	1.06	0.00	0.00	0.00	3.32	0.00	0.07	0.61	4.00
G4 32 wt% Magnox 4% Li2O	6.31	15.26	0.66	0.00	1.44	0.00	0.95	1.36	0.00	0.00	0.00	4.25	0.00	0.09	0.78	4.00
G4 32 wt% Magnox 4% Li2O	6.31	15.26	0.66	0.00	1.44	0.00	0.95	1.36	0.00	0.00	0.00	4.25	0.00	0.09	0.78	4.00
G4 32 wt% Magnox 4% Li2O	6.31	15.26	0.66	0.00	1.44	0.00	0.95	1.36	0.00	0.00	0.00	4.25	0.00	0.09	0.78	4.00
G4 32 wt% Magnox 4% Li2O	6.31	15.26	0.66	0.00	1.44	0.00	0.95	1.36	0.00	0.00	0.00	4.25	0.00	0.09	0.78	4.00
G4 32 wt% Magnox 4% Li2O	6.31	15.26	0.66	0.00	1.44	0.00	0.95	1.36	0.00	0.00	0.00	4.25	0.00	0.09	0.78	4.00
G4 32 wt% Magnox 4% Li2O	6.31	15.26	0.66	0.00	1.44	0.00	0.95	1.36	0.00	0.00	0.00	4.25	0.00	0.09	0.78	4.00
G4 32 wt% Magnox 4% Li2O	6.31	15.26	0.66	0.00	1.44	0.00	0.95	1.36	0.00	0.00	0.00	4.25	0.00	0.09	0.78	4.00
MMP 38% Magnox MW	7.2	13.9	0.79	0	1.8	0.00	1.1	1.7	0.00	0.00	0.00	5	0.00	0.14	0.94	3.3
MMP 38% Magnox MW	7.2	13.9	0.79	0	1.8	0.00	1.1	1.7	0.00	0.00	0.00	5	0.00	0.14	0.94	3.3
MMP 38% Magnox MW	7.2	13.9	0.79	0	1.8	0.00	1.1	1.7	0.00	0.00	0.00	5	0.00	0.14	0.94	3.3
MMP 38% Magnox MW	7.2	13.9	0.79	0	1.8	0.00	1.1	1.7	0.00	0.00	0.00	5	0.00	0.14	0.94	3.3
MMP 38% Magnox MW	7.2	13.9	0.79	0	1.8	0.00	1.1	1.7	0.00	0.00	0.00	5	0.00	0.14	0.94	3.3
MCP 38% Magnox Ca/Zn	7.4	13.2	0.77	1.2	1.8	0.00	1.1	1.6	0.00	0.00	0.00	5.1	0.00	0.14	0.96	3.7
MCP 38% Magnox Ca/Zn	7.4	13.2	0.77	1.2	1.8	0.00	1.1	1.6	0.00	0.00	0.00	5.1	0.00	0.14	0.96	3.7
MCP 38% Magnox Ca/Zn	7.4	13.2	0.77	1.2	1.8	0.00	1.1	1.6	0.00	0.00	0.00	5.1	0.00	0.14	0.96	3.7
MCP 38% Magnox Ca/Zn	7.4	13.2	0.77	1.2	1.8	0.00	1.1	1.6	0.00	0.00	0.00	5.1	0.00	0.14	0.96	3.7
MCP 38% Magnox Ca/Zn	7.4	13.2	0.77	1.2	1.8	0.00	1.1	1.6	0.00	0.00	0.00	5.1	0.00	0.14	0.96	3.7
M28R 28 wt% Magnox	5.40	15.70	0.70	0.0	1.30	0.00	0.76	1.30	0.00	0.00	0.00	3.70	0.00	0.14	0.70	3.80
M28R 28 wt% Magnox	5.40	15.70	0.70	0.0	1.30	0.00	0.76	1.30	0.00	0.00	0.00	3.70	0.00	0.14	0.70	3.80
M28R 28 wt% Magnox	5.40	15.70	0.70	0.0	1.30	0.00	0.76	1.30	0.00	0.00	0.00	3.70	0.00	0.14	0.70	3.80
M28R 28 wt% Magnox	5.40	15.70	0.70	0.0	1.30	0.00	0.76	1.30	0.00	0.00	0.00	3.70	0.00	0.14	0.70	3.80
M28R 28 wt% Magnox	5.40	15.70	0.70	0.0	1.30	0.00	0.76	1.30	0.00	0.00	0.00	3.70	0.00	0.14	0.70	3.80
M28R 28 wt% Magnox	5.40	15.70	0.70	0.0	1.30	0.00	0.76	1.30	0.00	0.00	0.00	3.70	0.00	0.14	0.70	3.80
M32 32 wt% Magnox	6.10	14.20	0.65	0.0	1.60	0.00	0.87	1.50	0.00	0.00	0.00	4.30	0.00	0.10	0.83	3.80
M32 32 wt% Magnox	6.10	14.20	0.65	0.0	1.60	0.00	0.87	1.50	0.00	0.00	0.00	4.30	0.00	0.10	0.83	3.80
M32 32 wt% Magnox	6.10	14.20	0.65	0.0	1.60	0.00	0.87	1.50	0.00	0.00	0.00	4.30	0.00	0.10	0.83	3.80
M32 32 wt% Magnox	6.10	14.20	0.65	0.0	1.60	0.00	0.87	1.50	0.00	0.00	0.00	4.30	0.00	0.10	0.83	3.80
M32 32 wt% Magnox	6.10	14.20	0.65	0.0	1.60	0.00	0.87	1.50	0.00	0.00	0.00	4.30	0.00	0.10	0.83	3.80
M32 32 wt% Magnox	6.10	14.20	0.65	0.0	1.60	0.00	0.87	1.50	0.00	0.00	0.00	4.30	0.00	0.10	0.83	3.80
G3 25 wt% Magnox 5.0% Li2O	4.93	16.69	0.52	0.00	1.13	0.00	0.74	1.06	0.00	0.00	0.00	3.32	0.00	0.07	0.61	5.00
G3 25 wt% Magnox 5.0% Li2O	4.93	16.69	0.52	0.00	1.13	0.00	0.74	1.06	0.00	0.00	0.00	3.32	0.00	0.07	0.61	5.00
G3 25 wt% Magnox 5.0% Li2O	4.93	16.69	0.52	0.00	1.13	0.00	0.74	1.06	0.00	0.00	0.00	3.32	0.00	0.07	0.61	5.00
G3 25 wt% Magnox 5.0% Li2O	4.93	16.69	0.52	0.00	1.13	0.00	0.74	1.06	0.00	0.00	0.00	3.32	0.00	0.07	0.61	5.00
G3 25 wt% Magnox 5.0% Li2O	4.93	16.69	0.52	0.00	1.13	0.00	0.74	1.06	0.00	0.00	0.00	3.32	0.00	0.07	0.61	5.00
G6 32 wt% Magnox 5.0% Li2O	**6.00**	**13.70**	**0.80**	**0.00**	**1.40**	0.00	**0.95**	**1.30**	0.00	0.00	0.00	**4.40**	0.00	**0.10**	**0.77**	**5.10**
G6 32 wt% Magnox 5.0% Li2O	**6.00**	**13.70**	**0.80**	**0.00**	**1.40**	0.00	**0.95**	**1.30**	0.00	0.00	0.00	**4.40**	0.00	**0.10**	**0.77**	**5.10**
G6 32 wt% Magnox 5.0% Li2O	**6.00**	**13.70**	**0.80**	**0.00**	**1.40**	0.00	**0.95**	**1.30**	0.00	0.00	0.00	**4.40**	0.00	**0.10**	**0.77**	**5.10**
G6 32 wt% Magnox 5.0% Li2O	**6.00**	**13.70**	**0.80**	**0.00**	**1.40**	0.00	**0.95**	**1.30**	0.00	0.00	0.00	**4.40**	0.00	**0.10**	**0.77**	**5.10**
G6 32 wt% Magnox 5.0% Li2O	**6.00**	**13.70**	**0.80**	**0.00**	**1.40**	0.00	**0.95**	**1.30**	0.00	0.00	0.00	**4.40**	0.00	**0.10**	**0.77**	**5.10**
G6 32 wt% Magnox 5.0% Li2O	**6.00**	**13.70**	**0.80**	**0.00**	**1.40**	0.00	**0.95**	**1.30**	0.00	0.00	0.00	**4.40**	0.00	**0.10**	**0.77**	**5.10**
G6 32 wt% Magnox 5.0% Li2O	**6.00**	**13.70**	**0.80**	**0.00**	**1.40**	0.00	**0.95**	**1.30**	0.00	0.00	0.00	**4.40**	0.00	**0.10**	**0.77**	**5.10**

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
BLEND 1 AVG	1.41	1.67	0.00	0.15	9.13	0.22	0.89	0.00	0.00	0.00	0.00	0.00	0.00	51.90	0.00	0.00
BLEND 1 AVG	1.41	1.67	0.00	0.15	9.13	0.22	0.89	0.00	0.00	0.00	0.00	0.00	0.00	51.90	0.00	0.00
BLEND 1 AVG	1.41	1.67	0.00	0.15	9.13	0.22	0.89	0.00	0.00	0.00	0.00	0.00	0.00	51.90	0.00	0.00
HM AVG	1.49	1.75	0.00	0.22	8.56	0.55	0.41	0.00	0.00	0.00	0.00	0.00	0.00	55.80	0.00	0.00
HM AVG	1.49	1.75	0.00	0.22	8.56	0.55	0.41	0.00	0.00	0.00	0.00	0.00	0.00	55.80	0.00	0.00
HM AVG	1.49	1.75	0.00	0.22	8.56	0.55	0.41	0.00	0.00	0.00	0.00	0.00	0.00	55.80	0.00	0.00
HM AVG	1.49	1.75	0.00	0.22	8.56	0.55	0.41	0.00	0.00	0.00	0.00	0.00	0.00	55.80	0.00	0.00
EA AVG	1.72	1.34	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.73	0.00	0.00
EA AVG	1.72	1.34	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.73	0.00	0.00
EA AVG	1.72	1.34	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.73	0.00	0.00
EA AVG	1.72	1.34	0.00	0.00	16.80	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	48.73	0.00	0.00
BLP 17 wt% Blend	1.10	0.00	0.00	2.10	9.05	1.90	0.21	0.00	0.00	0.00	0.00	0.61	0.44	50.28	0.40	0.00
BLP 17 wt% Blend	1.10	0.00	0.00	2.10	9.05	1.90	0.21	0.00	0.00	0.00	0.00	0.61	0.44	50.28	0.40	0.00
BLP 17 wt% Blend	1.10	0.00	0.00	2.10	9.05	1.90	0.21	0.00	0.00	0.00	0.00	0.61	0.44	50.28	0.40	0.00
BLP 17 wt% Blend	1.10	0.00	0.00	2.10	9.05	1.90	0.21	0.00	0.00	0.00	0.00	0.61	0.44	50.28	0.40	0.00
BLP 17 wt% Blend	1.10	0.00	0.00	2.10	9.05	1.90	0.21	0.00	0.00	0.00	0.00	0.61	0.44	50.28	0.40	0.00
MSP 28 wt% Magnox	5.70	0.00	0.00	1.80	7.40	2.10	0.48	0.00	0.00	0.00	0.00	0.64	0.78	42.90	0.45	0.00
MSP 28 wt% Magnox	5.70	0.00	0.00	1.80	7.40	2.10	0.48	0.00	0.00	0.00	0.00	0.64	0.78	42.90	0.45	0.00
MSP 28 wt% Magnox	5.70	0.00	0.00	1.80	7.40	2.10	0.48	0.00	0.00	0.00	0.00	0.64	0.78	42.90	0.45	0.00
MSP 28 wt% Magnox	5.70	0.00	0.00	1.80	7.40	2.10	0.48	0.00	0.00	0.00	0.00	0.64	0.78	42.90	0.45	0.00
MSP 28 wt% Magnox	5.70	0.00	0.00	1.80	7.40	2.10	0.48	0.00	0.00	0.00	0.00	0.64	0.78	42.90	0.45	0.00
G1 25 wt% Magnox 4% Li2O	4.90	0.00	0.00	1.61	8.23	1.84	0.48	0.00	0.00	0.00	0.00	0.61	0.64	45.74	0.39	0.00
G1 25 wt% Magnox 4% Li2O	4.90	0.00	0.00	1.61	8.23	1.84	0.48	0.00	0.00	0.00	0.00	0.61	0.64	45.74	0.39	0.00
G1 25 wt% Magnox 4% Li2O	4.90	0.00	0.00	1.61	8.23	1.84	0.48	0.00	0.00	0.00	0.00	0.61	0.64	45.74	0.39	0.00
G1 25 wt% Magnox 4% Li2O	4.90	0.00	0.00	1.61	8.23	1.84	0.48	0.00	0.00	0.00	0.00	0.61	0.64	45.74	0.39	0.00
G1 25 wt% Magnox 4% Li2O	4.90	0.00	0.00	1.61	8.23	1.84	0.48	0.00	0.00	0.00	0.00	0.61	0.64	45.74	0.39	0.00
G1 25 wt% Magnox 4% Li2O	4.90	0.00	0.00	1.61	8.23	1.84	0.48	0.00	0.00	0.00	0.00	0.61	0.64	45.74	0.39	0.00
G1 25 wt% Magnox 4% Li2O	4.90	0.00	0.00	1.61	8.23	1.84	0.48	0.00	0.00	0.00	0.00	0.61	0.64	45.74	0.39	0.00
G4 32 wt% Magnox 4% Li2O	6.27	0.00	0.00	2.06	7.42	2.35	0.62	0.00	0.00	0.00	0.00	0.78	0.82	41.23	0.49	0.00
G4 32 wt% Magnox 4% Li2O	6.27	0.00	0.00	2.06	7.42	2.35	0.62	0.00	0.00	0.00	0.00	0.78	0.82	41.23	0.49	0.00
G4 32 wt% Magnox 4% Li2O	6.27	0.00	0.00	2.06	7.42	2.35	0.62	0.00	0.00	0.00	0.00	0.78	0.82	41.23	0.49	0.00
G4 32 wt% Magnox 4% Li2O	6.27	0.00	0.00	2.06	7.42	2.35	0.62	0.00	0.00	0.00	0.00	0.78	0.82	41.23	0.49	0.00
G4 32 wt% Magnox 4% Li2O	6.27	0.00	0.00	2.06	7.42	2.35	0.62	0.00	0.00	0.00	0.00	0.78	0.82	41.23	0.49	0.00
G4 32 wt% Magnox 4% Li2O	6.27	0.00	0.00	2.06	7.42	2.35	0.62	0.00	0.00	0.00	0.00	0.78	0.82	41.23	0.49	0.00
G4 32 wt% Magnox 4% Li2O	6.27	0.00	0.00	2.06	7.42	2.35	0.62	0.00	0.00	0.00	0.00	0.78	0.82	41.23	0.49	0.00
MMP 38% Magnox MW	7.5	0.00	0.00	2.4	7.3	2.7	0.69	0.00	0.00	0.00	0.00	0.86	0.95	38	0.58	0.00
MMP 38% Magnox MW	7.5	0.00	0.00	2.4	7.3	2.7	0.69	0.00	0.00	0.00	0.00	0.86	0.95	38	0.58	0.00
MMP 38% Magnox MW	7.5	0.00	0.00	2.4	7.3	2.7	0.69	0.00	0.00	0.00	0.00	0.86	0.95	38	0.58	0.00
MMP 38% Magnox MW	7.5	0.00	0.00	2.4	7.3	2.7	0.69	0.00	0.00	0.00	0.00	0.86	0.95	38	0.58	0.00
MMP 38% Magnox MW	7.5	0.00	0.00	2.4	7.3	2.7	0.69	0.00	0.00	0.00	0.00	0.86	0.95	38	0.58	0.00
MCP 38% Magnox Ca/Zn	7.7	0.00	0.00	2.5	6.9	2.8	0.72	0.00	0.00	0.00	0.00	0.88	0.98	33.1	0.6	0.00
MCP 38% Magnox Ca/Zn	7.7	0.00	0.00	2.5	6.9	2.8	0.72	0.00	0.00	0.00	0.00	0.88	0.98	33.1	0.6	0.00
MCP 38% Magnox Ca/Zn	7.7	0.00	0.00	2.5	6.9	2.8	0.72	0.00	0.00	0.00	0.00	0.88	0.98	33.1	0.6	0.00
MCP 38% Magnox Ca/Zn	7.7	0.00	0.00	2.5	6.9	2.8	0.72	0.00	0.00	0.00	0.00	0.88	0.98	33.1	0.6	0.00
MCP 38% Magnox Ca/Zn	7.7	0.00	0.00	2.5	6.9	2.8	0.72	0.00	0.00	0.00	0.00	0.88	0.98	33.1	0.6	0.00
MCP 38% Magnox Ca/Zn	7.7	0.00	0.00	2.5	6.9	2.8	0.72	0.00	0.00	0.00	0.00	0.88	0.98	33.1	0.6	0.00
M28R 28 wt% Magnox	5.70	0.00	0.00	1.80	7.50	2.10	0.48	0.00	0.00	0.00	0.00	0.64	0.67	43.70	0.45	0.00
M28R 28 wt% Magnox	5.70	0.00	0.00	1.80	7.50	2.10	0.48	0.00	0.00	0.00	0.00	0.64	0.67	43.70	0.45	0.00
M28R 28 wt% Magnox	5.70	0.00	0.00	1.80	7.50	2.10	0.48	0.00	0.00	0.00	0.00	0.64	0.67	43.70	0.45	0.00
M28R 28 wt% Magnox	5.70	0.00	0.00	1.80	7.50	2.10	0.48	0.00	0.00	0.00	0.00	0.64	0.67	43.70	0.45	0.00
M28R 28 wt% Magnox	5.70	0.00	0.00	1.80	7.50	2.10	0.48	0.00	0.00	0.00	0.00	0.64	0.67	43.70	0.45	0.00
M28R 28 wt% Magnox	5.70	0.00	0.00	1.80	7.50	2.10	0.48	0.00	0.00	0.00	0.00	0.64	0.67	43.70	0.45	0.00
M32 32 wt% Magnox	6.50	0.00	0.00	2.10	7.20	2.50	0.57	0.00	0.00	0.00	0.00	0.76	0.64	41.10	0.55	0.00
M32 32 wt% Magnox	6.50	0.00	0.00	2.10	7.20	2.50	0.57	0.00	0.00	0.00	0.00	0.76	0.64	41.10	0.55	0.00
M32 32 wt% Magnox	6.50	0.00	0.00	2.10	7.20	2.50	0.57	0.00	0.00	0.00	0.00	0.76	0.64	41.10	0.55	0.00
M32 32 wt% Magnox	6.50	0.00	0.00	2.10	7.20	2.50	0.57	0.00	0.00	0.00	0.00	0.76	0.64	41.10	0.55	0.00
M32 32 wt% Magnox	6.50	0.00	0.00	2.10	7.20	2.50	0.57	0.00	0.00	0.00	0.00	0.76	0.64	41.10	0.55	0.00
M32 32 wt% Magnox	6.50	0.00	0.00	2.10	7.20	2.50	0.57	0.00	0.00	0.00	0.00	0.76	0.64	41.10	0.55	0.00
G3 25 wt% Magnox 5.0% Li2O	4.90	0.00	0.00	1.61	8.12	1.84	0.48	0.00	0.00	0.00	0.00	0.61	0.64	45.09	0.39	0.00
G3 25 wt% Magnox 5.0% Li2O	4.90	0.00	0.00	1.61	8.12	1.84	0.48	0.00	0.00	0.00	0.00	0.61	0.64	45.09	0.39	0.00
G3 25 wt% Magnox 5.0% Li2O	4.90	0.00	0.00	1.61	8.12	1.84	0.48	0.00	0.00	0.00	0.00	0.61	0.64	45.09	0.39	0.00
G3 25 wt% Magnox 5.0% Li2O	4.90	0.00	0.00	1.61	8.12	1.84	0.48	0.00	0.00	0.00	0.00	0.61	0.64	45.09	0.39	0.00
G3 25 wt% Magnox 5.0% Li2O	4.90	0.00	0.00	1.61	8.12	1.84	0.48	0.00	0.00	0.00	0.00	0.61	0.64	45.09	0.39	0.00
G3 25 wt% Magnox 5.0% Li2O	4.90	0.00	0.00	1.61	8.12	1.84	0.48	0.00	0.00	0.00	0.00	0.61	0.64	45.09	0.39	0.00
G6 32 wt% Magnox 5.0% Li2O	**6.10**	0.00	0.00	**2.00**	**7.40**	**2.30**	**0.58**	0.00	0.00	0.00	0.00	**0.69**	**0.43**	**39.90**	**0.50**	0.00
G6 32 wt% Magnox 5.0% Li2O	**6.10**	0.00	0.00	**2.00**	**7.40**	**2.30**	**0.58**	0.00	0.00	0.00	0.00	**0.69**	**0.43**	**39.90**	**0.50**	0.00
G6 32 wt% Magnox 5.0% Li2O	**6.10**	0.00	0.00	**2.00**	**7.40**	**2.30**	**0.58**	0.00	0.00	0.00	0.00	**0.69**	**0.43**	**39.90**	**0.50**	0.00
G6 32 wt% Magnox 5.0% Li2O	**6.10**	0.00	0.00	**2.00**	**7.40**	**2.30**	**0.58**	0.00	0.00	0.00	0.00	**0.69**	**0.43**	**39.90**	**0.50**	0.00
G6 32 wt% Magnox 5.0% Li2O	**6.10**	0.00	0.00	**2.00**	**7.40**	**2.30**	**0.58**	0.00	0.00	0.00	0.00	**0.69**	**0.43**	**39.90**	**0.50**	0.00
G6 32 wt% Magnox 5.0% Li2O	**6.10**	0.00	0.00	**2.00**	**7.40**	**2.30**	**0.58**	0.00	0.00	0.00	0.00	**0.69**	**0.43**	**39.90**	**0.50**	0.00
G6 32 wt% Magnox 5.0% Li2O	**6.10**	0.00	0.00	**2.00**	**7.40**	**2.30**	**0.58**	0.00	0.00	0.00	0.00	**0.69**	**0.43**	**39.90**	**0.50**	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
BLEND 1 AVG	0.00	0.00	0.00	0.89	0.00	0.00	0.00	0.14	0.00	99.48		
BLEND 1 AVG	0.00	0.00	0.00	0.89	0.00	0.00	0.00	0.14	0.00	99.48		
BLEND 1 AVG	0.00	0.00	0.00	0.89	0.00	0.00	0.00	0.14	0.00	99.48		
HM AVG	0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.33	0.00	99.97		
HM AVG	0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.33	0.00	99.97		
HM AVG	0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.33	0.00	99.97		
HM AVG	0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.33	0.00	99.97		
EA AVG	0.00	0.00	0.00	0.70	0.00	0.00	0.00	0.46	0.00	99.99		
EA AVG	0.00	0.00	0.00	0.70	0.00	0.00	0.00	0.46	0.00	99.99		
EA AVG	0.00	0.00	0.00	0.70	0.00	0.00	0.00	0.46	0.00	99.99		
EA AVG	0.00	0.00	0.00	0.70	0.00	0.00	0.00	0.46	0.00	99.99		
BLP 17 wt% Blend	0.44	0.26	0.00	0.00	0.00	0.27	0.00	2.20	0.00	100.22		
BLP 17 wt% Blend	0.44	0.26	0.00	0.00	0.00	0.27	0.00	2.20	0.00	100.22		
BLP 17 wt% Blend	0.44	0.26	0.00	0.00	0.00	0.27	0.00	2.20	0.00	100.22		
BLP 17 wt% Blend	0.44	0.26	0.00	0.00	0.00	0.27	0.00	2.20	0.00	100.22		
BLP 17 wt% Blend	0.44	0.26	0.00	0.00	0.00	0.27	0.00	2.20	0.00	100.22		
MSP 28 wt% Magnox	0.31	0.20	0.00	0.00	0.00	0.21	0.00	1.80	0.00	98.94		
MSP 28 wt% Magnox	0.31	0.20	0.00	0.00	0.00	0.21	0.00	1.80	0.00	98.94		
MSP 28 wt% Magnox	0.31	0.20	0.00	0.00	0.00	0.21	0.00	1.80	0.00	98.94		
MSP 28 wt% Magnox	0.31	0.20	0.00	0.00	0.00	0.21	0.00	1.80	0.00	98.94		
MSP 28 wt% Magnox	0.31	0.20	0.00	0.00	0.00	0.21	0.00	1.80	0.00	98.94		
G1 25 wt% Magnox 4% Li2O	0.30	0.18	0.00	0.00	0.00	0.19	0.00	1.48	0.00	99.90		
G1 25 wt% Magnox 4% Li2O	0.30	0.18	0.00	0.00	0.00	0.19	0.00	1.48	0.00	99.90		
G1 25 wt% Magnox 4% Li2O	0.30	0.18	0.00	0.00	0.00	0.19	0.00	1.48	0.00	99.90		
G1 25 wt% Magnox 4% Li2O	0.30	0.18	0.00	0.00	0.00	0.19	0.00	1.48	0.00	99.90		
G1 25 wt% Magnox 4% Li2O	0.30	0.18	0.00	0.00	0.00	0.19	0.00	1.48	0.00	99.90		
G1 25 wt% Magnox 4% Li2O	0.30	0.18	0.00	0.00	0.00	0.19	0.00	1.48	0.00	99.90		
G1 25 wt% Magnox 4% Li2O	0.30	0.18	0.00	0.00	0.00	0.19	0.00	1.48	0.00	99.90		
G4 32 wt% Magnox 4% Li2O	0.38	0.23	0.00	0.00	0.00	0.24	0.00	1.90	0.00	99.91		
G4 32 wt% Magnox 4% Li2O	0.38	0.23	0.00	0.00	0.00	0.24	0.00	1.90	0.00	99.91		
G4 32 wt% Magnox 4% Li2O	0.38	0.23	0.00	0.00	0.00	0.24	0.00	1.90	0.00	99.91		
G4 32 wt% Magnox 4% Li2O	0.38	0.23	0.00	0.00	0.00	0.24	0.00	1.90	0.00	99.91		
G4 32 wt% Magnox 4% Li2O	0.38	0.23	0.00	0.00	0.00	0.24	0.00	1.90	0.00	99.91		
G4 32 wt% Magnox 4% Li2O	0.38	0.23	0.00	0.00	0.00	0.24	0.00	1.90	0.00	99.91		
G4 32 wt% Magnox 4% Li2O	0.38	0.23	0.00	0.00	0.00	0.24	0.00	1.90	0.00	99.91		
MMP 38% Magnox MW	0.43	0.25	0.00	0.00	0.00	0.27	0	2.2	0.00	100.00		
MMP 38% Magnox MW	0.43	0.25	0.00	0.00	0.00	0.27	0	2.2	0.00	100.00		
MMP 38% Magnox MW	0.43	0.25	0.00	0.00	0.00	0.27	0	2.2	0.00	100.00		
MMP 38% Magnox MW	0.43	0.25	0.00	0.00	0.00	0.27	0	2.2	0.00	100.00		
MMP 38% Magnox MW	0.43	0.25	0.00	0.00	0.00	0.27	0	2.2	0.00	100.00		
MCP 38% Magnox Ca/Zn	0.45	0.26	0.00	0.00	0.00	0.28	3.5	2.3	0.00	99.94		
MCP 38% Magnox Ca/Zn	0.45	0.26	0.00	0.00	0.00	0.28	3.5	2.3	0.00	99.94		
MCP 38% Magnox Ca/Zn	0.45	0.26	0.00	0.00	0.00	0.28	3.5	2.3	0.00	99.94		
MCP 38% Magnox Ca/Zn	0.45	0.26	0.00	0.00	0.00	0.28	3.5	2.3	0.00	99.94		
MCP 38% Magnox Ca/Zn	0.45	0.26	0.00	0.00	0.00	0.28	3.5	2.3	0.00	99.94		
M28R 28 wt% Magnox	0.32	0.20	0.00	0.00	0.00	0.22	0.000	1.80	0.00	99.08		
M28R 28 wt% Magnox	0.32	0.20	0.00	0.00	0.00	0.22	0.000	1.80	0.00	99.08		
M28R 28 wt% Magnox	0.32	0.20	0.00	0.00	0.00	0.22	0.000	1.80	0.00	99.08		
M28R 28 wt% Magnox	0.32	0.20	0.00	0.00	0.00	0.22	0.000	1.80	0.00	99.08		
M28R 28 wt% Magnox	0.32	0.20	0.00	0.00	0.00	0.22	0.000	1.80	0.00	99.08		
M32 32 wt% Magnox	0.40	0.25	0.00	0.00	0.00	0.26	0.000	2.00	0.00	98.78		
M32 32 wt% Magnox	0.40	0.25	0.00	0.00	0.00	0.26	0.000	2.00	0.00	98.78		
M32 32 wt% Magnox	0.40	0.25	0.00	0.00	0.00	0.26	0.000	2.00	0.00	98.78		
M32 32 wt% Magnox	0.40	0.25	0.00	0.00	0.00	0.26	0.000	2.00	0.00	98.78		
M32 32 wt% Magnox	0.40	0.25	0.00	0.00	0.00	0.26	0.000	2.00	0.00	98.78		
M32 32 wt% Magnox	0.40	0.25	0.00	0.00	0.00	0.26	0.000	2.00	0.00	98.78		
G3 25 wt% Magnox 5.0% Li2O	0.30	0.18	0.00	0.00	0.00	0.19	0.00	1.48	0.00	99.90		
G3 25 wt% Magnox 5.0% Li2O	0.30	0.18	0.00	0.00	0.00	0.19	0.00	1.48	0.00	99.90		
G3 25 wt% Magnox 5.0% Li2O	0.30	0.18	0.00	0.00	0.00	0.19	0.00	1.48	0.00	99.90		
G3 25 wt% Magnox 5.0% Li2O	0.30	0.18	0.00	0.00	0.00	0.19	0.00	1.48	0.00	99.90		
G3 25 wt% Magnox 5.0% Li2O	0.30	0.18	0.00	0.00	0.00	0.19	0.00	1.48	0.00	99.90		
G3 25 wt% Magnox 5.0% Li2O	0.30	0.18	0.00	0.00	0.00	0.19	0.00	1.48	0.00	99.90		
G6 32 wt% Magnox 5.0% Li2O	**0.37**	**0.21**	0.00	0.00	0.00	**0.23**	**0.00**	**1.80**	0.00	**97.03**		
G6 32 wt% Magnox 5.0% Li2O	**0.37**	**0.21**	0.00	0.00	0.00	**0.23**	**0.00**	**1.80**	0.00	**97.03**		
G6 32 wt% Magnox 5.0% Li2O	**0.37**	**0.21**	0.00	0.00	0.00	**0.23**	**0.00**	**1.80**	0.00	**97.03**		
G6 32 wt% Magnox 5.0% Li2O	**0.37**	**0.21**	0.00	0.00	0.00	**0.23**	**0.00**	**1.80**	0.00	**97.03**		
G6 32 wt% Magnox 5.0% Li2O	**0.37**	**0.21**	0.00	0.00	0.00	**0.23**	**0.00**	**1.80**	0.00	**97.03**		
G6 32 wt% Magnox 5.0% Li2O	**0.37**	**0.21**	0.00	0.00	0.00	**0.23**	**0.00**	**1.80**	0.00	**97.03**		
G6 32 wt% Magnox 5.0% Li2O	**0.37**	**0.21**	0.00	0.00	0.00	**0.23**	**0.00**	**1.80**	0.00	**97.03**		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
M25 25 wt% Magnox	7.00	0.06	2.013	14.088	2.650	3.00	100-200	1.125E-04	0.030	ASTM I	90		71.04	380.96	
M25 25 wt% Magnox	14.00	0.06	2.013	28.176	2.650	3.00	100-200	1.125E-04	0.030	ASTM I	90	9.89	123.34	568.03	
M25 25 wt% Magnox	21.00	0.06	2.013	42.264	2.650	3.00	100-200	1.125E-04	0.030	ASTM I	90	9.41	106.13	632.44	
M25 25 wt% Magnox	28.00	0.06	2.013	56.352	2.650	3.00	100-200	1.125E-04	0.030	ASTM I	90	9.60	116.68	828.70	
M25 25 wt% Magnox	42.00	0.06	2.013	84.528	2.650	3.00	100-200	1.125E-04	0.030	ASTM I	90	9.65	123.46	917.81	
M25 25 wt% Magnox	56.00	0.06	2.013	112.704	2.650	3.00	100-200	1.125E-04	0.030	ASTM I	90	9.60	77.30	927.63	
M25 25 wt% Magnox	89.00	0.06	2.013	179.119	2.650	3.00	100-200	1.125E-04	0.030	ASTM I	90	9.61	101.76	1052.84	
G2 25 wt% Magnox 4.5% Li2O	7.00	0.08	2.004	14.030	**2.661**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	9.95	168.81	701.14	
G2 25 wt% Magnox 4.5% Li2O	14.00	0.08	2.004	28.060	**2.661**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	9.94	176.62	1319.08	
G2 25 wt% Magnox 4.5% Li2O	21.00	0.08	2.004	42.089	**2.661**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	9.88	185.53	1667.74	
G2 25 wt% Magnox 4.5% Li2O	28.00	0.08	2.004	56.119	**2.661**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	9.89	150.41	1805.20	
G2 25 wt% Magnox 4.5% Li2O	42.00	0.08	2.004	84.179	**2.661**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	9.90	148.43	2337.51	
G2 25 wt% Magnox 4.5% Li2O	56.00	0.08	2.004	112.239	**2.661**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	9.90	175.62	2282.91	
G5 32 wt% Magnox 4.5% Li2O	7.00	0.08	1.941	13.586	**2.748**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	10.07	97.40	277.11	
G5 32 wt% Magnox 4.5% Li2O	14.00	0.08	1.941	27.171	**2.748**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	10.00	98.77	728.37	
G5 32 wt% Magnox 4.5% Li2O	21.00	0.08	1.941	40.757	**2.748**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	10.01	92.47	1077.36	
G5 32 wt% Magnox 4.5% Li2O	28.00	0.08	1.941	54.343	**2.748**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	9.98	76.46	895.82	
G5 32 wt% Magnox 4.5% Li2O	42.00	0.08	1.941	81.514	**2.748**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	9.94	66.95	1580.71	
G5 32 wt% Magnox 4.5% Li2O	56.00	0.08	1.941	108.685	**2.748**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	9.90	85.58	2470.11	
G5 32 wt% Magnox 4.5% Li2O	112.00	0.08	1.941	217.370	**2.748**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	9.90	79.23	4434.57	
25 wt% NDA VTR Glass	**7.00**	**0.08**	2.018	14.123	**2.644**	**4.00**	**100-200**	1.125E-04	**0.040**	**ASTM I**	**90**	**9.68**	**135.35**	**580.55**	
25 wt% NDA VTR Glass	**14.00**	**0.08**	2.018	28.245	**2.644**	**4.00**	**100-200**	1.125E-04	**0.040**	**ASTM I**	**90**	**9.70**	**140.61**	**842.38**	
25 wt% NDA VTR Glass	**21.00**	**0.08**	2.018	42.368	**2.644**	**4.00**	**100-200**	1.125E-04	**0.040**	**ASTM I**	**90**	**9.69**	**140.29**	**953.09**	
25 wt% NDA VTR Glass	**28.00**	**0.08**	2.018	56.491	**2.644**	**4.00**	**100-200**	1.125E-04	**0.040**	**ASTM I**	**90**	**9.74**	**100.80**	**1010.59**	
25 wt% NDA VTR Glass	**42.00**	**0.08**	2.018	84.736	**2.644**	**4.00**	**100-200**	1.125E-04	**0.040**	**ASTM I**	**90**	**9.73**	**108.67**	**1200.89**	
25 wt% NDA VTR Glass	**56.00**	**0.08**	2.018	112.982	**2.644**	**4.00**	**100-200**	1.125E-04	**0.040**	**ASTM I**	**90**	**9.71**	**144.32**	**1340.87**	
G7 38 wt% Magnox 4% Li2O	**7.00**	**0.08**	1.921	13.449	**2.776**	**4.00**	**100-200**	1.125E-04	**0.040**	**ASTM I**	**90**	**9.97**	**39.14**	**88.79**	
G7 38 wt% Magnox 4% Li2O	**14.00**	**0.08**	1.921	26.897	**2.776**	**4.00**	**100-200**	1.125E-04	**0.040**	**ASTM I**	**90**	**9.95**	**43.52**	**212.28**	
G7 38 wt% Magnox 4% Li2O	**21.00**	**0.08**	1.921	40.346	**2.776**	**4.00**	**100-200**	1.125E-04	**0.040**	**ASTM I**	**90**	**9.93**	**43.96**	**227.36**	
G7 38 wt% Magnox 4% Li2O	**28.00**	**0.08**	1.921	53.794	**2.776**	**4.00**	**100-200**	1.125E-04	**0.040**	**ASTM I**	**90**	**9.90**	**36.04**	**241.34**	
G7 38 wt% Magnox 4% Li2O	**42.00**	**0.08**	1.921	80.692	**2.776**	**4.00**	**100-200**	1.125E-04	**0.040**	**ASTM I**	**90**	**9.92**	**54.11**	**263.11**	
G7 38 wt% Magnox 4% Li2O	**56.00**	**0.08**	1.921	107.589	**2.776**	**4.00**	**100-200**	1.125E-04	**0.040**	**ASTM I**	**90**	**9.91**	**50.29**	**306.86**	
G7 38 wt% Magnox 4% Li2O	**84.00**	**0.08**	1.921	161.383	**2.776**	**4.00**	**100-200**	1.125E-04	**0.040**	**ASTM I**	**90**	**9.86**	**39.34**	**333.53**	
G8 38 wt% Magnox 4.65% Li2O	7.00	0.08	1.893	13.248	**2.818**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	10.25	45.82	129.36	
G8 38 wt% Magnox 4.65% Li2O	14.00	0.08	1.893	26.496	**2.818**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	10.20	49.06	298.26	
G8 38 wt% Magnox 4.65% Li2O	21.00	0.08	1.893	39.744	**2.818**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	10.21	48.05	421.71	
G8 38 wt% Magnox 4.65% Li2O	28.00	0.08	1.893	52.993	**2.818**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	10.14	39.71	518.92	
G8 38 wt% Magnox 4.65% Li2O	42.00	0.08	1.893	79.489	**2.818**	4.00	**100-200**	1.125E-04	0.040	**ASTM I**	**90**	10.15	61.55	557.89	
M35H 35wt% Magnox	7.00	0.10	9.697	67.879	**2.750**	5.00	**100-200**	1.125E-04	0.010	**ASTM I**	**90**	9.81	16.76	714.67	
M35H 35wt% Magnox	14.00	0.10	9.697	135.758	**2.750**	5.00	**100-200**	1.125E-04	0.010	**ASTM I**	**90**	9.77	20.87	1651.70	
M25H 25 wt% Magnox	14.00	0.08	10.063	140.881	**2.650**	4.00	**100-200**	1.125E-04	0.008	**ASTM I**	**90**		48.27	1478.66	
M25B 25 wt% Magnox	21.00	0.08	8.050	169.057	**2.650**	4.00	**100-200**	1.125E-04	0.010	**ASTM I**	**90**		63.10	2486.65	
B31H 31wt% Blend HP	7.00	0.09	9.292	65.041	**2.870**	5.00	**100-200**	1.125E-04	0.010	**ASTM I**	**90**	9.87	44.60	265.22	
B31H 31wt% Blend HP	14.00	0.09	9.292	130.081	**2.870**	5.00	**100-200**	1.125E-04	0.010	**ASTM I**	**90**		67.59	583.66	
B31H 31wt% Blend HP	21.00	0.09	9.292	195.122	**2.870**	5.00	**100-200**	1.125E-04	0.010	**ASTM I**	**90**	9.89	74.46	670.68	
B31H 31wt% Blend HP	28.00	0.09	9.292	260.163	**2.870**	5.00	**100-200**	1.125E-04	0.010	**ASTM I**	**90**	9.93	125.86	669.06	
G11 38 wt% 25:75 Blend	7.00	0.15	18.773	131.409	**2.841**	8.00	**100-200**	1.125E-04	0.008	**ASTM I**	**90**	9.89	38.20	1277.85	
G11 38 wt% 25:75 Blend	15.00	0.15	18.773	281.591	**2.841**	8.00	**100-200**	1.125E-04	0.008	**ASTM I**	**90**	9.95	38.55	1908.26	
G11 38 wt% 25:75 Blend	26.00	0.15	18.773	488.091	**2.841**	8.00	**100-200**	1.125E-04	0.008	**ASTM I**	**90**	9.98	42.95	3667.45	
G7H 38 wt% Magnox 4.00% Li2O	7.00	0.38	19.212	134.486	**2.776**	20.00	**100-200**	1.125E-04	0.020	**ASTM I**	**90**		47.28	1155.32	
G7H 38 wt% Magnox 4.00% Li2O	14.00	0.38	19.212	268.972	**2.776**	20.00	**100-200**	1.125E-04	0.020	**ASTM I**	**90**		40.65	2125.89	
G7H 38 wt% Magnox 4.00% Li2O	21.00	0.38	19.212	403.458	**2.776**	20.00	**100-200**	1.125E-04	0.020	**ASTM I**	**90**		39.70	2966.37	
G7H 38 wt% Magnox 4.00% Li2O	28.00	0.38	19.212	537.944	**2.776**	20.00	**100-200**	1.125E-04	0.020	**ASTM I**	**90**		55.27	4077.51	
G7H 38 wt% Magnox 4.00% Li2O	35.00	0.38	19.212	672.430	**2.776**	20.00	**100-200**	1.125E-04	0.020	**ASTM I**	**90**		68.99	4932.70	
G8H 38 wt% Magnox 4.65% Li2O	7.00	0.38	18.926	132.482	**2.818**	20.00	**100-200**	1.125E-04	0.020	**ASTM I**	**90**		52.01	1478.74	
G8H 38 wt% Magnox 4.65% Li2O	14.00	0.38	18.926	264.963	**2.818**	20.00	**100-200**	1.125E-04	0.020	**ASTM I**	**90**		45.65	2681.63	
G8H 38 wt% Magnox 4.65% Li2O	21.00	0.38	18.926	397.445	**2.818**	20.00	**100-200**	1.125E-04	0.020	**ASTM I**	**90**		47.02	3828.26	
G8H 38 wt% Magnox 4.65% Li2O	28.00	0.38	18.926	529.927	**2.818**	20.00	**100-200**	1.125E-04	0.020	**ASTM I**	**90**		66.84	5113.10	
G8H 38 wt% Magnox 4.65% Li2O	35.00	0.38	18.926	662.408	**2.818**	20.00	**100-200**	1.125E-04	0.020	**ASTM I**	**90**		74.81	6140.06	
HSV 25 wt% NDA Glass	**7.00**	**0.20**	20.175	141.227	**2.644**	**10.00**	**100-200**	1.125E-04	**0.010**	**ASTM I**	**90**	**10.10**	**119.14**	**5276.23**	
HSV 25 wt% NDA Glass	**14.00**	**0.20**	20.175	282.454	**2.644**	**10.00**	**100-200**	1.125E-04	**0.010**	**ASTM I**	**90**	**9.87**	**149.56**	**8673.14**	
HSV 25 wt% NDA Glass	**28.00**	**0.20**	20.175	564.908	**2.644**	**10.00**	**100-200**	1.125E-04	**0.010**	**ASTM I**	**90**	**10.25**	**251.02**	**10273.59**	
HSV 25 wt% NDA Glass	**42.00**	**0.20**	20.175	847.361	**2.644**	**10.00**	**100-200**	1.125E-04	**0.010**	**ASTM I**	**90**	**9.92**	**256.09**	**10856.15**	
HSV 25 wt% NDA Glass	**7.00**	**0.35**	20.861	146.030	**2.644**	**10.00**	**200-270**	**6.400E-05**	**0.017**	**ASTM I**	**90**		**144.85**	**4151.47**	
HSV 25 wt% NDA Glass	**14.00**	**0.35**	20.861	292.059	**2.644**	**10.00**	**200-270**	**6.400E-05**	**0.017**	**ASTM I**	**90**	**10.20**	**389.76**	**8142.86**	
HSV 25 wt% NDA Glass	**21.00**	**0.35**	20.861	438.089	**2.644**	**10.00**	**200-270**	**6.400E-05**	**0.017**	**ASTM I**	**90**	**9.91**	**218.14**	**9463.32**	
HSV 25 wt% NDA Glass	**28.00**	**0.35**	20.861	584.119	**2.644**	**10.00**	**200-270**	**6.400E-05**	**0.017**	**ASTM I**	**90**	**9.94**	**217.89**	**9893.89**	
HSV 25 wt% NDA Glass	**42.00**	**0.35**	20.861	876.178	**2.644**	**10.00**	**200-270**	**6.400E-05**	**0.017**	**ASTM I**	**90**	**10.12**	**261.22**	**9356.62**	
HSV 25 wt% NDA Glass	**7.00**	**0.58**	20.785	145.495	**2.644**	**10.00**	**270-500**	**3.900E-05**	**0.028**	**ASTM I**	**90**		**180.93**	**4842.88**	
HSV 25 wt% NDA Glass	**14.00**	**0.58**	20.785	290.990	**2.644**	**10.00**	**270-500**	**3.900E-05**	**0.028**	**ASTM I**	**90**	**9.91**	**238.65**	**8655.33**	
HSV 25 wt% NDA Glass	**21.00**	**0.58**	20.785	436.484	**2.644**	**10.00**	**270-500**	**3.900E-05**	**0.028**	**ASTM I**	**90**	**9.91**	**231.53**	**9219.30**	
HSV 25 wt% NDA Glass	**28.00**	**0.58**	20.785	581.979	**2.644**	**10.00**	**270-500**	**3.900E-05**	**0.028**	**ASTM I**	**90**	**9.90**	**246.51**	**10035.31**	

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
M25 25 wt% Magnox		117.33	325.03				68.22	0.07					
M25 25 wt% Magnox		165.08	454.52				102.14	0.02					
M25 25 wt% Magnox		186.29	503.53				114.53	0.00					
M25 25 wt% Magnox		235.43	638.00				147.47	0.01					
M25 25 wt% Magnox		260.40	748.04				151.41	0.37					
M25 25 wt% Magnox		259.59	753.56				156.38	0.93					
M25 25 wt% Magnox		310.97	807.95				172.57	0.10					
G2 25 wt% Magnox 4.5% Li2O	22.57	244.56	557.61				118.94	0.00					
G2 25 wt% Magnox 4.5% Li2O	43.66	450.52	998.81				230.91	0.00					
G2 25 wt% Magnox 4.5% Li2O	61.82	585.70	1253.69				275.76	0.00					
G2 25 wt% Magnox 4.5% Li2O	60.44	634.25	1389.71				339.16	0.00					
G2 25 wt% Magnox 4.5% Li2O	80.94	750.12	1763.08				441.09	0.00					
G2 25 wt% Magnox 4.5% Li2O	85.27	769.94	1714.13				430.87	0.00					
G5 32 wt% Magnox 4.5% Li2O	6.24	114.27	234.96				67.43	0.05					
G5 32 wt% Magnox 4.5% Li2O	16.67	281.19	546.92				115.85	0.00					
G5 32 wt% Magnox 4.5% Li2O	24.84	408.73	784.43				269.20	0.00					
G5 32 wt% Magnox 4.5% Li2O	22.04	345.69	665.59				226.08	0.01					
G5 32 wt% Magnox 4.5% Li2O	38.87	579.35	1159.84				410.92	0.00					
G5 32 wt% Magnox 4.5% Li2O	65.62	798.21	1953.63				701.50	0.02					
G5 32 wt% Magnox 4.5% Li2O	108.75	1086.92	4045.09				1327.11	0.00					
25 wt% NDA VTR Glass	**0.43**	**175.26**	**479.46**				**74.39**	**0.85**					
25 wt% NDA VTR Glass	**0.67**	**253.24**	**680.93**				**115.66**	**0.70**					
25 wt% NDA VTR Glass	**0.88**	**286.36**	**766.33**				**136.86**	**0.50**					
25 wt% NDA VTR Glass	**0.94**	**310.86**	**803.52**				**153.21**	**0.81**					
25 wt% NDA VTR Glass	**2.09**	**349.61**	**923.38**				**158.03**	**0.52**					
25 wt% NDA VTR Glass	**2.02**	**384.83**	**1019.56**				**179.27**	**0.06**					
G7 38 wt% Magnox 4% Li2O	**1.09**	**34.81**	**85.31**				**25.24**	**0.03**					
G7 38 wt% Magnox 4% Li2O	**2.39**	**82.41**	**179.21**				**61.30**	**0.01**					
G7 38 wt% Magnox 4% Li2O	**2.45**	**86.75**	**189.70**				**62.46**	**0.00**					
G7 38 wt% Magnox 4% Li2O	**2.67**	**90.21**	**199.01**				**64.41**	**0.03**					
G7 38 wt% Magnox 4% Li2O	**2.72**	**99.46**	**216.00**				**74.02**	**0.01**					
G7 38 wt% Magnox 4% Li2O	**3.28**	**115.73**	**250.32**				**88.96**	**0.00**					
G7 38 wt% Magnox 4% Li2O	**3.58**	**121.49**	**273.05**				**91.55**	**0.01**					
G8 38 wt% Magnox 4.65% Li2O	2.91	59.74	117.09				35.30	0.07					
G8 38 wt% Magnox 4.65% Li2O	6.29	132.45	241.27				82.95	0.01					
G8 38 wt% Magnox 4.65% Li2O	8.58	183.53	331.58				119.66	0.01					
G8 38 wt% Magnox 4.65% Li2O	10.58	219.68	399.04				153.59	0.00					
G8 38 wt% Magnox 4.65% Li2O	11.02	238.80	435.24				171.19	0.02					
M35H 35wt% Magnox		202.47	533.54				192.94	0.73					
M35H 35wt% Magnox		435.79	1177.12				369.24	0.39					
M25H 25 wt% Magnox		430.20	1086.65				281.20	0.37					
M25B 25 wt% Magnox		633.60	1796.88				455.86	0.02					
B31H 31wt% Blend HP		80.71	223.91				90.16	0.00					
B31H 31wt% Blend HP		183.08	497.82				196.23	0.68					
B31H 31wt% Blend HP		206.94	569.19				223.38	0.07					
B31H 31wt% Blend HP		207.75	568.78				212.23	0.15					
G11 38 wt% 25:75 Blend	27.77	464.08	979.14				557.28	0.08					
G11 38 wt% 25:75 Blend	48.03	672.62	1437.44				863.70	0.08					
G11 38 wt% 25:75 Blend	98.53	1249.97	2806.15				1823.37	0.13					
G7H 38 wt% Magnox 4.00% Li2O	14.74	430.53	878.25				410.96	4.35					
G7H 38 wt% Magnox 4.00% Li2O	29.33	781.08	1611.23				839.45	3.66					
G7H 38 wt% Magnox 4.00% Li2O	44.06	1096.93	2273.31				1262.29	3.25					
G7H 38 wt% Magnox 4.00% Li2O	62.08	1438.64	2985.62				1713.62	3.44					
G7H 38 wt% Magnox 4.00% Li2O	75.17	1723.44	3657.87				2145.16	6.13					
G8H 38 wt% Magnox 4.65% Li2O	34.77	627.43	1135.90				556.40	3.20					
G8H 38 wt% Magnox 4.65% Li2O	65.72	1118.62	2001.50				1097.70	3.01					
G8H 38 wt% Magnox 4.65% Li2O	101.95	1621.38	2931.52				1699.01	2.92					
G8H 38 wt% Magnox 4.65% Li2O	138.41	2034.01	3795.54				2223.51	2.10					
G8H 38 wt% Magnox 4.65% Li2O	166.45	2407.74	4576.19				2746.44	3.02					
HSV 25 wt% NDA Glass	**11.51**	**1439.79**	**3725.40**				**1044.63**	**0.24**					
HSV 25 wt% NDA Glass	**21.57**	**2307.82**	**5986.95**				**1998.40**	**0.15**					
HSV 25 wt% NDA Glass	**23.62**	**2560.49**	**7339.56**				**2258.91**	**0.09**					
HSV 25 wt% NDA Glass	**29.41**	**2938.82**	**7389.15**				**2776.59**	**0.13**					
HSV 25 wt% NDA Glass	**9.14**	**1200.51**	**2953.91**				**768.44**	**0.14**					
HSV 25 wt% NDA Glass	**19.19**	**2141.67**	**5666.59**				**1711.42**	**0.04**					
HSV 25 wt% NDA Glass	**22.36**	**2447.98**	**6578.52**				**2051.61**	**0.00**					
HSV 25 wt% NDA Glass	**25.69**	**2663.23**	**6698.97**				**2344.68**	**0.00**					
HSV 25 wt% NDA Glass	**25.47**	**2660.20**	**6140.95**				**2433.72**	**0.01**					
HSV 25 wt% NDA Glass	**10.55**	**1352.92**	**3478.45**				**931.09**	**0.13**					
HSV 25 wt% NDA Glass	**20.64**	**2212.78**	**6079.74**				**1841.41**	**0.05**					
HSV 25 wt% NDA Glass	**22.02**	**2380.11**	**6398.61**				**1999.51**	**0.01**					
HSV 25 wt% NDA Glass	**24.59**	**2551.49**	**6946.68**				**2263.53**	**0.00**					

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
M25 25 wt% Magnox		76.03	13.57466348	12.3328125	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M25 25 wt% Magnox		76.03	13.57466348	12.3328125	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M25 25 wt% Magnox		76.03	13.57466348	12.3328125	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M25 25 wt% Magnox		76.03	13.57466348	12.3328125	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M25 25 wt% Magnox		76.03	13.57466348	12.3328125	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M25 25 wt% Magnox		76.03	13.57466348	12.3328125	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M25 25 wt% Magnox		76.03	13.57466348	12.3328125	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G2 25 wt% Magnox 4.5% Li2O		75.96	13.57192332	**12.46759914**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G2 25 wt% Magnox 4.5% Li2O		75.96	13.57192332	**12.46759914**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G2 25 wt% Magnox 4.5% Li2O		75.96	13.57192332	**12.46759914**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G2 25 wt% Magnox 4.5% Li2O		75.96	13.57192332	**12.46759914**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G2 25 wt% Magnox 4.5% Li2O		75.96	13.57192332	**12.46759914**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G2 25 wt% Magnox 4.5% Li2O		75.96	13.57192332	**12.46759914**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G5 32 wt% Magnox 4.5% Li2O		69.27	17.37206186	**1.735858012**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G5 32 wt% Magnox 4.5% Li2O		69.27	17.37206186	**1.735858012**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G5 32 wt% Magnox 4.5% Li2O		69.27	17.37206186	**1.735858012**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G5 32 wt% Magnox 4.5% Li2O		69.27	17.37206186	**1.735858012**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G5 32 wt% Magnox 4.5% Li2O		69.27	17.37206186	**1.735858012**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G5 32 wt% Magnox 4.5% Li2O		69.27	17.37206186	**1.735858012**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
25 wt% NDA VTR Glass		74.50	13.58885	**14.71244297**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
25 wt% NDA VTR Glass		74.50	13.58885	**14.71244297**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
25 wt% NDA VTR Glass		74.50	13.58885	**14.71244297**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
25 wt% NDA VTR Glass		74.50	13.58885	**14.71244297**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
25 wt% NDA VTR Glass		74.50	13.58885	**14.71244297**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
25 wt% NDA VTR Glass		74.50	13.58885	**14.71244297**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G7 38 wt% Magnox 4% Li2O		62.10	20.31095	**-3.36923341**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G7 38 wt% Magnox 4% Li2O		62.10	20.31095	**-3.36923341**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G7 38 wt% Magnox 4% Li2O		62.10	20.31095	**-3.36923341**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G7 38 wt% Magnox 4% Li2O		62.10	20.31095	**-3.36923341**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G7 38 wt% Magnox 4% Li2O		62.10	20.31095	**-3.36923341**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G7 38 wt% Magnox 4% Li2O		62.10	20.31095	**-3.36923341**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G7 38 wt% Magnox 4% Li2O		62.10	20.31095	**-3.36923341**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G8 38 wt% Magnox 4.65% Li2O		63.54	20.67407665	**-7.722042272**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G8 38 wt% Magnox 4.65% Li2O		63.54	20.67407665	**-7.722042272**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G8 38 wt% Magnox 4.65% Li2O		63.54	20.67407665	**-7.722042272**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G8 38 wt% Magnox 4.65% Li2O		63.54	20.67407665	**-7.722042272**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G8 38 wt% Magnox 4.65% Li2O		63.54	20.67407665	**-7.722042272**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M35H 35wt% Magnox		65.90	19.5263	**-5.03098714**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M35H 35wt% Magnox		65.90	19.5263	**-5.03098714**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M25H 25 wt% Magnox		76.03	13.57466348	**12.3328125**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
M25B 25 wt% Magnox		76.03	13.57466348	**12.3328125**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
B31H 31wt% Blend HP		70.50	13.15095	**23.59961459**	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B31H 31wt% Blend HP		70.50	13.15095	**23.59961459**	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B31H 31wt% Blend HP		70.50	13.15095	**23.59961459**	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B31H 31wt% Blend HP		70.50	13.15095	**23.59961459**	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
G11 38 wt% 25:75 Blend		63.70	19.18805179	**0.405836064**	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G11 38 wt% 25:75 Blend		63.70	19.18805179	**0.405836064**	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G11 38 wt% 25:75 Blend		63.70	19.18805179	**0.405836064**	Indeterminate	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G7H 38 wt% Magnox 4.00% Li2O		63.53	20.62932345	**-7.461597739**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G7H 38 wt% Magnox 4.00% Li2O		63.53	20.62932345	**-7.461597739**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G7H 38 wt% Magnox 4.00% Li2O		63.53	20.62932345	**-7.461597739**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G7H 38 wt% Magnox 4.00% Li2O		63.53	20.62932345	**-7.461597739**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G7H 38 wt% Magnox 4.00% Li2O		63.53	20.62932345	**-7.461597739**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G8H 38 wt% Magnox 4.65% Li2O		63.52	20.62932345	**-7.447120425**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G8H 38 wt% Magnox 4.65% Li2O		63.52	20.62932345	**-7.447120425**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G8H 38 wt% Magnox 4.65% Li2O		63.52	20.62932345	**-7.447120425**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G8H 38 wt% Magnox 4.65% Li2O		63.52	20.62932345	**-7.447120425**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
G8H 38 wt% Magnox 4.65% Li2O		63.52	20.62932345	**-7.447120425**	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HSV 25 wt% NDA Glass		77.30	12.07885	**18.75082097**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HSV 25 wt% NDA Glass		77.30	12.07885	**18.75082097**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HSV 25 wt% NDA Glass		77.30	12.07885	**18.75082097**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HSV 25 wt% NDA Glass		77.30	12.07885	**18.75082097**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HSV 25 wt% NDA Glass		77.30	12.07885	**18.75082097**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HSV 25 wt% NDA Glass		77.30	12.07885	**18.75082097**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HSV 25 wt% NDA Glass		77.30	12.07885	**18.75082097**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HSV 25 wt% NDA Glass		77.30	12.07885	**18.75082097**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HSV 25 wt% NDA Glass		77.30	12.07885	**18.75082097**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HSV 25 wt% NDA Glass		77.30	12.07885	**18.75082097**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HSV 25 wt% NDA Glass		77.30	12.07885	**18.75082097**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
M25 25 wt% Magnox	4.93	16.80	0.60	0.00	1.15	0.00	0.77	1.03	0.00	0.00	0.00	3.33	0.00	0.08	0.62	4.05
M25 25 wt% Magnox	4.93	16.80	0.60	0.00	1.15	0.00	0.77	1.03	0.00	0.00	0.00	3.33	0.00	0.08	0.62	4.05
M25 25 wt% Magnox	4.93	16.80	0.60	0.00	1.15	0.00	0.77	1.03	0.00	0.00	0.00	3.33	0.00	0.08	0.62	4.05
M25 25 wt% Magnox	4.93	16.80	0.60	0.00	1.15	0.00	0.77	1.03	0.00	0.00	0.00	3.33	0.00	0.08	0.62	4.05
M25 25 wt% Magnox	4.93	16.80	0.60	0.00	1.15	0.00	0.77	1.03	0.00	0.00	0.00	3.33	0.00	0.08	0.62	4.05
M25 25 wt% Magnox	4.93	16.80	0.60	0.00	1.15	0.00	0.77	1.03	0.00	0.00	0.00	3.33	0.00	0.08	0.62	4.05
M25 25 wt% Magnox	4.93	16.80	0.60	0.00	1.15	0.00	0.77	1.03	0.00	0.00	0.00	3.33	0.00	0.08	0.62	4.05
G2 25 wt% Magnox 4.5% Li2O	4.93	16.81	0.52	0.00	1.13	0.00	0.74	1.06	0.00	0.00	0.00	3.32	0.00	0.07	0.61	4.50
G2 25 wt% Magnox 4.5% Li2O	4.93	16.81	0.52	0.00	1.13	0.00	0.74	1.06	0.00	0.00	0.00	3.32	0.00	0.07	0.61	4.50
G2 25 wt% Magnox 4.5% Li2O	4.93	16.81	0.52	0.00	1.13	0.00	0.74	1.06	0.00	0.00	0.00	3.32	0.00	0.07	0.61	4.50
G2 25 wt% Magnox 4.5% Li2O	4.93	16.81	0.52	0.00	1.13	0.00	0.74	1.06	0.00	0.00	0.00	3.32	0.00	0.07	0.61	4.50
G2 25 wt% Magnox 4.5% Li2O	4.93	16.81	0.52	0.00	1.13	0.00	0.74	1.06	0.00	0.00	0.00	3.32	0.00	0.07	0.61	4.50
G2 25 wt% Magnox 4.5% Li2O	4.93	16.81	0.52	0.00	1.13	0.00	0.74	1.06	0.00	0.00	0.00	3.32	0.00	0.07	0.61	4.50
G5 32 wt% Magnox 4.5% Li2O	6.31	15.14	0.66	0.00	1.44	0.00	0.95	1.36	0.00	0.00	0.00	4.25	0.00	0.09	0.78	4.50
G5 32 wt% Magnox 4.5% Li2O	6.31	15.14	0.66	0.00	1.44	0.00	0.95	1.36	0.00	0.00	0.00	4.25	0.00	0.09	0.78	4.50
G5 32 wt% Magnox 4.5% Li2O	6.31	15.14	0.66	0.00	1.44	0.00	0.95	1.36	0.00	0.00	0.00	4.25	0.00	0.09	0.78	4.50
G5 32 wt% Magnox 4.5% Li2O	6.31	15.14	0.66	0.00	1.44	0.00	0.95	1.36	0.00	0.00	0.00	4.25	0.00	0.09	0.78	4.50
G5 32 wt% Magnox 4.5% Li2O	6.31	15.14	0.66	0.00	1.44	0.00	0.95	1.36	0.00	0.00	0.00	4.25	0.00	0.09	0.78	4.50
G5 32 wt% Magnox 4.5% Li2O	6.31	15.14	0.66	0.00	1.44	0.00	0.95	1.36	0.00	0.00	0.00	4.25	0.00	0.09	0.78	4.50
25 wt% NDA VTR Glass	**4.40**	**16.30**	**0.52**	**0.00**	**1.10**	0.00	**1.00**	**1.00**	0.00	0.00	0.00	**4.30**	0.00	**0.10**	**0.57**	**3.90**
25 wt% NDA VTR Glass	**4.40**	**16.30**	**0.52**	**0.00**	**1.10**	0.00	**1.00**	**1.00**	0.00	0.00	0.00	**4.30**	0.00	**0.10**	**0.57**	**3.90**
25 wt% NDA VTR Glass	**4.40**	**16.30**	**0.52**	**0.00**	**1.10**	0.00	**1.00**	**1.00**	0.00	0.00	0.00	**4.30**	0.00	**0.10**	**0.57**	**3.90**
25 wt% NDA VTR Glass	**4.40**	**16.30**	**0.52**	**0.00**	**1.10**	0.00	**1.00**	**1.00**	0.00	0.00	0.00	**4.30**	0.00	**0.10**	**0.57**	**3.90**
25 wt% NDA VTR Glass	**4.40**	**16.30**	**0.52**	**0.00**	**1.10**	0.00	**1.00**	**1.00**	0.00	0.00	0.00	**4.30**	0.00	**0.10**	**0.57**	**3.90**
25 wt% NDA VTR Glass	**4.40**	**16.30**	**0.52**	**0.00**	**1.10**	0.00	**1.00**	**1.00**	0.00	0.00	0.00	**4.30**	0.00	**0.10**	**0.57**	**3.90**
G7 38 wt% Magnox 4% Li2O	**7.2**	**12.9**	**0.74**	**0.00**	**1.7**	0.00	**1.1**	**1.6**	0.00	0.00	0.00	**5.2**	0.00	**0.1**	**0.91**	**4.1**
G7 38 wt% Magnox 4% Li2O	**7.2**	**12.9**	**0.74**	**0.00**	**1.7**	0.00	**1.1**	**1.6**	0.00	0.00	0.00	**5.2**	0.00	**0.1**	**0.91**	**4.1**
G7 38 wt% Magnox 4% Li2O	**7.2**	**12.9**	**0.74**	**0.00**	**1.7**	0.00	**1.1**	**1.6**	0.00	0.00	0.00	**5.2**	0.00	**0.1**	**0.91**	**4.1**
G7 38 wt% Magnox 4% Li2O	**7.2**	**12.9**	**0.74**	**0.00**	**1.7**	0.00	**1.1**	**1.6**	0.00	0.00	0.00	**5.2**	0.00	**0.1**	**0.91**	**4.1**
G7 38 wt% Magnox 4% Li2O	**7.2**	**12.9**	**0.74**	**0.00**	**1.7**	0.00	**1.1**	**1.6**	0.00	0.00	0.00	**5.2**	0.00	**0.1**	**0.91**	**4.1**
G7 38 wt% Magnox 4% Li2O	**7.2**	**12.9**	**0.74**	**0.00**	**1.7**	0.00	**1.1**	**1.6**	0.00	0.00	0.00	**5.2**	0.00	**0.1**	**0.91**	**4.1**
G8 38 wt% Magnox 4.65% Li2O	7.49	13.67	0.73	0.00	1.75	0.00	1.14	1.62	0.00	0.00	0.00	5.09	0.00	0.11	0.95	4.65
G8 38 wt% Magnox 4.65% Li2O	7.49	13.67	0.73	0.00	1.75	0.00	1.14	1.62	0.00	0.00	0.00	5.09	0.00	0.11	0.95	4.65
G8 38 wt% Magnox 4.65% Li2O	7.49	13.67	0.73	0.00	1.75	0.00	1.14	1.62	0.00	0.00	0.00	5.09	0.00	0.11	0.95	4.65
G8 38 wt% Magnox 4.65% Li2O	7.49	13.67	0.73	0.00	1.75	0.00	1.14	1.62	0.00	0.00	0.00	5.09	0.00	0.11	0.95	4.65
G8 38 wt% Magnox 4.65% Li2O	7.49	13.67	0.73	0.00	1.75	0.00	1.14	1.62	0.00	0.00	0.00	5.09	0.00	0.11	0.95	4.65
M35H 35wt% Magnox	6.80	13.80	0.74	0.00	1.80	0.00	0.96	1.70	0.00	0.00	0.00	4.70	0.00	0.00	0.93	3.60
M35H 35wt% Magnox	6.80	13.80	0.74	0.00	1.80	0.00	0.96	1.70	0.00	0.00	0.00	4.70	0.00	0.00	0.93	3.60
M25H 25 wt% Magnox	4.93	16.80	0.60	0.00	1.15	0.00	0.77	1.03	0.00	0.00	0.00	3.33	0.00	0.08	0.62	4.05
M25B 25 wt% Magnox	4.93	16.80	0.60	0.00	1.15	0.00	0.77	1.03	0.00	0.00	0.00	3.33	0.00	0.08	0.62	4.05
B31H 31wt% Blend HP	2.3	14.8	1.2	0.00	1.7	0.00	0.61	1.9	0.00	0.00	0.00	2.6	0.00	4.9	0.87	3.7
B31H 31wt% Blend HP	2.3	14.8	1.2	0.00	1.7	0.00	0.61	1.9	0.00	0.00	0.00	2.6	0.00	4.9	0.87	3.7
B31H 31wt% Blend HP	2.3	14.8	1.2	0.00	1.7	0.00	0.61	1.9	0.00	0.00	0.00	2.6	0.00	4.9	0.87	3.7
B31H 31wt% Blend HP	2.3	14.8	1.2	0.00	1.7	0.00	0.61	1.9	0.00	0.00	0.00	2.6	0.00	4.9	0.87	3.7
G11 38 wt% 25:75 Blend	5.90	13.83	1.06	0.00	1.86	0.00	1.01	1.79	0.00	0.00	0.00	4.45	0.00	2.21	1.00	4.00
G11 38 wt% 25:75 Blend	5.90	13.83	1.06	0.00	1.86	0.00	1.01	1.79	0.00	0.00	0.00	4.45	0.00	2.21	1.00	4.00
G11 38 wt% 25:75 Blend	5.90	13.83	1.06	0.00	1.86	0.00	1.01	1.79	0.00	0.00	0.00	4.45	0.00	2.21	1.00	4.00
G7H 38 wt% Magnox 4.00% Li2O	7.49	13.83	0.78	0.00	1.71	0.00	1.13	1.62	0.00	0.00	0.00	5.04	0.00	0.11	0.93	4.00
G7H 38 wt% Magnox 4.00% Li2O	7.49	13.83	0.78	0.00	1.71	0.00	1.13	1.62	0.00	0.00	0.00	5.04	0.00	0.11	0.93	4.00
G7H 38 wt% Magnox 4.00% Li2O	7.49	13.83	0.78	0.00	1.71	0.00	1.13	1.62	0.00	0.00	0.00	5.04	0.00	0.11	0.93	4.00
G7H 38 wt% Magnox 4.00% Li2O	7.49	13.83	0.78	0.00	1.71	0.00	1.13	1.62	0.00	0.00	0.00	5.04	0.00	0.11	0.93	4.00
G7H 38 wt% Magnox 4.00% Li2O	7.49	13.83	0.78	0.00	1.71	0.00	1.13	1.62	0.00	0.00	0.00	5.04	0.00	0.11	0.93	4.00
G8H 38 wt% Magnox 4.65% Li2O	7.49	13.67	0.78	0.00	1.71	0.00	1.13	1.62	0.00	0.00	0.00	5.04	0.00	0.11	0.93	4.65
G8H 38 wt% Magnox 4.65% Li2O	7.49	13.67	0.78	0.00	1.71	0.00	1.13	1.62	0.00	0.00	0.00	5.04	0.00	0.11	0.93	4.65
G8H 38 wt% Magnox 4.65% Li2O	7.49	13.67	0.78	0.00	1.71	0.00	1.13	1.62	0.00	0.00	0.00	5.04	0.00	0.11	0.93	4.65
G8H 38 wt% Magnox 4.65% Li2O	7.49	13.67	0.78	0.00	1.71	0.00	1.13	1.62	0.00	0.00	0.00	5.04	0.00	0.11	0.93	4.65
G8H 38 wt% Magnox 4.65% Li2O	7.49	13.67	0.78	0.00	1.71	0.00	1.13	1.62	0.00	0.00	0.00	5.04	0.00	0.11	0.93	4.65
HSV 25 wt% NDA Glass	**4.30**	**16.70**	**0.52**	**0.00**	**1.10**	0.00	**0.64**	**1.00**	0.00	0.00	0.00	**3.00**	0.00	**0.10**	**0.56**	**4.00**
HSV 25 wt% NDA Glass	**4.30**	**16.70**	**0.52**	**0.00**	**1.10**	0.00	**0.64**	**1.00**	0.00	0.00	0.00	**3.00**	0.00	**0.10**	**0.56**	**4.00**
HSV 25 wt% NDA Glass	**4.30**	**16.70**	**0.52**	**0.00**	**1.10**	0.00	**0.64**	**1.00**	0.00	0.00	0.00	**3.00**	0.00	**0.10**	**0.56**	**4.00**
HSV 25 wt% NDA Glass	**4.30**	**16.70**	**0.52**	**0.00**	**1.10**	0.00	**0.64**	**1.00**	0.00	0.00	0.00	**3.00**	0.00	**0.10**	**0.56**	**4.00**
HSV 25 wt% NDA Glass	**4.30**	**16.70**	**0.52**	**0.00**	**1.10**	0.00	**0.64**	**1.00**	0.00	0.00	0.00	**3.00**	0.00	**0.10**	**0.56**	**4.00**
HSV 25 wt% NDA Glass	**4.30**	**16.70**	**0.52**	**0.00**	**1.10**	0.00	**0.64**	**1.00**	0.00	0.00	0.00	**3.00**	0.00	**0.10**	**0.56**	**4.00**
HSV 25 wt% NDA Glass	**4.30**	**16.70**	**0.52**	**0.00**	**1.10**	0.00	**0.64**	**1.00**	0.00	0.00	0.00	**3.00**	0.00	**0.10**	**0.56**	**4.00**
HSV 25 wt% NDA Glass	**4.30**	**16.70**	**0.52**	**0.00**	**1.10**	0.00	**0.64**	**1.00**	0.00	0.00	0.00	**3.00**	0.00	**0.10**	**0.56**	**4.00**
HSV 25 wt% NDA Glass	**4.30**	**16.70**	**0.52**	**0.00**	**1.10**	0.00	**0.64**	**1.00**	0.00	0.00	0.00	**3.00**	0.00	**0.10**	**0.56**	**4.00**
HSV 25 wt% NDA Glass	**4.30**	**16.70**	**0.52**	**0.00**	**1.10**	0.00	**0.64**	**1.00**	0.00	0.00	0.00	**3.00**	0.00	**0.10**	**0.56**	**4.00**
HSV 25 wt% NDA Glass	**4.30**	**16.70**	**0.52**	**0.00**	**1.10**	0.00	**0.64**	**1.00**	0.00	0.00	0.00	**3.00**	0.00	**0.10**	**0.56**	**4.00**
HSV 25 wt% NDA Glass	**4.30**	**16.70**	**0.52**	**0.00**	**1.10**	0.00	**0.64**	**1.00**	0.00	0.00	0.00	**3.00**	0.00	**0.10**	**0.56**	**4.00**

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
M25 25 wt% Magnox	4.83	0.00	0.00	1.62	8.25	1.80	0.47	0.00	0.00	0.00	0.00	0.62	0.62	45.90	0.37	0.00
M25 25 wt% Magnox	4.83	0.00	0.00	1.62	8.25	1.80	0.47	0.00	0.00	0.00	0.00	0.62	0.62	45.90	0.37	0.00
M25 25 wt% Magnox	4.83	0.00	0.00	1.62	8.25	1.80	0.47	0.00	0.00	0.00	0.00	0.62	0.62	45.90	0.37	0.00
M25 25 wt% Magnox	4.83	0.00	0.00	1.62	8.25	1.80	0.47	0.00	0.00	0.00	0.00	0.62	0.62	45.90	0.37	0.00
M25 25 wt% Magnox	4.83	0.00	0.00	1.62	8.25	1.80	0.47	0.00	0.00	0.00	0.00	0.62	0.62	45.90	0.37	0.00
M25 25 wt% Magnox	4.83	0.00	0.00	1.62	8.25	1.80	0.47	0.00	0.00	0.00	0.00	0.62	0.62	45.90	0.37	0.00
M25 25 wt% Magnox	4.83	0.00	0.00	1.62	8.25	1.80	0.47	0.00	0.00	0.00	0.00	0.62	0.62	45.90	0.37	0.00
G2 25 wt% Magnox 4.5% Li2O	4.90	0.00	0.00	1.61	8.17	1.84	0.48	0.00	0.00	0.00	0.00	0.61	0.64	45.41	0.39	0.00
G2 25 wt% Magnox 4.5% Li2O	4.90	0.00	0.00	1.61	8.17	1.84	0.48	0.00	0.00	0.00	0.00	0.61	0.64	45.41	0.39	0.00
G2 25 wt% Magnox 4.5% Li2O	4.90	0.00	0.00	1.61	8.17	1.84	0.48	0.00	0.00	0.00	0.00	0.61	0.64	45.41	0.39	0.00
G2 25 wt% Magnox 4.5% Li2O	4.90	0.00	0.00	1.61	8.17	1.84	0.48	0.00	0.00	0.00	0.00	0.61	0.64	45.41	0.39	0.00
G2 25 wt% Magnox 4.5% Li2O	4.90	0.00	0.00	1.61	8.17	1.84	0.48	0.00	0.00	0.00	0.00	0.61	0.64	45.41	0.39	0.00
G2 25 wt% Magnox 4.5% Li2O	4.90	0.00	0.00	1.61	8.17	1.84	0.48	0.00	0.00	0.00	0.00	0.61	0.64	45.41	0.39	0.00
G5 32 wt% Magnox 4.5% Li2O	6.27	0.00	0.00	2.06	7.36	2.35	0.62	0.00	0.00	0.00	0.00	0.78	0.82	40.91	0.49	0.00
G5 32 wt% Magnox 4.5% Li2O	6.27	0.00	0.00	2.06	7.36	2.35	0.62	0.00	0.00	0.00	0.00	0.78	0.82	40.91	0.49	0.00
G5 32 wt% Magnox 4.5% Li2O	6.27	0.00	0.00	2.06	7.36	2.35	0.62	0.00	0.00	0.00	0.00	0.78	0.82	40.91	0.49	0.00
G5 32 wt% Magnox 4.5% Li2O	6.27	0.00	0.00	2.06	7.36	2.35	0.62	0.00	0.00	0.00	0.00	0.78	0.82	40.91	0.49	0.00
G5 32 wt% Magnox 4.5% Li2O	6.27	0.00	0.00	2.06	7.36	2.35	0.62	0.00	0.00	0.00	0.00	0.78	0.82	40.91	0.49	0.00
G5 32 wt% Magnox 4.5% Li2O	6.27	0.00	0.00	2.06	7.36	2.35	0.62	0.00	0.00	0.00	0.00	0.78	0.82	40.91	0.49	0.00
25 wt% NDA VTR Glass	**4.30**	0.00	0.00	**1.40**	**8.10**	**1.70**	**0.63**	0.00	0.00	0.00	0.00	**0.53**	**0.58**	**45.20**	**0.37**	0.00
25 wt% NDA VTR Glass	**4.30**	0.00	0.00	**1.40**	**8.10**	**1.70**	**0.63**	0.00	0.00	0.00	0.00	**0.53**	**0.58**	**45.20**	**0.37**	0.00
25 wt% NDA VTR Glass	**4.30**	0.00	0.00	**1.40**	**8.10**	**1.70**	**0.63**	0.00	0.00	0.00	0.00	**0.53**	**0.58**	**45.20**	**0.37**	0.00
25 wt% NDA VTR Glass	**4.30**	0.00	0.00	**1.40**	**8.10**	**1.70**	**0.63**	0.00	0.00	0.00	0.00	**0.53**	**0.58**	**45.20**	**0.37**	0.00
25 wt% NDA VTR Glass	**4.30**	0.00	0.00	**1.40**	**8.10**	**1.70**	**0.63**	0.00	0.00	0.00	0.00	**0.53**	**0.58**	**45.20**	**0.37**	0.00
25 wt% NDA VTR Glass	**4.30**	0.00	0.00	**1.40**	**8.10**	**1.70**	**0.63**	0.00	0.00	0.00	0.00	**0.53**	**0.58**	**45.20**	**0.37**	0.00
G7 38 wt% Magnox 4% Li2O	**7.3**	0.00	0.00	**2.4**	**6.5**	**2.7**	**0.72**	0.00	0.00	0.00	0.00	**0.83**	**0.67**	**37**	**0.61**	0.00
G7 38 wt% Magnox 4% Li2O	**7.3**	0.00	0.00	**2.4**	**6.5**	**2.7**	**0.72**	0.00	0.00	0.00	0.00	**0.83**	**0.67**	**37**	**0.61**	0.00
G7 38 wt% Magnox 4% Li2O	**7.3**	0.00	0.00	**2.4**	**6.5**	**2.7**	**0.72**	0.00	0.00	0.00	0.00	**0.83**	**0.67**	**37**	**0.61**	0.00
G7 38 wt% Magnox 4% Li2O	**7.3**	0.00	0.00	**2.4**	**6.5**	**2.7**	**0.72**	0.00	0.00	0.00	0.00	**0.83**	**0.67**	**37**	**0.61**	0.00
G7 38 wt% Magnox 4% Li2O	**7.3**	0.00	0.00	**2.4**	**6.5**	**2.7**	**0.72**	0.00	0.00	0.00	0.00	**0.83**	**0.67**	**37**	**0.61**	0.00
G7 38 wt% Magnox 4% Li2O	**7.3**	0.00	0.00	**2.4**	**6.5**	**2.7**	**0.72**	0.00	0.00	0.00	0.00	**0.83**	**0.67**	**37**	**0.61**	0.00
G7 38 wt% Magnox 4% Li2O	**7.3**	0.00	0.00	**2.4**	**6.5**	**2.7**	**0.72**	0.00	0.00	0.00	0.00	**0.83**	**0.67**	**37**	**0.61**	0.00
G8 38 wt% Magnox 4.65% Li2O	7.47	0.00	0.00	2.41	6.65	2.78	0.72	0.00	0.00	0.00	0.00	0.94	0.95	36.94	0.59	0.00
G8 38 wt% Magnox 4.65% Li2O	7.47	0.00	0.00	2.41	6.65	2.78	0.72	0.00	0.00	0.00	0.00	0.94	0.95	36.94	0.59	0.00
G8 38 wt% Magnox 4.65% Li2O	7.47	0.00	0.00	2.41	6.65	2.78	0.72	0.00	0.00	0.00	0.00	0.94	0.95	36.94	0.59	0.00
G8 38 wt% Magnox 4.65% Li2O	7.47	0.00	0.00	2.41	6.65	2.78	0.72	0.00	0.00	0.00	0.00	0.94	0.95	36.94	0.59	0.00
G8 38 wt% Magnox 4.65% Li2O	7.47	0.00	0.00	2.41	6.65	2.78	0.72	0.00	0.00	0.00	0.00	0.94	0.95	36.94	0.59	0.00
M35H 35wt% Magnox	7.20	0.00	0.00	2.30	7.10	2.80	0.63	0.00	0.00	0.00	0.00	0.85	0.70	39.70	0.61	0.00
M35H 35wt% Magnox	7.20	0.00	0.00	2.30	7.10	2.80	0.63	0.00	0.00	0.00	0.00	0.85	0.70	39.70	0.61	0.00
M25H 25 wt% Magnox	4.83	0.00	0.00	1.62	8.25	1.80	0.47	0.00	0.00	0.00	0.00	0.62	0.62	45.90	0.37	0.00
M25B 25 wt% Magnox	4.83	0.00	0.00	1.62	8.25	1.80	0.47	0.00	0.00	0.00	0.00	0.62	0.62	45.90	0.37	0.00
B31H 31wt% Blend HP	2	0.00	0.00	2.8	7.7	2.6	0.45	0.00	0.00	0.00	0.88	0.78	1.7	42.4	0.58	0.00
B31H 31wt% Blend HP	2	0.00	0.00	2.8	7.7	2.6	0.45	0.00	0.00	0.00	0.88	0.78	1.7	42.4	0.58	0.00
B31H 31wt% Blend HP	2	0.00	0.00	2.8	7.7	2.6	0.45	0.00	0.00	0.00	0.88	0.78	1.7	42.4	0.58	0.00
B31H 31wt% Blend HP	2	0.00	0.00	2.8	7.7	2.6	0.45	0.00	0.00	0.00	0.88	0.78	1.7	42.4	0.58	0.00
G11 38 wt% 25:75 Blend	5.72	0.00	0.00	2.75	6.72	2.98	0.64	0.00	0.00	0.00	0.00	0.93	1.09	37.36	0.66	0.00
G11 38 wt% 25:75 Blend	5.72	0.00	0.00	2.75	6.72	2.98	0.64	0.00	0.00	0.00	0.00	0.93	1.09	37.36	0.66	0.00
G11 38 wt% 25:75 Blend	5.72	0.00	0.00	2.75	6.72	2.98	0.64	0.00	0.00	0.00	0.00	0.93	1.09	37.36	0.66	0.00
G7H 38 wt% Magnox 4.00% Li2O	7.44	0.00	0.00	2.45	6.72	2.79	0.73	0.00	0.00	0.00	0.00	0.93	0.98	37.36	0.59	0.00
G7H 38 wt% Magnox 4.00% Li2O	7.44	0.00	0.00	2.45	6.72	2.79	0.73	0.00	0.00	0.00	0.00	0.93	0.98	37.36	0.59	0.00
G7H 38 wt% Magnox 4.00% Li2O	7.44	0.00	0.00	2.45	6.72	2.79	0.73	0.00	0.00	0.00	0.00	0.93	0.98	37.36	0.59	0.00
G7H 38 wt% Magnox 4.00% Li2O	7.44	0.00	0.00	2.45	6.72	2.79	0.73	0.00	0.00	0.00	0.00	0.93	0.98	37.36	0.59	0.00
G7H 38 wt% Magnox 4.00% Li2O	7.44	0.00	0.00	2.45	6.72	2.79	0.73	0.00	0.00	0.00	0.00	0.93	0.98	37.36	0.59	0.00
G8H 38 wt% Magnox 4.65% Li2O	7.44	0.00	0.00	2.45	6.65	2.79	0.73	0.00	0.00	0.00	0.00	0.93	0.98	36.94	0.59	0.00
G8H 38 wt% Magnox 4.65% Li2O	7.44	0.00	0.00	2.45	6.65	2.79	0.73	0.00	0.00	0.00	0.00	0.93	0.98	36.94	0.59	0.00
G8H 38 wt% Magnox 4.65% Li2O	7.44	0.00	0.00	2.45	6.65	2.79	0.73	0.00	0.00	0.00	0.00	0.93	0.98	36.94	0.59	0.00
G8H 38 wt% Magnox 4.65% Li2O	7.44	0.00	0.00	2.45	6.65	2.79	0.73	0.00	0.00	0.00	0.00	0.93	0.98	36.94	0.59	0.00
G8H 38 wt% Magnox 4.65% Li2O	7.44	0.00	0.00	2.45	6.65	2.79	0.73	0.00	0.00	0.00	0.00	0.93	0.98	36.94	0.59	0.00
HSV 25 wt% NDA Glass	**4.50**	0.00	0.00	**1.40**	**8.50**	**1.60**	**0.48**	0.00	0.00	0.00	0.00	**0.52**	**0.49**	**47.10**	**0.36**	0.00
HSV 25 wt% NDA Glass	**4.50**	0.00	0.00	**1.40**	**8.50**	**1.60**	**0.48**	0.00	0.00	0.00	0.00	**0.52**	**0.49**	**47.10**	**0.36**	0.00
HSV 25 wt% NDA Glass	**4.50**	0.00	0.00	**1.40**	**8.50**	**1.60**	**0.48**	0.00	0.00	0.00	0.00	**0.52**	**0.49**	**47.10**	**0.36**	0.00
HSV 25 wt% NDA Glass	**4.50**	0.00	0.00	**1.40**	**8.50**	**1.60**	**0.48**	0.00	0.00	0.00	0.00	**0.52**	**0.49**	**47.10**	**0.36**	0.00
HSV 25 wt% NDA Glass	**4.50**	0.00	0.00	**1.40**	**8.50**	**1.60**	**0.48**	0.00	0.00	0.00	0.00	**0.52**	**0.49**	**47.10**	**0.36**	0.00
HSV 25 wt% NDA Glass	**4.50**	0.00	0.00	**1.40**	**8.50**	**1.60**	**0.48**	0.00	0.00	0.00	0.00	**0.52**	**0.49**	**47.10**	**0.36**	0.00
HSV 25 wt% NDA Glass	**4.50**	0.00	0.00	**1.40**	**8.50**	**1.60**	**0.48**	0.00	0.00	0.00	0.00	**0.52**	**0.49**	**47.10**	**0.36**	0.00
HSV 25 wt% NDA Glass	**4.50**	0.00	0.00	**1.40**	**8.50**	**1.60**	**0.48**	0.00	0.00	0.00	0.00	**0.52**	**0.49**	**47.10**	**0.36**	0.00
HSV 25 wt% NDA Glass	**4.50**	0.00	0.00	**1.40**	**8.50**	**1.60**	**0.48**	0.00	0.00	0.00	0.00	**0.52**	**0.49**	**47.10**	**0.36**	0.00
HSV 25 wt% NDA Glass	**4.50**	0.00	0.00	**1.40**	**8.50**	**1.60**	**0.48**	0.00	0.00	0.00	0.00	**0.52**	**0.49**	**47.10**	**0.36**	0.00
HSV 25 wt% NDA Glass	**4.50**	0.00	0.00	**1.40**	**8.50**	**1.60**	**0.48**	0.00	0.00	0.00	0.00	**0.52**	**0.49**	**47.10**	**0.36**	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
M25 25 wt% Magnox	0.30	0.17	0.00	0.00	0.00	0.19	0.00	1.50	0.00	100.00		
M25 25 wt% Magnox	0.30	0.17	0.00	0.00	0.00	0.19	0.00	1.50	0.00	100.00		
M25 25 wt% Magnox	0.30	0.17	0.00	0.00	0.00	0.19	0.00	1.50	0.00	100.00		
M25 25 wt% Magnox	0.30	0.17	0.00	0.00	0.00	0.19	0.00	1.50	0.00	100.00		
M25 25 wt% Magnox	0.30	0.17	0.00	0.00	0.00	0.19	0.00	1.50	0.00	100.00		
M25 25 wt% Magnox	0.30	0.17	0.00	0.00	0.00	0.19	0.00	1.50	0.00	100.00		
M25 25 wt% Magnox	0.30	0.17	0.00	0.00	0.00	0.19	0.00	1.50	0.00	100.00		
G2 25 wt% Magnox 4.5% Li2O	0.30	0.18	0.00	0.00	0.00	0.19	0.00	1.48	0.00	99.90		
G2 25 wt% Magnox 4.5% Li2O	0.30	0.18	0.00	0.00	0.00	0.19	0.00	1.48	0.00	99.90		
G2 25 wt% Magnox 4.5% Li2O	0.30	0.18	0.00	0.00	0.00	0.19	0.00	1.48	0.00	99.90		
G2 25 wt% Magnox 4.5% Li2O	0.30	0.18	0.00	0.00	0.00	0.19	0.00	1.48	0.00	99.90		
G2 25 wt% Magnox 4.5% Li2O	0.30	0.18	0.00	0.00	0.00	0.19	0.00	1.48	0.00	99.90		
G2 25 wt% Magnox 4.5% Li2O	0.30	0.18	0.00	0.00	0.00	0.19	0.00	1.48	0.00	99.90		
G5 32 wt% Magnox 4.5% Li2O	0.38	0.23	0.00	0.00	0.00	0.24	0.00	1.90	0.00	99.91		
G5 32 wt% Magnox 4.5% Li2O	0.38	0.23	0.00	0.00	0.00	0.24	0.00	1.90	0.00	99.91		
G5 32 wt% Magnox 4.5% Li2O	0.38	0.23	0.00	0.00	0.00	0.24	0.00	1.90	0.00	99.91		
G5 32 wt% Magnox 4.5% Li2O	0.38	0.23	0.00	0.00	0.00	0.24	0.00	1.90	0.00	99.91		
G5 32 wt% Magnox 4.5% Li2O	0.38	0.23	0.00	0.00	0.00	0.24	0.00	1.90	0.00	99.91		
G5 32 wt% Magnox 4.5% Li2O	0.38	0.23	0.00	0.00	0.00	0.24	0.00	1.90	0.00	99.91		
G5 32 wt% Magnox 4.5% Li2O	0.38	0.23	0.00	0.00	0.00	0.24	0.00	1.90	0.00	99.91		
25 wt% NDA VTR Glass	**0.29**	**0.16**	0.00	0.00	0.00	**0.17**	**0.00**	**1.40**	0.00	**98.02**		
25 wt% NDA VTR Glass	**0.29**	**0.16**	0.00	0.00	0.00	**0.17**	**0.00**	**1.40**	0.00	**98.02**		
25 wt% NDA VTR Glass	**0.29**	**0.16**	0.00	0.00	0.00	**0.17**	**0.00**	**1.40**	0.00	**98.02**		
25 wt% NDA VTR Glass	**0.29**	**0.16**	0.00	0.00	0.00	**0.17**	**0.00**	**1.40**	0.00	**98.02**		
25 wt% NDA VTR Glass	**0.29**	**0.16**	0.00	0.00	0.00	**0.17**	**0.00**	**1.40**	0.00	**98.02**		
25 wt% NDA VTR Glass	**0.29**	**0.16**	0.00	0.00	0.00	**0.17**	**0.00**	**1.40**	0.00	**98.02**		
G7 38 wt% Magnox 4% Li2O	**0.43**	**0.25**	0.00	0.00	0.00	**0.28**	**0.00**	**2.2**	0.00	**97.44**		
G7 38 wt% Magnox 4% Li2O	**0.43**	**0.25**	0.00	0.00	0.00	**0.28**	**0.00**	**2.2**	0.00	**97.44**		
G7 38 wt% Magnox 4% Li2O	**0.43**	**0.25**	0.00	0.00	0.00	**0.28**	**0.00**	**2.2**	0.00	**97.44**		
G7 38 wt% Magnox 4% Li2O	**0.43**	**0.25**	0.00	0.00	0.00	**0.28**	**0.00**	**2.2**	0.00	**97.44**		
G7 38 wt% Magnox 4% Li2O	**0.43**	**0.25**	0.00	0.00	0.00	**0.28**	**0.00**	**2.2**	0.00	**97.44**		
G7 38 wt% Magnox 4% Li2O	**0.43**	**0.25**	0.00	0.00	0.00	**0.28**	**0.00**	**2.2**	0.00	**97.44**		
G7 38 wt% Magnox 4% Li2O	**0.43**	**0.25**	0.00	0.00	0.00	**0.28**	**0.00**	**2.2**	0.00	**97.44**		
G8 38 wt% Magnox 4.65% Li2O	0.44	0.27	0.00	0.00	0.00	0.29	0.00	2.26	0.00	99.92		
G8 38 wt% Magnox 4.65% Li2O	0.44	0.27	0.00	0.00	0.00	0.29	0.00	2.26	0.00	99.92		
G8 38 wt% Magnox 4.65% Li2O	0.44	0.27	0.00	0.00	0.00	0.29	0.00	2.26	0.00	99.92		
G8 38 wt% Magnox 4.65% Li2O	0.44	0.27	0.00	0.00	0.00	0.29	0.00	2.26	0.00	99.92		
G8 38 wt% Magnox 4.65% Li2O	0.44	0.27	0.00	0.00	0.00	0.29	0.00	2.26	0.00	99.92		
M35H 35wt% Magnox	0.45	0.28	0.00	0.00	0.00	0.28	0.00	2.20	0.00	100.13		
M35H 35wt% Magnox	0.45	0.28	0.00	0.00	0.00	0.28	0.00	2.20	0.00	100.13		
M25H 25 wt% Magnox	0.30	0.17	0.00	0.00	0.00	0.19	0.00	1.50	0.00	100.00		
M25B 25 wt% Magnox	0.30	0.17	0.00	0.00	0.00	0.19	0.00	1.50	0.00	100.00		
B31H 31wt% Blend HP	0.58	0.32	0.00	0.00	0.00	0.36	0.00	3.2	0.00	100.93		
B31H 31wt% Blend HP	0.58	0.32	0.00	0.00	0.00	0.36	0.00	3.2	0.00	100.93		
B31H 31wt% Blend HP	0.58	0.32	0.00	0.00	0.00	0.36	0.00	3.2	0.00	100.93		
B31H 31wt% Blend HP	0.58	0.32	0.00	0.00	0.00	0.36	0.00	3.2	0.00	100.93		
G11 38 wt% 25:75 Blend	0.54	0.30	0.00	0.00	0.00	0.35	0.00	2.77	0.00	99.90		
G11 38 wt% 25:75 Blend	0.54	0.30	0.00	0.00	0.00	0.35	0.00	2.77	0.00	99.90		
G11 38 wt% 25:75 Blend	0.54	0.30	0.00	0.00	0.00	0.35	0.00	2.77	0.00	99.90		
G7H 38 wt% Magnox 4.00% Li2O	0.45	0.27	0.00	0.00	0.00	0.29	0.00	2.25	0.00	99.91		
G7H 38 wt% Magnox 4.00% Li2O	0.45	0.27	0.00	0.00	0.00	0.29	0.00	2.25	0.00	99.91		
G7H 38 wt% Magnox 4.00% Li2O	0.45	0.27	0.00	0.00	0.00	0.29	0.00	2.25	0.00	99.91		
G7H 38 wt% Magnox 4.00% Li2O	0.45	0.27	0.00	0.00	0.00	0.29	0.00	2.25	0.00	99.91		
G7H 38 wt% Magnox 4.00% Li2O	0.45	0.27	0.00	0.00	0.00	0.29	0.00	2.25	0.00	99.91		
G8H 38 wt% Magnox 4.65% Li2O	0.45	0.27	0.00	0.00	0.00	0.29	0.00	2.25	0.00	99.91		
G8H 38 wt% Magnox 4.65% Li2O	0.45	0.27	0.00	0.00	0.00	0.29	0.00	2.25	0.00	99.91		
G8H 38 wt% Magnox 4.65% Li2O	0.45	0.27	0.00	0.00	0.00	0.29	0.00	2.25	0.00	99.91		
G8H 38 wt% Magnox 4.65% Li2O	0.45	0.27	0.00	0.00	0.00	0.29	0.00	2.25	0.00	99.91		
G8H 38 wt% Magnox 4.65% Li2O	0.45	0.27	0.00	0.00	0.00	0.29	0.00	2.25	0.00	99.91		
HSV 25 wt% NDA Glass	**0.29**	**0.17**	0.00	0.00	0.00	**0.17**	**0.00**	**1.40**	0.00	**98.90**		
HSV 25 wt% NDA Glass	**0.29**	**0.17**	0.00	0.00	0.00	**0.17**	**0.00**	**1.40**	0.00	**98.90**		
HSV 25 wt% NDA Glass	**0.29**	**0.17**	0.00	0.00	0.00	**0.17**	**0.00**	**1.40**	0.00	**98.90**		
HSV 25 wt% NDA Glass	**0.29**	**0.17**	0.00	0.00	0.00	**0.17**	**0.00**	**1.40**	0.00	**98.90**		
HSV 25 wt% NDA Glass	**0.29**	**0.17**	0.00	0.00	0.00	**0.17**	**0.00**	**1.40**	0.00	**98.90**		
HSV 25 wt% NDA Glass	**0.29**	**0.17**	0.00	0.00	0.00	**0.17**	**0.00**	**1.40**	0.00	**98.90**		
HSV 25 wt% NDA Glass	**0.29**	**0.17**	0.00	0.00	0.00	**0.17**	**0.00**	**1.40**	0.00	**98.90**		
HSV 25 wt% NDA Glass	**0.29**	**0.17**	0.00	0.00	0.00	**0.17**	**0.00**	**1.40**	0.00	**98.90**		
HSV 25 wt% NDA Glass	**0.29**	**0.17**	0.00	0.00	0.00	**0.17**	**0.00**	**1.40**	0.00	**98.90**		
HSV 25 wt% NDA Glass	**0.29**	**0.17**	0.00	0.00	0.00	**0.17**	**0.00**	**1.40**	0.00	**98.90**		
HSV 25 wt% NDA Glass	**0.29**	**0.17**	0.00	0.00	0.00	**0.17**	**0.00**	**1.40**	0.00	**98.90**		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
HSV 25 wt% NDA Glass	**42.00**	**0.58**	20.785	872.969	**2.644**	**10.00**	**270-500**	**3.900E-05**	**0.028**	**ASTM I**	**90**	**9.92**	**267.51**	**11053.10**	
SRS 0/100 (4-40)	7.00	0.07	1.867	13.067	**2.857**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.53	211.867	403.561	
SRS 0/100 (4-40)	14.00	0.07	1.884	26.369	**2.857**	3.90	**100-200**	**1.125E-04**	0.039	**ASTM I**	**90**	9.64	220.799	442.087	
SRS 0/100 (4-40)	28.00	0.07	1.884	52.738	**2.857**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.72	214.810	515.980	
SRS 0/100 (4-40)	42.00	0.07	1.884	79.107	**2.857**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.55	215.216	540.600	
SRS 0/100 (4-40)	56.00	0.07	1.884	105.476	**2.857**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.55	206.722	565.036	
SRS 0/100 (4-40)	84.00	0.07	1.884	158.214	**2.857**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.69	218.241	621.314	
SRS 20/80 (4-40)	7.00	0.08	1.903	13.320	**2.828**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.57	188.007	476.485	
SRS 20/80 (4-40)	14.00	0.08	1.903	26.639	**2.828**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.67	189.893	515.835	
SRS 20/80 (4-40)	28.00	0.08	1.903	53.279	**2.828**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.67	183.130	552.629	
SRS 20/80 (4-40)	56.00	0.08	1.903	106.558	**2.828**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.64	175.848	627.532	
SRS 20/80 (4-40)	84.00	0.08	1.903	159.837	**2.828**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.65	184.757	660.439	
SRS 20/80 (4-40)	112.00	0.08	1.903	213.115	**2.828**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.56	198.713	710.135	
SRS 60/40 (4-40)	7.00	0.08	1.973	13.808	**2.728**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.65	136.603	531.984	
SRS 60/40 (4-40)	14.00	0.08	1.973	27.616	**2.728**	3.90	**100-200**	**1.125E-04**	0.039	**ASTM I**	**90**	9.54	140.590	681.805	
SRS 60/40 (4-40)	28.00	0.08	1.973	55.232	**2.728**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.63	132.029	820.500	
SRS 60/40 (4-40)	42.00	0.08	1.973	82.848	**2.728**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.63	132.939	880.330	
SRS 60/40 (4-40)	56.00	0.08	1.973	110.464	**2.728**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.55	127.084	840.765	
SRS 60/40 (4-40)	84.00	0.08	1.973	165.696	**2.728**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.55	132.664	912.690	
SRS 60/40 (4-40)	112.00	0.08	1.973	220.928	**2.728**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.55	147.739	983.205	
SRS 100/0 (4-40)	7.00	0.08	1.999	13.993	**2.692**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.55	106.099	538.987	
SRS 100/0 (4-40)	14.00	0.08	1.999	27.985	**2.692**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.59	107.028	896.015	
SRS 100/0 (4-40)	28.00	0.08	1.999	55.971	**2.692**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.62	95.176	1472.977	
SRS 100/0 (4-40)	42.00	0.08	1.999	83.956	**2.692**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.60	93.161	1926.157	
SRS 100/0 (4-40)	56.00	0.08	1.999	111.941	**2.692**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.52	87.856	2143.405	
SRS 100/0 (4-40)	84.00	0.08	1.999	167.912	**2.692**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.53	104.659	2612.590	
SRS 100/0 (4-40)	112.00	0.08	1.999	223.882	**2.692**	4.00	**100-200**	**1.125E-04**	0.040	**ASTM I**	**90**	9.54	112.300	3632.931	
HLP-58	0.42	0.20	20.000	8.33	**2.622**	10.000	100-200	1.125E-04	0.01	ASTM I	90	10.71	41.230	13.120	
HLP-58	4.17	0.20	20.000	83.33	**2.622**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.12	91.770	50.720	
HLP-58	41.67	0.20	20.000	833.33	**2.622**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.47	132.760	106.490	
HLP-58	208.33	0.20	20.000	4166.67	**2.622**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.62	156.000	167.850	
HLP-59	0.42	0.20	20.000	8.33	**2.645**	10.000	100-200	1.125E-04	0.01	ASTM I	90	10.81	40.700	11.880	
HLP-59	4.17	0.20	20.000	83.33	**2.645**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.24	96.080	40.670	
HLP-59	41.67	0.20	20.000	833.33	**2.645**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.63	142.480	82.410	
HLP-59	208.33	0.20	20.000	4166.67	**2.645**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.77	178.500	76.250	
HLP-60	0.42	0.18	20.000	8.33	**2.932**	10.000	100-200	1.125E-04	0.01	ASTM I	90	10.75	33.350	9.330	
HLP-60	4.17	0.18	20.000	83.33	**2.932**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.13	66.490	20.470	
HLP-60	41.67	0.18	20.000	833.33	**2.932**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.56	105.440	119.490	
HLP-60	208.33	0.18	20.000	4166.67	**2.932**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.51	106.160	38.690	
HLP-61	0.42	0.20	20.000	8.33	**2.649**	10.000	100-200	1.125E-04	0.01	ASTM I	90	10.84	67.240	44.890	
HLP-61	4.17	0.20	20.000	83.33	**2.649**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.25	131.600	159.500	
HLP-61	41.67	0.20	20.000	833.33	**2.649**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.54	196.420	300.920	
HLP-61	208.33	0.20	20.000	4166.67	**2.649**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.61	235.900	438.320	
HLP-62	0.42	0.20	20.000	8.33	**2.680**	10.000	100-200	1.125E-04	0.01	ASTM I	90	9.91	37.240	22.830	
HLP-62	4.17	0.20	20.000	83.33	**2.680**	10.000	100-200	1.125E-04	0.01	ASTM I	90	10.14	62.320	45.830	
HLP-62	41.67	0.20	20.000	833.33	**2.680**	10.000	100-200	1.125E-04	0.01	ASTM I	90	10.40	84.380	83.860	
HLP-62	208.33	0.20	20.000	4166.67	**2.680**	10.000	100-200	1.125E-04	0.01	ASTM I	90	10.32	81.800	101.140	
HLP-63	0.42	0.19	20.000	8.33	**2.767**	10.000	100-200	1.125E-04	0.01	ASTM I	90	12.24	231.830	184.010	
HLP-63	4.17	0.19	20.000	83.33	**2.767**	10.000	100-200	1.125E-04	0.01	ASTM I	90	12.53	753.800	692.000	
HLP-63	41.67	0.19	20.000	833.33	**2.767**	10.000	100-200	1.125E-04	0.01	ASTM I	90	12.84	3040.000	2425.000	
HLP-63	208.33	0.19	20.000	4166.67	**2.767**	10.000	100-200	1.125E-04	0.01	ASTM I	90	12.98	7370.000	7610.000	
HLP-64	0.42	0.20	20.000	8.33	**2.633**	10.000	100-200	1.125E-04	0.01	ASTM I	90	10.97	40.950	7.930	
HLP-64	4.17	0.20	20.000	83.33	**2.633**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.68	619.000	546.600	
HLP-64	41.67	0.20	20.000	833.33	**2.633**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.80	251.670	1009.300	
HLP-64	208.33	0.20	20.000	4166.67	**2.633**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.93	727.690	1161.200	
HLP-65	0.42	0.20	20.000	8.33	**2.649**	10.000	100-200	1.125E-04	0.01	ASTM I	90	10.56	65.500	14.790	
HLP-65	4.17	0.20	20.000	83.33	**2.649**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.03	160.200	36.730	
HLP-65	41.67	0.20	20.000	833.33	**2.649**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.47	252.390	61.470	
HLP-65	208.33	0.20	20.000	4166.67	**2.649**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.75	289.970	62.210	
HLP-66	0.42	0.21	20.000	8.33	**2.582**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.53	658.910	475.490	
HLP-66	4.17	0.21	20.000	83.33	**2.582**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.89	237.900	1570.000	
HLP-66	41.67	0.21	20.000	833.33	**2.582**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.63	1998.900	4582.700	
HLP-66	208.33	0.21	20.000	4166.67	**2.582**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.71	13600.000	8460.000	
HLP-67	0.42	0.20	20.000	8.33	**2.712**	10.000	100-200	1.125E-04	0.01	ASTM I	90	12.23	195.420	574.990	
HLP-67	4.17	0.20	20.000	83.33	**2.712**	10.000	100-200	1.125E-04	0.01	ASTM I	90	12.44	237.400	1150.000	
HLP-67	41.67	0.20	20.000	833.33	**2.712**	10.000	100-200	1.125E-04	0.01	ASTM I	90	12.65	246.380	1833.000	
HLP-67	208.33	0.20	20.000	4166.67	**2.712**	10.000	100-200	1.125E-04	0.01	ASTM I	90	12.66	1341.100	3831.300	
HLP-68	0.42	0.19	20.000	8.33	**2.795**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.19	23.540	6.810	
HLP-68	4.17	0.19	20.000	83.33	**2.795**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.57	46.930	18.750	
HLP-68	41.67	0.19	20.000	833.33	**2.795**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.98	76.600	50.420	
HLP-68	208.33	0.19	20.000	4166.67	**2.795**	10.000	100-200	1.125E-04	0.01	ASTM I	90	12.11	82.450	40.760	
HLP-69	0.42	0.20	20.000	8.33	**2.605**	10.000	100-200	1.125E-04	0.01	ASTM I	90	10.26	31.450	3.940	

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
HSV 25 wt% NDA Glass	**27.02**	**2710.63**	**7676.57**				**2428.01**	**1.11**					
SRS 0/100 (4-40)	14.532	131.840	402.161		3.300		157.531	0.275					
SRS 0/100 (4-40)	15.473	138.422	423.625		3.635		162.197	0.423					
SRS 0/100 (4-40)	16.534	163.323	503.064		0.000		170.929	0.000					
SRS 0/100 (4-40)	16.994	172.948	519.673		4.086		181.541	0.683					
SRS 0/100 (4-40)	16.600	179.538	536.774		3.874		183.151	0.000					
SRS 0/100 (4-40)	16.687	214.396	670.388		4.298		198.110	0.158					
SRS 20/80 (4-40)	16.632	150.325	448.860		3.632		169.018	0.493					
SRS 20/80 (4-40)	17.449	157.884	477.256		3.836		172.638	0.524					
SRS 20/80 (4-40)	18.420	169.860	496.308		3.939		177.687	0.394					
SRS 20/80 (4-40)	19.370	191.213	558.071		4.174		196.881	0.020					
SRS 20/80 (4-40)	18.999	214.410	641.638		4.368		202.460	0.257					
SRS 20/80 (4-40)	21.381	212.611	639.509		4.648		204.691	1.485					
SRS 60/40 (4-40)	16.006	162.480	455.227		3.282		151.078	0.254					
SRS 60/40 (4-40)	20.281	199.046	562.425		4.177		185.771	0.298					
SRS 60/40 (4-40)	24.111	247.050	701.026		5.052		216.510	0.017					
SRS 60/40 (4-40)	25.218	259.665	724.442		5.312		231.416	0.416					
SRS 60/40 (4-40)	23.139	245.015	684.380		4.773		221.585	0.000					
SRS 60/40 (4-40)	24.691	265.529	766.421		5.204		238.553	0.264					
SRS 60/40 (4-40)	26.601	272.247	812.398		5.235		238.036	0.844					
SRS 100/0 (4-40)	11.369	164.064	430.447		2.509	0.045	112.267	0.291					
SRS 100/0 (4-40)	18.761	258.485	672.987		4.050	0.115	180.737	0.249					
SRS 100/0 (4-40)	31.616	420.221	1079.479		7.107	0.073	303.712	0.200					
SRS 100/0 (4-40)	42.667	528.897	1436.497		9.228	0.152	407.438	0.429					
SRS 100/0 (4-40)	47.629	577.382	1567.467		10.424	0.000	495.000	0.084					
SRS 100/0 (4-40)	56.191	675.906	2118.825		12.792	0.056	593.706	0.267					
SRS 100/0 (4-40)	88.000	820.346	2892.999		1812.178	0.075	753.128	0.414					
HLP-58			77.510		3.880	<0.04		<0.01	<0.07	<0.01	<0.01		
HLP-58			242.470		6.360	3.270		0.330	0.110	<0.01	<0.01		
HLP-58			466.860		4.670	1.240		0.290	<0.07	0.320	<0.01		
HLP-58			674.470		6.340	<0.40		<0.40	<0.70	<0.10	<0.10		
HLP-59			85.850		2.830	<0.04		<0.01	<0.07	<0.01	<0.01		
HLP-59			261.700		4.880	<0.04		<0.01	<0.07	<0.01	<0.01		
HLP-59			415.990		5.840	<0.04		<0.04	<0.07	<0.01	<0.01		
HLP-59			534.970		8.950	<0.40		<0.40	<0.70	<0.10	<0.10		
HLP-60			72.900		2.970	<0.04		<0.01	<0.07	<0.01	<0.01		
HLP-60			181.000		5.380	1.030		<0.01	<0.07	0.340	<0.01		
HLP-60			324.990		5.910	4.930		<0.04	0.250	5.570	0.300		
HLP-60			352.510		8.160	<0.40		<0.40	<0.70	<0.10	<0.10		
HLP-61			149.500		0.710	<0.04		<0.01	<0.07	<0.01	<0.01		
HLP-61			467.000		1.600	<0.04		<0.01	<0.07	<0.01	<0.01		
HLP-61			852.660		0.740	<0.04		<0.04	<0.07	<0.01	<0.01		
HLP-61			1239.600		2.880	<0.40		<0.40	<0.70	<0.10	<0.10		
HLP-62			65.740		0.210	<0.04		<0.01	<0.07	<0.01	<0.01		
HLP-62			146.990		1.050	<0.04		<0.01	<0.07	<0.01	<0.01		
HLP-62			237.390		<0.09	<0.04		<0.04	<0.07	<0.01	<0.01		
HLP-62			1007.500		2.180	<0.40		<0.40	<0.70	<0.10	<0.10		
HLP-63			1169.500		5.510	1.220		<0.01	<0.07	<0.01	<0.01		
HLP-63			4545.000		13.150	<0.04		<0.01	<0.07	<0.01	<0.01		
HLP-63			13700.000		17.120	5.680		<0.04	0.230	<0.01	<0.01		
HLP-63			34200.000		37.800	<0.40		<0.40	<0.70	<0.10	<0.10		
HLP-64			76.690		0.570	<0.04		<0.01	<0.07	<0.01	<0.01		
HLP-64			2323.100		0.470	<0.04		<0.01	<0.07	<0.01	<0.01		
HLP-64			3993.300		<0.09	<0.04		<0.04	<0.07	<0.01	<0.01		
HLP-64			3890.600		2.100	<0.40		<0.40	<0.70	<0.10	<0.10		
HLP-65			94.840		0.710	0.380		<0.01	<0.07	<0.01	<0.01		
HLP-65			274.120		2.570	5.200		1.150	<0.07	<0.01	<0.01		
HLP-65			450.680		1.360	<0.04		<0.04	<0.07	<0.01	<0.01		
HLP-65			521.810		3.680	<0.40		<0.40	<0.70	<0.10	<0.10		
HLP-66			1649.900		<0.09	0.320		<0.01	<0.07	<0.01	<0.01		
HLP-66			5049.000		1.360	0.440		<0.01	<0.07	<0.01	<0.01		
HLP-66			14879.000		12.710	2.240		<0.04	<0.07	<0.01	<0.01		
HLP-66			20000.000		62.800	<0.40		<0.40	<0.70	<0.10	<0.10		
HLP-67			2064.800		1.320	0.870		<0.01	<0.07	1.240	<0.01		
HLP-67			4039.600		4.320	1.350		<0.01	<0.07	4.300	<0.01		
HLP-67			6613.200		10.200	0.640		<0.04	<0.07	8.440	<0.01		
HLP-67			10368.000		10.560	<0.40		<0.40	<0.70	3.83	<0.10		
HLP-68			83.610		8.300	<0.04		<0.01	<0.07	<0.01	<0.01		
HLP-68			207.500		16.700	0.440		<0.01	<0.07	<0.01	<0.01		
HLP-68			449.510		23.550	0.230		<0.04	<0.07	<0.01	<0.01		
HLP-68			611.500		25.220	<0.40		<0.40	<0.70	<0.10	<0.10		
HLP-69			36.250		6.290	<0.04		<0.01	<0.07	<0.01	<0.01		

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
HSV 25 wt% NDA Glass		77.30	12.07885	**18.75082097**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
SRS 0/100 (4-40)		74.23	12.15203598	**23.26439529**	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
SRS 0/100 (4-40)		74.23	12.15203598	**23.26439529**	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
SRS 0/100 (4-40)		74.23	12.15203598	**23.26439529**	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
SRS 0/100 (4-40)		74.23	12.15203598	**23.26439529**	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
SRS 0/100 (4-40)		74.23	12.15203598	**23.26439529**	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
SRS 0/100 (4-40)		74.23	12.15203598	**23.26439529**	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
SRS 20/80 (4-40)		74.06	12.77692411	**19.99581312**	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
SRS 20/80 (4-40)		74.06	12.77692411	**19.99581312**	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
SRS 20/80 (4-40)		74.06	12.77692411	**19.99581312**	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
SRS 20/80 (4-40)		74.06	12.77692411	**19.99581312**	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
SRS 20/80 (4-40)		74.06	12.77692411	**19.99581312**	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
SRS 20/80 (4-40)		74.06	12.77692411	**19.99581312**	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
SRS 60/40 (4-40)		73.74	14.02670037	**13.45864877**	Potential ϕ-sep	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
SRS 60/40 (4-40)		73.74	14.02670037	**13.45864877**	Potential ϕ-sep	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
SRS 60/40 (4-40)		73.74	14.02670037	**13.45864877**	Potential ϕ-sep	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
SRS 60/40 (4-40)		73.74	14.02670037	**13.45864877**	Potential ϕ-sep	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
SRS 60/40 (4-40)		73.74	14.02670037	**13.45864877**	Potential ϕ-sep	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
SRS 60/40 (4-40)		73.74	14.02670037	**13.45864877**	Potential ϕ-sep	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
SRS 60/40 (4-40)		73.74	14.02670037	**13.45864877**	Potential ϕ-sep	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
SRS 100/0 (4-40)		73.41	15.265365	**6.991636553**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
SRS 100/0 (4-40)		73.41	15.265365	**6.991636553**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
SRS 100/0 (4-40)		73.41	15.265365	**6.991636553**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
SRS 100/0 (4-40)		73.41	15.265365	**6.991636553**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
SRS 100/0 (4-40)		73.41	15.265365	**6.991636553**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
SRS 100/0 (4-40)		73.41	15.265365	**6.991636553**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
SRS 100/0 (4-40)		73.41	15.265365	**6.991636553**	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-58		77.81	14.13	6.348551	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-58		77.81	14.13	6.348551	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-58		77.81	14.13	6.348551	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-58		77.81	14.13	6.348551	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-59		73.09	16.7	-0.597775	Indeterminate	Low alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-59		73.09	16.7	-0.597775	Indeterminate	Low alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-59		73.09	16.7	-0.597775	Indeterminate	Low alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-59		73.09	16.7	-0.597775	Indeterminate	Low alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-60		63.76	13.71	31.249802	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-60		63.76	13.71	31.249802	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-60		63.76	13.71	31.249802	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-60		63.76	13.71	31.249802	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-61		72.81	8.98	43.452221	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-61		72.81	8.98	43.452221	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-61		72.81	8.98	43.452221	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-61		72.81	8.98	43.452221	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-62		78.07	8.92	35.356679	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-62		78.07	8.92	35.356679	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-62		78.07	8.92	35.356679	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-62		78.07	8.92	35.356679	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-63		69.10	18.46	-4.139938	HOMOGENEOUS	High alkali	Mid Al	Potential ϕ-sep.	High Ti	Potential ϕ-sep.
HLP-63		69.10	18.46	-4.139938	HOMOGENEOUS	High alkali	Mid Al	Potential ϕ-sep.	High Ti	Potential ϕ-sep.
HLP-63		69.10	18.46	-4.139938	HOMOGENEOUS	High alkali	Mid Al	Potential ϕ-sep.	High Ti	Potential ϕ-sep.
HLP-63		69.10	18.46	-4.139938	HOMOGENEOUS	High alkali	Mid Al	Potential ϕ-sep.	High Ti	Potential ϕ-sep.
HLP-64		79.75	4.23	59.150981	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-64		79.75	4.23	59.150981	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-64		79.75	4.23	59.150981	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-64		79.75	4.23	59.150981	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-65		76.78	18.58	-17.132554	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-65		76.78	18.58	-17.132554	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-65		76.78	18.58	-17.132554	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-65		76.78	18.58	-17.132554	HOMOGENEOUS	Low alkali	Mid Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-66		88.11	9.69	14.908733	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-66		88.11	9.69	14.908733	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-66		88.11	9.69	14.908733	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-66		88.11	9.69	14.908733	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-67		76.16	8.58	40.339616	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-67		76.16	8.58	40.339616	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-67		76.16	8.58	40.339616	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-67		76.16	8.58	40.339616	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-68		65.09	30.04	-63.111427	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-68		65.09	30.04	-63.111427	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-68		65.09	30.04	-63.111427	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-68		65.09	30.04	-63.111427	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-69		77.43	11.72	20.569079	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
HSV 25 wt% NDA Glass	**4.30**	**16.70**	**0.52**	**0.00**	**1.10**	0.00	**0.64**	**1.00**	0.00	0.00	0.00	**3.00**	0.00	**0.10**	**0.56**	**4.00**
SRS 0/100 (4-40)	0.21	16.13	1.34	0.00	1.97	0.00	0.64	2.23	0.00	0.00	0.00	2.58	0.00	4.16	0.97	3.82
SRS 0/100 (4-40)	0.21	16.13	1.34	0.00	1.97	0.00	0.64	2.23	0.00	0.00	0.00	2.58	0.00	4.16	0.97	3.82
SRS 0/100 (4-40)	0.21	16.13	1.34	0.00	1.97	0.00	0.64	2.23	0.00	0.00	0.00	2.58	0.00	4.16	0.97	3.82
SRS 0/100 (4-40)	0.21	16.13	1.34	0.00	1.97	0.00	0.64	2.23	0.00	0.00	0.00	2.58	0.00	4.16	0.97	3.82
SRS 0/100 (4-40)	0.21	16.13	1.34	0.00	1.97	0.00	0.64	2.23	0.00	0.00	0.00	2.58	0.00	4.16	0.97	3.82
SRS 0/100 (4-40)	0.21	16.13	1.34	0.00	1.97	0.00	0.64	2.23	0.00	0.00	0.00	2.58	0.00	4.16	0.97	3.82
SRS 20/80 (4-40)	1.25	16.13	1.19	0.00	1.86	0.00	0.66	2.04	0.00	0.00	0.00	2.78	0.00	3.33	0.92	3.82
SRS 20/80 (4-40)	1.25	16.13	1.19	0.00	1.86	0.00	0.66	2.04	0.00	0.00	0.00	2.78	0.00	3.33	0.92	3.82
SRS 20/80 (4-40)	1.25	16.13	1.19	0.00	1.86	0.00	0.66	2.04	0.00	0.00	0.00	2.78	0.00	3.33	0.92	3.82
SRS 20/80 (4-40)	1.25	16.13	1.19	0.00	1.86	0.00	0.66	2.04	0.00	0.00	0.00	2.78	0.00	3.33	0.92	3.82
SRS 20/80 (4-40)	1.25	16.13	1.19	0.00	1.86	0.00	0.66	2.04	0.00	0.00	0.00	2.78	0.00	3.33	0.92	3.82
SRS 20/80 (4-40)	1.25	16.13	1.19	0.00	1.86	0.00	0.66	2.04	0.00	0.00	0.00	2.78	0.00	3.33	0.92	3.82
SRS 60/40 (4-40)	3.32	16.13	0.89	0.00	1.62	0.00	0.69	1.67	0.00	0.00	0.00	3.18	0.00	1.66	0.81	3.82
SRS 60/40 (4-40)	3.32	16.13	0.89	0.00	1.62	0.00	0.69	1.67	0.00	0.00	0.00	3.18	0.00	1.66	0.81	3.82
SRS 60/40 (4-40)	3.32	16.13	0.89	0.00	1.62	0.00	0.69	1.67	0.00	0.00	0.00	3.18	0.00	1.66	0.81	3.82
SRS 60/40 (4-40)	3.32	16.13	0.89	0.00	1.62	0.00	0.69	1.67	0.00	0.00	0.00	3.18	0.00	1.66	0.81	3.82
SRS 60/40 (4-40)	3.32	16.13	0.89	0.00	1.62	0.00	0.69	1.67	0.00	0.00	0.00	3.18	0.00	1.66	0.81	3.82
SRS 60/40 (4-40)	3.32	16.13	0.89	0.00	1.62	0.00	0.69	1.67	0.00	0.00	0.00	3.18	0.00	1.66	0.81	3.82
SRS 60/40 (4-40)	3.32	16.13	0.89	0.00	1.62	0.00	0.69	1.67	0.00	0.00	0.00	3.18	0.00	1.66	0.81	3.82
SRS 100/0 (4-40)	5.400	16.130	0.590	0.00	1.390	0.00	0.730	1.300	0.00	0.00	0.00	3.590	0.00	0.000	0.700	3.820
SRS 100/0 (4-40)	5.400	16.130	0.590	0.00	1.390	0.00	0.730	1.300	0.00	0.00	0.00	3.590	0.00	0.000	0.700	3.820
SRS 100/0 (4-40)	5.400	16.130	0.590	0.00	1.390	0.00	0.730	1.300	0.00	0.00	0.00	3.590	0.00	0.000	0.700	3.820
SRS 100/0 (4-40)	5.400	16.130	0.590	0.00	1.390	0.00	0.730	1.300	0.00	0.00	0.00	3.590	0.00	0.000	0.700	3.820
SRS 100/0 (4-40)	5.400	16.130	0.590	0.00	1.390	0.00	0.730	1.300	0.00	0.00	0.00	3.590	0.00	0.000	0.700	3.820
SRS 100/0 (4-40)	5.400	16.130	0.590	0.00	1.390	0.00	0.730	1.300	0.00	0.00	0.00	3.590	0.00	0.000	0.700	3.820
HLP-58	6.630	9.980	0.00	2.020	0.00	0.00	0.080	0.00	0.00	0.00	0.00	5.450	0.450	0.00	0.010	0.130
HLP-58	6.630	9.980	0.00	2.020	0.00	0.00	0.080	0.00	0.00	0.00	0.00	5.450	0.450	0.00	0.010	0.130
HLP-58	6.630	9.980	0.00	2.020	0.00	0.00	0.080	0.00	0.00	0.00	0.00	5.450	0.450	0.00	0.010	0.130
HLP-58	6.630	9.980	0.00	2.020	0.00	0.00	0.080	0.00	0.00	0.00	0.00	5.450	0.450	0.00	0.010	0.130
HLP-59	6.590	9.320	0.00	4.680	0.00	0.00	0.080	0.00	0.00	0.00	0.00	5.400	0.450	0.00	0.010	0.130
HLP-59	6.590	9.320	0.00	4.680	0.00	0.00	0.080	0.00	0.00	0.00	0.00	5.400	0.450	0.00	0.010	0.130
HLP-59	6.590	9.320	0.00	4.680	0.00	0.00	0.080	0.00	0.00	0.00	0.00	5.400	0.450	0.00	0.010	0.130
HLP-59	6.590	9.320	0.00	4.680	0.00	0.00	0.080	0.00	0.00	0.00	0.00	5.400	0.450	0.00	0.010	0.130
HLP-60	11.810	12.250	0.00	0.020	0.00	0.00	0.100	0.00	0.00	0.00	0.00	1.850	0.380	0.00	0.010	0.130
HLP-60	11.810	12.250	0.00	0.020	0.00	0.00	0.100	0.00	0.00	0.00	0.00	1.850	0.380	0.00	0.010	0.130
HLP-60	11.810	12.250	0.00	0.020	0.00	0.00	0.100	0.00	0.00	0.00	0.00	1.850	0.380	0.00	0.010	0.130
HLP-60	11.810	12.250	0.00	0.020	0.00	0.00	0.100	0.00	0.00	0.00	0.00	1.850	0.380	0.00	0.010	0.130
HLP-61	4.080	12.520	0.00	4.740	0.00	0.00	0.100	0.00	0.00	0.00	0.00	0.130	4.780	0.00	0.010	0.140
HLP-61	4.080	12.520	0.00	4.740	0.00	0.00	0.100	0.00	0.00	0.00	0.00	0.130	4.780	0.00	0.010	0.140
HLP-61	4.080	12.520	0.00	4.740	0.00	0.00	0.100	0.00	0.00	0.00	0.00	0.130	4.780	0.00	0.010	0.140
HLP-61	4.080	12.520	0.00	4.740	0.00	0.00	0.100	0.00	0.00	0.00	0.00	0.130	4.780	0.00	0.010	0.140
HLP-62	4.030	12.780	0.00	4.670	0.00	0.00	0.070	0.00	0.00	0.00	0.00	0.190	0.370	0.00	0.010	0.120
HLP-62	4.030	12.780	0.00	4.670	0.00	0.00	0.070	0.00	0.00	0.00	0.00	0.190	0.370	0.00	0.010	0.120
HLP-62	4.030	12.780	0.00	4.670	0.00	0.00	0.070	0.00	0.00	0.00	0.00	0.190	0.370	0.00	0.010	0.120
HLP-62	4.030	12.780	0.00	4.670	0.00	0.00	0.070	0.00	0.00	0.00	0.00	0.190	0.370	0.00	0.010	0.120
HLP-63	3.900	6.000	0.00	0.010	0.00	0.00	0.080	0.00	0.00	0.00	0.00	14.520	0.380	0.00	0.010	0.110
HLP-63	3.900	6.000	0.00	0.010	0.00	0.00	0.080	0.00	0.00	0.00	0.00	14.520	0.380	0.00	0.010	0.110
HLP-63	3.900	6.000	0.00	0.010	0.00	0.00	0.080	0.00	0.00	0.00	0.00	14.520	0.380	0.00	0.010	0.110
HLP-63	3.900	6.000	0.00	0.010	0.00	0.00	0.080	0.00	0.00	0.00	0.00	14.520	0.380	0.00	0.010	0.110
HLP-64	4.040	6.090	0.00	0.000	0.00	0.00	0.070	0.00	0.00	0.00	0.00	0.160	4.600	0.00	0.010	0.110
HLP-64	4.040	6.090	0.00	0.000	0.00	0.00	0.070	0.00	0.00	0.00	0.00	0.160	4.600	0.00	0.010	0.110
HLP-64	4.040	6.090	0.00	0.000	0.00	0.00	0.070	0.00	0.00	0.00	0.00	0.160	4.600	0.00	0.010	0.110
HLP-64	4.040	6.090	0.00	0.000	0.00	0.00	0.070	0.00	0.00	0.00	0.00	0.160	4.600	0.00	0.010	0.110
HLP-65	3.990	6.020	0.00	4.660	0.00	0.00	0.080	0.00	0.00	0.00	0.00	9.900	0.370	0.00	0.010	0.110
HLP-65	3.990	6.020	0.00	4.660	0.00	0.00	0.080	0.00	0.00	0.00	0.00	9.900	0.370	0.00	0.010	0.110
HLP-65	3.990	6.020	0.00	4.660	0.00	0.00	0.080	0.00	0.00	0.00	0.00	9.900	0.370	0.00	0.010	0.110
HLP-65	3.990	6.020	0.00	4.660	0.00	0.00	0.080	0.00	0.00	0.00	0.00	9.900	0.370	0.00	0.010	0.110
HLP-66	4.180	12.570	0.00	0.040	0.00	0.00	0.090	0.00	0.00	0.00	0.00	5.440	0.410	0.00	0.010	0.130
HLP-66	4.180	12.570	0.00	0.040	0.00	0.00	0.090	0.00	0.00	0.00	0.00	5.440	0.410	0.00	0.010	0.130
HLP-66	4.180	12.570	0.00	0.040	0.00	0.00	0.090	0.00	0.00	0.00	0.00	5.440	0.410	0.00	0.010	0.130
HLP-66	4.180	12.570	0.00	0.040	0.00	0.00	0.090	0.00	0.00	0.00	0.00	5.440	0.410	0.00	0.010	0.130
HLP-67	4.100	12.320	0.00	0.020	0.00	0.00	0.090	0.00	0.00	0.00	0.00	4.430	4.730	0.00	0.010	0.130
HLP-67	4.100	12.320	0.00	0.020	0.00	0.00	0.090	0.00	0.00	0.00	0.00	4.430	4.730	0.00	0.010	0.130
HLP-67	4.100	12.320	0.00	0.020	0.00	0.00	0.090	0.00	0.00	0.00	0.00	4.430	4.730	0.00	0.010	0.130
HLP-67	4.100	12.320	0.00	0.020	0.00	0.00	0.090	0.00	0.00	0.00	0.00	4.430	4.730	0.00	0.010	0.130
HLP-68	9.410	6.240	0.00	4.700	0.00	0.00	0.080	0.00	0.00	0.00	0.00	15.900	4.640	0.00	0.010	0.120
HLP-68	9.410	6.240	0.00	4.700	0.00	0.00	0.080	0.00	0.00	0.00	0.00	15.900	4.640	0.00	0.010	0.120
HLP-68	9.410	6.240	0.00	4.700	0.00	0.00	0.080	0.00	0.00	0.00	0.00	15.900	4.640	0.00	0.010	0.120
HLP-68	9.410	6.240	0.00	4.700	0.00	0.00	0.080	0.00	0.00	0.00	0.00	15.900	4.640	0.00	0.010	0.120
HLP-69	11.310	6.110	0.00	0.000	0.00	0.00	0.070	0.00	0.00	0.00	0.00	0.380	0.380	0.00	0.010	0.110

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
HSV 25 wt% NDA Glass	**4.50**	0.00	0.00	**1.40**	**8.50**	**1.60**	**0.48**	0.00	0.00	0.00	0.00	**0.52**	**0.49**	**47.10**	**0.36**	0.00
SRS 0/100 (4-40)	0.00	0.00	0.00	2.84	7.99	3.24	0.40	0.75	0.00	0.00	0.00	0.95	0.00	44.06	0.67	0.00
SRS 0/100 (4-40)	0.00	0.00	0.00	2.84	7.99	3.24	0.40	0.75	0.00	0.00	0.00	0.95	0.00	44.06	0.67	0.00
SRS 0/100 (4-40)	0.00	0.00	0.00	2.84	7.99	3.24	0.40	0.75	0.00	0.00	0.00	0.95	0.00	44.06	0.67	0.00
SRS 0/100 (4-40)	0.00	0.00	0.00	2.84	7.99	3.24	0.40	0.75	0.00	0.00	0.00	0.95	0.00	44.06	0.67	0.00
SRS 0/100 (4-40)	0.00	0.00	0.00	2.84	7.99	3.24	0.40	0.75	0.00	0.00	0.00	0.95	0.00	44.06	0.67	0.00
SRS 0/100 (4-40)	0.00	0.00	0.00	2.84	7.99	3.24	0.40	0.75	0.00	0.00	0.00	0.95	0.00	44.06	0.67	0.00
SRS 20/80 (4-40)	1.15	0.00	0.00	2.62	8.01	3.05	0.41	0.64	0.00	0.00	0.00	0.90	0.00	44.06	0.63	0.03
SRS 20/80 (4-40)	1.15	0.00	0.00	2.62	8.01	3.05	0.41	0.64	0.00	0.00	0.00	0.90	0.00	44.06	0.63	0.03
SRS 20/80 (4-40)	1.15	0.00	0.00	2.62	8.01	3.05	0.41	0.64	0.00	0.00	0.00	0.90	0.00	44.06	0.63	0.03
SRS 20/80 (4-40)	1.15	0.00	0.00	2.62	8.01	3.05	0.41	0.64	0.00	0.00	0.00	0.90	0.00	44.06	0.63	0.03
SRS 20/80 (4-40)	1.15	0.00	0.00	2.62	8.01	3.05	0.41	0.64	0.00	0.00	0.00	0.90	0.00	44.06	0.63	0.03
SRS 20/80 (4-40)	1.15	0.00	0.00	2.62	8.01	3.05	0.41	0.64	0.00	0.00	0.00	0.90	0.00	44.06	0.63	0.03
SRS 60/40 (4-40)	3.44	0.00	0.00	2.19	8.06	2.66	0.43	0.42	0.00	0.00	0.00	0.79	0.00	44.06	0.55	0.08
SRS 60/40 (4-40)	3.44	0.00	0.00	2.19	8.06	2.66	0.43	0.42	0.00	0.00	0.00	0.79	0.00	44.06	0.55	0.08
SRS 60/40 (4-40)	3.44	0.00	0.00	2.19	8.06	2.66	0.43	0.42	0.00	0.00	0.00	0.79	0.00	44.06	0.55	0.08
SRS 60/40 (4-40)	3.44	0.00	0.00	2.19	8.06	2.66	0.43	0.42	0.00	0.00	0.00	0.79	0.00	44.06	0.55	0.08
SRS 60/40 (4-40)	3.44	0.00	0.00	2.19	8.06	2.66	0.43	0.42	0.00	0.00	0.00	0.79	0.00	44.06	0.55	0.08
SRS 60/40 (4-40)	3.44	0.00	0.00	2.19	8.06	2.66	0.43	0.42	0.00	0.00	0.00	0.79	0.00	44.06	0.55	0.08
SRS 100/0 (4-40)	5.730	0.00	0.00	1.760	8.100	2.280	0.450	0.00	0.00	0.00	0.00	0.680	0.000	44.060	0.470	0.00
SRS 100/0 (4-40)	5.730	0.00	0.00	1.760	8.100	2.280	0.450	0.00	0.00	0.00	0.00	0.680	0.000	44.060	0.470	0.00
SRS 100/0 (4-40)	5.730	0.00	0.00	1.760	8.100	2.280	0.450	0.00	0.00	0.00	0.00	0.680	0.000	44.060	0.470	0.00
SRS 100/0 (4-40)	5.730	0.00	0.00	1.760	8.100	2.280	0.450	0.00	0.00	0.00	0.00	0.680	0.000	44.060	0.470	0.00
SRS 100/0 (4-40)	5.730	0.00	0.00	1.760	8.100	2.280	0.450	0.00	0.00	0.00	0.00	0.680	0.000	44.060	0.470	0.00
SRS 100/0 (4-40)	5.730	0.00	0.00	1.760	8.100	2.280	0.450	0.00	0.00	0.00	0.00	0.680	0.000	44.060	0.470	0.00
HLP-58	1.430	0.00	0.00	0.020	19.030	0.00	0.00	0.00	0.080	0.00	0.00	0.00	0.00	48.220	0.00	0.00
HLP-58	1.430	0.00	0.00	0.020	19.030	0.00	0.00	0.00	0.080	0.00	0.00	0.00	0.00	48.220	0.00	0.00
HLP-58	1.430	0.00	0.00	0.020	19.030	0.00	0.00	0.00	0.080	0.00	0.00	0.00	0.00	48.220	0.00	0.00
HLP-58	1.430	0.00	0.00	0.020	19.030	0.00	0.00	0.00	0.080	0.00	0.00	0.00	0.00	48.220	0.00	0.00
HLP-59	1.380	0.00	0.00	0.020	18.370	0.00	0.00	0.00	0.050	0.00	0.00	0.00	0.00	44.820	0.00	0.00
HLP-59	1.380	0.00	0.00	0.020	18.370	0.00	0.00	0.00	0.050	0.00	0.00	0.00	0.00	44.820	0.00	0.00
HLP-59	1.380	0.00	0.00	0.020	18.370	0.00	0.00	0.00	0.050	0.00	0.00	0.00	0.00	44.820	0.00	0.00
HLP-59	1.380	0.00	0.00	0.020	18.370	0.00	0.00	0.00	0.050	0.00	0.00	0.00	0.00	44.820	0.00	0.00
HLP-60	3.900	0.00	0.00	0.020	15.690	0.00	0.00	0.00	0.680	0.00	0.00	0.00	0.00	35.310	0.00	0.00
HLP-60	3.900	0.00	0.00	0.020	15.690	0.00	0.00	0.00	0.680	0.00	0.00	0.00	0.00	35.310	0.00	0.00
HLP-60	3.900	0.00	0.00	0.020	15.690	0.00	0.00	0.00	0.680	0.00	0.00	0.00	0.00	35.310	0.00	0.00
HLP-60	3.900	0.00	0.00	0.020	15.690	0.00	0.00	0.00	0.680	0.00	0.00	0.00	0.00	35.310	0.00	0.00
HLP-61	3.870	0.00	0.00	0.020	15.920	0.00	0.00	0.00	0.070	0.00	0.00	0.00	0.00	39.450	0.00	0.00
HLP-61	3.870	0.00	0.00	0.020	15.920	0.00	0.00	0.00	0.070	0.00	0.00	0.00	0.00	39.450	0.00	0.00
HLP-61	3.870	0.00	0.00	0.020	15.920	0.00	0.00	0.00	0.070	0.00	0.00	0.00	0.00	39.450	0.00	0.00
HLP-61	3.870	0.00	0.00	0.020	15.920	0.00	0.00	0.00	0.070	0.00	0.00	0.00	0.00	39.450	0.00	0.00
HLP-62	0.000	0.00	0.00	0.020	16.410	0.00	0.00	0.00	0.070	0.00	0.00	0.00	0.00	48.390	0.00	0.00
HLP-62	0.000	0.00	0.00	0.020	16.410	0.00	0.00	0.00	0.070	0.00	0.00	0.00	0.00	48.390	0.00	0.00
HLP-62	0.000	0.00	0.00	0.020	16.410	0.00	0.00	0.00	0.070	0.00	0.00	0.00	0.00	48.390	0.00	0.00
HLP-62	0.000	0.00	0.00	0.020	16.410	0.00	0.00	0.00	0.070	0.00	0.00	0.00	0.00	48.390	0.00	0.00
HLP-63	3.910	0.00	0.00	0.020	25.650	0.00	0.00	0.00	0.080	0.00	0.00	0.00	0.00	36.960	0.00	0.00
HLP-63	3.910	0.00	0.00	0.020	25.650	0.00	0.00	0.00	0.080	0.00	0.00	0.00	0.00	36.960	0.00	0.00
HLP-63	3.910	0.00	0.00	0.020	25.650	0.00	0.00	0.00	0.080	0.00	0.00	0.00	0.00	36.960	0.00	0.00
HLP-63	3.910	0.00	0.00	0.020	25.650	0.00	0.00	0.00	0.080	0.00	0.00	0.00	0.00	36.960	0.00	0.00
HLP-64	3.920	0.00	0.00	0.020	15.990	0.00	0.00	0.00	1.060	0.00	0.00	0.00	0.00	52.960	0.00	0.00
HLP-64	3.920	0.00	0.00	0.020	15.990	0.00	0.00	0.00	1.060	0.00	0.00	0.00	0.00	52.960	0.00	0.00
HLP-64	3.920	0.00	0.00	0.020	15.990	0.00	0.00	0.00	1.060	0.00	0.00	0.00	0.00	52.960	0.00	0.00
HLP-64	3.920	0.00	0.00	0.020	15.990	0.00	0.00	0.00	1.060	0.00	0.00	0.00	0.00	52.960	0.00	0.00
HLP-65	3.980	0.00	0.00	0.020	16.880	0.00	0.00	0.00	1.980	0.00	0.00	0.00	0.00	53.400	0.00	0.00
HLP-65	3.980	0.00	0.00	0.020	16.880	0.00	0.00	0.00	1.980	0.00	0.00	0.00	0.00	53.400	0.00	0.00
HLP-65	3.980	0.00	0.00	0.020	16.880	0.00	0.00	0.00	1.980	0.00	0.00	0.00	0.00	53.400	0.00	0.00
HLP-65	3.980	0.00	0.00	0.020	16.880	0.00	0.00	0.00	1.980	0.00	0.00	0.00	0.00	53.400	0.00	0.00
HLP-66	0.000	0.00	0.00	0.020	23.490	0.00	0.00	0.00	0.040	0.00	0.00	0.00	0.00	51.510	0.00	0.00
HLP-66	0.000	0.00	0.00	0.020	23.490	0.00	0.00	0.00	0.040	0.00	0.00	0.00	0.00	51.510	0.00	0.00
HLP-66	0.000	0.00	0.00	0.020	23.490	0.00	0.00	0.00	0.040	0.00	0.00	0.00	0.00	51.510	0.00	0.00
HLP-66	0.000	0.00	0.00	0.020	23.490	0.00	0.00	0.00	0.040	0.00	0.00	0.00	0.00	51.510	0.00	0.00
HLP-67	0.000	0.00	0.00	0.020	23.720	0.00	0.00	0.00	0.550	0.00	0.00	0.00	0.00	35.260	0.00	0.00
HLP-67	0.000	0.00	0.00	0.020	23.720	0.00	0.00	0.00	0.550	0.00	0.00	0.00	0.00	35.260	0.00	0.00
HLP-67	0.000	0.00	0.00	0.020	23.720	0.00	0.00	0.00	0.550	0.00	0.00	0.00	0.00	35.260	0.00	0.00
HLP-67	0.000	0.00	0.00	0.020	23.720	0.00	0.00	0.00	0.550	0.00	0.00	0.00	0.00	35.260	0.00	0.00
HLP-68	0.000	0.00	0.00	0.020	16.310	0.00	0.00	0.00	0.060	0.00	0.00	0.00	0.00	37.780	0.00	0.00
HLP-68	0.000	0.00	0.00	0.020	16.310	0.00	0.00	0.00	0.060	0.00	0.00	0.00	0.00	37.780	0.00	0.00
HLP-68	0.000	0.00	0.00	0.020	16.310	0.00	0.00	0.00	0.060	0.00	0.00	0.00	0.00	37.780	0.00	0.00
HLP-68	0.000	0.00	0.00	0.020	16.310	0.00	0.00	0.00	0.060	0.00	0.00	0.00	0.00	37.780	0.00	0.00
HLP-69	0.000	0.00	0.00	0.020	16.940	0.00	0.00	0.00	0.090	0.00	0.00	0.00	0.00	53.890	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
HSV 25 wt% NDA Glass	**0.29**	**0.17**	0.00	0.00	0.00	**0.17**	**0.00**	**1.40**	0.00	**98.90**		
SRS 0/100 (4-40)	0.62	0.34	0.00	0.00	0.00	0.44	0.00	3.66	0.00	100.00		
SRS 0/100 (4-40)	0.62	0.34	0.00	0.00	0.00	0.44	0.00	3.66	0.00	100.00		
SRS 0/100 (4-40)	0.62	0.34	0.00	0.00	0.00	0.44	0.00	3.66	0.00	100.00		
SRS 0/100 (4-40)	0.62	0.34	0.00	0.00	0.00	0.44	0.00	3.66	0.00	100.00		
SRS 0/100 (4-40)	0.62	0.34	0.00	0.00	0.00	0.44	0.00	3.66	0.00	100.00		
SRS 0/100 (4-40)	0.62	0.34	0.00	0.00	0.00	0.44	0.00	3.66	0.00	100.00		
SRS 20/80 (4-40)	0.56	0.31	0.00	0.00	0.00	0.39	0.00	3.27	0.00	100.00		
SRS 20/80 (4-40)	0.56	0.31	0.00	0.00	0.00	0.39	0.00	3.27	0.00	100.00		
SRS 20/80 (4-40)	0.56	0.31	0.00	0.00	0.00	0.39	0.00	3.27	0.00	100.00		
SRS 20/80 (4-40)	0.56	0.31	0.00	0.00	0.00	0.39	0.00	3.27	0.00	100.00		
SRS 20/80 (4-40)	0.56	0.31	0.00	0.00	0.00	0.39	0.00	3.27	0.00	100.00		
SRS 20/80 (4-40)	0.56	0.31	0.00	0.00	0.00	0.39	0.00	3.27	0.00	100.00		
SRS 60/40 (4-40)	0.45	0.26	0.00	0.00	0.00	0.30	0.00	2.50	0.00	100.00		
SRS 60/40 (4-40)	0.45	0.26	0.00	0.00	0.00	0.30	0.00	2.50	0.00	100.00		
SRS 60/40 (4-40)	0.45	0.26	0.00	0.00	0.00	0.30	0.00	2.50	0.00	100.00		
SRS 60/40 (4-40)	0.45	0.26	0.00	0.00	0.00	0.30	0.00	2.50	0.00	100.00		
SRS 60/40 (4-40)	0.45	0.26	0.00	0.00	0.00	0.30	0.00	2.50	0.00	100.00		
SRS 60/40 (4-40)	0.45	0.26	0.00	0.00	0.00	0.30	0.00	2.50	0.00	100.00		
SRS 60/40 (4-40)	0.45	0.26	0.00	0.00	0.00	0.30	0.00	2.50	0.00	100.00		
SRS 100/0 (4-40)	0.340	0.200	0.00	0.00	0.00	0.210	0.00	1.720	0.00	99.65		
SRS 100/0 (4-40)	0.340	0.200	0.00	0.00	0.00	0.210	0.00	1.720	0.00	99.65		
SRS 100/0 (4-40)	0.340	0.200	0.00	0.00	0.00	0.210	0.00	1.720	0.00	99.65		
SRS 100/0 (4-40)	0.340	0.200	0.00	0.00	0.00	0.210	0.00	1.720	0.00	99.65		
SRS 100/0 (4-40)	0.340	0.200	0.00	0.00	0.00	0.210	0.00	1.720	0.00	99.65		
SRS 100/0 (4-40)	0.340	0.200	0.00	0.00	0.00	0.210	0.00	1.720	0.00	99.65		
SRS 100/0 (4-40)	0.340	0.200	0.00	0.00	0.00	0.210	0.00	1.720	0.00	99.65		
HLP-58	0.00	0.00	0.00	3.010	0.00	0.00	1.430	1.460	0.00	99.43		
HLP-58	0.00	0.00	0.00	3.010	0.00	0.00	1.430	1.460	0.00	99.43		
HLP-58	0.00	0.00	0.00	3.010	0.00	0.00	1.430	1.460	0.00	99.43		
HLP-58	0.00	0.00	0.00	3.010	0.00	0.00	1.430	1.460	0.00	99.43		
HLP-59	0.00	0.00	0.00	2.880	0.00	0.00	1.430	1.520	0.00	97.13		
HLP-59	0.00	0.00	0.00	2.880	0.00	0.00	1.430	1.520	0.00	97.13		
HLP-59	0.00	0.00	0.00	2.880	0.00	0.00	1.430	1.520	0.00	97.13		
HLP-59	0.00	0.00	0.00	2.880	0.00	0.00	1.430	1.520	0.00	97.13		
HLP-60	0.00	0.00	0.00	8.570	0.00	0.00	0.020	4.140	0.00	94.88		
HLP-60	0.00	0.00	0.00	8.570	0.00	0.00	0.020	4.140	0.00	94.88		
HLP-60	0.00	0.00	0.00	8.570	0.00	0.00	0.020	4.140	0.00	94.88		
HLP-60	0.00	0.00	0.00	8.570	0.00	0.00	0.020	4.140	0.00	94.88		
HLP-61	0.00	0.00	0.00	8.460	0.00	0.00	3.990	0.070	0.00	98.35		
HLP-61	0.00	0.00	0.00	8.460	0.00	0.00	3.990	0.070	0.00	98.35		
HLP-61	0.00	0.00	0.00	8.460	0.00	0.00	3.990	0.070	0.00	98.35		
HLP-61	0.00	0.00	0.00	8.460	0.00	0.00	3.990	0.070	0.00	98.35		
HLP-62	0.00	0.00	0.00	8.560	0.00	0.00	0.000	5.520	0.00	101.21		
HLP-62	0.00	0.00	0.00	8.560	0.00	0.00	0.000	5.520	0.00	101.21		
HLP-62	0.00	0.00	0.00	8.560	0.00	0.00	0.000	5.520	0.00	101.21		
HLP-62	0.00	0.00	0.00	8.560	0.00	0.00	0.000	5.520	0.00	101.21		
HLP-63	0.00	0.00	0.00	8.830	0.00	0.00	0.000	0.060	0.00	100.52		
HLP-63	0.00	0.00	0.00	8.830	0.00	0.00	0.000	0.060	0.00	100.52		
HLP-63	0.00	0.00	0.00	8.830	0.00	0.00	0.000	0.060	0.00	100.52		
HLP-63	0.00	0.00	0.00	8.830	0.00	0.00	0.000	0.060	0.00	100.52		
HLP-64	0.00	0.00	0.00	0.000	0.00	0.00	3.730	4.240	0.00	97.00		
HLP-64	0.00	0.00	0.00	0.000	0.00	0.00	3.730	4.240	0.00	97.00		
HLP-64	0.00	0.00	0.00	0.000	0.00	0.00	3.730	4.240	0.00	97.00		
HLP-64	0.00	0.00	0.00	0.000	0.00	0.00	3.730	4.240	0.00	97.00		
HLP-65	0.00	0.00	0.00	0.000	0.00	0.00	0.000	0.040	0.00	101.44		
HLP-65	0.00	0.00	0.00	0.000	0.00	0.00	0.000	0.040	0.00	101.44		
HLP-65	0.00	0.00	0.00	0.000	0.00	0.00	0.000	0.040	0.00	101.44		
HLP-65	0.00	0.00	0.00	0.000	0.00	0.00	0.000	0.040	0.00	101.44		
HLP-66	0.00	0.00	0.00	0.040	0.00	0.00	0.010	0.020	0.00	98.00		
HLP-66	0.00	0.00	0.00	0.040	0.00	0.00	0.010	0.020	0.00	98.00		
HLP-66	0.00	0.00	0.00	0.040	0.00	0.00	0.010	0.020	0.00	98.00		
HLP-66	0.00	0.00	0.00	0.040	0.00	0.00	0.010	0.020	0.00	98.00		
HLP-67	0.00	0.00	0.00	0.010	0.00	0.00	3.950	3.790	0.00	93.13		
HLP-67	0.00	0.00	0.00	0.010	0.00	0.00	3.950	3.790	0.00	93.13		
HLP-67	0.00	0.00	0.00	0.010	0.00	0.00	3.950	3.790	0.00	93.13		
HLP-67	0.00	0.00	0.00	0.010	0.00	0.00	3.950	3.790	0.00	93.13		
HLP-68	0.00	0.00	0.00	0.000	0.00	0.00	0.000	5.630	0.00	100.90		
HLP-68	0.00	0.00	0.00	0.000	0.00	0.00	0.000	5.630	0.00	100.90		
HLP-68	0.00	0.00	0.00	0.000	0.00	0.00	0.000	5.630	0.00	100.90		
HLP-68	0.00	0.00	0.00	0.000	0.00	0.00	0.000	5.630	0.00	100.90		
HLP-69	0.00	0.00	0.00	8.790	0.00	0.00	3.940	0.070	0.00	102.11		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
HLP-69	4.17	0.20	20.000	83.33	**2.605**	10.000	100-200	1.125E-04	0.01	ASTM I	90	10.68	59.400	11.920	
HLP-69	41.67	0.20	20.000	833.33	**2.605**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.15	78.170	19.490	
HLP-69	208.33	0.20	20.000	4166.67	**2.605**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.20	80.750	21.960	
HLP-70	0.42	0.20	20.000	8.33	**2.638**	10.000	100-200	1.125E-04	0.01	ASTM I	90	12.34	460.420	229.470	
HLP-70	4.17	0.20	20.000	83.33	**2.638**	10.000	100-200	1.125E-04	0.01	ASTM I	90	12.62	953.400	684.500	
HLP-70	208.33	0.20	20.000	4166.67	**2.638**	10.000	100-200	1.125E-04	0.01	ASTM I	90	13.20	19000.000	12300.000	
HLP-71	0.42	0.20	20.000	8.33	**2.716**	10.000	100-200	1.125E-04	0.01	ASTM I	90	12.34	82.210	4504.000	
HLP-71	4.17	0.20	20.000	83.33	**2.716**	10.000	100-200	1.125E-04	0.01	ASTM I	90	12.70	117.700	8844.000	
HLP-71	41.67	0.20	20.000	833.33	**2.716**	10.000	100-200	1.125E-04	0.01	ASTM I	90	12.83	589.090	9959.000	
HLP-72	0.42	0.20	20.000	8.33	**2.663**	10.000	100-200	1.125E-04	0.01	ASTM I	90	10.02	19.550	13.840	
HLP-72	4.17	0.20	20.000	83.33	**2.663**	10.000	100-200	1.125E-04	0.01	ASTM I	90	9.89	27.580	89.540	
HLP-72	41.67	0.20	20.000	833.33	**2.663**	10.000	100-200	1.125E-04	0.01	ASTM I	90	9.58	19.980	482.000	
HLP-72	208.33	0.20	20.000	4166.67	**2.663**	10.000	100-200	1.125E-04	0.01	ASTM I	90	9.71	11.430	950.870	
HLP-73	0.42	0.20	20.000	8.33	**2.612**	10.000	100-200	1.125E-04	0.01	ASTM I	90	9.90	18.800	187.490	
HLP-73	4.17	0.20	20.000	83.33	**2.612**	10.000	100-200	1.125E-04	0.01	ASTM I	90	10.00	26.650	957.600	
HLP-73	41.67	0.20	20.000	833.33	**2.612**	10.000	100-200	1.125E-04	0.01	ASTM I	90	10.26	40.400	4037.600	
HLP-73	208.33	0.20	20.000	4166.67	**2.612**	10.000	100-200	1.125E-04	0.01	ASTM I	90	10.33	70.460	4664.600	
HLP-74	0.42	0.20	20.000	8.33	**2.680**	10.000	100-200	1.125E-04	0.01	ASTM I	90	9.73	20.440	34.160	
HLP-74	4.17	0.20	20.000	83.33	**2.680**	10.000	100-200	1.125E-04	0.01	ASTM I	90	9.92	30.280	163.900	
HLP-74	41.67	0.20	20.000	833.33	**2.680**	10.000	100-200	1.125E-04	0.01	ASTM I	90	9.77	32.200	576.000	
HLP-74	208.33	0.20	20.000	4166.67	**2.680**	10.000	100-200	1.125E-04	0.01	ASTM I	90	9.82	26.950	537.460	
HLP-75	0.42	0.20	20.000	8.33	**2.681**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.01	41.640	14.750	
HLP-75	4.17	0.20	20.000	83.33	**2.681**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.47	86.230	53.820	
HLP-75	41.67	0.20	20.000	833.33	**2.681**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.88	124.000	141.570	
HLP-75	208.33	0.20	20.000	4166.67	**2.681**	10.000	100-200	1.125E-04	0.01	ASTM I	90	12.02	170.950	195.810	
HLP-76	0.42	0.21	20.000	8.33	**2.554**	10.000	100-200	1.125E-04	0.01	ASTM I	90	10.86	43.650	11.100	
HLP-76	4.17	0.21	20.000	83.33	**2.554**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.38	99.560	47.080	
HLP-76	41.67	0.21	20.000	833.33	**2.554**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.80	162.500	152.000	
HLP-76	208.33	0.21	20.000	4166.67	**2.554**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.81	389.780	273.420	
HLP-77	0.42	0.21	20.000	8.33	**2.561**	10.000	100-200	1.125E-04	0.01	ASTM I	90	10.82	43.410	12.800	
HLP-77	4.17	0.21	20.000	83.33	**2.561**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.34	98.130	47.920	
HLP-77	41.67	0.21	20.000	833.33	**2.561**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.79	146.990	122.850	
HLP-77	208.33	0.21	20.000	4166.67	**2.561**	10.000	100-200	1.125E-04	0.01	ASTM I	90	11.90	161.170	269.650	
A1 (R7T7 type (SON68) 1997	0.0208	12.30	81.565	1.70	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	8.56	21	69	4.24
A1 (R7T7 type (SON68) 1997	0.0833	12.30	81.565	6.79	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	8.75	35	102	3.82
A1 (R7T7 type (SON68) 1997	0.375	12.30	81.565	30.59	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	8.92	62	169	5.16
A1 (R7T7 type (SON68) 1997	1	12.30	81.565	81.56	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	9.15	72	216	3.89
A1 (R7T7 type (SON68) 1997	7	12.30	81.565	570.95	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	9.22	92	360	3.13
A1 (R7T7 type (SON68) 1997	14	12.30	81.565	1141.91	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	9.32	106	426	2.95
A1 (R7T7 type (SON68) 1997	28	12.30	81.565	2283.82	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	9.37	114	499	3.25
A1 (R7T7 type (SON68) 1997	28	12.30	81.565	2283.82	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	9.36	135.8	469	2.64
A1 (R7T7 type (SON68) 1997	56	12.30	81.565	4567.64	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	9.39	142.0	542	2.86
A1 (R7T7 type (SON68) 1997	91	12.30	81.565	7422.41	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	9.37	146.0	659	3.47
A1 (R7T7 type (SON68) 1997	182	12.30	81.565	14844.83	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	9.47	186.2	757	3.39
A1 (R7T7 type (SON68) 1997	273	12.30	81.565	22267.24	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	9.42	172.6	829	3.61
A1 (R7T7 type (SON68) 1997	414	12.30	81.565	33767.90	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	9.49	202.7	1022	5.45
A1 (R7T7 type (SON68) 1997	539	12.30	81.565	43963.53	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	9.41	224.9	1318	6.37
A1 (R7T7 type (SON68) 1997	639	12.30	81.565	52120.03	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	9.49	258.4	1663	10.23
A1 (R7T7 type (SON68) 1997	786	12.30	81.565	64110.08	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	9.48	264.5	1882	9.58
A1 (R7T7 type (SON68) 1997	786	12.30	81.565	64110.08	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	9.48	268.7	1909	9.88
A1 (R7T7 type (SON68) 1997	881	12.30	81.565	71858.75	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	9.5	285.7	2005	12.00
A1 (R7T7 type (SON68) 1997	1029	12.30	81.565	83930.37	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	9.53	267.6	2065	18.93
A1 (R7T7 type (SON68) 1997	1219	12.30	81.565	99427.72	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	9.34	282.5	2222	23.23
A1 (R7T7 type (SON68) 1997	1455	12.30	81.565	118677.06	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	9.38	317.4	2674	15.94
A1 (R7T7 type (SON68) 1997	1738	12.30	81.565	141759.95	**2.8**	51.660	N/A	9.000E-06	0.15	DI water	90	9.4	340.8	3038	13.11
A2 (R7T7 type (SON68)-1998)	1	0.12	1.529	1.53	**2.8**	4.651	N/A	8.150E-05	0.08	DI water	90	8.9	31.3	11.7	0.97
A2 (R7T7 type (SON68)-1998)	14	0.12	1.529	21.40	**2.8**	4.651	N/A	8.150E-05	0.08	DI water	90	9.11	65.3	38.3	1.04
A2 (R7T7 type (SON68)-1998)	28	0.12	1.529	42.80	**2.8**	4.651	N/A	8.150E-05	0.08	DI water	90	9.11	66.0	41.4	1.10
A2 (R7T7 type (SON68)-1998)	56	0.12	1.529	85.60	**2.8**	4.651	N/A	8.150E-05	0.08	DI water	90	9.06	67.4	43.8	1.26
A2 (R7T7 type (SON68)-1998)	97	0.12	1.529	148.27	**2.8**	4.651	N/A	8.150E-05	0.08	DI water	90	9.09	68.2	46.5	1.31
A2 (R7T7 type (SON68)-1998)	152	0.12	1.529	232.35	**2.8**	4.651	N/A	8.150E-05	0.08	DI water	90	9.01	73.2	49.9	2.21
A2 (R7T7 type (SON68)-1998)	240	0.12	1.529	366.86	**2.8**	4.651	N/A	8.150E-05	0.08	DI water	90	8.77	77.2	52.6	2.33
A2 (R7T7 type (SON68)-1998)	372	0.12	1.529	568.64	**2.8**	4.651	N/A	8.150E-05	0.08	DI water	90	8.98	84.20	62.3	1.51
A2 (R7T7 type (SON68)-1998)	594	0.12	1.529	907.98	**2.8**	4.651	N/A	8.150E-05	0.08	DI water	90	8.91	98.69	79.6	1.28
A21 (AVM6) 1999	7	0.68	2.280	15.96	**2.8**	30.000	N/A	9.400E-05	0.30	DI water	90	9.4	22	42	
A21 (AVM6) 1999	14	0.68	2.280	31.91	**2.8**	30.000	N/A	9.400E-05	0.30	DI water	90	9.45	26	59	
A21 (AVM6) 1999	28	0.68	2.280	63.83	**2.8**	30.000	N/A	9.400E-05	0.30	DI water	90	9.3	28	86	
A21 (AVM6) 1999	56	0.68	2.280	127.66	**2.8**	30.000	N/A	9.400E-05	0.30	DI water	90	9.25	28	138	
A21 (AVM6) 1999	91	0.68	2.280	207.45	**2.8**	30.000	N/A	9.400E-05	0.30	DI water	90	9.25	25	216	
A21 (AVM6) 1999	219	0.68	2.280	499.24	**2.8**	30.000	N/A	9.400E-05	0.30	DI water	90	9.1	16	615	
A21 (AVM6) 1999	364	0.68	2.280	829.79	**2.8**	30.000	N/A	9.400E-05	0.30	DI water	90	9.05	15	1047	
A21 (AVM6) 1999	728	0.68	2.280	1659.57	**2.8**	30.000	N/A	9.400E-05	0.30	DI water	90	9.26	20.5	1571	

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
HLP-69			85.920		11.550	<0.04		<0.01	0.410	<0.01	<0.01		
HLP-69			155.540		13.100	<0.04		<0.04	0.530	0.810	<0.01		
HLP-69			204.000		14.500	<0.40		<0.40	<0.70	<0.10	<0.10		
HLP-70			2119.400		9.570	<0.04		<0.01	<0.07	<0.01	<0.01		
HLP-70			5425.500		23.350	<0.04		<0.01	<0.07	<0.01	<0.01		
HLP-70			66400.000		124.000	<0.40		<0.40	<0.70	<0.10	<0.10		
HLP-71			11298.000		30.390	<0.04		<0.01	<0.07	<0.01	<0.01		
HLP-71			21800.000		85.060	<0.04		<0.01	<0.07	0.640	<0.01		
HLP-71			31462.000		65.400	<0.04		<0.04	<0.07	113.500	<0.01		
HLP-72			50.000		6.740	0.370		<0.01	<0.07	<0.01	<0.01		
HLP-72			180.490		9.880	0.260		2.150	<0.07	<0.01	<0.01		
HLP-72			808.290		5.230	<0.04		3.090	<0.07	<0.01	<0.01		
HLP-72			1440.000		6.080	<0.40		<0.40	<0.70	<0.10	<0.10		
HLP-73			324.000		3.570	<0.04		<0.01	<0.07	<0.01	<0.01		
HLP-73			1603.300		2.830	<0.04		<0.01	<0.07	<0.01	<0.01		
HLP-73			6568.600		<0.09	<0.04		<0.04	<0.07	<0.01	<0.01		
HLP-73			1925.400		2.210	<0.40		<0.40	<0.70	<0.10	<0.10		
HLP-74			78.790		5.290	<0.04		<0.01	<0.07	<0.01	<0.01		
HLP-74			341.470		6.570	0.040		<0.01	<0.07	<0.01	<0.01		
HLP-74			1010.000		1.760	<0.04		<0.04	<0.07	<0.01	<0.01		
HLP-74			1185.000		3.480	<0.40		<0.40	<0.70	<0.10	<0.10		
HLP-75			109.500		5.710	0.140		<0.01	<0.07	<0.01	<0.01		
HLP-75			319.990		9.980	0.680		<0.01	<0.07	<0.01	<0.01		
HLP-75			617.770		10.230	<0.04		<0.04	<0.07	<0.01	<0.01		
HLP-75			942.830		8.770	<0.40		<0.40	<0.70	<0.10	<0.10		
HLP-76			97.440		5.130	0.900		<0.01	<0.07	<0.01	<0.01		
HLP-76			339.090		9.490	1.400		<0.01	<0.07	<0.01	0.090		
HLP-76			751.000		10.030	<0.04		<0.04	<0.07	<0.01	<0.01		
HLP-76			1245.000		2.980	<0.40		<0.40	<0.70	<0.10	<0.10		
HLP-77			101.500		4.580	0.530		<0.01	<0.07	<0.01	<0.01		
HLP-77			300.960		8.910	0.850		<0.01	<0.07	<0.01	0.080		
HLP-77			649.360		10.800	<0.04		<0.04	<0.07	<0.01	<0.01		
HLP-77			952.630		12.480	<0.40		<0.40	<0.70	<0.10	<0.10		
A1 (R7T7 type (SON68) 1997		24.0	160		3.07		22.1						
A1 (R7T7 type (SON68) 1997		31.4	210		2.83		26.6						
A1 (R7T7 type (SON68) 1997		47.3	314		3.04		37.1						
A1 (R7T7 type (SON68) 1997		57.5	379		2.50		42.4						
A1 (R7T7 type (SON68) 1997		89.9	573		2.72		55.5						
A1 (R7T7 type (SON68) 1997		103.9	660		2.85		60.4						
A1 (R7T7 type (SON68) 1997		118.9	749		2.97		65.5						
A1 (R7T7 type (SON68) 1997		108.6	694		2.44		80.6						
A1 (R7T7 type (SON68) 1997		124.1	782		2.62		84.4						
A1 (R7T7 type (SON68) 1997		148.0	932		2.04		90.9						
A1 (R7T7 type (SON68) 1997		167.5	1054		1.95		99.7						
A1 (R7T7 type (SON68) 1997		192.9	1283		< 2		108.3						
A1 (R7T7 type (SON68) 1997		219.9	1546		< 2		148.2						
A1 (R7T7 type (SON68) 1997		252.9	1833		< 1		229.3						
A1 (R7T7 type (SON68) 1997		290.6	2277		< 1		312.6						
A1 (R7T7 type (SON68) 1997		316.3	2667		0.67		398.2						
A1 (R7T7 type (SON68) 1997		318.5	2714		0.53		404.4						
A1 (R7T7 type (SON68) 1997		333.1	2888		0.78		438.8						
A1 (R7T7 type (SON68) 1997		326.7	2785		0.00		450.1						
A1 (R7T7 type (SON68) 1997		342.8	2985		0.00		498.7						
A1 (R7T7 type (SON68) 1997		398.9	3594		0.32		585.8						
A1 (R7T7 type (SON68) 1997		441.6	3939		0.00		688.2						
A2 (R7T7 type (SON68)-1998)		2.8	19.2		1.35		2.75						
A2 (R7T7 type (SON68)-1998)		8.7	56.7		0.91		8.26						
A2 (R7T7 type (SON68)-1998)		9.7	61.8		0.76		8.93						
A2 (R7T7 type (SON68)-1998)		10.6	64.8		0.73		8.70						
A2 (R7T7 type (SON68)-1998)		11.6	68.9		0.69		9.40						
A2 (R7T7 type (SON68)-1998)		12.9	73.2		0.48		9.28						
A2 (R7T7 type (SON68)-1998)		13.6	77.2		0.51		9.79						
A2 (R7T7 type (SON68)-1998)		16.9	90.0		0.38		10.08						
A2 (R7T7 type (SON68)-1998)		21.4	109.0		0.47		10.70						
A21 (AVM6) 1999		1.2	73		0.53								
A21 (AVM6) 1999		1.8	101		0.48								
A21 (AVM6) 1999		2.6	144		0.41								
A21 (AVM6) 1999		4.2	223		0.32								
A21 (AVM6) 1999		6.5	337		0.21								
A21 (AVM6) 1999		17.5	848		0.34								
A21 (AVM6) 1999		38.3	1321		1.05								
A21 (AVM6) 1999		38.7	2000		0.68								

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
HLP-69		77.43	11.72	20.569079	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-69		77.43	11.72	20.569079	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-69		77.43	11.72	20.569079	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-70		73.55	16.61	-0.827083	Indeterminate	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-70		73.55	16.61	-0.827083	Indeterminate	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-70		73.55	16.61	-0.827083	Indeterminate	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-71		66.66	16.97	8.187824	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-71		66.66	16.97	8.187824	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-71		66.66	16.97	8.187824	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-72		60.10	19.54	4.191938	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-72		60.10	19.54	4.191938	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-72		60.10	19.54	4.191938	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-72		60.10	19.54	4.191938	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-73		67.99	25.37	-41.386351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-73		67.99	25.37	-41.386351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-73		67.99	25.37	-41.386351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-73		67.99	25.37	-41.386351	HOMOGENEOUS	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-74		64.58	27.77	-49.473136	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-74		64.58	27.77	-49.473136	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-74		64.58	27.77	-49.473136	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-74		64.58	27.77	-49.473136	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-75		73.85	15.88	2.814761	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-75		73.85	15.88	2.814761	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-75		73.85	15.88	2.814761	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-75		73.85	15.88	2.814761	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	High Ti	HOMOGENEOUS
HLP-76		84.51	12.18	6.618311	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-76		84.51	12.18	6.618311	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-76		84.51	12.18	6.618311	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-76		84.51	12.18	6.618311	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-77		86.06	11.83	6.109616	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-77		86.06	11.83	6.109616	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-77		86.06	11.83	6.109616	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
HLP-77		86.06	11.83	6.109616	Potential ϕ-sep	High alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1 (R7T7 type (SON68) 1997		72.03	17.71	-4.602343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1 (R7T7 type (SON68) 1997		72.03	17.71	-4.602343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1 (R7T7 type (SON68) 1997		72.03	17.71	-4.602343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1 (R7T7 type (SON68) 1997		72.03	17.71	-4.602343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1 (R7T7 type (SON68) 1997		72.03	17.71	-4.602343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1 (R7T7 type (SON68) 1997		72.03	17.71	-4.602343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1 (R7T7 type (SON68) 1997		72.03	17.71	-4.602343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1 (R7T7 type (SON68) 1997		72.03	17.71	-4.602343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1 (R7T7 type (SON68) 1997		72.03	17.71	-4.602343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1 (R7T7 type (SON68) 1997		72.03	17.71	-4.602343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1 (R7T7 type (SON68) 1997		72.03	17.71	-4.602343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1 (R7T7 type (SON68) 1997		72.03	17.71	-4.602343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1 (R7T7 type (SON68) 1997		72.03	17.71	-4.602343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1 (R7T7 type (SON68) 1997		72.03	17.71	-4.602343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1 (R7T7 type (SON68) 1997		72.03	17.71	-4.602343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A1 (R7T7 type (SON68) 1997		72.03	17.71	-4.602343	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2 (R7T7 type (SON68)-1998)		72.76	17.18	-2.779564	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2 (R7T7 type (SON68)-1998)		72.76	17.18	-2.779564	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2 (R7T7 type (SON68)-1998)		72.76	17.18	-2.779564	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2 (R7T7 type (SON68)-1998)		72.76	17.18	-2.779564	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2 (R7T7 type (SON68)-1998)		72.76	17.18	-2.779564	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2 (R7T7 type (SON68)-1998)		72.76	17.18	-2.779564	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2 (R7T7 type (SON68)-1998)		72.76	17.18	-2.779564	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A2 (R7T7 type (SON68)-1998)		72.76	17.18	-2.779564	HOMOGENEOUS	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A21 (AVM6) 1999		80.03	11.81	15.891677	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A21 (AVM6) 1999		80.03	11.81	15.891677	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A21 (AVM6) 1999		80.03	11.81	15.891677	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A21 (AVM6) 1999		80.03	11.81	15.891677	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A21 (AVM6) 1999		80.03	11.81	15.891677	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A21 (AVM6) 1999		80.03	11.81	15.891677	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A21 (AVM6) 1999		80.03	11.81	15.891677	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
HLP-69	11.310	6.110	0.00	0.000	0.00	0.00	0.070	0.00	0.00	0.00	0.00	0.380	0.380	0.00	0.010	0.110
HLP-69	11.310	6.110	0.00	0.000	0.00	0.00	0.070	0.00	0.00	0.00	0.00	0.380	0.380	0.00	0.010	0.110
HLP-69	11.310	6.110	0.00	0.000	0.00	0.00	0.070	0.00	0.00	0.00	0.00	0.380	0.380	0.00	0.010	0.110
HLP-70	11.790	6.160	0.00	4.560	0.00	0.00	0.070	0.00	0.00	0.00	0.00	0.230	4.970	0.00	0.010	0.120
HLP-70	11.790	6.160	0.00	4.560	0.00	0.00	0.070	0.00	0.00	0.00	0.00	0.230	4.970	0.00	0.010	0.120
HLP-70	11.790	6.160	0.00	4.560	0.00	0.00	0.070	0.00	0.00	0.00	0.00	0.230	4.970	0.00	0.010	0.120
HLP-71	11.840	5.900	0.00	4.650	0.00	0.00	0.090	0.00	0.00	0.00	0.00	0.450	0.370	0.00	0.010	0.130
HLP-71	11.840	5.900	0.00	4.650	0.00	0.00	0.090	0.00	0.00	0.00	0.00	0.450	0.370	0.00	0.010	0.130
HLP-71	11.840	5.900	0.00	4.650	0.00	0.00	0.090	0.00	0.00	0.00	0.00	0.450	0.370	0.00	0.010	0.130
HLP-72	4.010	6.150	0.00	0.170	0.00	0.00	0.080	0.00	0.00	0.00	0.00	15.330	0.370	0.00	0.010	0.150
HLP-72	4.010	6.150	0.00	0.170	0.00	0.00	0.080	0.00	0.00	0.00	0.00	15.330	0.370	0.00	0.010	0.150
HLP-72	4.010	6.150	0.00	0.170	0.00	0.00	0.080	0.00	0.00	0.00	0.00	15.330	0.370	0.00	0.010	0.150
HLP-72	4.010	6.150	0.00	0.170	0.00	0.00	0.080	0.00	0.00	0.00	0.00	15.330	0.370	0.00	0.010	0.150
HLP-73	11.810	12.200	0.00	0.040	0.00	0.00	0.090	0.00	0.00	0.00	0.00	13.490	4.780	0.00	0.010	0.130
HLP-73	11.810	12.200	0.00	0.040	0.00	0.00	0.090	0.00	0.00	0.00	0.00	13.490	4.780	0.00	0.010	0.130
HLP-73	11.810	12.200	0.00	0.040	0.00	0.00	0.090	0.00	0.00	0.00	0.00	13.490	4.780	0.00	0.010	0.130
HLP-73	11.810	12.200	0.00	0.040	0.00	0.00	0.090	0.00	0.00	0.00	0.00	13.490	4.780	0.00	0.010	0.130
HLP-74	11.930	12.450	0.00	4.730	0.00	0.00	0.080	0.00	0.00	0.00	0.00	11.080	0.420	0.00	0.010	0.140
HLP-74	11.930	12.450	0.00	4.730	0.00	0.00	0.080	0.00	0.00	0.00	0.00	11.080	0.420	0.00	0.010	0.140
HLP-74	11.930	12.450	0.00	4.730	0.00	0.00	0.080	0.00	0.00	0.00	0.00	11.080	0.420	0.00	0.010	0.140
HLP-74	11.930	12.450	0.00	4.730	0.00	0.00	0.080	0.00	0.00	0.00	0.00	11.080	0.420	0.00	0.010	0.140
HLP-75	7.620	9.430	0.00	2.380	0.00	0.00	0.090	0.00	0.00	0.00	0.00	5.850	2.640	0.00	0.010	0.280
HLP-75	7.620	9.430	0.00	2.380	0.00	0.00	0.090	0.00	0.00	0.00	0.00	5.850	2.640	0.00	0.010	0.280
HLP-75	7.620	9.430	0.00	2.380	0.00	0.00	0.090	0.00	0.00	0.00	0.00	5.850	2.640	0.00	0.010	0.280
HLP-75	7.620	9.430	0.00	2.380	0.00	0.00	0.090	0.00	0.00	0.00	0.00	5.850	2.640	0.00	0.010	0.280
HLP-76	9.970	7.850	0.00	0.540	0.00	0.00	0.190	0.00	0.00	0.00	0.00	1.570	1.640	0.00	0.010	0.180
HLP-76	9.970	7.850	0.00	0.540	0.00	0.00	0.190	0.00	0.00	0.00	0.00	1.570	1.640	0.00	0.010	0.180
HLP-76	9.970	7.850	0.00	0.540	0.00	0.00	0.190	0.00	0.00	0.00	0.00	1.570	1.640	0.00	0.010	0.180
HLP-76	9.970	7.850	0.00	0.540	0.00	0.00	0.190	0.00	0.00	0.00	0.00	1.570	1.640	0.00	0.010	0.180
HLP-77	9.580	7.900	0.00	0.490	0.00	0.00	0.180	0.00	0.00	0.00	0.00	1.670	1.560	0.00	0.010	0.190
HLP-77	9.580	7.900	0.00	0.490	0.00	0.00	0.180	0.00	0.00	0.00	0.00	1.670	1.560	0.00	0.010	0.190
HLP-77	9.580	7.900	0.00	0.490	0.00	0.00	0.180	0.00	0.00	0.00	0.00	1.670	1.560	0.00	0.010	0.190
HLP-77	9.580	7.900	0.00	0.490	0.00	0.00	0.180	0.00	0.00	0.00	0.00	1.670	1.560	0.00	0.010	0.190
A1 (R7T7 type (SON68) 1997	4.92	13.92	0.61	4.01	0.00	0.95	0.52	0.97	0.00	0.00	0.00	2.98	0.00	0.00	1.49	1.96
A1 (R7T7 type (SON68) 1997	4.92	13.92	0.61	4.01	0.00	0.95	0.52	0.97	0.00	0.00	0.00	2.98	0.00	0.00	1.49	1.96
A1 (R7T7 type (SON68) 1997	4.92	13.92	0.61	4.01	0.00	0.95	0.52	0.97	0.00	0.00	0.00	2.98	0.00	0.00	1.49	1.96
A1 (R7T7 type (SON68) 1997	4.92	13.92	0.61	4.01	0.00	0.95	0.52	0.97	0.00	0.00	0.00	2.98	0.00	0.00	1.49	1.96
A1 (R7T7 type (SON68) 1997	4.92	13.92	0.61	4.01	0.00	0.95	0.52	0.97	0.00	0.00	0.00	2.98	0.00	0.00	1.49	1.96
A1 (R7T7 type (SON68) 1997	4.92	13.92	0.61	4.01	0.00	0.95	0.52	0.97	0.00	0.00	0.00	2.98	0.00	0.00	1.49	1.96
A1 (R7T7 type (SON68) 1997	4.92	13.92	0.61	4.01	0.00	0.95	0.52	0.97	0.00	0.00	0.00	2.98	0.00	0.00	1.49	1.96
A1 (R7T7 type (SON68) 1997	4.92	13.92	0.61	4.01	0.00	0.95	0.52	0.97	0.00	0.00	0.00	2.98	0.00	0.00	1.49	1.96
A1 (R7T7 type (SON68) 1997	4.92	13.92	0.61	4.01	0.00	0.95	0.52	0.97	0.00	0.00	0.00	2.98	0.00	0.00	1.49	1.96
A1 (R7T7 type (SON68) 1997	4.92	13.92	0.61	4.01	0.00	0.95	0.52	0.97	0.00	0.00	0.00	2.98	0.00	0.00	1.49	1.96
A1 (R7T7 type (SON68) 1997	4.92	13.92	0.61	4.01	0.00	0.95	0.52	0.97	0.00	0.00	0.00	2.98	0.00	0.00	1.49	1.96
A1 (R7T7 type (SON68) 1997	4.92	13.92	0.61	4.01	0.00	0.95	0.52	0.97	0.00	0.00	0.00	2.98	0.00	0.00	1.49	1.96
A1 (R7T7 type (SON68) 1997	4.92	13.92	0.61	4.01	0.00	0.95	0.52	0.97	0.00	0.00	0.00	2.98	0.00	0.00	1.49	1.96
A1 (R7T7 type (SON68) 1997	4.92	13.92	0.61	4.01	0.00	0.95	0.52	0.97	0.00	0.00	0.00	2.98	0.00	0.00	1.49	1.96
A1 (R7T7 type (SON68) 1997	4.92	13.92	0.61	4.01	0.00	0.95	0.52	0.97	0.00	0.00	0.00	2.98	0.00	0.00	1.49	1.96
A1 (R7T7 type (SON68) 1997	4.92	13.92	0.61	4.01	0.00	0.95	0.52	0.97	0.00	0.00	0.00	2.98	0.00	0.00	1.49	1.96
A1 (R7T7 type (SON68) 1997	4.92	13.92	0.61	4.01	0.00	0.95	0.52	0.97	0.00	0.00	0.00	2.98	0.00	0.00	1.49	1.96
A2 (R7T7 type (SON68)-1998)	4.91	14.02	0.60	4.04	0.00	0.93	0.51	1.42	0.00	0.00	0.00	2.91	0.00	0.00	0.90	1.98
A2 (R7T7 type (SON68)-1998)	4.91	14.02	0.60	4.04	0.00	0.93	0.51	1.42	0.00	0.00	0.00	2.91	0.00	0.00	0.90	1.98
A2 (R7T7 type (SON68)-1998)	4.91	14.02	0.60	4.04	0.00	0.93	0.51	1.42	0.00	0.00	0.00	2.91	0.00	0.00	0.90	1.98
A2 (R7T7 type (SON68)-1998)	4.91	14.02	0.60	4.04	0.00	0.93	0.51	1.42	0.00	0.00	0.00	2.91	0.00	0.00	0.90	1.98
A2 (R7T7 type (SON68)-1998)	4.91	14.02	0.60	4.04	0.00	0.93	0.51	1.42	0.00	0.00	0.00	2.91	0.00	0.00	0.90	1.98
A2 (R7T7 type (SON68)-1998)	4.91	14.02	0.60	4.04	0.00	0.93	0.51	1.42	0.00	0.00	0.00	2.91	0.00	0.00	0.90	1.98
A2 (R7T7 type (SON68)-1998)	4.91	14.02	0.60	4.04	0.00	0.93	0.51	1.42	0.00	0.00	0.00	2.91	0.00	0.00	0.90	1.98
A2 (R7T7 type (SON68)-1998)	4.91	14.02	0.60	4.04	0.00	0.93	0.51	1.42	0.00	0.00	0.00	2.91	0.00	0.00	0.90	1.98
A21 (AVM6) 1999	9	19.5	0.07	0.2	0.00	0.11	0.45	0.14	0.00	0.00	0.00	1.9	0.00	0.23	0.11	0.4
A21 (AVM6) 1999	9	19.5	0.07	0.2	0.00	0.11	0.45	0.14	0.00	0.00	0.00	1.9	0.00	0.23	0.11	0.4
A21 (AVM6) 1999	9	19.5	0.07	0.2	0.00	0.11	0.45	0.14	0.00	0.00	0.00	1.9	0.00	0.23	0.11	0.4
A21 (AVM6) 1999	9	19.5	0.07	0.2	0.00	0.11	0.45	0.14	0.00	0.00	0.00	1.9	0.00	0.23	0.11	0.4
A21 (AVM6) 1999	9	19.5	0.07	0.2	0.00	0.11	0.45	0.14	0.00	0.00	0.00	1.9	0.00	0.23	0.11	0.4
A21 (AVM6) 1999	9	19.5	0.07	0.2	0.00	0.11	0.45	0.14	0.00	0.00	0.00	1.9	0.00	0.23	0.11	0.4
A21 (AVM6) 1999	9	19.5	0.07	0.2	0.00	0.11	0.45	0.14	0.00	0.00	0.00	1.9	0.00	0.23	0.11	0.4
A21 (AVM6) 1999	9	19.5	0.07	0.2	0.00	0.11	0.45	0.14	0.00	0.00	0.00	1.9	0.00	0.23	0.11	0.4

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
HLP-69	0.000	0.00	0.00	0.020	16.940	0.00	0.00	0.00	0.090	0.00	0.00	0.00	0.00	53.890	0.00	0.00
HLP-69	0.000	0.00	0.00	0.020	16.940	0.00	0.00	0.00	0.090	0.00	0.00	0.00	0.00	53.890	0.00	0.00
HLP-69	0.000	0.00	0.00	0.020	16.940	0.00	0.00	0.00	0.090	0.00	0.00	0.00	0.00	53.890	0.00	0.00
HLP-70	0.000	0.00	0.00	0.020	24.310	0.00	0.00	0.00	1.930	0.00	0.00	0.00	0.00	37.990	0.00	0.00
HLP-70	0.000	0.00	0.00	0.020	24.310	0.00	0.00	0.00	1.930	0.00	0.00	0.00	0.00	37.990	0.00	0.00
HLP-70	0.000	0.00	0.00	0.020	24.310	0.00	0.00	0.00	1.930	0.00	0.00	0.00	0.00	37.990	0.00	0.00
HLP-71	3.910	0.00	0.00	0.020	24.470	0.00	0.00	0.00	0.040	0.00	0.00	0.00	0.00	35.790	0.00	0.00
HLP-71	3.910	0.00	0.00	0.020	24.470	0.00	0.00	0.00	0.040	0.00	0.00	0.00	0.00	35.790	0.00	0.00
HLP-71	3.910	0.00	0.00	0.020	24.470	0.00	0.00	0.00	0.040	0.00	0.00	0.00	0.00	35.790	0.00	0.00
HLP-72	0.040	0.00	0.00	0.020	16.420	0.00	0.00	0.00	0.870	0.00	0.00	0.00	0.00	37.010	0.00	0.00
HLP-72	0.040	0.00	0.00	0.020	16.420	0.00	0.00	0.00	0.870	0.00	0.00	0.00	0.00	37.010	0.00	0.00
HLP-72	0.040	0.00	0.00	0.020	16.420	0.00	0.00	0.00	0.870	0.00	0.00	0.00	0.00	37.010	0.00	0.00
HLP-72	0.040	0.00	0.00	0.020	16.420	0.00	0.00	0.00	0.870	0.00	0.00	0.00	0.00	37.010	0.00	0.00
HLP-73	3.910	0.00	0.00	0.020	15.560	0.00	0.00	0.00	0.050	0.00	0.00	0.00	0.00	35.320	0.00	0.00
HLP-73	3.910	0.00	0.00	0.020	15.560	0.00	0.00	0.00	0.050	0.00	0.00	0.00	0.00	35.320	0.00	0.00
HLP-73	3.910	0.00	0.00	0.020	15.560	0.00	0.00	0.00	0.050	0.00	0.00	0.00	0.00	35.320	0.00	0.00
HLP-73	3.910	0.00	0.00	0.020	15.560	0.00	0.00	0.00	0.050	0.00	0.00	0.00	0.00	35.320	0.00	0.00
HLP-74	0.000	0.00	0.00	0.020	15.730	0.00	0.00	0.00	2.010	0.00	0.00	0.00	0.00	35.840	0.00	0.00
HLP-74	0.000	0.00	0.00	0.020	15.730	0.00	0.00	0.00	2.010	0.00	0.00	0.00	0.00	35.840	0.00	0.00
HLP-74	0.000	0.00	0.00	0.020	15.730	0.00	0.00	0.00	2.010	0.00	0.00	0.00	0.00	35.840	0.00	0.00
HLP-74	0.000	0.00	0.00	0.020	15.730	0.00	0.00	0.00	2.010	0.00	0.00	0.00	0.00	35.840	0.00	0.00
HLP-75	1.950	0.00	0.00	0.020	19.250	0.00	0.00	0.00	0.800	0.00	0.00	0.00	0.00	42.250	0.00	0.00
HLP-75	1.950	0.00	0.00	0.020	19.250	0.00	0.00	0.00	0.800	0.00	0.00	0.00	0.00	42.250	0.00	0.00
HLP-75	1.950	0.00	0.00	0.020	19.250	0.00	0.00	0.00	0.800	0.00	0.00	0.00	0.00	42.250	0.00	0.00
HLP-75	1.950	0.00	0.00	0.020	19.250	0.00	0.00	0.00	0.800	0.00	0.00	0.00	0.00	42.250	0.00	0.00
HLP-76	0.090	0.00	0.00	0.090	19.380	0.00	0.00	0.00	0.520	0.00	0.00	0.00	0.00	55.460	0.00	0.00
HLP-76	0.090	0.00	0.00	0.090	19.380	0.00	0.00	0.00	0.520	0.00	0.00	0.00	0.00	55.460	0.00	0.00
HLP-76	0.090	0.00	0.00	0.090	19.380	0.00	0.00	0.00	0.520	0.00	0.00	0.00	0.00	55.460	0.00	0.00
HLP-76	0.090	0.00	0.00	0.090	19.380	0.00	0.00	0.00	0.520	0.00	0.00	0.00	0.00	55.460	0.00	0.00
HLP-77	0.060	0.00	0.00	0.080	20.290	0.00	0.00	0.00	0.520	0.00	0.00	0.00	0.00	56.120	0.00	0.00
HLP-77	0.060	0.00	0.00	0.080	20.290	0.00	0.00	0.00	0.520	0.00	0.00	0.00	0.00	56.120	0.00	0.00
HLP-77	0.060	0.00	0.00	0.080	20.290	0.00	0.00	0.00	0.520	0.00	0.00	0.00	0.00	56.120	0.00	0.00
HLP-77	0.060	0.00	0.00	0.080	20.290	0.00	0.00	0.00	0.520	0.00	0.00	0.00	0.00	56.120	0.00	0.00
A1 (R7T7 type (SON68) 1997	0.00	0.00	1.37	1.74	10.06	1.62	0.86	0.00	0.29	0.00	0.00	0.54	0.00	45.12	0.00	0.00
A1 (R7T7 type (SON68) 1997	0.00	0.00	1.37	1.74	10.06	1.62	0.86	0.00	0.29	0.00	0.00	0.54	0.00	45.12	0.00	0.00
A1 (R7T7 type (SON68) 1997	0.00	0.00	1.37	1.74	10.06	1.62	0.86	0.00	0.29	0.00	0.00	0.54	0.00	45.12	0.00	0.00
A1 (R7T7 type (SON68) 1997	0.00	0.00	1.37	1.74	10.06	1.62	0.86	0.00	0.29	0.00	0.00	0.54	0.00	45.12	0.00	0.00
A1 (R7T7 type (SON68) 1997	0.00	0.00	1.37	1.74	10.06	1.62	0.86	0.00	0.29	0.00	0.00	0.54	0.00	45.12	0.00	0.00
A1 (R7T7 type (SON68) 1997	0.00	0.00	1.37	1.74	10.06	1.62	0.86	0.00	0.29	0.00	0.00	0.54	0.00	45.12	0.00	0.00
A1 (R7T7 type (SON68) 1997	0.00	0.00	1.37	1.74	10.06	1.62	0.86	0.00	0.29	0.00	0.00	0.54	0.00	45.12	0.00	0.00
A1 (R7T7 type (SON68) 1997	0.00	0.00	1.37	1.74	10.06	1.62	0.86	0.00	0.29	0.00	0.00	0.54	0.00	45.12	0.00	0.00
A1 (R7T7 type (SON68) 1997	0.00	0.00	1.37	1.74	10.06	1.62	0.86	0.00	0.29	0.00	0.00	0.54	0.00	45.12	0.00	0.00
A1 (R7T7 type (SON68) 1997	0.00	0.00	1.37	1.74	10.06	1.62	0.86	0.00	0.29	0.00	0.00	0.54	0.00	45.12	0.00	0.00
A1 (R7T7 type (SON68) 1997	0.00	0.00	1.37	1.74	10.06	1.62	0.86	0.00	0.29	0.00	0.00	0.54	0.00	45.12	0.00	0.00
A1 (R7T7 type (SON68) 1997	0.00	0.00	1.37	1.74	10.06	1.62	0.86	0.00	0.29	0.00	0.00	0.54	0.00	45.12	0.00	0.00
A1 (R7T7 type (SON68) 1997	0.00	0.00	1.37	1.74	10.06	1.62	0.86	0.00	0.29	0.00	0.00	0.54	0.00	45.12	0.00	0.00
A1 (R7T7 type (SON68) 1997	0.00	0.00	1.37	1.74	10.06	1.62	0.86	0.00	0.29	0.00	0.00	0.54	0.00	45.12	0.00	0.00
A1 (R7T7 type (SON68) 1997	0.00	0.00	1.37	1.74	10.06	1.62	0.86	0.00	0.29	0.00	0.00	0.54	0.00	45.12	0.00	0.00
A1 (R7T7 type (SON68) 1997	0.00	0.00	1.37	1.74	10.06	1.62	0.86	0.00	0.29	0.00	0.00	0.54	0.00	45.12	0.00	0.00
A2 (R7T7 type (SON68)-1998)	0	0.00	0.72	1.70	9.86	1.59	0.74	0.00	0.28	0.00	0.00	0.44	0.00	45.48	0.00	0.00
A2 (R7T7 type (SON68)-1998)	0	0.00	0.72	1.70	9.86	1.59	0.74	0.00	0.28	0.00	0.00	0.44	0.00	45.48	0.00	0.00
A2 (R7T7 type (SON68)-1998)	0	0.00	0.72	1.70	9.86	1.59	0.74	0.00	0.28	0.00	0.00	0.44	0.00	45.48	0.00	0.00
A2 (R7T7 type (SON68)-1998)	0	0.00	0.72	1.70	9.86	1.59	0.74	0.00	0.28	0.00	0.00	0.44	0.00	45.48	0.00	0.00
A2 (R7T7 type (SON68)-1998)	0	0.00	0.72	1.70	9.86	1.59	0.74	0.00	0.28	0.00	0.00	0.44	0.00	45.48	0.00	0.00
A2 (R7T7 type (SON68)-1998)	0	0.00	0.72	1.70	9.86	1.59	0.74	0.00	0.28	0.00	0.00	0.44	0.00	45.48	0.00	0.00
A2 (R7T7 type (SON68)-1998)	0	0.00	0.72	1.70	9.86	1.59	0.74	0.00	0.28	0.00	0.00	0.44	0.00	45.48	0.00	0.00
A2 (R7T7 type (SON68)-1998)	0	0.00	0.72	1.70	9.86	1.59	0.74	0.00	0.28	0.00	0.00	0.44	0.00	45.48	0.00	0.00
A21 (AVM6) 1999	3.8	0.00	0.06	0.29	15.5	0.18	0.30	0.00	0.00	0.00	0.1	0.05	0.15	44.49	0.00	0.00
A21 (AVM6) 1999	3.8	0.00	0.06	0.29	15.5	0.18	0.30	0.00	0.00	0.00	0.1	0.05	0.15	44.49	0.00	0.00
A21 (AVM6) 1999	3.8	0.00	0.06	0.29	15.5	0.18	0.30	0.00	0.00	0.00	0.1	0.05	0.15	44.49	0.00	0.00
A21 (AVM6) 1999	3.8	0.00	0.06	0.29	15.5	0.18	0.30	0.00	0.00	0.00	0.1	0.05	0.15	44.49	0.00	0.00
A21 (AVM6) 1999	3.8	0.00	0.06	0.29	15.5	0.18	0.30	0.00	0.00	0.00	0.1	0.05	0.15	44.49	0.00	0.00
A21 (AVM6) 1999	3.8	0.00	0.06	0.29	15.5	0.18	0.30	0.00	0.00	0.00	0.1	0.05	0.15	44.49	0.00	0.00
A21 (AVM6) 1999	3.8	0.00	0.06	0.29	15.5	0.18	0.30	0.00	0.00	0.00	0.1	0.05	0.15	44.49	0.00	0.00
A21 (AVM6) 1999	3.8	0.00	0.06	0.29	15.5	0.18	0.30	0.00	0.00	0.00	0.1	0.05	0.15	44.49	0.00	0.00

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
HLP-69	0.00	0.00	0.00	8.790	0.00	0.00	3.940	0.070	0.00	102.11		
HLP-69	0.00	0.00	0.00	8.790	0.00	0.00	3.940	0.070	0.00	102.11		
HLP-69	0.00	0.00	0.00	8.790	0.00	0.00	3.940	0.070	0.00	102.11		
HLP-70	0.00	0.00	0.00	8.430	0.00	0.00	0.000	0.050	0.00	100.64		
HLP-70	0.00	0.00	0.00	8.430	0.00	0.00	0.000	0.050	0.00	100.64		
HLP-70	0.00	0.00	0.00	8.430	0.00	0.00	0.000	0.050	0.00	100.64		
HLP-71	0.00	0.00	0.00	0.010	0.00	0.00	3.930	6.120	0.00	97.73		
HLP-71	0.00	0.00	0.00	0.010	0.00	0.00	3.930	6.120	0.00	97.73		
HLP-71	0.00	0.00	0.00	0.010	0.00	0.00	3.930	6.120	0.00	97.73		
HLP-72	0.00	0.00	0.00	8.560	0.00	0.00	3.860	3.850	0.00	96.90		
HLP-72	0.00	0.00	0.00	8.560	0.00	0.00	3.860	3.850	0.00	96.90		
HLP-72	0.00	0.00	0.00	8.560	0.00	0.00	3.860	3.850	0.00	96.90		
HLP-72	0.00	0.00	0.00	8.560	0.00	0.00	3.860	3.850	0.00	96.90		
HLP-73	0.00	0.00	0.00	0.020	0.00	0.00	0.010	0.010	0.00	97.45		
HLP-73	0.00	0.00	0.00	0.020	0.00	0.00	0.010	0.010	0.00	97.45		
HLP-73	0.00	0.00	0.00	0.020	0.00	0.00	0.010	0.010	0.00	97.45		
HLP-73	0.00	0.00	0.00	0.020	0.00	0.00	0.010	0.010	0.00	97.45		
HLP-74	0.00	0.00	0.00	0.000	0.00	0.00	4.010	0.000	0.00	98.45		
HLP-74	0.00	0.00	0.00	0.000	0.00	0.00	4.010	0.000	0.00	98.45		
HLP-74	0.00	0.00	0.00	0.000	0.00	0.00	4.010	0.000	0.00	98.45		
HLP-74	0.00	0.00	0.00	0.000	0.00	0.00	4.010	0.000	0.00	98.45		
HLP-75	0.00	0.00	0.00	3.660	0.00	0.00	1.970	2.530	0.00	100.73		
HLP-75	0.00	0.00	0.00	3.660	0.00	0.00	1.970	2.530	0.00	100.73		
HLP-75	0.00	0.00	0.00	3.660	0.00	0.00	1.970	2.530	0.00	100.73		
HLP-75	0.00	0.00	0.00	3.660	0.00	0.00	1.970	2.530	0.00	100.73		
HLP-76	0.00	0.00	0.00	0.130	0.00	0.00	0.010	1.110	0.00	98.74		
HLP-76	0.00	0.00	0.00	0.130	0.00	0.00	0.010	1.110	0.00	98.74		
HLP-76	0.00	0.00	0.00	0.130	0.00	0.00	0.010	1.110	0.00	98.74		
HLP-76	0.00	0.00	0.00	0.130	0.00	0.00	0.010	1.110	0.00	98.74		
HLP-77	0.00	0.00	0.00	0.080	0.00	0.00	0.000	1.010	0.00	99.74		
HLP-77	0.00	0.00	0.00	0.080	0.00	0.00	0.000	1.010	0.00	99.74		
HLP-77	0.00	0.00	0.00	0.080	0.00	0.00	0.000	1.010	0.00	99.74		
HLP-77	0.00	0.00	0.00	0.080	0.00	0.00	0.000	1.010	0.00	99.74		
A1 (R7T7 type (SON68) 1997	0.34	0.23	0.00	0.000	0.00	0.00	2.48	2.7	0.17	99.85		
A1 (R7T7 type (SON68) 1997	0.34	0.23	0.00	0.000	0.00	0.00	2.48	2.7	0.17	99.85		
A1 (R7T7 type (SON68) 1997	0.34	0.23	0.00	0.000	0.00	0.00	2.48	2.7	0.17	99.85		
A1 (R7T7 type (SON68) 1997	0.34	0.23	0.00	0.000	0.00	0.00	2.48	2.7	0.17	99.85		
A1 (R7T7 type (SON68) 1997	0.34	0.23	0.00	0.000	0.00	0.00	2.48	2.7	0.17	99.85		
A1 (R7T7 type (SON68) 1997	0.34	0.23	0.00	0.000	0.00	0.00	2.48	2.7	0.17	99.85		
A1 (R7T7 type (SON68) 1997	0.34	0.23	0.00	0.000	0.00	0.00	2.48	2.7	0.17	99.85		
A1 (R7T7 type (SON68) 1997	0.34	0.23	0.00	0.000	0.00	0.00	2.48	2.7	0.17	99.85		
A1 (R7T7 type (SON68) 1997	0.34	0.23	0.00	0.000	0.00	0.00	2.48	2.7	0.17	99.85		
A1 (R7T7 type (SON68) 1997	0.34	0.23	0.00	0.000	0.00	0.00	2.48	2.7	0.17	99.85		
A1 (R7T7 type (SON68) 1997	0.34	0.23	0.00	0.000	0.00	0.00	2.48	2.7	0.17	99.85		
A1 (R7T7 type (SON68) 1997	0.34	0.23	0.00	0.000	0.00	0.00	2.48	2.7	0.17	99.85		
A1 (R7T7 type (SON68) 1997	0.34	0.23	0.00	0.000	0.00	0.00	2.48	2.7	0.17	99.85		
A1 (R7T7 type (SON68) 1997	0.34	0.23	0.00	0.000	0.00	0.00	2.48	2.7	0.17	99.85		
A1 (R7T7 type (SON68) 1997	0.34	0.23	0.00	0.000	0.00	0.00	2.48	2.7	0.17	99.85		
A1 (R7T7 type (SON68) 1997	0.34	0.23	0.00	0.000	0.00	0.00	2.48	2.7	0.17	99.85		
A1 (R7T7 type (SON68) 1997	0.34	0.23	0.00	0.000	0.00	0.00	2.48	2.7	0.17	99.85		
A2 (R7T7 type (SON68)-1998)	0.33	0.23	0.33	0.000	0.00	0.20	2.5	2.65	0.73	100.00		
A2 (R7T7 type (SON68)-1998)	0.33	0.23	0.33	0.000	0.00	0.20	2.5	2.65	0.73	100.00		
A2 (R7T7 type (SON68)-1998)	0.33	0.23	0.33	0.000	0.00	0.20	2.5	2.65	0.73	100.00		
A2 (R7T7 type (SON68)-1998)	0.33	0.23	0.33	0.000	0.00	0.20	2.5	2.65	0.73	100.00		
A2 (R7T7 type (SON68)-1998)	0.33	0.23	0.33	0.000	0.00	0.20	2.5	2.65	0.73	100.00		
A2 (R7T7 type (SON68)-1998)	0.33	0.23	0.33	0.000	0.00	0.20	2.5	2.65	0.73	100.00		
A2 (R7T7 type (SON68)-1998)	0.33	0.23	0.33	0.000	0.00	0.20	2.5	2.65	0.73	100.00		
A2 (R7T7 type (SON68)-1998)	0.33	0.23	0.33	0.000	0.00	0.20	2.5	2.65	0.73	100.00		
A21 (AVM6) 1999	0.04	0.03	0.00	0.000	0.00	0.02	0.00	0.19	2.44	99.75	99.75	0.00
A21 (AVM6) 1999	0.04	0.03	0.00	0.000	0.00	0.02	0.00	0.19	2.44	99.75		
A21 (AVM6) 1999	0.04	0.03	0.00	0.000	0.00	0.02	0.00	0.19	2.44	99.75		
A21 (AVM6) 1999	0.04	0.03	0.00	0.000	0.00	0.02	0.00	0.19	2.44	99.75		
A21 (AVM6) 1999	0.04	0.03	0.00	0.000	0.00	0.02	0.00	0.19	2.44	99.75		
A21 (AVM6) 1999	0.04	0.03	0.00	0.000	0.00	0.02	0.00	0.19	2.44	99.75		
A21 (AVM6) 1999	0.04	0.03	0.00	0.000	0.00	0.02	0.00	0.19	2.44	99.75		
A21 (AVM6) 1999	0.04	0.03	0.00	0.000	0.00	0.02	0.00	0.19	2.44	99.75		

Glass ID	Nominal Test Duration (days)	SA =(6*mass)/ density*diameter of particle (m^2)	SA/V (m^2/L)	(SA/V)*time (m^2-day/L)	Density (g/cc)	Nominal Mass Glass (g)	Nominal Mesh Size of Glass	Geometric Diameter of Average Particle (m)	Nominal Volume (L) Leachant Used	Type of Leachant	Nominal Temperature (°C)	pH	Si (ppm)	B (ppm)	Ca (ppm)
A21 (AVM6) 1999	910	0.68	2.280	2074.47	**2.8**	30.000	N/A	9.400E-05	0.30	DI water	90	8.95	19.7	1660	
A21 (AVM6) 1999	1092	0.68	2.280	2489.36	**2.8**	30.000	N/A	9.400E-05	0.30	DI water	90		17.6	1722	
A22 (AVM6) 1999	7	0.68	2.280	15.96	**2.8**	30.000	N/A	9.400E-05	0.30	DI water	90	9.4	10	8	
A22 (AVM6) 1999	14	0.68	2.280	31.91	**2.8**	30.000	N/A	9.400E-05	0.30	DI water	90	9.5	11	9	
A22 (AVM6) 1999	28	0.68	2.280	63.83	**2.8**	30.000	N/A	9.400E-05	0.30	DI water	90	9.35	12	10	
A22 (AVM6) 1999	56	0.68	2.280	127.66	**2.8**	30.000	N/A	9.400E-05	0.30	DI water	90	9.25	11	11	
A22 (AVM6) 1999	91	0.68	2.280	207.45	**2.8**	30.000	N/A	9.400E-05	0.30	DI water	90	9.2	11	13	
A22 (AVM6) 1999	219	0.68	2.280	499.24	**2.8**	30.000	N/A	9.400E-05	0.30	DI water	90	8.95	11	19	
A22 (AVM6) 1999	364	0.68	2.280	829.79	**2.8**	30.000	N/A	9.400E-05	0.30	DI water	90	8.9	12	28	
A22 (AVM6) 1999	728	0.68	2.280	1659.57	**2.8**	30.000	N/A	9.400E-05	0.30	DI water	90	8.90	12.9	38	
A22 (AVM6) 1999	910	0.68	2.280	2074.47	**2.8**	30.000	N/A	9.400E-05	0.30	DI water	90	8.85	11.9	41	
A22 (AVM6) 1999	1092	0.68	2.280	2489.36	**2.8**	30.000	N/A	9.400E-05	0.30	DI water	90	8.85	14.2	46	
B1 (simplified-same molar comp SON68)-1997	1	0.88	2.947	2.95	**2.8**	28.880	N/A	7.000E-05	0.30	DI water	90	9.03	194	189.9	
B1 (simplified-same molar comp SON68)-1997	7	0.88	2.947	20.63	**2.8**	28.880	N/A	7.000E-05	0.30	DI water	90	9.07	242	435.7	
B1 (simplified-same molar comp SON68)-1997	14	0.88	2.947	41.26	**2.8**	28.880	N/A	7.000E-05	0.30	DI water	90	9.08	237	713.7	
B1 (simplified-same molar comp SON68)-1997	28	0.88	2.947	82.51	**2.8**	28.880	N/A	7.000E-05	0.30	DI water	90	9.11	221	985.3	
B1 (simplified-same molar comp SON68)-1997	56	0.88	2.947	165.03	**2.8**	28.880	N/A	7.000E-05	0.30	DI water	90	9.33	366	1572.8	
B1 (simplified-same molar comp SON68)-1997	90	0.88	2.947	265.22	**2.8**	28.880	N/A	7.000E-05	0.30	DI water	90	9.18	311	1858.5	
B1 (simplified-same molar comp SON68)-1997	140	0.88	2.947	412.57	**2.8**	28.880	N/A	7.000E-05	0.30	DI water	90	9.24	386	2413.0	
B1 (simplified-same molar comp SON68)-1997	182	0.88	2.947	536.34	**2.8**	28.880	N/A	7.000E-05	0.30	DI water	90	9.20	319	2637.8	
B1 (simplified-same molar comp SON68)-1997	433	0.88	2.947	1276.02	**2.8**	28.880	N/A	7.000E-05	0.30	DI water	90	9.29	327	3407.0	
B1 (simplified-same molar comp SON68)-1997	658	0.88	2.947	1939.09	**2.8**	28.880	N/A	7.000E-05	0.30	DI water	90	9.26	322	4389.7	
B1 (simplified-same molar comp SON68)-1997	861	0.88	2.947	2537.31	**2.8**	28.880	N/A	7.000E-05	0.30	DI water	90	9.42	306	4591.9	
B1 (simplified-same molar comp SON68)-1997	960	0.88	2.947	2829.06	**2.8**	28.880	N/A	7.000E-05	0.30	DI water	90	9.45	414	5324.4	
B1 (simplified-same molar comp SON68)-1997	1169	0.88	2.947	3444.97	**2.8**	28.880	N/A	7.000E-05	0.30	DI water	90		301	4165.0	
B1 (simplified-same molar comp SON68)-1997	1533	0.88	2.947	4517.66	**2.8**	28.880	N/A	7.000E-05	0.30	DI water	90		394	6288.8	
B4 (simplified-same molar comp SON68)-1998	1	0.92	3.062	3.06	**2.8**	30.010	N/A	7.000E-05	0.30	DI water	90	7.95	268.8	192.4	6.70
B4 (simplified-same molar comp SON68)-1998	7	0.92	3.062	21.44	**2.8**	30.010	N/A	7.000E-05	0.30	DI water	90	8.95	378.4	435.3	6.10
B4 (simplified-same molar comp SON68)-1998	14	0.92	3.062	42.87	**2.8**	30.010	N/A	7.000E-05	0.30	DI water	90	9.05	365.5	497.7	6.60
B4 (simplified-same molar comp SON68)-1998	28	0.92	3.062	85.74	**2.8**	30.010	N/A	7.000E-05	0.30	DI water	90	9.14	342.4	470.8	5.40
B4 (simplified-same molar comp SON68)-1998	56	0.92	3.062	171.49	**2.8**	30.010	N/A	7.000E-05	0.30	DI water	90	9.1	317.1	443.9	5.40
B4 (simplified-same molar comp SON68)-1998	91	0.92	3.062	278.66	**2.8**	30.010	N/A	7.000E-05	0.30	DI water	90	9.1	317.3	450.7	5.40
B4 (simplified-same molar comp SON68)-1998	140	0.92	3.062	428.71	**2.8**	30.010	N/A	7.000E-05	0.30	DI water	90	9.6	356.5	448.3	5.90
B4 (simplified-same molar comp SON68)-1998	182	0.92	3.062	557.33	**2.8**	30.010	N/A	7.000E-05	0.30	DI water	90	9.2	326.9	442.1	5.20
B4 (simplified-same molar comp SON68)-1998	274	0.92	3.062	839.06	**2.8**	30.010	N/A	7.000E-05	0.30	DI water	90	9.18	279.1	379.2	5.20
B4 (simplified-same molar comp SON68)-1998	364	0.92	3.062	1114.66	**2.8**	30.010	N/A	7.000E-05	0.30	DI water	90	9.27	344.7	451.3	5.60
B4 (simplified-same molar comp SON68)-1998	508	0.92	3.062	1555.62	**2.8**	30.010	N/A	7.000E-05	0.30	DI water	90	9.09	355.4	428.6	2.90
B4 (simplified-same molar comp SON68)-1998	607	0.92	3.062	1858.78	**2.8**	30.010	N/A	7.000E-05	0.30	DI water	90	9.22	295.0	421.4	2.60
B4 (simplified-same molar comp SON68)-1998	876	0.92	3.062	2682.53	**2.8**	30.010	N/A	7.000E-05	0.30	DI water	90	9.16	302.6	436.0	5.90
B4 (simplified-same molar comp SON68)-1998	1240	0.92	3.062	3797.18	**2.8**	30.010	N/A	7.000E-05	0.30	DI water	90	9.19	315.1	535.3	6.40
B4 (simplified-same molar comp SON68)-1998	1374	0.92	3.062	4207.52	**2.8**	30.010	N/A	7.000E-05	0.30	DI water	90	9.13	0.0	441.0	
FZK2	12	0.04	0.360	4.32	**2.8**	2.520	N/A	1.500E-04	0.10	pH-Stat	50	3.117	100.5	99	67.00
FZK2	30	0.04	0.360	10.80	**2.8**	2.520	N/A	1.500E-04	0.10	pH-Stat	50	3.109		167	117.00
FZK2	51	0.04	0.360	18.36	**2.8**	2.520	N/A	1.500E-04	0.10	pH-Stat	50	2.883	107.6	228	168.60
FZK2	65	0.04	0.360	23.40	**2.8**	2.520	N/A	1.500E-04	0.10	pH-Stat	50	3.101	93.6	243	181.40
FZK2	79	0.04	0.360	28.44	**2.8**	2.520	N/A	1.500E-04	0.10	pH-Stat	50	3.104	107.3	279	206.10
FZK6	12	0.04	0.360	4.32	**2.8**	2.520	N/A	1.500E-04	0.10	pH-Stat	50	5.3	82.5	68	39.20
FZK6	35	0.04	0.360	12.60	**2.8**	2.520	N/A	1.500E-04	0.10	pH-Stat	50	5.16	57.1	96	60.40
FZK6	57	0.04	0.360	20.52	**2.8**	2.520	N/A	1.500E-04	0.10	pH-Stat	50	5.13	60.2	122	80.70
FZK6	71	0.04	0.360	25.56	**2.8**	2.520	N/A	1.500E-04	0.10	pH-Stat	50	5.13	73.9	143	86.80
FZK6	84	0.04	0.360	30.24	**2.8**	2.520	N/A	1.500E-04	0.10	pH-Stat	50	5.11	64.2	151	88.30
FZK8	12	0.04	0.360	4.32	**2.8**	2.520	N/A	1.500E-04	0.10	pH-Stat	50	7.1	72.1	66	38.80
FZK8	35	0.04	0.360	12.60	**2.8**	2.520	N/A	1.500E-04	0.10	pH-Stat	50	7.11	49.3	74	40.50
FZK8	57	0.04	0.360	20.52	**2.8**	2.520	N/A	1.500E-04	0.10	pH-Stat	50	7.1	64.3	96	57.80
FZK8	71	0.04	0.360	25.56	**2.8**	2.520	N/A	1.500E-04	0.10	pH-Stat	50	7.06	64.7	105	63.00
FZK8	84	0.04	0.360	30.24	**2.8**	2.520	N/A	1.500E-04	0.10	pH-Stat	50	7.1	56.5	118	68.80
FZK10	12	0.04	0.360	4.32	**2.8**	2.520	N/A	1.500E-04	0.10	pH-Stat	50	9.11	74.9	39	12.00
FZK10	35	0.04	0.360	12.60	**2.8**	2.520	N/A	1.500E-04	0.10	pH-Stat	50	9.1	56.65	40	17.35
FZK10	57	0.04	0.360	20.52	**2.8**	2.520	N/A	1.500E-04	0.10	pH-Stat	50	9.2	64.9	45	17.80
FZK10	71	0.04	0.360	25.56	**2.8**	2.520	N/A	1.500E-04	0.10	pH-Stat	50	9.14	67.3	47	16.80
FZK10	84	0.04	0.360	30.24	**2.8**	2.520	N/A	1.500E-04	0.10	pH-Stat	50	9.14	53.7	46	15.10
min:	0.02	0.02	0.36	1.53	2.37	1.00	0.00	0.00	0.01	0.00	25.00	2.88	0.00	0.08	0.00
max:	7426.00	12.30	81.56	141759.95	2.93	51.66	0.00	0.00	0.40	0.00	200.00	13.66	21543.33	35230.62	206.10
			2.509 is density of ISG glass (no density in Glamor data)										2.26	0.08	0.01

Glass ID	Cr (ppm)	Li (ppm)	Na (ppm)	K (ppm)	Al (ppm)	Fe (ppm)	Mo (ppm)	Mg (ppm)	Ti (ppm)	Zn (ppm)	Zr (ppm)	U(ppm)	Reaction Phase(s) Observed
A21 (AVM6) 1999		39.9	2120		0.94								
A21 (AVM6) 1999		40.1	2184		0.79								
A22 (AVM6) 1999		0.4	19		2.95								
A22 (AVM6) 1999		0.5	22		3.03								
A22 (AVM6) 1999		0.5	25		3.03								
A22 (AVM6) 1999		0.5	29		2.80								
A22 (AVM6) 1999		0.6	33		2.58								
A22 (AVM6) 1999		0.8	45		1.96								
A22 (AVM6) 1999		0.7	55		1.78								
A22 (AVM6) 1999		1.1	79		1.58								
A22 (AVM6) 1999		1.3	89		1.20								
A22 (AVM6) 1999		1.9	106		1.12								
B1 (simplified-same molar comp SON68)-1997			307										
B1 (simplified-same molar comp SON68)-1997			713										
B1 (simplified-same molar comp SON68)-1997			1196										
B1 (simplified-same molar comp SON68)-1997			1605										
B1 (simplified-same molar comp SON68)-1997			2524										
B1 (simplified-same molar comp SON68)-1997			3283										
B1 (simplified-same molar comp SON68)-1997			3840										
B1 (simplified-same molar comp SON68)-1997			4169										
B1 (simplified-same molar comp SON68)-1997			5403										
B1 (simplified-same molar comp SON68)-1997			6745										
B1 (simplified-same molar comp SON68)-1997			7390										
B1 (simplified-same molar comp SON68)-1997			8453										
B1 (simplified-same molar comp SON68)-1997			7497										
B1 (simplified-same molar comp SON68)-1997			8746										
B4 (simplified-same molar comp SON68)-1998			330										
B4 (simplified-same molar comp SON68)-1998			734										
B4 (simplified-same molar comp SON68)-1998			834										
B4 (simplified-same molar comp SON68)-1998			787										
B4 (simplified-same molar comp SON68)-1998			747										
B4 (simplified-same molar comp SON68)-1998			756										
B4 (simplified-same molar comp SON68)-1998			756										
B4 (simplified-same molar comp SON68)-1998			750										
B4 (simplified-same molar comp SON68)-1998			658										
B4 (simplified-same molar comp SON68)-1998			775										
B4 (simplified-same molar comp SON68)-1998			762										
B4 (simplified-same molar comp SON68)-1998			747										
B4 (simplified-same molar comp SON68)-1998			750										
B4 (simplified-same molar comp SON68)-1998			869										
B4 (simplified-same molar comp SON68)-1998			-										
FZK2		30.3			6.00		1.3						
FZK2		52.6			7.11		0.6						
FZK2		71.0			5.88		0.9						
FZK2		78.2			8.54		0.4						
FZK2		85.7			11.37								
FZK6		15.8			23.00		0.6						
FZK6		34.5			0.00		6.3						
FZK6		46.9			0.04		6.7						
FZK6		53.1			0.13		5.4						
FZK6		59.0			0.06		1.1						
FZK8		18.1			0.00		6.7						
FZK8		24.2			0.01		7.2						
FZK8		22.5			0.01		7.2						
FZK8		24.0			0.00		6.8						
FZK8		26.2			0.00		2.4						
FZK10		10.0			0.00		4.4						
FZK10		10.2			0.00		4.4						
FZK10		10.5			0.01		4.5						
FZK10		10.6			0.00		4.0						
FZK10		10.7			0.00		2.4						
min:	0.40	0.03	3.45	0.13	0.00	0.00	0.38	0.00	0.01	0.00	0.01	0.08	
max:	166.45	6750.00	76318.23	10223.10	1812.18	1485.90	9219.73	10.88	47.00	115.33	76.00	8.31	
	0.40	0.03	3.45	0.13	0.00	0.00	0.38	0.00	0.01	0.01	0.01	0.08	

Glass ID	Analytic Method Used To Study Reaction Phase Formation	x discriminator	y discriminator	Phase separation criterion value	Original THERMO discriminator	Predicted to be Low (<19.3 wt% alkali) or High Alkali?	Al_2O_3 Indicator	Potential For Phase Separation (original ROC)	TiO_2 Indicator	Potential For Phase Separation (TiO_2 ROC)
A21 (AVM6) 1999		80.03	11.81	15.891677	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A21 (AVM6) 1999		80.03	11.81	15.891677	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A22 (AVM6) 1999		71.04	16.63	3.084746	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A22 (AVM6) 1999		71.04	16.63	3.084746	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A22 (AVM6) 1999		71.04	16.63	3.084746	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A22 (AVM6) 1999		71.04	16.63	3.084746	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A22 (AVM6) 1999		71.04	16.63	3.084746	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A22 (AVM6) 1999		71.04	16.63	3.084746	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A22 (AVM6) 1999		71.04	16.63	3.084746	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A22 (AVM6) 1999		71.04	16.63	3.084746	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
A22 (AVM6) 1999		71.04	16.63	3.084746	Potential ϕ-sep	Low alkali	High Al	HOMOGENEOUS	Low Ti	HOMOGENEOUS
B1 (simplified-same molar comp SON68)-1997		100.00	0	50.5703	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B1 (simplified-same molar comp SON68)-1997		100.00	0	50.5703	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B1 (simplified-same molar comp SON68)-1997		100.00	0	50.5703	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B1 (simplified-same molar comp SON68)-1997		100.00	0	50.5703	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B1 (simplified-same molar comp SON68)-1997		100.00	0	50.5703	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B1 (simplified-same molar comp SON68)-1997		100.00	0	50.5703	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B1 (simplified-same molar comp SON68)-1997		100.00	0	50.5703	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B1 (simplified-same molar comp SON68)-1997		100.00	0	50.5703	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B1 (simplified-same molar comp SON68)-1997		100.00	0	50.5703	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B1 (simplified-same molar comp SON68)-1997		100.00	0	50.5703	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B1 (simplified-same molar comp SON68)-1997		100.00	0	50.5703	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B1 (simplified-same molar comp SON68)-1997		100.00	0	50.5703	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B4 (simplified-same molar comp SON68)-1998		91.20	5.31	34.691282	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B4 (simplified-same molar comp SON68)-1998		91.20	5.31	34.691282	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B4 (simplified-same molar comp SON68)-1998		91.20	5.31	34.691282	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B4 (simplified-same molar comp SON68)-1998		91.20	5.31	34.691282	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B4 (simplified-same molar comp SON68)-1998		91.20	5.31	34.691282	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B4 (simplified-same molar comp SON68)-1998		91.20	5.31	34.691282	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B4 (simplified-same molar comp SON68)-1998		91.20	5.31	34.691282	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B4 (simplified-same molar comp SON68)-1998		91.20	5.31	34.691282	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B4 (simplified-same molar comp SON68)-1998		91.20	5.31	34.691282	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B4 (simplified-same molar comp SON68)-1998		91.20	5.31	34.691282	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B4 (simplified-same molar comp SON68)-1998		91.20	5.31	34.691282	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
B4 (simplified-same molar comp SON68)-1998		91.20	5.31	34.691282	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
FZK2		78.74	12.173	15.9148511	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
FZK2		78.74	12.173	15.9148511	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
FZK2		78.74	12.173	15.9148511	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
FZK2		78.74	12.173	15.9148511	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
FZK2		78.74	12.173	15.9148511	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
FZK6		78.74	12.173	15.9148511	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
FZK6		78.74	12.173	15.9148511	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
FZK6		78.74	12.173	15.9148511	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
FZK6		78.74	12.173	15.9148511	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
FZK6		78.74	12.173	15.9148511	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
FZK8		78.74	12.173	15.9148511	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
FZK8		78.74	12.173	15.9148511	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
FZK8		78.74	12.173	15.9148511	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
FZK8		78.74	12.173	15.9148511	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
FZK8		78.74	12.173	15.9148511	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
FZK10		78.74	12.173	15.9148511	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
FZK10		78.74	12.173	15.9148511	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
FZK10		78.74	12.173	15.9148511	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
FZK10		78.74	12.173	15.9148511	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
FZK10		78.74	12.173	15.9148511	Potential ϕ-sep	Low alkali	Low Al	Potential ϕ-sep.	Low Ti	Potential ϕ-sep.
min:										
max:										

Glass ID	Al2O3	B2O3	BaO	CaO	CeO2	Ce2O3	Cr2O3	Cs2O	CuO	Cu2O	FeO	Fe2O3	K2O	Gd2O3	La2O3	Li2O
A21 (AVM6) 1999	9	19.5	0.07	0.2	0.00	0.11	0.45	0.14	0.00	0.00	0.00	1.9	0.00	0.23	0.11	0.4
A21 (AVM6) 1999	9	19.5	0.07	0.2	0.00	0.11	0.45	0.14	0.00	0.00	0.00	1.9	0.00	0.23	0.11	0.4
A22 (AVM6) 1999	12.5	16.75	0.19	0.2	0.00	0.33	0.45	0.39	0.00	0.00	0.00	1.9	0.00	0.66	0.3	0.4
A22 (AVM6) 1999	12.5	16.75	0.19	0.2	0.00	0.33	0.45	0.39	0.00	0.00	0.00	1.9	0.00	0.66	0.3	0.4
A22 (AVM6) 1999	12.5	16.75	0.19	0.2	0.00	0.33	0.45	0.39	0.00	0.00	0.00	1.9	0.00	0.66	0.3	0.4
A22 (AVM6) 1999	12.5	16.75	0.19	0.2	0.00	0.33	0.45	0.39	0.00	0.00	0.00	1.9	0.00	0.66	0.3	0.4
A22 (AVM6) 1999	12.5	16.75	0.19	0.2	0.00	0.33	0.45	0.39	0.00	0.00	0.00	1.9	0.00	0.66	0.3	0.4
A22 (AVM6) 1999	12.5	16.75	0.19	0.2	0.00	0.33	0.45	0.39	0.00	0.00	0.00	1.9	0.00	0.66	0.3	0.4
A22 (AVM6) 1999	12.5	16.75	0.19	0.2	0.00	0.33	0.45	0.39	0.00	0.00	0.00	1.9	0.00	0.66	0.3	0.4
A22 (AVM6) 1999	12.5	16.75	0.19	0.2	0.00	0.33	0.45	0.39	0.00	0.00	0.00	1.9	0.00	0.66	0.3	0.4
A22 (AVM6) 1999	12.5	16.75	0.19	0.2	0.00	0.33	0.45	0.39	0.00	0.00	0.00	1.9	0.00	0.66	0.3	0.4
B1 (simplified-same molar comp SON68)-1997	0.00	20.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B1 (simplified-same molar comp SON68)-1997	0.00	20.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B1 (simplified-same molar comp SON68)-1997	0.00	20.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B1 (simplified-same molar comp SON68)-1997	0.00	20.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B1 (simplified-same molar comp SON68)-1997	0.00	20.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B1 (simplified-same molar comp SON68)-1997	0.00	20.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B1 (simplified-same molar comp SON68)-1997	0.00	20.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B1 (simplified-same molar comp SON68)-1997	0.00	20.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B1 (simplified-same molar comp SON68)-1997	0.00	20.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B1 (simplified-same molar comp SON68)-1997	0.00	20.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B1 (simplified-same molar comp SON68)-1997	0.00	20.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	18.45	0.00	5.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	18.45	0.00	5.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	18.45	0.00	5.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	18.45	0.00	5.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	18.45	0.00	5.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	18.45	0.00	5.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	18.45	0.00	5.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	18.45	0.00	5.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	18.45	0.00	5.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	18.45	0.00	5.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	18.45	0.00	5.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	18.45	0.00	5.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FZK2	2.62	14.8	0.46	4.58	0.00	0.35	0.493	0.59	0.00	0.00	0.00	1.87	0.047	0.064	0.43	2.6
FZK2	2.62	14.8	0.46	4.58	0.00	0.35	0.493	0.59	0.00	0.00	0.00	1.87	0.047	0.064	0.43	2.6
FZK2	2.62	14.8	0.46	4.58	0.00	0.35	0.493	0.59	0.00	0.00	0.00	1.87	0.047	0.064	0.43	2.6
FZK2	2.62	14.8	0.46	4.58	0.00	0.35	0.493	0.59	0.00	0.00	0.00	1.87	0.047	0.064	0.43	2.6
FZK2	2.62	14.8	0.46	4.58	0.00	0.35	0.493	0.59	0.00	0.00	0.00	1.87	0.047	0.064	0.43	2.6
FZK6	2.62	14.8	0.46	4.58	0.00	0.35	0.493	0.59	0.00	0.00	0.00	1.87	0.047	0.064	0.43	2.6
FZK6	2.62	14.8	0.46	4.58	0.00	0.35	0.493	0.59	0.00	0.00	0.00	1.87	0.047	0.064	0.43	2.6
FZK6	2.62	14.8	0.46	4.58	0.00	0.35	0.493	0.59	0.00	0.00	0.00	1.87	0.047	0.064	0.43	2.6
FZK6	2.62	14.8	0.46	4.58	0.00	0.35	0.493	0.59	0.00	0.00	0.00	1.87	0.047	0.064	0.43	2.6
FZK8	2.62	14.8	0.46	4.58	0.00	0.35	0.493	0.59	0.00	0.00	0.00	1.87	0.047	0.064	0.43	2.6
FZK8	2.62	14.8	0.46	4.58	0.00	0.35	0.493	0.59	0.00	0.00	0.00	1.87	0.047	0.064	0.43	2.6
FZK8	2.62	14.8	0.46	4.58	0.00	0.35	0.493	0.59	0.00	0.00	0.00	1.87	0.047	0.064	0.43	2.6
FZK8	2.62	14.8	0.46	4.58	0.00	0.35	0.493	0.59	0.00	0.00	0.00	1.87	0.047	0.064	0.43	2.6
FZK8	2.62	14.8	0.46	4.58	0.00	0.35	0.493	0.59	0.00	0.00	0.00	1.87	0.047	0.064	0.43	2.6
FZK10	2.62	14.8	0.46	4.58	0.00	0.35	0.493	0.59	0.00	0.00	0.00	1.87	0.047	0.064	0.43	2.6
FZK10	2.62	14.8	0.46	4.58	0.00	0.35	0.493	0.59	0.00	0.00	0.00	1.87	0.047	0.064	0.43	2.6
FZK10	2.62	14.8	0.46	4.58	0.00	0.35	0.493	0.59	0.00	0.00	0.00	1.87	0.047	0.064	0.43	2.6
FZK10	2.62	14.8	0.46	4.58	0.00	0.35	0.493	0.59	0.00	0.00	0.00	1.87	0.047	0.064	0.43	2.6
FZK10	2.62	14.8	0.46	4.58	0.00	0.35	0.493	0.59	0.00	0.00	0.00	1.87	0.047	0.064	0.43	2.6
min:	0.19	3.70	0.01	0.01	1.10	0.02	0.01	0.03	0.01	0.11	0.07	0.01	0.01	0.06	0.01	0.00
max:	21.29	20.23	1.34	12.81	1.97	0.95	1.14	2.23	0.22	0.20	8.81	21.86	8.08	4.90	1.49	14.67
	0.193	3.700	0.010	0.010	1.100	0.020	0.010	0.030	0.010	0.112	0.070	0.009	0.012	0.064	0.010	0.001

Glass ID	MgO	MnO	MnO2	MoO3	Na2O	Nd2O3	NiO	PO4	P2O5	PbO	Pd	Pr2O3	RuO2	SiO2	Sm2O3	SO4
A21 (AVM6) 1999	3.8	0.00	0.06	0.29	15.5	0.18	0.30	0.00	0.00	0.00	0.1	0.05	0.15	44.49	0.00	0.00
A21 (AVM6) 1999	3.8	0.00	0.06	0.29	15.5	0.18	0.30	0.00	0.00	0.00	0.1	0.05	0.15	44.49	0.00	0.00
A22 (AVM6) 1999	6	0.00	0.17	0.82	15	0.51	0.30	0.00	2.00	0.00	0.27	0.15	0.44	38.5	0.00	0.00
A22 (AVM6) 1999	6	0.00	0.17	0.82	15	0.51	0.30	0.00	2.00	0.00	0.27	0.15	0.44	38.5	0.00	0.00
A22 (AVM6) 1999	6	0.00	0.17	0.82	15	0.51	0.30	0.00	2.00	0.00	0.27	0.15	0.44	38.5	0.00	0.00
A22 (AVM6) 1999	6	0.00	0.17	0.82	15	0.51	0.30	0.00	2.00	0.00	0.27	0.15	0.44	38.5	0.00	0.00
A22 (AVM6) 1999	6	0.00	0.17	0.82	15	0.51	0.30	0.00	2.00	0.00	0.27	0.15	0.44	38.5	0.00	0.00
A22 (AVM6) 1999	6	0.00	0.17	0.82	15	0.51	0.30	0.00	2.00	0.00	0.27	0.15	0.44	38.5	0.00	0.00
A22 (AVM6) 1999	6	0.00	0.17	0.82	15	0.51	0.30	0.00	2.00	0.00	0.27	0.15	0.44	38.5	0.00	0.00
A22 (AVM6) 1999	6	0.00	0.17	0.82	15	0.51	0.30	0.00	2.00	0.00	0.27	0.15	0.44	38.5	0.00	0.00
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	14.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.56	0.00	0.00
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	14.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.56	0.00	0.00
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	14.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.56	0.00	0.00
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	14.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.56	0.00	0.00
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	14.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.56	0.00	0.00
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	14.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.56	0.00	0.00
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	14.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.56	0.00	0.00
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	14.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.56	0.00	0.00
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	14.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.56	0.00	0.00
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	14.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.56	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	12.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.8	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	12.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.8	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	12.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.8	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	12.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.8	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	12.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.8	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	12.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.8	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	12.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.8	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	12.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.8	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	12.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.8	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	12.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.8	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	12.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.8	0.00	0.00
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	12.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.8	0.00	0.00
FZK2	1.9	0	0.345	0.9	10.3	1.293	0.29	0.00	0.38	0.00	0.00	0.29	0.521	50.4	0.00	0.00
FZK2	1.9	0	0.345	0.9	10.3	1.293	0.29	0.00	0.38	0.00	0.00	0.29	0.521	50.4	0.00	0.00
FZK2	1.9	0	0.345	0.9	10.3	1.293	0.29	0.00	0.38	0.00	0.00	0.29	0.521	50.4	0.00	0.00
FZK2	1.9	0	0.345	0.9	10.3	1.293	0.29	0.00	0.38	0.00	0.00	0.29	0.521	50.4	0.00	0.00
FZK2	1.9	0	0.345	0.9	10.3	1.293	0.29	0.00	0.38	0.00	0.00	0.29	0.521	50.4	0.00	0.00
FZK6	1.9	0	0.345	0.9	10.3	1.293	0.29	0.00	0.38	0.00	0.00	0.29	0.521	50.4	0.00	0.00
FZK6	1.9	0	0.345	0.9	10.3	1.293	0.29	0.00	0.38	0.00	0.00	0.29	0.521	50.4	0.00	0.00
FZK6	1.9	0	0.345	0.9	10.3	1.293	0.29	0.00	0.38	0.00	0.00	0.29	0.521	50.4	0.00	0.00
FZK6	1.9	0	0.345	0.9	10.3	1.293	0.29	0.00	0.38	0.00	0.00	0.29	0.521	50.4	0.00	0.00
FZK6	1.9	0	0.345	0.9	10.3	1.293	0.29	0.00	0.38	0.00	0.00	0.29	0.521	50.4	0.00	0.00
FZK8	1.9	0	0.345	0.9	10.3	1.293	0.29	0.00	0.38	0.00	0.00	0.29	0.521	50.4	0.00	0.00
FZK8	1.9	0	0.345	0.9	10.3	1.293	0.29	0.00	0.38	0.00	0.00	0.29	0.521	50.4	0.00	0.00
FZK8	1.9	0	0.345	0.9	10.3	1.293	0.29	0.00	0.38	0.00	0.00	0.29	0.521	50.4	0.00	0.00
FZK8	1.9	0	0.345	0.9	10.3	1.293	0.29	0.00	0.38	0.00	0.00	0.29	0.521	50.4	0.00	0.00
FZK8	1.9	0	0.345	0.9	10.3	1.293	0.29	0.00	0.38	0.00	0.00	0.29	0.521	50.4	0.00	0.00
FZK10	1.9	0	0.345	0.9	10.3	1.293	0.29	0.00	0.38	0.00	0.00	0.29	0.521	50.4	0.00	0.00
FZK10	1.9	0	0.345	0.9	10.3	1.293	0.29	0.00	0.38	0.00	0.00	0.29	0.521	50.4	0.00	0.00
FZK10	1.9	0	0.345	0.9	10.3	1.293	0.29	0.00	0.38	0.00	0.00	0.29	0.521	50.4	0.00	0.00
FZK10	1.9	0	0.345	0.9	10.3	1.293	0.29	0.00	0.38	0.00	0.00	0.29	0.521	50.4	0.00	0.00
FZK10	1.9	0	0.345	0.9	10.3	1.293	0.29	0.00	0.38	0.00	0.00	0.29	0.521	50.4	0.00	0.00
min:	0.02	0.03	0.06	0.01	1.40	0.01	0.21	0.42	0.04	0.02	0.10	0.05	0.15	32.77	0.36	0.03
max:	7.70	3.34	1.37	2.84	25.65	8.59	2.97	0.75	2.64	0.03	0.88	0.95	1.70	65.56	0.67	0.08
	0.017	0.030		0.010	1.401	0.010	0.210	0.416	0.040	0.020	0.100	0.050	0.150	32.770	0.360	0.026

Glass ID	SrO	TeO2	ThO2	TiO2	U3O8	Y2O3	ZnO	ZrO2	Others	Sum Oxides		
A21 (AVM6) 1999	0.04	0.03	0.00	0.000	0.00	0.02	0.00	0.19	2.44	99.75		
A21 (AVM6) 1999	0.04	0.03	0.00	0.000	0.00	0.02	0.00	0.19	2.44	99.75		
A22 (AVM6) 1999	0.12	0.08	0.00	0.000	0.000	0.07	0.00	0.53	0.82	99.85	99.85	0.00
A22 (AVM6) 1999	0.12	0.08	0.00	0.000	0.000	0.07	0.00	0.53	0.82	99.85		
A22 (AVM6) 1999	0.12	0.08	0.00	0.000	0.000	0.07	0.00	0.53	0.82	99.85		
A22 (AVM6) 1999	0.12	0.08	0.00	0.000	0.000	0.07	0.00	0.53	0.82	99.85		
A22 (AVM6) 1999	0.12	0.08	0.00	0.000	0.000	0.07	0.00	0.53	0.82	99.85		
A22 (AVM6) 1999	0.12	0.08	0.00	0.000	0.000	0.07	0.00	0.53	0.82	99.85		
A22 (AVM6) 1999	0.12	0.08	0.00	0.000	0.000	0.07	0.00	0.53	0.82	99.85		
A22 (AVM6) 1999	0.12	0.08	0.00	0.000	0.000	0.07	0.00	0.53	0.82	99.85		
A22 (AVM6) 1999	0.12	0.08	0.00	0.000	0.000	0.07	0.00	0.53	0.82	99.85		
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00		
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00		
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00		
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00		
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00		
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00		
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00		
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00		
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00		
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00		
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00		
B1 (simplified-same molar comp SON68)-1997	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00		
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.00	100.00		
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.00	100.00		
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.00	100.00		
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.00	100.00		
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.00	100.00		
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.00	100.00		
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.00	100.00		
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.00	100.00		
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.00	100.00		
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.00	100.00		
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.00	100.00		
B4 (simplified-same molar comp SON68)-1998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	0.00	100.00		
FZK2	0.098	0.13	0.00	0.00	0.00	0.13	0.00192	0.65	0.44	96.98		
FZK2	0.098	0.13	0.00	0.00	0.00	0.13	0.00192	0.65	0.44	96.98		
FZK2	0.098	0.13	0.00	0.00	0.00	0.13	0.00192	0.65	0.44	96.98		
FZK2	0.098	0.13	0.00	0.00	0.00	0.13	0.00192	0.65	0.44	96.98		
FZK2	0.098	0.13	0.00	0.00	0.00	0.13	0.00192	0.65	0.44	96.98		
FZK6	0.098	0.13	0.00	0.00	0.00	0.13	0.00192	0.65	0.44	96.98		
FZK6	0.098	0.13	0.00	0.00	0.00	0.13	0.00192	0.65	0.44	96.98		
FZK6	0.098	0.13	0.00	0.00	0.00	0.13	0.00192	0.65	0.44	96.98		
FZK6	0.098	0.13	0.00	0.00	0.00	0.13	0.00192	0.65	0.44	96.98		
FZK6	0.098	0.13	0.00	0.00	0.00	0.13	0.00192	0.65	0.44	96.98		
FZK8	0.098	0.13	0.00	0.00	0.00	0.13	0.00192	0.65	0.44	96.98		
FZK8	0.098	0.13	0.00	0.00	0.00	0.13	0.00192	0.65	0.44	96.98		
FZK8	0.098	0.13	0.00	0.00	0.00	0.13	0.00192	0.65	0.44	96.98		
FZK8	0.098	0.13	0.00	0.00	0.00	0.13	0.00192	0.65	0.44	96.98		
FZK8	0.098	0.13	0.00	0.00	0.00	0.13	0.00192	0.65	0.44	96.98		
FZK10	0.098	0.13	0.00	0.00	0.00	0.13	0.00192	0.65	0.44	96.98		
FZK10	0.098	0.13	0.00	0.00	0.00	0.13	0.00192	0.65	0.44	96.98		
FZK10	0.098	0.13	0.00	0.00	0.00	0.13	0.00192	0.65	0.44	96.98		
FZK10	0.098	0.13	0.00	0.00	0.00	0.13	0.00192	0.65	0.44	96.98		
FZK10	0.098	0.13	0.00	0.00	0.00	0.13	0.00192	0.65	0.44	96.98		
min:	0.01	0.03	0.33	0.01	0.55	0.02	0.00	0.01	0.17	91.53		
max:	0.62	0.34	4.50	8.83	4.42	0.44	5.82	6.12	5.81	108.14		
	0.011	0.030	0.330	0.010	0.550	0.020	0.002	0.010	0.170	91.526		