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Part B-1
Viscosity
Calorimetry

**PHYSICAL CHARACTERIZATION FOR HANFORD TANK
WASTE SAMPLES AN-102, AN-103, AND AZ-102**

Scott W. Rosencrance
William D. King
Charles Nash

APRIL 2002

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Westinghouse Savannah River Company
Savannah River Site
Aiken, SC 29808

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1.0 EXECUTIVE SUMMARY

Waste in the various storage tanks at the Hanford reservation will be vitrified. Prior to the vitrification process, a series of pretreatment operations will be performed. Among the key pretreatment processes will be the removal of strontium and transuranic elements from some of the tank wastes (i.e. 241-AN-102 and 241-AN-107). The goal of this pretreatment step is to prepare a product stream that is filterable and decontaminated of both strontium and transuranic elements. In addition, all tanks will undergo a decontamination operation to remove cesium and technetium using ion exchange technology. Decontaminated solutions will then be evaporated as necessary to accommodate the necessary glass formulation for vitrification.

The transfer of supernate and slurries at various stages in this complex processing strategy is a necessity. Rheological data are thus key to plant design. Likewise, the solutions will undergo heating at various stages in the processing, so knowledge of heat capacities is important. In order to properly design the facility to accommodate the materials of interest during the processing, a series of physical property measurements have been made on actual tank waste. Both a rheometer and a differential scanning calorimeter were installed in the Shielded Cells Facility of the Savannah River Technology Center and were utilized to obtain the pertinent rheological and calorimetric information requested by the customer. This work was conducted for CH2M Hill Hanford Group, Inc. to satisfy the requirements of the Part B-1 contract.¹

Note: After installation of the rheometer in the shielded cells facility, the instrumentation demonstrated severe bias in measuring low viscosity samples. Variation in the measured viscosity for repeated tests with the same sample was frequently as large as 50%. Although the sensitivity of the Haake system procured by a former SRTC researcher was already limited for low viscosity samples, the observed errors were even larger than would be normally expected when using this instrumentation in the range (viscosity) of limiting operation that was pertinent to the Part B-1 samples.

In order to utilize the flawed device and attempt to supply rheological information for Part B-1, an empirical method was developed to extract viscosity data. This method was not based on first principles or theoretical foundation with regard to the mathematical understanding and complexity surrounding the discipline of rheology. The developed strategy is rather an attempt to develop an innovative empirical method to supply data for the Part B-1 samples and thus utilize an instrument which had an inherent bias. The alternative to not attempting to develop this empirical method would have been determination of no rheological properties during Part B-1 given the time constraints.

The following list summarizes the tests conducted and the major conclusions for the conditions evaluated.

- Rheograms were obtained for both as-received and diluted Envelope A (Tank 241-AN-103) and C (Tank 241-AN-102) samples and an as-received Envelope B (Tank 241-AZ-102) sample.
- Rheograms were obtained for the pretreated Envelope B (Tank 241-AZ-102) evaporator concentrate.
- Rheograms were obtained for the Envelope C sample after full pretreatment (strontium/transuranics precipitation, crossflow filtration, and cesium and technetium ion exchange processing) but prior to evaporation.
- Rheograms were obtained for Envelope C strontium/transuranics precipitate slurries of 2, 10, 13, and 16 weight percent insoluble solids.
- Rheograms were collected for a series of temperatures ranging between 10 and 50 °C.
- All rheograms were described by a Bingham plastic model.
- The temperature dependence of viscosity was described by an Arrhenius-type exponential expression.
- Precipitate sample apparent viscosity data for the Envelope C supernate and Sr/TRU precipitate slurries was incorporated into the temperature-dependant Arrhenius model to produce a modified unified model describing all Envelope C precipitate apparent viscosity data as a function of temperature and weight percent solids.
- Calorimetric data was obtained for various Envelope C supernates and precipitates.
- The specific heat was calculated for the various samples tested.

2.0 INTRODUCTION AND BACKGROUND

The Hanford River Protection Project Waste Treatment Plant (RPP-WTP) pretreatment and immobilization processes being developed by the DOE Office of River Protection will decontaminate Low-Activity Waste (LAW) Envelopes A and B supernates using crossflow filtration followed by cesium and technetium ion exchange. Prior to filtration and ion exchange, Envelope C will undergo strontium/transuranics (Sr/TRU) precipitation to remove radioactive strontium and chelated actinides. The decontaminated supernates will be concentrated in the LAW Melter Feed Evaporator. The concentrated LAW Melter Feed will be mixed with glass-forming minerals and chemicals in the LAW Melter Feed Preparation Tank. The resulting slurry will then be transferred to a Melter Feed Tank from which it will be fed to one of the joule-heated, refractory-lined melters.

The objective of this work was to characterize the physical properties (rheology and calorimetry) of actual tank wastes at various stages of the River Protection Project treatment process. The transfer of supernate and slurries at various stages in this complex processing strategy is a necessity. Likewise, the solution undergoes heating at various stages in the processing and heat capacity data is important. In order to properly design the facility to accommodate the materials of interest during the processing, physical property measurements have been made on actual tank waste. Both a rheometer and a differential scanning calorimeter were installed in the Shielded Cells Facility of the Savannah River Technology Center (SRTC) and were utilized to obtain the pertinent rheological and calorimetric information.

This work was requested by the customer² and the experimental details and Quality Assurance requirements were specified in a Task Plan.³ A list of the viscosity and heat capacity tests requested by the customer on LAW supernate samples is provided in Table I along with the status of each test. As indicated in the table, some of the planned tests were not performed because the samples were used for other tests or were composited for return to Hanford, WA in order to satisfy the deadlines for return imposed by the Hanford Waste Treatability Study.

Table 1. Viscosity and Heat Capacity Testing on LAW Supernates

Sample	Physical Property	Status
Envelope A		
AN-103 (as-received)	Rheology	Completed
AN-103 (as-received)	Specific Heat	Not Completed, sample was returned to meet treatability study deadline
AN-103 (diluted)	Rheology	Completed
AN-103 (pretreated, before evaporation)	Rheology and Specific Heat	Not Completed, all material utilized for other testing
Envelope B		
AZ-102 (as-received)	Rheology	Completed
AZ-102 (as-received)	Specific Heat	Not Completed, sample was returned to meet treatability study deadline
AZ-102 (pretreated, prior to evaporation)	Rheology and Specific Heat	Not Completed, all material utilized for other testing
AZ-102 (pretreated and concentrated)	Rheology	Completed
Envelope C		
AN-102 (as-received)	Rheology	Completed
AN-102 (as-received)	Specific Heat	Not Completed, sample was returned to meet treatability study deadline
AN-102 (diluted)	Rheology	Completed
AN-102 (diluted)	Specific Heat	Completed
AN-102 Sr/TRU Precipitate Slurries	Rheology	Completed
AN-102 Sr/TRU Precipitate Slurries	Specific Heat	Completed
AN-102 (pretreated, prior to evaporation)	Rheology	Completed
AN-102 (pretreated, prior to evaporation)	Specific Heat	Not Completed, sample was returned to meet treatability study deadline
All work performed under a WFO agreement with BNFL		

Additional evaporation and physical property data (some of which was listed in the Task Plan²) was collected on a variety of other sample types under the Part B-1 contract. The samples are listed below with references provided to the reports describing the results.

- As-received and diluted supernate samples (density measurements)^{4,5,6}
- Simulant LAW evaporation^{7,8,9,10}
- Actual Envelope C (AN-102) pretreated LAW evaporation^{11,12}
- Simulant LAW melter feed¹³
- Simulant LAW melter feed with glass formers¹²
- Simulant Sr/TRU precipitate slurry¹⁴
- Simulant Cs eluate evaporation¹⁵
- Actual AZ-102 Tc eluate evaporation¹⁶

The following tests were canceled or modified as indicated.

- There were some differences between the letter from the customer and the task plan regarding the temperatures at which sample viscosities were to be measured. All changes were verbally approved by the customer prior to analysis.
- Particle size, volume %, and solids solubility tests on the AN-103 and AN-102 samples were canceled due to the fact that insufficient solids were available for analysis.
- Simulant Tc eluate evaporation was canceled.¹⁷
- Rheology testing was canceled on the HLW melter feed and the feed with glass formers because the AZ-102 sample did not contain sufficient solids and the C-106 sludge sample that was received was not considered representative due to sample and tank histories.¹⁸
- Tc eluate evaporation was not conducted for actual samples other than AZ-102 because the decision was made not to include the Tc eluates in the HLW melter feed.¹⁷
- The AA sample was canceled from the test program at SRTC.

Test results for the following samples will be reported in future documents. The likely authors of the reports are indicated.

- Actual Env. C, pretreated LAW melter feed and melter feed with glass formers - Zamecnik, J.; Crawford, C.; Koopman, D. (A status report has been issued.¹⁹)
- Actual Env. B, pretreated LAW melter feed with glass formers – Schumacher, R.; Crawford, C.; Koopman, D. (Rheology testing was delayed until the final glass former recipe is developed. A status report has been issued.²⁰)
- Actual Cs eluate evaporation – Schumacher, Crawford, Koopman (A status report has been issued.²¹)

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3.0 EXPERIMENTAL

3.1 RHEOLOGY

The decision to use the Haake M5 head for the measurement of actual Hanford supernate samples and Sr/TRU precipitate slurries was made by a former researcher in SRTC (Bao Ha). Ha assisted with Part B-1 work and had previous experience in rheological characterization of samples from the Savannah River Site. Ha initiated procurement, mock-up, and remote operation of the rheometer in the SRTC shielded cells facility. He left the company shortly after initiating this work. The authors inherited the instrumentation and the responsibility of modifying, installing, and operating the rheometer for the Part B-1 contract. Appendix A, Part 1 contains figures detailing various aspects of the mock-up efforts. The captions on each figure describe the series of innovative tactics utilized to allow for remoted operation of the rheometer. An important facet of the mock-up was the design and acquisition of a remoted temperature control unit from Haake that allowed for temperature stability of approximately ± 0.1 °C. Because the rheological properties of these types of samples are generally observed to be highly temperature-dependent, acquisition of the temperature control unit was deemed to be an important step in the mock-up procedure.

After the initial strategy was developed to allow for remoted operation of the equipment a 95 cP (at 25 °C) Newtonian standard oil from Cannon Instrument Company (2139 High Tech Road, State College, PA 16803) was analyzed prior to installation of the unit into the shielded cells. The results are shown in Appendix A, Part 2. The data was accurately described by a Newtonian relation and the fit yielded an apparent viscosity of 98.2 cP, which corresponds to ~3% error from the known value. After this successful demonstration of the equipment's performance, the entire experimental apparatus was installed into the shielded cells.

Initial attempts to characterize lower viscosity samples, after installation of the equipment into the shielded cells, consistently yielded extremely poor reproducibility. Variation in the measured viscosity for repeated tests with the same sample was frequently as large as 50%. Although the sensitivity of the Haake system procured by Ha is already limited for low viscosity samples, the observed errors were even larger than would be normally expected for this instrumentation in this range (viscosity) of limiting operation that is pertinent to the Part B-1 samples. Given that the mock-up using a 95cP oil was successful, this instrumental problem/bias only appeared to be significant for lower viscosity samples. An effort was undertaken to reduce this instrumental bias/error and develop a more reproducible method for the determination of viscosity of the Part B-1 samples. The authors would like to emphasize that removal of the instrument for inspection and repair at this point was prohibitive with respect to both cost and time because the unit had been installed in a radioactive environment. Given the importance of this data in coordination with the schedule and costs, a decision was made to proceed with the development of a method for use with the installed equipment.

Specifically, the goal was to develop a method to obtain results with high precision and accuracy for a Newtonian standard oil in the range of viscosities expected for the Hanford samples of interest. A 14.8 cP (at 25 °C) Newtonian oil was obtained from Cannon Instrument Company for this purpose. The developed method could then be used to obtain the requested viscosity information for Part B-1 samples and eliminate a lengthy and costly delay which would have extended beyond August 2000 and the end of the contract.

Further testing revealed that the instrumental problem was also apparent when the rotor was operated while suspended in air, which has a viscosity under ambient conditions of about 0.02 cP and no yield stress. The rheometer consistently demonstrated a shear rate dependence of increasing shear stress with a non-zero intercept and well-defined slope. The exact functional form of this instrumental bias or offset, as we refer to it, was variable from day to day and ultimately was realized to be the root of the observed lack of accuracy for the low viscosity samples, such as those of interest in this work. Once this realization was made, the authors developed an empirical method to characterize the offset of the rotor suspended in air. Theoretically, there would be a zero response if the instrument was operating in an unbiased manner. This blank was measured prior to each sample and used for background correction/subtraction for the data collected on various unknown samples. Specifically, the instrument was operated in the absence of sample (rotor suspended in air) for the blank run. This operation was from 0-2700 s⁻¹ using a linear ramp over three minutes. The rheometer was held at 2700 s⁻¹ for 30 seconds before a linear ramp back to 0 s⁻¹ was introduced over the final three minutes of the run. This sequence was performed multiple times for the same sample (typically nine) to obtain replicates. The data from 300-1500 s⁻¹ was used for subsequent evaluations (the instrumental bias being corrected for by this method did not allow evaluation below 300 s⁻¹ because of low feedback). This correction method then took the statistical average (mean) of the slope for the blank run and subtracted this signal from the statistical average (mean) of the run containing the actual sample. This correction was used for all subsequent standards and samples.

The results of this strategy are shown in Appendix A, Part 3 as a pre-calibration performed on the standard oil before the Hanford samples were run. This was a validation of the empirical model that was developed to correct for the instrumental bias. Namely, the calculated viscosity using this novel empirical method was 16.7 cP (uncorrected response would have been 34 cP) at 25 °C with a known value of 14.8 cP. This result translates to a viscosity about 13% more than the known value for the standard and a 95% confidence interval of less than 5% with regard to precision. It is important to note that the observed accuracy is for a sample of about 15 cP and would be expected to decrease as the viscosity of the sample decreases.

The actual Hanford samples were analyzed using this same method. The authors would like to emphasize that this method is not based on first principles or theoretical foundation with regard to the mathematical understanding and complexity surrounding the discipline of rheology. The developed strategy is rather an attempt to develop an innovative empirical method to supply more accurate and precise viscosity data for the Part B-1 samples and thus utilize an instrument which had an inherent bias.

A post-calibration was conducted following the use of the rheometer for the Part B-1 samples. These results are shown in Appendix A, Part 4 and are interpreted using the same empirical background correction. The post-calibration performed on the Newtonian standard oil at 15 °C gave a viscosity of 25.9 cP. Shown in Appendix A, Part 5 is the temperature-dependent viscosity data supplied by the vendor for the Newtonian standard oil used in the post calibration. This data is well described by an Arrhenius-type relation. A plot of the natural log of the viscosity versus the value of $1/T$ (where T is the temperature of the sample in Kelvin) is used to linearize the data and provide a convenient format to calculate the viscosity at other temperatures of interest. The resulting evaluation of this data yields a viscosity of 22.6 cP at 15 °C. This result supplied a value that was within 14% of the known value and agrees well with the pre-calibration data using the designed method.

The authors would like to emphasize that the replicate tests in all cases involved multiple runs of the rheometer using the same aliquot of material in the rheometer cell for evaluation. In addition, the replicate tests were conducted through continuous cycling of the instrument until the desired number of replicates was obtained. In other words, the ramp down in shear rate of a given cycle was immediately followed by a shear ramp up for the following cycle. This was necessary for two reasons. The first is that evaluations such as the remoted operation of a rheometer are extremely tedious and time consuming. Secondly, there is a limited amount of actual Hanford tank waste available. As a result some sample results demonstrate small, time-dependent alterations in viscosity, which are likely the result of a shear-induced modification of the sample. All data for a given sample were averaged which includes the previously discussed time dependent facet of the data. Further work of a more extensive fashion could be performed in the future to better characterize this phenomenon for the Hanford waste.

The customer requested the determination of viscosity for a number of actual Hanford samples with relatively low viscosities. The empirical method was designed as a strategy to overcome the instrumental bias and provide meaningful viscosity data for these samples of interest to the customer. Since the yield stress data was not requested, a corresponding empirical method for determination of yield stress data using the biased instrument was not developed. Yield stress data is provided for some samples, but is of unknown accuracy and was often observed to vary significantly for a given sample. If yield stress data or improved viscosity data is needed by the customer in future work, this will require development of a new empirical test method (if possible) or more preferably procurement, mock-up, and installation of a new Haake M5 head.

Samples for rheological testing were obtained after various stages of processing. All samples were shipped from Hanford and stored at SRTC for various times between tests under ambient conditions. Sample histories are briefly described in the results section below with references to individual reports which provide more detailed sample information. All measurements were performed using the Haake RV30/M5 controller/head combination and the NV sensor. For each sample, a representative aliquot of 9 ml of material was placed in the thermally-jacketed sample cup and allowed to equilibrate for 30 minutes at each temperature of analysis.

The stress-strain curves were plotted for each replicate analysis over the shear rate range 300-1500 s⁻¹ and fitted by least squares linear regression analysis. Each plot included data acquired under increasing and decreasing shear rate conditions. In every case, the shear stress vs. shear rate curves for both the blanks and the actual samples were well described by the simple linear Bingham Model equation²² shown below.

$$\sigma = M\gamma + B$$

where:

σ = shear stress (Pa)

M = plastic viscosity (Pa-s)

γ = shear rate (1/s)

B = yield stress (Pa)

The slope (M), intercept (B), and residual explanation (R²) determined by regression are provided in the appendices. R² values for the blank tests generally were not as high as those observed for the samples, because small differences in the increasing and decreasing shear rate portions of the analysis cycle are more significant when the shear stress feedback is low. The mean, standard deviation (denoted as “sigma”), and 95% confidence limits (precision) for M and B are also provided in the tables. The 95% confidence limits were calculated from the mean and standard deviation of each series of replicates assuming N-1 degrees of freedom (DF; where N = number of replicates) and are an indication of precision. Sample viscosities in cP were calculated from the slope for each replicate test. The average viscosity and the associated 95% confidence limit for precision are also provided in the associated appendices.

3.2 CALORIMETRY

An Instrument Specialists differential scanning calorimeter (Model DSC550E) was remotely installed in the SRTC shielded cells. 20-60 mg of actual tank waste was introduced into a 0.11-mL sealable stainless steel crucible and weighed. All analysis was performed in at least triplicate over the range from 10 to 100 °C at a heating rate of 10 °C/min. The reference material used for heat capacity determination was sapphire (mass: 63 mg). For each experiment, initial runs were conducted with two empty crucibles of equal weight to determine the blank or background. Secondly, a known mass of sapphire standard was placed into the sample disk and compared against the remaining empty crucible. Finally, a third series of replicates was performed after replacing the crucible containing the standard with the weighed tank sample .

The data were analyzed by simple ratio analysis of the instrument response for the standard and the sample adjusting for the known heat capacity of the standard at each analysis temperature as shown below. Sample and standard data at each temperature were background corrected.

$$HC_{\text{sample}} = [(mW_{\text{sample}} - mW_{\text{empty}}) / (mW_{\text{standard}} - mW_{\text{empty}})] * [M_{\text{standard}} / M_{\text{sample}}] * HC_{\text{standard}}$$

where:

HC = heat capacity

mW = measured heat flow in milliWatts

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4.0 RESULTS

4.1 RHEOLOGY OF AS-RECEIVED AND DILUTED SUPERNATES

Rheograms were obtained for as-received and diluted supernate samples prior to filtration.

4.1.1 Envelope A As-Received

Rheograms were obtained on actual Tank 241-AN-103 as-received sample, which was taken from the as-received archive from compositing and characterization work by Hay. The as-received sample was 11.7 molar in sodium and contained visible solids (24.7 wt % insoluble solids). A summary of the resulting data for the blank and the Envelope A sample at 25 °C and at 50 °C are shown in Appendix B. The data for the actual sample are well described by the linear Bingham model as reflected by the high residual explanation (R^2). The blank experiments also exhibited a linear response. The average apparent viscosity for the Envelope A sample was calculated to be 23.1 cP at 25 °C and 6.2 cP at 50 °C, respectively, with the 95% confidence limits indicated in Table 2.

4.1.2 Envelope A Diluted

Rheograms were obtained on the actual AN-103 diluted tank sample. The sample had been diluted to 5.3 molar sodium as described by Hay, causing nearly complete dissolution of the solids. The solids content of the diluted Tank 241-AN-103 sample was 0.1 wt %. A summary of the resulting data for the blank and the diluted Envelope A sample at 25 °C and 50 °C are shown in Appendix B. The data for the actual sample are well described by the linear Bingham model as reflected by the high residual explanation (R^2). The blank experiments also exhibited a linear response. The average apparent viscosity for this sample was calculated to be 3.2 cP at 25 °C and 2.5 cP at 50 °C with the confidence intervals indicated in Table 2.

4.1.3 Envelope B As-received

Rheograms were obtained on actual Tank 241-AZ-102 as-received sample taken from the as-received archive from compositing and characterization work by Hay. The as-received sample was 2.8 molar in sodium in the supernate fraction and contained visible sludge solids (0.48 to 1.2 wt % insoluble solids). A summary of the resulting data for the blank and the as-received Envelope B sample at 25 °C and 50 °C are shown in Appendix C. The data for the actual sample are well described by the linear Bingham model as reflected by the high residual explanation (R^2). The blank experiments also exhibited a linear response. The average apparent viscosity for this sample was calculated to be 3.7 cP at 25 °C and 2.4 cP at 50 °C, with the confidence intervals indicated in Table 2.

Table 2. Summary of Rheology Testing Results

Sample ID	[Na] (M)	Wt% Solids	T (°C)	Viscosity (cP)	95% CL
Envelope A (AN-103)					
As-received	11.7	24.7	25	23.1	0.6
As-received	11.7	---	50	6.2	0.4
Diluted	5.3	0.1	25	3.2	0.5
Diluted	5.3	---	50	2.5	0.5
Envelope B (AZ-102)					
As-received	2.8	0.48-1.2	25	3.7	0.7
As-received	2.8	---	50	2.4	0.6
Evap. Conc.	4.1	---	25	2.1	0.3
Evap. Conc.	4.1	---	50	0.7	0.4
Envelope C (AN-102)					
As-received	10.2	<0.1	25	6.7	0.6
As-received	10.2	---	50	0.8	0.5
Diluted	6.4	---	25	2.7	0.5
Diluted	6.4	---	50	2.0	0.6
Pretreated	4.9	---	25	4.2	0.8
Pretreated	4.9	---	50	2.8	0.7
Envelope C Sr/Tru Precipitate Slurries					
2 wt.% Sr/TRU Precipitate Slurry	6	---	10	4.4	0.3
2 wt.% Sr/TRU Precipitate Slurry	6	---	15	4.0	0.3
2 wt.% Sr/TRU Precipitate Slurry	6	2	25	3.5	0.5
2 wt.% Sr/TRU Precipitate Slurry	6	---	50	4.0	0.5
10 wt.% Sr/TRU Precipitate Slurry	6	10	25	11.8	0.5
10 wt.% Sr/TRU Precipitate Slurry	6	---	50	5.5	0.5
13 wt.% Sr/TRU Precipitate Slurry	6	---	10	21.6	0.8
13 wt.% Sr/TRU Precipitate Slurry	6	---	15	18.6	1
13 wt.% Sr/TRU Precipitate Slurry	6	13	25	14.6	1.2
13 wt.% Sr/TRU Precipitate Slurry	6	---	50	8.8	0.7
16 wt.% Sr/TRU Precipitate Slurry	6	---	10	27.5	0.4
16 wt.% Sr/TRU Precipitate Slurry	6	---	15	23.4	0.4
16 wt.% Sr/TRU Precipitate Slurry	6	16	25	18.0	0.4
16 wt.% Sr/TRU Precipitate Slurry	6	---	50	10.2	0.4

4.1.4 Envelope C As-received

Rheograms were obtained on actual Tank 241-AN-102 as-received sample, which was taken from the as-received archive from compositing and characterization work by Hay. The as-received composite sample was 10.2 molar in sodium and contained small amounts of visible solids (<0.1 wt % insoluble solids). A summary of the resulting data for the blank and the Envelope C sample at 25 °C and at 50 °C are shown in Appendix D. The data for the actual sample are well described by the linear Bingham model as reflected by the high residual explanation (R^2). The blank experiments also exhibited a linear response. The average apparent viscosity for this sample was calculated to be 6.7 cP at 25 °C and 0.8 cP at 50 °C, with the confidence intervals indicated in Table 2.

4.1.5 Envelope C Diluted

Rheograms were obtained on actual Tank 241-AN-102 diluted sample which was 6.4 molar in sodium. A summary of the resulting data for the blank and the diluted Envelope C sample at 25 °C and 50 °C are shown in Appendix D. The data for the actual sample are well described by the linear Bingham model as reflected by the high residual explanation (R^2). The blank rheograms also exhibited a linear response. The average apparent viscosity for this sample was calculated to be 2.7 cP at 25 °C and 2.0 cP at 50 °C, with the confidence intervals indicated in Table 2.

4.2 RHEOLOGY OF ENVELOPE C SR/TRU PRECIPITATE SLURRIES

The diluted Tank 241-AN-102 sample was treated to precipitate Sr-90 and transuranic elements by the addition of sodium hydroxide, strontium nitrate, and sodium permanganate reagents at 50 °C.²³ A sample of the resulting slurry, containing both the entrained solids and the Sr/TRU precipitate was obtained for rheology measurements. This sample and other slurry precipitate samples with higher wt % solids loadings were obtained from the Large C Cells Filter campaign.²³ The Sr/TRU precipitate slurry was processed as a series of seven batches with Na^+ molarities varying from 5.8 to 6.4 M. The sodium concentrations of the concentrate samples isolated for physical property determinations were not measured but are expected to be near 6 M based on the measured sodium levels in the various batches. The slurries were not washed prior to analysis. Weight percent solids in this manuscript refers to total insoluble solids at 25 °C. Fitting of the rheograms was again performed by using a linear fit. Samples containing solids tend to have more complex rheology and thus often require more complex mathematical description. This manuscript recognizes this issue and for simplification has used linear fitting routines. This choice is based on the empirical nature of the linear correction method employed and the desire not to apply the rigor typically associated with unbiased instrumentation.

4.2.1 Envelope C 2 Wt % Sr/TRU Precipitate Slurry

Rheograms were obtained on the actual Envelope C (241-AN-102) precipitated tank sample slurry prior to crossflow filtration. A summary of the resulting data for the blank and the precipitate slurry at 10, 15, 25, and 50 °C are shown in Appendix E. The data are well described by the linear Bingham model as reflected by the high residual explanation (R^2). The average apparent viscosities for this sample at 10, 15, 25, and 50 °C were calculated to be 4.4, 4.0, 3.5, and 4.0 cP, respectively, with the confidence intervals indicated in Table 2. Given the confidence intervals, it is apparent from the data that the viscosity does not change significantly across the temperature range studied.

4.2.2 Envelope C 10 Wt % Sr/TRU Precipitate Slurry

Rheograms were obtained on actual Envelope C Sr/TRU precipitate slurry concentrated to 10 wt % by crossflow filtration. A summary of the resulting data for the blank and the precipitate slurry at 25 °C and 50 °C are shown in Appendix E. The data are well described by the linear Bingham model as reflected by the high residual explanation (R^2). The average apparent viscosity for this sample was calculated to be 11.8 cP at 25 °C and 5.5 cP at 50 °C, with the confidence intervals indicated in Table 2.

4.2.3 Envelope C 13 Wt % Sr/TRU Precipitate Slurry

Rheograms were obtained on the actual Envelope C Sr/TRU precipitate slurry concentrated to 13 wt % by crossflow filtration. A summary of the resulting data for the blank and the precipitate slurry at 10, 15, 25 and 50 °C are shown in Appendix E. The data are well described by the linear Bingham model as reflected by the high residual explanation (R^2). The average apparent viscosities for this sample at 10, 15, 25, and 50 °C were calculated to be 21.6, 18.6, 14.6, and 8.8 cP, respectively, with the confidence intervals indicated in Table 2.

4.2.4 Envelope C 16 Wt % Sr/TRU Precipitate Slurry

Rheograms were obtained on actual Envelope C Sr/TRU precipitate slurry concentrated to 16 wt % by a combination of crossflow and deadend filtration. A summary of the resulting data for the blank and the precipitate slurry at 10, 15, 25, and 50 °C is shown in Appendix E. The data are described by the linear Bingham model as reflected by the high residual explanation (R^2). The average apparent viscosities for this sample at 10, 15, 25, and 50 °C were calculated to be 27.5, 23.4, 18.0, and 10.2 cP, respectively, with the confidence intervals indicated in Table 2.

4.3 RHEOLOGY OF PRE-TREATED SAMPLES AND CONCENTRATES

Two samples were tested after all pretreatment steps had been completed. The complete pretreatment process includes Sr/TRU precipitation (only for Envelope C samples), filtration, and cesium and technetium ion exchange. The Envelope B (241-AZ-102) sample was pretreated and concentrated by evaporation prior to rheology testing. Rheology testing was also conducted on an Envelope C sample (241-AN-102) after pretreatment but before evaporation. The Envelope C sample was pretreated in two portions. A smaller portion of the sample (~0.5 L) was treated first, in order to confirm that the Sr/TRU process would sufficiently decontaminate the sample without interfering with other downstream processes (e.g. ion exchange). The remainder of the sample (~17 L) was treated after the small sample had been successfully processed.

Rheograms were obtained using a sample from the 17L run of the Envelope C sample after full pretreatment, but prior to evaporation.

4.3.1 Envelope B Evaporator Concentrate

Rheograms were obtained on the actual Envelope B (241-AZ-102) evaporator concentrate. The sample history for the evaporator concentrate included (sequentially) deadend filtration,⁵ cesium ion exchange,²⁴ technetium ion exchange,²⁴ and evaporation to 4.1 molar sodium in preparation for subsequent vitrification testing. It should be noted that the Env. B sample was diluted during ion exchange processing to 2.2 M Na⁺ (~20%) with NaOH solutions (0.25-1.0 M) used to pretreat the ion exchange columns (see reference 8). A summary of the resulting data for the blank and the evaporator concentrate at 25 °C and 50 °C are shown in Appendix C. The data are well described by the linear Bingham model as reflected by the high residual explanation (R²). The average apparent viscosities for this sample at 25 °C and 50 °C were calculated to be 2.1 cP and 0.7 cP, respectively, with the confidence intervals indicated in Table 2.

4.3.2 Envelope C Pretreated Liquid

Rheograms were obtained on the actual 241-AN-102 Envelope C product after Sr/TRU precipitation and crossflow filtration,⁷ and cesium and technetium ion exchange processing²³. The pretreated liquid was 4.9 molar in sodium. The liquid sample had not been processed in an evaporator. Characterization of this product is reported in the ion exchange report. A summary of the resulting data for the blank and the pretreated Envelope C sample at 25 °C and 50 °C are shown in Appendix D. The data for the actual sample are well described by the linear Bingham model as reflected by the high residual explanation (R²). The blank experiments also exhibited a linear response. The average apparent viscosities for this sample at 25 °C and 50 °C were calculated to be 4.2 cP and 2.8 cP, respectively, with the confidence intervals indicated in Table 2.

4.4 CALORIMETRY

4.4.1 Calorimetry of Envelope C (AN-102) Diluted Supernate

Three dilutions of the as-received AN-102 sample (10.2 M Na⁺) were conducted to give separate solutions containing 5, 7, and 9 M Na⁺. Calorimetry experiments were conducted on each sample. Table 3 shows the averaged heat flow data observed for the experiments with the empty crucible, the standard, and the actual sample. The calculated heat capacity data are also provided along with an estimate of the error associated with each. Propagation of errors analysis was conducted for each data point using the standard deviations calculated from replicate analyses to determine the error. Sigma (σ) corresponds to the calculated best guess as to the standard deviation of the derived heat capacity values. The coefficient of variation (CV) is the ratio of σ to the calculated heat capacity.

Table 3. Calorimetry Data for Diluted AN-102 Supernate Samples

T (°C)	Sample (mW)	Standard (mW)	Empty (mW)	HC Cal./g °C	σ Cal./g °C	CV
5 M Na⁺ AN-102						
40	-30.28	-13.04	-1.70	0.70	0.07	10.2%
50	-30.16	-13.21	-2.03	0.71	0.07	10.0%
60	-29.91	-13.48	-2.34	0.72	0.06	8.9%
70	-29.66	-13.47	-2.60	0.74	0.06	8.6%
80	-29.45	-13.61	-2.88	0.75	0.07	9.3%
90	-29.10	-13.75	-3.10	0.75	0.07	9.8%
7 M Na⁺ AN-102						
40	-38.45	-13.04	-1.70	0.65	0.07	10.8%
50	-37.84	-13.21	-2.03	0.65	0.07	10.6%
60	-37.32	-13.48	-2.34	0.65	0.06	9.7%
70	-36.89	-13.47	-2.60	0.67	0.06	9.6%
80	-36.33	-13.61	-2.88	0.67	0.07	10.3%
90	-35.81	-13.75	-3.10	0.68	0.07	10.8%
9 M Na⁺ AN-102						
40	-37.14	-13.04	-1.70	0.68	0.07	10.7%
50	-36.48	-13.21	-2.03	0.68	0.07	10.5%
60	-35.57	-13.48	-2.34	0.68	0.06	9.6%
70	-34.70	-13.47	-2.60	0.68	0.06	9.4%
80	-33.96	-13.61	-2.88	0.68	0.07	10.0%
90	-33.18	-13.75	-3.10	0.68	0.07	10.5%

4.4.2 Calorimetry of Envelope C (AN-102) Sr/TRU Precipitate Slurries

Calorimetry experiments were conducted on AN-102 Sr/TRU precipitate slurries containing 13 and 15 wt % insoluble solids. Table 4 shows the averaged heat flow data observed for the experiments with the empty crucible, the standard, and the actual sample. The calculated heat capacity data are also provided along with an estimate of the error associated with each.

Table 4. Calorimetry Data for AN-102 Sr/TRU Precipitate Slurries

T (°C)	Sample (mW)	Standard (mW)	Empty (mW)	HC Cal./g °C	σ Cal./g °C	CV
13 wt. %						
35	-26.72	-28.67	7.28	0.49	0.03	5.9%
45	-26.44	-29.02	7.70	0.49	0.03	5.3%
55	-26.03	-29.44	8.09	0.49	0.02	4.4%
65	-25.74	-29.73	8.40	0.50	0.02	4.1%
75	-25.62	-29.80	8.57	0.50	0.02	4.1%
85	-25.57	-30.07	8.70	0.51	0.02	4.1%
15 wt. %						
35	-72.57	-28.67	7.28	0.68	0.03	4.8%
45	-72.03	-29.02	7.70	0.68	0.04	5.1%
55	-71.51	-29.44	8.09	0.68	0.03	5.1%
65	-71.00	-29.73	8.40	0.68	0.03	4.8%
75	-70.62	-29.80	8.57	0.69	0.03	4.6%
85	-70.82	-30.07	8.70	0.70	0.04	5.4%

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5.0 DISCUSSION

5.1 RHEOLOGY

5.1.1 Rheology of Sr/TRU Precipitate Slurry Samples

The viscosity of the Sr/TRU precipitate slurries is directly related to wt % solids. The slurry viscosities exhibit a linear relationship with wt % solids as shown in Table 5 and Figure 1. Least squares linear regression analysis of the data at each temperature reveals that the slope gradually decreases from 1.6 to 0.45 across the temperature range 10 to 50 °C. The fact that the viscosity data remains linear as a function of wt % solids at each analysis temperature suggests that either the wt % solids does not change across the temperature range analyzed for each sample or the wt % solids changes by the same amount at a given temperature for every sample.

Table 5. Linear Regression Analysis Results for the Sr/TRU Precipitate Slurry Viscosity Data as a Function of Wt % Solids

T (°C)	Regression Fit	R ²
10	$y = 1.6267x + 1.0242$	1.00
15	$y = 1.3699x + 1.1773$	1.00
25	$y = 1.0283x + 1.4352$	1.00
50	$y = 1.4457x + 2.5561$	0.88

Shown in the Figure 2 are the temperature-dependant average apparent viscosities as determined for the AN-102 supernate and precipitate slurries as a function of temperature. As a simplification tool an empirical model was developed to relate the apparent viscosity to temperature and weight percent solids for these samples. Because all samples were described by a Bingham fit, the apparent viscosity can be explained as a function of weight percent insoluble solids and temperature. The apparent viscosity is independent of the shear rate. An Arrhenius expression was used to fit each individual Envelope C sample as a function of temperature. A plot of the natural log of the apparent viscosity versus the reciprocal of the temperature in Kelvin yielded the parameters of interest. The y-intercept is defined as the natural log of the pre-exponential term and the slope of the fit is equal to the energy of flow activation divided by the gas constant R. The pre-exponential and slope was determined for each sample. Each of these terms was then linearized as a function of weight percent solids.

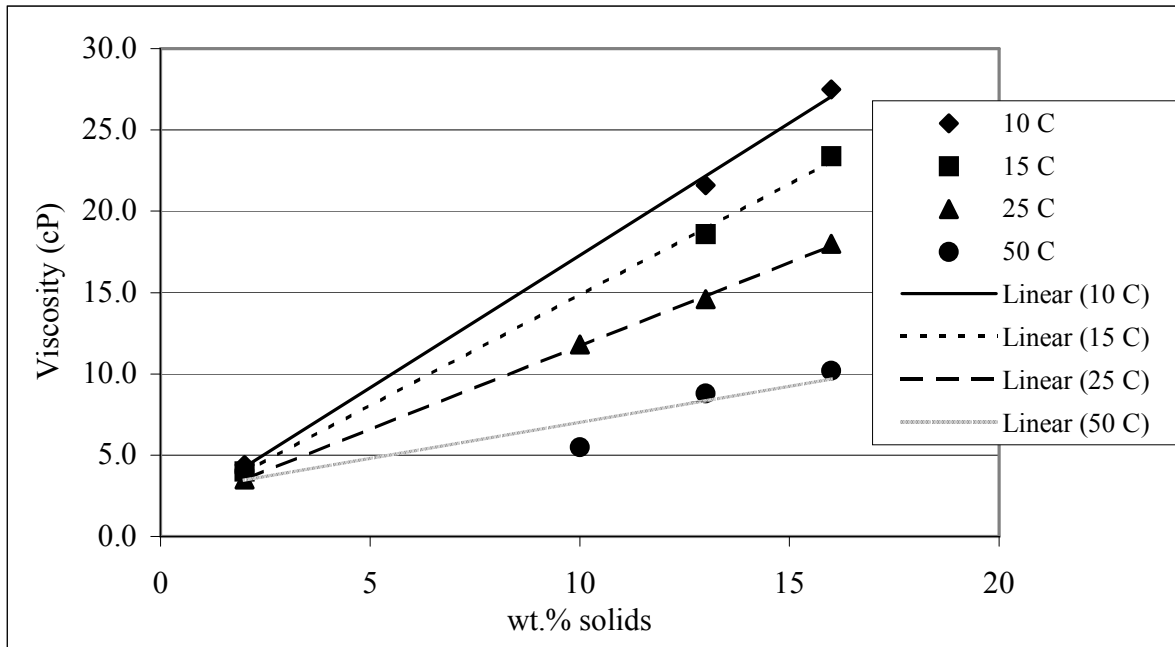


Figure 1. Plot of Actual AN-102 Sr/TRU Precipitate Slurry Viscosity Data Versus Wt % Solids for Each Analysis Temperature

Because the weight percent solids are known at 25 °C as well as the temperature dependence from the Arrhenius fit the unified relation could be established. The assumption is that coincident temperature effects on weight percent solids only change the amount of solids and not the type or characteristics with respect to rheology for the limited range evaluated. The unification of the model was performed at 25 °C where the solids were known. The model assumes the user knows the wt% solids and the temperature for the system of interest and predicts the viscosity. The model does not predict weight percent solid or temperature.

The final unified and empirical model that resulted was an Arrhenius-type exponential with the linearized functional fits determined for the effects of weight percent solids embedded into the Arrhenius expression. The end result was a single empirical function relating the apparent viscosity to shear rate, temperature, and insoluble solids.

Env. C Tank 241-AN-102 Rheology

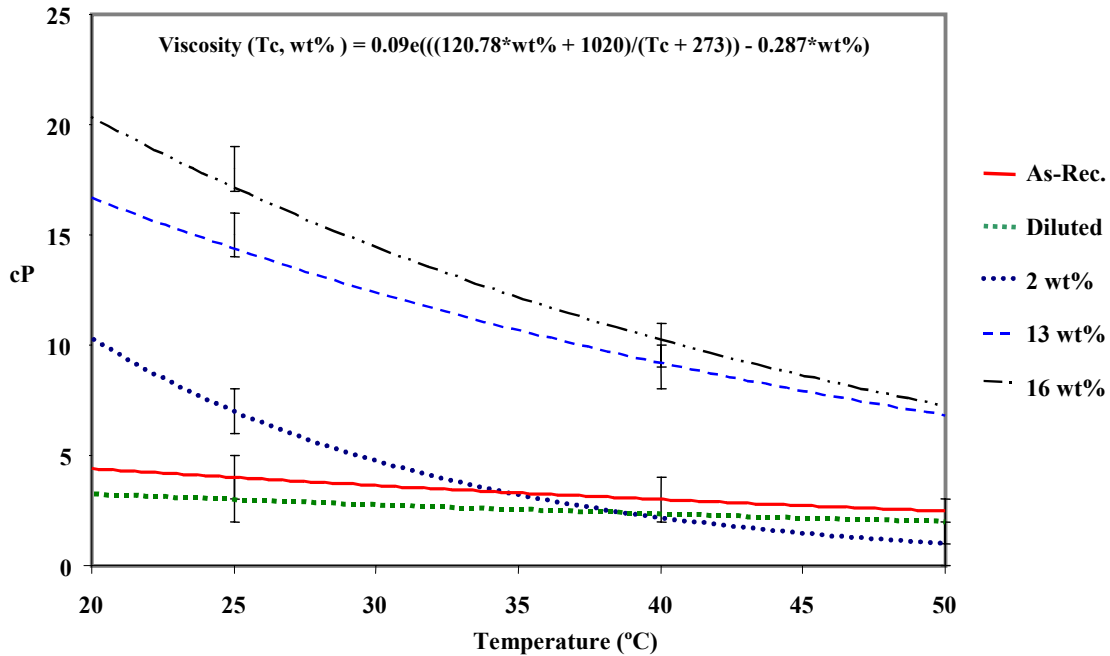


Figure 2. Temperature-dependent Average Apparent Viscosities for the AN-102 Supernate and Precipitate Slurries as a Function of Temperature
[The equation at the top of the figure relates apparent viscosity to temperature and wt % solids for all AN-102 samples. $T_c = T$ (°C).]

5.2 CALORIMETRY

5.2.1 Calorimetry of Envelope C (AN-102) Diluted Supernate

A plot of the heat capacity values observed for the diluted AN-102 supernate samples as a function of temperature (40-90 °C) is shown in Figure 3. The heat capacity values obtained at each sodium concentration and temperature are not distinguishable, based on the propagation of error analysis reported in Table 3.

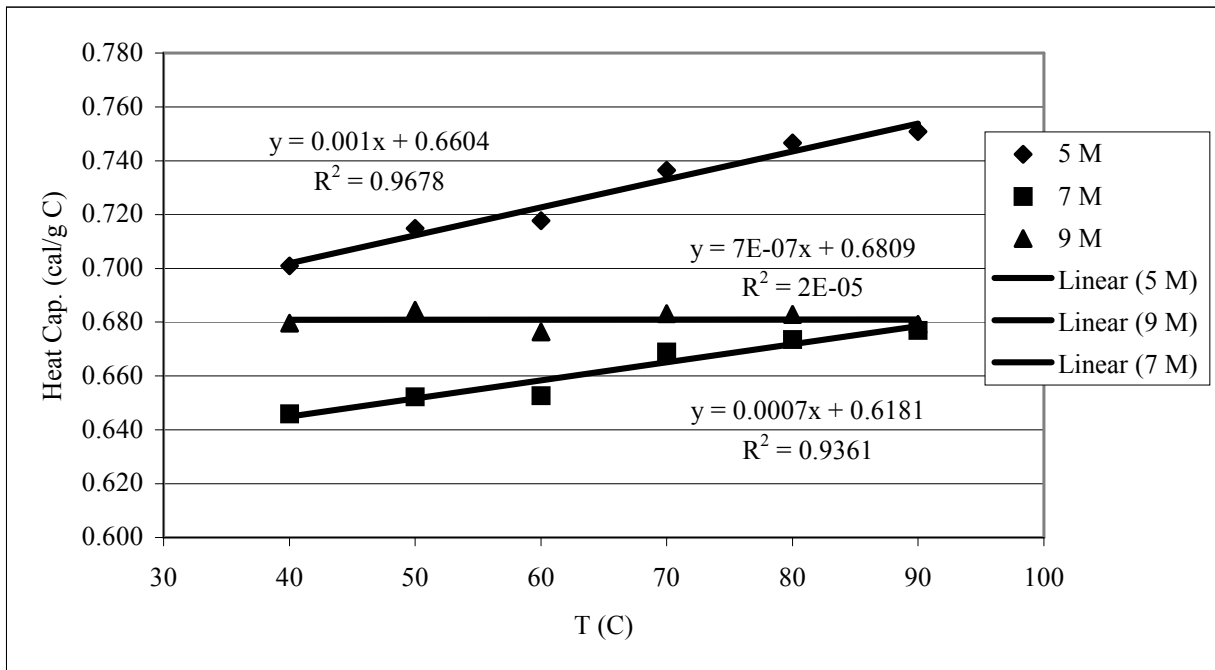


Figure 3. Heat Capacity Versus Temperature Data for the Actual 241-AN-102 Diluted Supernate Samples

5.2.2 Calorimetry of Envelope C (AN-102) Sr/TRU Precipitate Slurries

A plot of the heat capacity values observed for the AN-102 Sr/TRU precipitate slurries as a function of temperature (35-85 °C) is shown in Figure 4. Propagation of error analysis (Table 4) indicates that the results obtained for the two samples are statistically different with respect to wt% solids. The analysis of error also strongly suggests that there is no temperature dependence of heat capacity for either sample for the temperature range reported. The decrease in heat capacity observed in going from 13 to 15 wt % solids seems large and could possibly be attributed to differences in composition (perhaps total solids). Further evaluation would be necessary in order to more definitively understand this observation.

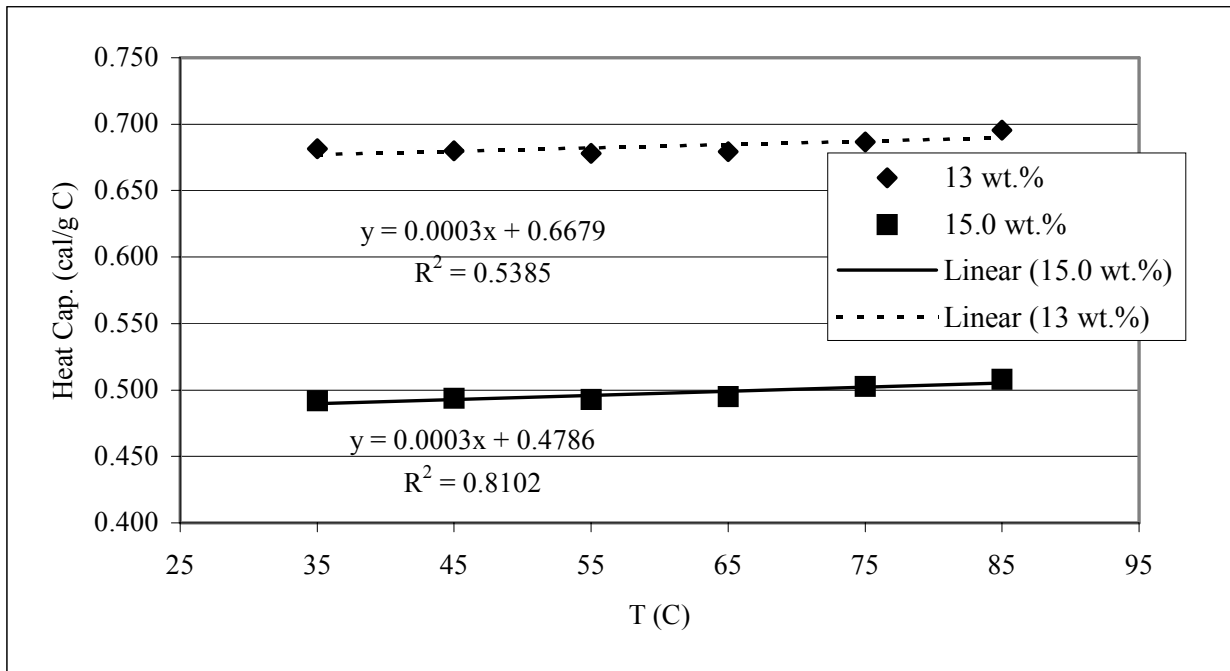


Figure 4. Heat Capacity Versus Temperature Data for the Actual 241-AN-102 Sr/TRU Precipitate Slurries

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6.0 CONCLUSIONS/SUMMARY

Rheograms were obtained for a number of actual Hanford sample supernates, both as-received and diluted, and for two samples which had been subjected to the full pretreatment process. At 25 °C, the as-received Envelope A sample exhibited the highest observed viscosity of all supernate samples tested (23.1 cP). The high viscosity is most likely due to the high wt % solids observed for this sample. All other supernate viscosities were below 10 cP at all temperatures measured. In general, the supernate viscosities appear to be intermediate between the viscosities of sodium hydroxide and sodium nitrate solutions at similar concentrations (viscosities of 6 M solutions at 25 °C: NaOH – 4.6 cP; NaNO₃ – 2.2 cP). Rheograms obtained for the Sr/TRU precipitate slurries indicate, as expected, increase in viscosity with wt % insoluble solids. The viscosity of the AN-102 samples at 25 °C was observed to increase from near 3 cP at 0 wt % solids to 18 cP at 16 wt % solids.

Heat capacity data were obtained for the diluted AN-102 sample at various concentrations. Error analysis indicates that the heat capacities of supernate samples at 5, 7, and 9 M Na⁺ were not significantly different. The average heat capacity observed for the diluted supernate samples at 40 °C was 0.68 cal./g °C. Heat capacity data obtained for AN-102 SR/TRU precipitate slurries was lower than was observed for the AN-102 supernate. At 35 °C the average heat capacity observed for the 13 and 15 wt % slurries was 0.59 cal./g °C.

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APPENDIX A

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**RHEOMETER PRE-CALIBRATION IN THE SHIELDED CELLS
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**TEMPERATURE DEPENDENCE OF VISCOSITY
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APPENDIX A – PART 1

PHOTOGRAPHS OF RHEOMETER REMOTING EFFORTS

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Figure 1. Front view of all components of customized remoted unit in mockup



Figure 2. Front view of specially designed remoted Haake DC5 temperature control unit

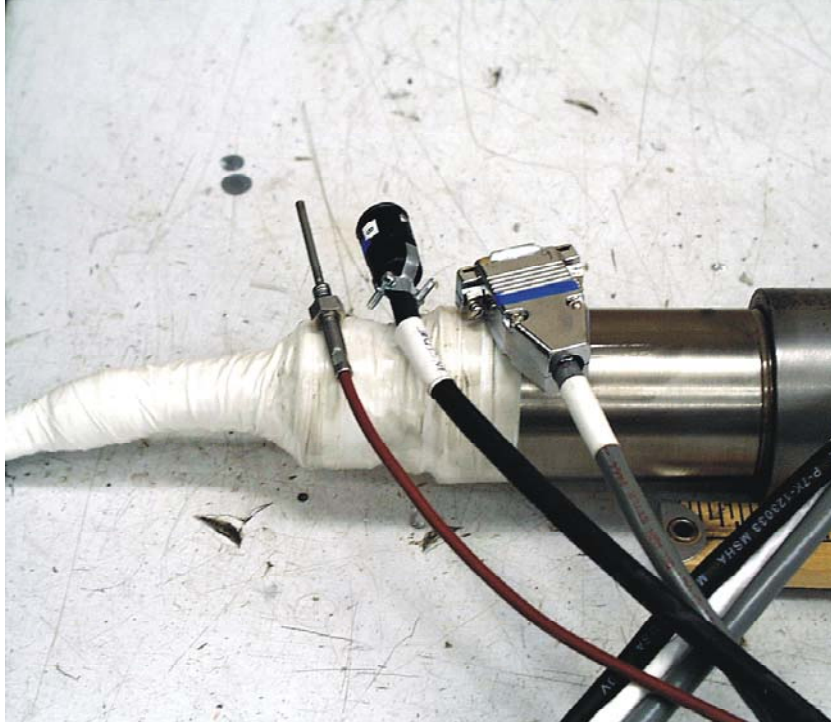


Figure 3. Connectors positioned on top of KAPL plug for DC5 temperature control unit

From left to right are the PT100 thermocouple for insertion into the cup temperature jacket, and two control cables for feedback from DC5 control unit positioned exterior to shielded cell.

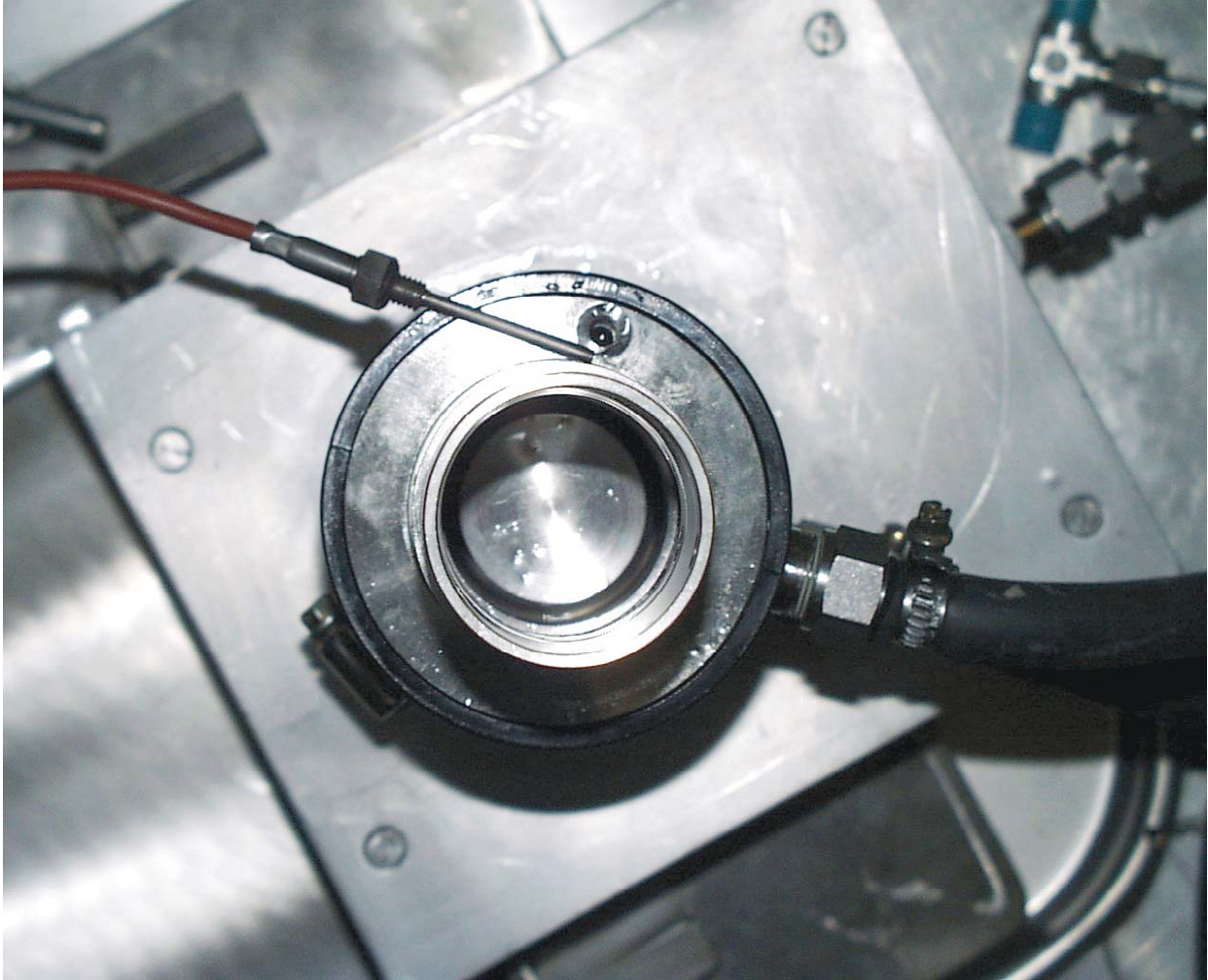


Figure 4. Top view of cup for the NV sensor system resting inside of temperature control jacket

Notice the fluid circulation cables from the DC5 bath exiting at the right. The PT100 temperature sensor is resting adjacent to the entrance hole in the temperature jacket.



Figure 5. Front view of cup for the NV sensor system resting inside of temperature control jacket

Notice the fluid circulation cables from the DC5 bath exiting at the bottom. The PT temperature sensor is inserted into the jacket.



Figure 6. Front view of cut for the system in mockup

Note the sample cup positioned below the rotor and the thermal jacket to the left prior to positioning over the sample cup. A special jack was designed to accommodate the sample system and allow for remoted operations.

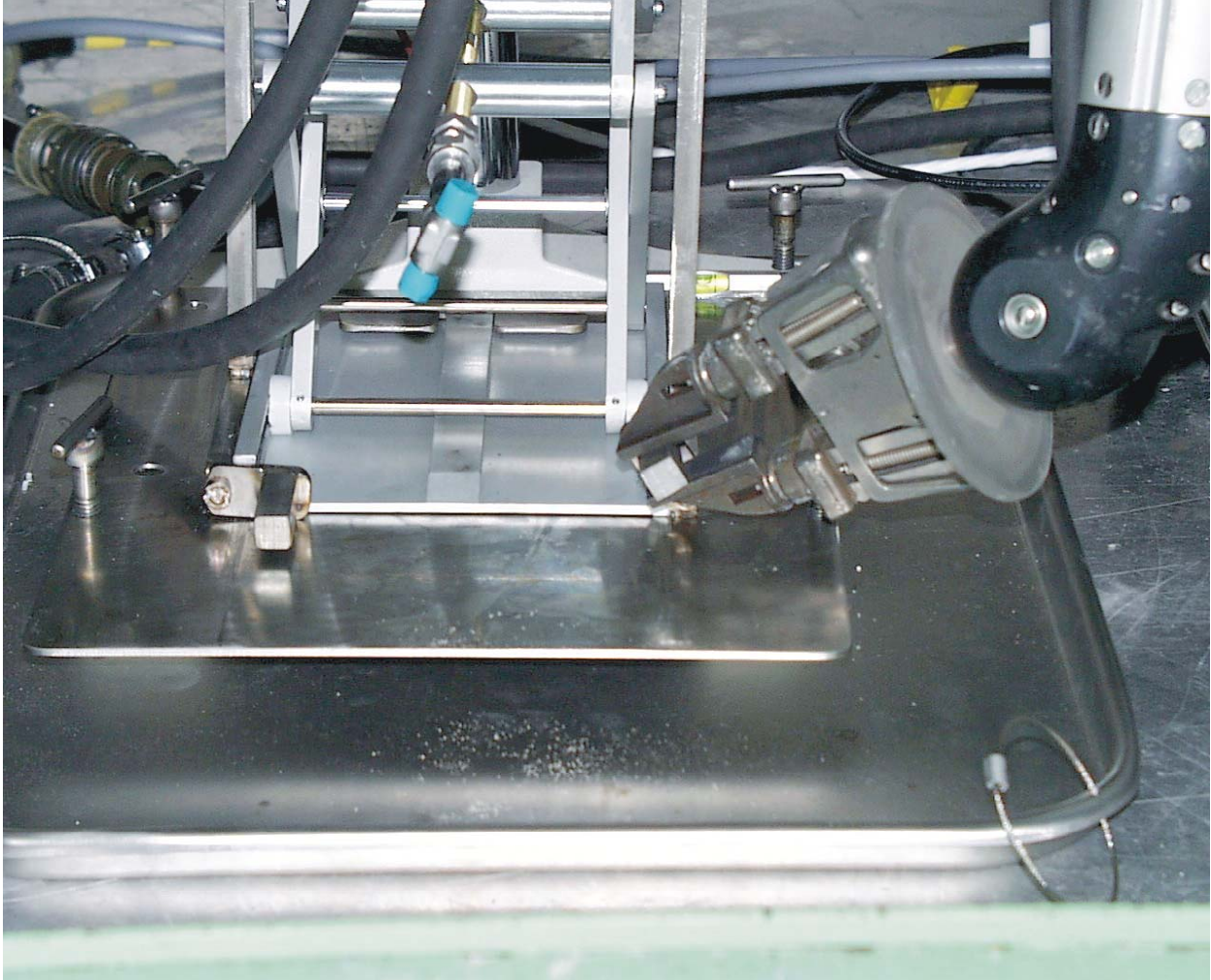


Figure 7. Front view of special jack to accommodate sample system remotely for use in shielded cell

Guide tracks are placed at the left and right and allow the jack to slide into the support base which is attached to the secondary container. Leveling screws are placed on the base to allow for leveling. A stop is placed at the rear to properly define positioning with regard to front and back. Locking keys which rotate (manipulator touching the right key) ensure proper alignment of jack with regard to the rheometer head.

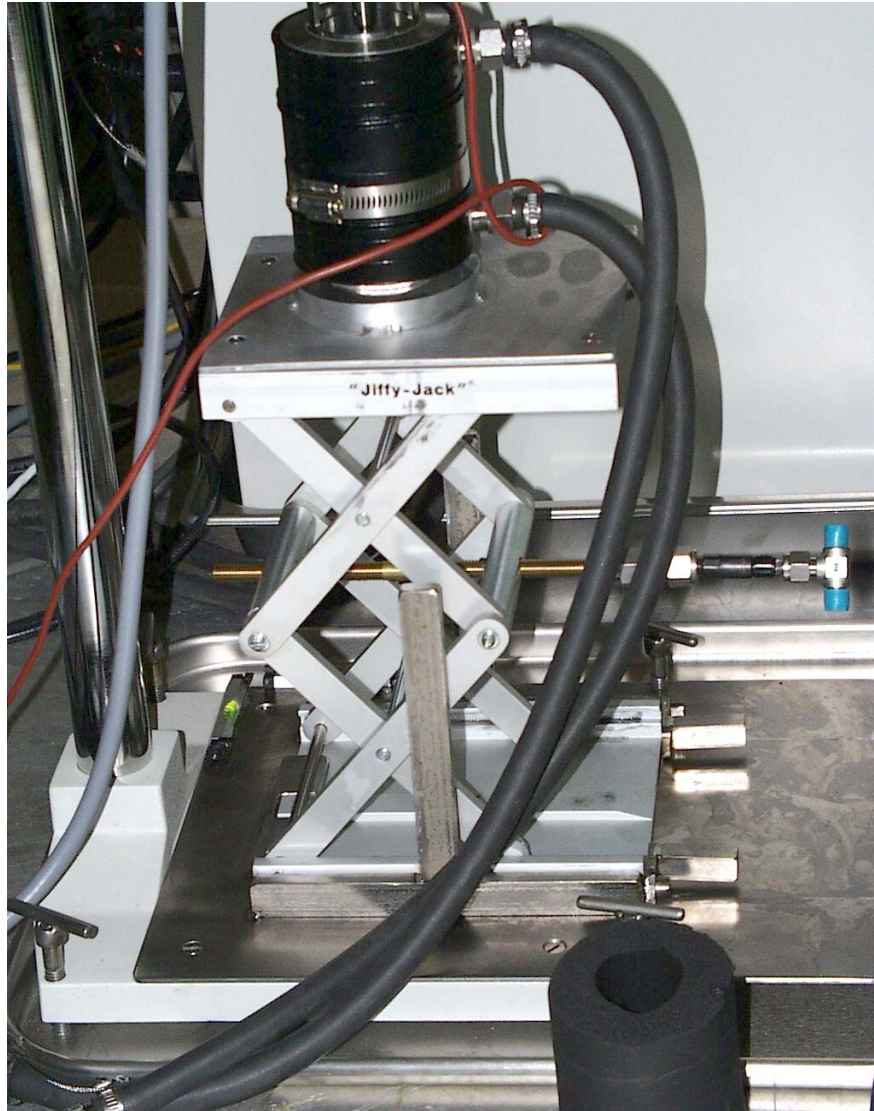


Figure 8. Side view of jack with temperature jacket elevated

Note the leveling system, locking keys, and side supports. The side supports are necessary to allow reproducible lateral positioning. This is necessary when remotely placing the rotor into the cup using the jack.



Figure 9. Front view prior to raising jack to position rotor inside sample cup



Figure 10. Side view of manipulator turning crank to raise jack and place rotor inside cup



Figure 11. Side view of properly positioned sample cup following elevation of jack

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APPENDIX A – PART 2

RHEOMETER CALIBRATION PRIOR TO SHIELDED CELLS INSTALLATION
WITH THE 95 cP STANDARD

Table 1. 95 cP Standard Rheology Data53

Figure 1. 95 cP Standard Rheogram54

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Table 1. 95 cP Standard Rheology Data

[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
46.14	506.8	73.66	763.7	99.82	1006	73.66	759.7
48.12	518.2	74.76	771.2	98.99	999	72.39	747.8
48.63	528.4	75.64	780.9	98.25	991.1	71.83	740.3
49.99	538.1	76.53	787.5	97.31	982.3	70.55	731.5
50.73	546.4	77.24	795.4	96.75	976.1	69.87	724.5
51.32	552.2	77.86	802	95.86	968.2	69.31	718.3
51.91	559.7	78.72	809.1	95.12	961.1	68.66	710.8
53.54	571.6	80	822.3	94.41	953.6	67.54	702.4
54.28	578.6	80.79	828.9	92.99	942.6	66.83	695
54.96	587.4	81.5	837.3	92.42	935.6	65.46	683.1
55.7	594.5	82.1	843.9	91.45	927.2	64.78	675.6
56.47	602.4	83.1	851.4	90.74	920.1	64.07	668.1
57.24	608.6	83.69	858	89.91	913.5	62.98	658.8
57.86	615.6	85.14	869.9	89.14	906	62.3	652.7
59.4	628	85.83	877.4	87.78	892.8	61.29	644.3
60.14	634.6	86.8	884.5	86.95	885.8	60.49	637.7
60.82	642.5	87.42	892.4	86.18	877.4	59.87	628.4
61.97	652.2	88.55	902.5	85.26	870.3	59.1	621.4
62.8	658.8	89.32	909.6	84.73	865.1	58.33	613.4
63.42	665.4	90.06	916.6	83.64	853.2	56.85	602.9
64.31	673.4	90.74	924.1	82.78	845.7	56.08	595.8
65.49	683.9	91.69	931.6	82.07	837.7	55.34	587.4
66.38	691.4	92.51	940.4	81.15	830.7	54.48	580.8
67.03	699.4	93.22	947.5	80.35	821.9	53.69	571.6
67.68	706.4	94.59	958.5	79.52	815.3	52.92	564.1
68.93	715.2	95.27	966	78.25	802.9	52.15	557
69.64	722.3	96.27	975.2	77.66	796.8	51.44	549.5
70.2	729.3	97.07	982.3	76.65	787.9	49.87	537.6
71.24	737.3	97.87	988.9	75.97	780.9	49.6	533.2
72.36	749.2	98.43	995.9	75.35	774.3	48.77	525.3
73.04	756.2	99.35	1003	74.67	767.7	47.74	516

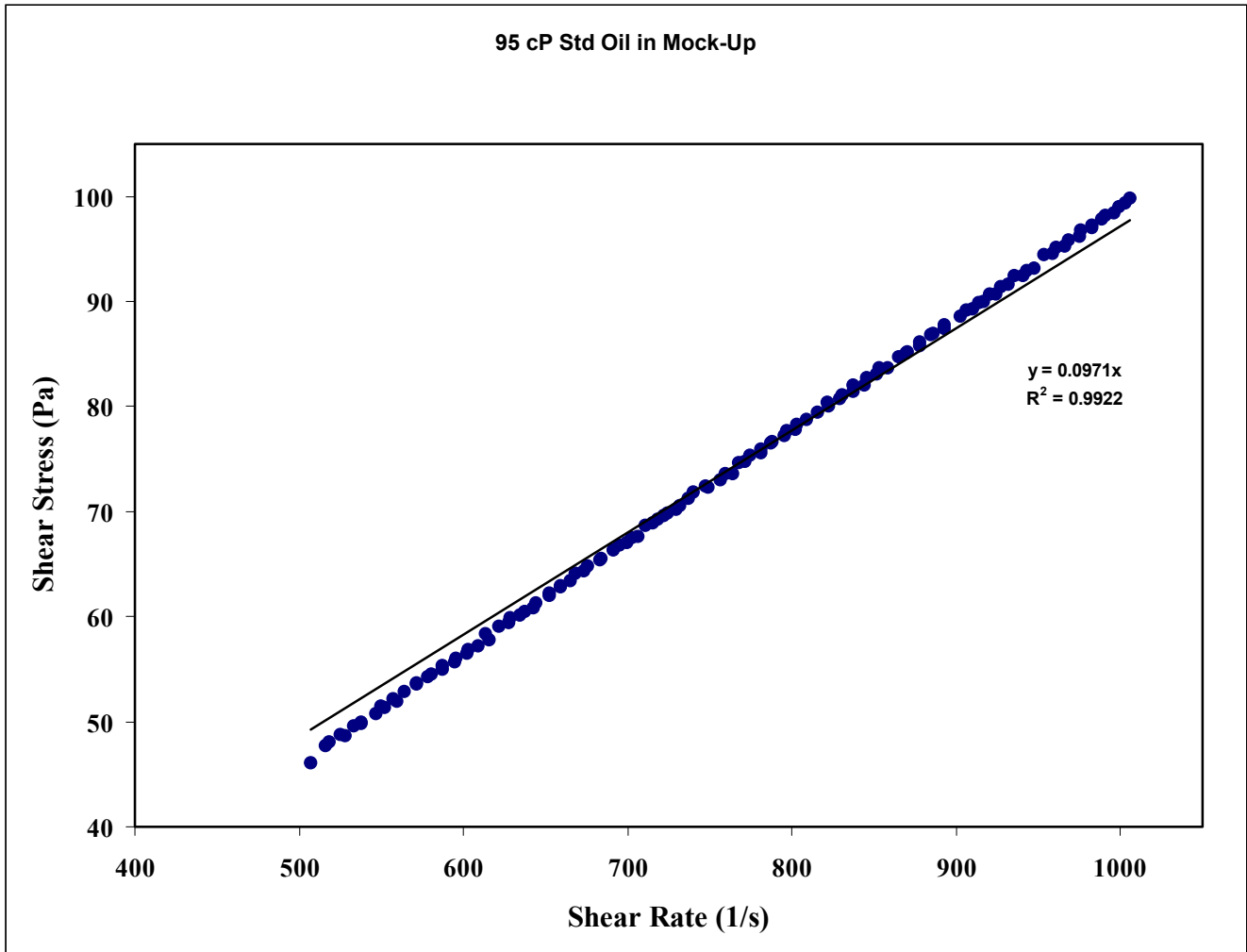


Figure 1. 95 cP Standard Rheogram

APPENDIX A – PART 3

**RHEOMETER PRE-CALIBRATION IN THE SHIELDED CELLS
WITH THE LOW VISCOSITY STANDARD**

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RHEOMETER PRE-CALIBRATION IN THE SHIELDED CELLS WITH THE LOW VISCOSITY STANDARD

Table 1. Rheometer Response for Blank

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
5.345	305.4	5.961	325.2	5.689	327	4.499	301.4	6.138	311.1	5.274	307.6	5.286	303.6	4.753	301.4	5.248	308.9
5.993	322.1	6.473	344.6	6.278	341.1	4.7	319.1	6.621	324.8	5.973	320.4	5.97	322.6	6.02	323	5.982	323.5
6.458	339.3	6.958	375	6.751	358.3	5.937	327.9	7.124	348.6	6.482	338	6.494	346.4	6.059	331	6.491	341.5
6.92	368.4	7.47	400.6	7.331	389.6	6.076	366.2	7.55	376.3	7.041	368	7.014	371.5	7.068	371.1	6.923	373.3
7.399	394	7.843	422.6	7.757	413.8	7.017	396.6	7.97	399.7	7.55	389.6	7.506	394.9	7.512	393.5	7.381	392.6
7.876	419.5	8.246	444.6	8.246	438.5	7.485	420	8.358	421.7	8	422.2	7.967	422.2	7.914	423.1	7.805	420.9
8.263	441.6	8.695	470.2	9.039	476.8	7.92	445.5	9.225	445.5	8.509	447.7	8.479	448.2	8.376	445.5	8.278	442.9
8.974	479	9.583	509.9	9.432	501.1	8.411	469.3	9.672	485.2	8.941	473.3	8.944	472.9	8.846	473.7	9.045	481.2
9.358	508.5	10.02	534.1	9.894	524.4	8.811	509	10.14	508.5	9.403	499.7	9.364	498	9.287	496.6	9.489	505.9
9.817	531	10.41	558.8	10.29	553.1	9.607	517.4	10.66	536.8	9.856	525.7	10.21	535.9	10.09	536.3	9.909	530.1
10.25	557	10.87	591	10.79	576.9	9.675	542.9	11.15	561.9	10.35	549.1	10.63	562.3	10.54	561.4	10.41	562.8
10.71	580.4	11.33	614.3	11.14	598.4	10.15	583.5	11.59	594.5	10.73	573.8	11.13	583.9	10.95	589.2	10.8	587
11.07	605.1	11.78	637.7	11.56	623.6	10.98	616.1	12.03	619.2	11.62	614.8	11.62	619.2	11.43	615.2	11.34	616.1
11.55	629.3	12.52	675.6	12.13	651.3	11.46	637.7	12.41	642.5	12.1	639.4	12.06	642.1	11.85	638.1	11.83	642.1
12.43	672.5	12.93	697.6	12.66	681.3	11.94	661.9	12.88	665.9	12.52	669.8	12.45	665.4	12.29	661.5	12.36	671.6
12.84	696.3	13.34	720.5	13.47	721	12.46	691.4	13.68	690.1	13	693.6	13.2	703.3	12.74	690.1	12.9	700.2
13.27	722.7	13.87	752.7	13.88	744.3	13.01	724.5	14.09	729.8	13.39	717.4	13.62	725.8	13.22	717	13.31	721.4
13.7	754.4	14.25	774.3	14.32	772.5	13.5	746.1	14.56	751.4	13.84	739	13.66	735.1	13.73	743	13.73	745.6
14.18	777.8	14.58	797.6	14.82	799.8	13.91	769.4	15.03	783.5	14.23	765.5	14.3	765	14.19	769.9	14.51	784
14.63	805.1	15.45	838.6	15.23	821	14.29	795.4	15.43	809.5	15.16	805.1	15.2	813.9	14.67	797.6	14.88	807.8
15.03	825.4	15.89	866.8	15.93	858	14.79	824.1	15.91	832.9	15.5	829.4	15.27	821	15.21	824.1	15.38	832.9
15.44	849.2	16.27	891.9	16.06	865.9	15.3	849.2	16.51	858.9	15.97	858	15.77	849.2	15.61	851.8	15.91	865.1
16.26	891.9	16.79	914.4	16.86	910	15.69	889.3	16.99	888.4	16.38	881.4	16.71	891.5	16.52	891.9	16.2	888
16.62	913.1	17.06	940	17.42	937.8	16.53	923.7	17.33	914.4	16.88	909.6	17.12	914.4	16.97	917.1	16.66	909.6
17.03	943.9	17.51	964.7	17.71	965.1	17.06	929.4	17.8	940.9	17.3	935.1	17.51	946.6	17.42	945.3	16.97	933.8
17.45	969.1	18.28	1002	18.3	990.2	17	967.7	18.63	962.9	17.74	962	17.98	973	17.92	973.5	17.42	961.1
17.86	995.5	18.66	1029	18.78	1015	17.95	992.9	18.96	1004	18.19	987.1	18.42	995.5	18.39	999.9	18.28	1002
18.33	1021	19.13	1053	19.16	1046	18.36	1027	19.46	1027	18.75	1012	19.07	1025	18.87	1025	18.78	1025
18.84	1047	19.61	1077	19.64	1068	18.9	1052	20.02	1055	19.49	1050	19.52	1052	19.37	1055	19.19	1050
19.16	1070	20.11	1110	19.99	1095	19.28	1077	20.49	1086	19.96	1080	19.93	1077	19.78	1078	19.61	1081
19.7	1095	20.49	1133	20.52	1120	19.78	1100	20.85	1111	20.44	1103	20.44	1109	20.23	1104	20.02	1107

RHEOMETER PRE-CALIBRATION IN THE SHIELDED CELLS WITH THE LOW VISCOSITY STANDARD

Table 1. Rheometer Response for Blank - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
20.08	1119	20.85	1154	20.94	1145	20.17	1126	21.23	1134	20.91	1129	20.91	1136	20.73	1129	20.44	1133
20.88	1160	21.62	1191	21.38	1171	20.67	1149	21.71	1158	21.47	1161	21.32	1160	21.18	1162	20.97	1160
21.32	1188	22.09	1218	21.94	1198	21	1174	22.24	1185	21.83	1187	21.74	1186	21.59	1186	21.44	1185
21.8	1216	22.45	1241	22.33	1222	21.44	1215	22.95	1207	22.27	1214	22.18	1212	22.03	1209	21.83	1211
22.21	1243	22.98	1268	22.83	1249	22.27	1240	23.48	1249	22.68	1237	22.71	1239	22.45	1236	22.36	1236
22.6	1263	23.39	1296	23.75	1294	22.77	1265	23.87	1274	23.16	1263	23.16	1263	22.95	1262	22.77	1263
22.98	1288	23.78	1318	24.16	1318	23.16	1296	24.37	1300	23.6	1286	23.6	1286	23.37	1287	23.6	1303
23.42	1314	24.52	1357	24.61	1341	23.66	1320	24.73	1330	23.99	1311	24.4	1329	24.19	1327	23.99	1327
23.99	1342	24.93	1381	25.02	1373	24.08	1345	25.23	1354	24.9	1352	24.87	1352	24.7	1352	24.58	1353
24.37	1367	25.32	1404	25.5	1397	24.49	1382	25.61	1378	25.29	1377	25.29	1382	25.11	1379	24.9	1376
25.17	1404	25.91	1429	25.82	1419	25.26	1404	26.12	1406	25.76	1406	25.7	1405	25.5	1410	25.38	1410
25.58	1433	26.3	1463	26.27	1446	25.67	1429	26.59	1431	26.24	1432	26.09	1429	25.91	1426	25.79	1430
25.97	1458	26.68	1483	28.07	1579	26.12	1460	27.01	1455	26.65	1453	26.59	1458	26.44	1455	26.27	1456
26.41	1483	27.06	1507	27.57	1553	26.59	1481	27.83	1481	26.98	1474	27.86	1569	27.48	1571	26.71	1486
26.8	1508	27.83	1547	27.09	1528	26.89	1560	27.75	1522	27.69	1512	27.36	1547	27.06	1542	27.54	1524
27.27	1553	26.98	1526	26.62	1503	27.54	1504	26.89	1556	26.65	1537	27.04	1521	26.5	1512	26.77	1541
26.47	1517	26.89	1506	26.27	1479	26.38	1492	26.47	1517	26.12	1499	26.09	1482	26.06	1488	26.32	1515
26.09	1491	25.67	1446	25.44	1439	26.32	1466	26.06	1492	26.03	1482	25.67	1452	25.64	1464	25.82	1488
25.67	1463	25.58	1436	24.96	1414	25.85	1457	25.56	1467	25.61	1454	25.2	1428	25.26	1438	25.44	1462
25.23	1438	24.31	1403	24.55	1389	25.79	1424	25.08	1438	25.53	1443	24.7	1404	24.85	1416	24.93	1430
24.79	1415	24.05	1347	24.08	1358	24.93	1384	24.61	1406	25.11	1414	24.34	1377	24.43	1392	24.58	1408
24.34	1392	22.83	1319	23.57	1333	24.43	1366	24.22	1382	24.73	1387	23.78	1347	23.51	1352	24.13	1382
23.63	1352	22.68	1291	23.19	1310	24.25	1329	23.78	1359	24.25	1360	23.37	1319	23.16	1321	23.69	1355
23.22	1328	21.29	1226	22.74	1283	23.16	1316	23.39	1334	23.75	1335	22.86	1295	22.63	1295	23.25	1332
22.68	1301	21.2	1208	22.27	1259	23.04	1280	22.57	1309	23.25	1310	22.45	1268	22.24	1269	22.74	1306
22.21	1272	20.67	1177	21.86	1235	22.57	1255	22.06	1269	22.42	1268	21.92	1242	21.77	1244	22	1265
21.74	1244	20.61	1170	21.12	1194	22.21	1218	21.65	1245	22.03	1246	21.41	1211	21.26	1217	21.53	1241
21.2	1218	20.23	1148	20.58	1167	21.47	1195	21.15	1218	21.62	1215	21	1188	20.79	1192	21.09	1215
20.79	1185	20.14	1140	20.11	1143	21.09	1163	20.67	1191	21.18	1190	20.55	1166	20.44	1164	20.61	1185
20.29	1159	19.73	1122	19.64	1111	20.64	1137	20.2	1159	20.73	1167	20.14	1140	19.96	1141	20.23	1163
19.84	1135	19.7	1115	19.19	1087	20.14	1114	19.78	1134	20.26	1138	19.31	1099	19.13	1103	19.81	1139

RHEOMETER PRE-CALIBRATION IN THE SHIELDED CELLS WITH THE LOW VISCOSITY STANDARD

Table 1. Rheometer Response for Blank - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
19.37	1112	19.31	1092	18.84	1063	19.73	1088	19.31	1110	19.75	1114	18.84	1073	18.75	1081	19.34	1115
18.84	1080	18.57	1052	18.33	1036	19.28	1060	18.9	1085	19.37	1089	18.42	1048	18.36	1055	18.6	1077
18.45	1055	18.04	1030	17.89	1013	18.81	1037	18.42	1060	18.93	1064	17.95	1022	17.83	1022	18.13	1051
18.01	1027	17.65	1001	17.45	987.6	18.36	995.9	18.04	1036	18.39	1036	17.48	994.2	17.36	1001	17.68	1021
17.59	1003	17.3	976.1	16.74	949.7	17.54	988	17.15	1012	17.95	1011	16.97	966	16.77	971.3	17.3	995.1
17.09	978.3	16.82	953.2	16.2	921.5	17.51	944.4	16.77	969.9	17.09	969.1	16.56	938.7	16.32	945.3	16.88	971.7
16.35	940.9	16.41	931.2	15.85	898.1	16.62	914	16.32	946.6	16.74	946.1	16.09	915.3	15.88	920.1	16.53	950.6
15.97	917.5	16	903.4	15.37	866.8	16.17	891.9	15.88	917.9	16.2	916.2	15.64	889.7	15.43	889.3	15.73	905.6
15.46	893.3	15.11	859.8	14.87	839.1	15.76	867.7	15.4	893.7	15.82	892.8	15.2	865.9	15.08	864.6	15.23	884.9
15.05	862.4	14.72	839.1	14.34	818.3	15.37	842.1	14.93	868.1	15.35	869.5	14.46	827.2	14.58	840.4	14.84	853.6
14.66	840.8	14.22	810.9	13.87	786.6	14.93	818.8	14.4	840.4	14.93	843.5	13.98	798.1	13.84	803.8	14.43	829.8
14.25	815.3	13.75	784.4	13.36	758.9	14.4	776.5	13.95	810.4	14.43	818.8	13.48	773.8	13.48	780.4	13.95	804.2
13.45	776.5	13.3	754	12.92	734.6	13.63	753.1	13.57	787.9	13.63	780	13.04	748.7	13.04	752.7	13.45	780.4
12.98	752.2	12.89	730.2	12.53	710.4	13.24	728.9	12.74	764.6	13.18	750.9	12.56	717.9	12.62	727.1	13.04	756.2
12.53	721	12.47	706.9	12.09	685.7	12.77	698	12.3	722.3	12.71	724.5	12.11	691	12.22	703.3	12.74	730.7
12.24	698	12.1	683.1	11.7	662.3	12.39	671.6	11.89	699.4	12.12	694.1	11.64	665.9	11.84	678.7	12.28	703.3
11.76	672.9	11.65	659.3	11.28	637.2	11.94	644.3	11.38	670.7	12.15	687.5	11.21	639	11.36	651.8	11.71	676.9
11.36	649.1	10.76	615.2	10.38	598.9	11.4	619.2	10.93	643.4	11.24	643	10.8	615.2	10.5	613.9	11.25	653.1
10.89	625.3	10.33	589.2	9.998	566.3	10.93	594.5	10.45	617.8	10.72	614.8	10.3	589.2	10.1	590.1	10.46	611.2
10.14	588.3	9.853	565	9.512	543.8	10.51	568.5	9.977	591.8	10.32	590.5	9.912	565	9.616	562.8	10.03	588.8
9.728	564.1	9.376	535.9	8.98	510.8	10.02	545.6	9.568	565.8	9.906	567.2	9.376	540.3	9.222	532.8	9.574	556.1
9.293	533.2	8.956	509.9	8.53	486.1	9.545	520	9.187	541.2	9.412	534.5	8.562	498.4	8.772	507.7	9.163	534.1
8.811	509.4	8.494	481.7	8.035	458.8	9.157	479.5	8.684	516	8.944	511.6	8.183	475.5	8.195	479.5	8.42	498.9
8.408	486.5	8.068	457.9	7.535	437.6	8.281	453.5	8.148	490.5	8.533	486.5	7.707	448.2	7.728	452.6	8.03	475.1
8.006	463.2	7.547	435.4	7.011	403.2	7.816	428.8	7.313	465.4	8.056	462.3	7.325	421.7	7.222	423.9	7.6	445.5
7.624	438.5	6.855	397.1	6.556	376.8	7.411	399.3	6.926	424.4	7.583	435.4	6.787	394.4	6.795	400.6	7.245	423.1
6.721	395.7	6.42	373.3	6.103	353.9	7.003	375.9	6.426	397.5	7.053	408.5	6.319	371.1	6.378	375.5	6.795	395.7
6.343	373.3	5.961	350.8	5.632	329.2	6.541	349.9	6.011	376.8	6.612	383.4	5.878	346.4	5.869	349	6.289	372.4
5.845	343.7	5.481	317.7	4.827	290.4	6.124	325.7	5.49	344.2	5.733	341.5	5.372	317.7	5.357	324.3	5.801	345.1
5.481	321.7	5.112	293.9			5.621	285.1	5.073	319.1	5.322	317.3	4.931	292.2	4.543	275	5.375	321.3
5.008	294.8	4.644	271.5			4.771	258.7	4.576	293.9	4.872	292.2					4.898	294.8
4.537	269.7	4.218	246.3			4.318			269.3	4.437	268.4					4.455	271.5

RHEOMETER PRE-CALIBRATION IN THE SHIELDED CELLS WITH THE LOW VISCOSITY STANDARD

Table 2. 25 °C

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
8.197	309.4	8.893	319.9	8.395	305.4	9.185	316.4	10.23	327.4	8.292	309.8	10.17	323.5	8.964	320.8	9.097	328.3
10.36	312.9	9.274	321.3	10.59	323.5	9.943	327.9	10.54	345.5	9.431	312	10.83	347.3	9.896	327	9.434	327.4
10.98	335.8	11.09	335.8	10.73	342.4	11.52	347.7	11.85	371.1	10.82	343.3	12.49	376.8	10.63	343.7	11.18	344.2
12.24	369.7	11.29	358.3	11.65	370.6	11.7	369.7	13.34	396.6	11.66	370.6	13.58	402.8	12.05	365.3	12.08	369.3
13.12	400.1	12.21	382.5	13.2	394.9	12.8	402.3	13.96	420.9	13.25	392.2	13.6	419.1	12.67	391.3	12.49	393.5
14.76	420.4	13.63	422.6	13.47	414.2	13.79	429.7	14.86	450.4	13.98	417.3	15.05	454.3	14.44	431.4	13.48	417.8
15.98	465.4	14.81	446.4	15.27	451.7	15.23	453.9	15.46	474.6	14.39	441.1	15.86	480.3	15.37	457.4	14.82	445.1
15.88	475.9	15.77	475.5	16.35	482.1	16.34	480.8	17.2	509	15.26	464.9	16.81	507.7	15.79	465.8	15.82	482.5
17	490.9	16.89	498	16.73	503.3	17.1	503.3	18.48	540.3	16.23	490.5	17.8	532.8	17.12	509.4	16.93	506.3
18.45	530.1	17.75	527.5	17.32	526.6	17.87	527.5	19.3	564.5	17.2	518.2	18.83	563.2	17.62	532.3	17.9	529.7
18.65	550.4	18.71	550.9	18.12	549.1	18.45	550	20.07	587.4	19.3	563.6	19.87	588.8	19.3	566.3	18.45	560.1
20.37	582.1	19.54	582.6	19.04	574.7	19.9	594	20.93	613	19.04	570.7	20.93	613	20.22	590.1	19.39	585.2
20.72	595.8	20.43	607.7	20.64	618.7	21.14	619.6	21.58	638.5	20.1	596.2	21.91	637.2	20.93	618.3	20.25	609.5
22.56	655.7	21.91	639.4	21.79	643.4	21.91	642.5	22.2	663.7	21.23	622.2	22.94	674.2	21.64	642.1	21.35	634.1
22.26	655.7	22.62	660.6	22.97	671.2	22.77	676.9	23.89	701.6	22.97	667.2	23.83	696.7	22.44	667.2	22.59	660.1
		23.42	694.1	23.54	697.6	23.89	702.4	25.05	731.5	23.8	696.7	24.81	725.8	23.71	693.6	23.18	686.1
		24.45	717.9	24.25	719.2	24.96	728.9	25.73	756.7	24.39	721	25.49	749.6	24.72	718.8	24.66	728
		25.16	749.2	25.55	751.4	25.61	750.9	26.44	780.4	25.55	745.2	26.58	771.6	25.31	746.5	25.4	750.9
		26.29	771.6	26.05	774.3	26.17	774.7	27.65	805.1	26.32	770.3	27.32	797.2	26.47	773.8	26.7	776.9
		27.15	795	26.82	796.3	27.41	799	28.24	832	26.91	792.8	28.33	827.2	27.56	802	27.77	810
		27.53	817.5	28.45	833.3	28.51	839.5	29.37	856.7	28.18	816.6	29.16	851	28.98	838.6	28.24	835.1
		29.28	860.7	29.16	860.7	29.69	865.5	30.4	895	29.34	857.1	30.14	877	29.57	862.9	29.48	859.3
29.75	857.1	29.84	882.7	30.08	890.6	30.43	893.3	31.64	919.7	30.52	883.1	31.67	918.8	30.64	892.4	29.87	884
34.87	978.3	30.82	914.4	30.96	911.8	31.35	922.3	32.33	946.1	31.38	914.9	32.71	948.3	31.64	917.1	31.05	907.8
36.88	1055	31.91	938.2	31.97	942.2	32.18	947	32.92	967.7	32	934.2	33.57	976.6	32.15	940	31.94	937.8
37.53	1085	32.56	961.6	32.59	964.2	33.18	970.8	33.78	988.9	33.12	967.7	34.19	999.5	33.24	971.7	32.77	962.5
39.07	1120	33.27	985.8	33.51	993.7	33.89	995.5	35.4	1031	33.95	994.2	35.17	1027	34.04	995.1	33.51	986.7
39.37	1141	34.87	1022	34.46	1018	34.75	1022	36.14	1057	34.81	1020	36.14	1047	34.99	1021	34.99	1025
40.79	1170	35.73	1048	35.4	1043	36	1059	37.06	1082	35.82	1048	36.91	1074	35.76	1042	35.88	1050
41.03	1190	36.5	1076	36.79	1083	36.79	1085	37.8	1107	36.59	1071	37.8	1098	36.65	1072	36.56	1080
42	1222	37.45	1102	37.71	1109	37.71	1108	38.75	1137	37.56	1095	38.6	1125	37.62	1098	37.33	1105

Table 2. 25 °C - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
42.56	1238	38.16	1130	38.48	1134	38.69	1137	39.69	1164	38.36	1118	40.26	1170	39.01	1139	38.36	1129
43.51	1265	38.95	1153	39.22	1161	39.25	1159	40.49	1188	39.66	1159	40.2	1178	39.72	1162	39.07	1157
44.07	1286	39.75	1178	40.11	1183	40.02	1181	41.44	1219	40.52	1184	41.91	1221	40.88	1194	40.2	1182
45.11	1311	40.73	1202	40.85	1211	40.88	1205	42.48	1246	41.47	1209	42.65	1244	41.68	1220	41.03	1210
45.82	1331	41.8	1239	41.88	1237	41.8	1233	43.33	1268	42.39	1242	43.48	1269	42.51	1241	41.83	1236
46.53	1353	42.65	1265	42.54	1264	42.8	1261	44.13	1299	43.25	1267	44.58	1304	43.22	1267	42.71	1262
47.06	1376	43.39	1289	44.28	1306	44.28	1305	45.08	1323	44.19	1292	45.38	1329	44.07	1291	44.22	1304
48.4	1408	44.25	1315	44.9	1327	44.96	1327	45.76	1349	44.99	1320	46.15	1353	44.9	1313	45.05	1328
48.45	1423	45.11	1343	45.67	1353	46	1352	46.47	1372	45.94	1343	47.06	1378	46.12	1351	45.88	1353
49.79	1452	46.18	1369	46.53	1378	46.94	1385	47.98	1408	46.59	1367	47.89	1404	47.06	1381	46.74	1379
50.14	1473	46.8	1394	47.36	1403	47.57	1409	48.93	1440	48.1	1408	48.81	1428	47.92	1408	47.68	1409
51.3	1498	47.74	1421	48.45	1435	48.51	1435	49.67	1462	48.84	1431	49.4	1452	48.87	1433	48.42	1431
51.68	1519	48.75	1449	49.11	1457	49.25	1458	50.58	1489	49.67	1455	50.91	1492	49.67	1460	49.16	1454
52.95	1552	49.99	1485	49.79	1479	50.02	1485	51.56	1519	50.53	1482	51.77	1516	50.56	1488	49.96	1481
53.28	1568	50.79	1511	51.06	1516	51.41	1523	52.45	1543	51.44	1512	52.72	1547	51.38	1514	50.91	1507
50.67	1547	46.92	1417	46.26	1400	46.86	1405	47.09	1407	49.19	1403	45.2	1400	47.15	1412	46.47	1413
50.05	1522	45.88	1389	45.49	1377	45.97	1382	46.21	1385	48.42	1393	44.34	1376	45.55	1370	45.85	1390
49.08	1493	45.26	1364	44.7	1348	45.2	1356	45.2	1357	46.83	1351	43.54	1352	44.61	1345	44.7	1355
48.25	1470	44.19	1340	43.87	1326	44.4	1330	44.19	1323	46.89	1327	42.68	1326	43.99	1323	43.66	1325
47.51	1445	43.39	1311	43.13	1303	43.57	1308	43.42	1301	45.23	1301	41.11	1303	42.89	1289	42.89	1301
46.68	1422	41.91	1272	41.85	1265	42.54	1278	42.06	1264	44.46	1271	40.4	1278	42.12	1264	42.06	1278
45.23	1380	41.03	1249	40.97	1239	41.71	1255	41.38	1241	43.33	1245	39.64	1237	41.35	1241	41.32	1255
44.58	1355	40.23	1218	40.08	1212	40.2	1211	40.52	1212	42.56	1220	38.42	1214	40.26	1211	39.78	1215
43.69	1329	39.55	1195	39.07	1189	39.43	1188	39.72	1191	41.65	1194	37.56	1188	39.37	1184	39.55	1205
42.83	1306	38.72	1172	38.24	1163	38.54	1155	38.54	1159	40.79	1170	36.88	1155	38.45	1155	38.16	1163
42.18	1281	37.95	1148	37.47	1131	37.68	1130	37.8	1135	40.11	1131	36.14	1129	37.56	1134	37.36	1139
41.26	1257	37.21	1122	36.73	1105	36.82	1106	37.06	1111	39.22	1109	34.63	1109	36.44	1099	36.35	1110
40.46	1231	35.55	1081	35.64	1083	35.79	1082	36.26	1086	37.71	1080	33.72	1084	35.64	1077	35.64	1085
38.84	1190	34.81	1058	34.75	1057	35.11	1059	34.93	1048	36.88	1054	32.92	1044	34.93	1053	34.78	1059
38.04	1167	33.95	1026	34.16	1034	34.49	1035	33.95	1025	36.08	1027	32.09	1021	34.1	1027	33.83	1037
37.24	1135	32.95	1003	32.53	990.2	33.04	994.6	33.42	1003	35.2	1003	30.76	995.9	32.62	991.1	32.95	1012
36.5	1112	32.24	980.1	31.85	966.4	31.97	969.5	32.03	969.5	34.28	979.6	30.16	969.1	31.91	966.9	32.09	984.9

Table 3. Rheology Summary for Blank

Run #	M*1000 (Pa-s)	B (Pa)	R ²
1	17.6	0.1561	
2	17.8	0.0832	
3	17.9	0.1271	
4	17.9	0.1214	
5	17.9	0.1771	
6	18.0	0.0835	
7	17.9	0.1080	
8	17.8	0.0579	
9	17.7	0.1030	
$\delta \cong s$	$Z = \pm 1.96\delta$	N=9	
Statistics for M	Mean=17.8	Sigma=0.1	95% CL= ± 0.1
Statistics for B	Mean=0.1130	Sigma=0.0373	95% CL= ± 0.0244

Table 4. Rheology Summary for 25 °C

Run #	M*1000 (Pa-s)		R ²	Viscosity (cP)
1	34.3		0.9953	16.5
2	34.2		0.9980	16.4
3	34.3		0.9983	16.5
4	34.4		0.9983	16.6
5	34.6		0.9985	16.8
6	34.4		0.9965	16.6
7	35.1		0.9860	17.3
8	34.8		0.9973	17.0
9	34.5		0.9972	16.7
$\delta \cong s$	$Z = \pm 1.96\delta$	N=9		
Statistics for M	Mean = 34.5	Sigma = 0.3	95% CL = ± 0.2	Avg = 16.7 ± 0.3 (13%) High

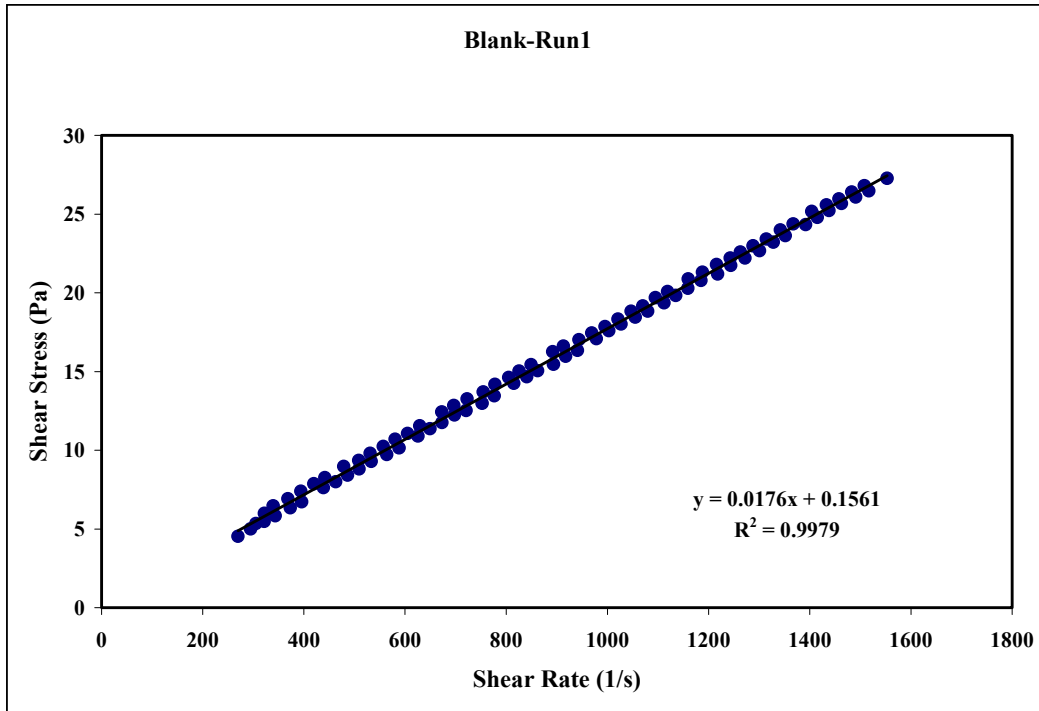


Figure 1. Blank Run 1

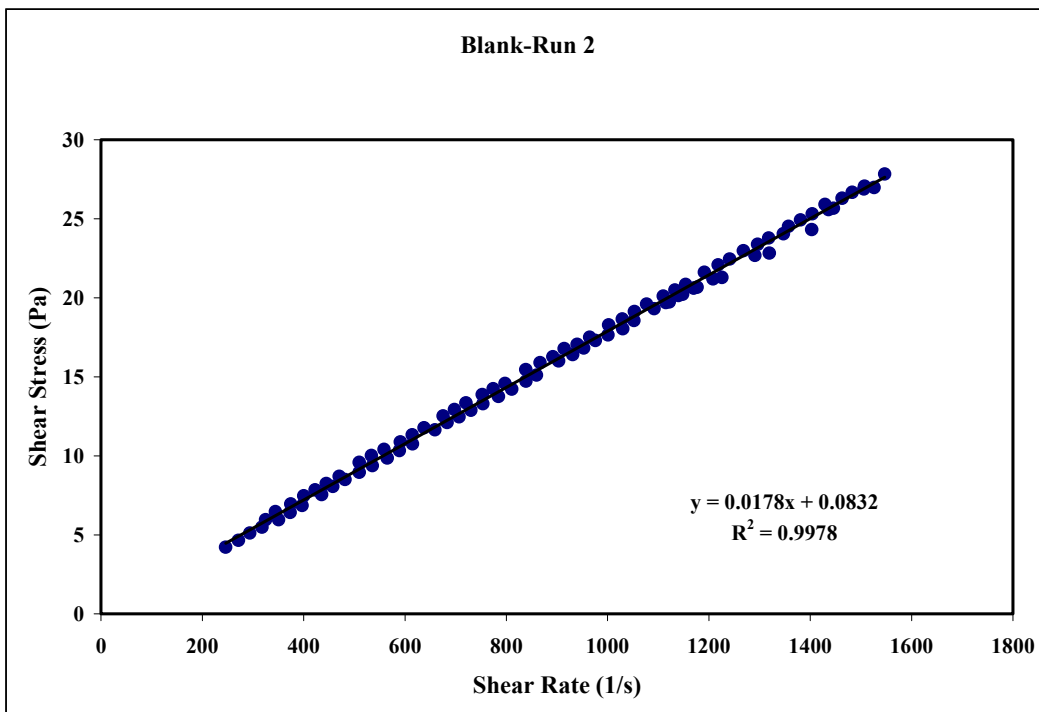


Figure 2. Blank Run 2

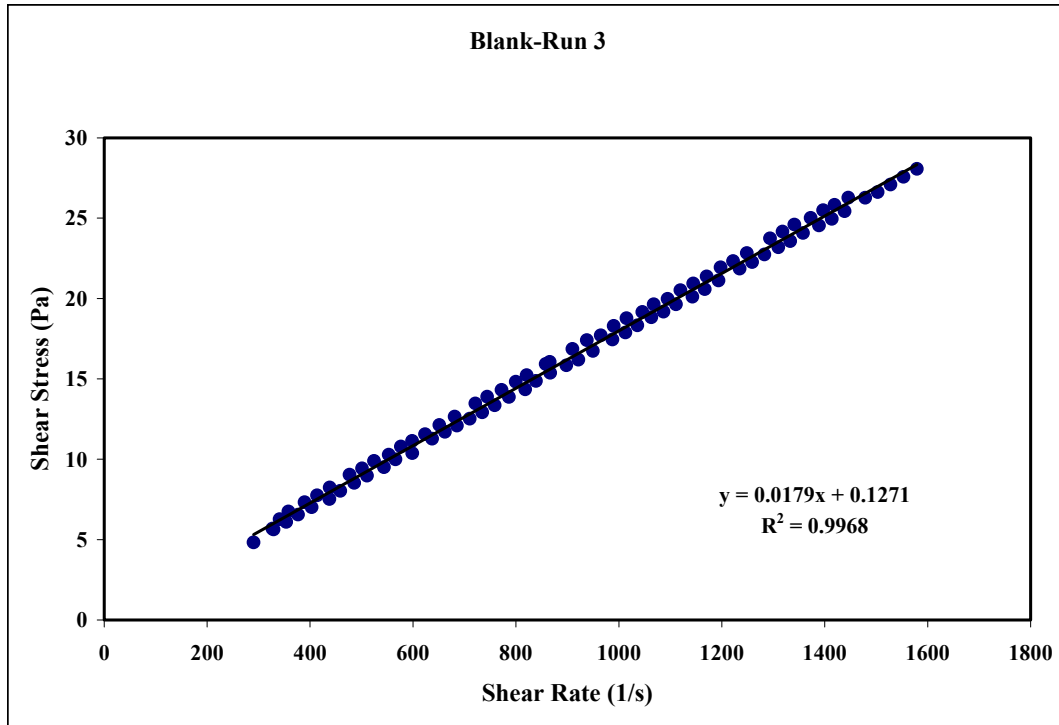


Figure 3. Blank Run 3

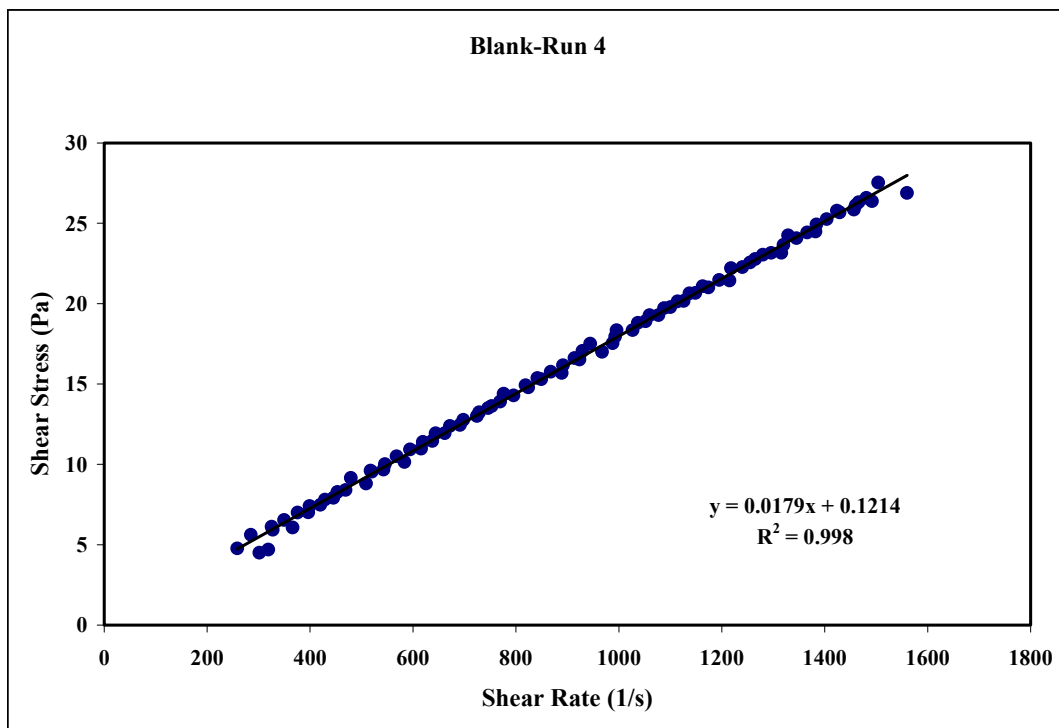


Figure 4. Blank Run 4

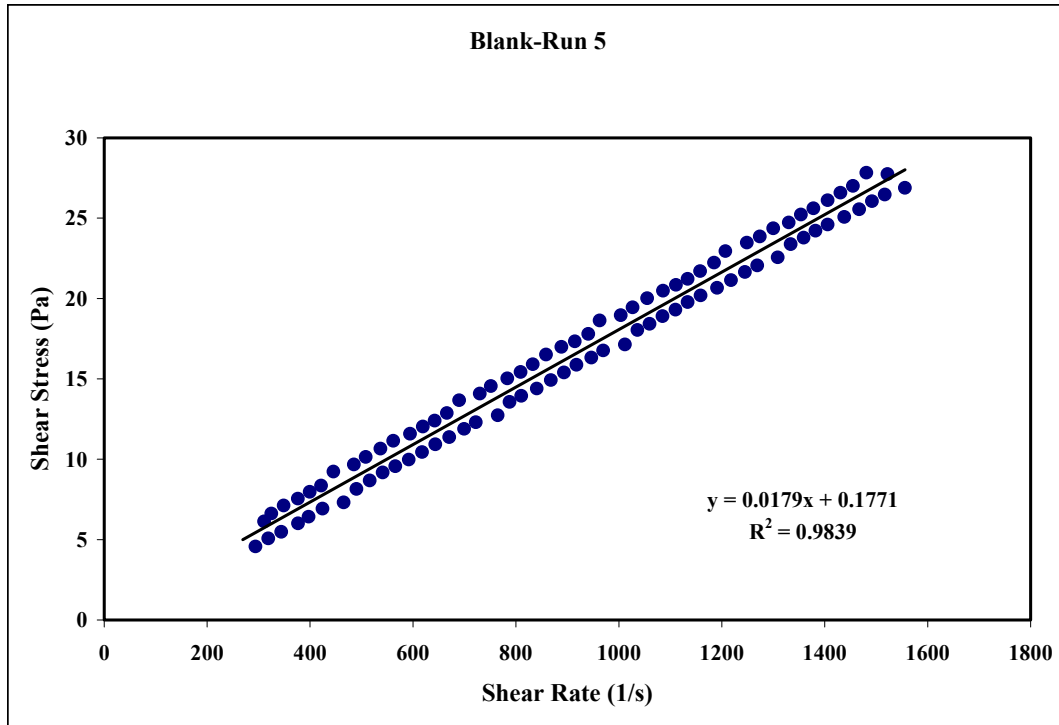


Figure 5. Blank Run 5

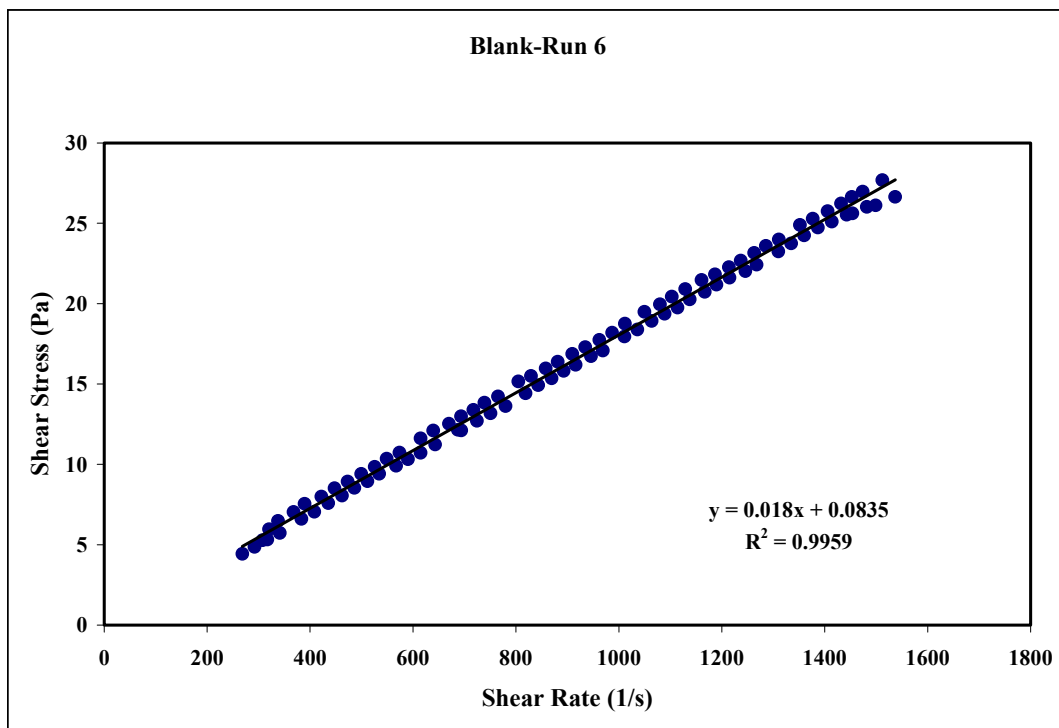


Figure 6. Blank Run 6

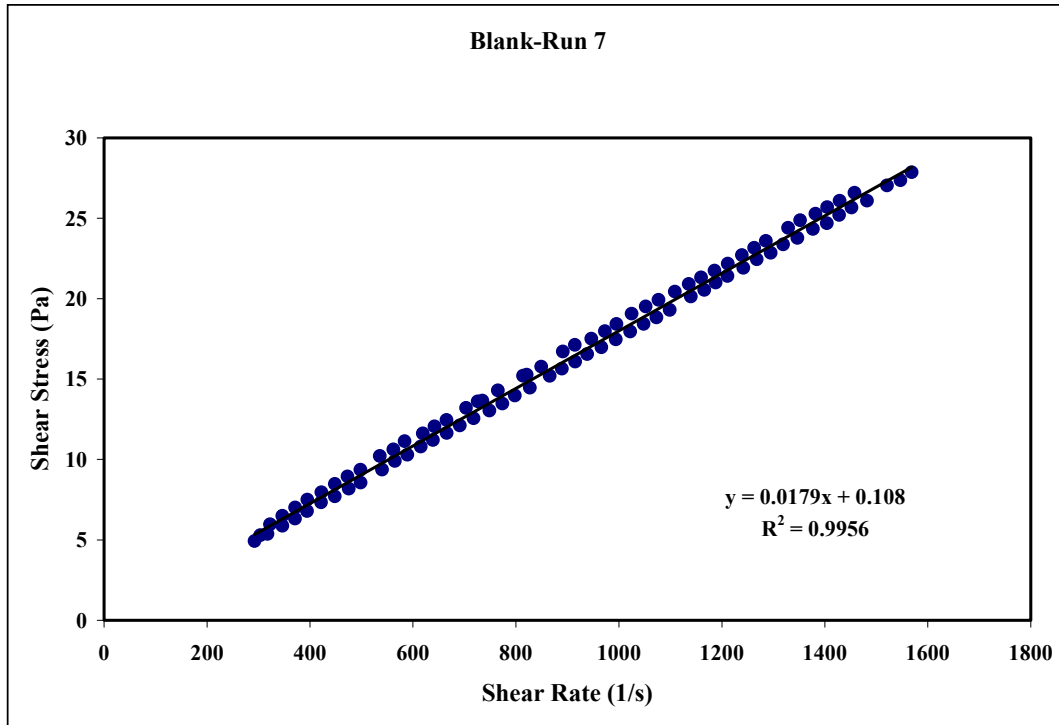


Figure 7. Blank Run 7

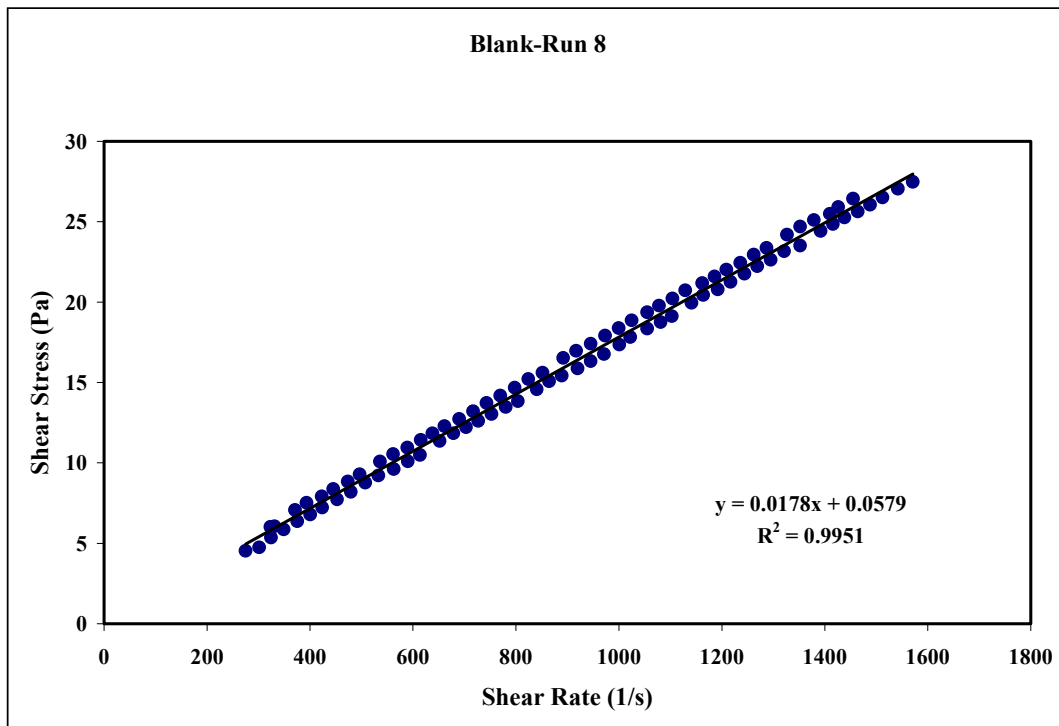


Figure 8. Blank Run 8

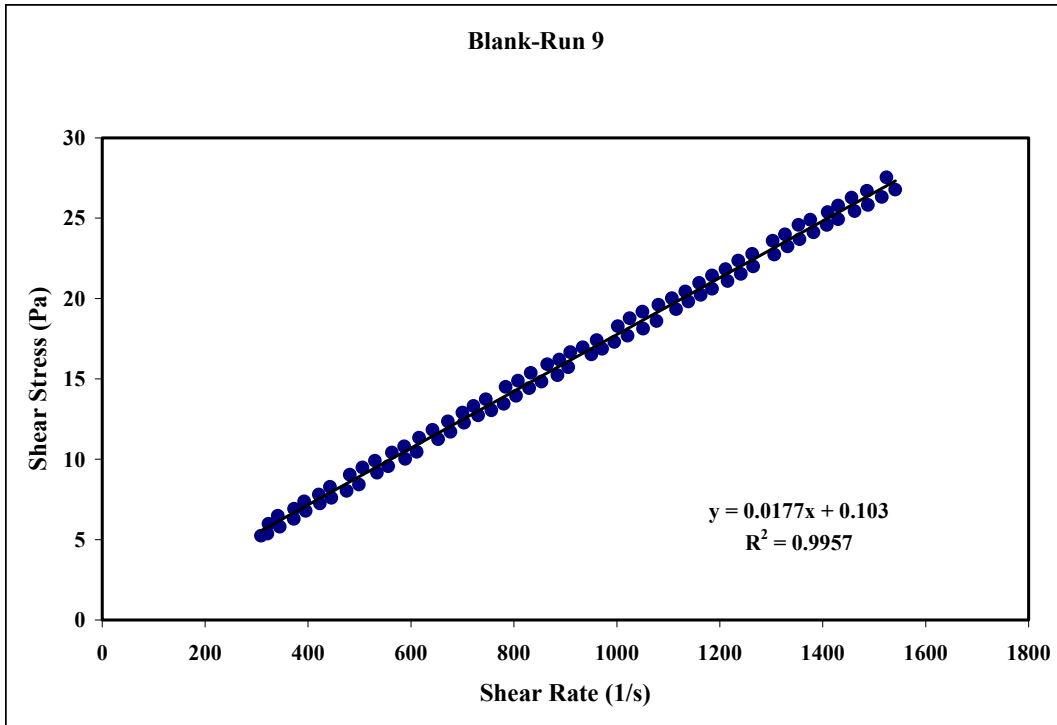


Figure 9. Blank Run 9

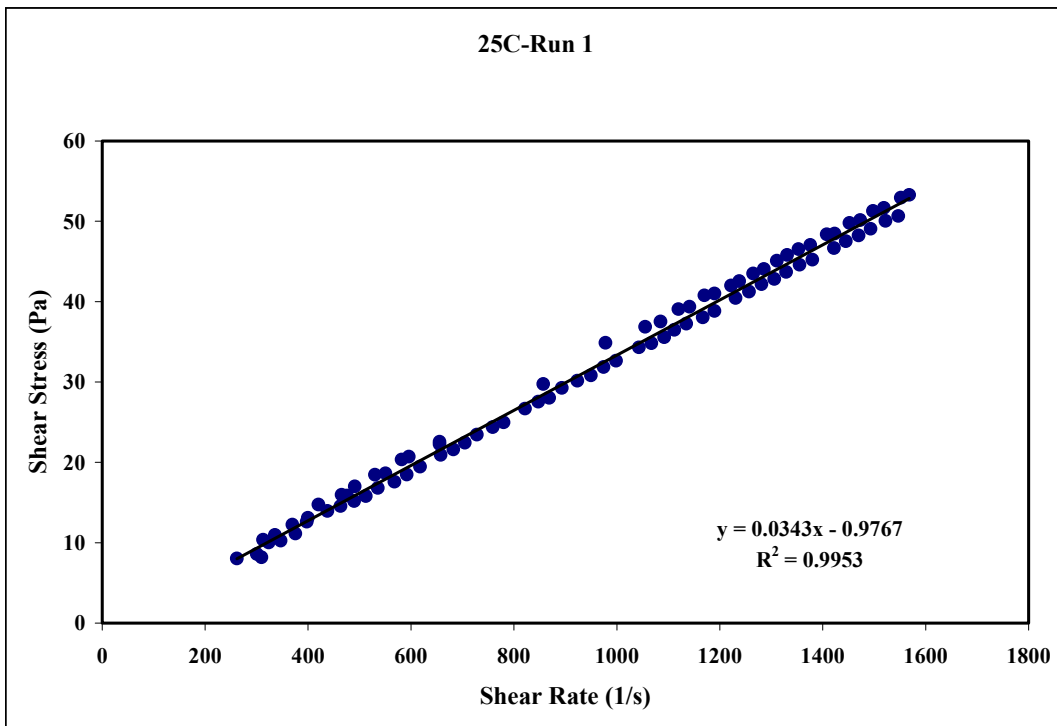


Figure 10. 25 °C Run 1

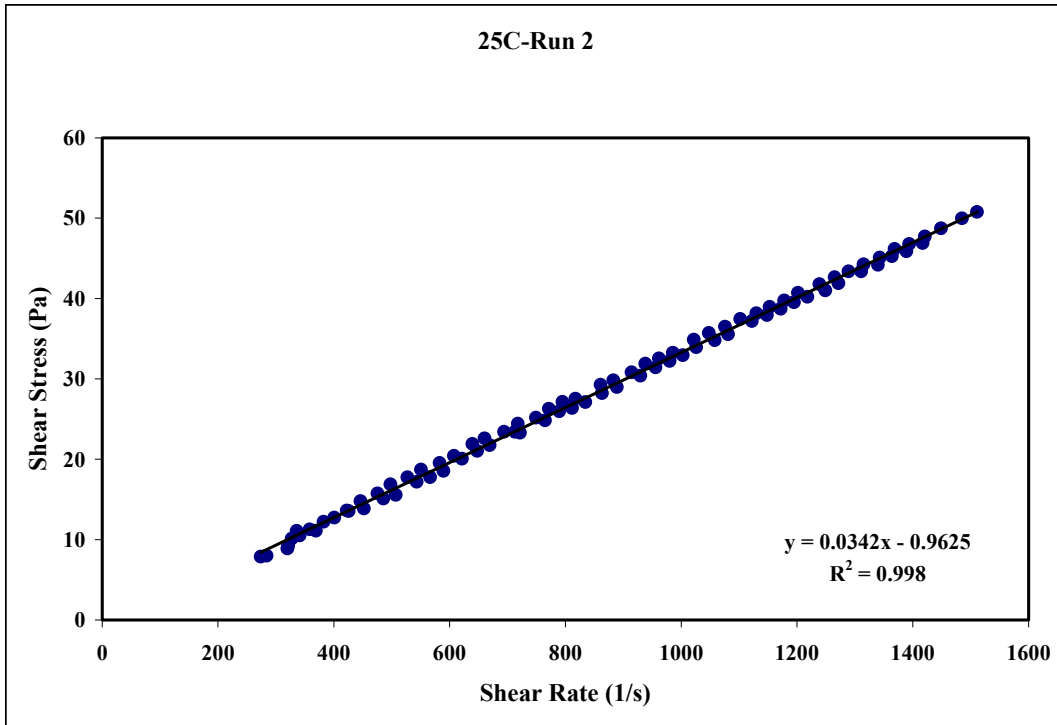


Figure 11. 25 °C Run 2

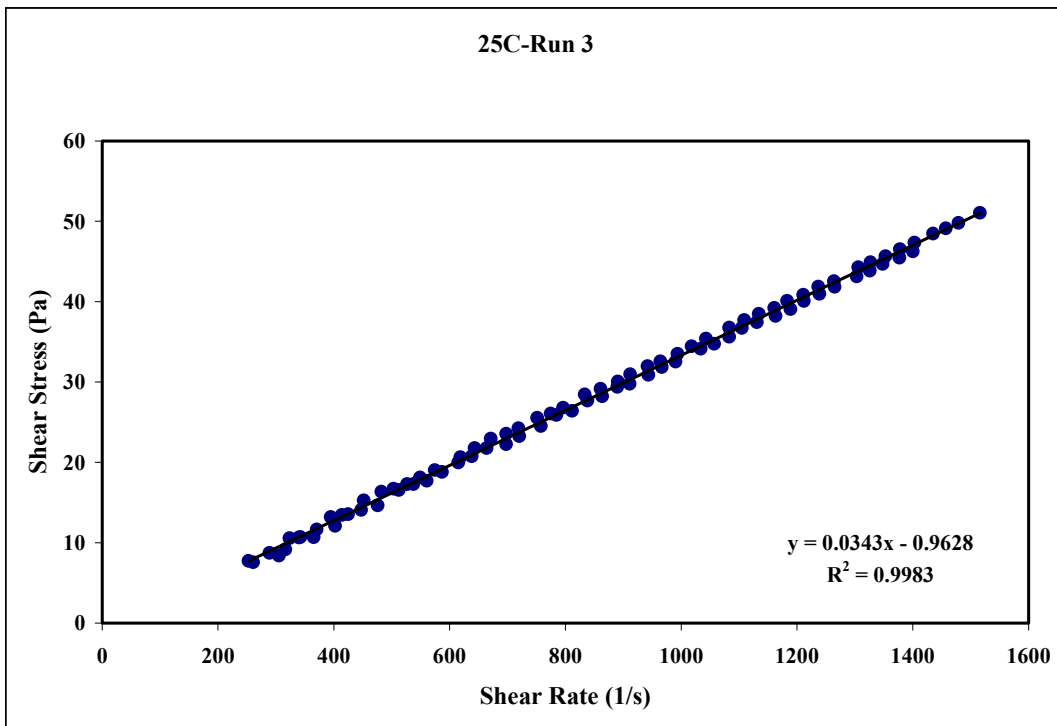


Figure 12. 25 °C Run 3

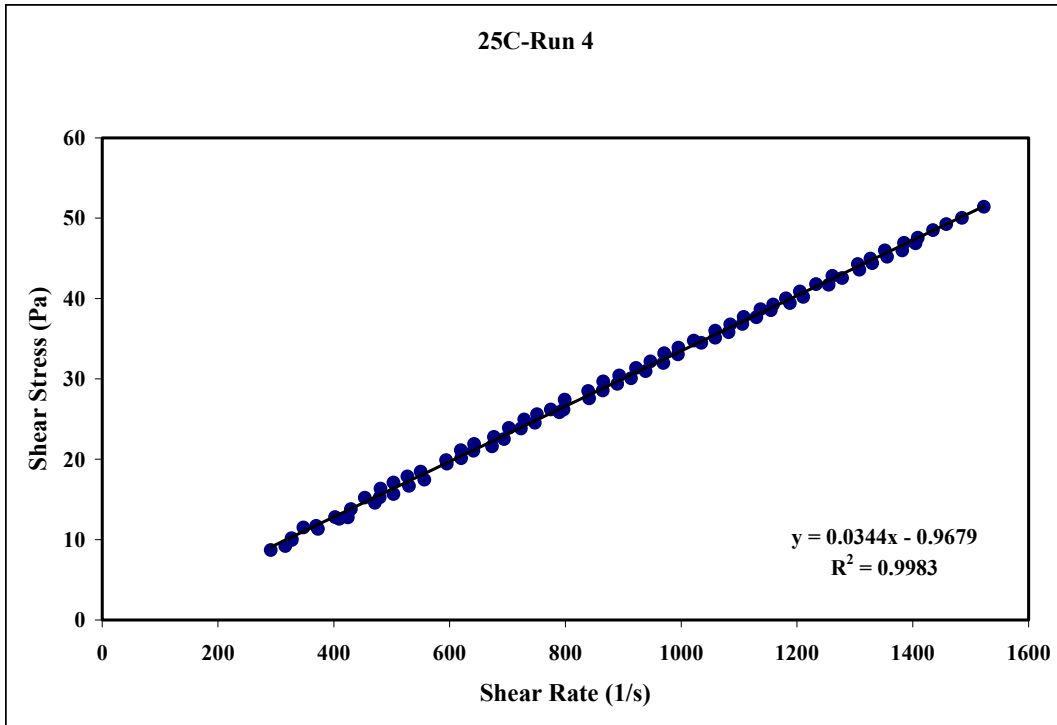


Figure 13. 25 °C Run 4

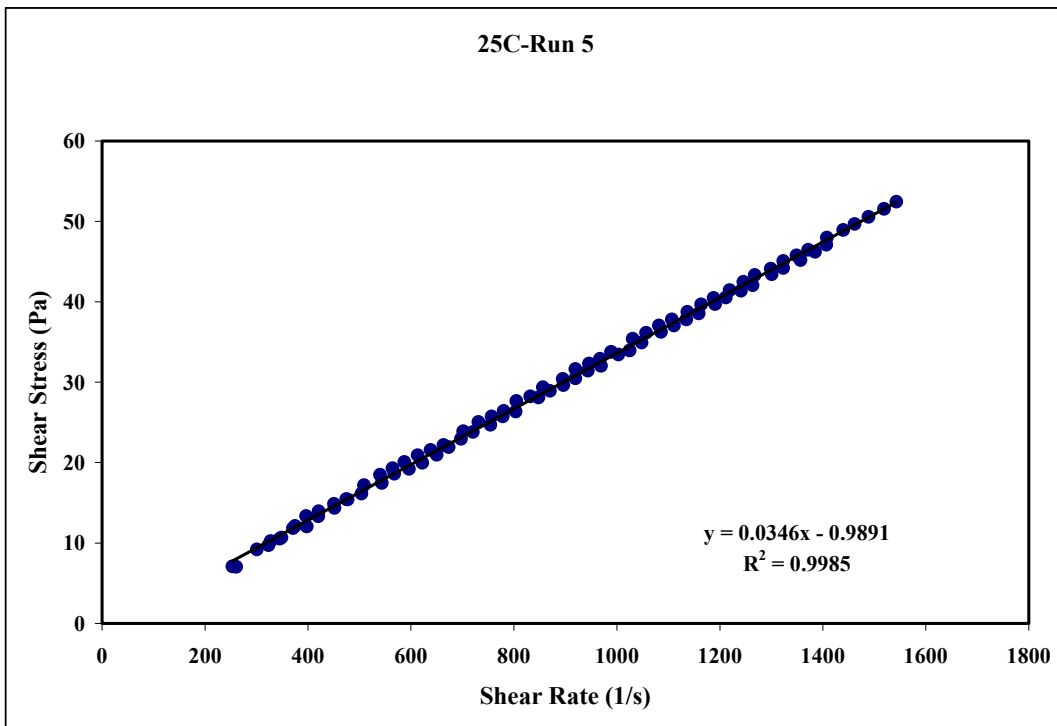


Figure 14. 25 °C Run 5

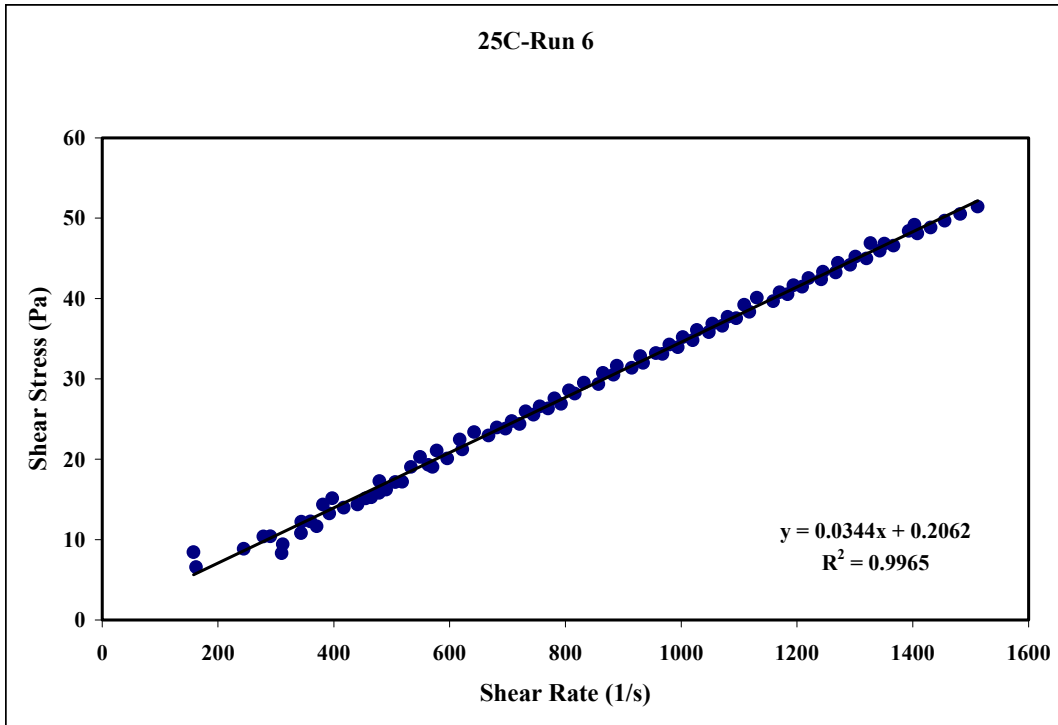


Figure 15. 25 °C Run 6

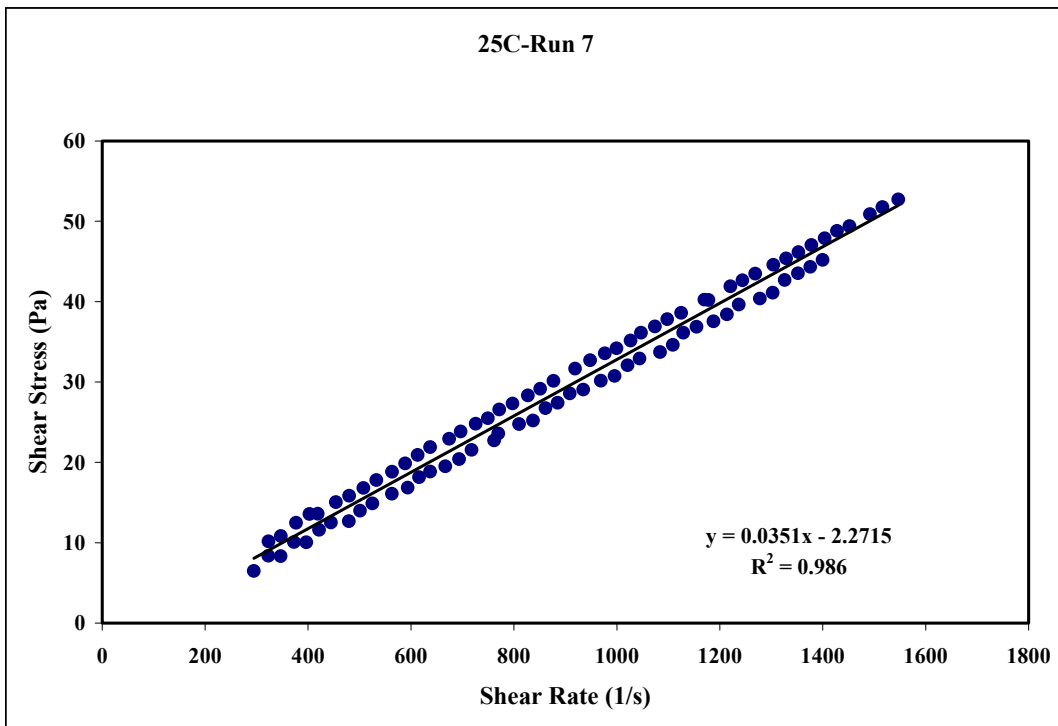


Figure 16. 25 °C Run 7

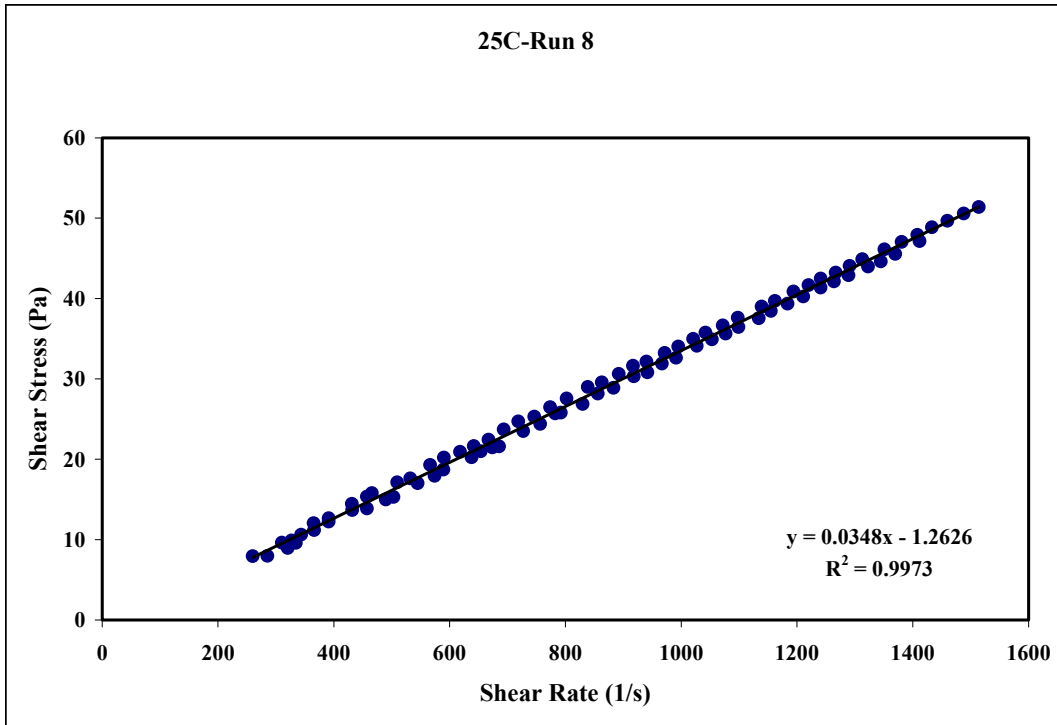


Figure 17. 25 °C Run 8

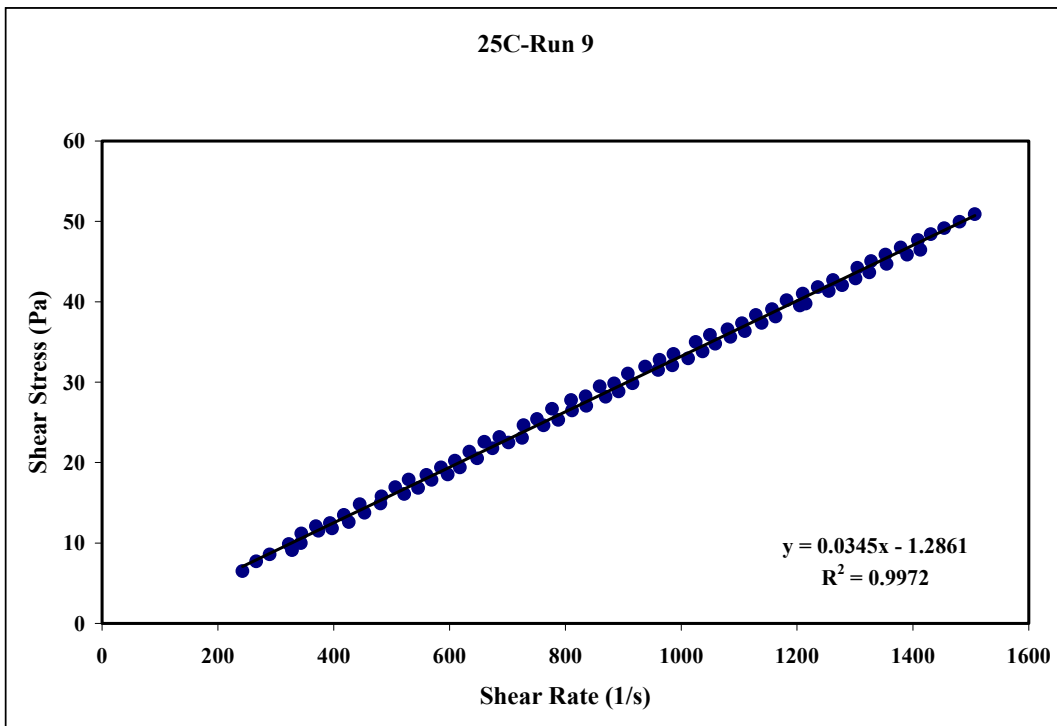


Figure 18. 25 °C Run 9

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APPENDIX A – PART 4

**RHEOMETER POST-CALIBRATION IN THE SHIELDED CELLS
WITH THE LOW VISCOSITY STANDARD**

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Table 2. 15 °C

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
8.871	275	9.374	273.2	9.249	274.5	8.936	275.9	9.436	283.4	9.791	276.3	9.767	275.4	9.501	278.5	9.356	268.4
10.64	297.9	10.61	294.8	10.48	293.9	10.76	297.5	10.39	293.1	10.63	291.7	10.64	294.8	10.41	291.7	10.38	287.8
11.58	320.4	11.83	323.9	11.42	316	11.63	319.1	11.52	316.4	11.69	317.3	11.63	325.7	11.84	321.3	11.44	319.5
12.48	346.4	11.9	333.2	12.43	339.3	12.73	349	12.64	349.5	12.62	347.7	12.62	349	12.55	344.2	12.61	346.8
14.14	376.8	13.2	360.5	13.86	375	13.87	376.3	13.43	370.2	13.9	375	13.91	376.8	13.82	374.6	13.71	375
15.02	404.5	14.14	381.2	14.96	401.9	15.03	406.3	14.87	404.5	14.85	404.5	15.17	408.5	14.76	401.9	14.72	402.8
16.38	428.3	15.61	419.1	15.99	427	16.27	431	15.92	427	16.16	431.4	16.02	430.5	15.95	428.3	15.75	425.7
17.72	457.4	16.48	438.9	16.95	453	17.05	453.5	17.27	458.8	16.88	453.5	17.18	457.4	16.74	452.6	17.03	454.8
18.54	483.9	17.63	458.8	18.31	483.9	18.28	485.6	18.07	481.7	18.13	483.4	17.92	482.1	18.28	487.8	18.01	483.4
19.73	509	19.4	507.7	19.49	513	19.4	510.3	19.43	513	19.23	511.6	19.34	513.4	18.99	503.3	18.78	505
20.97	533.2	20.85	537.2	20.73	539.4	20.71	540.7	20.53	537.6	20.23	536.3	20.59	540.7	20.26	538.5	19.85	530.1
22.72	568.9	21.92	563.2	21.86	565	21.65	564.1	21.59	561.9	21.89	568	21.62	565.4	21.27	563.2	21.36	565.4
23.81	593.2	23.58	597.1	22.98	589.6	23.25	595.8	23.25	594.9	22.95	593.2	22.78	594.9	22.84	596.2	22.36	589.2
24.88	619.6	24.67	621.4	24.32	617	24.23	618.7	24.05	615.6	23.9	618.7	23.87	621.4	23.69	617.8	23.34	617
25.97	644.3	26	651.3	25.65	647.8	25.5	648.7	25.09	640.8	25.2	647.8	25.03	646.9	24.7	643	24.79	647.4
27.57	675.1	27.13	678.2	26.77	675.6	26.65	675.6	26.54	675.1	26.21	670.3	26.15	673.4	26.06	675.6	25.65	670.7
28.81	705.5	28.4	704.2	28.13	703.8	27.87	704.2	27.78	700.7	27.63	702	27.66	706	27.33	702	26.95	698
30.18	730.7	29.47	730.2	29.26	728.9	29.17	735.1	28.81	727.1	28.7	728.4	28.64	732.9	28.22	727.1	28.19	728
31.51	760.2	30.56	754	30.09	748.3	30.38	758	30.35	759.3	30.03	757.5	29.94	761.5	29.58	756.2	29.35	754.4
32.75	784.9	32.13	786.6	31.74	784	31.48	785.3	31.42	785.7	30.92	780.4	30.62	776.9	30.8	784.4	30.18	778.2
33.96	810.4	33.28	813.1	32.84	810.4	32.37	809.1	32.34	808.2	32.04	805.1	32.1	813.1	31.89	810.4	31.66	810.4
35.5	843	34.59	841.7	34.17	841.3	33.9	841.3	33.79	840.4	33.46	839.5	33.25	839.1	33.08	836.9	32.63	833.3
36.6	867.3	35.68	868.1	35.21	865.9	34.97	865.9	34.97	867.7	34.53	860.7	34.56	866.8	34.17	865.1	33.99	865.5
37.93	893.7	36.92	894.1	36.63	895	36.3	895	36.15	892.4	35.92	892.8	35.65	894.6	35.56	893.7	35.09	891.1
39.08	921	37.99	917.9	37.51	915.7	37.34	920.1	37.57	923.7	37.07	921	36.92	921.9	36.57	918.8	36.12	914.4
40.71	953.6	39.53	951.9	38.97	947.9	38.64	948.3	38.64	947.9	38.08	942.6	38.28	953.2	37.54	943.5	37.49	949.2
41.81	978.3	40.68	976.6	40	971.7	39.97	979.2	39.68	970.4	39.53	974.3	39.41	977.4	39.08	976.1	38.55	972.6
43.02	1003	41.72	1003	41.45	1004	41.07	1002	41.18	1006	40.74	1002	40.68	1006	40.12	1002	39.65	999.5
44.38	1031	42.78	1025	42.49	1029	42.25	1030	42.25	1029	41.84	1027	41.95	1034	41.24	1028	40.71	1023
45.68	1060	44.44	1061	44.06	1062	43.32	1054	43.58	1059	43.02	1055	43.11	1061	42.49	1055	42.19	1056
47.01	1088	45.54	1085	44.38	1071	44.68	1085	44.97	1087	44.29	1083	44.08	1085	43.52	1079	43.32	1083

Table 2. 15 °C - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
48.14	1112	46.9	1114	45.65	1096	45.8	1111	45.95	1114	45.27	1107	45.24	1111	44.97	1113	44.26	1107
49.59	1142	48.08	1141	46.93	1123	47.16	1140	47.04	1137	46.87	1141	46.63	1142	46.19	1141	45.59	1137
50.77	1169	49.29	1168	47.99	1150	48.38	1166	48.61	1170	47.81	1164	47.7	1168	47.31	1166	46.72	1164
52.08	1196	50.36	1192	49.74	1189	49.44	1193	49.77	1195	49.09	1191	49.06	1198	48.29	1190	47.81	1189
53.41	1224	51.42	1216	50.42	1206	50.77	1223	50.83	1217	50	1215	50.18	1221	49.56	1218	49	1216
54.47	1248	53.08	1250	52.19	1244	52.02	1248	52.28	1248	51.63	1249	51.28	1248	50.8	1248	50.15	1244
55.86	1278	54.24	1279	53.32	1270	53.17	1277	53.32	1275	52.58	1272	52.34	1274	52.13	1276	51.31	1271
57.05	1304	55.36	1302	54.83	1304	54.12	1300	54.59	1302	54.06	1304	53.38	1297	53.35	1304	52.61	1302
58.17	1328	56.72	1332	56.07	1332	55.6	1333	55.66	1327	55.09	1329	54.98	1335	54.44	1330	53.67	1326
59.68	1360	57.88	1357	57.34	1359	56.75	1358	57.14	1358	56.16	1352	56.13	1361	55.45	1355	54.83	1355
61.01	1387	59	1382	58.38	1384	57.85	1382	58.23	1382	57.55	1384	57.31	1387	56.46	1380	55.98	1379
62.2	1411	60.6	1417	59.59	1411	58.91	1406	59.36	1408	58.73	1411	58.47	1412	57.96	1412	57.43	1413
63.62	1441	61.69	1440	60.78	1438	60.13	1433	60.95	1440	59.83	1435	59.71	1440	58.94	1435	58.47	1437
64.8	1469	62.91	1469	62.02	1464	61.6	1469	62.17	1468	61.22	1469	60.66	1464	60.3	1467	59.65	1466
66.1	1497	64.21	1496	63.03	1489	62.88	1495	63.41	1494	62.26	1491	62.08	1497	61.43	1493	60.72	1493
67.55	1525	65.3	1519	64.56	1521	63.85	1519	64.39	1516	63.59	1523	63.05	1520	62.55	1518	61.87	1519
66.25	1542	63.74	1507	64.51	1543	63.97	1537	63.82	1543	63.11	1535	62.88	1539	63.14	1551	61.78	1535
65.07	1515	62.49	1479	63	1508	62.85	1512	62.43	1512	62.14	1512	61.81	1514	61.31	1513	60.72	1508
63.5	1483	61.07	1450	61.78	1482	61.55	1484	61.37	1484	60.63	1479	60.66	1488	59.89	1480	59.36	1479
62.23	1456	60.13	1425	60.66	1455	60.42	1454	59.92	1453	59.77	1457	59.27	1456	58.67	1452	58.38	1452
60.95	1427	59	1402	59.53	1430	59.3	1430	58.79	1427	58.41	1428	58.05	1426	57.52	1428	57.34	1430
59.86	1404	57.37	1367	58.29	1403	57.91	1399	57.79	1404	57.43	1403	56.87	1401	56.37	1399	55.89	1397
58.79	1381	56.28	1342	57.2	1376	56.75	1374	56.31	1372	55.86	1370	55.66	1373	55.15	1371	54.8	1370
57.34	1348	55.03	1316	56.1	1352	55.63	1348	55.15	1345	54.83	1345	54.59	1348	54	1343	53.79	1347
56.13	1322	53.97	1290	54.86	1325	54.29	1319	54.18	1319	53.47	1314	53.41	1322	52.82	1320	52.49	1318
54.8	1294	52.58	1259	53.29	1291	53.14	1292	53.11	1296	52.49	1292	52.19	1293	51.69	1291	51.31	1290
53.47	1264	51.48	1235	52.19	1266	51.93	1264	51.66	1263	51.1	1261	50.92	1263	50.8	1268	50.18	1264
52.34	1241	50.33	1210	50.95	1237	50.74	1240	50.48	1235	50.03	1235	49.89	1240	49.62	1242	49.03	1236
51.07	1211	48.91	1179	49.97	1215	49.53	1212	49.35	1209	48.76	1206	48.49	1209	48.05	1206	47.93	1210
49.94	1189	47.64	1152	48.82	1189	48.49	1187	48.02	1179	47.75	1182	47.37	1183	47.1	1182	46.54	1180
48.46	1154	46.54	1126	47.22	1155	47.1	1156	46.96	1157	46.3	1153	46.16	1154	46.04	1158	45.54	1155

Table 2. 15 °C - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
47.43	1133	45.36	1100	45.95	1126	45.95	1131	45.74	1128	45.3	1127	45.15	1129	44.88	1131	44.23	1124
45.98	1101	43.88	1069	44.82	1099	44.62	1100	44.44	1097	44.32	1104	43.88	1101	43.85	1106	43.23	1099
44.88	1077	42.72	1042	43.67	1074	43.37	1071	43.32	1072	42.87	1071	42.81	1074	42.28	1072	42.28	1077
43.49	1047	41.36	1012	42.63	1050	42.34	1046	42.1	1044	41.66	1043	41.51	1044	41.33	1047	41.1	1051
42.46	1022	40.36	988	41.27	1020	41.13	1021	40.98	1020	40.62	1018	40.71	1025	40.24	1022	40.42	1034
41.3	998.1	39.14	962.5	40.24	994.2	39.97	993.7	40	995.5	39.35	988.9	39.14	991.5	38.76	988.9	38.99	1001
39.79	965.5	38.05	937.3	39.02	967.7	38.85	968.2	38.49	963.3	38.23	963.3	38.14	965.5	37.75	964.7	38.05	976.1
38.55	937.8	36.63	904.3	37.78	940	37.46	936	37.25	933.8	36.98	933.4	37.19	943.9	36.57	936.5	36.39	938.2
37.6	914	35.53	878.7	36.3	906.9	36.3	909.6	36.18	909.6	35.95	908.7	35.65	908.7	35.5	912.2	35.59	921.9
36.04	882.2	34.32	854	35.18	881.8	35.03	879.6	35.18	882.7	34.56	877.8	34.67	885.3	34.11	878.7	34.08	883.1
34.85	854.9	33.16	827.6	33.96	854	33.9	853.6	34.05	857.1	33.58	855.8	33.58	860.7	33.13	853.6	32.84	852.7
33.82	831.6	31.68	793.7	33.02	830.2	32.84	829.8	32.81	829.8	32.45	830.2	32.28	828	32.01	828.9	31.51	825
32.22	799.8	30.65	772.1	31.63	801.6	31.45	801.2	31.39	799.4	31.15	797.2	31	801.6	30.68	797.6	30.71	801.2
31	773.4	29.44	745.6	30.59	776	30.32	773.8	30.21	772.1	30.12	774.7	29.82	772.5	29.7	775.2	29.2	769.4
29.94	747	28.04	715.2	29.52	751.4	29.08	744.3	29.23	748.7	28.81	745.6	28.84	749.2	28.52	744.8	28.13	743
28.52	717.9	26.68	683.5	28.04	718.3	28.1	722.7	27.66	715.2	27.63	719.2	27.57	718.8	27.42	721.4	27.22	719.6
27.42	691.4	26.12	667.6	26.92	693.6	26.71	688.8	26.59	688.3	26.45	689.7	26.57	696.3	26.51	695.4	26	691.9
26.15	664.5	24.4	631.1	25.97	667.6	25.44	663.2	25.8	668.1	25.41	666.3	25.14	663.2	24.97	661.9	24.76	662.3
25.09	639.9	23.19	604.2	24.52	636.8	24.43	638.5	24.26	634.1	24.02	634.1	23.99	635	23.78	636.8	23.72	637.2
23.69	610.3	22.24	577.7	23.43	610.8	23.28	610.8	23.1	607.3	23.04	610.8	22.87	609.5	22.75	609.5	22.84	613.4
22.54	581.7	21.21	553.9	22.3	585.7	22.04	583.5	22.01	584.3	21.8	579.5	21.83	584.8	21.74	583	21.36	578.2
21.47	560.5	19.7	520.9	21.39	562.3	21.09	559.7	20.94	554.8	20.76	553.9	20.71	555.3	20.73	559.2	20.23	554.8
20.38	534.1	18.78	499.3	20.05	534.1	19.64	523.5	19.88	528.8	19.43	524.9	19.64	528.8	19.55	530.6	19.2	527.5
18.9	502.4	17.45	471.1	18.6	502.4	18.6	499.7	18.72	503.7	18.34	498	18.52	503.3	17.98	497.1	18.22	503.7
17.83	477.3	16.33	445.5	17.45	472.9	17.3	472	17.54	477.3	17.48	474.6	17.33	476.4	17.12	471.5	16.77	472
17.01	453	15.44	420.9	16.09	444.2	16.5	449.5	16.06	442.9	16.15	442.9	16.47	452.1	16.12	446.9	15.82	442.9
15.56	425.7	13.93	386	15.32	419.5	15.32	421.7	15.26	419.5	14.9	418.6	15.17	418.6	14.79	420	14.85	421.7
13.99	391.3	12.86	360.5	13.75	390	14.22	396.6	13.99	393.1	14.02	390.4	13.81	388.7	14.08	395.7	13.54	389.6
13.25	368.9	11.53	331	13.01	363.1	12.92	363.6	12.83	361.8	12.92	365.3	12.83	362.2	12.42	361.4	12.6	366.6
11.89	336.2	10.57	308	12.05	339.8	11.77	335.4	12	339.8	11.68	335.4	11.75	337.1	11.74	335.8	11.93	339.8
10.58	309.4	9.637	282.9	10.96	315.5	10.78	312	10.71	309.8	10.83	307.2	10.79	312	10.75	307.6	10.57	308.9
9.676	284.2	8.486	255.2	9.581	283.8	9.486	282	9.835	281.6	9.676	278.5	9.741	280.3	9.785	282.9	9.397	279.8

Table 3. Rheology Summary for Blank

Run #	M*1000 (Pa-s)	B (Pa)	R²
1	18.1	-0.0669	0.9964
2	17.5	0.0603	0.9939
3	17.5	-0.1379	0.9935
	$t=\pm 3.968$	N=3	
Statistics for M	Mean = 17.7	Sigma = 0.8	95% CL = ± 0.1
Statistics for B	Mean = -0.0482	Sigma = 0.1004	95% CL = ± 0.2299

Table 4. Rheology Summary for 15 °C

Run #	M*1000 (Pa-s)		R ²	Viscosity (cP)
1	45.9		0.9983	28.2
2	44.6		0.9994	26.9
3	44.0		0.9994	26.3
4	43.7		0.9995	26.0
5	43.8		0.9991	26.1
6	43.1		0.9993	25.4
7	42.8		0.9993	25.1
8	42.5		0.9992	24.8
9	42.1		0.9993	24.4
$\delta \approx s$	Z= $\pm 1.96\delta$	N=9		
Statistics for M	Mean = 43.6	Sigma = 1.2	95% CL = ± 0.8	Avg = 25.9 ± 1.6 (13%) High
			Calc cP=22.6	15% High

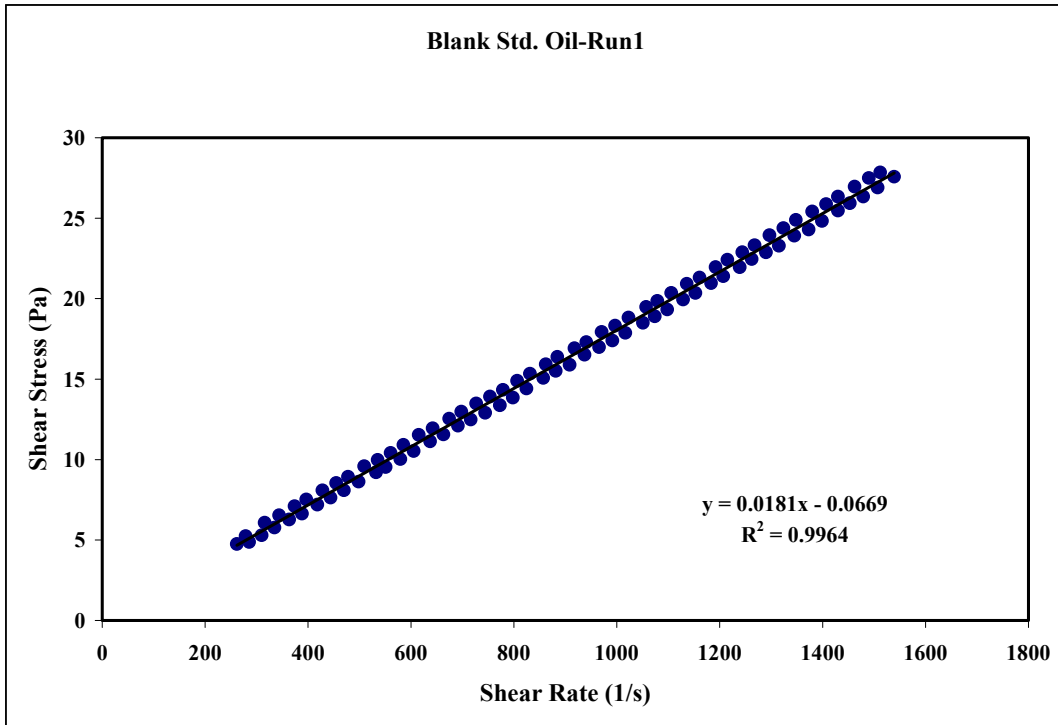


Figure 1. Blank Run 1

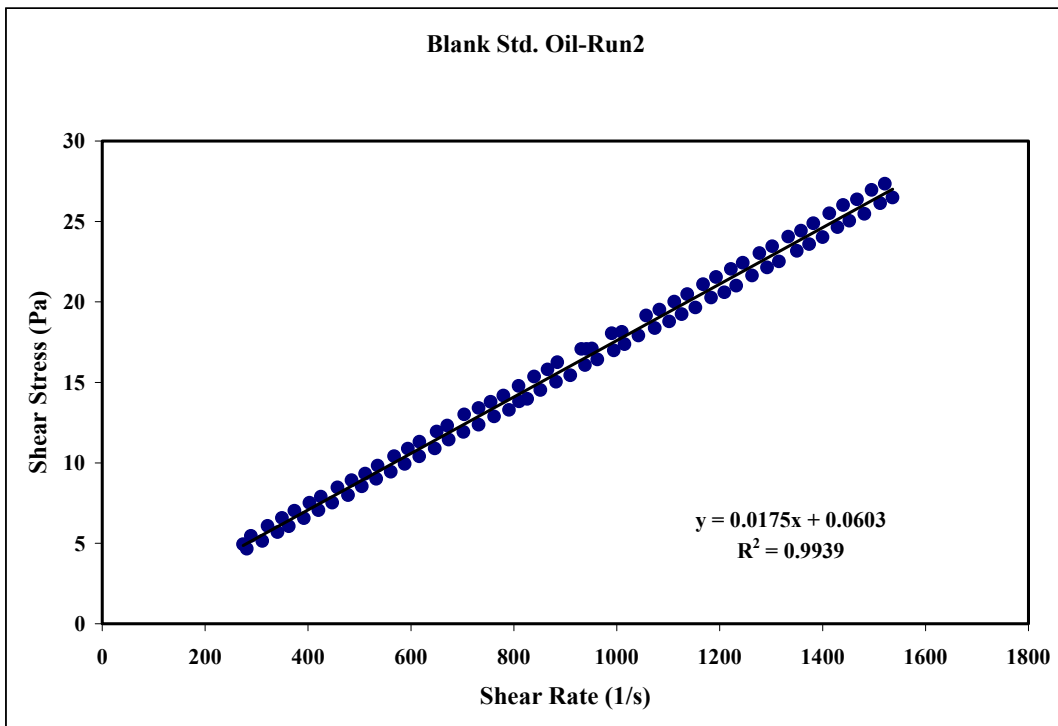


Figure 2. Blank Run 2

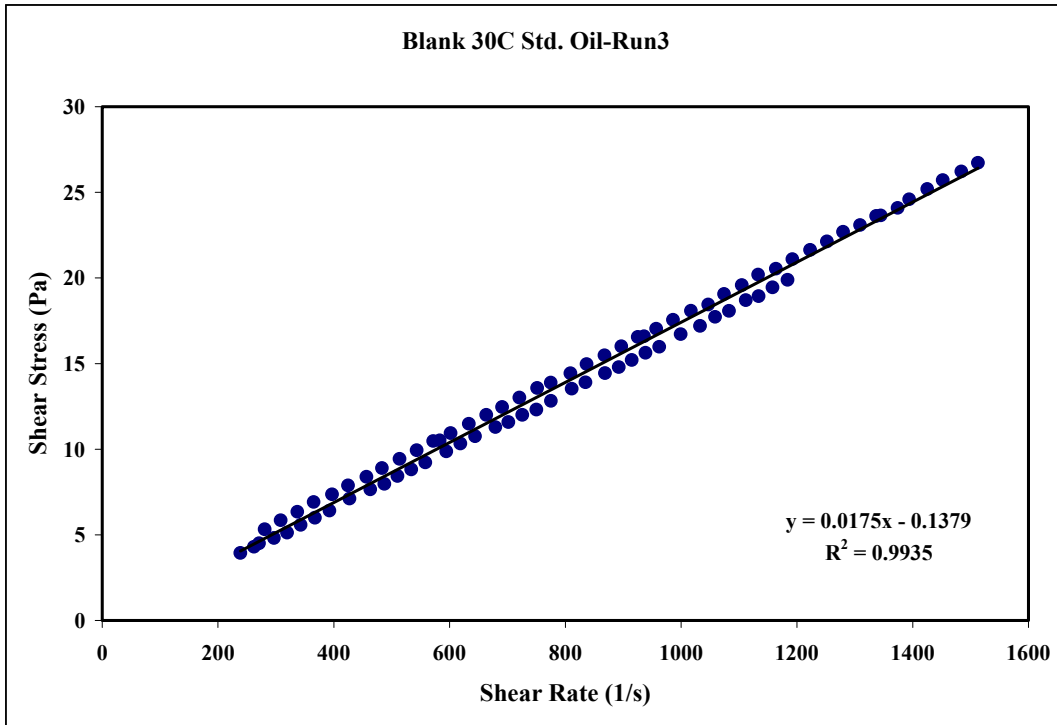


Figure 3. Blank Run 3

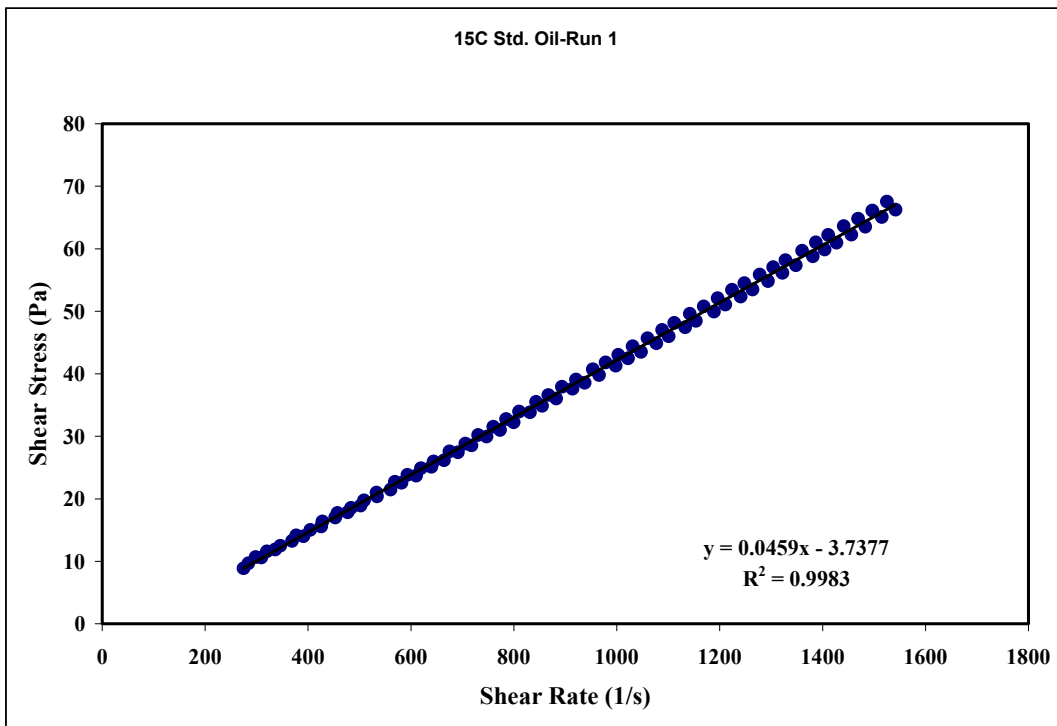


Figure 4. 15 °C Run 1

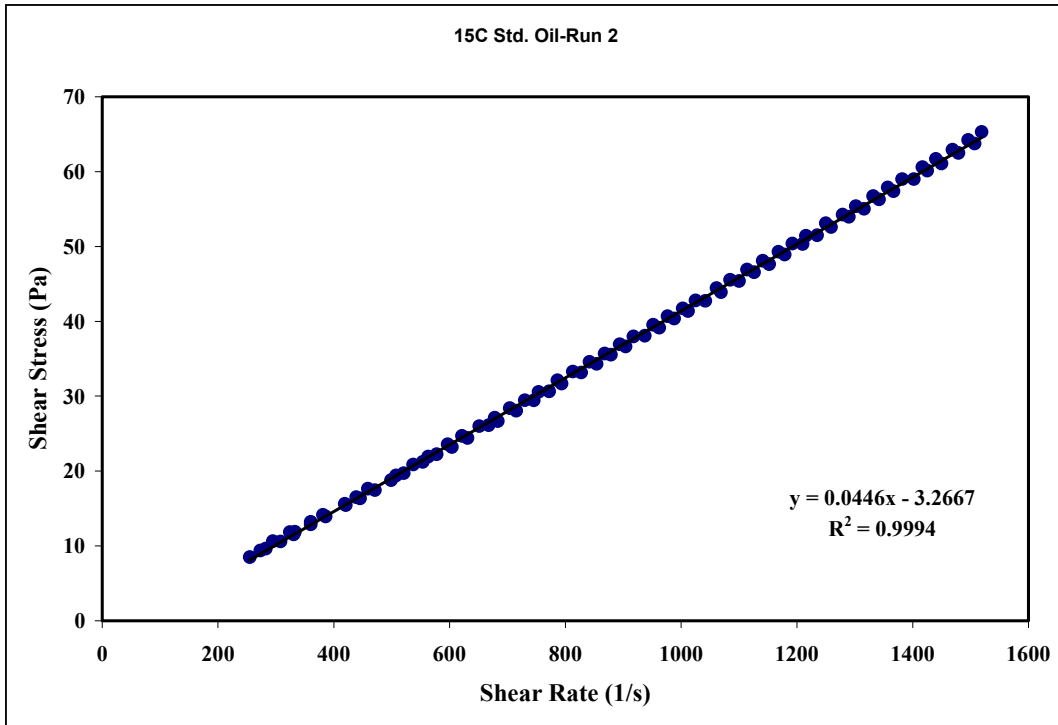


Figure 5. 15 °C Run 2

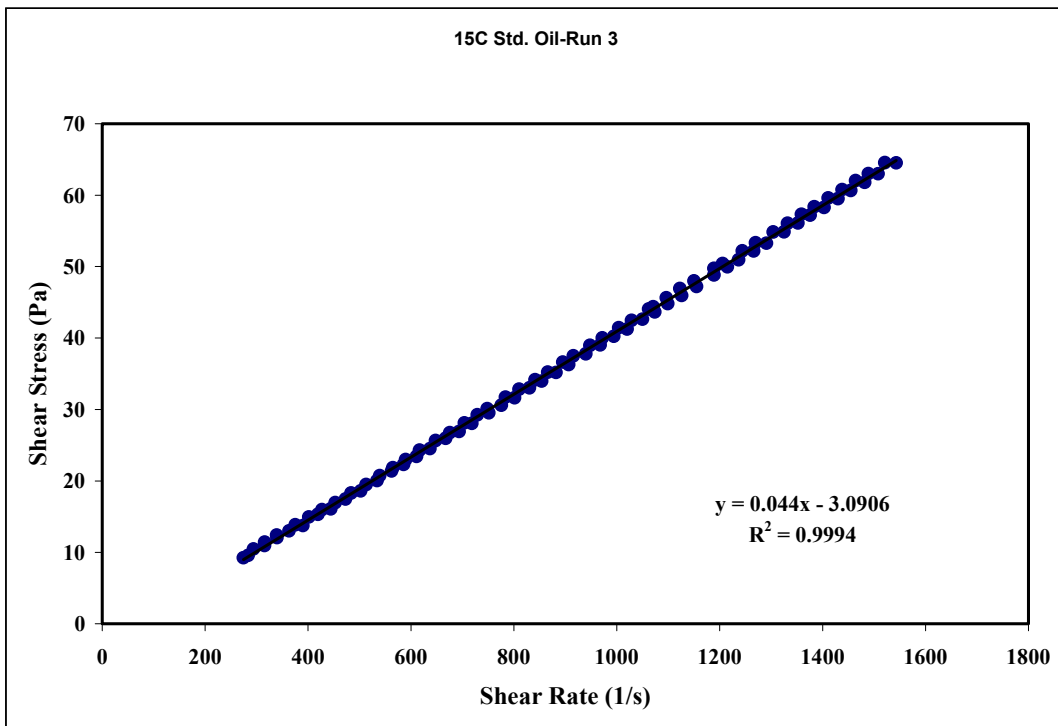


Figure 6. 15 °C Run 3

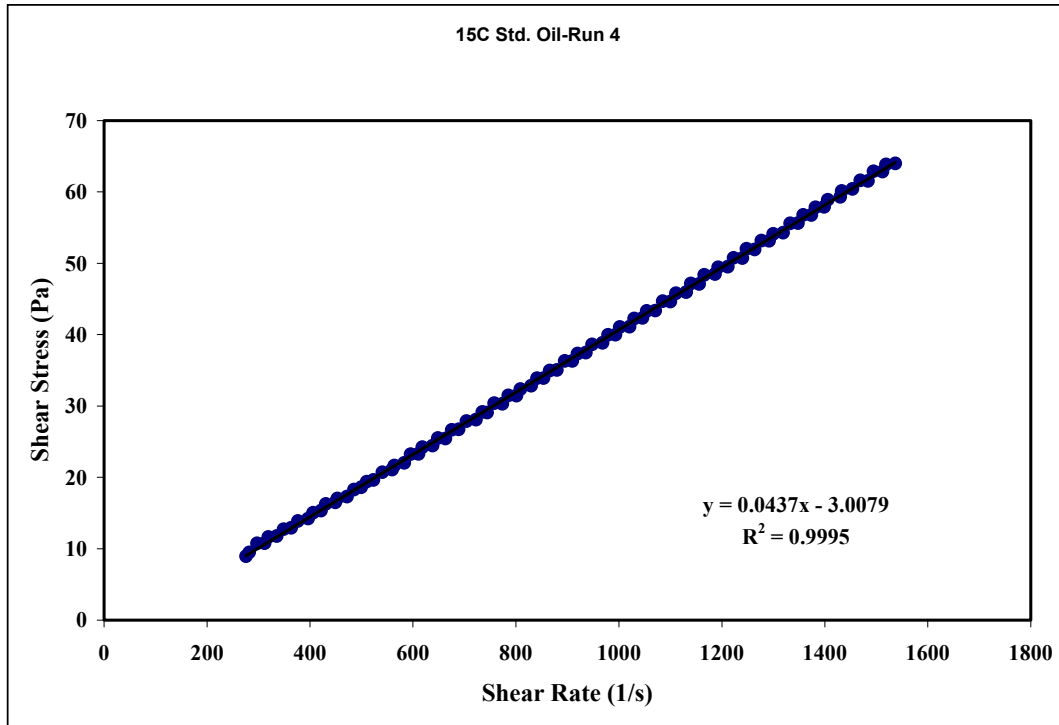


Figure 7. 15 °C Run 4

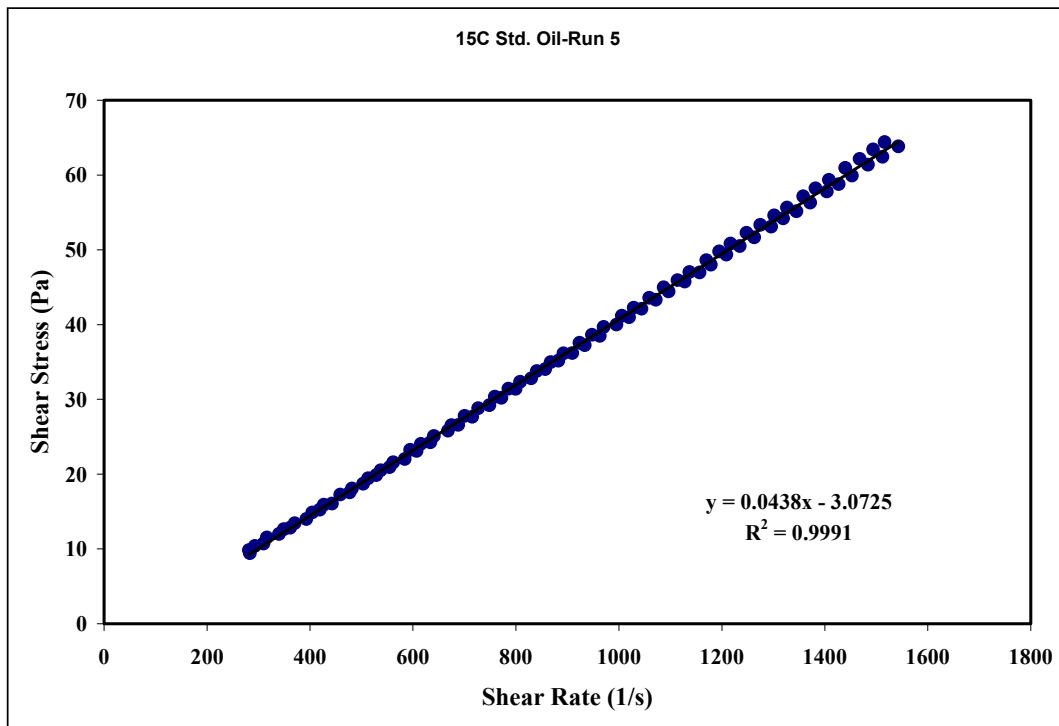


Figure 8. 15 °C Run 5

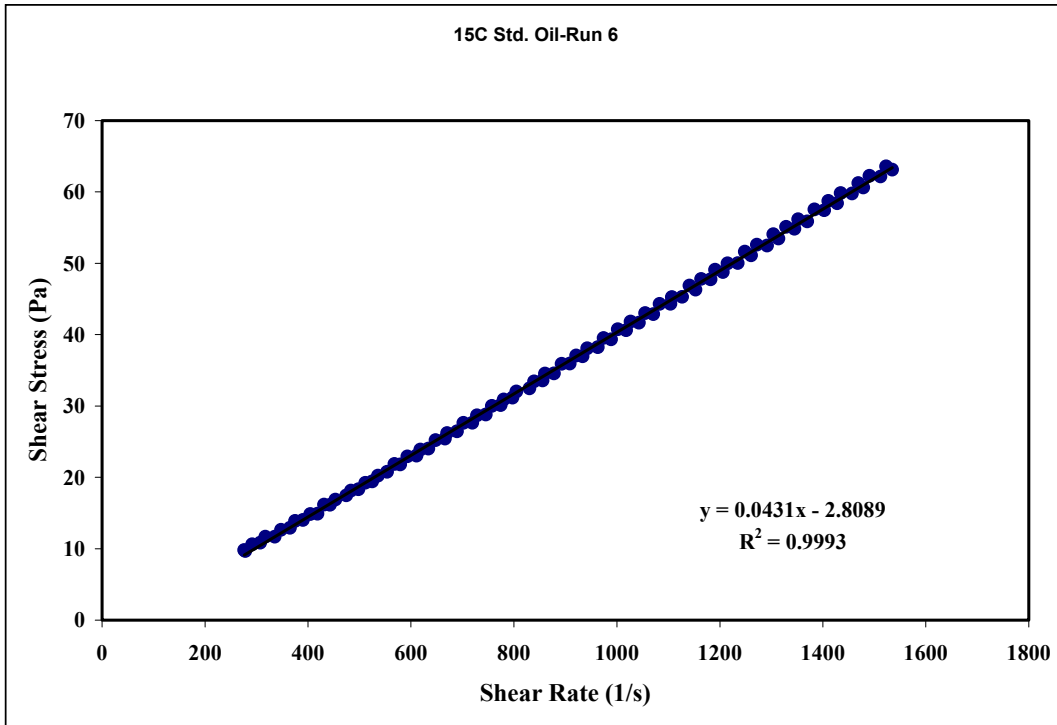


Figure 9. 15 °C Run 6

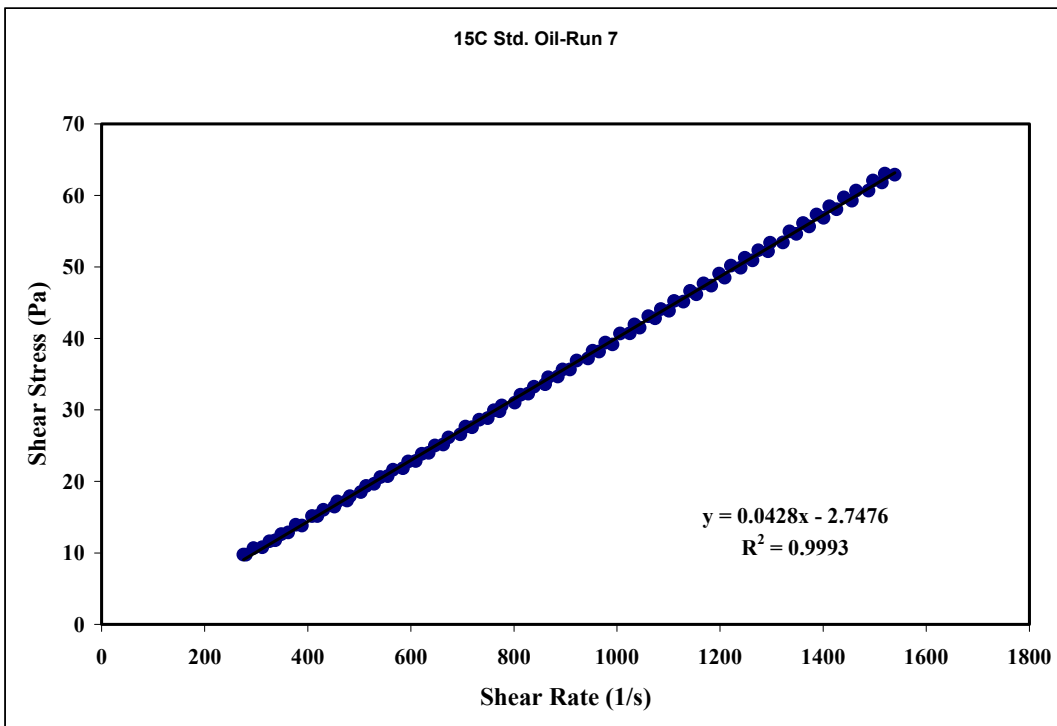


Figure 10. 15 °C Run 7

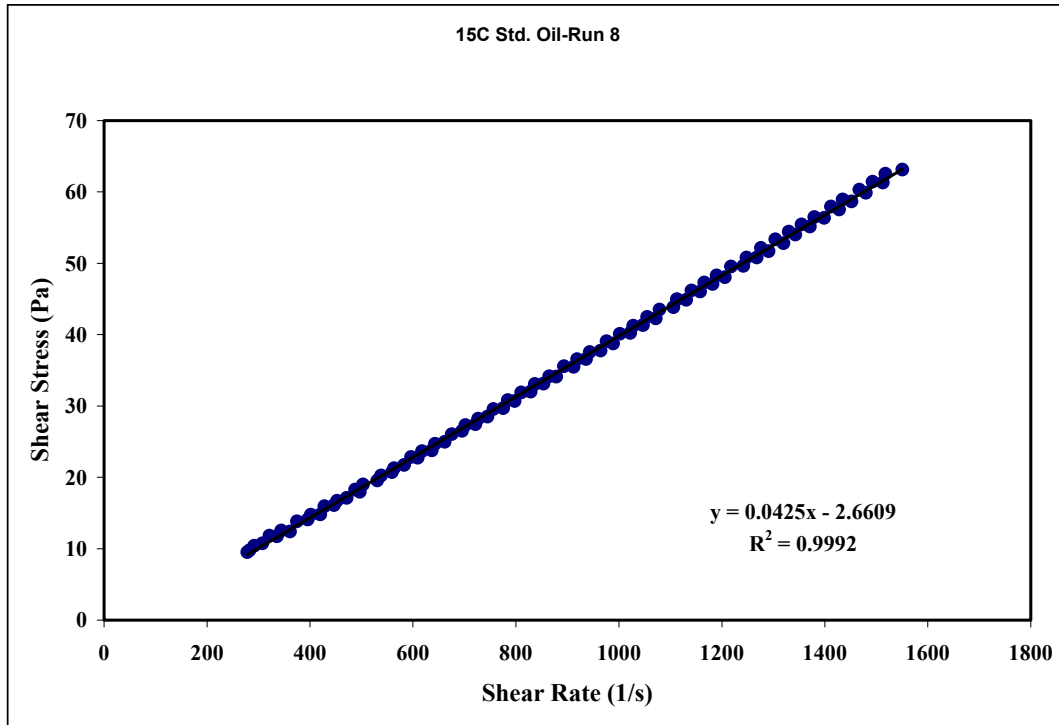


Figure 11. 15 °C Run 8

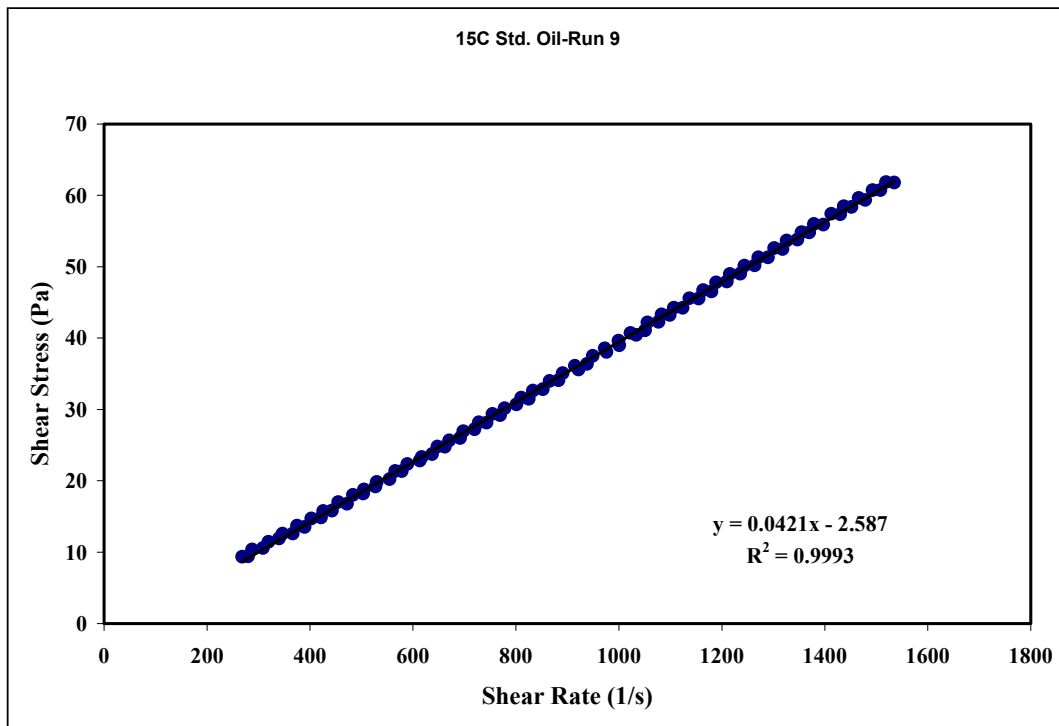


Figure 12. 15 °C Run 9

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APPENDIX A – PART 5

**TEMPERATURE DEPENDENCE OF VISCOSITY
FOR THE LOW VISCOSITY STANDARD OIL**

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Table 1. Known Temperature-Dependant Viscosity Data for Low-Viscosity Standard

T (C)	1/T (K)	Viscosity (cP)	ln (viscosity)
20.00	3.411E-03	18.38	2.911E+00
25.00	3.354E-03	14.78	2.693E+00
37.78	3.216E-03	9.089	2.207E+00
40.00	3.193E-03	8.429	2.132E+00
98.89	2.688E-03	2.095	7.396E-01
100.00	2.680E-03	2.056	7.208E-01

Table 2. Calculated viscosity data at 15 °C based on Arrhenius fit

T (C)	1/T (K)	Viscosity (cP)	ln (viscosity)
15.00	3.470E-03	22.6	

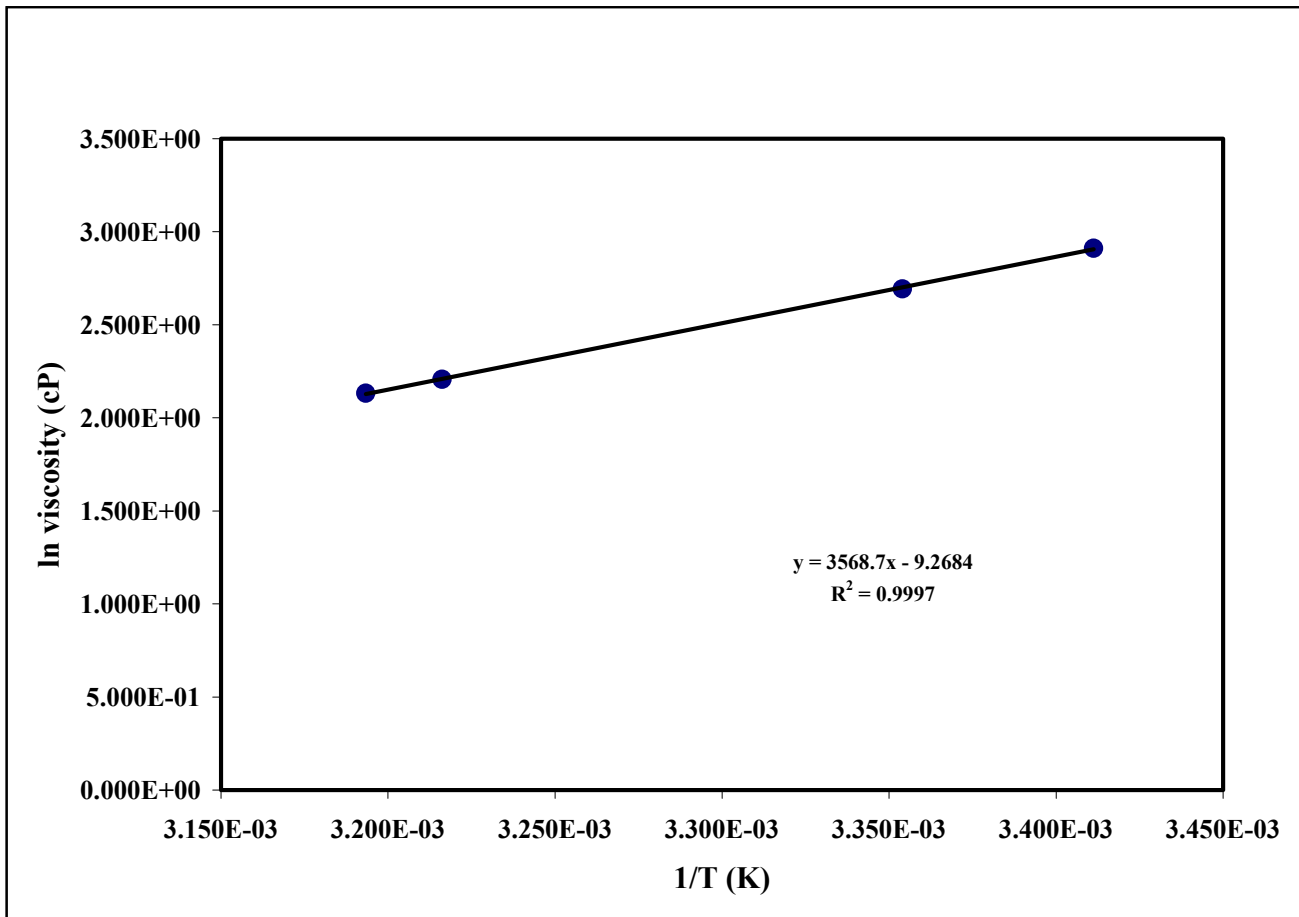


Figure 1. Arrhenius Plot of Temperature-Dependence of Viscosity for the Low Viscosity Standard

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ENVELOPE A RHEOLOGY DATA

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ENVELOPE A RHEOLOGY DATA

Table 1. Rheometer Response for Blank – As Received

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
3.068	323.9	2.613	306.3	2.092	302.3	1.861	305.8	1.876	304.5	1.985	312	1.828	325.2	2.157	306.3	1.882	326.5
3.48	327.9	2.906	324.3	2.432	308	2.545	319.9	2.257	312.4	2.379	318.6	2.281	323.5	2.175	309.8	2.423	325.2
3.79	346.8	3.133	346.4	2.648	328.7	2.74	341.5	2.802	347.3	2.601	341.1	2.574	342.4	2.666	346.4	2.601	344.2
3.938	372.4	3.338	371.9	3.113	365.3	2.95	361.8	2.968	371.9	2.861	365.8	2.959	378.1	2.861	368.4	2.846	368.9
4.075	402.3	3.48	401	3.228	388.7	3.113	389.6	3.054	402.3	3.287	402.3	3.089	401.5	3.027	391.8	3.057	393.1
4.214	426.1	3.625	424.4	3.364	421.3	3.361	420.9	3.264	427.9	3.382	428.8	3.287	424.8	3.169	424.4	3.255	416.4
4.391	453	3.835	450.8	3.512	445.1	3.533	446.9	3.423	452.1	3.586	452.6	3.412	455.2	3.347	451.7	3.426	442.9
4.595	472.4	4.083	475.5	3.713	468	3.642	475.1	3.554	478.6	3.737	484.8	3.503	479.9	3.527	479.5	3.604	468.4
4.702	499.7	4.202	507.2	3.832	492.7	3.909	498	3.716	505	3.873	510.3	3.631	502.8	3.728	504.1	3.971	507.7
5.096	536.8	4.314	531.5	3.998	518.7	4.021	527.5	3.924	529.3	4.051	536.3	4.042	541.2	3.87	528.8	4.154	533.2
5.241	561.4	4.459	556.6	4.184	542	4.122	552.2	4.075	553.1	4.252	561.9	3.935	553.5	4.012	554.8	4.32	558.8
5.391	591.4	4.64	581.7	4.335	569.8	4.379	577.7	4.225	580.4	4.37	587.9	4.442	595.4	4.187	578.2	4.456	582.6
5.578	612.5	4.814	607.3	4.533	596.2	4.459	602.4	4.631	620	4.589	611.2	4.575	621.4	4.311	602.9	4.581	614.8
5.898	651.3	5.202	646.9	4.894	639.9	4.619	625.3	4.737	644.7	4.882	650.4	4.77	646.5	4.666	640.8	4.773	641.2
6.093	674.2	5.344	672.5	4.865	649.1	4.743	651.3	4.874	674.2	5.084	682.2	4.862	671.2	4.838	665	4.9	667.6
6.232	699.8	5.548	701.1	5.291	689.7	4.992	676.9	5.022	698	5.258	702	5.057	699.8	4.903	695.8	5.078	692.3
6.427	728.4	5.69	728	5.454	716.1	5.323	717.9	5.184	719.2	5.318	725.4	5.279	725.4	5.007	720.1	5.273	719.2
6.56	753.1	5.871	749.2	5.575	744.3	5.415	746.5	5.3	747.8	5.415	750.9	5.448	753.1	5.377	754.4	5.442	743.9
6.726	776	6.043	776	5.818	773	5.584	770.3	5.468	772.1	5.557	786.2	5.563	784.4	5.451	783.1	5.563	769.4
6.972	795	6.211	796.3	5.986	797.2	5.708	794.6	5.821	812.2	5.753	812.6	5.64	810	5.605	800.7	5.667	792.8
7.226	834.2	6.584	837.7	6.146	823.2	5.88	817.9	5.747	822.3	5.877	839.9	5.865	833.3	5.797	835.1	6.063	832.4
7.318	859.3	6.812	860.7	6.247	854.9	5.966	843	6.007	849.2	6.054	865.5	6.007	857.6	5.942	859.8	6.229	855.8
7.546	884	6.901	890.2	6.415	880	6.27	867.7	6.359	891.1	6.238	888.9	6.324	898.6	6.128	884.5	6.265	886.7
7.726	910.9	7.037	913.5	6.605	903	6.575	908.7	6.495	917.1	6.386	914	6.528	923.7	6.217	905.6	6.436	911.8
7.957	932.9	7.203	936.9	6.759	930.7	6.726	931.2	6.679	941.7	6.549	941.3	6.688	950.6	6.584	949.2	6.596	940
8.108	960.2	7.605	975.7	6.954	955.8	6.791	963.3	6.824	967.3	6.667	971.7	6.827	973.5	6.492	957.2	6.904	959.4
8.573	1005	7.756	999.5	7.105	983.2	6.996	988.9	6.93	997.3	6.924	996.4	6.91	1003	6.922	997.7	6.963	993.3
8.715	1029	7.857	1029	7.274	1008	7.102	1013	7.087	1022	7.072	1022	7.081	1026	6.945	1021	7.155	1019
8.904	1059	7.993	1051	7.422	1032	7.318	1038	7.232	1045	7.206	1046	7.22	1049	7.129	1052	7.286	1045
8.99	1081	8.114	1075	7.576	1059	7.442	1064	7.502	1070	7.596	1086	7.3	1080	7.297	1077	7.422	1067
9.114	1104	8.194	1098	7.963	1097	7.581	1087	7.682	1098	7.679	1116	7.596	1107	7.365	1099	7.608	1092

ENVELOPE A RHEOLOGY DATA

Table 1. Rheometer Response for Blank – As Received - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
9.331	1127	8.431	1126	8.179	1125	7.75	1115	8.099	1138	7.786	1140	7.706	1137	7.564	1122	7.786	1117
9.748	1166	8.745	1166	8.375	1151	8.156	1157	8.182	1161	7.966	1164	7.88	1163	7.871	1161	7.922	1148
9.964	1191	8.827	1193	8.543	1179	8.289	1181	8.262	1192	8.07	1187	8.052	1187	8.031	1191	8.357	1187
10.11	1223	9.038	1216	8.567	1210	8.508	1203	8.466	1218	8.389	1227	8.194	1211	8.126	1211	8.502	1215
10.34	1241	9.251	1240	8.739	1233	8.561	1237	8.665	1239	8.351	1235	8.576	1250	8.295	1234	8.407	1228
10.5	1275	9.357	1263	8.842	1256	8.75	1260	8.783	1266	8.747	1277	8.703	1272	8.62	1274	8.709	1253
10.68	1296	9.532	1289	9.224	1293	8.89	1284	8.895	1288	8.928	1302	8.83	1304	8.774	1296	9.1	1297
10.77	1320	9.878	1330	9.39	1315	9.029	1308	9.271	1329	9.067	1327	8.981	1328	9.011	1319	9.032	1305
11.02	1345	10.05	1352	9.434	1345	9.203	1334	9.44	1352	9.262	1353	9.109	1351	9.123	1351	9.372	1352
11.46	1383	10.19	1384	9.641	1369	9.354	1360	9.621	1378	9.437	1379	9.221	1375	9.227	1376	9.476	1375
11.59	1415	10.37	1406	9.825	1394	9.763	1404	9.78	1404	9.594	1413	9.402	1399	9.399	1397	9.65	1401
11.93	1436	10.54	1434	10.01	1418	9.653	1413	9.911	1436	9.68	1438	9.813	1439	9.697	1437	9.875	1427
11.99	1464	10.72	1456	10.31	1458	10.14	1456	9.976	1462	9.837	1466	9.976	1464	9.869	1460	9.952	1455
12.24	1487	10.87	1479	10.46	1482	10.12	1462	10.12	1486	9.993	1489	10.18	1496	10.06	1483	10.22	1487
12.37	1521	11.34	1521	10.61	1506	10.53	1508	10.32	1512	10.2	1513	10.24	1523	10.19	1513	10.47	1510
10.1	1524	8.872	1427	9.647	1553	8.449	1393	9.236	1525	8.558	1414	9.067	1511	9.251	1517	9.502	1545
9.742	1483	8.694	1404	9.257	1511	8.357	1365	9.097	1497	8.339	1387	8.913	1488	9.088	1490	9.357	1524
9.532	1462	8.268	1364	9.038	1489	8.206	1334	8.875	1472	8.153	1362	8.78	1457	8.966	1469	9.017	1486
9.396	1427	8.099	1339	8.969	1456	8.028	1309	8.662	1449	8.025	1336	8.558	1430	8.576	1426	8.827	1464
9.177	1404	7.931	1309	8.774	1432	7.806	1285	8.327	1405	7.789	1312	8.392	1407	8.6	1419	8.682	1441
8.996	1380	7.821	1284	8.605	1410	7.685	1257	8.138	1380	7.638	1287	8.253	1382	8.2	1374	8.517	1414
8.842	1355	7.493	1259	8.457	1382	7.362	1230	7.919	1355	7.203	1239	7.954	1344	7.99	1352	8.46	1388
8.6	1332	7.357	1234	8.244	1357	7.244	1208	7.759	1330	7.096	1217	7.67	1323	7.866	1320	8.182	1350
8.298	1291	7.191	1210	8.037	1330	7.117	1182	7.51	1305	6.833	1191	7.596	1292	7.738	1297	8.049	1329
8.058	1269	6.975	1181	7.608	1292	6.759	1141	7.478	1274	6.67	1163	7.428	1268	7.54	1273	7.863	1299
7.907	1238	6.812	1157	7.472	1268	6.782	1132	7.312	1248	6.448	1138	7.3	1242	7.413	1249	7.715	1275
7.718	1213	6.448	1118	7.351	1238	6.291	1087	7.072	1225	6.386	1106	7.132	1221	7.2	1222	7.528	1250
7.487	1191	6.282	1088	7.226	1214	6.143	1061	6.951	1199	6.211	1081	6.951	1195	6.993	1198	7.135	1214
7.374	1165	6.17	1067	7.019	1190	5.96	1031	6.797	1173	6.054	1055	6.785	1171	6.812	1173	7.007	1191
7.25	1140	5.975	1048	6.782	1162	5.812	1007	6.572	1148	5.803	1039	6.54	1143	6.626	1144	6.812	1165
7.078	1113	5.667	1018	6.534	1134	5.634	982.3	6.188	1107	5.599	1006	6.176	1101	6.285	1104	6.637	1135

ENVELOPE A RHEOLOGY DATA

Table 2. 25 °C As Received

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
7.172	313.3	6.405	314.2	6.846	305.4	6.293	324.3	6.106	331	6.124	317.3	6.471	308.9	6.521	304.1	6.065	323.5
7.409	316.9	7.787	316.9	7.625	321.3	6.861	319.1	7.509	323.5	7.429	319.1	7.722	319.9	7.571	316.4	7.358	318.2
8.672	346.4	8.125	335.8	7.968	341.1	8.001	334	8.075	344.6	8.344	342.9	8.11	339.8	8.335	342.9	7.787	338.9
9.753	368.4	8.921	359.2	9.042	365.3	8.746	361.4	8.732	366.6	8.581	362.7	8.826	364	8.616	364.9	8.933	365.3
10.3	390.4	9.892	383.4	9.708	394.4	9.152	386.9	9.687	390	9.522	386.5	9.753	393.1	9.545	389.1	9.427	387.4
11.09	423.5	10.37	408.1	10.05	418.6	9.992	411.6	10.3	412.9	10.37	412	10.55	417.3	10.27	414.2	9.853	411.2
11.59	445.5	11.67	443.3	10.79	441.6	10.95	435	10.75	438.5	11.43	449.5	11.14	444.2	11.45	452.1	10.77	435
12.63	477.3	12.26	469.3	11.75	464	11.6	460.1	12.4	479.5	12.24	474.2	11.94	471.5	12.29	478.1	11.77	475.5
13.29	501.5	13.18	499.3	12.75	505	12.75	499.7	13.03	503.3	13	505.5	12.59	496.6	13.06	505	12.49	497.1
14.1	524.9	13.78	522.6	13.55	529.7	13.47	527.1	13.93	533.2	13.72	527.9	13.98	532.8	13.84	532.3	13.4	529.3
14.96	544.7	14.45	546	14.4	559.7	14.2	552.2	14.69	556.1	14.41	550.9	14.74	557	14.57	556.1	14.27	557.5
15.7	569.8	15.9	583.5	15.06	582.6	14.92	579.1	15.39	579.9	15.07	574.2	15.44	580.8	15.15	587	15.01	582.1
17.29	613.9	16.55	608.1	15.95	608.1	15.81	603.7	16.09	613	16.01	611.7	16.12	612.5	15.86	610.8	15.76	606.4
17.95	638.1	17.2	631.1	16.75	639	16.58	629.3	16.76	638.1	17.07	641.6	16.78	637.7	16.55	636.3	16.43	629.3
18.66	668.5	18.15	662.8	17.21	663.7	17.38	663.2	17.41	661	17.71	665	17.62	665	17.33	660.6	17.2	654.4
19.57	691.4	18.89	686.6	18.01	685.7	18.04	685.3	18.27	684.8	18.27	690.5	18.33	690.1	18.18	687.5	18.33	695
20.4	713.5	19.52	708.6	18.86	710.8	18.84	709.9	19.46	723.6	18.92	713	19.01	716.1	18.89	711.7	18.95	717.4
20.97	738.6	20.08	731.1	20.2	751.4	19.66	735.5	20.31	746.5	20.14	750.9	20.14	744.3	19.63	738.6	19.6	743.4
22.5	782.7	20.97	761.1	20.79	773.8	20.52	765.5	20.88	776.9	21.14	778.7	20.64	769.9	20.37	765.9	20.46	773
22.65	789.3	21.68	784.9	21.53	798.5	21.29	791.9	21.76	801.2	21.62	801.6	21.65	796.8	21.26	790.6	21.11	797.6
24.34	835.1	23.01	825.8	22.36	830.7	22.06	818.3	22.24	821.9	22.45	825.8	22.24	820.1	22.53	828.9	22	823.6
24.99	858	23.78	852.7	23.21	854	22.8	843.9	23.42	860.2	23.07	848.3	22.98	844.8	23.16	856.7	22.86	851
25.88	883.1	24.67	876.1	23.9	879.6	23.72	870.3	24.22	884	23.84	873	23.75	873.9	23.95	884.9	23.39	874.8
26.56	909.1	25.55	908.2	24.61	905.2	24.96	912.2	25.05	914.4	24.49	898.6	25.11	913.1	24.84	909.1	24.16	896.8
27.42	940	26.14	932.5	25.49	929.8	25.05	921.9	25.73	937.3	25.88	937.8	25.73	936.9	25.76	937.3	24.93	924.6
28.25	965.1	27.03	962.5	26.56	967.7	26	947	26.35	960.7	26.74	965.5	26.5	965.1	26.62	969.1	26.23	966
29.07	985.8	27.74	986.2	27.39	992.9	27.48	989.3	27.68	999	27.51	992.4	27.21	985.8	27.21	989.8	27.03	990.7
29.7	1011	28.66	1011	28.31	1025	27.92	1010	28.42	1023	28.42	1024	27.92	1013	28.22	1022	27.83	1018
31	1047	29.46	1043	29.1	1051	29.1	1046	29.28	1054	29.22	1046	28.75	1039	28.72	1045	28.69	1045
31.77	1075	30.23	1066	30.02	1079	29.84	1073	29.99	1077	29.93	1071	30.05	1078	29.49	1067	29.43	1070
32.54	1099	31.15	1096	30.64	1098	30.61	1097	30.61	1100	30.52	1094	30.76	1104	30.23	1089	30.2	1101

ENVELOPE A RHEOLOGY DATA

Table 2. 25 °C As Received - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
33.31	1122	31.86	1118	31.62	1129	31.35	1121	31.38	1124	31.89	1133	31.56	1126	31.03	1120	30.94	1125
34.55	1160	33.04	1154	32.36	1155	32.06	1147	32.39	1157	32.69	1158	32.48	1160	31.92	1145	32.12	1160
35.41	1185	33.72	1177	33.1	1178	32.92	1174	33.19	1182	33.34	1183	33.31	1185	33.25	1185	32.95	1184
36.35	1215	34.67	1210	33.81	1204	33.69	1199	34.11	1213	34.16	1213	34.08	1212	33.96	1208	33.75	1213
37.09	1239	35.29	1228	34.99	1241	34.49	1226	34.82	1236	34.99	1239	34.88	1240	34.82	1241	34.46	1237
37.86	1263	36.27	1256	35.79	1265	35.29	1253	35.47	1259	35.79	1264	35.73	1269	35.56	1266	35.29	1268
38.72	1288	37.07	1284	36.62	1296	36.21	1280	36.62	1295	36.41	1289	36.5	1294	36.18	1289	35.97	1288
39.58	1311	37.98	1315	37.42	1321	37.42	1319	37.45	1324	37.33	1315	37.24	1319	36.92	1312	36.86	1320
40.85	1350	38.72	1341	38.01	1342	38.25	1345	38.16	1348	38.04	1339	37.95	1343	38.16	1350	37.42	1342
41.56	1373	39.49	1364	38.78	1367	38.93	1367	38.93	1373	38.84	1365	39.08	1377	39.08	1380	38.19	1364
42.48	1402	40.29	1389	40.08	1407	39.7	1397	39.64	1397	39.61	1392	39.94	1408	39.76	1401	39.43	1404
43.19	1427	41.56	1427	40.97	1433	40.47	1419	40.5	1424	41	1432	40.73	1434	40.53	1427	40.11	1427
44.08	1452	42.21	1448	41.74	1462	41.27	1443	41.3	1451	41.77	1460	41.59	1458	41.39	1453	41	1458
44.88	1478	43.01	1476	42.36	1484	42.48	1482	42.21	1478	42.48	1482	42.13	1482	42.13	1482	41.71	1483
45.65	1502	43.99	1508	43.1	1507	43.34	1508	43.13	1506	43.34	1512	42.92	1504	43.01	1512	42.48	1510
43.1	1511	43.22	1530	42.07	1510	41.42	1490	41.5	1497	41.53	1497	41.95	1517	41.53	1508	42.24	1534
42.24	1485	42.18	1504	41.3	1485	40.65	1465	40.82	1472	40.56	1463	41.68	1504	40.79	1480	40.32	1482
41.62	1463	41.65	1481	40.44	1458	39.91	1440	39.79	1440	39.82	1439	40.08	1460	40.05	1460	39.97	1466
40.82	1439	40.05	1443	39.64	1434	38.84	1408	39.2	1417	39.23	1418	39.76	1447	39.11	1427	39.2	1441
40.08	1412	39.02	1412	38.9	1406	38.13	1381	38.46	1393	37.89	1381	37.6	1376	38.31	1401	38.22	1405
39.17	1386	38.31	1389	37.98	1380	37.3	1355	37.72	1370	37.09	1354	37.39	1363	37.72	1382	37.51	1382
38.43	1360	37.54	1366	37.27	1356	36.47	1332	36.98	1346	36.35	1327	36.5	1341	36.89	1352	36.53	1351
37.66	1337	36.86	1344	36.53	1329	35.79	1308	35.44	1303	35.7	1302	36	1320	36.06	1326	35.82	1326
36.21	1295	35.53	1303	35.56	1300	35.02	1282	35.23	1291	34.96	1278	34.67	1289	35.29	1301	34.93	1298
35.38	1270	34.76	1279	34.64	1273	34.22	1254	34.37	1260	34.22	1255	34.49	1274	34.58	1278	34.19	1271
34.58	1242	34.02	1249	34.08	1247	33.43	1230	32.92	1225	33.34	1230	33.34	1237	33.25	1237	33.4	1246
33.75	1213	33.22	1225	33.13	1219	32.03	1188	32.57	1210	32.66	1203	33.13	1218	32.45	1212	32.51	1219
32.98	1189	32.45	1201	31.5	1176	31.32	1165	31.8	1181	31.77	1177	31.62	1188	31.68	1189	31.74	1194
32.18	1156	31.77	1178	31.15	1158	30.5	1134	31.06	1154	30.47	1136	31.59	1177	30.97	1160	30.5	1155
30.64	1128	31.12	1155	30.38	1134	29.81	1111	30.67	1135	29.76	1112	30.58	1143	29.99	1128	29.78	1128
30.38	1112	29.73	1114	29.81	1104	28.99	1083	29.4	1111	28.99	1084	29.78	1115	29.13	1104	29.02	1108

ENVELOPE A RHEOLOGY DATA

Table 2. 25 °C As Received - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
29.4	1074	28.84	1088	29.76	1103	28.25	1060	28.28	1066	28.16	1059	29.02	1090	28.36	1074	28.25	1077
28.96	1054	28.28	1063	28.33	1074	27.21	1025	27.89	1043	27.36	1033	28.19	1067	27.65	1051	27.54	1048
27.77	1035	27.45	1035	28.04	1059	26.38	999.5	26.71	1023	26.41	999.9	26.86	1026	26.94	1026	26.68	1022
27.45	1019	26.83	1014	26.32	1007	25.73	974.3	25.82	982.7	25.76	974.8	26.14	999.5	26.23	1003	25.85	996.8
26	957.6	26.06	987.6	25.88	992.4	24.87	951.4	24.93	953.2	24.84	949.7	25.32	971.3	25.43	977.9	25.05	970.4
25.94	956.7	24.93	951.9	24.19	923.2	24.4	928.1	24.07	920.6	24.13	925.9	24.69	946.6	24.34	939.5	24.43	946.1
24.58	928.1	24.13	926.3	23.87	910.9	23.07	891.5	23.19	893.7	23.51	900.8	23.81	921	23.3	907.4	23.63	919.3
24.22	905.2	23.33	895.9	22.62	887.1	22.39	863.7	22.65	869	22.68	875.6	22.98	891.5	22.53	884.5	22.77	893.7
22.48	861.1	22.42	868.6	22	866.4	21.47	834.2	21.76	845.2	21.79	846.1	22.39	865.1	21.71	853.2	22.21	869
22.15	843.5	21.82	843.9	21.17	835.1	20.82	809.5	21.17	821.9	20.49	806.4	21.56	839.5	21.17	831.1	21.32	842.1
21.26	817.5	20.88	818.3	21.05	818.8	20.02	786.2	19.96	782.2	19.93	782.7	20.94	816.1	20.34	803.4	20.67	815.7
20.37	777.8	20.29	793.7	20.11	788.4	19.43	761.1	19.25	759.7	19.34	759.3	19.99	791.9	19.69	776	19.25	776
19.63	750.9	19.46	766.8	19.28	759.3	18.45	729.8	18.48	732.4	18.36	726.7	19.46	765	18.84	750	19.16	765
19.04	725.4	18.72	744.3	18.66	733.7	17.8	706	17.8	705.1	17.74	704.2	18.24	723.2	18.12	725.4	17.8	720.5
18.27	701.1	17.41	703.8	17.3	691	17.15	679.1	16.88	681.3	17.15	680.4	17.5	700.7	17.5	701.6	17.06	696.7
17.33	675.6	16.79	682.6	16.59	666.8	16.2	652.7	16.08	653.5	16.35	654.4	16.62	674.7	16.91	677.3	16.32	666.8
16.59	651.8	16.23	650	15.76	643	15.37	626.2	15.46	626.2	15.46	630.2	15.88	651.3	16.02	649.1	15.7	645.2
15.46	610.8	15.55	626.7	14.96	612.5	14.63	599.8	14.66	593.6	14.48	587.4	15.28	616.5	14.87	609	14.9	614.8
14.69	585.7	14.22	588.3	14.34	587.4	13.6	560.1	14.1	571.1	13.8	566.3	14.51	589.6	14.16	582.1	14.1	590.1
13.95	559.2	13.54	566.7	13.69	562.3	12.92	535.4	13.45	549.5	13.09	541.2	13.77	564.5	13.36	557	13.12	556.1
13.06	531	12.86	539.8	12.83	539.4	12.36	509.4	12.11	509	12.33	507.7	13.03	539.4	12.5	525.3	12.47	529.7
12.4	489.6	12.06	513	12.26	514.7	11.62	483	11.82	488.3	11.73	486.1	12.52	514.7	11.99	500.6	11.7	503.7
11.73	479	11.44	488.7	11.29	472.4	10.87	456.5	11.04	457	10.2	438.9	11.84	490.5	11.43	476.4	11.37	481.7
10.96	455.2	10.55	461.4	11.03	464.5	9.96	427.5	10.31	434.1	10.18	427	11	464.5	10.65	452.1	10.79	454.8
10.39	423.5	10.12	434.5	9.519	421.3	9.288	404.1	9.462	406.3	10.08	421.3	10.13	440.2	9.794	426.6	9.933	423.5
9.61	394	9.539	403.7	8.974	392.6	8.959	381.2	9.096	386.9	8.362	371.5	9.359	408.5	9.329	403.2	9.172	394
8.581	370.2	8.652	381.6	8.658	369.3	7.906	344.2	7.971	345.9	8.196	362.7	8.527	375.5	8.178	363.1	8.329	375.9
8.092	337.6	7.784	350.8	7.61	345.9	6.864	313.3	7.264	323.5	6.888	316	8.086	348.6	7.693	339.3	7.631	341.1
7.462	314.6	7.645	327.9	7.379	320.4	6.624	290.4	6.417	292.2	6.408	286.4	7.012	321.7	6.63	307.6	7.021	316
6.846	290.9	6.624	299.2	6.438	295.3	5.538	264	6.142	268.8	6.086	279	6.846	297.5	6.518	283.8	6.536	293.9
6.154	267.5	6.059	272.3	5.396	256.5	5.523	241.1	5.58	246.3	5.819	251.6	5.819	274.5	5.438	260.9	5.885	267.5

ENVELOPE A RHEOLOGY DATA

Table 3. 50 °C As Received

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
3.982	316.4	3.615	306.7	4.145	315.1	3.846	305	3.506	305.4	3.799	312.9	3.636	310.7	3.805	308	3.355	336.2
4.367	317.3	4.399	321.7	4.311	325.2	4.402	322.6	3.932	313.3	3.953	321.7	3.802	314.2	4.219	321.3	4.13	330.1
4.832	338.9	4.909	343.3	4.849	346.4	4.781	343.3	4.447	330.1	4.441	341.5	4.343	330.5	4.293	347.7	4.293	347.3
4.814	360.5	4.98	365.8	4.882	369.7	4.746	365.8	4.521	357	4.722	362.2	4.456	355.2	4.728	368.4	4.624	368.4
5.16	382.5	5.13	392.6	5.157	398.8	5.172	389.1	4.84	383.4	4.959	393.1	4.66	378.5	5.009	400.1	4.959	391.3
5.557	422.6	5.583	416.9	5.45	423.9	5.503	427.9	5.273	423.1	5.11	417.3	5.042	405	5.296	427	5.332	429.7
5.983	446	5.873	449.1	5.746	452.1	5.9	453	5.592	449.1	5.426	443.3	5.358	431	5.332	450.8	5.716	454.3
6.32	472.9	6.122	475.9	6.006	478.6	6.231	480.3	5.968	472	5.826	467.1	5.725	471.5	5.586	478.6	5.912	480.8
6.649	496.6	6.394	501.1	6.379	505	6.459	504.6	6.104	504.1	6.004	494	6.083	494.9	5.808	501.9	6.092	503.7
6.874	527.1	6.737	524.4	6.681	527.1	6.755	531.5	6.397	529.3	6.338	517.8	6.19	526.2	6.539	541.2	6.462	537.6
7.22	550	6.924	546.9	7.001	566.3	7.025	558.3	6.72	550.9	6.584	549.5	6.43	549.5	6.755	568	6.681	560.1
7.386	576	7.306	574.7	7.326	589.6	7.264	589.2	7.063	586.5	6.806	577.7	6.634	576.4	7.084	589.6	6.915	586.5
7.608	600.7	7.779	614.3	7.649	620.5	7.534	612.1	7.35	609.9	7.554	614.3	6.989	598.4	7.149	620.5	7.187	611.2
8.35	644.3	8.205	641.2	8.051	644.7	8.007	646	7.767	637.2	7.844	638.1	7.658	638.1	7.418	642.1	7.394	635.9
8.253	651.3	8.38	672.5	8.191	670.3	8.247	669.8	7.966	666.3	7.98	669.4	7.847	660.1	7.676	666.3	7.8	664.1
9.061	695	8.741	696.7	8.596	695.4	8.439	694.1	8.347	694.1	8.495	691.4	8.078	685.3	8.131	694.1	8.223	687.5
9.454	717	9.055	717.4	9.01	720.5	8.779	716.6	8.768	717.9	8.865	717.4	8.688	711.3	8.412	721.4	8.327	715.2
9.584	749.2	9.513	751.4	9.65	758.4	9.223	744.3	9.046	740.3	9.01	747.8	8.865	739.5	8.898	749.6	9.049	752.7
10.05	774.3	9.957	775.2	9.809	782.2	9.579	770.3	9.212	763.7	9.389	770.3	9.288	771.2	9.146	772.1	9.283	778.2
10.29	798.1	10.13	804.7	10.21	805.6	10.16	809.1	9.937	803.8	9.614	794.6	9.528	790.1	9.496	799.4	9.623	810
10.75	822.8	10.5	831.6	10.49	832.4	10.54	834.2	10.24	832.9	10	819.7	9.969	818.8	10.18	839.5	10.06	835.5
10.98	847.4	10.95	858.9	10.95	860.7	10.85	864.6	10.59	863.7	10.23	844.3	10.37	851	10.38	865.5	10.32	861.1
11.47	872.1	11.16	881.8	11.11	884.9	11.23	890.6	10.99	885.8	10.71	872.6	10.63	873	10.73	893.3	10.72	885.8
12.01	909.6	11.55	905.2	11.52	909.1	11.53	910.9	11.35	915.7	11.42	914.4	10.96	900.3	11.11	917.1	10.98	906.5
12.44	934.2	12.22	944.8	11.87	940.9	12.02	937.3	11.58	942.2	11.69	943.5	11.35	926.8	11.3	938.2	11.3	931.6
12.83	967.3	12.53	970.4	12.35	966.9	12.34	969.1	12.14	969.9	12.04	964.7	11.67	952.3	11.69	965.1	11.93	975.2
13.22	993.3	12.92	993.7	12.73	990.7	12.64	994.2	12.5	991.1	12.4	993.7	11.92	976.6	12.11	988.5	12.25	997.7
13.54	1016	12.87	1006	12.97	1016	12.93	1021	12.8	1022	12.83	1018	12.6	1020	12.75	1032	12.62	1022
13.94	1043	13.69	1048	13.76	1060	13.26	1043	13.12	1046	13.05	1048	13.02	1047	13.13	1058	12.96	1048
14.24	1067	13.99	1075	13.99	1083	13.9	1082	13.4	1069	13.51	1070	13.45	1077	13.48	1082	13.33	1081
14.94	1103	14.4	1107	14.27	1107	14.3	1109	13.78	1095	13.75	1099	13.36	1085	13.73	1107	13.67	1104

ENVELOPE A RHEOLOGY DATA

Table 3. 50 °C As Received - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
15.35	1129	14.78	1131	14.65	1139	14.54	1133	14.09	1120	14.17	1120	13.75	1111	14.03	1136	13.94	1127
15.72	1159	15.12	1158	15.05	1162	14.99	1165	14.79	1159	14.75	1161	14.5	1155	14.34	1159	14.24	1152
16.1	1182	15.47	1185	15.39	1186	15.31	1189	15.04	1182	14.76	1170	14.86	1178	14.71	1181	14.93	1192
16.33	1207	15.81	1211	15.63	1212	15.54	1212	15.35	1211	15.4	1213	15.12	1204	15.24	1221	15.21	1215
16.68	1232	16.22	1236	16.07	1237	15.85	1236	15.77	1237	15.7	1236	15.44	1237	15.7	1248	15.63	1244
17.03	1257	16.49	1259	16.39	1266	16.47	1273	16.23	1267	16.09	1267	15.91	1256	15.96	1276	15.94	1267
17.68	1296	17.22	1304	17.01	1303	16.84	1301	16.53	1297	16.44	1291	16.13	1287	16.34	1298	16.21	1299
17.94	1323	17.22	1310	17.36	1331	17.39	1328	16.82	1322	16.71	1317	16.44	1311	16.67	1330	16.56	1323
18.32	1346	17.88	1352	17.79	1357	17.65	1351	17.19	1346	17.02	1342	16.73	1333	17	1353	16.88	1348
18.56	1376	18.2	1377	17.76	1366	17.82	1377	17.46	1367	17.36	1368	17.32	1369	17.27	1374	17.26	1371
18.97	1399	18.5	1403	18.44	1409	18.2	1404	17.7	1391	17.7	1394	17.58	1401	17.7	1411	17.4	1397
19.18	1424	18.85	1426	18.85	1434	18.47	1434	18.35	1433	18	1424	17.91	1426	17.97	1435	18.05	1435
19.5	1448	19.27	1456	19.06	1459	18.79	1456	18.59	1455	18.41	1451	18.2	1448	18.47	1461	18.47	1464
19.95	1474	19.5	1480	19.42	1492	19.21	1482	19.03	1482	18.71	1475	18.62	1479	18.73	1491	18.85	1493
20.63	1514	20.13	1518	19.89	1516	19.5	1504	19.36	1510	19.09	1501	18.97	1503	19.03	1519	19.18	1521
19.53	1549	19	1520	18.85	1528	18.94	1552	18.62	1542	18.38	1524	18.2	1523	18.02	1521	17.28	1475
19.03	1523	18.65	1493	18.5	1502	18.5	1526	18.32	1519	18	1496	17.49	1482	17.76	1492	16.63	1422
18.76	1498	18.23	1468	17.88	1463	18.17	1498	17.97	1489	17.64	1472	17.52	1473	17.31	1467	16.69	1420
18.08	1458	17.91	1438	17.43	1439	17.58	1457	17.67	1469	16.96	1432	17.2	1434	16.96	1443	15.86	1399
17.79	1437	17.37	1412	17.05	1408	17.05	1430	17.31	1447	16.69	1408	17.14	1433	16.22	1400	15.89	1383
17.49	1405	17.08	1388	16.66	1381	16.75	1405	17.02	1420	16.34	1383	16.19	1402	15.98	1372	15.57	1357
17.14	1386	16.72	1361	16.25	1355	16.43	1382	16.63	1391	15.95	1352	15.92	1345	15.63	1351	15.54	1350
16.81	1360	16.31	1340	15.92	1331	16.07	1352	15.95	1351	15.63	1331	15.95	1344	15.21	1323	15.24	1331
16.52	1335	15.63	1299	15.51	1304	15.72	1325	15.66	1327	15.15	1295	15.01	1319	14.86	1294	14.86	1304
15.78	1294	15.27	1275	15.18	1274	15.3	1299	15.24	1300	14.74	1273	14.98	1305	14.53	1271	14.53	1273
15.39	1268	15.01	1244	14.89	1250	14.98	1273	14.98	1274	14.53	1241	14.24	1255	14.27	1248	14.27	1249
15.04	1242	14.62	1218	14.53	1229	14.59	1246	14.53	1244	14.12	1219	14.09	1236	13.97	1225	13.94	1222
14.86	1219	14.33	1196	14.03	1190	14.27	1221	13.76	1193	13.76	1195	13.76	1205	13.35	1186	13.53	1196
14.44	1194	14.12	1173	13.62	1165	13.91	1196	13.7	1182	13.5	1169	12.93	1153	13.11	1161	13.2	1173
14.09	1167	13.67	1147	13.32	1133	13.59	1170	13.7	1174	13.2	1146	13.03	1141	12.73	1138	12.69	1133
13.7	1144	13.08	1111	12.96	1095	13.29	1144	12.7	1122	12.69	1103	12.61	1114	12.45	1106	12.32	1111

ENVELOPE A RHEOLOGY DATA

Table 3. 50 °C As Received - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
13.11	1109	12.79	1085	13	1094	12.69	1105	12.49	1107	12.37	1079	12.11	1073	12.24	1081	11.99	1082
12.76	1078	12.47	1050	12.04	1067	12.43	1074	12.27	1086	12.06	1049	11.81	1046	11.9	1054	11.72	1051
12.85	1056	12.1	1028	12.03	1029	12.11	1048	12.04	1043	11.72	1023	11.56	1021	11.55	1030	11.38	1029
12.8	1055	11.8	1005	10.95	988	11.73	1023	12.02	1031	11.35	1000	11.21	998.1	11.21	1004	11.04	1002
11.69	1031	11.39	980.1	11.04	975.7	11.33	998.6	11.06	1011	11.02	974.8	10.86	972.6	10.6	966	10.68	978.3
11.6	1013	11.2	956.7	10.55	910.5	11.03	971.7	11.05	985.8	10.75	950.1	10.52	946.6	10.51	957.6	10.47	955
10.71	957.2	10.52	917.5	10.54	909.1	10.64	942.2	10.14	933.4	10.37	926.8	9.981	907.4	9.854	913.1	9.795	913.1
10.82	942.2	10.25	892.4	9.744	881.8	10.26	914	10.18	921.5	10.15	901.6	9.644	885.3	9.599	882.7	9.505	887.5
10.46	908.7	9.951	862.9	9.67	870.8	9.913	890.6	9.907	896.3	9.759	875.2	9.404	854	9.351	858	9.505	879.6
10.27	864.6	9.567	839.1	9.28	819.2	9.738	867.7	9.496	865.5	9.058	832	8.978	829.4	8.957	833.8	9.075	851
10.18	863.7	9.327	813.9	9.398	818.3	9.268	843.9	9.22	839.9	8.839	802.5	8.732	807.8	8.661	807.3	8.507	806.4
9.25	828	8.853	787.9	8.46	792.3	8.723	802.5	8.85	811.3	8.489	779.1	8.404	780	8.244	780.4	8.122	777.8
9.019	773.4	8.617	762.8	8.368	780.9	8.51	778.7	8.62	787.9	8.137	755.3	8.081	755.3	8.04	756.7	7.98	754
8.898	770.8	8.22	735.9	8.137	741.7	8.099	753.1	8.019	754.4	7.738	725.4	7.812	727.1	7.738	730.7	7.741	732.9
7.261	735.1	7.818	709.9	7.542	699.4	7.889	723.6	7.915	723.6	7.285	700.2	7.329	702.9	7.276	704.7	7.433	707.7
7.264	707.7	7.608	685.3	7.3	675.6	7.504	697.2	7.634	700.7	7.004	675.1	6.965	664.1	7.027	677.3	6.909	670.3
7.039	665	6.912	644.3	6.853	643.4	7.098	673.4	7.232	678.2	6.794	646.9	6.563	642.1	6.749	651.3	6.655	647.8
6.933	650.9	6.604	619.6	6.566	620.5	6.817	648.2	6.918	653.5	6.326	615.2	6.205	612.5	6.089	612.1	6.196	614.8
6.791	625.8	6.524	590.5	6.299	597.1	6.711	620.5	6.359	612.5	6.057	588.8	5.986	584.3	5.77	589.2	5.894	592.7
6.489	590.5	6.086	570.7	5.962	571.1	6.27	593.6	6.341	603.3	5.776	563.6	5.595	562.8	5.669	557.5	5.645	567.2
6.305	580.4	5.888	540.7	5.628	546	6.054	568.5	5.684	562.8	5.545	539.8	5.426	539.4	5.284	535.9	5.281	540.3
5.675	534.5	5.545	513.8	5.273	506.3	5.243	528.8	5.503	538.1	5.246	513.4	5.136	513.4	5.083	505.9	5.012	516.5
5.426	506.8	5.089	492.2	4.906	479.5	5.036	505.9	5.225	508.1	4.994	488.7	4.598	472.9	4.639	480.3	4.843	490.5
5.213	482.5	4.766	454.3	4.524	452.6	4.903	478.6	4.985	483	4.766	461.8	4.207	447.3	4.305	452.6	4.157	451.7
4.953	453.5	4.465	425.3	4.204	430.1	4.627	455.2	4.761	456.5	4.482	433.6	3.979	418.2	4.047	430.1	3.976	425.7
4.53	427	4.183	406.3	4.012	396.2	4.414	424.8	4.45	432.8	3.905	394.4	3.858	396.2	3.947	400.6	3.84	400.6
4.175	404.5	4	381.6	3.935	372.8	3.932	400.1	3.994	407.6	3.799	385.2	3.485	374.6	3.515	377.7	3.384	373.7
3.686	368	3.754	345.9	3.426	350.3	3.793	375.5	3.411	371.5	3.097	338.9	3.284	348.6	3.017	341.1	3.145	342
3.654	342.4	3.201	318.6	3.077	311.6	3.355	337.6	3.426	341.5	3.118	314.6	3.035	313.8	2.946	310.2	3.177	317.3
3.228	311.6	3.213	290	2.955	288.2	2.991	315.5	3.201	319.1	2.719	283.4	2.639	284.2	2.727	287.8	2.636	294.8
3.139	287.3	2.674	264	2.656	266.2	2.745	287.3	3	295.7	2.701	260	2.511	260.9	2.559	261.3	2.721	267.9
2.748	263.5	2.721	239.3	2.544	256.9	2.6	263.5	2.739	270.6	2.257	234.4	2.411	251.2	0	162.2	2.278	244.1

ENVELOPE A RHEOLOGY DATA

Table 4. Rheometer Response for Blank – Diluted

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
2.674	375.9	2.824	389.6	2.233	327.4	2.372	344.6	2.573	371.5	2.458	365.8	2.073	312.9	2.185	324.8	1.969	319.9
2.783	396.2	2.863	414.2	2.381	342.4	2.475	369.7	2.552	403.2	2.564	390.9	2.395	347.3	2.348	347.3	2.342	347.7
2.854	418.6	2.925	442.9	2.537	364	2.537	396.2	2.674	426.1	2.813	426.6	2.472	371.9	2.419	372.8	2.431	372.4
3.147	453.5	2.993	467.6	2.647	392.6	2.677	420.4	2.765	448.6	2.824	455.7	2.537	401	2.443	397.9	2.57	392.2
3.168	483.9	3.079	493.1	2.768	418.6	2.807	443.8	2.964	485.2	2.827	480.8	2.608	422.6	2.597	422.2	2.526	424.4
3.274	502.4	3.177	516.5	3.035	456.1	2.869	472	3.079	506.3	2.901	504.1	2.712	442	2.656	453.5	2.611	448.6
3.393	526.2	3.224	544.2	3.076	480.3	2.961	497.1	3.085	537.6	2.975	528.4	2.869	478.1	2.827	476.4	2.674	470.6
3.479	555.3	3.319	573.8	3.115	512.1	2.964	525.7	3.126	561	3.064	557.9	2.827	510.3	2.91	500.6	2.727	495.8
3.609	580.8	3.473	598	3.26	531.9	3.126	555.3	3.212	583	3.168	581.3	2.949	531	2.964	530.1	2.842	520.4
3.748	605.5	3.576	621.8	3.328	559.7	3.188	580.4	3.31	608.6	3.396	618.7	2.993	554.8	2.961	558.8	2.86	550
3.999	642.5	3.721	665.9	3.407	581.3	3.449	617.4	3.372	639.4	3.44	646	3.061	579.5	3.076	581.7	2.996	579.9
4.005	676	3.789	690.5	3.467	605.1	3.493	644.3	3.461	663.2	3.493	671.2	3.274	617.8	3.153	606.8	3.15	604.6
4.136	701.6	3.869	713.9	3.706	646.5	3.626	669.8	3.57	686.6	3.57	697.6	3.171	629.3	3.41	648.2	3.191	628.9
4.278	727.1	3.919	739.5	3.706	676.4	3.7	694.1	3.816	727.1	3.683	720.1	3.304	661.9	3.47	670.3	3.203	657.5
4.352	749.2	3.996	766.3	3.801	695.4	3.739	719.6	3.845	751.4	3.65	746.5	3.464	689.2	3.532	698.9	3.342	683.5
4.485	771.6	4.056	790.1	3.813	720.1	3.807	747	3.89	781.3	3.813	768.6	3.517	716.6	3.665	724	3.419	712.6
4.568	800.3	4.147	817.5	3.917	744.3	3.834	771.2	3.925	804.2	4.076	806.9	3.603	739.5	3.727	754	3.659	750.9
4.6	826.3	4.218	841.7	4.029	769	3.845	794.1	4.07	841.3	4.103	833.8	3.769	783.5	3.724	782.7	3.674	781.8
4.908	863.3	4.357	866.8	4.334	810.4	3.911	820.1	4.112	869.9	4.136	864.2	3.899	806.4	3.801	803.8	3.683	805.6
5.047	886.2	4.423	893.7	4.239	839.5	4.221	860.2	4.056	878.3	4.168	885.8	3.937	836.4	3.822	830.7	3.695	830.2
5.091	911.8	4.683	936	4.363	859.8	4.227	889.7	4.26	926.8	4.328	907.4	4.059	859.8	3.922	851.4	3.801	857.1
5.145	945.3	4.727	958.5	4.337	886.7	4.094	901.6	4.443	947.5	4.36	940.9	4.044	888.4	4.106	886.7	4.014	882.7
5.189	967.7	4.733	988.5	4.532	908.2	4.467	943.1	4.5	972.6	4.431	966.9	4.109	909.1	4.121	923.7	4.05	912.7
5.316	992	4.757	1018	4.627	950.1	4.556	968.6	4.535	1004	4.511	992.4	4.136	935.1	4.301	944.8	4.082	939.5
5.367	1016	4.884	1037	4.784	971.7	4.544	998.1	4.612	1025	4.633	1016	4.195	959.8	4.289	973	4.156	963.8
5.512	1042	4.94	1059	4.727	1003	4.645	1020	4.582	1048	4.653	1041	4.443	999.9	4.319	997.3	4.263	988.5
5.603	1070	4.932	1089	4.831	1022	4.721	1044	4.834	1087	4.733	1066	4.482	1021	4.497	1029	4.369	1014
5.787	1112	5.266	1127	5.003	1061	4.816	1077	4.917	1111	4.902	1105	4.532	1054	4.588	1057	4.437	1039
5.858	1139	5.325	1151	4.929	1070	4.798	1100	5.038	1133	4.887	1136	4.532	1076	4.633	1079	4.455	1067
5.867	1164	5.458	1176	5.154	1111	4.988	1136	5.047	1159	4.905	1162	4.662	1097	4.713	1103	4.568	1095
6.068	1184	5.479	1203	5.325	1138	5.077	1162	5.065	1193	5.1	1182	4.831	1135	4.76	1137	4.571	1120

ENVELOPE A RHEOLOGY DATA

Table 4. Rheometer Response for Blank – Diluted - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
6.139	1219	5.509	1236	5.367	1161	5.257	1186	5.233	1218	5.1	1206	4.831	1159	4.683	1165	4.852	1162
6.243	1241	5.651	1257	5.367	1189	5.228	1212	5.376	1246	5.293	1251	4.985	1180	4.828	1187	4.908	1185
6.29	1267	5.855	1293	5.568	1215	5.37	1237	5.47	1270	5.426	1272	4.911	1215	4.887	1214	4.81	1218
6.346	1291	5.899	1316	5.473	1248	5.373	1270	5.568	1300	5.355	1281	5.091	1235	4.943	1242	4.899	1239
6.506	1315	5.911	1347	5.55	1271	5.432	1294	5.595	1327	5.586	1323	5.251	1273	5.012	1266	4.991	1262
6.769	1354	5.991	1368	5.805	1295	5.526	1316	5.595	1357	5.544	1354	5.233	1296	5.148	1293	5.038	1287
6.775	1386	5.982	1393	5.728	1327	5.529	1340	5.586	1384	5.692	1375	5.304	1325	5.162	1317	5.278	1326
6.876	1409	6.024	1417	5.814	1349	5.751	1382	5.692	1407	5.846	1410	5.523	1357	5.281	1341	5.263	1351
6.909	1435	6.311	1453	5.84	1375	5.822	1405	5.805	1432	5.899	1433	5.47	1389	5.482	1378	5.399	1378
6.974	1460	6.364	1477	6.106	1412	5.944	1430	5.849	1457	5.879	1465	5.376	1393	5.6	1402	5.414	1409
7.181	1484	6.373	1507	6.151	1434	5.917	1462	5.861	1486	5.929	1487	5.722	1433	4.727	1627	5.444	1433
7.367	1522	6.462	1529	6.254	1459	6	1484	6.041	1513	5.92	1510	5.663	1464	4.772	1598	4.793	1635
5.364	1546	5.038	1524	5.085	1575	4.869	1568	4.692	1525	4.665	1542	4.76	1600	4.713	1576	4.606	1595
5.275	1520	4.982	1498	4.985	1549	4.911	1538	4.393	1484	4.642	1514	4.647	1567	4.591	1551	4.574	1572
5.168	1496	4.94	1471	4.94	1523	4.819	1514	4.47	1452	4.55	1494	4.615	1546	4.378	1512	4.565	1544
5.071	1470	4.763	1448	4.822	1500	4.798	1490	4.378	1433	4.532	1466	4.494	1518	4.337	1491	4.446	1512
4.858	1433	4.574	1410	4.73	1475	4.671	1466	4.245	1400	4.476	1440	4.526	1493	4.283	1460	4.372	1490
4.76	1404	4.642	1403	4.479	1432	4.556	1440	4.207	1376	4.405	1411	4.588	1455	4.272	1433	4.177	1456
4.647	1386	4.334	1357	4.355	1411	4.491	1416	4.118	1355	4.242	1384	4.582	1454	4.136	1408	4.121	1429
4.633	1355	4.236	1335	4.325	1381	4.177	1378	3.955	1316	4.059	1359	4.005	1416	4.133	1381	4.041	1405
4.571	1328	4.254	1304	4.334	1354	4.106	1355	3.843	1295	3.982	1322	3.922	1348	3.964	1356	4.05	1375
4.423	1303	4.233	1284	4.248	1333	4.177	1327	3.875	1264	3.84	1301	3.99	1343	3.893	1326	3.985	1351
4.34	1279	4.165	1259	4.147	1312	4.076	1304	3.774	1242	3.881	1271	3.739	1325	3.777	1304	3.878	1326
4.289	1253	4.059	1237	3.917	1273	3.831	1269	3.668	1222	3.698	1243	3.831	1315	3.523	1267	3.854	1307
4.171	1228	4.032	1209	3.86	1247	3.81	1240	3.473	1185	3.644	1220	3.443	1262	3.526	1243	3.612	1266
3.993	1191	3.698	1162	3.837	1220	3.632	1218	3.479	1155	3.618	1196	3.671	1245	3.499	1211	3.487	1244
3.848	1165	3.789	1154	3.816	1194	3.68	1188	3.529	1117	3.476	1172	3.564	1219	3.413	1191	3.434	1219
3.724	1138	3.517	1113	3.695	1168	3.615	1162	3.585	1115	3.313	1137	3.292	1169	3.348	1165	3.437	1188
3.763	1107	3.422	1090	3.632	1143	3.496	1139	2.857	1091	3.316	1104	3.268	1154	3.357	1139	3.39	1165
3.677	1085	3.416	1064	3.538	1114	3.458	1115	2.946	1077	3.257	1080	3.138	1131	3.227	1116	3.141	1127
3.547	1063	3.354	1030	3.384	1088	3.209	1080	2.588	1024	3.094	1056	3.079	1108	2.978	1080	3.106	1108

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Table 5. 25 °C Diluted

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
3.737	341.1	3.908	345.5	3.393	329.2	3.183	312.9	3.879	342.4	4.183	370.2	3.663	309.4	2.325	337.1	2.867	312.4
3.802	362.2	4.068	368.9	3.742	332.7	3.677	326.1	4.115	373.7	4.352	402.8	4.145	346.8	3.396	304.1	3.497	323.9
4.095	386.9	4.151	390	4.101	352.1	3.648	334	4.107	397.1	4.645	425.7	4.195	372.4	4.035	325.2	3.964	345.9
4.459	411.2	4.456	414.7	4.53	390	4.089	368	4.305	425.3	4.837	454.8	4.367	398.8	4.035	349	4.044	368.4
4.764	449.5	4.675	453.5	4.695	417.3	4.293	390	4.565	450.4	4.985	480.8	4.352	406.8	4.26	372.8	4.133	393.5
5.033	473.7	4.926	477.7	4.923	444.6	4.382	425.7	4.835	473.3	5.033	504.1	4.873	453	4.571	401.9	4.367	423.5
5.098	505	5.157	500.2	5.054	468.9	4.414	449.9	5.071	511.6	5.169	531.5	5.116	474.6	4.716	431.4	4.571	447.7
5.278	530.1	5.207	529.7	5.142	497.1	4.687	474.2	5.216	540.7	5.447	557.5	5.222	505	4.663	451.3	4.731	475.9
5.441	551.7	5.358	554.4	5.332	523.1	4.817	501.1	5.344	563.2	5.625	582.1	5.305	530.6	4.793	475.1	4.968	500.6
5.557	585.2	5.574	578.6	5.503	546.4	5.172	535.4	5.524	587	5.861	621.8	5.527	557	4.906	501.1	5.16	527.1
5.713	609	5.595	609	5.728	577.7	5.311	560.5	5.684	617.4	6.143	646.9	5.666	580.8	5.142	525.3	5.385	551.3
5.882	635.5	5.882	632.8	5.906	602	5.536	590.1	5.779	644.7	6.273	674.7	5.787	606.8	5.284	550.9	5.388	578.2
6.163	658.8	6.107	657.5	6.036	625.3	5.687	616.5	6.012	668.5	6.344	698.9	5.906	631.1	5.696	595.4	5.622	600.2
6.376	685.3	6.418	695.8	6.184	648.2	5.693	644.7	6.083	691.4	6.527	728.4	6.264	668.1	5.894	617.4	5.894	641.6
6.436	712.1	6.616	719.6	6.474	690.5	5.962	670.3	6.468	730.7	6.655	752.2	6.326	693.6	5.921	650	5.932	668.1
6.69	735.9	6.652	751.8	6.551	715.2	6.184	695.4	6.646	752.7	6.699	776	6.444	721.8	6.143	671.6	6.086	689.7
7.131	776.5	6.879	774.7	6.791	743.9	6.37	719.2	6.853	778.2	6.98	804.2	6.705	745.2	6.249	698	6.261	723.2
7.205	802	6.794	800.3	6.788	767.7	6.388	742.6	7.057	812.2	6.98	828	6.634	770.8	6.341	721.4	6.282	748.3
7.522	827.6	7.116	824.5	7.042	790.6	6.687	780.4	7.101	837.7	7.323	851.8	6.874	795.4	6.749	757.5	6.486	771.6
7.64	858	7.128	850.1	7.181	816.1	6.897	801.2	7.371	861.5	7.427	881.8	7.217	835.1	6.933	786.6	6.64	797.2
7.631	883.6	7.548	872.1	7.457	858.9	6.948	832	7.347	884.9	7.528	904.7	7.217	858	6.909	811.7	6.734	817.5
7.954	909.6	7.829	915.7	7.477	865.5	7.3	858	7.563	906.5	7.942	946.6	7.394	883.6	7.235	838.6	6.921	844.3
8.01	931.2	7.927	941.3	7.738	892.4	7.35	891.5	7.631	930.7	8.063	969.5	7.643	913.1	7.294	861.5	7.264	891.1
8.214	957.2	8.267	966.4	8.001	933.8	7.554	914.9	7.741	959.4	8.253	1001	7.69	937.3	7.383	891.9	7.448	915.3
8.703	994.2	8.433	992	8.111	959.4	7.687	938.2	8.185	999.5	8.288	1025	7.776	959.4	7.519	913.1	7.534	943.1
8.726	1025	8.522	1025	8.294	985.8	7.812	962.9	8.353	1024	8.356	1049	7.927	986.2	7.584	939.1	7.809	964.7
8.871	1052	8.643	1051	8.528	1010	7.945	991.5	8.534	1052	8.486	1071	8.17	1010	8.12	976.6	7.72	988.5
9.058	1076	8.886	1074	8.566	1041	8.146	1014	8.62	1080	8.836	1111	8.353	1040	8.081	1006	7.948	1017
9.306	1099	8.904	1100	8.809	1063	8.327	1052	8.794	1107	8.951	1136	8.436	1067	8.244	1027	8.09	1050
9.457	1123	9.055	1126	8.954	1088	8.475	1079	8.942	1138	9.099	1161	8.726	1108	8.38	1055	8.199	1076
9.732	1161	9.084	1153	9.277	1126	8.489	1103	9.043	1165	9.244	1192	8.839	1133	8.525	1081	8.427	1097

ENVELOPE A RHEOLOGY DATA

Table 5. 25 °C Diluted - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
9.735	1190	9.419	1179	9.46	1154	8.984	1137	9.126	1189	9.351	1216	9.025	1157	8.587	1103	8.478	1127
9.913	1213	9.614	1204	9.567	1179	9.108	1162	9.413	1215	9.62	1237	9.143	1181	8.966	1142	8.549	1154
10.11	1233	9.848	1230	9.786	1206	9.185	1186	9.587	1241	9.682	1265	9.401	1212	9.081	1167	8.812	1182
10.42	1271	9.99	1254	9.996	1230	9.339	1215	9.765	1265	9.806	1289	9.507	1237	9.129	1196	8.99	1204
10.56	1300	10.33	1298	10.11	1262	9.428	1237	9.792	1289	9.857	1317	9.564	1271	9.265	1220	9.152	1229
10.77	1325	10.51	1321	10.29	1285	9.528	1265	10.2	1332	10.19	1343	9.78	1296	9.419	1244	9.41	1265
10.95	1347	10.69	1348	10.24	1310	9.833	1289	10.41	1357	10.48	1384	9.966	1322	9.567	1269	9.478	1289
11.11	1376	10.81	1380	10.45	1333	9.975	1315	10.46	1383	10.57	1407	10.01	1347	9.792	1293	9.587	1320
11.31	1397	10.91	1402	10.7	1358	10.15	1343	10.67	1409	10.71	1434	10.14	1371	10.08	1333	9.75	1344
11.66	1436	11.13	1430	10.79	1383	10.28	1368	10.81	1436	10.81	1464	10.28	1396	10.29	1360	9.895	1367
11.79	1463	11.32	1450	10.93	1411	10.52	1393	11.02	1460	10.93	1490	10.64	1434	10.38	1386	10.23	1405
11.97	1489	11.64	1490	11.31	1456	10.61	1420	11.23	1489	11.15	1514	10.81	1459	10.54	1415	10.37	1430
12.11	1513	11.83	1515	11.51	1481	11.09	1463	11.32	1521	11.3	1538	11.03	1484	10.64	1438	10.51	1458
10.57	1529	10.32	1556	10.24	1533	10.26	1567	9.948	1515	10.2	1526	10.52	1568	10.61	1592	10.52	1588
10.46	1496	10.18	1532	10.4	1517	10.12	1544	9.999	1492	9.975	1500	10.36	1542	10.39	1569	10.39	1563
10.64	1473	9.848	1491	10.08	1491	10.03	1520	9.67	1462	9.685	1461	10.04	1515	10.3	1538	10.11	1535
9.765	1450	9.614	1465	10.16	1485	9.797	1497	9.635	1432	9.626	1439	9.943	1490	10.07	1514	9.925	1508
9.88	1436	9.502	1441	10.01	1468	9.765	1471	9.46	1409	9.392	1408	9.481	1451	9.966	1488	9.721	1480
9.715	1409	9.407	1415	9.866	1435	9.336	1430	9.351	1382	9.223	1386	9.38	1428	9.744	1464	9.475	1459
9.599	1378	9.176	1389	9.809	1411	9.12	1405	9.214	1356	9.016	1361	9.309	1402	9.67	1438	9.413	1426
9.472	1354	9.025	1354	9.614	1388	9.253	1392	9.049	1331	8.865	1329	9.058	1378	9.543	1412	9.283	1404
9.33	1319	8.791	1329	9.505	1365	8.845	1351	8.824	1307	8.75	1300	8.966	1354	9.333	1387	9.061	1378
9.058	1298	8.643	1306	9.2	1328	8.676	1329	8.62	1283	8.525	1276	8.8	1318	9.203	1360	8.922	1356
8.96	1272	8.59	1284	8.942	1303	8.519	1298	8.383	1239	8.338	1252	8.525	1298	8.969	1336	8.904	1331
8.694	1236	8.463	1259	8.845	1272	8.555	1273	8.143	1214	8.164	1229	8.478	1266	8.472	1293	8.386	1288
8.513	1212	8.111	1217	8.649	1247	8.383	1251	8.09	1186	8.134	1202	8.259	1241	8.445	1266	8.297	1265
8.389	1180	7.815	1192	8.51	1226	8.167	1224	7.824	1162	7.818	1174	8.125	1218	8.235	1242	8.276	1234
8.158	1162	7.75	1168	8.347	1201	7.989	1197	7.542	1140	7.468	1133	7.995	1193	8.173	1216	8.096	1211
7.942	1136	7.634	1140	8.205	1176	7.794	1172	7.59	1107	7.442	1111	7.767	1169	7.918	1183	7.936	1186
7.841	1107	7.492	1117	7.788	1137	7.708	1147	7.445	1084	7.214	1081	7.566	1143	7.853	1157	7.69	1163
7.676	1081	7.421	1090	7.806	1107	7.409	1105	7.181	1061	7.093	1054	7.519	1117	7.693	1132	7.575	1135

ENVELOPE A RHEOLOGY DATA

Table 6. 50 °C Diluted

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
2.462	318.2	3.548	348.1	3.219	334.5	3.261	338.9	3.264	344.2	3.338	347.7	2.87	308.9	2.734	317.3	2.527	323
2.909	322.6	3.583	368.9	3.53	361.8	3.388	358.7	3.361	374.1	3.314	375.5	3.136	321.7	3.024	324.8	2.873	322.6
3.403	352.1	3.785	398.4	3.58	386.9	3.568	389.6	3.645	397.5	3.358	398.8	3.261	343.3	3.237	344.6	3.148	338
3.497	375.9	3.93	420	3.672	408.5	3.847	411.6	3.773	420.4	3.628	421.3	3.506	372.8	3.607	375.9	3.385	362.2
3.492	383.4	4.045	444.2	4.057	449.5	3.832	435.4	3.861	446.9	3.796	445.5	3.619	401.9	3.779	399.7	3.752	401.9
3.811	428.8	4.16	468.4	4.063	458.8	4.208	471.5	3.956	474.6	3.965	473.3	3.859	430.1	3.808	424.8	3.941	424.8
4.001	453.9	4.616	510.8	4.285	485.2	4.335	495.8	4.151	501.9	4.359	510.3	3.947	454.8	3.921	451.3	3.983	454.8
4.098	484.8	4.835	535	4.524	529.3	4.492	525.3	4.406	531	4.521	533.7	4.027	478.6	4.134	478.1	4.042	479
4.172	512.5	4.903	561.4	4.708	553.5	4.764	549.1	4.554	557	4.584	561	4.311	512.1	4.311	505.5	4.128	505
4.483	534.1	4.974	587.9	4.773	576.4	4.782	579.5	4.782	594.9	4.569	589.2	4.447	538.5	4.424	536.8	4.276	530.6
4.56	562.8	4.98	615.6	4.927	608.1	4.841	604.2	4.874	617.4	4.581	613.9	4.625	563.6	4.415	559.2	4.394	554.8
4.776	585.2	5.167	640.3	5.101	632.8	4.915	630.2	5.016	647.8	4.557	638.1	4.758	587.4	4.607	584.3	4.507	581.3
5.172	620.9	5.427	663.2	5.3	654	5.22	661.5	5.181	672.5	4.862	677.8	4.868	612.5	4.764	609.9	4.726	604.2
5.255	644.3	5.602	700.2	5.368	678.7	5.362	685.7	5.288	694.1	5.045	702	5.17	650	4.986	632.8	4.945	646.5
5.255	676	5.779	725.8	5.397	707.3	5.59	720.5	5.273	719.6	5.172	728.4	5.359	673.4	5.226	672.9	5.066	668.1
5.513	699.4	5.847	754.4	5.684	731.5	5.732	746.1	5.613	760.6	5.246	750	5.433	702	5.285	701.6	5.175	702.4
5.658	723.2	5.992	774.7	5.767	759.3	5.827	766.8	5.877	784	5.394	780	5.424	726.7	5.291	723.6	5.318	727.1
5.717	747.8	6.259	811.7	5.98	786.6	5.901	798.1	5.969	806	5.421	802	5.608	749.6	5.409	748.7	5.516	750.9
5.954	788.4	6.208	820.6	6.247	828.9	6.066	824.1	5.957	837.3	5.537	828	5.788	774.3	5.628	773.4	5.542	775.2
6.14	810.9	6.611	863.3	6.451	851	6.146	850.5	6.087	861.5	5.652	852.3	5.963	802.9	5.738	799.4	5.699	800.3
6.253	832.4	6.688	892.8	6.498	882.2	6.333	874.8	6.262	885.3	5.983	893.7	6.273	841.3	5.892	826.3	5.874	822.3
6.501	869.5	6.777	914.4	6.614	907.4	6.688	897.7	6.424	912.2	6.054	918.4	6.371	869	6.022	853.2	6.117	859.3
6.691	893.3	7.034	942.2	6.788	930.3	6.694	930.7	6.484	940.4	5.883	928.5	6.593	888.9	6.105	881.4	6.267	887.5
6.791	921	7.102	971.7	6.883	955.4	6.93	960.7	6.723	967.3	6.105	959.4	6.602	920.6	6.492	921	6.436	912.2
6.794	946.1	7.268	996.8	7.013	979.2	7.037	986.7	6.856	988.9	6.516	1003	6.664	945.3	6.62	944.8	6.484	944.8
6.99	969.9	7.357	1019	7.108	1003	7.132	1011	7.149	1026	6.593	1029	6.83	969.5	6.652	972.6	6.495	968.2
7.129	994.2	7.431	1044	7.546	1044	7.238	1039	7.194	1052	6.744	1055	7.138	1005	6.815	997.7	6.667	992
7.212	1022	7.765	1081	7.573	1074	7.306	1068	7.259	1082	6.827	1077	7.262	1029	6.818	1026	6.848	1015
7.425	1048	7.984	1106	7.691	1095	7.478	1096	7.386	1107	7.007	1105	7.404	1054	6.984	1047	6.907	1040
7.712	1074	8.025	1133	7.8	1119	7.638	1119	7.439	1133	7.093	1132	7.404	1084	7.265	1082	7.004	1069
7.795	1100	8.12	1163	7.904	1146	7.783	1144	7.623	1160	7.149	1159	7.487	1108	7.324	1110	7.081	1099

ENVELOPE A RHEOLOGY DATA

Table 6. 50 °C Diluted - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
8.085	1142	8.28	1186	8.019	1172	7.895	1170	7.67	1183	7.256	1182	7.655	1132	7.389	1134	7.451	1140
8.339	1170	8.564	1219	8.395	1210	8.203	1207	8.011	1223	7.587	1221	7.759	1159	7.587	1157	7.546	1164
8.422	1195	8.688	1242	8.437	1231	8.333	1229	8.162	1248	7.451	1232	8.028	1198	7.703	1193	7.664	1187
8.611	1220	8.745	1264	8.549	1262	8.348	1258	8.262	1277	7.65	1257	8.005	1207	7.821	1221	7.682	1218
8.694	1249	9.014	1295	8.638	1285	8.531	1287	8.176	1284	7.993	1300	8.463	1247	7.951	1243	7.851	1240
8.94	1275	9.153	1326	8.727	1307	8.665	1309	8.41	1315	8.144	1327	8.526	1272	8.176	1268	8.031	1275
9.088	1303	9.224	1353	9.112	1345	8.715	1337	8.579	1344	8.253	1352	8.54	1306	8.159	1306	8.144	1304
9.141	1332	9.268	1360	9.12	1368	8.771	1361	8.821	1383	8.369	1383	8.718	1330	8.318	1328	8.129	1329
9.363	1359	9.567	1401	9.251	1393	8.904	1388	8.765	1392	8.694	1406	8.759	1360	8.395	1349	8.312	1354
9.452	1382	9.541	1436	9.404	1421	9.168	1411	8.872	1424	8.887	1431	8.961	1378	8.49	1374	8.422	1378
9.502	1412	9.757	1460	9.44	1447	9.277	1441	9.091	1450	9.212	1468	9.212	1422	8.774	1409	8.526	1400
9.659	1435	9.804	1484	9.552	1471	9.547	1484	9.325	1495	9.286	1495	9.224	1435	9.029	1432	8.878	1436
9.816	1459	9.958	1509	9.928	1508	9.629	1508	9.505	1517	9.366	1522	9.431	1465	9.055	1463	8.857	1466
10.01	1484	10.27	1545	9.993	1537	9.792	1529	9.615	1546	9.511	1542	9.452	1490	9.114	1486	9.032	1488
10.25	1520	10.44	1570	10.08	1560	9.825	1560	9.662	1571	9.547	1568	9.641	1520	9.18	1507	9.114	1512
8.656	1521	8.167	1464	8.019	1462	7.854	1456	8.073	1477	7.803	1478	8.144	1522	7.294	1381	9.117	1534
8.555	1496	8.073	1429	7.975	1438	7.721	1432	7.67	1434	7.721	1451	7.925	1485	7.194	1355	9.473	1571
8.354	1471	7.993	1403	7.792	1415	7.599	1406	7.481	1411	7.626	1421	7.866	1456	7.084	1332	9.407	1602
8.259	1451	7.762	1378	7.599	1376	7.484	1376	7.475	1378	7.398	1399	7.712	1435	7.061	1305	9.591	1628
8.07	1422	7.667	1351	7.383	1353	7.36	1352	7.407	1355	7.303	1367	7.602	1412	6.658	1270	9.748	1653
7.661	1382	7.436	1326	7.318	1321	7.191	1330	7.223	1333	7.223	1346	7.286	1378	6.552	1246	9.916	1676
7.726	1354	7.226	1292	7.194	1296	7.016	1296	7.046	1310	7.052	1319	7.294	1348	6.469	1217	7.161	1376
7.579	1328	7.283	1282	7.114	1269	6.901	1267	6.774	1273	6.966	1289	7.194	1327	6.365	1188	7.226	1367
7.374	1306	6.936	1241	6.809	1246	6.578	1246	6.797	1241	6.815	1263	7.013	1301	6.188	1163	7.087	1339
7.256	1282	6.697	1218	6.741	1211	6.563	1212	6.584	1217	6.697	1239	6.948	1273	6.102	1141	6.898	1315
7.067	1259	6.637	1186	6.531	1187	6.336	1189	6.51	1194	6.578	1214	6.729	1249	5.791	1108	6.629	1272
7.007	1232	6.56	1161	6.35	1166	6.339	1165	6.339	1170	6.149	1170	6.407	1212	5.797	1079	6.436	1245
6.711	1205	6.43	1138	6.303	1136	6.232	1140	6.054	1136	5.954	1147	6.199	1189	5.682	1055	6.344	1222
6.64	1176	6.282	1115	6.143	1114	6.072	1114	5.93	1104	5.806	1121	6.096	1163	5.377	1033	6.294	1188
6.439	1152	5.995	1078	6.066	1088	5.862	1086	5.806	1078	5.753	1098	6.019	1134	5.427	1007	6.223	1161
6.217	1110	5.889	1049	5.679	1048	5.741	1058	5.631	1055	5.696	1068	5.841	1110	5.17	965.1	5.998	1137

ENVELOPE A RHEOLOGY DATA

Table 6. 50 °C Diluted - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
6.031	1082	5.717	1023	5.486	1026	5.463	1032	5.67	1032	5.587	1047	5.829	1088	4.983	945.7	5.865	1109
5.841	1055	5.723	999.9	5.483	992.9	5.3	995.1	5.427	1009	5.531	1021	5.542	1044	4.853	919.3	5.69	1087
5.711	1031	5.596	972.6	5.279	973	5.229	969.5	5.365	983.6	5.362	995.1	5.264	1022	4.749	886.7	5.445	1051
5.702	1001	5.332	947	5.202	939.1	5.016	943.1	5.01	943.9	5.297	966.4	5.22	992.4	4.666	861.5	5.288	1025
5.61	974.3	5.09	908.7	5.072	915.3	4.921	919.3	4.927	917.9	5.087	940	5.066	964.7	4.575	840.4	5.235	997.3
5.335	951	4.894	882.7	4.948	890.2	4.844	887.5	4.69	889.7	4.968	916.2	5.137	953.6	4.199	803.8	5.14	973
5.276	928.5	4.782	856.7	4.838	864.2	4.658	864.6	4.723	864.6	4.743	871.2	4.971	922.8	4.092	775.6	5.054	953.6
5.131	900.8	4.672	833.8	4.723	838.6	4.743	840.4	4.51	839.1	4.554	847	4.894	894.1	3.894	750.5	4.953	928.1
4.82	863.7	4.394	806.4	4.424	798.5	4.421	801.2	4.314	810.9	4.498	823.2	4.566	867.7	3.731	727.1	4.575	888.9
4.631	839.1	4.35	779.6	4.385	790.6	4.308	775.6	4.151	786.6	4.32	796.3	4.498	837.7	3.592	699.4	4.557	859.8
4.625	811.7	4.098	749.6	4.08	750	4.184	751.8	4.137	758.9	4.193	770.8	4.329	814.4	3.607	673.8	4.436	834.2
4.418	787.5	4.116	718.3	4.036	724.5	3.918	727.1	3.918	732.4	3.992	742.1	4.11	770.3	3.412	648.2	4.341	812.2
4.362	762.8	3.974	699.4	3.752	694.5	3.79	700.2	3.601	696.7	3.856	713.5	4.069	761.9	3.204	616.5	4.113	786.6
3.986	727.6	3.719	669	3.678	667.6	3.58	665	3.521	674.2	3.77	687	3.98	735.1	3.098	592.7	4.166	755.3
3.912	703.3	3.675	647.4	3.574	643	3.418	638.5	3.494	644.3	3.657	662.3	3.64	698	3.003	556.6	3.782	729.3
3.915	676	3.557	620.9	3.361	611.7	3.207	613.4	3.444	622.2	3.326	624.9	3.663	666.8	2.811	534.5	3.69	706
3.708	654	3.563	591.4	3.267	593.2	3.122	589.6	3.302	595.8	3.163	602.9	3.503	643.8	2.695	507.2	3.604	680
3.462	615.2	3.092	556.6	3.089	559.7	3.157	557	3.222	570.2	3.095	571.1	3.329	620.9	2.465	481.2	3.548	653.5
3.382	590.1	3.101	532.3	2.974	531.5	3.045	531.5	3.051	545.6	2.932	550.9	3.08	582.1	2.343	453	3.228	613.9
3.166	567.6	3.03	505.9	2.885	507.7	2.894	505	2.906	518.7	2.885	519.1	2.84	560.5	2.311	430.1	3.08	587.9
3.119	534.1	2.823	480.3	2.669	480.3	2.687	481.2	2.586	480.8	2.731	496.2	2.906	527.9	2.05	395.7	3.039	562.8
3.006	511.2	2.598	455.7	2.639	459.6	2.539	459.6	2.485	454.8	2.601	466.2	2.716	505.9	2.027	371.1	2.87	535
2.817	490.5	2.42	427	2.556	432.8	2.183	422.6	2.237	431.4	2.249	442.4	2.69	479	1.772	344.2	2.82	511.2
2.61	467.6	2.299	394	2.305	407.6	2.189	396.6	2.266	394	2.13	420	2.438	457.4	1.837	323	2.58	488.3
2.53	441.6	2.231	370.6	1.959	366.6	2.071	370.6	2.035	366.6	2.006	383.4	2.444	431	1.494	284.7	2.391	448.2
2.172	405.4	2.009	336.2	1.902	345.1	1.893	342.4	1.864	349	2.059	359.2	2.107	396.6	1.305	261.3	2.142	425.7
2.189	374.1	1.68	313.3	1.858	311.6	1.926	321.3	1.725	314.2	1.793	334	2.068	367.1	1.313	252.5	2.009	395.7
2.05	352.5	1.763	286.9	1.639	286.9	1.701	294.4	1.657	290.9	1.766	307.6	1.787	346.4	0	173.5	2.109	373.3
1.846	327.4	1.42	263.5	1.586	264	1.609	269.3	1.411	267.5	1.491	283.8	1.911	322.1	0	174.4	1.867	347.7
1.624	286.9	1.506	255.6	1.47	241.5	1.426	242.4	1.441	241.9	1.275	244.1	1.441	284.2	0	152.6	1.686	318.6
1.387	264.4	0	169.3	0	152.7	0	151.6	0	156.2	1.266	238.9	1.408	254.3	0	127.5	1.526	286.9
1.473	258.7	0	173.9	0	162.4	0	159.3	0	164.5	0	153.4	0	152.4	0	103.3	1.275	260.4

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APPENDIX C

ENVELOPE B RHEOLOGY DATA

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NOTE: Envelope B was received at 3M Na so there is not a diluted sample to be run as with Envelope A and Envelope C.

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ENVELOPE B RHEOLOGY DATA

Table 1. Rheometer Response for Blank – As Received

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
3.078	348.6	3.031	343.7	2.241	319.9	2.253	322.6	2.454	360	2.324	342	0.338	395.3	0.211	392.6	0.791	322.6
3.442	368.4	3.179	364.4	2.723	321.7	2.522	344.6	2.714	379.4	2.43	372.4	1.516	323.9	1.374	322.6	1.279	322.6
3.697	398.4	3.386	387.4	2.904	342.4	2.771	368.9	2.845	408.1	2.643	396.6	1.886	328.7	1.788	323.9	1.56	342.9
3.913	420.4	3.552	410.7	3.167	362.7	2.883	394	3.025	431.9	2.848	421.7	2.143	346.4	2.007	340.6	1.741	371.5
4.064	446.4	3.715	435.4	3.374	385.6	3.037	423.5	3.176	459.2	2.972	445.1	2.359	366.6	2.265	360.9	1.898	394.9
4.514	485.2	4.191	475.5	3.774	424.8	3.185	446.4	3.3	484.3	3.135	470.6	2.484	390	2.398	384.7	2.057	419.5
4.676	509.9	4.215	505.9	3.94	447.7	3.336	470.2	3.496	509	3.531	508.1	2.706	415.6	2.59	409.8	2.235	442.4
4.884	533.7	4.345	530.1	4.061	470.6	3.647	509.9	3.635	534.1	3.641	532.8	3.061	455.7	2.957	449.9	2.507	482.1
5.005	559.7	4.271	555.3	4.28	498	3.815	541.6	3.78	557.5	3.815	561.4	3.235	482.1	3.061	477.3	2.649	505.9
5.088	583	4.416	577.7	4.381	531	3.762	548.2	4.147	603.3	3.984	591.4	3.389	511.2	3.2	507.2	2.765	537.2
5.043	614.8	4.558	604.6	4.579	553.5	4.176	590.5	4.239	625.8	4.096	615.2	3.54	540.3	3.357	531.9	2.892	564.5
5.147	639	4.7	629.7	4.691	581.3	4.351	614.3	4.286	657.1	4.17	640.8	3.632	566.7	3.508	555.3	3.072	586.5
5.384	661.9	5.017	670.3	4.901	604.2	4.481	643.4	4.517	681.7	4.348	661.9	3.777	591.4	3.62	579.9	3.229	618.3
5.703	699.8	5.177	694.5	5.058	628.9	4.6	666.8	4.617	707.7	4.375	686.1	3.928	615.2	3.972	617.8	3.271	643.8
5.807	723.2	5.396	720.5	5.224	655.7	4.774	695	4.795	729.3	4.567	713.5	4.014	640.3	4.043	641.6	3.392	670.3
5.949	753.6	5.473	744.8	5.558	697.6	4.934	720.5	4.789	757.1	4.762	741.7	4.173	665	4.197	664.1	3.608	695
6.082	778.7	5.564	774.7	5.748	717.9	4.987	751.8	5.026	781.8	4.943	766.3	4.321	691.4	4.28	696.3	3.729	718.8
6.227	801.6	5.733	797.6	5.78	746.1	5.097	780	5.322	821.9	5.265	810.4	4.431	717.9	4.401	721	3.78	742.6
6.352	825.8	5.878	819.7	5.955	766.8	5.295	803.4	5.384	847	5.221	818.3	4.771	757.1	4.52	747	4.073	781.3
6.801	863.7	5.976	844.8	6.301	805.1	5.603	837.3	5.526	875.2	5.689	863.7	4.895	784.4	4.611	772.5	4.188	802.5
6.943	888.9	6.337	883.6	6.402	828	5.647	861.1	5.748	897.7	5.748	886.7	5.038	809.5	4.777	798.5	4.236	832.9
7.154	911.3	6.402	914.4	6.55	860.2	5.538	871.7	5.967	922.8	5.843	918.4	5.085	836.4	4.931	822.3	4.354	856.7
7.281	942.6	6.636	935.1	6.671	884.9	6.002	917.1	6.079	952.8	6.023	942.6	5.005	848.8	5.005	847.4	4.502	879.6
7.396	969.1	6.719	961.6	6.869	904.3	6.112	941.3	6.346	973	6.218	969.9	5.467	891.9	5.177	872.1	4.582	905.6
7.574	992.4	6.869	984	7.08	930.3	6.153	971.7	6.736	999	6.381	995.1	5.544	915.3	5.487	912.2	4.777	932
7.843	1016	7.201	1023	7.299	959.8	6.295	995.5	7.041	1025	6.446	1021	5.709	941.3	5.641	937.8	4.881	958
8.228	1057	7.352	1046	7.411	988.5	6.497	1019	7.346	1063	6.612	1044	5.792	969.9	5.644	970.8	4.996	984
8.29	1084	7.47	1073	7.603	1020	6.585	1045	7.592	1089	6.739	1070	5.869	997.3	5.81	993.7	5.351	1027
8.45	1107	7.577	1107	7.68	1047	6.751	1070	7.68	1120	6.792	1099	6.053	1025	5.925	1022	5.49	1052
8.654	1133	7.722	1123	7.813	1070	6.967	1096	7.751	1145	7.003	1125	6.177	1054	6.082	1045	5.538	1078
8.802	1164	7.961	1156	8.024	1095	7.47	1136	7.843	1168	7.08	1152	6.325	1077	6.195	1069	5.626	1109

ENVELOPE B RHEOLOGY DATA

Table 1. Rheometer Response for Blank – As Received - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
8.941	1189	8.021	1183	8.092	1118	7.417	1167	8.009	1192	7.34	1191	6.443	1101	6.298	1091	5.789	1133
9.071	1212	8.207	1207	8.485	1160	7.544	1189	8.139	1215	7.473	1213	6.594	1127	6.618	1133	5.94	1155
9.252	1236	8.281	1232	8.669	1186	7.648	1211	8.417	1257	7.523	1246	6.739	1150	6.742	1159	5.97	1182
9.571	1272	8.488	1256	8.846	1211	7.731	1245	8.616	1282	7.674	1267	6.778	1180	6.828	1183	6.13	1207
9.66	1302	8.846	1296	8.923	1242	7.852	1268	8.755	1312	7.754	1290	6.982	1205	7.011	1210	6.405	1245
9.847	1322	9.015	1325	9.083	1264	7.976	1292	8.858	1337	8.018	1329	7.065	1235	7.213	1239	6.502	1267
9.891	1344	9.056	1348	9.196	1287	8.151	1315	8.997	1362	8.154	1353	7.393	1274	7.304	1267	6.526	1294
10.3	1382	9.163	1375	9.32	1313	8.379	1352	9.125	1388	8.204	1380	7.583	1304	7.473	1292	6.766	1331
10.43	1407	9.311	1400	9.518	1336	8.583	1377	9.237	1412	8.391	1401	7.734	1327	7.562	1325	6.938	1352
10.56	1431	9.471	1423	9.77	1375	8.695	1405	9.459	1437	8.349	1437	7.831	1354	7.63	1349	7.083	1377
10.85	1464	9.557	1449	9.864	1400	8.888	1432	9.574	1464	8.657	1459	7.973	1379	7.781	1374	7.071	1409
10.93	1490	9.986	1488	9.891	1429	8.962	1463	9.275	1504	8.74	1482	8.006	1412	7.885	1397	6.935	1646
11.1	1513	10.11	1513	10.02	1452	9.122	1488	9.388	1526	8.908	1512	8.204	1436	8.971	1629	6.866	1622
9.897	1523	8.583	1542	8.571	1585	8.459	1580	7.624	1519	7.518	1543	8.755	1598	8.891	1602	6.801	1590
9.716	1497	8.479	1513	8.243	1543	8.26	1554	7.485	1494	7.405	1516	8.616	1574	8.642	1579	6.642	1572
9.527	1470	8.317	1488	8.287	1534	8.121	1528	7.322	1461	7.148	1490	8.533	1543	8.462	1556	6.476	1544
9.133	1428	8.18	1461	7.941	1488	7.751	1485	7.18	1436	7.091	1464	8.441	1519	8.175	1519	6.174	1517
9.003	1406	8.101	1437	7.813	1463	7.58	1464	7.056	1413	6.926	1436	8.257	1493	8.077	1494	6.121	1487
8.849	1375	7.908	1411	7.645	1438	7.494	1439	6.92	1391	6.73	1408	8.083	1471	7.944	1463	6.005	1459
8.74	1352	7.654	1386	7.467	1409	7.402	1416	6.571	1351	6.585	1383	7.766	1434	7.825	1441	5.988	1432
8.559	1324	7.364	1347	7.464	1386	7.091	1378	6.517	1325	6.452	1360	7.654	1404	7.71	1419	5.745	1411
8.45	1299	7.192	1326	7.242	1363	7.597	1349	6.286	1299	6.352	1334	7.568	1380	7.396	1376	5.659	1387
8.204	1274	7.13	1295	7.165	1336	7.449	1325	6.133	1276	6.198	1308	7.405	1357	7.479	1371	5.336	1346
8.035	1250	6.952	1272	6.92	1310	7.299	1300	6.094	1250	6.035	1280	7.201	1334	7.035	1326	5.212	1317
7.686	1211	6.887	1248	6.745	1284	6.967	1276	5.869	1219	5.908	1252	7.121	1310	6.864	1304	5.301	1308
7.523	1189	6.668	1223	6.639	1259	6.689	1250	5.766	1191	5.757	1227	6.911	1283	6.748	1279	5.049	1283
7.405	1161	6.363	1183	6.34	1217	6.423	1227	5.609	1167	5.384	1189	6.576	1244	6.585	1249	4.961	1252
7.269	1130	6.242	1159	6.201	1191	5.949	1187	5.467	1144	5.236	1163	6.497	1218	6.497	1219	4.824	1222
7.091	1105	6.088	1131	6.062	1169	5.848	1160	5.162	1106	5.183	1133	6.257	1189	6.278	1192	4.605	1196
6.914	1081	5.928	1103	5.896	1140	5.949	1153	5.046	1081	5.091	1112	6.106	1166	6.165	1166	4.428	1166
6.721	1052	5.816	1079	5.718	1116	5.499	1111	4.872	1059	4.984	1089	5.985	1137	5.964	1140	4.416	1143

ENVELOPE B RHEOLOGY DATA

Table 2. 25 °C As Received

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
4.293	305.8	3.639	314.6	3.769	302.7	3.748	327.9	2.932	359.2	3.704	327.9	3.589	323.5	3.775	323.5	3.106	353.9
4.802	319.9	4.379	314.6	4.769	319.9	4.586	325.2	4.047	326.1	4.601	325.7	4.311	320.4	4.033	327.9	3.929	324.3
4.997	341.5	4.98	339.8	4.743	340.2	5.122	347.7	4.74	340.6	5.142	342.4	4.521	333.6	4.618	344.6	4.713	334.5
5.361	371.9	5.068	360.9	5.296	363.6	5.178	369.3	4.994	364.4	5.394	371.9	5.284	370.2	5.163	370.2	4.897	356.1
5.811	397.5	5.361	388.2	5.622	391.8	5.583	393.1	5.486	388.2	5.637	394.4	5.388	391.3	5.252	394	5.077	379.4
5.897	420	5.817	412	5.903	420.4	5.965	421.7	5.876	412.9	5.808	427	5.69	422.6	5.823	433.2	5.545	403.2
6.098	444.2	6.14	442.4	5.983	445.1	6.424	446.4	5.938	439.4	6.119	450.8	6.122	445.5	5.971	457.9	5.817	446
6.803	483	6.279	464.9	6.211	467.6	6.453	470.6	6.08	462.3	6.436	474.6	6.442	480.8	6.036	480.8	6.234	471.5
6.906	505.9	6.397	487.8	6.936	508.1	6.959	508.5	6.82	500.6	6.717	498.9	6.699	505	6.273	510.8	6.613	495.3
7.332	537.2	7.057	527.9	7.181	531.5	7.294	529.7	7.019	525.3	7.119	536.3	7.051	527.9	6.489	534.1	6.838	522.2
7.649	561.4	7.341	550	7.554	560.1	7.394	561.4	7.175	550.9	7.412	557.5	7.128	561.4	6.646	559.2	6.877	554.8
7.936	586.5	7.569	576.4	7.838	583.9	7.602	585.2	7.468	581.7	7.38	589.6	7.323	585.7	6.93	582.6	7.11	579.1
8.155	610.8	7.664	607.3	8.075	609	7.856	608.1	7.625	606.8	7.634	613	7.613	606.8	7.406	623.6	7.454	605.9
8.436	635	7.835	629.7	7.995	639.4	8.016	633.3	7.741	628.9	7.859	637.2	7.773	632.8	7.655	647.8	7.67	628.4
8.492	661	8.291	659.3	8.353	665.4	8.501	673.4	7.945	655.7	8.25	662.3	8.176	658.8	7.974	674.2	7.983	653.5
9.129	698.5	8.557	682.6	8.833	690.5	8.72	695	8.188	678.2	8.708	698.9	8.33	684.8	8.318	698	8.155	677.8
9.247	721.8	8.557	710.4	8.85	717.4	8.945	725.8	8.578	706	8.732	729.3	8.833	725.4	8.38	731.5	8.324	704.2
9.505	754.9	9.01	734.6	9.167	740.3	8.987	750.5	8.646	732	8.788	735.9	8.948	748.7	8.581	758.4	8.735	733.3
9.871	778.7	9.223	759.3	9.7	781.3	9.197	772.5	9.028	761.5	9.028	764.6	9.294	775.6	8.735	783.5	8.93	756.2
10.11	805.1	9.688	802.5	9.883	806.4	9.667	810.9	9.244	787.5	9.357	788.8	9.36	802	9.096	807.3	9.41	801.2
10.35	827.6	10.11	825.8	10.09	829.8	9.502	819.2	9.738	832.9	9.88	830.2	9.558	832.9	9.117	830.7	9.605	823.6
10.7	850.1	10.11	850.5	10.21	854.5	10.16	861.5	9.67	840.4	9.987	856.2	9.901	858.9	9.315	861.1	9.883	851
11.04	889.7	10.4	879.6	10.54	884.5	10.38	885.3	9.931	864.6	10.23	888.9	10.16	881.4	9.661	889.7	10.1	879.2
11.21	919.7	10.82	901.6	10.75	907.4	10.52	915.7	10.51	909.1	10.24	912.2	10.38	913.1	10	914.4	10.25	904.3
11.52	937.8	10.98	932.9	11.01	930.3	10.88	940	10.76	934.7	10.63	937.3	10.7	932.9	10.03	939.5	10.37	936.5
11.9	968.6	11.04	956.3	11.36	955	11.14	964.2	10.78	958.5	10.99	963.8	10.74	957.2	10.37	965.1	10.69	961.1
12.04	996.4	11.22	981.8	11.56	983.6	11.24	989.8	11.05	989.8	11.09	987.1	11.14	997.7	10.7	1006	10.76	981.8
12.28	1022	11.56	1006	11.76	1008	11.59	1029	11.26	1014	11.61	1030	11.38	1022	11.08	1031	11.12	1019
12.52	1044	11.71	1033	12.27	1050	11.82	1052	11.58	1036	11.51	1036	11.56	1051	11.34	1056	11.28	1048
12.64	1071	12.09	1059	12.39	1079	12	1083	11.62	1065	12.02	1080	11.8	1076	11.23	1066	11.45	1073
13.28	1111	12.49	1100	12.55	1102	12.19	1106	11.85	1092	12.16	1107	11.97	1102	11.72	1111	11.62	1097

ENVELOPE B RHEOLOGY DATA

Table 2. 25 °C As Received - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
13.51	1136	12.69	1122	12.77	1125	12.53	1128	12.14	1117	12.38	1133	12.13	1126	11.93	1136	11.87	1122
13.76	1166	12.83	1153	13.07	1149	12.91	1163	12.23	1141	12.67	1161	12.48	1152	12.17	1168	11.94	1149
14.04	1189	12.95	1175	13.57	1187	13.05	1192	12.95	1182	12.88	1184	12.69	1184	12.44	1192	12.19	1174
14.23	1212	13.11	1199	13.54	1216	13.24	1213	13.1	1205	13.04	1211	12.91	1211	12.57	1216	12.39	1199
14.34	1240	13.48	1224	13.82	1239	13.42	1236	13.33	1237	13.32	1234	13.18	1237	12.51	1241	12.69	1222
14.6	1262	13.91	1260	14.04	1264	13.85	1273	13.46	1262	13.55	1261	13.31	1263	12.82	1265	12.98	1264
15.09	1302	14.01	1290	14.32	1287	14.05	1299	13.68	1290	13.77	1285	13.53	1287	13.14	1291	13.18	1289
15.25	1328	14.19	1314	14.74	1326	14.3	1324	13.91	1314	14.25	1327	13.78	1312	13.26	1315	13.34	1312
15.5	1352	14.4	1339	14.89	1347	14.54	1348	14.09	1337	14.18	1335	14.04	1339	13.55	1358	13.48	1344
15.67	1375	14.61	1362	15.09	1379	14.67	1381	14.38	1363	14.41	1382	14.49	1379	13.97	1384	13.63	1367
15.95	1400	15.11	1402	15.39	1405	14.98	1408	14.55	1389	14.53	1390	14.68	1404	14.09	1409	14.01	1397
16.15	1422	15.27	1423	15.67	1429	15.15	1432	14.97	1417	14.95	1416	14.78	1433	14.27	1439	14.12	1422
16.63	1462	15.46	1454	15.79	1450	15.33	1460	15.16	1449	15.4	1460	15.05	1459	14.49	1468	14.3	1443
16.75	1493	15.72	1477	16.24	1491	15.65	1483	15.39	1474	15.62	1487	15.18	1485	14.71	1493	14.53	1467
17.06	1516	15.87	1504	16.47	1515	15.75	1507	15.75	1501	15.75	1519	15.38	1507	14.86	1516	14.85	1494
14.88	1526	12.9	1313	14.85	1516	13.67	1379	14.32	1533	14.14	1497	13.96	1515	13.67	1512	12.93	1521
14.5	1489	12.63	1291	14.67	1488	13.43	1358	13.93	1493	13.93	1471	13.73	1490	13.49	1489	12.81	1496
14.26	1466	12.46	1261	14.35	1467	13.19	1331	13.67	1461	13.7	1441	13.34	1449	13.34	1466	12.51	1468
14.08	1441	12.25	1233	14.02	1433	12.9	1304	13.58	1435	13.31	1414	13.05	1428	13.08	1439	12.48	1439
13.93	1407	11.94	1202	13.73	1405	12.75	1279	13.31	1409	13.05	1378	12.81	1404	13.08	1408	12.31	1412
13.7	1381	11.7	1178	13.52	1382	12.49	1247	13.02	1383	12.84	1346	12.48	1379	12.87	1381	11.96	1383
13.46	1358	11.6	1148	13.31	1356	12.27	1221	12.9	1362	12.51	1322	12.4	1351	12.66	1355	11.82	1357
13.17	1332	11.39	1123	13.08	1332	12	1196	12.71	1338	12.12	1299	12.3	1320	12.48	1327	11.53	1331
12.96	1304	11.08	1100	12.96	1308	11.72	1171	12.3	1299	12.1	1272	12.01	1293	12.09	1303	11.31	1308
12.57	1277	10.8	1076	12.51	1269	11.56	1148	12.15	1277	11.74	1251	11.82	1270	11.88	1280	11.13	1285
12.52	1249	10.71	1053	12.32	1241	11.03	1111	11.93	1245	11.59	1223	11.71	1247	11.49	1239	10.74	1244
12.22	1225	10.21	1014	12.11	1212	10.82	1084	11.6	1230	11.11	1181	11.43	1223	11.42	1210	10.65	1222
11.72	1187	10.01	987.6	11.94	1190	10.64	1059	11.27	1191	10.78	1158	11.32	1195	11.07	1188	10.48	1192
11.61	1163	9.842	957.6	11.76	1166	10.67	1049	11.1	1165	10.69	1127	11.01	1170	10.94	1155	10.18	1168
11.28	1137	9.439	935.6	11.17	1128	10.11	1003	10.87	1140	10.58	1102	10.47	1126	10.81	1135	9.913	1141
11.15	1114	9.404	910	11.03	1104	9.854	977.9	10.67	1114	10.32	1078	10.19	1101	10.41	1104	9.744	1112

ENVELOPE B RHEOLOGY DATA

Table 2. 25 °C As Received - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
10.81	1084	9.049	886.7	10.9	1076	9.505	948.3	10.52	1088	10.14	1052	9.984	1077	10.25	1083	9.392	1088
10.59	1062	8.987	863.3	10.61	1057	9.271	922.8	10.15	1061	9.866	1026	9.795	1048	9.934	1053	9.191	1055
10.26	1028	8.3	823.2	10.45	1032	9.099	891.5	9.848	1037	9.57	1001	9.62	1020	9.608	1021	9.111	1028
10.08	999.5	8.217	798.1	9.886	991.1	8.883	866.4	9.425	996.8	9.259	963.3	9.463	995.5	9.451	995.9	8.913	1003
9.863	973.9	8.022	769.9	9.664	966	8.676	839.9	9.342	970.8	8.987	940.4	9.182	972.1	9.155	973.9	8.779	978.8
9.729	948.3	7.714	745.6	9.327	942.2	8.436	813.1	9.155	943.1	8.726	913.1	9.004	945.7	8.951	947	8.537	957.2
9.419	927.2	7.622	721	9.167	911.3	8.146	787.1	8.85	920.6	8.703	886.2	8.972	919.7	8.924	923.7	8.167	914.9
9.058	887.1	7.389	696.7	9.123	887.5	7.948	763.3	8.67	899.4	8.442	857.1	8.794	895	8.714	896.8	7.948	888
8.685	862.9	6.98	657.5	8.883	863.7	7.566	738.6	8.608	877	8.102	828.5	8.501	867.7	8.185	857.6	7.699	865.5
8.593	837.3	6.675	632.4	8.587	840.8	7.347	713.9	8.037	836	7.957	804.2	8.294	841.3	8.031	828	7.46	838.6
8.223	808.2	6.456	609.5	8.294	799.8	7.184	690.1	7.921	811.3	7.788	782.2	7.892	813.5	7.776	808.7	7.246	813.9
8.193	780.4	6.077	577.7	8.013	776.5	6.598	649.1	7.507	785.7	7.43	759.3	7.554	771.6	7.445	779.1	7.214	782.2
7.699	755.3	5.903	557	7.847	746.5	6.418	625.3	7.519	758.4	6.906	717	7.279	747.4	7.244	754.9	6.794	756.7
7.572	731.5	5.746	531.5	7.557	720.5	6.424	592.7	7.152	728.9	6.649	695.4	7.045	721.8	6.894	722.3	6.672	730.2
7.397	707.7	5.492	507.7	7.113	694.5	6.166	568.9	6.962	704.7	6.619	668.1	7.036	691.4	6.823	695.4	6.518	702
7.075	679.5	5.281	482.1	6.989	669	5.977	544.7	6.814	680.9	6.199	636.8	6.699	666.3	6.498	670.3	6.166	678.7
6.693	656.2	4.63	438.9	6.897	643.4	5.634	520	6.311	644.3	5.956	612.1	6.237	639	6.252	647.4	5.912	655.3
6.409	615.6	4.438	413.8	6.557	617.8	5.267	496.2	6.072	619.6	5.767	583.5	5.989	613.9	5.897	609	5.642	628.4
6.196	593.6	4.189	383	6.279	591.8	4.935	471.1	5.879	592.7	5.361	561.4	5.782	589.6	5.639	587.9	5.571	599.8
5.992	566.7	3.722	360.9	5.98	567.2	4.642	446.4	5.622	569.4	5.273	527.5	5.512	568	5.533	555.3	5.273	576
5.625	536.8	3.586	334.5	5.287	528.8	4.115	405.4	5.394	544.2	4.914	513	5.349	524.4	5.323	535.9	4.799	536.3
5.483	512.5	3.133	308.5	5.107	502.4	3.92	372.8	5.243	509.9	4.758	482.5	5.048	498.4	5.086	508.5	4.731	513
5.385	487.8	2.988	277.2	4.879	479.9	3.846	356.1	5.11	479	4.364	454.8	4.69	466.2	4.755	483	4.574	483.4
5.077	460.5	2.624	254.7	4.728	447.7	3.42	319.9	4.636	455.2	4.237	421.7	4.583	459.6	4.429	460.1	4.408	457.4
4.648	436.3			4.592	424.8	3.157	293.1	4.334	429.7	4.062	395.7	4.515	437.2	4.361	435.8	4.024	432.3
4.346	410.7			4.355	397.1	2.855	267.9	4.077	405	3.695	368.4	3.757	391.3	4.121	405	3.6	402.8
3.816	369.3			3.95	376.3	2.636	241.5	4.009	375.9	3.47	346.4	3.695	366.6	3.55	364.9	3.405	379.9
3.737	348.1			3.426	334			3.524	350.3	3.284	320.8	3.29	338.4	3.278	338.4	3.127	342.4
3.441	317.3			3.429	324.8			3.254	324.3	2.935	296.1	3.331	316.9	2.914	314.6	2.707	316.9
3.257	294.8			2.911	285.1			2.976	287.3	2.579	254.3	2.872	291.3	2.935	285.6	2.935	308.9
2.846	271.9			2.79	260.9			2.426	263.5	2.497	247.2	2.668	264.4	2.411	261.8	2.207	267.5
2.716	244.1			2.881	252.5			2.505	255.2					2.278	237.5	2.215	238.4

ENVELOPE B RHEOLOGY DATA

Table 3. 50 °C As Received

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
3.696	306.3	4.173	338	4.226	341.1	3.936	328.7	4.587	374.1	3.939	327.9	3.495	327.9	4.007	303.6	3.427	305.4
4.084	314.6	4.703	373.7	4.611	361.4	4.256	349	4.824	393.5	4.489	370.2	4.427	354.7	3.977	314.2	3.936	323.9
4.498	342.4	4.898	396.6	4.72	384.7	4.578	371.9	5.321	431.4	4.788	394	4.38	362.7	4.244	336.7	4.096	342
4.694	367.5	5.203	426.1	4.904	407.6	4.88	394.4	5.333	453.5	5.123	417.3	5.043	403.7	4.303	344.6	4.359	372.4
4.788	392.2	5.522	451.7	5.428	449.1	4.951	416	5.561	481.7	5.365	442.9	5.099	428.8	4.788	386	4.614	397.5
5.188	416.4	5.762	477.3	5.635	473.7	5.146	441.1	5.732	506.8	5.277	451.3	5.303	460.1	4.99	401	4.933	423.9
5.475	442.4	5.919	502.4	5.803	499.3	5.454	466.2	6.079	536.3	5.404	492.2	5.49	486.1	5.052	433.6	5.176	446.4
5.7	463.6	6.096	527.9	6.031	521.8	5.611	497.1	6.179	559.2	5.383	494	5.727	508.5	5.623	483.4	5.146	469.8
6.085	504.1	6.383	553.9	6.315	556.1	5.916	522.2	6.437	583.5	6.265	542	5.851	536.3	5.685	496.2	5.759	509.9
6.339	529.3	6.466	581.3	6.543	579.9	6.431	566.3	6.765	622.2	6.789	594.9	6.144	563.6	5.839	536.3	6.005	534.5
6.375	557.5	6.975	623.6	6.762	605.1	6.25	575.1	6.919	645.6	6.813	606.8	6.422	587.4	5.789	551.3	6.034	566.7
6.588	580.4	7.144	647.4	6.961	630.2	6.857	613.4	7.2	673.8	6.884	643.8	6.62	613	6.413	572	6.144	589.6
6.833	601.1	7.046	657.9	7.014	657.5	6.878	643	7.342	702	7.493	677.3	6.75	634.1	6.558	587.9	6.342	615.6
7.236	643.4	7.517	698.5	7.227	681.7	6.916	662.3	7.487	723.2	7.538	693.6	7.277	677.3	6.665	628.4	6.759	643.8
7.289	667.2	7.422	723.2	7.552	707.3	7.754	697.2	7.792	750	7.632	716.1	7.419	704.7	6.801	656.6	6.901	672.5
7.57	690.1	8.346	747.8	7.733	732.9	7.544	713	7.982	779.6	7.499	744.8	7.585	730.7	6.928	680.9	7.061	697.2
7.777	722.7	8.233	768.6	7.896	758.4	7.766	765	8.209	807.3	8.28	761.5	7.976	756.2	7.203	708.6	7.286	721.4
7.99	748.7	8.322	826.7	8.434	800.3	7.748	766.3	8.488	833.3	8.343	776.5	7.979	779.6	7.677	751.4	7.585	743
8.275	770.3	8.227	828.5	8.497	823.6	8.476	790.6	8.541	861.1	8.565	826.7	8.192	810.4	7.751	774.7	7.609	769
8.372	793.2	9.094	849.6	8.739	852.3	8.585	803.8	8.884	886.2	8.683	856.2	8.266	833.8	7.902	803.8	8.047	810.9
8.582	819.2	9.059	864.2	8.943	878.3	9.032	851.4	9.159	915.3	8.822	887.1	8.502	861.5	8.109	825.4	8.257	836
9.035	856.7	9.677	920.1	9.21	909.1	9.041	873	9.254	943.9	9.062	910.5	8.677	884.5	8.443	854	8.573	861.5
9.204	881.8	9.586	937.3	9.296	931.6	9.13	904.3	9.39	965.1	9.165	936	9.106	924.6	8.618	880.5	8.677	892.4
9.393	905.6	9.805	959.4	9.586	955.4	9.642	956.7	9.606	988.9	9.426	958.5	9.287	950.6	8.893	909.6	8.751	917.5
9.509	940.9	9.571	978.8	9.594	980.5	9.571	963.8	10.05	1027	9.589	981.4	9.547	977.4	9.065	940.4	8.979	941.3
9.811	956.7	10.29	1003	10.06	1020	9.834	991.1	10.2	1059	9.982	1022	9.674	1000	9.168	963.3	9.053	965.1
9.982	992	10.51	1043	10.25	1048	9.967	1021	10.34	1082	10.21	1051	9.87	1027	9.423	995.1	9.284	992.9
10.2	1019	10.67	1075	10.46	1074	10.24	1046	10.63	1105	10.27	1074	10.01	1060	9.648	1026	9.449	1018
10.45	1043	10.81	1103	10.62	1096	10.38	1073	10.76	1130	10.53	1105	10.17	1080	9.84	1052	9.63	1043
10.64	1068	10.96	1137	10.88	1123	10.57	1097	10.92	1155	10.62	1126	10.28	1103	10.01	1076	10	1083
10.77	1096	11.11	1159	11.01	1154	10.76	1123	11.23	1196	10.85	1150	10.45	1133	10.17	1101	10.24	1109

ENVELOPE B RHEOLOGY DATA

Table 3. 50 °C As Received - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
11.08	1118	11.25	1180	11.23	1177	10.92	1151	11.32	1222	11.21	1185	10.78	1159	10.34	1126	10.37	1133
11.43	1159	11.62	1218	11.38	1199	11.38	1191	11.37	1231	11.28	1214	10.94	1185	10.46	1150	10.6	1159
11.69	1185	11.77	1242	11.7	1240	11.49	1218	11.78	1272	11.44	1239	11.13	1211	10.6	1174	10.79	1188
11.91	1215	11.95	1270	11.97	1263	11.77	1241	12.02	1300	11.66	1261	11.57	1252	10.86	1202	10.98	1219
12.11	1236	12.13	1292	12.01	1293	11.87	1273	12.15	1327	11.86	1284	11.68	1273	11.06	1228	11.14	1242
12.39	1272	12.33	1314	12.31	1317	11.99	1299	12.42	1352	12.26	1329	11.78	1302	11.41	1270	11.23	1267
12.51	1296	12.74	1353	12.46	1346	12.25	1324	12.44	1378	12.5	1352	11.89	1329	11.58	1293	11.41	1293
12.63	1325	12.99	1380	12.7	1368	12.36	1349	12.76	1401	12.61	1378	12.13	1352	11.72	1322	11.58	1320
12.88	1349	13.08	1403	12.81	1392	12.58	1370	12.9	1427	12.8	1400	12.32	1374	11.89	1349	11.76	1351
13.13	1374	13.23	1432	12.95	1418	12.65	1397	13.07	1453	12.99	1433	12.66	1413	12.06	1372	12	1375
13.34	1400	13.36	1457	13.49	1457	13.05	1439	13.21	1479	13.08	1457	12.86	1436	12.24	1398	12.22	1404
13.6	1423	13.51	1483	13.6	1481	13.17	1466	13.68	1521	13.34	1480	13.06	1468	12.49	1423	12.39	1433
13.71	1447	13.84	1507	13.64	1510	13.42	1490	13.89	1552	13.59	1503	13.17	1490	12.6	1447	12.55	1459
13.9	1474	14.14	1547	13.9	1530	13.52	1516	14.01	1575	13.94	1547	13.32	1517	13.07	1487	12.78	1486
14.34	1514	14.31	1570	14.05	1554	13.73	1539	14.31	1603	13.81	1555	13.68	1552	13.22	1512	13.03	1512
12.87	1513	11.99	1458	12.6	1502	12.09	1489	12.03	1473	11.92	1488	11.91	1493	12.31	1551	12.23	1557
12.68	1488	11.78	1430	12.02	1461	11.89	1463	11.78	1449	11.82	1466	11.73	1468	12	1522	11.82	1518
12.55	1464	11.71	1404	11.91	1435	11.6	1440	11.63	1428	11.53	1443	11.5	1442	11.77	1493	11.65	1489
12.26	1440	11.48	1382	11.68	1409	11.42	1408	11.16	1389	11.38	1420	11.3	1420	11.52	1467	11.6	1465
12.11	1412	11.29	1358	11.42	1386	11.29	1382	11.04	1363	11.23	1392	11.15	1396	11.42	1442	11.35	1441
11.84	1388	11.07	1337	11.17	1355	11.17	1354	10.9	1335	11.01	1361	10.92	1370	11.02	1404	11.18	1414
11.35	1348	10.94	1311	11.03	1327	10.88	1332	10.72	1311	10.76	1337	10.43	1327	10.79	1379	10.89	1389
11.17	1319	10.43	1267	10.75	1300	10.68	1306	10.51	1285	10.49	1310	10.38	1304	10.67	1349	10.74	1362
11.09	1293	10.24	1244	10.51	1273	10.39	1279	10.3	1260	10.32	1284	10.13	1272	10.54	1323	10.46	1339
10.81	1270	10.11	1215	10.26	1248	10.34	1251	10.06	1238	9.92	1243	9.935	1250	10.31	1299	10.15	1299
10.63	1247	9.932	1194	10.09	1225	10.01	1226	9.745	1199	9.719	1219	9.737	1225	10.09	1276	9.938	1272
10.49	1223	9.751	1169	9.76	1190	9.734	1199	9.568	1166	9.452	1196	9.627	1201	10.01	1252	9.763	1249
10.3	1197	9.577	1144	9.568	1167	9.624	1175	9.355	1148	9.452	1164	9.479	1174	9.816	1230	9.586	1217
9.825	1160	9.139	1104	9.328	1137	9.319	1149	9.189	1115	9.23	1142	9.062	1134	9.506	1198	9.358	1191
9.571	1127	8.994	1082	9.192	1114	8.935	1112	8.929	1091	9.056	1118	9.118	1118	9.251	1174	9.275	1165
9.367	1106	8.724	1050	9.091	1091	8.929	1081	8.751	1066	8.526	1082	8.772	1091	8.917	1130	8.985	1144

ENVELOPE B RHEOLOGY DATA

Table 5. 25 °C Pretreated

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
2.62	331	3.428	342	3.383	345.5	3.351	346.4	3.016	313.8	3.185	324.8	3.963	423.1	3.454	375.9	3.365	372.8
3.286	326.5	3.567	364.4	3.475	366.2	3.632	368.4	3.138	338.9	3.244	342.9	4.2	450.4	3.499	402.3	3.564	394.9
3.389	340.6	3.818	392.2	3.792	386.9	3.798	390.9	3.425	364.4	3.587	364.4	4.386	474.6	3.839	426.6	3.67	419.5
3.638	368.9	4.123	417.3	3.981	412	4.262	437.2	3.721	389.6	3.833	394.4	4.617	506.3	4.085	452.6	3.928	443.8
3.948	390	4.321	441.6	4.425	451.7	4.558	459.6	3.786	412.9	3.972	422.2	4.842	531.5	4.434	476.4	4.176	470.2
4.07	414.2	4.561	471.5	4.605	474.6	4.345	470.6	4.052	436.3	4.173	448.2	4.913	554.4	4.537	500.6	4.363	498
4.259	438.5	4.768	495.8	4.863	500.6	4.662	497.1	4.236	463.6	4.378	474.2	5.123	576	4.842	542	4.623	522.6
4.422	465.8	4.925	520.9	5.023	533.2	4.854	527.9	4.703	501.1	4.635	501.1	5.461	615.2	5.049	565	4.86	547.3
4.981	503.7	5.336	564.5	5.188	554.8	5.422	566.7	4.993	531	5.023	528.4	5.76	641.2	5.342	597.1	5.055	574.2
5.236	529.7	5.547	587	5.339	580.4	5.582	591	5.221	553.9	5.357	553.5	5.848	671.2	5.55	623.6	5.49	619.6
5.36	561	5.724	617.8	5.541	606.8	5.774	617	5.413	581.7	5.476	577.7	5.982	694.1	5.816	646.5	5.698	640.8
5.552	582.6	6.029	641.6	5.698	631.9	5.86	639.9	5.624	605.5	6.002	618.3	6.242	717.4	5.943	670.7	5.922	666.3
5.698	605.5	6.171	665.4	5.928	657.1	6.307	679.5	5.689	636.8	6.165	641.2	6.526	741.2	6.079	693.2	6.112	698
6.236	644.3	6.278	692.8	6.325	694.1	6.209	687.9	5.899	660.6	6.553	670.3	6.624	764.1	6.434	736.4	6.23	722.3
6.36	667.6	6.633	718.3	6.606	724.5	6.76	731.1	6.106	684.4	6.668	696.3	6.822	789.3	6.775	758.4	6.571	746.1
6.505	691	6.754	743.9	6.683	748.3	6.893	757.1	6.337	705.5	6.938	722.7	7.325	830.7	6.92	784.4	6.683	770.3
6.742	722.7	7.017	770.3	6.952	774.3	7.183	780	6.807	746.5	7.171	748.3	7.414	853.6	7.088	814.8	6.973	799
6.878	745.2	7.254	795.9	7.177	799.8	7.337	808.7	6.866	770.3	7.29	778.2	7.677	880	7.299	837.7	7.115	825.8
7.337	780.9	7.435	819.7	7.429	825	7.627	834.2	7.219	795.9	7.556	802.5	7.737	903.4	7.529	862.9	7.414	850.1
7.476	805.1	7.967	860.2	7.843	863.7	7.74	868.1	7.319	825.4	7.769	828.9	7.929	927.6	7.668	885.3	7.701	880.5
7.562	834.7	8.074	888.4	7.941	885.8	8.018	886.2	7.55	849.6	7.964	854	8.175	957.2	7.976	908.7	7.902	903
7.926	860.2	8.234	914	8.077	916.2	8.287	921.9	7.713	870.3	8.293	878.7	8.515	983.2	8.423	952.3	8.035	930.7
8.231	888	8.417	938.7	8.382	939.1	8.539	945.7	7.994	895.5	8.397	902.5	8.944	1027	8.559	976.1	8.539	967.7
8.349	908.7	8.698	960.2	8.547	962.5	8.775	970.4	8.186	924.1	8.908	944.4	9.261	1050	8.681	1000	8.648	998.1
8.627	936.9	8.787	985.8	8.965	997.7	8.837	993.7	8.479	951.9	9.255	970.4	9.364	1079	9.065	1028	8.82	1020
8.796	962.5	9.021	1011	9.104	1022	9.074	1018	8.645	977.9	9.494	993.3	9.625	1101	9.204	1056	9.051	1043
9.258	997.7	9.545	1054	9.249	1052	9.503	1058	9.045	1016	9.66	1024	9.77	1125	9.497	1087	9.199	1071
9.409	1020	9.761	1079	9.444	1077	9.699	1084	9.243	1044	9.675	1049	10	1150	9.731	1111	9.489	1094
9.58	1049	10.01	1105	9.693	1101	9.873	1111	9.568	1074	9.773	1076	10.38	1189	9.847	1137	9.876	1134
9.752	1072	10.2	1136	9.853	1129	10.13	1137	9.708	1100	10.07	1098	10.58	1213	10.12	1159	10.18	1155
9.977	1095	10.41	1160	10.15	1154	10.42	1162	10.15	1120	10.16	1122	10.77	1242	10.47	1196	10.38	1188

ENVELOPE B RHEOLOGY DATA

Table 5. 25 °C Pretreated - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
10.47	1133	10.58	1184	10.36	1179	10.61	1192	10.21	1155	10.39	1162	10.89	1268	10.71	1226	10.63	1211
10.66	1155	10.85	1210	10.63	1204	10.78	1216	10.42	1181	10.59	1187	11.24	1295	10.97	1250	10.78	1234
10.8	1184	11.08	1239	10.85	1228	10.97	1237	10.77	1207	10.68	1218	11.43	1319	11.11	1274	10.97	1259
10.95	1209	11.27	1264	11.1	1253	11.48	1275	10.9	1231	10.89	1244	11.61	1344	11.39	1305	11.21	1285
11.2	1234	11.56	1290	11.5	1302	11.6	1301	11.01	1257	11.17	1267	11.9	1367	11.59	1326	11.38	1312
11.46	1261	11.75	1315	11.78	1324	11.84	1326	11.25	1279	11.43	1294	12.3	1407	11.73	1350	12.05	1355
11.64	1285	12.15	1353	11.84	1353	11.99	1357	11.81	1319	11.85	1319	12.47	1432	11.91	1373	12.21	1380
12.01	1311	12.45	1382	12.16	1376	12.25	1378	12	1346	12.21	1348	12.71	1460	12.47	1416	12.44	1405
12.2	1335	12.7	1411	12.24	1399	12.4	1403	12.27	1367	12.45	1372	12.91	1485	12.68	1441	12.67	1428
12.41	1362	12.79	1431	12.4	1423	12.96	1443	12.46	1400	12.87	1397	13.27	1511	12.87	1466	12.78	1460
12.89	1404	12.9	1458	12.67	1449	13.27	1467	12.65	1426	13.1	1423	13.46	1541	13.05	1496	12.95	1485
13.12	1434	13.21	1480	12.97	1475	13.4	1492	12.74	1452	13.32	1449	13.63	1564	13.2	1516	13.35	1508
13.2	1459	13.68	1524	13.39	1518	13.66	1523	13.05	1477	13.37	1490	13.76	1588	13.42	1540	13.46	1535
13.5	1482	13.97	1545	13.59	1545	13.82	1541	13.35	1502	13.57	1517	13.98	1612	13.92	1579	13.98	1571
13.63	1504	14.04	1575	13.8	1570	14.05	1573	13.53	1528	13.71	1540	14.29	1641	14.01	1602	14.15	1597
12.68	1519	12.04	1463	12.22	1486	12.61	1514	12.51	1519	11.26	1398	11.21	1408	11.3	1437	11.97	1475
12.5	1496	11.82	1431	11.93	1464	12.22	1490	12.33	1490	10.94	1371	11.01	1379	11.2	1413	11.72	1449
12.12	1457	11.6	1408	11.73	1430	12.08	1465	12.12	1462	10.49	1329	10.66	1354	10.92	1387	11.45	1424
11.88	1433	11.35	1383	11.59	1408	11.77	1441	12	1436	10.12	1303	10.45	1329	10.74	1364	10.95	1382
11.72	1402	11.2	1362	11.32	1386	11.41	1401	11.67	1410	9.983	1275	10.28	1305	10.22	1322	10.69	1357
11.52	1378	10.66	1321	10.96	1350	11.38	1391	11.49	1384	9.728	1245	9.779	1266	10.03	1299	10.51	1327
11.23	1352	10.49	1296	10.73	1323	11.18	1365	11.28	1360	9.595	1218	9.684	1239	9.861	1269	10.36	1301
11.04	1327	10.24	1271	10.47	1301	10.72	1320	11.06	1334	9.364	1194	9.373	1216	9.702	1246	10.08	1278
10.76	1301	10.04	1242	10.25	1267	10.44	1296	10.71	1309	9.122	1170	9.119	1192	9.503	1221	9.864	1255
10.55	1275	9.829	1213	10.06	1241	10.26	1266	10.54	1284	8.793	1144	8.968	1164	9.237	1195	9.708	1232
10.3	1250	9.634	1189	9.853	1219	10.1	1243	10.08	1245	8.669	1119	8.743	1133	9.059	1165	9.512	1204
10.12	1224	9.418	1166	9.651	1195	9.761	1217	9.856	1214	8.402	1092	8.577	1110	8.704	1135	9.16	1178
9.568	1184	9.222	1143	9.21	1157	9.598	1194	9.657	1189	8.198	1068	8.379	1085	8.429	1109	8.746	1137
9.349	1156	8.761	1105	8.944	1130	9.125	1157	9.403	1165	7.66	1028	7.961	1046	8.207	1082	8.465	1114
9.13	1133	8.539	1074	8.624	1104	9	1132	9.204	1138	7.429	1003	7.719	1022	7.997	1058	8.328	1083
8.906	1107	8.325	1055	8.539	1075	8.775	1103	8.977	1113	7.367	977	7.553	994.6	7.837	1033	8.195	1060

ENVELOPE B RHEOLOGY DATA

Table 6. 50 °C Pretreated

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
2.906	323.9	3.063	340.2	2.986	317.7	3.01	325.2	2.995	326.1	3.35	335.8	2.885	312	2.51	326.5	2.865	314.6
3.365	327	3.557	333.2	3.705	334	3.542	326.1	3.537	327.9	3.569	350.8	3.471	328.7	3.483	319.1	3.03	310.2
3.572	343.3	3.862	350.8	4.022	353.9	3.717	350.3	3.649	345.1	3.83	380.3	3.356	337.1	3.537	342.4	3.48	333.6
3.735	363.6	4.013	371.1	4.17	376.3	3.821	369.7	3.806	367.1	3.773	391.3	3.945	366.2	4.084	383	3.83	384.3
3.918	389.6	4.164	394.9	4.217	404.1	4.043	394.4	4.072	393.5	4.223	418.2	4.229	409.8	3.966	392.6	3.729	399.7
4.22	413.4	4.436	417.8	4.362	435.4	4.279	416.4	4.421	430.1	4.054	436.7	4.282	434.1	4.217	414.2	4.214	433.6
4.608	454.3	4.7	457.9	4.629	457.4	4.371	446.4	4.629	457.4	4.555	463.6	4.339	459.2	4.25	431	4.04	450.4
4.608	487.4	4.927	481.7	4.806	479.9	4.572	471.5	4.759	483.4	4.38	484.3	4.531	490.9	4.161	457.9	4.59	484.8
4.927	510.3	5.173	504.1	5.152	521.3	4.676	496.6	4.945	505	4.839	511.6	4.667	513.8	4.596	511.6	4.51	502.4
5.07	537.6	5.209	539	5.342	544.2	4.865	521.8	5.067	537.6	5.164	560.5	4.836	537.2	4.566	526.2	4.933	531
5.327	561	5.357	562.8	5.51	569.4	5.342	565.4	5.197	564.1	5.123	579.1	5.336	575.1	5.416	578.2	4.892	551.7
5.451	584.3	5.587	585.7	5.694	602.9	5.534	590.5	5.336	589.2	5.49	602.9	5.525	600.2	5.212	614.3	5.209	578.6
5.638	617	5.738	609.5	5.966	627.1	5.682	617	5.484	614.3	5.445	626.2	5.653	623.6	5.907	653.5	5.537	628
5.922	643.8	6.176	647.8	6.132	650.4	5.866	646	5.629	639.4	5.747	652.7	5.821	648.7	5.771	680.9	5.422	645.6
6.182	670.3	6.351	670.3	6.138	674.7	6.085	669	5.88	666.8	6.105	698.5	5.877	680.9	6.162	707.3	5.916	673.8
6.33	693.2	6.499	701.6	6.428	700.7	6.236	693.2	6.067	693.6	5.984	718.8	6.12	704.2	5.957	727.6	5.732	695
6.511	718.8	6.727	724	6.819	737.3	6.363	717	6.2	717.9	6.443	748.3	6.224	726.7	6.505	754.4	6.209	724.9
6.718	743.9	6.801	748.3	7.002	768.1	6.608	757.1	6.475	744.8	6.188	766.3	6.65	763.7	6.301	774.7	6.073	743.4
7.141	784.9	6.999	772.1	7.014	775.6	6.819	776.9	6.813	783.5	6.715	792.8	6.641	789.7	6.783	805.1	6.588	769.4
7.363	810.4	7.378	808.2	7.476	818.3	6.907	810.4	6.901	810	6.674	814.8	6.922	813.1	6.671	823.2	6.916	817
7.484	833.8	7.547	834.2	7.576	841.3	7.183	834.7	7.171	835.1	7.052	842.6	6.99	844.8	6.981	847.4	6.819	832.9
7.718	865.1	7.718	858.5	7.783	870.8	7.313	863.3	7.354	858.5	7.348	891.5	7.221	862.4	7.076	873	7.239	861.5
7.863	890.6	7.919	884	8.002	899	7.496	888.4	7.481	888	7.295	909.6	7.336	899.9	7.523	905.6	7.316	887.1
8.044	914.9	8.094	913.1	8.23	922.8	7.736	916.6	7.632	917.5	7.683	938.2	7.532	924.1	7.265	921.5	7.493	913.1
8.26	941.3	8.248	935.6	8.375	955	7.973	940.9	7.774	940	7.612	956.3	7.555	947	7.887	943.5	7.84	954.1
8.594	978.3	8.591	973.5	8.535	980.5	7.988	964.7	7.94	965.5	8.047	988.9	7.81	971.7	7.724	968.6	8.076	973.9
8.807	1003	8.834	999	8.775	1002	8.384	1001	8.153	989.3	7.928	1004	8.286	1013	8.183	996.8	8.153	1003
9.05	1027	9	1026	9.094	1040	8.585	1026	8.34	1014	8.396	1032	8.467	1037	8.038	1014	8.414	1039
9.077	1056	9.186	1050	9.284	1065	8.713	1057	8.511	1040	8.63	1086	8.689	1064	8.417	1040	8.55	1057
9.301	1081	9.287	1079	9.526	1089	8.932	1081	8.92	1079	8.573	1100	8.751	1087	8.411	1059	8.659	1080
9.589	1104	9.503	1102	9.757	1117	9.05	1106	8.988	1111	8.92	1123	8.914	1118	8.798	1085	9.014	1121

ENVELOPE B RHEOLOGY DATA

Table 6. 50 °C Pretreated - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
9.757	1128	9.89	1139	9.917	1140	9.281	1128	9.154	1137	9.02	1148	9.05	1142	9.011	1131	9.183	1147
10.14	1169	10.09	1162	10.03	1171	9.476	1152	9.423	1157	9.319	1169	9.213	1166	9	1148	9.485	1174
10.36	1192	10.15	1192	10.26	1195	9.861	1192	9.609	1189	9.772	1217	9.441	1192	9.408	1177	9.609	1199
10.59	1224	10.39	1218	10.38	1219	9.97	1218	9.834	1213	9.609	1234	9.606	1218	9.378	1196	9.787	1225
10.82	1241	10.57	1240	10.61	1243	10.1	1248	9.893	1240	10.07	1261	9.87	1244	9.778	1224	9.953	1251
10.92	1274	10.78	1265	11.05	1280	10.29	1272	10.16	1264	9.938	1280	10.24	1286	9.778	1244	10.1	1282
11.12	1297	11.15	1304	11.17	1312	10.4	1296	10.3	1290	10.53	1332	10.47	1311	10.14	1278	10.29	1306
11.36	1320	11.31	1332	11.37	1334	10.66	1321	10.64	1330	10.39	1346	10.53	1339	10.1	1294	10.5	1331
11.66	1357	11.5	1356	11.91	1359	10.76	1345	10.91	1352	10.56	1400	10.74	1361	10.54	1326	10.66	1355
11.91	1382	11.74	1381	12.35	1386	11	1370	11.01	1381	12.57	1563	10.89	1388	10.94	1375	10.83	1379
12.1	1408	11.86	1404	12.56	1412	11.14	1395	11.24	1407	12.35	1577	11.09	1412	10.83	1394	11.01	1407
12.28	1430	11.99	1432	12.74	1437	11.56	1437	11.46	1430	12.67	1629	11.28	1435	11.32	1423	11.39	1447
12.49	1467	12.25	1454	13.01	1464	11.78	1463	11.56	1454	12.53	1652	11.58	1475	11.14	1442	11.65	1472
12.77	1493	12.41	1479	13.34	1502	11.88	1493	11.74	1477	13.44	1689	11.81	1501	11.62	1473	11.88	1500
12.86	1518	12.86	1519	13.57	1525	12.01	1518	11.94	1504	13.31	1724	12.01	1525	11.48	1491	12.04	1525
13.05	1542	13.05	1544	13.7	1558	12.21	1545	12.41	1549	13.55	1751	12.18	1555	12.01	1516	12.18	1551
12.52	1573	12.41	1604	11.84	1598	11.23	1578	11.01	1566	11.03	1560	11.12	1574	11.66	1629	11.46	1590
12.42	1548	12.27	1581	11.73	1572	11.07	1547	10.92	1537	10.94	1536	10.96	1546	11.17	1603	11.06	1550
12.15	1523	11.92	1542	11.44	1549	10.72	1522	10.82	1515	10.59	1511	10.78	1523	11.35	1582	10.84	1526
11.94	1497	11.64	1514	11.23	1522	10.54	1493	10.49	1491	10.34	1467	10.42	1483	9.112	1430	10.74	1498
11.48	1456	11.39	1494	11.01	1498	10.28	1471	10.31	1468	10.26	1443	10.16	1458	8.313	1259	10.56	1474
11.19	1434	11.17	1464	10.64	1457	10.14	1444	9.988	1429	9.751	1415	9.961	1431	7.964	1195	10.35	1447
11.06	1400	11.06	1436	10.55	1434	9.914	1421	9.739	1402	9.917	1395	9.757	1406	8.076	1166	10.13	1419
10.85	1380	10.79	1414	10.27	1409	9.592	1381	9.512	1377	9.535	1371	9.571	1381	7.579	1123	9.896	1395
10.7	1355	10.66	1389	10.04	1385	9.367	1356	9.361	1347	9.467	1347	9.384	1347	7.712	1106	9.666	1371
10.51	1330	10.1	1350	9.885	1353	9.21	1332	9.257	1323	9.053	1321	9.165	1325	6.919	1062	9.544	1341
10.27	1305	9.92	1324	9.666	1327	9.047	1301	9.011	1297	8.778	1277	8.914	1297	7.073	1036	9.26	1318
9.799	1264	9.811	1296	9.396	1303	8.875	1275	8.716	1271	8.784	1256	8.757	1274	6.682	981	8.84	1278
9.612	1241	9.811	1285	9.189	1279	8.606	1252	8.588	1243	8.28	1231	8.612	1249	6.108	943.9	8.73	1253
9.405	1208	9.355	1248	8.852	1239	8.417	1226	8.446	1219	8.455	1209	8.437	1223	6.321	926.3	8.502	1226
9.109	1185	9.151	1218	8.914	1232	8.34	1200	8.269	1194	8.038	1185	7.919	1181	5.812	897.2	8.337	1200

APPENDIX D

ENVELOPE C RHEOLOGY DATA

Table 1. Rheometer Response for Blank – As Received 143

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Table 8. 25 °C Pretreated..... 166

Table 9. 50 °C Pretreated..... 169

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ENVELOPE C RHEOLOGY DATA

Table 1. Rheometer Response for Blank – As Received

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
3.13	341.5	3.87	385.2	3.956	401.9	3.252	360.5	3.716	371.5	3.737	374.1	3.16	327	1.828	331.4	2.473	320.4
3.225	366.2	4.199	422.2	4.134	429.2	3.45	386	3.903	396.6	3.672	383.8	3.432	344.6	2.663	305	3.216	325.2
3.373	394.9	4.388	446	4.302	452.1	3.669	408.5	4.024	424.4	4.217	424.8	3.634	367.5	3.098	315.5	3.421	346.4
3.586	423.5	4.447	476.4	4.471	473.3	4.075	449.5	4.211	448.6	4.373	447.7	3.832	390.9	3.37	332.7	3.53	367.5
3.734	445.5	4.619	499.7	4.817	511.6	4.175	482.1	4.388	474.2	4.48	480.8	3.983	413.8	3.776	372.8	3.696	388.2
3.82	473.3	4.808	524	4.924	540.3	4.273	505.5	4.554	498.4	4.652	502.4	4.368	452.6	3.927	397.9	4.057	424.8
4.107	497.1	4.977	550	5.087	564.1	4.524	532.8	4.806	524.4	4.752	523.1	4.498	480.8	3.998	428.8	4.217	450.4
4.456	535.9	5.178	576.4	5.261	587.4	4.684	557.9	4.891	550	5.039	563.2	4.495	487.8	4.208	452.6	4.264	481.7
4.551	558.3	5.288	600.2	5.433	612.1	4.811	580.4	5.246	589.6	5.202	588.3	4.874	532.8	4.368	476.8	4.492	505
4.566	588.8	5.48	626.7	5.596	635.9	5.107	618.3	5.389	615.6	5.312	613	4.986	557.5	4.439	501.5	4.56	530.1
4.776	611.7	5.785	661.9	5.72	661.9	5.279	639	5.542	643	5.412	643.4	5.113	587.9	4.675	523.5	4.779	552.6
4.903	633.7	5.832	693.2	6.081	702.4	5.362	671.2	5.605	671.6	5.572	667.2	5.249	612.5	4.924	562.8	5.066	589.6
5.027	657.5	6.025	714.8	6.149	731.1	5.501	695.8	5.729	694.5	5.747	693.2	5.465	639	5.116	588.3	5.199	614.8
5.389	698.9	6.105	741.7	6.356	758.4	5.673	721.4	5.832	719.6	5.812	716.1	5.59	661.9	5.359	617.4	5.297	644.7
5.486	720.1	6.445	775.6	6.463	779.6	5.756	748.3	6.025	745.2	5.966	739	5.705	686.6	5.474	642.1	5.389	669.8
5.61	751.8	6.528	801.2	6.558	804.2	6.001	771.6	6.176	767.2	6.105	765	6.048	726.7	5.584	669.4	5.587	695.8
5.72	777.4	6.679	824.1	6.729	827.2	6.114	798.5	6.321	795.9	6.418	805.1	6.191	749.2	5.702	701.1	5.738	724
5.936	801.2	6.815	856.7	7.013	865.5	6.309	825	6.442	823.6	6.608	831.1	6.291	778.2	5.838	717.9	5.85	748.7
6.019	824.5	6.966	879.2	7.105	889.7	6.43	850.1	6.623	849.6	6.694	863.7	6.534	803.4	5.93	751.4	5.977	772.5
6.35	863.7	7.004	905.2	7.309	915.7	6.478	879.2	6.753	875.2	6.815	886.7	6.705	826.7	6.137	780.4	6.256	811.7
6.445	884.5	7.217	929.4	7.487	943.9	6.655	909.6	7.075	917.9	6.924	912.2	6.697	859.3	6.288	806	6.377	839.9
6.472	915.3	7.389	954.5	7.694	972.1	6.877	936.9	7.274	943.5	7.108	936.9	6.797	882.2	6.418	830.7	6.519	860.7
6.682	937.8	7.519	979.2	7.792	996.4	6.972	960.7	7.407	971.3	7.229	964.7	6.984	906	6.575	854	6.658	885.8
6.821	960.2	7.65	1004	7.916	1028	7.203	998.1	7.573	995.5	7.38	989.3	7.096	930.7	6.646	879.2	6.759	917.5
7.117	998.6	7.993	1047	7.978	1049	7.291	1022	7.661	1026	7.422	1014	7.247	955.8	7.025	917.5	6.88	940.9
7.3	1023	8.132	1075	8.117	1075	7.368	1046	7.777	1050	7.653	1040	7.38	983.2	7.067	946.6	6.993	968.2
7.374	1052	8.259	1098	8.268	1101	7.398	1079	7.901	1075	7.978	1080	7.593	1008	7.215	969.9	7.17	993.3
7.49	1077	8.327	1120	8.49	1126	7.525	1103	8.011	1099	8.07	1104	7.925	1048	7.339	996.4	7.241	1015
7.614	1101	8.463	1144	8.869	1166	7.638	1129	8.17	1125	8.289	1136	7.895	1058	7.475	1024	7.354	1043
7.735	1126	8.848	1185	8.999	1190	7.756	1155	8.33	1152	8.398	1157	8.25	1106	7.641	1049	7.65	1087
7.88	1151	8.999	1209	8.972	1222	7.869	1183	8.614	1190	8.484	1181	8.336	1133	7.818	1072	7.88	1110

ENVELOPE C RHEOLOGY DATA

Table 1. Rheometer Response for Blank – As Received - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
8.014	1178	9.064	1236	9.194	1248	8.064	1211	8.75	1213	8.715	1207	8.475	1156	7.94	1097	7.963	1135
8.185	1207	9.265	1263	9.265	1274	8.176	1236	8.866	1237	8.827	1234	8.487	1189	8.244	1138	8.073	1161
8.398	1232	9.369	1289	9.505	1298	8.312	1258	8.925	1268	8.937	1271	8.674	1210	8.369	1163	8.224	1186
8.745	1273	9.496	1309	9.635	1325	8.449	1285	9.126	1296	9.097	1295	8.724	1232	8.46	1186	8.324	1217
8.895	1297	9.555	1334	9.774	1352	8.736	1328	9.171	1324	9.144	1318	8.895	1258	8.635	1210	8.452	1242
8.981	1326	10.05	1376	9.958	1374	8.964	1351	9.39	1351	9.301	1345	9.251	1296	8.718	1244	8.662	1265
9.188	1349	10.03	1404	10.06	1399	8.99	1376	9.567	1376	9.443	1369	9.307	1322	8.869	1266	8.854	1290
9.248	1372	10.19	1428	10.37	1443	9.138	1409	9.653	1400	9.623	1398	9.458	1353	8.996	1290	8.916	1315
9.393	1403	10.3	1449	10.55	1464	9.274	1434	9.789	1426	9.789	1425	9.57	1377	9.254	1330	9.103	1341
9.547	1426	10.44	1474	10.69	1489	9.387	1461	10.14	1464	9.946	1450	9.656	1401	9.245	1336	9.283	1367
9.919	1463	10.54	1496	10.74	1521	9.467	1486	10.29	1487	10.26	1487	9.831	1424	9.162	1371	9.692	1409
9.748	1474	11.03	1536	11	1542	9.6	1511	10.35	1516	10.36	1519	10.12	1460	9.206	1372	9.813	1433
10.17	1516	11.11	1563	11.09	1569	9.73	1536	10.34	1537	10.48	1543	10.18	1489	9.86	1448	9.884	1460
9.561	1516	8.996	1471	8.407	1500	9.15	1522	8.999	1513	9.035	1523	9.236	1568	9.236	1590	8.91	1593
9.422	1493	8.676	1432	8.25	1475	9.067	1497	8.857	1489	8.697	1483	9.162	1538	9.07	1566	8.975	1584
9.301	1466	8.57	1408	7.987	1439	8.878	1471	8.721	1459	8.543	1461	8.978	1514	8.94	1536	8.662	1541
9.058	1444	8.463	1377	8.227	1407	8.727	1447	8.54	1428	8.407	1432	8.792	1489	8.813	1512	8.561	1519
8.94	1416	8.348	1357	8.398	1380	8.558	1421	8.342	1405	8.271	1410	8.608	1461	8.694	1485	8.389	1486
8.727	1392	8.008	1326	8.167	1359	8.289	1380	8.315	1379	8.099	1385	8.552	1432	8.431	1460	8.247	1463
8.383	1349	7.948	1303	8.008	1334	8.043	1355	8.147	1353	7.981	1353	8.44	1407	8.345	1434	8.203	1434
8.173	1325	7.774	1277	7.851	1302	7.892	1326	7.984	1330	7.863	1330	8.265	1383	8.141	1410	8.005	1409
8.008	1301	7.614	1253	7.792	1276	7.741	1302	7.874	1305	7.712	1303	8.123	1357	8.046	1384	7.815	1384
7.948	1269	7.463	1227	7.632	1254	7.555	1278	7.747	1282	7.573	1280	8.005	1334	7.697	1349	7.715	1360
7.783	1245	7.096	1189	7.507	1229	7.425	1252	7.564	1259	7.46	1253	7.655	1294	7.614	1319	7.564	1337
7.611	1222	7.022	1164	7.354	1204	7.297	1222	7.141	1215	7.238	1226	7.555	1270	7.496	1293	7.457	1312
7.291	1186	6.91	1136	7.025	1158	7.17	1198	7.016	1189	6.966	1185	7.395	1241	7.315	1266	7.031	1270
7.194	1156	6.797	1116	6.83	1136	7.072	1173	6.848	1163	6.845	1163	7.327	1215	7.143	1247	6.927	1241
7.064	1137	6.442	1077	6.685	1109	6.874	1148	6.774	1136	6.64	1133	7.167	1190	6.93	1217	6.714	1216
6.88	1103	6.386	1049	6.51	1086	6.774	1121	6.581	1113	6.549	1104	7.031	1166	6.708	1189	6.578	1191
6.744	1077	6.146	1029	6.418	1057	6.602	1090	6.448	1077	6.291	1082	6.907	1141	6.54	1161	6.578	1160
6.555	1053	5.972	1003	6.318	1033	6.353	1067	6.344	1051	6.247	1053	6.543	1100	6.383	1134	6.469	1137

ENVELOPE C RHEOLOGY DATA

Table 2. 25 °C As Received

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
4.849	317.3	5.042	324.8	2.867	372.4	1.603	490.9	4.864	325.2	5.095	325.2	5.275	326.5	4.213	314.6	4.755	319.5
4.82	323	4.974	341.5	4.115	323.5	4.621	328.7	5.518	345.5	5.148	343.3	5.287	346.8	5.107	326.5	4.778	326.1
5.524	340.2	5.506	376.3	4.781	323.5	4.784	326.5	5.444	368.4	5.317	372.4	5.423	379.4	5.503	349	5.278	346.8
6.083	374.1	5.953	398.8	5.456	341.1	5.296	348.6	5.684	395.3	5.693	394.9	5.853	401.5	5.557	373.7	5.793	372.4
6.234	400.6	6.146	430.5	5.805	366.6	5.817	371.5	5.888	427.5	6.255	418.6	6.113	427.5	5.817	400.6	5.785	396.2
6.246	425.3	6.625	453.5	5.885	395.3	5.699	394	6.365	450.8	6.43	445.5	6.548	455.7	6.166	428.3	5.861	420
6.542	449.1	6.865	478.6	5.962	419.5	5.977	417.3	6.77	472.9	6.734	473.7	6.874	482.1	6.536	453	6.329	445.1
6.764	481.7	6.865	501.9	6.4	442.4	6.507	457.4	6.871	497.5	6.782	497.1	7.036	508.1	6.708	481.2	6.723	485.2
6.998	505.9	7.377	531.5	6.649	479.9	6.699	479.5	7.093	522.2	7.093	524.9	7.119	531	7.107	508.1	6.977	493.1
7.365	529.7	7.652	559.7	6.956	503.3	7.045	503.3	7.332	546.9	7.501	563.2	7.315	555.7	7.344	534.1	7.193	535.9
7.605	553.9	7.986	583.9	7.11	533.7	7.027	533.2	7.69	589.6	7.551	591.8	7.732	595.4	7.542	558.8	7.525	564.1
8.463	591.4	8.191	607.7	7.362	555.7	7.383	555.3	8.016	615.6	7.963	610.3	7.927	620	7.764	583	8.013	595.8
8.714	617	8.744	650	7.596	579.1	7.72	577.3	8.478	642.1	8.309	642.1	8.341	646.9	8.019	605.5	8.057	621.4
8.661	644.7	8.951	672.9	7.815	603.7	8.386	617.4	8.365	671.2	8.623	668.5	8.691	675.6	8.427	645.6	8.404	640.8
8.859	669.8	9.055	695.8	8.445	644.3	8.531	643	8.552	695	8.91	689.7	8.963	706	8.563	672	8.395	672.5
9.256	692.8	9.454	728	8.62	653.5	8.59	669	9.087	720.1	9.395	725.8	9.348	732.4	8.842	702	8.833	695.8
9.67	726.2	9.475	753.1	9.306	695.4	9.232	699.4	9.265	743	9.413	752.2	9.401	758.4	9.324	724.5	9.17	720.5
9.96	748.7	9.889	778.7	9.333	724	9.123	724.5	9.67	772.1	9.928	778.7	9.883	787.1	9.277	751.4	9.17	744.3
10.24	781.3	10.06	804.7	9.863	751.8	9.469	748.3	9.741	801.2	10.18	799.8	9.818	811.7	9.658	784.9	9.652	784
10.79	804.7	10.51	840.8	10.12	773.4	9.836	776.5	10.24	824.1	10.39	833.3	10.34	836.9	9.774	807.8	10.12	807.3
10.85	827.6	10.82	862.4	10.27	799.8	10.14	802.9	10.64	864.6	10.56	859.3	10.5	862.9	10.4	832	10.37	832
11.27	851.4	11.28	883.1	10.56	833.8	10.36	828	11.09	891.9	10.85	886.2	10.61	889.7	10.34	856.7	10.47	865.1
11.36	877.4	11.65	923.7	11.02	856.2	10.67	852.3	11.49	920.6	11.23	913.1	11.22	912.7	10.9	879.6	10.93	886.7
11.91	903.8	12.01	944.4	11.14	881.4	10.85	878.7	11.65	940.4	11.43	936.5	11.4	939.5	11.13	917.5	11.12	909.1
12.65	944.8	12.19	966.9	11.56	905.6	11.52	905.2	12.03	966.4	11.66	962.5	11.87	978.8	11.49	948.8	11.71	950.6
12.8	969.9	12.35	989.8	12.09	944.8	11.98	945.3	12.17	998.1	12.22	984.5	12.26	1005	12.03	970.8	11.85	978.3
13.19	996.8	13.12	1031	12.4	968.2	12.33	974.8	12.69	1020	12.68	1024	12.69	1028	12.3	999	12.1	989.8
13.55	1024	13.51	1056	12.73	994.2	12.42	999.5	13.11	1057	13.02	1048	12.8	1059	12.48	1028	12.54	1014
13.95	1048	13.89	1082	13.12	1020	12.74	1024	13.39	1079	13.44	1078	13.18	1087	12.88	1055	13.13	1059
14.48	1080	14.31	1110	13.41	1051	13.15	1048	13.82	1109	13.7	1103	13.53	1112	13.19	1081	13.52	1085
14.88	1103	14.81	1139	13.75	1076	13.58	1073	13.95	1130	13.93	1130	13.86	1137	13.6	1104	13.76	1111

ENVELOPE C RHEOLOGY DATA

Table 2. 25 °C As Received - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
15.21	1135	15.07	1163	14.04	1100	13.91	1099	14.34	1154	14.39	1155	14.11	1160	13.77	1132	14.16	1136
15.45	1160	15.39	1186	14.39	1125	14.24	1126	14.66	1179	14.68	1178	14.55	1185	14.14	1155	14.31	1162
15.82	1184	15.82	1210	14.75	1148	14.59	1150	15.48	1217	14.92	1203	15.01	1211	14.62	1184	14.8	1193
16.28	1209	16.39	1250	15.57	1189	15.2	1178	15.85	1241	15.29	1229	15.24	1237	15.15	1208	15.17	1218
16.63	1233	16.86	1277	15.55	1202	15.59	1203	16.19	1267	16.02	1273	16.18	1281	15.59	1248	15.33	1241
17.07	1258	17.23	1302	16.08	1228	16.17	1244	16.52	1299	16.08	1284	16.44	1304	15.96	1270	15.61	1265
17.39	1284	17.51	1326	16.63	1259	16.55	1269	16.81	1321	16.85	1325	16.65	1334	16.17	1303	16.07	1292
18.1	1325	17.78	1352	16.92	1283	16.93	1300	17.48	1358	17.12	1345	17.01	1359	16.7	1327	16.76	1331
18.58	1354	18.28	1381	17.25	1310	17.28	1323	17.75	1382	17.31	1373	17.34	1380	17.13	1351	17.15	1359
18.81	1376	18.58	1404	18.02	1352	17.66	1346	18.1	1406	17.75	1404	17.69	1406	17.22	1373	17.48	1385
19.14	1400	18.99	1427	18.4	1373	18.25	1384	18.49	1432	18.1	1427	18.05	1430	18.02	1412	17.75	1410
19.53	1425	19.58	1467	18.64	1398	18.58	1407	18.81	1458	18.46	1451	18.79	1469	17.93	1421	18.16	1441
19.85	1449	19.94	1492	18.9	1429	18.96	1431	19.35	1485	18.93	1478	19.2	1499	18.87	1467	18.58	1466
20.74	1490	20.41	1518	19.35	1451	19.35	1462	19.55	1516	19.61	1518	19.32	1519	19.14	1495	18.96	1490
20.98	1516	20.65	1544	19.73	1481	19.7	1483	20	1540	19.55	1527	19.82	1551	19.14	1506	19.23	1516
19.61	1527	19.05	1493	20.03	1555	19.44	1552	18.31	1493	18.37	1512	18.19	1486	18.73	1522	18.99	1545
19.32	1495	18.81	1469	19.73	1526	18.81	1510	17.81	1469	18.02	1487	17.81	1462	18.34	1497	18.52	1518
18.93	1473	18.4	1442	19.29	1499	18.31	1487	17.25	1430	17.72	1465	17.45	1433	18.1	1471	18.28	1491
18.55	1449	17.9	1417	18.93	1476	17.93	1461	16.95	1405	17.48	1438	17.07	1406	17.28	1428	17.9	1467
18.31	1426	17.66	1389	18.43	1449	17.54	1436	16.57	1376	17.07	1414	16.57	1378	16.89	1405	17.6	1436
17.54	1388	16.86	1350	18.16	1424	17.31	1406	16.36	1353	16.51	1371	16.33	1353	16.51	1381	17.31	1412
17.25	1364	16.54	1320	17.34	1383	16.86	1379	16	1326	16.06	1347	16.06	1331	16.3	1356	16.57	1376
16.95	1334	16.12	1296	17.07	1359	16.6	1354	15.59	1303	15.74	1327	15.74	1306	15.97	1324	16.33	1351
16.51	1309	15.8	1270	16.74	1334	16.15	1329	15.35	1278	15.44	1292	15.38	1278	15.65	1304	15.91	1322
16.3	1287	15.41	1243	16.33	1308	15.71	1305	14.79	1239	14.91	1275	15.12	1253	15.41	1278	15.68	1299
15.59	1248	15.12	1217	15.86	1279	15.47	1282	14.29	1212	14.82	1241	14.46	1225	14.88	1251	15.17	1267
15.23	1228	14.7	1190	15.59	1250	15.23	1255	14.05	1185	14.38	1219	13.99	1188	14.35	1213	14.97	1243
15	1196	14.32	1165	15.17	1223	14.49	1215	13.64	1159	14.17	1195	13.67	1162	14.02	1187	14.64	1219
14.79	1173	13.93	1133	14.73	1195	14.17	1189	13.4	1136	13.81	1172	13.4	1136	13.7	1162	14.14	1188
14.46	1149	13.55	1110	14.49	1172	13.93	1165	13.07	1107	13.43	1144	13.04	1106	13.46	1137	13.61	1168
13.84	1112	13.37	1083	14.38	1151	13.55	1132	12.63	1078	13.22	1119	12.84	1081	13.16	1111	13.49	1133

ENVELOPE C RHEOLOGY DATA

Table 2. 25 °C As Received - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
13.43	1085	12.93	1057	13.99	1127	13.16	1110	12.3	1051	12.42	1076	12.6	1056	12.57	1081	13.28	1107
13.07	1063	12.42	1020	13.46	1088	12.6	1084	11.95	1023	12.27	1049	12.16	1032	12.31	1054	12.9	1085
12.66	1036	12.15	994.6	12.84	1055	12.27	1051	11.74	999.9	11.81	1021	11.77	1008	12.17	1031	12.48	1061
12.53	1003	11.77	968.6	12.69	1032	12.3	1029	11.45	975.7	11.67	996.4	11.42	979.2	11.8	1008	11.95	1021
11.98	980.1	11.35	941.3	12.45	1007	11.97	1007	10.74	937.3	11.37	971.7	10.78	936.5	11.65	978.3	11.62	996.4
11.94	957.6	11.35	919.3	12.09	979.6	11.72	978.8	10.63	912.7	10.87	947.5	10.56	913.5	11.18	949.7	11.49	970.8
11.4	935.6	10.76	895.9	11.65	953.6	11.24	951.9	10.27	889.7	10.82	922.8	10.28	882.2	10.66	925	11.15	940.9
10.82	892.8	10.36	856.7	11.25	928.1	10.76	914	10.13	862.4	9.943	885.8	10.02	857.6	10.62	900.8	10.77	914.9
10.49	869	9.848	831.6	11.09	904.3	10.29	888	9.525	838.2	9.919	861.5	9.715	832.9	9.679	859.8	10.38	887.5
10.04	842.6	9.605	808.7	10.55	879.6	10.1	863.3	9.058	800.3	9.395	832.9	9.505	809.5	9.706	836.4	10.18	863.7
9.827	817.5	9.167	777.4	10.03	839.9	9.88	834.7	9.016	773	9.339	809.5	8.984	785.7	9.28	810.9	9.886	832.9
9.368	785.7	8.96	754	9.877	816.1	9.454	810.4	8.498	747.4	8.842	784.9	8.466	748.3	9.058	779.1	9.436	809.5
9.167	761.9	8.723	733.7	9.59	784.4	8.998	787.9	8.12	728.4	8.56	760.2	8.276	721.8	8.552	751.4	9.123	782.7
9.031	740.3	8.193	692.8	9.064	758.9	8.998	761.5	8.016	697.2	8.451	736.8	8.019	700.7	8.338	728.9	8.927	758.9
8.679	714.8	7.966	669.8	8.617	735.1	8.398	722.3	7.439	671.2	8.084	709.9	7.306	663.7	8.007	700.7	8.566	734.2
8.128	679.1	7.714	645.6	8.626	706.9	7.933	699.8	7.113	643.8	7.433	666.8	7.019	640.3	7.513	676	8.001	693.6
7.906	650.4	7.199	613.4	8.046	680	7.676	675.1	6.992	615.6	6.927	639.4	6.853	617.4	7.258	652.2	7.433	668.5
7.474	626.7	6.737	587.4	7.661	654	7.211	646.5	6.773	591	6.841	611.2	6.8	586.1	7.051	613.9	7.208	643
7.146	604.2	6.619	566.3	7.315	628	6.942	624	6.521	565.8	6.465	588.8	6.536	559.7	6.806	591.8	6.951	618.3
6.613	566.3	6.4	541.6	7.001	603.7	6.761	587	6.122	542	6.22	564.5	6.095	538.1	6.273	561	6.643	593.2
6.403	539	5.666	502.8	6.581	564.5	6.415	562.8	5.69	505.5	5.95	538.1	5.897	510.3	5.941	535.4	6.471	559.7
5.974	515.6	5.352	480.8	6.294	538.1	6.063	533.7	5.37	474.2	5.56	513	5.358	487	5.826	512.1	6.22	536.8
5.483	490.5	5.074	449.1	6.196	528.8	5.823	508.1	5.148	450.4	5.163	485.6	5.092	448.2	5.681	488.3	5.787	515.2
5.187	458.3	5.107	423.5	5.841	500.2	5.577	481.2	4.604	428.3	4.843	446	4.583	423.9	5.201	464.5	5.382	490.5
5.006	434.1	4.849	399.7	5.459	470.6	5.187	460.1	4.598	405	4.453	420.4	4.293	397.9	4.923	437.6	5.199	461.4
4.994	409	4.314	377.2	5.139	438.9	4.817	421.3	3.964	364.9	4.701	411.6	4.352	367.1	4.524	395.3	4.923	440.2
4.657	382.1	3.87	341.1	4.66	412.9	4.299	398.8	3.926	342	4.246	368	3.967	345.5	4.053	373.3	4.293	392.6
4.059	357.8	3.923	313.8	4.183	375.5	4.056	369.3	3.337	307.6	3.612	340.6	3.814	321.3	3.997	341.1	4.58	384.7
4.216	333.6	3.236	287.3	4.284	353	4.166	342	3.378	286	3.595	311.1	3.521	282.9	3.725	316	3.985	345.5
3.473	305.8	3.343	261.3	3.68	324.3	3.524	317.3	2.795	253.8	3.278	290.4	2.858	259.1	3.621	295.3	3.482	312.4
3.556	277.6	3.349	254.7	3.834	303.2	3.651	293.9	0	159.7	3.216	264	2.929	251.2	3.189	271	3.695	290
2.911	253.8	0	173.8	3.171	264.9	2.896	256.9	0	176.4	2.659	243.3	0	169.9	3.127	244.6	3.023	262.2

ENVELOPE C RHEOLOGY DATA

Table 3. 50 °C As Received

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
3.233	314.6	3.42	353.9	2.582	354.3	3.411	308.9	3.1	334	3.352	327	3.352	304.1	4	319.9	3.535	310.7
3.479	320.8	3.444	346.8	3.834	323.9	3.497	311.6	3.769	327.9	3.899	328.7	3.811	315.1	4.166	344.2	4.027	322.6
3.964	342.4	4.059	350.3	3.849	342	4	334.5	4.272	349.9	4.432	355.2	3.917	335.4	4.195	375	4.074	343.7
4.127	364.9	4.219	368.9	4.172	360.9	3.994	351.7	4.32	379.4	4.577	378.1	4.186	363.6	4.542	398.8	4.142	372.4
4.589	403.2	4.755	408.5	4.284	384.7	4.42	380.8	4.397	401.9	4.589	404.1	4.592	400.6	4.684	423.5	4.447	397.5
4.657	427.9	4.867	432.8	4.565	416.4	4.237	406.3	4.586	426.6	4.672	433.6	4.752	428.3	4.758	450.4	4.672	425.7
4.761	459.6	5.009	458.3	4.666	445.5	4.832	432.3	4.837	450.8	5.107	450.4	4.864	449.1	4.829	475.5	4.843	450.8
4.864	482.5	5.204	482.1	4.755	473.3	5.11	483.9	5.024	472.9	5.092	483.9	5.03	475.5	5.335	513.8	4.959	476.4
4.991	506.3	5.308	511.6	5.045	495.8	5.104	506.3	5.349	509	5.305	507.2	5.181	503.3	5.515	536.8	5.101	500.2
5.287	531	5.45	537.6	5.302	515.2	5.471	555.7	5.299	536.8	5.545	543.8	5.19	527.5	5.613	559.7	5.326	529.3
5.477	555.7	5.687	561	5.468	552.6	5.823	580.8	5.521	559.2	5.645	566.7	5.42	553.1	5.645	593.2	5.494	556.6
5.639	579.9	6.137	597.1	5.415	560.5	5.773	605.5	5.66	581.7	5.82	597.1	5.85	590.5	5.719	618.3	5.666	580.8
5.764	603.7	6.252	620.9	5.713	595.8	6.098	632.4	5.82	605.1	6.057	621.4	5.856	621.8	5.876	641.2	5.841	620.9
6.119	648.2	6.368	646.9	6.009	626.2	5.95	654.9	5.897	632.8	6.116	647.8	5.986	643.8	6.036	666.3	6.08	644.7
6.373	677.8	6.527	677.8	6.001	657.5	6.48	680.4	6.128	659.3	6.279	671.2	6.187	667.2	6.288	693.6	6.252	672.5
6.501	701.6	6.711	701.6	6.382	689.2	6.406	703.8	6.385	686.1	6.412	694.1	6.187	696.7	6.634	730.7	6.193	697.6
6.521	726.7	6.749	726.7	6.501	715.7	6.646	753.6	6.592	731.1	6.504	717.9	6.536	724.5	6.61	753.6	6.471	717.9
6.779	749.2	6.956	750.5	6.637	740.3	7.267	778.7	6.862	756.7	6.622	744.3	6.572	753.1	6.82	784	6.734	744.3
7.004	773.4	7.235	775.2	6.871	764.1	7.066	803.8	7.025	784.9	7.093	785.7	6.8	776.9	6.965	806.4	6.909	781.3
6.989	799	7.365	819.7	6.977	790.1	7.412	830.7	7.075	813.1	7.332	811.3	6.939	804.2	7.066	829.4	6.942	803.8
7.51	836.9	7.684	839.9	7.14	817.5	7.329	850.1	7.134	837.7	7.389	840.4	7.033	828.5	7.448	865.9	7.312	829.8
7.522	876.1	7.782	863.3	7.181	845.7	7.652	875.6	7.394	862.9	7.519	865.5	7.335	872.1	7.572	889.3	7.341	865.9
7.522	889.7	7.877	896.3	7.409	873.9	7.566	897.2	7.463	888.4	7.821	892.8	7.309	877.8	7.619	921.5	7.445	891.9
7.829	913.1	8.155	921	7.714	901.2	7.738	947.5	7.72	910.5	7.85	917.5	7.649	908.7	7.841	945.3	7.616	917.5
8.202	945.3	8.214	944.4	7.838	928.5	8.498	969.5	7.924	937.3	8.051	949.7	7.983	945.3	7.877	966.9	7.779	943.1
8.279	975.2	8.344	968.6	7.936	950.1	8.217	995.5	7.966	960.7	8.016	973	8.031	976.6	8.247	1006	7.942	967.7
8.412	995.1	8.856	1006	8.35	990.2	8.478	1021	8.294	1003	8.262	997.3	8.179	1000	8.415	1029	7.983	992.4
8.525	1022	8.978	1032	8.478	1014	8.463	1040	8.445	1029	8.442	1021	8.303	1022	8.611	1051	8.111	1016
8.629	1050	9.138	1059	8.629	1044	8.679	1061	8.64	1053	8.771	1056	8.51	1051	8.723	1076	8.294	1045
8.848	1074	9.214	1083	8.892	1070	8.679	1085	8.705	1078	8.865	1082	8.602	1074	8.806	1108	8.466	1071
8.984	1100	9.404	1107	8.833	1079	9.102	1111	8.91	1108	8.995	1107	8.998	1111	8.948	1130	8.631	1097

ENVELOPE C RHEOLOGY DATA

Table 3. 50 °C As Received - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
9.463	1138	9.442	1130	8.981	1114	8.998	1132	9.084	1138	9.075	1139	9.173	1138	9.161	1155	8.951	1138
9.602	1164	9.904	1169	9.108	1141	9.294	1180	9.217	1163	9.306	1165	9.336	1164	9.309	1181	9.194	1162
9.747	1188	10.12	1194	9.259	1171	9.981	1202	9.321	1188	9.425	1187	9.348	1190	9.348	1207	9.416	1189
9.812	1220	10.32	1218	9.614	1197	9.724	1228	9.549	1215	9.644	1216	9.644	1214	9.765	1244	9.428	1220
10.05	1243	10.41	1250	9.756	1223	10.11	1251	9.759	1239	9.747	1241	9.694	1246	9.824	1278	9.573	1243
10.24	1267	10.58	1274	10.11	1266	10.01	1272	9.886	1268	10.08	1280	9.812	1269	10.06	1302	9.712	1265
10.66	1304	10.7	1303	10.21	1290	10.35	1294	10.23	1296	10.17	1306	9.886	1293	10.13	1327	9.966	1304
10.77	1327	10.84	1329	10.32	1315	10.27	1316	10.34	1320	10.43	1331	10.02	1318	10.39	1352	10.2	1328
10.93	1354	11.11	1353	10.48	1343	10.7	1337	10.74	1357	10.53	1356	10.22	1344	10.46	1377	10.37	1352
11.16	1385	11.26	1375	10.58	1369	10.98	1382	10.81	1382	10.74	1387	10.34	1370	10.68	1400	10.57	1379
11.2	1412	11.64	1412	10.53	1377	10.9	1403	11.04	1410	10.85	1412	10.9	1412	10.9	1425	10.68	1405
11.4	1431	11.81	1439	11.07	1409	11.29	1426	10.96	1416	11.08	1436	10.87	1437	10.95	1453	10.75	1440
11.66	1464	11.98	1464	10.95	1441	11.22	1447	11.42	1467	11.25	1460	11.05	1466	11.18	1478	10.84	1463
11.88	1492	11.99	1492	11.39	1465	11.59	1469	11.45	1493	11.4	1486	11.33	1493	11.54	1519	11.06	1487
11.97	1512	12.24	1518	11.26	1488	11.93	1516	11.69	1517	11.62	1508	11.61	1517	11.72	1544	11.24	1509
11.11	1522	10.87	1516	10.47	1504	10.77	1524	10.24	1517	10.38	1516	10.57	1549	10.32	1528	10.29	1543
10.95	1490	10.7	1491	10.24	1479	10.73	1501	10.1	1486	10.26	1493	10.4	1526	9.957	1504	10.16	1513
10.74	1467	10.47	1469	9.605	1424	10.07	1458	9.999	1466	9.984	1461	9.987	1486	9.916	1479	9.945	1489
10.5	1444	10.03	1428	9.661	1405	10.02	1435	9.797	1444	9.857	1435	9.916	1463	9.386	1434	9.774	1463
10.22	1419	9.818	1407	9.226	1379	9.827	1403	9.419	1403	9.747	1409	9.786	1432	9.365	1411	9.537	1438
9.943	1380	9.602	1383	9.33	1355	9.638	1377	9.306	1379	9.416	1385	9.635	1411	9.217	1379	9.324	1412
9.812	1356	9.54	1354	8.995	1332	9.365	1352	9.084	1352	9.309	1358	9.451	1386	9.028	1356	9.173	1389
9.587	1326	9.348	1332	8.927	1308	9.271	1329	8.945	1324	9.176	1335	9.069	1351	8.913	1332	8.984	1360
9.525	1304	9.22	1309	8.484	1280	9.052	1305	8.83	1301	8.735	1297	8.818	1328	8.824	1308	8.916	1335
9.3	1278	8.871	1271	8.59	1257	8.886	1279	8.572	1276	8.611	1273	8.697	1302	8.501	1271	8.581	1307
9.058	1251	8.694	1245	8.048	1226	8.685	1254	8.371	1252	8.507	1239	8.557	1269	8.377	1248	8.38	1283
8.963	1228	8.56	1216	8.288	1203	8.546	1228	8.3	1223	8.339	1216	8.43	1244	8.285	1218	8.241	1254
8.72	1204	8.321	1190	7.788	1177	8.069	1185	7.779	1184	8.081	1195	8.282	1219	8.025	1195	8.125	1225
8.371	1160	8.27	1167	7.832	1152	7.948	1161	7.619	1159	8.057	1171	8.001	1192	7.835	1171	7.344	1200
8.134	1135	7.779	1132	7.315	1126	7.732	1132	7.48	1134	7.835	1147	7.862	1161	7.531	1133	7.498	1178
7.972	1110	7.643	1105	6.965	1077	7.463	1103	7.3	1108	7.522	1103	7.684	1136	7.32	1110	7.137	1115

ENVELOPE C RHEOLOGY DATA

Table 3. 50 °C As Received - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
7.77	1083	7.471	1081	7.081	1054	7.365	1079	7.016	1078	7.255	1080	7.516	1111	7.178	1083	7.045	1095
7.56	1058	7.391	1053	6.829	1030	7.164	1052	6.862	1054	7.152	1052	7.309	1085	7.039	1056	6.847	1061
7.486	1034	7.11	1029	6.879	1006	7.004	1026	6.909	1021	6.791	1032	7.048	1060	6.877	1027	6.45	992
7.229	1002	6.853	1001	6.625	984.9	6.835	994.6	6.631	998.1	6.808	999.5	6.808	1036	6.708	999.9	6.48	978.8
7.107	976.6	6.734	974.8	6.625	960.2	6.708	971.3	6.566	972.1	6.687	973.5	6.56	996.8	6.489	973.9	6.619	963.8
6.838	950.6	6.625	941.7	6.104	934.7	6.397	947.5	6.365	947.5	6.578	949.7	6.637	974.3	6.45	950.6	6.521	962.5
6.729	928.1	6.356	916.2	6.249	910.9	6.409	923.7	6.193	921.9	6.193	924.6	6.797	973.9	6.261	918.8	5.169	923.2
6.344	886.2	6.228	895.5	5.782	885.3	6.11	896.8	5.956	895.5	6.175	900.3	5.779	943.9	6.045	894.1	5.278	895.9
6.163	867.3	6.113	871.2	5.42	832.9	5.941	869.5	5.796	865.5	5.708	857.6	5.725	904.7	5.861	867.3	5.21	858.5
6.036	836.9	5.773	834.7	5.574	810.9	5.577	829.4	5.16	832	5.642	837.3	5.879	868.6	5.811	841.7	5.373	843.5
5.93	814.8	5.598	812.2	5.065	783.5	5.598	819.7	5.373	814.4	5.338	811.7	5.264	845.2	5.53	819.2	5.24	817.5
5.657	792.3	5.403	780	5.358	761.9	5.492	795	5.104	794.1	5.219	776.9	5.299	788.8	5.373	794.1	5.178	808.7
5.311	754	5.278	758.4	4.837	735.9	5.086	748.7	5.32	760.6	5.166	751.4	5.486	778.7	5.302	768.1	5.086	783.1
5.133	731.1	5.196	734.6	4.891	713	4.799	727.1	5.246	759.3	4.994	728	4.512	760.6	4.98	743	4.974	760.2
5.042	704.7	5.039	706.4	4.636	687.9	4.692	700.7	4.414	722.3	4.823	703.3	4.725	748.3	4.556	701.6	4.701	718.3
4.894	680.9	4.719	668.5	4.734	665	4.687	672.9	3.932	658.8	4.654	680.4	4.725	711.3	4.476	676.9	4.559	693.2
4.74	646.5	4.488	644.3	4.192	637.7	4.37	646.5	4.13	645.2	4.429	653.1	4.9	691	4.491	645.2	4.349	669.4
4.53	624.4	4.37	619.2	3.932	592.3	4.16	615.6	3.902	621.8	4.388	627.1	3.905	660.1	4.299	619.2	4.18	639
4.388	601.5	4.104	587.9	4.056	568.5	4.009	590.1	4.266	588.8	3.964	585.2	3.864	625.3	4.136	596.2	4.006	616.5
4.272	575.5	3.935	563.6	3.636	543.4	3.849	563.6	3.39	561	3.763	559.7	3.763	591.4	3.982	571.1	3.896	584.3
3.973	538.5	3.793	536.8	3.609	521.3	3.822	531.9	3.58	546	3.633	536.8	3.657	565.4	3.846	546.4	3.757	557
3.769	515.6	3.597	510.3	3.358	472.4	3.553	510.3	3.417	514.3	3.458	509.4	3.6	532.8	3.384	506.8	3.597	530.6
3.731	484.3	3.411	485.6	2.976	446.9	3.37	477.7	3.216	487.4	3.254	475.5	3.482	512.1	3.651	496.2	3.491	503.7
3.559	461	3.056	445.5	3.186	416	3.121	452.1	3.133	460.5	3.077	453.5	3.091	475.9	3.396	469.8	3.322	477.7
3.21	424.4	3.012	424.4	2.745	389.1	2.961	424.4	3.077	432.3	3.032	422.2	3.012	453	2.911	423.5	3.038	452.1
2.878	401.5	3	394.9	2.772	371.1	3.174	411.2	2.893	405	2.914	398.8	3.02	424.4	3.009	415.1	2.775	428.3
2.727	376.3	2.721	375.9	1.268	316.4	2.707	372.8	2.615	376.3	2.576	374.6	2.846	401	2.574	371.5	2.843	402.8
2.807	345.1	2.387	339.3	1.408	292.6	2.464	343.7	2.426	350.8	2.653	349	2.547	375	2.437	348.1	2.769	375.5
2.331	327.9	2.502	312			2.168	313.3	2.103	312	2.458	320.4	2.541	350.8	2.452	317.7	2.381	349.9
2.313	292.2	2.156	292.6			2.215	286	2.011	284.7	2.198	297.9	2.381	323.5	2.144	293.5	2.434	324.8
2.05	270.6	2.041	262.2			2.091	266.6	1.834	255.6	1.982	257.4	2.124	298.8	2.159	271.9	2.079	284.2
2.115	249	2.053	255.2			1.813	243.3			2.005	250.3	1.917	253	1.905	249.4	1.766	260.4
												1.846	245.9			1.786	252.1

ENVELOPE C RHEOLOGY DATA

Table 4. Rheometer Response for Blank – Diluted

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
2.984	351.7	2.948	385.2	2.723	375.5	2.563	369.3	2.611	365.3	2.484	367.1	1.812	325.7	1.226	312	1.264	309.4
3.144	376.8	3.291	419.1	2.969	397.9	2.747	394	2.762	391.3	2.658	393.1	2.143	338.4	1.883	320.4	1.841	322.1
3.294	399.3	3.434	447.3	3.078	422.6	2.877	417.8	2.951	416.9	2.892	418.2	2.339	362.2	2.022	338	1.782	330.1
3.442	428.8	3.579	468	3.259	449.1	3.075	438.9	3.078	445.5	3.078	446.9	2.537	386.9	2.262	361.8	2.223	370.6
3.611	453	3.7	498.4	3.398	474.6	3.398	481.7	3.223	477.3	3.155	478.6	2.706	411.6	2.451	388.2	2.401	396.6
3.75	476.8	3.812	522.6	3.727	509.9	3.552	506.8	3.484	501.1	3.306	502.8	2.762	440.7	2.634	420	2.513	421.7
3.94	501.1	3.99	547.3	3.792	539	3.724	531	3.658	525.7	3.481	524.4	2.904	466.7	2.729	444.2	2.791	448.6
4.04	527.9	4.277	582.6	3.934	563.2	3.895	557	3.709	557	3.614	550.4	3.161	488.7	2.922	468	2.856	480.8
4.466	565.4	4.422	606.8	4.064	585.2	4.034	581.7	3.898	579.9	3.706	579.1	3.185	516	3.052	494	3.052	506.3
4.579	590.1	4.543	633.7	4.17	608.6	4.17	614.3	4.064	605.1	3.978	602	3.374	539.4	3.238	518.2	3.164	527.5
4.783	619.6	4.727	660.6	4.378	645.2	4.238	641.2	4.253	631.1	4.286	643.4	3.51	568.5	3.567	558.3	3.303	552.2
4.839	644.7	4.783	683.5	4.437	661	4.386	665.9	4.372	657.1	4.496	668.5	3.824	596.2	3.697	584.3	3.395	576
5.002	666.3	4.898	710.8	4.839	703.3	4.552	689.2	4.674	692.8	4.591	695	3.928	624.4	3.848	606.8	3.801	616.1
5.141	689.7	5.132	734.6	4.907	732	4.721	713.9	4.75	721.4	4.632	725.4	4.212	663.7	3.943	632.8	4.005	643.4
5.186	714.8	5.274	759.3	5.123	754.4	4.81	740.3	4.857	746.5	4.739	747.4	4.372	687	4.093	665.4	4.093	670.3
5.647	754.4	5.351	785.7	5.18	777.4	5.206	778.7	5.035	772.1	4.907	771.6	4.434	717	4.182	692.3	4.203	693.6
5.848	780.4	5.739	825.8	5.286	802.9	5.283	806.4	5.123	797.2	4.943	799.4	4.558	736.4	4.354	716.1	4.369	726.7
5.99	805.6	5.819	849.6	5.455	827.6	5.555	831.6	5.298	819.7	5.177	822.3	4.739	765	4.579	740.3	4.443	750.9
6.041	835.5	5.999	876.1	5.647	854.9	5.635	857.1	5.588	854.5	5.28	849.6	4.827	792.3	4.824	766.3	4.617	775.6
6.251	858.9	6.097	909.1	5.81	878.3	5.739	888.4	5.76	880.5	5.407	877.4	4.961	824.5	5.029	805.6	4.685	804.2
6.343	882.7	6.254	931.2	6.091	920.6	5.854	913.5	5.854	906.5	5.532	902.1	5.156	847.9	5.1	832	4.898	832
6.674	924.6	6.411	952.8	6.242	950.6	5.996	935.6	5.866	932	5.881	943.5	5.186	870.8	5.316	853.6	5.052	859.8
6.878	946.1	6.716	990.7	6.349	975.7	6.165	959.4	6.035	953.6	5.996	965.1	5.328	897.2	5.369	886.7	5.221	883.6
7	972.1	6.831	1014	6.514	999.9	6.266	985.8	6.346	994.2	6.118	999.5	5.695	933.4	5.484	913.1	5.499	909.1
7.248	994.6	6.961	1041	6.71	1020	6.464	1010	6.517	1016	6.171	1024	5.786	962.9	5.624	938.2	5.736	934.2
7.254	1027	7.077	1072	6.84	1053	6.73	1052	6.582	1048	6.298	1048	5.958	988	5.801	965.1	5.931	960.2
7.367	1052	7.257	1089	6.905	1079	6.932	1075	6.739	1070	6.431	1074	6.085	1012	5.955	986.2	6.097	984.9
7.571	1076	7.411	1122	7.118	1103	7.009	1107	6.846	1098	6.556	1100	6.307	1038	6.047	1011	6.482	1026
7.71	1097	7.506	1149	7.387	1143	7.142	1130	7.009	1122	6.775	1124	6.378	1067	6.331	1050	6.52	1055
8.032	1137	7.698	1172	7.565	1166	7.239	1152	7.248	1159	6.819	1148	6.559	1098	6.47	1078	6.642	1080
8.124	1161	7.997	1211	7.689	1197	7.553	1189	7.384	1181	7.213	1189	6.591	1126	6.568	1103	6.837	1104

ENVELOPE C RHEOLOGY DATA

Table 4. Rheometer Response for Blank – Diluted - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
8.263	1193	8.104	1233	7.861	1218	7.701	1215	7.479	1208	7.349	1216	6.822	1148	6.665	1126	6.89	1133
8.509	1216	8.198	1263	7.97	1244	7.834	1240	7.677	1237	7.452	1240	6.899	1175	6.79	1149	6.751	1155
8.553	1240	8.391	1282	8.104	1275	7.911	1270	7.796	1263	7.639	1266	7.065	1201	6.861	1177	6.748	1180
8.944	1277	8.465	1312	8.169	1297	8.148	1293	8	1286	7.825	1294	7.18	1228	7.121	1201	6.917	1207
9.053	1299	8.642	1338	8.334	1321	8.331	1318	8.104	1310	7.917	1319	7.284	1256	7.219	1228	7.204	1242
9.08	1329	8.758	1360	8.473	1345	8.355	1348	8.186	1337	7.973	1342	7.447	1279	7.55	1270	7.337	1268
9.181	1356	9.056	1400	8.562	1373	8.438	1374	8.385	1363	8.127	1366	7.55	1305	7.757	1294	7.31	1299
9.435	1381	9.083	1408	8.725	1400	8.66	1398	8.462	1387	8.302	1393	7.876	1346	7.879	1319	7.414	1324
9.545	1407	9.175	1434	8.882	1427	8.74	1425	8.616	1419	8.405	1421	8.047	1371	7.893	1349	7.621	1349
9.66	1431	9.574	1478	9.252	1468	8.95	1450	8.778	1445	8.802	1463	8.186	1395	7.902	1374	7.757	1374
9.873	1455	9.713	1510	9.335	1492	9.127	1482	9.169	1487	8.932	1487	8.275	1423	8.041	1401	7.959	1399
10.26	1493	9.867	1525	9.432	1523	9.278	1509	9.252	1513	9.056	1512	8.34	1455	8.213	1425	7.973	1426
10.39	1519	10.04	1558	9.583	1543	9.441	1534	9.4	1538	9.157	1540	8.533	1475	8.34	1450	7.864	1633
8.512	1512	8.302	1482	8.37	1519	8.118	1533	7.571	1487	7.586	1510	7.423	1510	7.654	1592	7.701	1563
8.482	1486	8.308	1473	8.169	1495	7.825	1493	7.627	1480	7.411	1483	7.497	1495	7.544	1567	7.639	1549
8.281	1462	7.944	1434	7.908	1456	7.612	1467	7.094	1436	7.233	1458	7.606	1481	7.373	1543	7.666	1544
8.065	1437	7.811	1404	7.725	1433	7.494	1443	7.118	1421	7.103	1434	6.582	1440	7.307	1511	7.103	1522
8.012	1404	7.698	1381	7.689	1403	7.287	1419	7.204	1384	7.023	1401	6.701	1425	7.213	1490	7.171	1510
7.808	1382	7.571	1358	7.666	1363	7.251	1387	6.387	1354	6.84	1376	6.671	1387	7.115	1467	6.991	1462
7.781	1356	7.435	1334	6.736	1332	6.961	1364	6.565	1340	6.745	1352	6.887	1361	7.011	1444	6.852	1436
7.553	1331	7.331	1308	6.926	1316	6.795	1336	6.411	1308	6.594	1329	6.156	1334	6.872	1413	6.751	1414
7.482	1289	7.142	1283	6.991	1257	6.819	1302	6.112	1263	6.304	1291	6.301	1317	6.647	1388	6.547	1386
6.674	1264	6.887	1256	7.059	1255	6.597	1277	6.035	1249	6.091	1264	6.124	1295	6.434	1359	6.488	1355
6.79	1250	6.612	1214	6.233	1233	6.354	1259	5.925	1227	5.985	1238	6.207	1285	6.31	1336	6.322	1330
6.787	1215	6.417	1189	6.062	1151	6.147	1229	5.979	1216	5.807	1214	5.899	1244	6.076	1297	6.138	1304
6.905	1192	6.292	1157	6.094	1135	5.996	1199	6.053	1175	5.76	1181	5.84	1218	5.925	1266	6.109	1279
6.186	1164	6.204	1133	6.133	1128	5.881	1173	6.047	1174	5.6	1155	5.683	1192	5.825	1243	5.961	1254
6.31	1147	6.094	1108	5.857	1089	5.706	1144	5.292	1118	5.479	1131	5.606	1161	5.745	1213	5.606	1215
5.745	1106	5.931	1085	5.931	1073	5.662	1111	5.177	1086	5.351	1108	5.443	1135	5.484	1186	5.413	1190
5.686	1092	5.777	1060	5.144	1056	5.428	1087	5.135	1054	5.156	1083	5.328	1112	5.313	1160	5.336	1162
5.644	1047	5.467	1022	4.816	1030	5.316	1063	5.046	1030	5.073	1057	5.174	1087	5.242	1138	5.162	1137

ENVELOPE C RHEOLOGY DATA

Table 5. 25 °C Diluted

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
4.883	302.7	5.925	367.5	5.078	309.4	4.303	304.5	4.303	330.5	4.339	308	4.682	328.3	5.084	305.4	4.211	305
5.315	313.3	6.463	395.3	5.309	321.3	5.247	312	5.454	323.5	5.51	318.2	5.653	327.9	5.54	322.6	5.247	320.8
6.088	348.1	6.833	428.8	5.99	340.2	5.434	334	5.676	339.8	5.661	337.1	5.59	341.5	5.478	344.6	5.457	344.6
6.582	371.1	6.972	448.2	6.15	361.8	5.638	361.4	5.892	361.4	5.883	366.2	6.135	367.5	6.073	371.5	5.567	368.4
6.694	396.2	7.405	481.2	6.238	386.5	6.2	397.9	6.561	387.4	6.318	391.3	6.594	397.5	6.555	395.3	6.014	397.1
6.934	423.5	7.511	507.2	6.65	412.5	6.549	424.4	6.819	410.7	6.821	413.4	6.916	420.4	6.653	422.6	6.378	421.7
7.191	449.9	7.703	530.6	7.15	438.9	7.109	447.3	6.91	435.8	6.777	438.5	7.017	447.3	6.712	446	6.703	450.8
7.49	482.1	7.955	555.7	7.378	479	7.345	473.3	7.049	461.4	7.514	481.2	7.126	472.9	7.446	485.2	6.978	477.3
7.745	506.3	8.106	578.6	7.763	501.9	7.476	504.6	8.05	503.3	7.754	499.7	7.464	494.4	7.751	511.6	7.342	504.6
8.079	530.1	8.535	617.8	8.008	529.3	7.834	529.3	8.061	524.9	7.866	525.3	7.733	520.4	8.008	536.3	7.538	531.5
8.248	555.3	8.683	644.7	8.159	554.8	8.047	553.5	8.408	557	8.059	549.1	8.479	561.9	8.28	564.5	7.842	559.2
8.402	580.4	9.248	672.9	8.476	585.7	8.201	579.1	8.615	580.4	8.254	586.1	8.65	585.7	8.529	591.8	8.05	584.8
8.677	606.8	9.183	699.4	8.81	609.9	8.307	604.6	8.766	603.7	8.692	605.1	8.819	611.7	8.757	615.2	8.215	608.6
9.296	644.7	9.506	725.8	9.097	633.3	8.426	630.6	8.852	628.9	8.884	639.4	8.908	639	8.866	639	8.159	635.9
9.355	668.5	9.828	750.5	9.408	657.5	8.653	652.7	9.112	651.3	9.233	663.2	9.278	664.5	9.011	661	8.801	676.4
9.858	700.7	9.769	773.4	9.497	681.3	9.299	698	9.183	677.3	9.269	690.5	9.5	696.3	9.574	698	8.884	686.1
9.781	724.5	10.33	816.6	9.805	724	9.66	721	9.748	705.5	9.452	718.3	9.562	717.9	9.52	723.2	9.301	711.3
10.05	749.6	10.07	825	10.14	749.2	9.568	750.9	10.13	745.6	9.923	741.7	9.722	742.1	10.01	750.9	9.745	753.1
10.43	771.2	10.63	848.8	10.32	775.6	9.911	774.3	10.19	775.6	10.04	764.6	10.25	765.9	9.967	782.2	10.2	781.3
10.32	798.5	10.83	891.5	10.67	804.7	10.02	799.8	10.48	798.1	9.982	789.3	10.48	807.3	10.21	809.1	10.25	806
10.91	823.6	11.14	918.4	10.6	828	10.35	829.8	10.33	821	10.69	830.7	10.72	829.8	10.53	828.9	10.63	831.6
11	853.2	11.55	943.5	10.88	851.4	10.6	855.4	10.82	847.4	10.66	855.4	10.79	859.3	10.73	855.8	10.65	862.9
11.18	881.4	11.65	967.7	10.98	876.1	10.82	888.4	11.13	884	10.76	885.8	11.18	883.1	10.76	891.1	10.78	885.8
11.38	906.9	11.76	994.6	11.49	914.9	10.7	911.8	11.41	908.2	11.17	908.7	11.37	910.5	11.21	916.2	11.13	912.7
11.96	949.2	12.17	1025	11.54	939.1	11.15	936.5	11.44	936.5	11.15	929.8	11.46	935.6	11.17	939.1	11.13	936.5
12	972.6	12.31	1055	11.91	962	11.3	962.9	11.47	959.8	11.53	974.3	11.74	958.9	11.53	966.9	11.34	963.8
12.19	998.1	12.32	1081	11.96	992.9	11.33	985.4	11.78	985.8	11.89	996.8	11.75	991.1	11.61	994.6	11.58	993.3
12.45	1028	12.59	1107	12.2	1019	11.75	1025	12.2	1010	11.92	1018	12.16	1012	11.76	1022	12.04	1022
12.44	1051	12.84	1130	12.41	1044	11.67	1035	12.04	1032	12.24	1051	12.51	1053	11.97	1046	11.96	1047
12.71	1076	12.95	1154	12.51	1066	12.13	1075	12.68	1076	12.44	1076	12.36	1074	12.15	1072	12.13	1070
12.97	1099	12.81	1182	12.8	1093	12.21	1101	12.81	1103	12.5	1097	12.51	1097	12.61	1111	12.3	1096

ENVELOPE C RHEOLOGY DATA

Table 5. 25 °C Diluted - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
13.3	1137	13.05	1205	12.89	1120	12.5	1133	13	1126	12.77	1123	12.83	1122	12.84	1136	12.72	1134
13.35	1165	13.62	1247	13.22	1159	12.74	1159	13.23	1152	13.08	1162	13.07	1148	13.02	1167	12.97	1166
13.62	1188	14.12	1272	13.37	1182	12.7	1185	13.19	1180	13.26	1185	13.46	1187	13.29	1188	13.13	1185
13.89	1213	14.45	1298	13.54	1211	12.89	1209	13.45	1205	13.46	1211	13.57	1215	13.37	1212	13.23	1217
14.02	1245	14.52	1329	13.57	1240	13.07	1234	13.56	1229	13.57	1236	13.77	1241	13.49	1244	13.46	1245
14.23	1267	14.76	1351	13.89	1265	13.44	1259	13.79	1253	13.7	1267	13.86	1270	13.72	1267	13.78	1263
14.45	1291	14.92	1375	14.13	1293	13.6	1300	14.1	1294	13.86	1295	14.17	1296	13.82	1294	13.97	1300
14.8	1330	15.21	1398	14.12	1318	13.96	1325	14.24	1317	14.06	1321	14.24	1325	13.98	1318	13.9	1325
15	1352	15.48	1436	14.4	1341	13.96	1352	14.41	1347	14.21	1344	14.38	1352	14.2	1343	14.23	1351
15.12	1383	15.53	1447	14.56	1366	14.15	1376	14.53	1370	14.47	1368	14.56	1374	14.54	1382	14.34	1377
15.14	1408	15.89	1490	14.79	1392	14.38	1401	14.72	1394	14.59	1394	14.74	1400	14.69	1407	14.69	1402
15.51	1433	16.15	1519	15.2	1431	14.74	1430	14.81	1422	14.92	1417	14.97	1426	14.89	1439	14.63	1425
15.54	1458	16.29	1544	15.28	1456	14.83	1453	15.4	1457	14.93	1445	15.3	1464	14.96	1464	14.84	1450
15.79	1483	16.27	1567	15.56	1486	14.8	1487	15.38	1479	15.34	1481	15.43	1489	15.18	1491	15.31	1491
15.98	1508	16.75	1603	15.78	1509	15.08	1511	15.67	1512	15.47	1515	15.72	1513	15.41	1515	15.64	1519
14.94	1501	14.47	1466	15.15	1574	15.27	1577	15.12	1551	14.88	1543	15.06	1577	14.82	1547	14.56	1548
14.62	1456	14.32	1440	14.88	1550	15.15	1549	14.59	1511	14.74	1518	14.71	1540	14.56	1523	14.38	1525
14.71	1448	14.05	1405	14.82	1518	14.94	1527	14.29	1484	14.38	1496	14.5	1516	14.32	1495	14.32	1504
14.02	1408	13.76	1386	14.65	1493	14.71	1503	14.11	1460	14.2	1473	14.38	1493	14.17	1473	13.91	1464
13.85	1385	13.55	1359	14.35	1467	14.38	1477	14.02	1434	13.7	1431	14.11	1460	13.61	1430	13.76	1433
13.76	1354	13.26	1328	14.2	1441	14.38	1453	13.82	1404	13.64	1408	13.97	1438	13.88	1422	13.43	1411
13.61	1331	13.26	1306	14.08	1419	13.91	1412	13.7	1377	13.49	1381	13.7	1411	13.31	1378	13.26	1388
13.2	1296	12.96	1280	13.64	1380	13.7	1387	13.52	1352	13.23	1356	13.55	1387	13.05	1354	12.93	1351
13.02	1273	12.57	1241	13.37	1356	13.43	1359	13.17	1329	12.99	1329	13.34	1364	12.87	1323	12.66	1328
12.72	1247	12.47	1218	13.2	1332	13.28	1336	12.9	1304	12.84	1300	12.99	1325	12.75	1299	12.43	1304
12.52	1216	12.29	1188	13.02	1299	13.02	1306	12.87	1276	12.66	1274	12.75	1300	12.59	1275	12.36	1278
12.2	1192	12.04	1163	12.87	1274	12.72	1282	12.63	1251	12.57	1248	12.67	1268	12.48	1250	12.11	1251
12.04	1165	11.82	1139	12.64	1252	12.66	1256	12.43	1226	12.28	1222	12.24	1247	12.28	1226	12.03	1225
11.88	1141	11.62	1116	12.23	1214	12.48	1223	12.03	1184	12.04	1196	12.11	1221	11.82	1184	11.64	1192
11.85	1110	11.46	1092	12.03	1189	12.31	1200	11.71	1162	11.84	1171	12.07	1190	11.58	1161	11.5	1169
11.63	1084	11.4	1063	11.7	1164	12.12	1174	11.6	1130	11.73	1144	11.76	1169	11.65	1132	11.41	1145

ENVELOPE C RHEOLOGY DATA

Table 5. 25 °C Diluted - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
11.35	1059	11.11	1033	11.58	1141	11.84	1143	11.3	1103	11.57	1116	11.71	1140	11.38	1106	11.19	1115
11.04	1036	10.92	1003	11.47	1110	11.44	1118	11.1	1079	11.04	1077	11.56	1114	11.18	1080	10.85	1092
10.97	1010	10.66	976.1	11.22	1086	11.34	1089	10.99	1052	10.93	1050	11.36	1089	10.9	1054	10.56	1053
10.73	982.7	10.38	946.6	11.06	1062	11.09	1065	10.91	1029	10.95	1040	11.12	1063	10.8	1026	10.48	1028
10.63	958.5	9.964	922.8	10.76	1021	10.94	1041	10.69	1003	10.48	1008	10.83	1038	10.55	1001	10.3	997.7
10.12	912.7	10	896.3	10.64	998.6	10.81	1015	10.37	977	10.38	978.8	10.3	997.3	10.15	977	10.22	972.6
9.66	891.5	9.426	858.9	10.37	971.3	10.33	977	10.12	938.7	9.97	939.1	9.97	967.7	9.976	948.3	9.87	947.9
9.583	865.5	9.491	832	9.958	945.7	10.05	951	9.852	914	9.58	916.2	9.885	945.3	9.855	921.5	9.668	924.1
9.408	842.6	8.958	807.8	9.837	915.3	10.01	926.3	9.541	891.5	9.615	891.1	9.745	913.1	9.704	894.1	9.692	897.7
9.37	810.9	8.858	783.1	9.63	888.4	9.92	895.9	9.287	857.1	9.287	864.6	9.411	890.6	9.393	873	9.124	860.7
9.103	789.3	8.559	750	9.331	866.8	9.506	873.4	9.023	834.2	9.08	835.1	9.299	865.5	8.822	831.1	8.763	836.4
8.855	761.9	8.42	727.1	9.183	840.8	9.393	843.9	8.816	802	8.949	809.5	9.26	836.9	8.677	804.2	8.488	806.4
8.671	739.5	8.322	698.9	9.133	810.9	9.014	820.1	8.881	776.9	8.665	782.7	8.769	813.5	8.375	780.4	8.384	781.8
8.221	698	7.837	670.7	8.979	788.4	9.103	793.7	8.624	752.7	8.399	757.1	8.884	784	8.346	756.2	8.328	756.7
8.053	672.9	7.502	646.5	8.485	750	8.636	769.9	8.192	727.1	8.414	732.4	8.331	759.3	7.952	724.5	7.902	732.4
7.668	649.6	7.227	623.1	8.076	723.6	8.159	730.2	7.94	704.2	7.967	701.1	8.121	732	7.931	697.6	7.97	699.4
7.316	618.3	7.011	602	7.976	699.4	8.156	700.7	7.484	664.1	7.866	673.4	8.135	707.7	7.615	668.5	7.561	674.7
7.15	593.6	6.706	557	7.878	670.7	8.109	675.6	7.283	641.6	7.552	645.2	7.727	682.6	7.171	642.5	7.135	649.1
7.085	565	6.611	537.2	7.517	646.5	7.635	651.3	7.085	616.5	7.186	617.8	7.339	642.1	6.964	618.7	6.904	622.7
6.733	542	6.301	505	7.301	621.8	7.443	628.4	7.188	583.9	6.816	589.2	7.236	617.4	6.742	595.4	6.795	596.2
6.771	511.2	6.224	482.5	7.07	592.7	7.091	602.4	6.925	559.7	6.487	564.1	6.671	586.1	6.549	567.6	6.531	572.9
6.277	482.1	6.022	457	6.576	571.1	6.816	577.7	6.688	534.5	6.244	539.4	6.543	561.9	6.23	543.8	6.292	534.1
5.786	456.1	5.434	431.9	6.52	548.2	6.715	554.4	6.321	510.3	6.052	513.8	6.209	535.4	6.022	505	6.111	510.8
5.451	433.6	5.102	405.9	6.283	507.7	6.321	509.4	6.028	482.1	5.62	476.8	6.011	509.4	5.783	477.3	5.806	485.6
5.519	408.1	5.229	383.8	5.676	486.1	5.874	485.6	5.502	457.9	5.33	451.3	5.478	473.7	5.434	456.1	5.508	456.5
5.289	381.2	4.717	355.6	5.537	455.2	5.46	461.4	5.111	421.7	5.209	426.1	5.389	452.1	5.143	424.4	5.031	431.9
4.62	357	4.306	329.6	5.294	430.5	5.342	432.8	5.061	397.5	5.182	398.4	5.232	443.3	5.164	399.7	5.075	408.5
4.051	318.6	4.022	289.1	5.493	409.8	5.407	406.8	4.907	371.5	4.484	376.3	4.889	410.3	4.732	376.3	4.418	366.2
4.214	287.3	3.403	264.9	4.913	385.2	5.167	379.4	4.531	338	4.235	342.9	4.501	365.3	4.324	349.5	4.359	357.8
3.534	266.6	3.696	255.6	4.599	359.2	4.492	357.4	3.948	312	4.392	316.9	4.528	347.3	4.398	322.6	3.664	316.9
3.605	243.7			4.001	317.7	4.67	332.3	4.054	289.5	3.702	292.2	4.229	317.3	3.788	286.4	3.895	292.2

ENVELOPE C RHEOLOGY DATA

Table 6. 50 °C Diluted

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
3.977	305.4	3.673	342.9	2.776	374.6	3.788	307.6	4.605	325.2	4.705	343.3	4.294	327.9	4.383	328.7	3.661	312.4
4.146	318.6	4.078	327.9	3.803	331	4.214	318.6	4.67	347.7	5.138	367.1	4.694	346.4	4.815	347.7	4.578	330.5
4.646	340.2	4.513	348.6	4.282	324.8	4.765	336.7	5.084	368.4	5.36	396.6	4.815	367.5	4.951	365.8	4.664	349.9
4.75	361.4	5.01	370.2	4.88	353	4.856	364.9	5.309	390.9	5.445	421.3	5.164	393.1	5.324	388.7	4.998	372.8
5.454	401	5.031	392.2	5.327	371.5	5.138	389.6	5.842	430.1	5.653	446	5.584	418.6	5.508	413.8	5.36	399.7
5.694	423.5	5.185	416.9	5.407	396.6	5.596	414.2	5.869	451.7	5.969	469.3	5.771	445.5	5.629	438.9	5.36	420.4
5.937	455.2	5.552	442.4	5.617	427.5	5.806	440.7	6.238	485.2	6.212	496.6	6.102	475.1	5.886	468.4	5.564	448.2
6.315	475.5	5.928	481.7	5.866	451.7	6.247	479	6.395	509	6.499	521.8	6.333	500.2	6.141	494	5.602	473.7
6.57	499.3	6.197	506.8	6.218	474.2	6.469	506.3	6.517	532.8	6.688	548.2	6.543	526.6	6.739	532.3	5.824	500.6
6.848	538.5	6.434	534.1	6.478	511.6	6.676	531.5	6.762	558.3	7.236	593.2	6.742	551.7	7.02	558.3	6.529	539
7.129	568.9	6.632	558.3	6.623	539	6.916	557.5	6.996	582.6	7.511	615.6	7.064	591	6.955	591.4	6.816	564.5
7.484	591	6.866	584.3	6.952	566.3	7.049	586.1	7.313	624	7.629	637.7	7.251	617	7.257	623.1	7.079	591
7.81	620.5	7.2	617.4	7.18	591.4	7.366	615.6	7.544	644.3	7.623	668.5	7.437	641.2	6.934	634.1	7.203	620.9
8.026	643	7.319	645.2	7.402	613.4	7.632	641.6	7.828	671.2	7.851	691.4	7.733	671.2	8.695	688.8	7.393	647.8
8.097	674.7	7.517	670.3	7.766	639.9	7.751	669.4	7.979	699.8	8.15	714.8	7.754	694.5	8.485	719.2	7.591	672
8.375	698	7.795	694.1	7.896	663.2	7.881	691	8.073	725.4	8.153	743.4	8.097	715.7	8.659	762.8	7.538	687
8.653	722.7	8.091	717.4	8.067	686.6	8.067	713	8.479	750	8.609	781.8	8.337	747	8.39	802.5	8.085	729.3
8.665	748.3	8.053	746.5	8.461	729.3	8.541	754.4	8.464	774.7	8.929	806	8.562	776	9.233	829.8	7.955	742.1
8.935	769.4	8.428	773.4	8.798	755.3	8.701	782.2	8.683	799	8.902	830.2	8.671	808.7	9.216	844.8	8.307	768.1
9.529	809.5	8.565	796.3	8.896	779.1	8.905	806.9	9.13	840.8	9.275	857.6	8.985	828.9	9.414	868.6	8.716	812.2
9.47	837.7	8.976	835.1	9.177	810.4	9.103	838.2	9.301	865.5	8.887	879.2	9.133	861.5	9.094	896.8	8.94	836.9
9.799	863.7	9.041	863.7	9.299	831.1	9.343	864.2	9.414	889.7	9.858	901.6	9.23	885.8	9.95	929	9.032	863.7
9.944	886.2	9.281	886.2	9.328	853.2	9.458	888	9.704	916.2	9.739	919.7	9.509	910	9.825	943.5	9.31	888
10.1	910.9	9.58	914.9	9.695	895.9	9.686	911.3	9.849	947.5	9.899	958.9	9.559	937.8	10.01	964.7	9.423	920.6
10.43	934.7	9.677	937.3	10.09	919.3	9.908	935.6	10.04	973	10.54	998.6	9.713	968.6	10.11	974.8	9.452	943.9
10.71	975.7	9.873	961.1	10.17	949.2	10.01	962	10.12	998.1	10.3	1014	10.06	990.7	10.25	995.9	9.642	966
10.86	999	10	989.3	10.23	974.3	10.38	1002	10.33	1022	10.65	1040	10.08	1018	10.25	1019	10.01	1004
10.97	1030	10.34	1014	10.42	997.7	10.4	1010	10.65	1063	10.92	1080	10.34	1040	10.42	1046	10.15	1031
11.28	1046	10.68	1056	10.62	1023	10.4	1050	10.84	1092	11	1094	10.44	1072	10.79	1074	10.18	1053
11.44	1076	10.77	1079	10.87	1049	10.45	1051	10.77	1097	11.21	1119	10.69	1096	10.85	1101	10.31	1076
11.73	1105	10.81	1120	11.15	1073	11.05	1092	11.24	1136	10.97	1149	11.06	1140	10.88	1134	10.67	1113

ENVELOPE C RHEOLOGY DATA

Table 6. 50 °C Diluted - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
12.08	1134	11.86	1147	11.41	1114	11.05	1140	11.42	1168	11.84	1174	11.02	1149	11.03	1160	10.8	1140
12.23	1159	11.75	1174	11.6	1139	10.96	1142	11.54	1192	11.8	1189	11.3	1191	11.3	1186	11.03	1167
12.33	1189	12.42	1234	11.83	1162	11.67	1173	11.64	1218	11.83	1232	11.45	1215	11.44	1211	11.2	1193
12.49	1212	12.36	1249	11.99	1185	11.67	1204	11.85	1247	11.96	1259	11.64	1244	11.59	1239	11.35	1219
12.66	1241	12.68	1276	12.03	1215	11.7	1228	12.06	1270	12.18	1288	11.74	1267	11.78	1262	11.44	1248
12.93	1267	12.55	1304	12.18	1238	12.27	1253	12.09	1292	12.42	1327	11.89	1293	11.96	1286	11.59	1274
13.18	1292	13.34	1337	12.38	1263	12.43	1283	12.21	1318	12.61	1352	12.11	1317	12.03	1314	11.58	1301
13.28	1320	13.18	1357	12.73	1302	12.2	1315	12.52	1359	12.76	1378	12.31	1355	12.3	1339	11.85	1326
13.39	1342	13.9	1398	12.82	1326	12.12	1315	12.73	1382	12.91	1402	12.49	1377	12.43	1367	11.93	1352
13.89	1385	13.86	1419	12.9	1351	12.92	1355	12.88	1412	12.94	1434	12.67	1404	12.73	1412	12.46	1386
14.05	1409	13.97	1452	13.12	1382	13.02	1394	13.14	1434	13	1460	12.67	1434	12.94	1430	12.49	1413
14.06	1434	13.89	1463	13.3	1405	13.14	1423	13.3	1470	13.24	1486	12.9	1462	13.1	1457	12.62	1440
14.37	1465	14.08	1485	13.6	1430	13.47	1465	13.45	1498	13.42	1510	13.04	1488	13.22	1487	12.85	1459
14.47	1491	14.05	1494	13.65	1459	13.59	1488	13.28	1506	13.68	1537	13.16	1513	12.36	1571	12.15	1570
14.74	1515	14.21	1510	13.91	1485	13.8	1512	13.73	1535	13.81	1561	13.3	1536	12.17	1546	11.99	1543
13.1	1542	12.81	1537	12.73	1547	12.47	1524	12.04	1482	11.6	1456	11.96	1518	12.06	1524	11.73	1518
12.98	1516	12.67	1507	12.61	1521	12.31	1498	11.84	1455	11.62	1431	11.86	1494	11.85	1503	11.63	1490
12.8	1491	12.49	1486	12.45	1497	12.15	1469	11.62	1430	11.44	1406	11.7	1468	11.51	1462	11.47	1461
12.58	1464	12.17	1461	12.28	1476	11.81	1443	11.44	1408	11.33	1382	11.55	1443	11.37	1440	11.12	1442
12.45	1437	12.02	1429	11.85	1436	11.78	1417	11.33	1373	11.14	1355	11.34	1416	11.3	1409	11.03	1406
12.27	1408	11.94	1407	11.66	1411	11.53	1392	11.13	1349	10.96	1330	11.08	1387	11.02	1384	10.96	1382
12.12	1382	11.81	1382	11.53	1380	11.22	1353	11.01	1323	10.75	1307	11.03	1355	10.64	1350	10.74	1353
11.78	1359	11.41	1344	11.43	1357	10.95	1327	10.7	1300	10.25	1267	10.8	1334	10.65	1324	10.49	1329
11.74	1334	11.23	1315	11.36	1332	10.85	1300	10.63	1276	10.22	1243	10.69	1305	10.41	1298	10.39	1306
11.52	1310	11.24	1289	11.11	1308	10.49	1274	10.22	1239	10.06	1211	10.48	1282	10.43	1288	10.2	1280
11.34	1284	11.01	1265	10.74	1269	10.57	1244	10.13	1212	9.87	1187	10.31	1256	10.26	1261	10.12	1256
10.93	1245	10.79	1243	10.53	1243	10.2	1225	9.964	1183	9.606	1162	10.16	1230	9.769	1217	9.671	1215
10.77	1223	10.46	1217	10.39	1223	10.2	1190	9.802	1159	9.447	1137	9.953	1204	9.559	1194	9.55	1189
10.58	1192	10.31	1192	10.22	1189	9.982	1166	9.636	1134	9.411	1109	9.71	1176	9.532	1161	9.334	1166
10.46	1170	10.22	1166	10.12	1164	9.674	1142	9.319	1108	9.103	1084	9.319	1137	9.438	1137	9.148	1138
10.27	1144	9.793	1125	9.825	1140	9.538	1118	9.278	1084	8.855	1059	9.248	1112	9.165	1111	9.074	1106

ENVELOPE C RHEOLOGY DATA

Table 6. 50 °C Diluted - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
10	1120	9.636	1097	9.609	1116	9.408	1094	8.917	1045	8.787	1029	9.05	1081	9.08	1085	8.872	1081
9.683	1083	9.358	1074	9.39	1092	9.18	1067	8.713	1022	8.535	1003	8.858	1056	8.899	1060	8.73	1057
9.452	1054	9.263	1051	9.148	1052	8.792	1026	8.544	995.1	8.352	977.4	8.742	1034	8.689	1034	8.526	1034
9.174	1028	9.156	1019	9.026	1029	8.576	999.5	8.387	966	8.076	933.4	8.689	1007	8.494	1007	8.301	1007
9.177	1004	8.887	994.2	8.837	1003	8.464	975.7	8.218	943.1	7.754	910.9	8.396	984	8.301	980.1	8.31	981.4
9.009	974.3	8.633	967.7	8.686	970.8	8.375	943.1	8.183	916.6	7.887	901.6	8.204	960.7	8.026	955	7.774	941.7
8.76	945.7	8.541	943.9	8.473	944.4	8.106	917.5	7.754	892.8	7.47	856.2	8.014	933.8	7.715	910.5	7.632	915.3
8.497	920.1	8.201	919.7	8.218	923.7	7.955	893.7	7.712	867.3	7.126	833.8	7.659	890.6	7.449	889.7	7.526	891.9
8.272	895.9	7.955	878.7	8.138	896.8	7.866	865.1	7.464	840.4	7.129	800.7	7.381	862.4	7.425	865.1	7.354	862.4
7.993	870.8	7.635	857.6	7.863	873	7.499	843	7.268	814.8	6.836	777.4	7.268	836	7.076	839.9	7.171	836
7.925	847.4	7.603	831.6	7.588	828.9	7.313	818.3	6.756	774.7	6.679	756.7	6.946	809.1	6.958	809.1	6.928	810.4
7.609	821.4	7.277	800.3	7.262	808.2	7.079	778.2	6.638	748.3	6.31	717	6.765	781.3	6.827	786.2	6.842	787.5
7.236	780	7.286	774.7	7.061	783.1	6.884	756.2	6.455	718.3	6.227	692.3	6.472	754.9	6.768	762.8	6.626	762.4
6.955	754.9	7.029	752.7	6.999	756.7	6.682	726.2	6.274	696.3	6.025	665.4	6.416	732	6.449	734.6	6.238	722.7
6.863	724.5	6.564	713	6.7	731.1	6.52	702	6.144	665.9	5.67	641.2	6.298	705.1	6.301	707.7	5.898	699.4
6.878	699.4	6.301	689.2	6.529	701.1	6.404	677.8	6.025	640.8	5.46	611.2	5.934	675.6	6.058	686.1	5.901	672.5
6.514	674.2	6.147	664.5	6.487	676	6.019	649.6	5.806	616.5	5.389	585.7	5.789	650.9	5.694	642.5	5.795	646.5
6.197	651.8	6.055	631.5	6.212	652.7	5.732	624.9	5.682	593.2	5.126	561	5.62	630.6	5.466	618.7	5.543	620.5
5.987	627.1	5.721	609	5.969	626.7	5.54	597.6	5.374	567.6	4.998	532.3	5.291	591.4	5.336	595.8	5.141	587.4
5.866	602.4	5.605	582.1	5.676	602.4	5.362	560.5	4.697	527.5	4.691	508.5	5.173	566.7	5.108	566.7	4.972	563.6
5.549	561.9	5.274	555.3	5.362	559.7	5.105	539.4	4.632	503.7	4.463	481.7	4.922	537.2	4.871	539.8	4.865	542
5.28	537.2	5.141	531.5	5.164	535	4.874	511.6	4.38	472	4.344	456.5	4.948	516.5	4.833	508.1	4.922	518.7
5.12	506.8	4.939	499.7	4.948	507.7	4.629	486.5	4.38	447.3	3.85	418.2	4.643	492.2	4.611	485.2	4.608	490
4.916	483.9	4.771	472	4.655	479.9	4.309	458.3	4.226	423.9	3.756	394	4.238	453.9	4.241	459.6	4.418	465.4
4.534	459.2	4.537	447.7	4.336	462.7	4.099	426.1	3.88	395.3	3.504	368.9	4.155	426.6	4.028	435.4	3.821	420.9
4.262	433.6	4.262	420	4.134	428.3	3.85	402.3	3.445	371.5	3.196	336.2	3.788	401.9	3.531	397.5	3.794	396.2
4.182	409	3.862	395.7	4.161	404.5	3.714	375.9	3.439	341.1	3.149	311.6	3.593	376.8	3.48	373.3	3.359	374.1
3.658	368.9	3.824	370.6	3.747	381.6	3.427	349.5	3.104	313.8	2.773	285.6	3.557	349	3.246	349	3.193	342
3.498	346.4	3.492	346.4	3.451	356.1	3.232	327.4	2.912	290.9	2.675	259.6	3.09	325.7	2.9	317.3	2.989	327
3.122	318.6	2.9	308	3.048	316.4	2.897	287.3	2.607	265.7	2.243	234.9	3.06	302.3	2.954	290	2.637	289.1
3.081	292.2	3.004	286.4	3.019	287.3	2.45	267.1	2.516	241.5	0	153	2.619	273.7				
2.604	262.2	2.545	255.2	2.619	263.1	2.542	234.9	0	151.9	0	155.6	2.539	249				

ENVELOPE C RHEOLOGY DATA

Table 7. Rheometer Response for Blank – Pretreated

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
3.753	323.9	3.463	321.3	3.46	319.9	3.283	317.7	3.493	323	3.451	328.7	3.641	347.7	3.351	324.3	3.324	325.2
4.025	343.3	3.768	341.1	3.759	335.8	3.546	338.4	3.741	345.5	3.798	343.3	3.848	371.1	3.617	344.6	3.644	340.6
4.194	364.9	4.037	363.6	3.996	360.5	3.801	358.7	3.972	370.2	3.922	373.7	4.058	394.4	3.765	372.4	3.827	368.4
4.455	387.4	4.212	388.7	4.215	385.2	4.218	402.3	4.114	396.2	4.135	396.2	4.141	416.4	3.972	396.2	3.993	389.6
4.851	426.6	4.434	411.2	4.392	411.2	4.404	424.8	4.265	427.9	4.446	435	4.342	442.9	4.135	417.3	4.218	413.8
5.079	451.3	4.54	434.5	4.564	444.2	4.534	457.4	4.425	450.4	4.638	458.3	4.57	467.6	4.28	440.2	4.588	453
5.224	478.6	4.967	474.2	4.753	470.6	4.715	480.3	4.508	476.8	4.845	482.1	4.819	496.6	4.694	481.2	4.756	478.6
5.464	501.9	5.153	499.7	4.922	498.4	4.842	501.1	4.822	499.7	4.943	505	5.141	539.4	4.848	504.1	4.922	501.5
5.644	525.7	5.333	525.7	5.088	524.4	5.162	538.5	4.981	525.7	5.117	539.8	5.339	562.3	4.928	536.8	5.088	525.7
6.044	565	5.467	553.1	5.319	551.7	5.399	560.5	5.103	549.5	5.316	564.1	5.467	592.3	5.106	560.1	5.251	552.6
6.281	589.6	5.624	576	5.47	576	5.39	593.2	5.523	591	5.44	589.2	5.621	616.1	5.28	583.9	5.405	585.7
6.514	613.9	5.783	598.9	5.618	602	5.576	617	5.689	617.4	5.65	612.5	5.774	638.1	5.446	606.8	5.505	611.7
6.609	644.7	6.109	637.2	5.745	626.2	5.78	641.2	5.831	644.7	6.05	651.8	5.928	662.3	5.624	630.6	5.76	635
6.849	666.3	6.316	663.7	5.911	650.9	5.946	665	5.999	670.3	5.952	663.7	6.106	687.5	5.952	675.1	5.872	659.3
7.044	691.4	6.473	688.8	6.257	690.1	6.141	689.7	6.112	701.1	6.431	704.2	6.278	719.2	5.928	683.1	6.053	683.9
7.304	716.1	6.757	716.6	6.458	712.1	6.31	712.1	6.307	725.8	6.541	729.3	6.71	757.5	6.411	728.4	6.204	711.7
7.618	757.1	6.864	739.5	6.535	744.8	6.668	754.9	6.476	748.7	6.636	758.4	6.831	780.4	6.591	752.7	6.417	736.8
7.846	780.9	7.026	771.2	6.733	770.8	6.872	780	6.645	773.4	6.872	784.9	6.961	811.3	6.787	776.5	6.52	767.7
8.068	805.6	7.154	795.9	6.875	791.9	6.94	809.1	6.798	797.2	6.991	808.7	7.154	833.8	6.861	806.4	6.822	791.9
8.257	832	7.287	818.3	7.207	828.5	7.18	839.1	6.985	822.8	7.157	833.8	7.299	856.7	6.994	832.4	6.911	821
8.355	862.9	7.618	855.8	7.367	854.9	7.275	865.1	7.151	849.6	7.449	860.7	7.686	892.8	7.192	856.7	7.219	850.5
8.589	887.5	7.799	878.7	7.432	879.2	7.535	888.4	7.515	890.6	7.574	885.8	7.793	920.6	7.521	893.7	7.387	878.7
8.755	909.1	7.976	905.2	7.689	903.8	7.621	912.7	7.71	912.7	7.964	923.7	7.825	945.3	7.734	918.8	7.509	904.3
8.879	934.2	8.098	933.4	7.772	928.1	7.748	941.3	7.816	939.5	8.13	948.8	8.104	973.5	7.852	947	7.734	927.6
9.272	973.9	8.228	955	7.938	952.8	7.961	965.1	7.982	969.9	8.246	977	8.272	999.9	8.145	971.7	7.867	954.5
9.453	996.8	8.604	991.5	8.095	979.6	8.251	992.4	8.115	998.1	8.423	999.5	8.435	1023	8.251	996.8	8.246	995.5
9.642	1030	8.725	1014	8.426	1023	8.343	1019	8.296	1020	8.595	1031	8.592	1048	8.388	1022	8.429	1022
9.912	1055	8.935	1045	8.669	1044	8.515	1044	8.544	1050	8.787	1053	8.737	1070	8.598	1050	8.565	1049
10.12	1081	9.19	1069	8.823	1069	8.846	1085	8.698	1074	9.006	1078	9.136	1112	8.719	1080	8.74	1076
10.29	1103	9.284	1093	8.858	1099	9.03	1110	8.947	1098	9.172	1101	9.329	1136	8.891	1110	8.95	1099
10.62	1139	9.477	1118	9.122	1119	9.187	1140	9.255	1135	9.589	1141	9.432	1166	9.009	1137	8.971	1130

ENVELOPE C RHEOLOGY DATA

Table 7. Rheometer Response for Blank – Pretreated - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
10.83	1161	9.563	1142	9.252	1144	9.299	1165	9.326	1160	9.773	1162	9.518	1188	9.252	1162	9.107	1154
10.9	1190	9.882	1182	9.394	1171	9.554	1185	9.503	1189	9.879	1196	9.713	1211	9.477	1188	9.329	1178
11.11	1216	10.04	1204	9.554	1197	9.645	1223	9.675	1217	10.04	1220	10.05	1250	9.56	1215	9.497	1205
11.33	1238	10.18	1232	9.752	1223	9.879	1246	9.776	1241	10.17	1243	10.27	1274	9.764	1241	9.69	1230
11.46	1265	10.35	1261	10.12	1266	9.968	1270	9.953	1264	10.36	1266	10.41	1303	9.947	1264	9.838	1253
11.72	1290	10.5	1286	10.34	1293	10.14	1293	10.12	1289	10.54	1293	10.55	1326	10.24	1303	10.18	1295
12.1	1333	10.65	1310	10.44	1319	10.6	1330	10.55	1329	10.8	1317	10.68	1348	10.42	1331	10.32	1322
12.27	1354	10.82	1331	10.6	1341	10.73	1355	10.69	1352	11.17	1361	10.81	1375	10.57	1353	10.47	1351
12.51	1382	11.1	1370	10.73	1366	10.9	1379	10.79	1383	11.34	1391	11.26	1413	10.62	1378	10.53	1373
12.7	1410	11.27	1401	10.94	1389	10.97	1413	11.04	1408	11.59	1410	11.42	1436	10.87	1402	10.76	1396
12.88	1434	11.47	1423	11.13	1413	11.29	1431	11.16	1430	11.75	1435	11.54	1464	11.04	1434	10.92	1421
13.02	1457	11.68	1443	11.23	1442	11.42	1459	11.33	1455	11.89	1466	11.62	1489	11.26	1456	11.3	1461
13.18	1480	11.9	1479	11.74	1482	11.55	1492	11.46	1479	12.05	1493	11.85	1510	11.43	1483	11.27	1470
13.46	1504	12.07	1504	11.84	1512	11.73	1516	11.65	1502	12.21	1516	12.21	1551	11.6	1507	11.69	1512
13.78	1542	12.21	1527	11.93	1534	11.89	1539	11.97	1542	12.37	1541	12.21	1560	11.69	1534	11.85	1540
11.33	1536	10.64	1513	10.74	1547	10.02	1536	10.88	1541	10.86	1547	10.56	1549	10.41	1545	10.43	1538
11.06	1512	10.5	1488	10.56	1519	9.737	1510	10.44	1515	10.58	1523	10.39	1515	10.22	1522	10.31	1514
10.9	1489	10.04	1447	10.44	1497	9.725	1483	10.27	1493	10.44	1492	10.19	1491	10.12	1490	10.12	1489
10.73	1463	9.802	1420	9.924	1461	9.518	1459	10.08	1460	10.33	1467	10.05	1467	10	1467	9.882	1463
10.56	1441	9.648	1394	9.708	1438	9.361	1425	9.938	1436	10.14	1443	9.876	1445	9.811	1441	9.767	1434
10.15	1402	9.512	1369	9.687	1407	9.13	1400	9.814	1413	9.918	1419	9.761	1419	9.568	1416	9.474	1412
9.986	1379	9.335	1345	9.554	1381	8.935	1375	9.607	1391	9.767	1396	9.287	1380	9.477	1391	9.344	1390
9.743	1348	9.213	1314	9.338	1358	8.802	1348	9.465	1353	9.539	1352	9.166	1356	9.287	1366	8.953	1349
9.592	1322	8.944	1289	9.163	1337	8.385	1324	9.021	1328	9.166	1329	8.935	1332	9.101	1337	8.734	1326
9.361	1300	8.752	1264	8.817	1297	8.414	1300	8.891	1304	8.991	1299	8.855	1300	8.737	1309	8.645	1293
9.207	1274	8.61	1238	8.613	1270	7.956	1255	8.725	1276	8.808	1274	8.672	1275	8.636	1281	8.482	1269
9.08	1250	8.423	1214	8.648	1259	7.808	1248	8.607	1251	8.692	1249	8.533	1251	8.429	1253	8.269	1246
8.666	1210	8.29	1183	8.479	1232	7.879	1208	8.367	1215	8.527	1226	8.379	1227	8.213	1232	8.092	1222
8.441	1186	8.003	1158	8.086	1192	7.399	1179	8.186	1190	8.284	1200	8.192	1204	7.87	1192	7.988	1196
8.308	1157	7.802	1134	7.873	1166	7.248	1171	8.018	1168	8.198	1167	7.745	1162	7.645	1165	7.811	1170
8.216	1135	7.423	1092	7.781	1134	7.34	1129	7.837	1140	8.021	1143	7.577	1139	7.556	1142	7.556	1144

ENVELOPE C RHEOLOGY DATA

Table 8. 25 °C Pretreated

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
3.331	318.6	4.283	346.8	3.908	312	4.174	328.7	3.742	325.2	3.443	303.2	3.828	325.2	3.245	331.4	3.239	312.4
4.212	323.9	4.766	372.8	4.621	343.3	4.295	345.9	4.112	328.3	3.754	310.2	4.13	340.2	4.062	327.9	4.008	315.5
4.136	339.8	5.115	392.6	5.009	365.8	4.905	368.9	4.393	347.7	4.301	346.4	4.766	363.1	4.295	342	3.985	334
4.65	361.4	5.074	416.9	5.062	389.6	5.124	393.1	4.952	372.4	4.887	369.7	4.923	386.9	4.47	366.2	4.562	371.1
5.044	402.8	5.772	454.3	5.316	420.9	5.775	429.7	5.106	395.3	4.967	390.9	5.55	427.5	4.804	398.8	4.911	394.4
5.606	425.7	6.056	483	5.725	445.5	5.902	455.7	5.467	426.1	5.189	423.9	5.879	454.8	5.266	423.5	5.068	425.7
6.027	449.9	6.151	505.5	6.089	471.1	6.16	485.6	5.535	450.4	5.331	449.1	5.911	478.6	5.609	449.5	5.529	451.3
6.29	475.9	6.417	526.6	6.482	494	6.263	506.3	5.787	481.7	5.651	473.7	6.29	508.5	5.606	471.1	5.704	473.3
6.497	501.9	7.045	560.5	6.731	521.3	6.71	531	6.018	504.6	6.006	496.6	6.334	532.3	6.189	509	5.796	496.6
6.817	534.1	7.326	592.3	7.048	555.7	7.213	564.1	6.281	531.9	6.343	520.9	6.592	555.7	6.45	536.8	5.89	520.4
7.062	557.5	7.574	614.8	7.187	584.8	7.409	591.4	6.672	556.1	6.775	561.4	7.062	583	6.755	557.5	6.237	546
7.346	581.7	7.746	638.1	7.595	610.8	7.548	616.1	6.858	579.5	6.95	583.9	7.281	608.6	6.692	587.9	6.663	589.6
7.657	606.4	8.483	674.2	8.021	634.1	7.841	638.5	7.551	618.3	7.385	615.2	7.471	632.8	7.015	608.6	6.911	614.8
8.258	646	8.687	694.1	8.335	658.4	7.977	676	7.77	642.5	7.311	642.1	7.932	672.9	7.054	634.1	7.418	641.2
8.545	669	8.995	728.9	8.551	680.9	8.228	678.2	8.178	671.2	7.637	668.1	7.761	681.7	7.326	657.1	7.412	671.2
8.527	693.6	9.024	756.2	8.578	705.5	10	708.6	8.504	695.8	8.187	694.1	8.542	726.7	7.823	697.2	7.583	693.6
8.924	720.1	9.534	780.9	9.35	750.5	10.15	737.7	8.69	728.9	8.172	721.4	8.557	754.9	8.4	724.5	8.06	721
9.113	750.9	9.776	806.9	9.59	775.2	10.15	775.2	9.119	752.2	8.557	746.5	8.915	776.5	8.436	749.6	8.285	744.8
9.412	771.6	10.11	831.6	9.948	802.5	10.08	796.8	9.11	779.6	8.98	770.8	9.066	808.7	8.853	781.3	8.385	769.9
10.12	810.9	10.75	868.6	10.21	830.2	10.22	827.6	9.687	802.9	8.995	795.4	9.581	832	8.862	805.1	8.942	795
10.39	834.2	10.92	897.2	10.67	857.1	10.48	863.7	9.797	830.7	9.758	834.7	9.531	856.7	9.383	830.2	8.888	820.1
10.7	858	11.22	921	10.89	881.8	10.97	890.6	10.15	856.7	9.785	863.7	9.906	883.1	9.421	854.5	9.315	846.1
10.88	887.1	11.65	944.8	11.16	913.5	11.4	914.9	10.44	881.8	10.1	889.3	10.45	909.1	9.853	879.2	9.889	888
11.2	914	11.86	975.7	11.56	934.7	11.5	944.8	10.69	907.8	10.52	913.1	10.36	933.8	10.23	918.8	10.08	910.9
11.46	943.9	12.27	998.6	11.83	960.2	11.84	969.9	11.29	947.9	10.62	935.1	10.75	956.7	10.24	926.8	10.25	944.8
11.82	971.3	12.25	1022	12.03	983.6	12.09	997.7	11.62	970.4	11.08	958.9	11.4	999	10.54	955.4	10.51	968.6
12.25	993.7	12.6	1047	12.29	1008	12.57	1020	11.92	1001	11.29	984.9	11.47	1029	10.79	984	10.83	995.1
12.31	1016	12.96	1069	13.05	1053	13.18	1058	12.11	1025	11.58	1012	11.7	1054	11.37	1027	11.16	1021
12.58	1039	13.66	1113	12.93	1061	13.39	1084	12.44	1054	11.76	1038	12.11	1075	11.42	1036	11.5	1047
12.89	1068	13.86	1138	13.56	1101	13.66	1112	12.71	1077	12.2	1075	12.38	1110	11.67	1065	11.71	1071
13.74	1109	14.24	1161	13.98	1133	14.03	1136	12.86	1099	12.53	1107	12.48	1118	12.26	1105	11.99	1098

ENVELOPE C RHEOLOGY DATA

Table 8. 25 °C Pretreated - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
14.03	1134	14.41	1191	14.24	1156	14.08	1164	13.43	1138	12.86	1136	13.16	1162	12.53	1130	12.29	1122
14.3	1159	14.79	1213	14.54	1181	14.43	1188	13.73	1160	13.16	1156	13.4	1187	12.82	1158	12.52	1148
14.53	1185	15.06	1237	14.8	1214	14.82	1214	14.06	1189	13.34	1181	13.66	1210	13.07	1184	12.96	1188
14.9	1209	15.65	1276	15.26	1239	15.11	1242	14.2	1211	13.65	1204	13.93	1241	13.37	1207	13.16	1213
15.2	1243	16	1300	15.51	1262	15.45	1267	14.7	1249	13.81	1228	14.09	1264	13.76	1244	13.55	1237
15.56	1270	16.24	1322	15.8	1287	15.83	1293	14.97	1272	14.24	1255	14.51	1301	14.07	1271	13.77	1269
15.93	1293	16.47	1355	16.15	1311	16.06	1319	15.35	1300	14.78	1298	14.84	1326	14.3	1304	14.01	1291
16.1	1319	16.9	1379	16.43	1335	16.46	1342	15.63	1323	14.98	1325	15.2	1351	14.6	1325	14.24	1317
16.41	1342	16.99	1405	17.04	1375	17.03	1384	15.96	1353	15.34	1352	15.34	1376	14.81	1352	14.53	1341
17	1380	17.36	1427	17.37	1401	17.3	1408	16.16	1376	15.5	1376	15.58	1402	15.05	1374	15.01	1380
17.37	1409	17.54	1452	17.54	1434	17.62	1435	16.4	1397	15.82	1402	15.88	1435	15.25	1407	15.32	1409
17.45	1433	17.92	1479	17.92	1454	17.8	1466	17.01	1438	16.09	1424	16.09	1460	15.59	1428	15.62	1435
17.89	1460	18.39	1520	18.22	1482	18.31	1492	17.32	1461	16.38	1449	16.46	1486	15.95	1457	15.69	1458
18.22	1478	18.9	1542	18.48	1508	18.51	1515	17.33	1493	16.87	1490	16.29	1582	15.91	1570	15.98	1480
18.57	1516	19.05	1573	18.78	1531	19.1	1560	16.88	1548	17.28	1517	15.94	1556	15.58	1545	14.67	1478
17.74	1523	17.24	1467	17.57	1494	18.84	1528	16.23	1507	16.09	1540	15.55	1530	15.32	1513	14.4	1451
17.39	1501	16.56	1427	17.21	1471	18.36	1501	15.97	1483	15.76	1515	15.23	1486	14.99	1489	14.34	1441
16.83	1462	16.32	1404	16.86	1448	17.98	1478	15.61	1461	15.32	1475	14.84	1463	14.84	1465	13.98	1412
16.62	1431	15.85	1375	16.23	1408	17.86	1451	15.38	1429	15.32	1466	14.64	1435	14.43	1440	13.78	1387
16.35	1408	15.82	1352	15.91	1382	17.48	1428	15.02	1407	14.75	1422	14.22	1411	14.31	1415	13.19	1344
16.06	1384	15.41	1325	15.76	1356	16.83	1385	14.96	1383	14.31	1399	13.98	1380	13.98	1390	13.1	1321
15.64	1361	15.2	1298	15.41	1333	16.62	1362	14.46	1358	14.1	1367	13.72	1356	13.63	1364	12.65	1296
15.2	1321	14.78	1277	14.96	1305	16.06	1333	14.1	1333	13.93	1341	13.6	1332	13.39	1337	12.36	1260
14.81	1297	14.58	1251	14.52	1273	15.88	1308	13.78	1304	13.45	1316	13.19	1307	12.92	1297	12.23	1235
14.55	1274	13.81	1211	14.37	1246	15.58	1283	13.6	1279	13.22	1292	12.83	1282	12.61	1274	11.93	1208
14.19	1243	13.51	1187	14.13	1220	15.2	1252	13.3	1254	12.98	1269	12.51	1244	12.57	1243	11.53	1182
14.01	1220	13.33	1160	13.81	1197	14.9	1227	12.98	1225	12.9	1242	12.21	1217	12.2	1218	11.3	1157
13.63	1196	13.07	1134	13.42	1173	14.64	1204	12.64	1201	12.48	1216	11.87	1193	11.91	1196	11.07	1133
13.01	1158	12.6	1101	13.19	1149	14.31	1179	12.19	1159	12.22	1190	11.71	1161	11.66	1170	10.87	1109
12.86	1135	12.31	1076	12.99	1121	13.6	1139	11.88	1129	11.81	1166	11.29	1140	11.23	1144	10.57	1083
12.69	1110	12.24	1053	12.27	1079	13.36	1115	11.69	1106	11.61	1140	10.84	1106	10.74	1104	9.998	1043

ENVELOPE C RHEOLOGY DATA

Table 8. 25 °C Pretreated - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
12.33	1082	11.82	1030	12.05	1056	13.1	1091	11.47	1080	11.24	1095	10.89	1082	10.61	1080	9.755	1013
11.84	1051	11.28	991.5	11.72	1027	12.7	1059	11.22	1054	10.91	1067	10.55	1060	10.25	1054	9.906	1003
11.68	1029	10.89	964.2	11.39	997.3	12.5	1036	10.98	1029	10.61	1040	10.16	1027	10.05	1031	9.454	978.3
11.48	1005	10.73	941.3	10.95	978.8	12.24	1011	10.62	1003	10.17	1022	10.11	1002	9.868	999.5	9.066	951.9
11.04	982.7	10.44	910.9	10.81	943.9	11.86	987.6	10.2	977.4	9.972	989.3	9.779	976.1	9.655	973	8.542	906.9
10.96	958.5	10.04	886.7	10.48	922.8	11.5	960.7	9.809	939.1	9.619	964.7	9.516	949.2	9.323	946.1	8.444	877.4
10.34	916.6	9.871	859.3	10.16	899	11.33	935.1	9.605	911.3	9.468	943.9	8.986	921.5	8.888	921.5	8.098	854.9
9.883	886.2	9.386	834.2	9.986	875.6	11.05	907.4	9.288	890.2	8.915	903.4	8.85	900.8	8.817	896.8	8.134	830.7
9.844	863.3	9.326	809.1	9.714	850.1	10.35	865.5	9.016	865.9	8.794	878.3	8.415	859.3	8.427	872.1	7.607	806.4
9.285	841.7	8.749	785.3	9.217	824.1	10.23	843	8.456	824.5	8.409	855.8	8.243	834.2	8.196	844.8	7.639	782.2
9.152	818.3	8.489	761.5	8.708	779.1	9.705	817.5	8.036	803.8	8.143	822.8	7.962	811.7	7.983	818.3	7.077	741.7
8.696	777.8	7.85	722.7	8.4	752.7	9.451	791	7.983	778.2	7.918	799	7.764	780.4	7.58	779.6	6.589	715.7
8.314	755.3	7.858	692.3	7.992	728	9.107	760.2	7.58	748.3	7.912	774.7	7.489	755.3	7.045	748.7	6.45	687
8.172	724	7.338	665	7.989	697.2	8.977	736.4	7.29	725.8	7.429	750.5	7.074	732.9	6.911	725.8	6.201	666.8
7.826	698	7.142	647.4	7.761	676.9	8.779	714.3	7.045	692.8	6.959	710.4	6.84	706.9	6.938	702.4	6.056	634.6
7.468	674.2	6.716	614.8	7.468	653.1	8.181	674.2	6.769	669.4	6.482	687.9	6.885	680.9	6.589	676.4	5.991	613.9
7.181	651.8	6.459	589.6	7.042	628	7.861	650.4	6.382	642.1	6.497	659.7	6.53	656.6	6.083	651.3	5.751	591
6.775	624	6.151	567.2	6.459	591	7.367	624.4	6.213	618.3	6.231	633.7	6.133	630.6	5.935	614.3	5.127	546.4
6.417	599.3	5.917	529.3	6.219	565	6.941	598.4	5.959	593.2	6.035	611.7	5.76	605.5	5.704	587	5.251	539.4
6.207	572.9	5.592	503.7	6.035	537.6	6.669	568.9	5.624	556.6	5.556	577.3	5.408	559.7	5.331	558.3	4.861	512.1
5.905	546.9	5.266	477.3	5.621	514.3	6.494	541.6	5.157	529.3	5.37	553.9	5.186	550.9	5.18	535	4.153	468.9
5.609	506.8	4.864	452.1	5.287	487.4	6.083	517.4	5.1	507.2	5.257	530.1	4.946	509.9	5.003	510.8	4.094	444.6
5.293	483.4	4.505	427	4.932	464	5.825	491.8	4.858	480.8	5.127	506.8	4.582	478.1	4.781	487	4.041	420.9
4.769	459.2	4.455	403.2	4.476	423.5	5.701	468.4	4.745	449.1	4.846	481.2	4.44	455.7	4.195	443.8	3.884	388.2
4.553	426.1	4.13	377.7	4.224	403.7	5.574	442.4	4.26	423.9	4.526	454.8	3.961	430.1	4.053	423.5	3.369	363.6
4.248	402.8	3.594	334.5	4.153	371.1	5.231	415.1	3.914	400.6	4.064	428.3	3.745	397.9	3.576	400.6	3.286	338.4
4.263	379.4	3.055	309.8	3.712	347.3	4.695	375.5	4.011	378.1	3.671	386.5	3.538	370.6	3.39	368.9	2.949	313.3
3.745	352.1	3.07	282.9	3.351	321.3	4.15	350.3	3.49	338	3.301	362.2	3.366	350.8	3.476	343.7	2.83	291.3
3.082	312.4	2.57	260.9	3.304	295.3	3.976	320.8	2.901	315.1	3.325	331.4	2.78	314.6	2.913	318.6	2.52	264
3.177	290	2.534	254.3	2.7	268.8	3.848	293.5	2.898	289.1	2.863	307.2	2.789	287.3	2.893	291.3	2.401	238.4
2.549	262.6			2.611	244.6	3.399	271.5	2.345	261.8	2.81	282						
2.617	256									2.413	260						

ENVELOPE C RHEOLOGY DATA

Table 9. 50 °C Pretreated

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
3.286	303.2	3.368	317.3	3.152	315.1	2.963	322.6	3.729	349	3.658	343.7	3.037	315.5	2.966	304.1	2.655	314.6
3.877	318.2	3.886	349.5	3.653	331.4	3.371	323.5	3.839	356.5	3.777	367.1	3.7	346.8	3.383	323.5	3.09	322.6
4.085	337.6	4.253	370.2	3.857	353	3.783	345.1	4.437	397.1	4.2	391.3	4.093	369.7	3.724	345.9	3.522	343.7
4.289	364.9	4.709	401.9	4.413	390	4.111	368	4.582	422.2	4.478	415.6	4.224	398.4	3.786	369.7	3.676	365.8
4.756	389.6	4.81	426.1	4.496	412.5	4.227	389.1	4.851	453.9	4.688	441.6	4.416	421.7	4.064	394	3.874	390.4
5.094	417.8	4.878	449.1	4.682	444.2	4.46	415.1	5.002	480.3	5.106	483	4.603	449.5	4.384	418.6	4.17	416.9
5.517	448.2	5.419	482.5	4.969	466.7	4.816	441.6	5.265	503.7	5.39	506.3	4.904	470.6	4.579	445.5	4.428	444.2
5.745	473.7	5.677	510.8	5.283	489.2	5.117	467.6	5.425	529.3	5.55	531.9	4.999	502.8	4.78	472	4.715	468.9
6.011	502.8	5.73	531	5.558	511.6	5.467	507.7	5.771	555.7	5.745	556.1	5.363	524.4	5.052	496.6	4.943	496.2
6.295	533.2	6.257	562.8	5.908	551.7	5.695	529.7	5.949	578.2	5.934	584.3	5.745	561.4	5.224	523.1	5.251	538.1
6.568	560.5	6.449	590.5	6.183	577.3	5.925	561.9	6.428	617	6.115	613.9	6.035	591.4	5.511	548.2	5.47	565
6.935	583	6.63	609	6.473	601.5	6.115	584.3	6.621	641.2	6.334	639	6.26	614.3	5.695	572.9	5.81	592.3
7.148	609.5	7.085	647.4	6.787	630.6	6.408	609.5	6.952	665.9	6.704	665.4	6.337	642.1	5.976	602	6.047	618.3
7.37	639.9	7.325	670.3	6.988	657.1	6.674	635.9	7.127	698	6.872	689.7	6.582	667.2	6.488	646.9	6.221	642.1
7.76	664.5	7.405	701.6	7.242	684.4	6.89	660.6	7.452	722.3	7.068	714.8	6.923	696.7	6.612	675.6	6.328	671.6
7.964	692.3	7.734	721.8	7.606	708.6	7.097	684.4	7.775	749.2	7.375	738.1	7.08	721.8	6.713	682.6	6.565	695.8
8.207	714.8	7.976	744.8	7.71	738.1	7.574	726.2	7.926	774.7	7.485	767.7	7.325	746.1	7.201	726.7	6.692	727.1
8.707	753.1	8.509	784.4	8	769	7.929	747.8	8.018	807.3	8.062	807.3	7.663	772.5	7.364	753.1	6.878	750.5
9.154	776.9	8.663	807.8	8.186	792.3	8.121	774.3	8.485	834.2	8.237	835.1	7.71	801.2	7.651	780	7.207	773.4
9.272	802.9	8.962	836.4	8.42	821.4	8.515	804.2	8.589	858.9	8.604	862	7.967	826.3	7.737	802.9	7.287	803.8
9.512	824.1	9.071	859.8	8.891	846.1	8.61	832.4	8.864	882.7	8.793	888	8.243	850.1	7.941	835.1	7.668	825.8
10.12	866.4	9.441	880.5	8.985	871.2	8.938	855.8	9.027	906.5	8.917	912.7	8.722	887.1	8.311	860.7	7.935	865.1
10.33	887.5	9.758	917.9	9.379	894.6	9.074	877	9.512	946.6	9.095	942.2	8.917	917.1	8.402	885.3	8.124	892.4
10.65	910	10.02	944.4	9.489	920.1	9.261	905.6	9.885	969.9	9.483	966	8.938	940	8.698	910	8.343	917.1
10.88	942.2	10.25	971.3	10.05	959.8	9.634	929	10.19	998.6	9.663	990.2	9.252	966	9.009	936	8.417	942.6
11.21	966.9	10.43	991.5	10.14	988.5	9.915	954.5	10.41	1026	9.909	1018	9.489	989.8	9.107	960.2	8.669	965.5
11.52	992.9	10.9	1028	10.51	1010	10.04	980.5	10.61	1049	10.22	1044	9.755	1015	9.551	999	8.903	992
11.87	1019	11.03	1056	10.86	1049	10.6	1023	10.71	1072	10.29	1067	10.17	1052	9.743	1029	9.252	1017
12.03	1041	11.42	1077	11.13	1071	10.9	1047	11.21	1112	10.47	1107	10.31	1075	10.1	1049	9.415	1045
12.59	1078	11.52	1104	11.37	1094	11.13	1079	11.41	1135	10.36	1108	10.58	1105	10.38	1074	9.642	1072
12.86	1106	12.16	1139	11.72	1125	11.4	1104	11.76	1162	12.06	1150	10.89	1129	10.6	1108	9.861	1098

ENVELOPE C RHEOLOGY DATA

Table 9. 50 °C Pretreated - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
13.17	1130	12.35	1161	11.87	1147	11.6	1131	11.96	1187	12.07	1185	11.07	1158	10.91	1134	10.3	1137
13.41	1157	12.67	1194	12.11	1175	11.86	1157	12.15	1213	12.32	1223	11.42	1182	11.11	1159	10.55	1159
13.86	1180	12.84	1216	12.45	1200	12.24	1186	12.49	1238	12.3	1238	11.74	1215	11.31	1182	10.7	1189
14.11	1205	13.02	1237	12.7	1227	12.52	1210	12.79	1266	12.51	1262	11.93	1237	11.48	1207	10.92	1220
14.4	1229	13.43	1270	13.08	1251	12.78	1233	12.98	1289	12.63	1293	12.2	1259	11.72	1230	11.14	1243
14.96	1269	13.83	1297	13.28	1276	13.05	1257	13.24	1315	12.92	1322	12.6	1296	11.94	1256	11.34	1267
15.24	1293	14.12	1329	13.54	1301	13.21	1282	13.52	1340	13.25	1345	12.85	1322	12.4	1298	11.6	1292
15.47	1323	14.27	1348	13.89	1331	13.76	1323	14.16	1384	13.39	1381	13.06	1348	12.76	1322	11.97	1329
15.77	1346	14.46	1371	14.37	1356	14	1354	14.34	1409	13.7	1401	13.29	1370	12.91	1352	12.25	1358
16.06	1370	15.11	1408	14.53	1386	14.31	1377	14.62	1434	13.98	1433	13.55	1401	13.09	1374	12.38	1380
16.29	1391	15.31	1436	15.01	1416	14.5	1404	14.91	1463	14.19	1458	13.69	1426	13.39	1398	12.62	1404
16.85	1434	15.47	1460	15.2	1443	14.87	1429	15.18	1487	14.47	1485	13.96	1452	13.86	1434	12.82	1432
17.17	1457	15.86	1485	15.58	1471	15.06	1457	15.32	1517	14.74	1514	14.31	1478	13.98	1465	13.1	1460
17.26	1489	16.31	1523	15.9	1495	15.28	1482	15.56	1538	14.94	1541	14.5	1501	14.16	1486	13.26	1485
17.58	1514	16.51	1548	16.19	1521	15.58	1504	15.83	1563	15.28	1565	14.65	1528	14.39	1509	13.54	1513
15.54	1515	14.65	1482	14.59	1514	14.18	1508	13.94	1495	13.2	1496	13.76	1511	12.6	1506	12.64	1542
15.27	1486	14.33	1457	14.48	1489	13.79	1485	13.68	1473	12.52	1433	13.44	1489	12.67	1475	12.39	1516
14.95	1465	13.97	1433	14.15	1458	13.62	1456	13.03	1434	12.67	1423	13.03	1455	12.69	1474	12.15	1491
14.65	1436	13.74	1407	13.91	1431	13.41	1418	12.79	1410	12.47	1391	12.73	1430	11.82	1441	11.9	1462
14.48	1412	13.53	1382	13.56	1404	12.58	1393	12.71	1381	11.65	1349	12.57	1404	11.92	1428	11.69	1435
14.24	1391	13.17	1363	13.35	1378	12.67	1375	12.34	1357	11.63	1334	12.37	1377	11.5	1404	11.52	1411
13.94	1363	12.7	1332	13	1355	12.42	1354	12.04	1330	11.44	1304	12.13	1352	11.57	1393	11.24	1384
13.32	1326	12.56	1314	12.92	1330	12.51	1332	11.86	1304	10.84	1255	11.88	1330	11.4	1364	10.93	1360
13.11	1295	12.35	1282	12.36	1292	11.73	1300	11.59	1271	10.86	1235	11.48	1293	11.17	1338	10.76	1335
12.84	1270	12.15	1241	12.08	1269	11.71	1285	11.34	1246	10.84	1222	11.26	1263	10.85	1309	10.6	1310
12.6	1245	12.32	1240	11.89	1242	11.43	1250	11.13	1225	10.32	1206	10.87	1239	10.5	1284	10.04	1266
12.33	1222	11.47	1207	11.59	1211	11.52	1227	10.92	1201	10.07	1162	10.72	1213	10.33	1258	9.823	1243
12.05	1200	11.41	1166	11.33	1185	10.72	1196	10.38	1162	9.95	1138	10.49	1190	9.87	1221	9.675	1218
11.41	1160	11.32	1155	11.12	1158	10.78	1180	10.18	1137	9.657	1111	10.2	1169	9.693	1186	9.483	1187
11.31	1131	10.31	1138	10.78	1134	10.02	1145	9.906	1106	9.435	1081	10.02	1141	9.391	1163	9.24	1163
10.92	1111	10.39	1118	10.49	1111	9.897	1128	9.675	1085	9.19	1052	9.527	1100	9.181	1137	8.994	1141

ENVELOPE C RHEOLOGY DATA

Table 9. 50 °C Pretreated - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
10.74	1082	9.66	1062	10.23	1083	9.811	1090	9.509	1062	8.835	1027	9.213	1075	9.077	1113	8.811	1116
10.41	1051	9.79	1048	9.953	1057	9.533	1062	8.959	1025	8.63	1001	8.98	1051	8.796	1086	8.539	1088
10.23	1026	9.438	1013	9.571	1031	9.053	1019	8.775	1003	8.462	977	8.71	1022	8.544	1060	8.296	1060
9.755	1004	9.181	981.8	9.441	1005	8.787	992.9	8.598	976.6	8.098	953.2	8.37	997.3	8.121	1023	8.089	1034
9.373	966.9	8.805	941.3	9.009	964.2	8.586	969.5	8.314	944.8	7.63	913.1	8.284	971.3	7.864	995.1	7.594	996.4
9.053	943.9	8.429	914.9	8.704	940	8.334	942.2	8.041	920.1	7.565	886.2	8.041	948.8	7.627	974.8	7.449	971.3
8.802	914.9	8.183	886.7	8.379	915.3	8.053	917.1	7.876	897.7	7.219	865.1	7.805	920.1	7.529	945.3	7.171	946.6
8.826	891.1	8.044	863.3	8.216	886.7	7.778	886.2	7.346	860.7	7.091	833.3	7.435	893.7	7.281	919.7	7.148	913.5
8.385	869.5	7.642	828.9	8.092	859.3	7.568	862.4	7.091	839.5	6.736	808.2	7.325	867.3	7.148	888.9	6.816	891.1
8.32	842.6	7.216	803.4	7.577	834.7	7.411	838.6	6.926	809.1	6.568	777.8	6.784	828.9	6.677	865.9	6.659	864.6
7.843	818.3	7.159	775.2	7.452	809.5	6.878	800.3	6.668	785.7	6.18	759.7	6.609	799.8	6.446	832.9	6.399	839.5
7.378	776.5	6.748	746.1	7.239	783.1	6.698	771.2	6.508	764.1	6.002	724.9	6.384	773.8	6.118	808.7	6.227	814.8
7.154	752.2	6.565	722.7	6.84	760.6	6.44	745.6	6.097	725.8	5.697	698.9	6.064	750.9	6.091	781.3	5.973	790.6
6.819	721	6.408	698	6.417	714.3	6.168	723.6	5.869	700.2	5.44	674.7	5.925	728	5.774	756.7	5.538	751.4
6.609	697.6	6.097	670.7	6.251	689.2	5.925	699.4	5.541	671.2	5.354	646.9	5.789	702.9	5.535	733.3	5.203	728.4
6.417	674.2	5.828	648.2	6.088	681.3	5.766	675.6	5.523	643	5.159	623.1	5.387	674.2	5.47	706.4	5.233	696.3
6.215	648.2	5.443	609.9	5.837	654.4	5.585	650.4	5.191	617	4.866	595.4	5.129	649.1	5.188	680	5.008	673.4
5.757	622.7	5.224	584.3	5.26	610.3	5.035	608.6	4.955	592.3	4.594	574.2	4.901	623.1	4.884	655.3	4.759	650.4
5.564	599.8	4.916	555.3	5.041	584.3	4.774	585.7	4.762	568.9	3.999	530.1	4.771	595.4	4.653	628	4.395	612.5
5.1	557.9	4.629	537.6	4.771	560.5	4.561	560.5	4.469	545.6	4.224	521.3	4.493	571.1	4.543	602	4.132	591
4.822	532.8	4.487	505	4.605	530.1	4.31	532.3	4.194	521.8	3.848	495.8	3.969	524.9	4.002	560.1	4.046	561.9
4.647	503.7	4.17	481.2	4.304	506.8	4.025	506.8	3.685	478.6	3.306	449.5	3.688	499.7	3.718	535.4	3.795	539.8
4.274	481.2	3.818	457.9	4.076	480.3	3.869	471.5	3.555	453.5	3.179	420.9	3.448	472	3.543	504.6	3.602	515.2
4.046	457.9	3.463	415.6	3.809	454.3	3.472	450.4	3.33	427.9	2.877	397.1	3.28	448.6	3.365	479.5	3.297	476.4
3.522	420.4	3.114	394	3.584	425.7	3.182	419.1	3.07	395.7	2.492	368.9	3.096	423.5	3.297	456.5	3.055	447.3
3.445	397.5	3.055	367.1	3.389	398.8	2.966	396.6	2.756	368.9	2.466	342.4	2.794	394.9	3.164	429.7	3.046	440.2
3.179	373.3	2.652	344.2	3.001	373.7	2.806	371.1	2.643	348.1	2.241	314.6	2.525	365.8	2.812	404.1	2.445	394.9
2.803	343.3	2.439	313.3	2.815	349.9	2.572	337.1	2.294	316	1.936	290	2.525	342.4	2.575	378.5	2.466	371.1
2.756	317.3	2.365	289.5	2.315	308.9	2.268	313.3	2.099	291.3	1.847	259.6	2.173	318.6	2.442	352.5	2.143	345.5
2.374	294.4	2.01	266.2	2.022	286.4	2.146	284.2	1.862	265.7	0	161.6	2.046	294.4	2.031	312	1.912	314.6
2.265	272.3	1.809	237.1	1.927	260.4	1.838	262.6	1.711	242.8	0	176.8	1.605	257.4	1.649	285.6	1.915	289.1
1.847	247.7	0	149.8	1.824	251.6	1.634	237.1	0	158.6	0	177.3	1.687	249.4	1.797	275	1.525	264.9

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APPENDIX E

ENVELOPE C
SR/TRU PRECIPITATE SLURRY RHEOLOGY DATA

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Table 1. Rheometer Response for Blank – 2 wt %

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
2.379	272.3	2.417	279	2.5	275.4	2.58	279	2.61	272.3	2.568	274.5	2.633	275	2.497	279.8	2.497	275
2.784	294.8	2.663	297	2.698	290.4	2.746	292.6	2.811	296.1	2.725	294.4	2.849	297	2.778	293.1	2.722	291.3
2.971	321.3	2.826	321.7	2.95	323.5	3.045	323.9	2.926	319.9	2.968	325.7	3.039	321.7	3.021	325.2	2.867	314.6
3.098	349	3.039	349.5	3.196	350.3	3.216	352.5	3.092	345.1	3.16	349.5	3.193	351.7	3.169	349	3.157	346.8
3.305	374.1	3.29	382.1	3.287	377.2	3.305	375.5	3.216	371.5	3.284	377.2	3.299	375.5	3.296	379.4	3.317	375.9
3.557	398.4	3.385	408.1	3.429	401	3.613	407.6	3.483	404.5	3.465	402.3	3.418	399.3	3.468	404.5	3.527	401.9
3.841	432.3	3.563	431.4	3.657	433.6	3.737	432.3	3.687	432.3	3.613	428.3	3.702	431.4	3.672	429.2	3.619	430.5
4.004	457.4	3.82	464	3.861	458.8	3.903	458.8	3.764	456.5	3.708	455.2	3.805	460.1	3.859	460.1	3.734	455.7
4.107	485.6	3.992	488.3	3.977	486.5	4.012	488.7	3.912	481.7	3.998	487.8	3.977	484.8	3.995	484.8	3.918	487
4.297	507.7	4.095	516.9	4.083	509.4	4.199	512.5	4.172	515.2	4.104	513.8	4.113	509.9	4.095	514.7	4.006	505.9
4.548	540.7	4.237	541.6	4.329	542	4.341	537.2	4.332	543.4	4.208	536.8	4.368	542.5	4.314	542.5	4.214	534.1
4.705	565	4.433	569.4	4.462	570.7	4.607	571.6	4.518	568.5	4.468	568	4.554	566.7	4.394	571.1	4.436	565.4
4.877	595.4	4.572	592.3	4.563	593.6	4.752	597.6	4.566	594	4.598	595.4	4.637	597.6	4.572	595.4	4.595	594.5
5.06	620.5	4.85	626.7	4.77	618.7	4.826	625.3	4.743	619.6	4.803	625.3	4.832	623.6	4.735	618.7	4.77	620.9
5.205	646.5	4.974	649.1	4.977	650.4	4.951	648.2	4.894	646	4.945	651.3	4.945	648.7	4.962	655.3	4.88	644.7
5.347	671.2	5.175	678.2	5.184	676.4	5.122	674.2	5.087	671.6	5.042	678.2	5.175	672.9	5.158	680.4	5.128	677.8
5.649	704.2	5.297	705.5	5.389	706	5.415	708.6	5.303	703.8	5.282	701.1	5.294	699.4	5.255	706.9	5.246	703.3
5.859	729.8	5.445	729.3	5.463	732.9	5.465	726.7	5.38	732	5.477	732.4	5.516	733.7	5.394	733.3	5.448	732.4
5.939	757.5	5.56	752.2	5.667	755.3	5.75	759.7	5.631	758.4	5.643	758.9	5.75	758	5.539	757.5	5.531	755.3
6.105	780	5.862	780	5.892	786.2	5.832	787.1	5.761	782.7	5.779	786.6	5.892	787.1	5.72	782.7	5.655	780
6.309	805.6	5.741	806	5.998	811.7	5.933	810	5.939	807.8	5.942	813.1	6.046	813.1	5.871	814.8	5.898	810.4
6.448	840.4	6.182	826.3	6.259	843	6.146	844.8	6.069	835.5	6.155	841.3	6.173	836.9	6.081	840.4	6.048	836.4
6.634	865.5	6.149	855.4	6.386	868.1	6.306	868.1	6.318	869	6.309	867.3	6.371	862	6.22	869.9	6.17	868.1
6.815	888.4	6.525	889.7	6.543	895.9	6.528	893.7	6.448	897.2	6.478	891.1	6.682	895.5	6.359	893.7	6.418	891.1
6.948	914.9	6.744	913.5	6.726	920.6	6.768	921.9	6.605	921	6.726	922.8	6.812	922.3	6.492	918.4	6.51	917.1
7.206	948.3	6.942	949.7	6.981	952.3	6.948	951.9	6.877	951.9	6.975	949.2	6.904	948.3	6.806	951.9	6.774	947.9
7.315	973.9	7.093	978.8	7.067	979.2	7.09	975.7	6.987	979.6	7.025	972.6	7.173	971.7	6.957	981	6.919	975.2
7.546	1005	7.188	1003	7.206	1003	7.253	1002	7.182	1003	7.274	1005	7.448	1005	7.167	1003	7.046	1002
7.765	1032	7.312	1028	7.36	1028	7.457	1029	7.371	1032	7.478	1031	7.561	1034	7.253	1033	7.271	1028
7.901	1059	7.617	1062	7.558	1053	7.706	1062	7.507	1056	7.638	1057	7.812	1058	7.448	1057	7.525	1057
8.019	1081	7.815	1087	7.839	1089	7.8	1089	7.753	1088	7.783	1086	8.07	1088	7.605	1084	7.614	1086
8.265	1111	7.99	1116	8.093	1114	7.981	1113	7.984	1114	7.987	1112	8.221	1113	7.771	1109	7.759	1110

Table 1. Rheometer Response for Blank – 2 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
8.407	1139	8.144	1140	8.114	1140	8.164	1139	8.138	1141	8.138	1137	8.383	1142	8.04	1142	7.978	1140
8.647	1170	8.366	1173	8.298	1163	8.455	1172	8.256	1166	8.33	1167	8.594	1166	8.194	1166	8.162	1164
8.86	1194	8.585	1196	8.549	1196	8.647	1197	8.452	1192	8.52	1191	8.706	1193	8.333	1197	8.309	1192
9.017	1221	8.733	1221	8.73	1224	8.827	1225	8.747	1226	8.795	1223	8.922	1220	8.478	1222	8.564	1222
9.15	1245	8.952	1254	8.881	1248	9.046	1249	8.981	1248	8.961	1252	9.097	1244	8.682	1247	8.632	1249
9.422	1276	9.117	1281	9.12	1277	9.103	1274	9.153	1276	9.079	1277	9.366	1278	8.89	1281	8.848	1275
9.6	1304	9.274	1303	9.274	1303	9.393	1308	9.348	1301	9.268	1301	9.532	1304	9.1	1304	9.026	1305
9.689	1327	9.588	1335	9.47	1327	9.555	1332	9.544	1334	9.473	1330	9.937	1335	9.268	1329	9.141	1329
10.04	1358	9.745	1361	9.724	1359	9.721	1360	9.683	1359	9.609	1355	10.19	1360	9.369	1354	9.354	1354
10.12	1385	9.887	1386	9.934	1385	9.857	1383	9.828	1378	9.84	1386	10.33	1388	9.632	1388	9.659	1386
10.35	1410	10.14	1418	10	1412	10.19	1409	10.15	1416	10.02	1410	10.51	1410	9.81	1413	9.854	1414
10.57	1440	10.31	1444	10.28	1438	10.27	1436	10.3	1441	10.29	1442	10.84	1441	9.985	1442	9.99	1438
10.7	1467	10.53	1469	10.48	1470	10.45	1470	10.48	1468	10.43	1469	10.97	1470	10.22	1466	10.15	1465
10.86	1492	10.7	1497	10.6	1497	10.69	1497	10.65	1495	10.6	1496	11.16	1494	10.3	1492	10.26	1490
10.55	1510	10.53	1516	10.62	1512	10.55	1507	10.23	1477	10.34	1480	10.08	1508	10.29	1508	10.23	1510
10.32	1481	10.18	1481	10.4	1488	10.29	1481	10.04	1452	10.17	1456	9.842	1456	10.14	1485	10.08	1481
10.09	1452	10.02	1456	10.06	1452	10.07	1454	9.837	1423	9.967	1430	9.689	1430	9.845	1453	9.887	1457
9.931	1428	9.866	1429	9.837	1427	9.905	1428	9.697	1399	9.804	1406	9.481	1401	9.683	1428	9.57	1425
9.73	1403	9.718	1399	9.647	1401	9.653	1404	9.493	1374	9.461	1372	9.316	1376	9.514	1400	9.473	1399
9.422	1372	9.505	1375	9.514	1374	9.576	1378	9.313	1348	9.381	1345	9.188	1352	9.378	1375	9.274	1375
9.336	1345	9.224	1345	9.233	1350	9.248	1345	9.159	1321	9.183	1318	8.981	1324	9.085	1345	9.049	1349
9.046	1320	9.12	1317	9.07	1323	9.073	1317	8.884	1288	8.984	1296	8.602	1292	8.987	1318	8.795	1314
8.946	1290	8.863	1292	8.759	1291	8.931	1292	8.638	1261	8.614	1264	8.517	1267	8.736	1292	8.511	1292
8.768	1268	8.682	1268	8.641	1265	8.676	1263	8.463	1231	8.416	1237	8.345	1240	8.561	1268	8.336	1265
8.493	1243	8.431	1237	8.496	1237	8.567	1239	8.298	1206	8.312	1209	8.185	1215	8.253	1237	8.138	1240
8.227	1207	8.259	1208	8.339	1211	8.28	1207	8.111	1179	8.096	1182	7.901	1183	8.141	1207	8.055	1214
8.088	1181	8.12	1185	8.061	1187	8.105	1182	7.928	1155	7.922	1157	7.872	1162	7.963	1181	7.877	1186
7.957	1155	7.845	1153	7.913	1161	7.874	1155	7.741	1126	7.599	1126	7.484	1127	7.732	1155	7.525	1155
7.729	1129	7.673	1126	7.664	1126	7.753	1128	7.567	1102	7.558	1103	7.407	1098	7.448	1126	7.315	1131
7.579	1102	7.516	1102	7.496	1100	7.57	1103	7.256	1070	7.268	1074	7.212	1075	7.3	1100	7.167	1100
7.318	1076	7.259	1070	7.33	1074	7.188	1072	7.081	1044	7.117	1047	7.013	1051	7.132	1075	6.96	1072
7.084	1044	7.034	1044	7.146	1047	7.043	1046	6.942	1019	6.984	1022	6.824	1018	6.963	1047	6.842	1046

Table 2. 10 °C at 2 wt %

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
2.893	275.9	2.975	273.7	2.626	274.1	2.688	271	2.851	277.2	2.922	275.9	2.753	271				
3.221	290	3.206	293.1	3.106	288.6	3.1	294.8	3.082	295.3	3.109	296.6	3.046	288.6				
3.624	323	3.348	320.8	3.372	316.9	3.387	321.7	3.322	321.3	3.257	321.7	3.18	315.5				
3.902	349.9	3.7	351.7	3.567	338.4	3.588	350.8	3.502	348.6	3.751	354.3	3.452	341.5				
4.07	374.1	3.917	379.4	3.893	371.5	3.786	373.3	3.695	375	3.789	381.6	3.73	376.8				
4.461	404.1	4.059	403.2	4.085	398.8	4.041	400.6	4.029	401	4.032	404.5	4.026	401.5				
4.574	431	4.396	429.7	4.209	421.7	4.224	426.6	4.313	431.9	4.159	430.5	4.136	425.7				
4.914	456.1	4.719	464	4.532	454.8	4.414	455.2	4.485	461	4.508	464	4.464	452.1				
5.269	486.5	4.923	490	4.784	478.6	4.674	483.4	4.645	485.6	4.801	487.8	4.775	484.8				
5.491	511.2	5.213	515.2	4.982	508.5	4.872	508.1	4.911	511.6	5	514.7	4.911	511.6				
5.748	540.7	5.358	539.8	5.245	534.5	5.159	533.2	5.109	537.2	5.257	542.5	5.136	532.8				
6.035	566.7	5.606	564.5	5.408	559.2	5.529	566.7	5.535	570.2	5.408	567.6	5.331	559.2				
6.24	593.6	5.89	590.5	5.63	583.9	5.722	593.6	5.79	595.4	5.674	593.6	5.787	594.9				
6.494	618.3	6.136	621.4	5.947	618.3	5.911	620	5.959	623.1	5.994	626.7	6.012	620.9				
6.909	649.6	6.429	649.6	6.172	641.6	6.139	646	6.136	646	6.254	652.2	6.154	644.3				
7.21	677.3	6.574	674.7	6.533	673.8	6.391	671.6	6.521	677.8	6.453	679.1	6.352	670.3				
7.592	705.5	6.897	702	6.852	698.9	6.719	703.3	6.823	702.9	6.74	703.3	6.542	697.6				
7.844	736.4	7.213	728	6.974	723.2	6.9	729.3	7.119	732.4	7.018	737.3	6.909	723.2				
7.767	740.8	7.53	759.3	7.267	748.3	7.116	753.1	7.302	759.7	7.364	762.4	7.163	750.5				
8.279	761.9	7.722	788.8	7.625	781.3	7.563	786.6	7.601	786.6	7.628	790.6	7.506	783.1				
8.734	808.7	8.006	810.4	7.888	806.4	7.861	811.7	7.743	809.1	7.79	815.3	7.669	809.5				
8.808	813.9	8.391	843.5	8.104	834.2	8.057	840.4	8.116	841.7	8.107	839.9	8.08	840.8				
9.285	858	8.652	867.7	8.362	859.3	8.329	864.2	8.483	868.6	8.368	872.6	8.394	864.2				
9.344	879.2	8.915	893.3	8.77	889.3	8.684	893.7	8.779	895.5	8.66	895.5	8.607	893.3				
10.02	917.5	9.276	922.8	9.004	916.6	8.894	919.7	8.983	922.8	9.11	926.8	8.921	921				
10.4	950.1	9.566	951.4	9.3	940.4	9.252	946.6	9.312	947.5	9.317	952.8	9.152	944.8				
10.67	977	9.841	978.8	9.738	970.8	9.513	969.9	9.575	972.1	9.643	982.3	9.427	970.4				
10.96	1002	10.11	1002	10.03	998.1	9.995	1003	9.951	1002	9.874	1004	9.871	1002				
11.26	1027	10.6	1033	10.43	1029	10.24	1029	10.22	1028	10.4	1036	10.23	1029				
11.73	1056	10.9	1058	10.77	1053	10.51	1056	10.69	1060	10.64	1064	10.5	1056				
11.97	1084	11.21	1087	11.08	1081	10.83	1081	11.02	1087	10.94	1087	10.81	1083				

Table 2. 10 °C at 2 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
12.28	1110	11.5	1112	11.32	1105	11.18	1107	11.35	1117	11.3	1119	11.18	1107				
12.8	1140	11.87	1143	11.75	1136	11.63	1138	11.69	1141	11.55	1143	11.57	1139				
13.11	1168	12.21	1171	12.12	1162	11.88	1165	11.99	1168	11.92	1172	11.86	1166				
13.38	1192	12.53	1196	12.35	1188	12.22	1191	12.25	1197	12.15	1195	12.25	1194				
14.08	1224	13.02	1229	12.57	1212	12.6	1216	12.6	1223	12.56	1222	12.5	1219				
14.42	1250	13.3	1252	13.09	1244	13.01	1246	12.96	1249	12.86	1249	12.9	1245				
14.73	1278	13.67	1281	13.4	1273	13.27	1274	13.3	1273	13.21	1278	13.32	1277				
15.01	1302	13.88	1305	13.72	1297	13.58	1302	13.59	1299	13.6	1302	13.63	1302				
15.33	1326	14.24	1330	14.05	1323	13.98	1327	14.06	1331	13.98	1335	13.94	1330				
15.71	1357	14.73	1361	14.32	1349	14.27	1352	14.45	1360	14.4	1360	14.25	1356				
16.02	1385	15.06	1386	14.78	1375	14.79	1384	14.69	1386	14.68	1389	14.66	1382				
16.28	1408	15.25	1411	15.2	1409	15.04	1411	15.04	1411	15.05	1415	14.96	1407				
16.88	1440	15.73	1438	15.51	1434	15.41	1439	15.38	1437	15.41	1442	15.5	1439				
17.02	1466	16.11	1472	15.83	1461	15.66	1460	15.87	1468	15.79	1472	15.74	1467				
17.4	1491	16.33	1487	16.2	1485	16.19	1493	16.16	1497	16.23	1498	16.06	1493				
17.84	1523	16.47	1507	16.67	1517	16.53	1522	16.56	1522	16.54	1526	16.41	1520				
16.42	1510	15.86	1478	16.21	1508	16.18	1508	16.15	1511	15.83	1513	16.36	1508				
16.06	1484	15.5	1453	15.83	1486	15.92	1482	15.77	1487	15.71	1494	15.98	1482				
15.77	1457	15.09	1424	15.44	1455	15.38	1457	15.41	1461	15	1431	15.8	1458				
15.44	1431	14.79	1400	15	1430	14.97	1422	15.12	1436	14.82	1401	15.24	1427				
14.91	1398	14.47	1376	14.64	1405	14.7	1399	14.64	1405	14.38	1374	14.91	1402				
14.53	1374	13.99	1346	14.35	1374	14.32	1371	14.29	1376	13.99	1349	14.56	1371				
14.2	1345	13.7	1316	14.08	1350	13.87	1341	13.93	1351	13.64	1321	14.2	1345				
13.87	1319	13.37	1292	13.76	1326	13.58	1315	13.61	1326	13.4	1294	13.79	1321				
13.52	1293	12.9	1260	13.34	1298	13.25	1287	13.43	1302	13.05	1271	13.46	1296				
13.16	1268	12.61	1235	12.9	1267	12.9	1261	12.87	1268	12.7	1239	13.02	1262				
12.73	1237	12.32	1207	12.6	1239	12.62	1235	12.59	1241	12.29	1213	12.72	1237				
12.44	1211	11.9	1177	12.23	1210	12.21	1208	12.21	1218	12.06	1184	12.32	1208				
12.18	1189	11.49	1154	11.98	1184	11.93	1184	11.81	1187	11.7	1161	11.92	1182				
11.71	1153	11.21	1126	11.6	1159	11.44	1150	11.5	1160	11.46	1137	11.7	1160				
11.33	1126	10.91	1099	11.23	1127	11.16	1123	11.21	1136	11.05	1108	11.24	1127				

Table 2. 10 °C at 2 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
11.06	1099	10.45	1070	10.85	1100	10.76	1097	10.86	1105	10.62	1074	11	1101				
10.7	1074	10.2	1044	10.51	1075	10.46	1072	10.55	1075	10.31	1050	10.63	1075				
10.39	1050	9.892	1019	10.29	1051	10.15	1042	10.21	1050	10	1023	10.18	1044				
10.1	1024	9.536	986.7	9.847	1019	9.785	1018	9.983	1026	9.761	999.5	9.9	1021				
9.557	990.2	9.229	962.9	9.489	992.9	9.474	988.9	9.474	993.3	9.184	967.7	9.584	991.5				
9.338	963.3	8.897	937.8	9.249	968.2	9.214	963.8	9.267	966	8.998	940.4	9.3	965.1				
9.004	935.1	8.69	911.8	8.945	936.9	8.912	932	8.903	941.7	8.634	913.5	8.986	941.3				
8.64	908.2	8.317	885.8	8.681	911.8	8.521	906.5	8.495	910.9	8.368	889.7	8.743	913.5				
8.329	883.1	7.956	852.7	8.314	886.2	8.291	878.3	8.217	885.8	8.042	855.8	8.323	888				
8.092	859.3	7.631	825.8	7.9	855.4	7.998	851.8	7.95	860.7	7.642	830.7	8.199	862				
7.716	827.6	7.486	802.9	7.725	827.6	7.657	827.6	7.696	831.6	7.4	804.7	7.734	843				
7.423	800.3	6.926	769.9	7.37	804.7	7.429	802.5	7.474	806	7.095	778.7	7.622	813.9				
7.222	777.4	6.752	745.2	7.201	777.8	7.009	767.2	7.139	781.3	6.941	752.2	7.323	778.7				
6.775	745.2	6.55	718.3	6.793	753.1	6.835	750.9	6.778	747.4	6.503	720.1	6.82	756.2				
6.598	717.9	6.183	693.2	6.53	721.4	6.471	716.1	6.559	722.3	6.337	700.7	6.607	721				
6.299	695.8	5.879	662.3	6.183	693.2	6.24	688.8	6.252	698	6.053	671.6	6.237	694.5				
5.902	662.3	5.642	636.3	5.95	666.3	5.979	664.1	6.009	672.9	5.796	645.2	6.062	668.5				
5.645	636.3	5.464	612.1	5.686	639.9	5.633	633.3	5.654	641.2	5.544	618.7	5.66	635.5				
5.355	608.6	5.233	588.3	5.467	615.6	5.39	607.3	5.387	611.2	5.159	583	5.438	611.2				
5.112	583	4.748	552.6	5.041	581.7	5.127	578.6	5.207	588.3	4.935	560.1	5.127	582.6				
4.843	554.8	4.609	523.5	4.973	562.3	4.887	555.7	4.985	564.1	4.763	530.6	4.92	559.2				
4.612	530.1	4.272	500.2	4.801	536.3	4.659	528.4	4.778	538.5	4.485	504.6	4.5	528.4				
4.334	498.4	3.982	469.8	4.387	503.3	4.245	497.1	4.278	503.7	4.221	477.7	4.316	502.4				
3.967	473.3	3.822	443.8	4.153	475.1	4.091	468.9	4.15	477.7	3.905	451.7	4.056	473.3				
3.928	447.7	3.553	414.2	3.973	451.7	3.925	443.3	3.851	447.3	3.754	427	3.896	446				
3.618	416	3.487	395.7	3.624	419.1	3.629	416.4	3.709	421.7	3.325	395.3	3.695	420.9				
3.283	389.6	3.138	364.9	3.407	393.1	3.416	391.3	3.292	392.6	3.177	366.6	3.295	390				
3.094	362.2	2.934	339.8	3.132	365.3	3.132	367.1	3.26	365.8	2.967	344.2	3.168	361.4				
2.967	339.3	2.567	305.8	2.955	343.3	2.913	334	3.041	342	2.688	309.8	2.94	335.4				
2.502	308	2.366	280.3	2.715	309.4	2.756	308	2.789	317.7	2.455	292.6	2.721	312.4				
2.342	281.6	2.117	253.8	2.428	282.9	2.537	283.4	2.469	283.4	2.289	257.8	2.36	280.7				
2.179	257.8	1.913	228.3	2.247	254.7	2.342	257.8	2.25	260.9	2.031	229.2	2.173	256				

Table 3. 15 °C at 2 wt %

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
3.023	272.8	2.99	277.6	2.83	276.7	2.765	273.2	2.958	276.3	2.878	275.9	2.78	277.2	2.89	271.9	2.789	281.2
3.41	292.6	3.227	293.5	3.197	293.9	2.795	269.3	3.212	296.6	3.076	295.3	3.123	291.7	3.103	295.3	3.073	290.4
3.6	319.5	3.541	317.7	3.573	324.8	3.215	307.6	3.464	321.7	3.328	319.1	3.461	324.3	3.39	319.9	3.319	316.4
3.917	345.5	3.872	348.6	3.674	350.8	3.668	346.4	3.692	345.1	3.677	353	3.65	349.9	3.635	345.9	3.514	342.9
4.198	370.2	4.079	373.3	3.952	377.7	4.124	364.4	4.02	380.8	3.893	378.5	3.86	376.3	3.813	371.1	3.878	372.8
4.579	402.3	4.357	401	4.23	405.9	4.109	395.3	4.192	403.2	4.141	404.1	4.094	401	4.1	397.9	3.988	398.4
4.754	430.5	4.497	424.4	4.514	431.9	4.491	413.4	4.458	430.5	4.325	430.5	4.393	437.6	4.431	431.9	4.221	421.3
5.032	456.1	4.861	456.1	4.73	460.1	4.665	452.1	4.585	457	4.704	461.8	4.656	460.1	4.553	459.6	4.541	454.3
5.358	482.1	5.13	481.7	4.852	485.2	4.958	479.5	4.958	489.6	4.849	489.2	4.801	489.6	4.855	484.3	4.766	481.2
5.725	508.5	5.299	509	5.112	509.9	5.13	502.4	5.088	513	5.068	513	4.973	514.7	5.035	507.7	4.911	505.9
6.237	539.4	5.612	540.7	5.337	536.8	5.473	537.6	5.284	540.7	5.272	538.5	5.162	539	5.263	539.8	5.118	533.7
6.512	565.8	5.885	564.5	5.701	567.2	5.521	558.3	5.515	566.3	5.535	562.8	5.39	566.7	5.414	568	5.278	559.7
6.906	589.2	6.074	590.1	5.923	594.9	5.802	585.7	5.725	590.5	5.734	588.8	5.707	592.3	5.71	595.8	5.589	584.3
7.483	620	6.399	620.9	6.136	617.4	6.059	613.4	6.098	623.1	5.976	617.8	6.024	625.3	5.932	618.7	5.893	616.1
7.746	648.7	6.687	649.1	6.355	648.2	6.364	646.5	6.399	650.4	6.361	650	6.287	648.7	6.234	650.4	6.074	642.5
7.924	672.5	6.941	673.4	6.621	672	6.577	672.5	6.512	673.8	6.536	676	6.468	676.9	6.287	669.8	6.246	669.8
8.149	702	7.104	697.6	6.941	705.5	6.855	701.1	6.879	703.3	6.965	707.7	6.737	702.4	6.568	695.4	6.503	693.6
8.288	728	7.474	728.4	7.169	729.3	7.074	727.1	7.11	730.2	7.204	731.5	7.03	734.6	6.944	731.1	6.728	719.6
8.601	754	7.693	754	7.438	754.9	7.302	752.7	7.474	761.5	7.344	758.9	7.296	761.5	7.175	758.9	6.941	746.5
8.868	782.7	8.089	784	7.779	785.3	7.693	784	7.699	786.6	7.515	783.5	7.489	784.9	7.45	781.3	7.415	781.8
9.093	809.5	8.296	811.7	7.962	814.8	7.927	810.9	7.953	816.6	7.752	807.3	7.782	815.7	7.675	811.7	7.619	805.6
9.356	833.3	8.578	837.7	8.279	840.8	8.163	836.4	8.184	839.5	8.151	839.9	8.122	842.6	7.95	835.5	7.773	832
9.673	865.5	8.797	862	8.483	864.6	8.444	861.1	8.394	863.3	8.397	868.1	8.291	866.8	8.282	865.9	8.083	857.6
10.01	893.7	9.241	893.7	8.773	890.6	8.607	888.4	8.69	889.3	8.829	892.8	8.515	891.1	8.441	894.1	8.347	882.2
10.32	918.8	9.406	921	9.178	925	9.042	920.1	9.081	923.2	9.187	925	8.974	925	8.717	919.7	8.702	917.1
10.65	944.4	9.681	943.9	9.359	951.4	9.317	945.3	9.288	950.6	9.386	951.4	9.19	953.2	8.951	943.9	8.977	943.1
10.89	973.5	10.08	977.9	9.625	975.2	9.602	975.2	9.56	974.3	9.673	978.3	9.51	977	9.347	976.6	9.172	971.3
11.07	999	10.33	1002	9.898	1001	9.827	1001	9.832	994.2	9.93	1007	9.755	1005	9.613	1001	9.436	997.7
11.6	1030	10.59	1030	10.27	1031	10.19	1027	10.29	1026	10.14	1031	10	1030	9.892	1031	9.69	1025
11.92	1058	10.88	1055	10.62	1058	10.41	1052	10.27	1043	10.34	1056	10.39	1062	10.15	1053	10.03	1049
12.18	1086	11.29	1087	10.78	1081	10.79	1078	10.77	1072	10.65	1082	10.68	1081	10.52	1087	10.32	1076

Table 3. 15 °C at 2 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
12.49	1113	11.62	1111	11.09	1108	11	1104	11.19	1111	11.1	1113	10.99	1114	10.8	1110	10.64	1108
12.77	1134	11.8	1138	11.5	1137	11.5	1140	11.33	1131	11.37	1142	11.2	1140	11.08	1140	10.95	1135
13.03	1166	12.13	1163	11.94	1168	11.74	1165	11.68	1158	11.67	1169	11.46	1164	11.41	1166	11.26	1161
13.4	1192	12.66	1195	12.15	1194	11.94	1192	11.97	1189	12.04	1195	11.98	1197	11.66	1192	11.53	1185
13.81	1220	12.87	1219	12.42	1217	12.29	1217	12.45	1225	12.35	1225	12.28	1222	12.08	1219	11.94	1216
14.02	1243	13	1247	12.79	1244	12.61	1242	12.78	1251	12.61	1249	12.6	1249	12.49	1250	12.19	1243
14.38	1268	13.29	1271	13.24	1276	13.13	1274	13.08	1278	12.99	1274	12.9	1275	12.81	1276	12.52	1268
14.81	1298	13.67	1305	13.49	1306	13.36	1302	13.35	1302	13.41	1307	13.19	1302	13.05	1301	12.85	1293
15.15	1324	14.01	1330	13.85	1328	13.65	1326	13.74	1327	13.72	1333	13.68	1336	13.32	1326	13.33	1325
15.59	1356	14.3	1356	14.29	1359	14.06	1352	14.17	1360	14.06	1362	13.9	1360	13.68	1350	13.59	1354
15.98	1383	14.62	1380	14.64	1386	14.45	1382	14.43	1385	14.42	1385	14.23	1388	14.1	1386	13.96	1379
16.16	1408	15.02	1412	14.91	1411	14.86	1409	14.72	1413	14.68	1409	14.56	1413	14.44	1409	14.36	1405
16.62	1438	15.51	1440	15.54	1442	15.12	1437	15.06	1439	15.14	1444	14.86	1438	14.74	1434	14.59	1433
16.91	1465	15.76	1464	15.88	1469	15.42	1462	15.45	1465	15.51	1467	15.3	1469	15.25	1469	14.9	1461
17.29	1488	16.03	1489	16.25	1493	15.7	1487	15.88	1499	15.83	1497	15.63	1498	15.59	1496	15.34	1492
17.65	1521	16.44	1520	16.5	1518	16.18	1519	16.14	1525	16.09	1520	15.96	1523	15.83	1520	15.51	1506
16.17	1506	15.93	1509	15.78	1507	15.54	1508	15.4	1489	15.28	1488	15.66	1511	15.57	1514	15.54	1515
15.75	1481	15.51	1484	15.37	1479	15.28	1481	14.89	1457	14.77	1456	15.34	1483	15.28	1486	15.1	1482
15.43	1454	15.25	1461	15.07	1456	15.04	1457	14.51	1429	14.42	1427	15.04	1461	14.75	1453	14.77	1454
15.13	1430	14.89	1429	14.69	1430	14.51	1425	14.3	1408	14.18	1402	14.63	1428	14.42	1426	14.54	1429
14.57	1397	14.48	1400	14.39	1403	14.09	1399	13.98	1382	13.77	1377	14.24	1403	14.03	1402	14.18	1406
14.27	1372	14.09	1376	14.01	1370	13.86	1370	13.53	1348	13.47	1346	13.98	1374	13.68	1376	13.77	1373
13.92	1343	13.77	1346	13.65	1346	13.5	1347	13.21	1322	13.09	1321	13.62	1348	13.41	1352	13.41	1346
13.68	1321	13.38	1318	13.29	1318	13.09	1316	12.95	1297	12.77	1291	13.29	1323	13.09	1326	13.18	1322
13.18	1291	13.09	1293	13.03	1291	12.75	1289	12.51	1264	12.49	1268	12.95	1296	12.64	1290	12.82	1294
12.98	1263	12.84	1268	12.62	1266	12.54	1265	12.19	1238	12.25	1244	12.58	1268	12.36	1263	12.44	1265
12.56	1237	12.45	1237	12.25	1232	12.09	1233	11.89	1213	11.74	1210	12.21	1237	12.01	1237	12.13	1242
12.32	1207	12.01	1208	12.04	1211	11.83	1209	11.59	1184	11.52	1182	11.9	1211	11.84	1212	11.81	1209
11.95	1182	11.82	1184	11.59	1178	11.56	1182	11.25	1158	11.11	1156	11.54	1185	11.51	1186	11.52	1184
11.48	1160	11.39	1154	11.21	1152	11.32	1159	10.85	1132	10.87	1130	11.21	1155	11.07	1155	11.19	1159
11.35	1140	11.1	1129	10.92	1122	11.04	1132	10.67	1106	10.61	1106	10.93	1129	10.72	1125	10.85	1134

Table 3. 15 °C at 2 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
11.02	1108	10.75	1098	10.71	1098	10.49	1099	10.2	1077	10.1	1075	10.68	1102	10.33	1101	10.62	1107
10.83	1082	10.43	1074	10.24	1068	10.28	1071	9.989	1051	9.859	1047	10.32	1076	10.05	1072	10.18	1075
10.23	1049	10.13	1047	10.06	1043	10.06	1050	9.693	1025	9.631	1022	9.963	1051	9.877	1048	9.874	1048
10.18	1033	9.868	1023	9.824	1021	9.536	1018	9.309	991.5	9.155	989.3	9.738	1026	9.545	1024	9.622	1024
9.631	993.7	9.43	990.2	9.338	986.7	9.264	990.2	9.078	968.6	8.983	963.8	9.261	991.1	9.184	991.1	9.347	997.3
9.279	962.5	9.104	963.3	9.081	959.8	9.084	962.9	8.791	943.1	8.666	936.5	9.042	965.1	8.838	965.1	8.903	965.1
9.11	936.9	8.871	938.2	8.74	932	8.797	940.4	8.415	914.4	8.447	911.3	8.761	938.2	8.658	941.3	8.604	938.2
8.655	905.2	8.619	910	8.477	908.7	8.379	906.9	8.193	888	8.075	887.1	8.53	913.1	8.193	909.6	8.365	910.5
8.376	878.3	8.359	885.8	8.225	883.1	8.143	880	7.808	858	7.787	853.2	8.249	888	8.06	881.4	8.137	885.8
8.211	855.8	8.042	859.3	7.853	850.1	7.906	855.4	7.554	828.5	7.503	829.4	7.858	854	7.779	857.1	7.752	860.7
7.799	826.3	7.639	827.6	7.604	824.1	7.465	824.1	7.258	803.8	7.231	803.8	7.568	826.3	7.551	832.4	7.48	829.8
7.518	799	7.524	801.6	7.358	795.4	7.261	799.4	7.107	780	6.92	778.7	7.341	799.8	7.116	800.3	7.199	802.5
7.32	774.7	7.059	771.6	7.071	769.9	6.982	772.1	6.758	753.6	6.645	745.6	7.012	776.5	6.879	771.6	6.897	771.6
6.92	741.7	6.846	744.8	6.793	745.2	6.761	745.6	6.429	722.3	6.364	717.9	6.707	744.8	6.642	745.2	6.595	746.1
6.695	718.3	6.607	717.9	6.613	720.5	6.506	717.9	6.234	696.7	6.124	694.1	6.42	719.6	6.349	720.1	6.432	723.6
6.42	688.8	6.254	695	6.299	692.8	6.186	692.8	6.012	671.2	5.917	669.4	6.195	692.8	6.16	696.7	6.077	690.5
6.192	665	6.035	664.1	5.917	659.7	5.879	661.5	5.589	637.2	5.562	638.5	5.917	665.4	5.811	662.3	5.748	665.9
5.834	638.1	5.816	640.3	5.68	635.5	5.595	634.1	5.331	613.4	5.408	609.5	5.648	642.5	5.624	639.9	5.615	638.5
5.731	612.5	5.55	616.5	5.381	608.1	5.447	609.9	5.077	585.7	5.124	585.7	5.322	610.8	5.307	614.8	5.402	614.8
5.198	579.9	5.168	583	5.118	576.4	5.094	580.8	4.843	561.4	4.716	554.8	5.065	586.1	5.006	587.9	5.006	584.3
5.05	550.9	4.952	554.8	4.908	552.2	4.893	556.6	4.609	528.8	4.482	527.5	4.923	556.6	4.763	555.3	4.763	555.3
4.766	527.9	4.784	531.9	4.633	525.7	4.576	526.2	4.357	501.1	4.357	502.8	4.701	532.3	4.538	528.8	4.568	530.1
4.547	505	4.381	499.3	4.396	497.1	4.36	501.9	4.109	476.4	4.13	476.8	4.426	506.8	4.289	503.7	4.319	506.3
4.337	476.8	4.198	472	4.18	468.9	4.044	470.6	3.955	453.9	3.804	451.3	4.085	473.3	4.008	478.1	4.038	471.1
3.97	444.6	3.996	447.3	3.828	442	3.884	443.3	3.6	419.5	3.487	416.9	3.783	445.5	3.709	444.2	3.721	448.2
3.724	418.6	3.78	423.9	3.727	416.4	3.635	420.4	3.319	394.4	3.319	392.2	3.635	418.6	3.443	416.4	3.632	417.8
3.49	391.3	3.674	404.5	3.384	390	3.325	388.2	3.18	368.9	3.055	366.2	3.407	395.3	3.31	391.8	3.319	394.4
3.227	361.8	3.289	385.2	3.197	364	2.978	363.1	2.937	342	2.878	338	3.271	369.3	3.138	366.2	3.076	363.1
3.076	334.5	2.875	342	3.052	339.8	2.898	334.9	2.529	312	2.7	313.3	2.851	336.2	2.819	339.8	2.845	338
2.842	309.8	3.002	331.8	2.603	306.7	2.709	310.7	2.443	285.6	2.404	282.9	2.671	310.7	2.611	308.5	2.611	312.4
2.537	283.4	2.573	293.5	2.431	277.2	2.434	282	2.247	259.6	2.215	255.2	2.505	284.2	2.395	283.4	2.375	283.4
2.236	252.5	2.514	271	2.135	252.1	2.271	257.8	2.025	237.1	2.025	231.8	2.218	259.1	2.159	255.2	2.129	257.4

Table 4. 25 °C at 2 wt %

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
2.652	275	2.62	279.4	2.605	275	2.605	277.6	2.525	273.2	2.484	275.4	2.247	272.3	2.208	274.5	2.108	278.1
3.102	296.1	3.034	293.5	2.865	296.1	2.836	297.9	2.774	297.5	2.717	297	2.575	294.8	2.463	295.3	2.531	294.8
3.312	321.7	3.265	318.6	3.129	318.2	3.141	321.7	3.043	318.6	2.998	323.9	2.874	323.9	2.809	327.4	2.717	323
3.552	346.4	3.558	346.4	3.454	349.9	3.454	351.2	3.256	347.3	3.209	349	3.158	350.3	3.034	357	2.922	347.3
3.842	369.7	3.774	370.6	3.709	379.4	3.667	378.1	3.641	379	3.413	373.7	3.392	375.5	3.212	382.1	3.274	378.1
4.209	402.3	4.185	403.2	3.922	404.1	3.916	400.6	3.851	404.1	3.768	405.9	3.579	403.7	3.496	407.6	3.425	403.7
4.561	427.9	4.345	428.8	4.292	434.5	4.093	426.1	4.064	431.4	4.008	431.9	3.771	430.5	3.694	433.6	3.688	431
4.904	460.1	4.608	453.5	4.268	438.5	4.484	461	4.333	456.5	4.173	460.1	4.102	454.8	4.043	468.9	3.886	458.8
5.186	485.2	4.907	486.5	4.759	483.9	4.706	489.2	4.558	482.1	4.401	485.6	4.425	484.8	4.244	492.7	4.064	485.2
5.443	513	5.224	511.6	5.135	505	4.961	513.8	4.786	508.5	4.676	517.4	4.6	515.2	4.457	521.3	4.265	509
5.656	535	5.407	539.4	5.262	528.8	5.245	539	5.041	534.1	4.934	542	4.854	540.3	4.629	546	4.496	532.8
6.171	568	5.698	562.3	5.511	560.1	5.479	565	5.41	568	5.171	570.7	4.987	564.1	5.014	577.3	4.893	569.8
6.363	594	5.97	586.1	5.668	575.1	5.795	595.8	5.606	591	5.39	593.6	5.262	589.2	5.058	597.1	5.005	597.6
6.615	618.7	6.352	618.7	6.133	623.1	6.005	625.3	5.825	621.4	5.715	624	5.558	621.8	5.366	623.6	5.227	622.7
6.935	643.8	6.508	646	6.461	652.2	6.289	649.1	6.076	645.2	5.928	651.8	5.718	649.1	5.505	650	5.493	647.8
7.296	676.9	6.745	672	6.642	676.9	6.47	678.2	6.417	677.8	6.171	676.9	6.109	675.6	5.813	683.1	5.718	672.5
7.541	703.8	7.177	702.4	7.009	700.7	6.79	706	6.733	703.8	6.431	708.6	6.233	703.3	6.02	710.8	5.99	703.3
7.858	726.7	7.378	730.7	7.293	733.7	7.083	732.4	6.875	723.2	6.674	733.3	6.461	728	6.405	741.7	6.275	735.1
8.287	760.2	7.648	754.9	7.621	758.9	7.361	759.7	7.21	761.5	6.976	760.2	6.76	754.9	6.719	763.7	6.467	761.5
8.556	787.1	7.985	785.3	7.825	786.6	7.671	786.6	7.29	777.8	7.21	789.3	7.006	781.3	6.852	793.7	6.736	786.2
8.894	810.4	8.151	804.2	8.068	812.6	7.831	814.4	7.722	814.4	7.387	814.8	7.358	815.3	7.009	818.8	6.884	812.2
9.113	838.2	8.515	839.1	8.323	836.9	8.071	839.1	7.929	838.6	7.657	839.5	7.556	841.7	7.307	846.1	7.115	840.4
9.536	869	8.808	862	8.604	862.9	8.349	867.7	8.195	864.6	7.95	864.6	7.763	865.5	7.464	870.8	7.449	868.6
9.826	893.7	9.107	891.1	8.982	896.3	8.666	894.6	8.438	889.7	8.178	891.1	8.071	897.2	7.802	897.2	7.704	895
10.11	922.3	9.426	922.3	9.142	923.2	8.855	918.8	8.728	921.9	8.586	925.4	8.37	922.8	8.08	924.1	7.855	920.1
10.37	945.7	9.696	946.6	9.403	951.4	9.116	945.3	9.039	947.9	8.808	954.1	8.527	950.1	8.394	957.2	8.083	945.7
10.76	977	9.918	971.3	9.705	975.2	9.551	978.3	9.222	975.7	9.039	979.6	8.766	974.3	8.598	984.5	8.453	979.6
11.05	1005	10.29	999.5	9.941	1002	9.71	1007	9.512	1001	9.332	1004	8.977	999.9	8.897	1009	8.687	1007
11.32	1028	10.52	1025	10.23	1030	9.995	1031	9.743	1027	9.604	1029	9.465	1033	9.127	1034	8.95	1031
11.58	1053	10.78	1050	10.62	1062	10.24	1055	10.13	1059	9.87	1056	9.663	1059	9.497	1066	9.172	1056
12.01	1087	11.15	1084	10.89	1086	10.48	1081	10.44	1088	10.23	1090	9.95	1084	9.687	1092	9.491	1090

Table 4. 25 °C at 2 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
12.31	1110	11.42	1113	11.1	1113	10.88	1117	10.64	1111	10.5	1117	10.13	1109	9.98	1122	9.814	1113
12.62	1137	11.66	1134	11.36	1140	11.19	1140	11.02	1142	10.66	1142	10.51	1141	10.23	1144	10.04	1141
13.08	1167	11.97	1159	11.62	1164	11.53	1172	11.25	1169	10.92	1169	10.67	1170	10.53	1175	10.2	1166
13.38	1194	12.38	1192	12.05	1196	11.82	1198	11.49	1193	11.2	1194	11	1192	10.8	1203	10.62	1199
13.58	1217	12.61	1221	12.31	1221	11.89	1218	11.79	1218	11.65	1227	11.2	1218	11.06	1228	10.85	1223
14.08	1249	12.95	1247	12.57	1250	12.29	1237	12	1244	11.88	1252	11.64	1252	11.43	1258	11.2	1251
14.37	1277	13.27	1275	12.86	1274	12.39	1250	12.41	1272	12.12	1280	11.9	1278	11.61	1285	11.43	1277
14.52	1299	13.62	1304	13.25	1308	12.89	1308	12.76	1304	12.38	1304	12.18	1304	11.9	1310	11.67	1301
14.93	1328	13.84	1330	13.55	1334	12.95	1315	13.12	1332	12.76	1334	12.4	1329	12.14	1338	12	1334
15.19	1353	14.2	1354	13.76	1356	13.38	1336	13.32	1358	13.08	1359	12.85	1360	12.41	1362	12.34	1359
15.65	1384	14.56	1384	14.19	1389	13.9	1385	13.61	1383	13.32	1387	13.15	1386	12.82	1396	12.62	1384
15.95	1412	14.8	1412	14.55	1416	14.19	1412	13.89	1407	13.57	1414	13.41	1411	13.09	1419	12.74	1411
16.25	1438	15.12	1436	14.86	1442	14.67	1444	14.28	1441	13.99	1446	13.74	1438	13.43	1443	13.16	1436
16.53	1462	15.4	1461	15.09	1466	14.84	1468	14.67	1467	14.31	1471	13.91	1464	13.82	1475	13.54	1470
16.95	1489	15.83	1493	15.37	1491	15.17	1495	14.92	1492	14.64	1498	14.37	1497	14.09	1500	13.81	1494
17.39	1523	16.09	1520	15.72	1517	15.49	1524	15.26	1516	14.85	1523	14.71	1523	14.59	1531	14.15	1523
16.26	1535	15.7	1534	15.4	1541	14.93	1513	14.34	1511	14.72	1539	12.93	1419	13.87	1535	13.63	1504
16	1509	15.35	1510	14.93	1509	14.58	1486	14.04	1485	14.22	1506	12.61	1394	13.57	1507	13.48	1478
15.58	1478	15.05	1487	14.69	1486	14.13	1453	13.87	1456	14.01	1480	12.21	1360	13.42	1482	13.1	1453
15.14	1452	14.63	1453	14.43	1458	13.9	1429	13.45	1434	13.72	1455	12.13	1344	13.18	1458	12.82	1426
14.9	1425	14.37	1430	14.25	1431	13.57	1399	13.16	1408	13.39	1431	11.65	1308	12.74	1425	12.52	1399
14.61	1402	14.1	1407	13.9	1405	13.24	1374	12.86	1376	13.04	1402	11.39	1280	12.55	1400	12.29	1374
14.16	1370	13.63	1371	13.36	1372	12.89	1347	12.54	1348	12.74	1370	11.1	1256	12.3	1374	11.81	1342
13.87	1343	13.24	1346	13.04	1348	12.7	1318	12.37	1322	12.4	1343	10.84	1230	11.86	1342	11.88	1338
13.57	1320	13.02	1317	12.87	1320	12.41	1292	11.81	1291	12.21	1320	10.53	1204	11.59	1318	11.19	1307
13.3	1294	12.72	1296	12.64	1295	12.03	1267	11.59	1266	11.86	1293	10.13	1173	11.2	1290	11.2	1293
12.82	1261	12.44	1269	12.27	1270	11.76	1243	11.4	1237	11.4	1262	9.882	1145	11.02	1264	10.4	1219
12.5	1237	12.07	1237	11.78	1237	11.38	1208	11.11	1212	11.13	1236	9.577	1114	10.75	1233	10.37	1212
12.25	1207	11.84	1209	11.48	1214	11.06	1183	10.77	1186	10.9	1208	9.346	1097	10.48	1209	10.44	1207
11.89	1181	11.38	1180	11.23	1184	10.81	1157	10.49	1155	10.58	1181	9	1063	10.05	1178	9.805	1157
11.63	1156	11.07	1154	10.96	1158	10.48	1130	10.19	1128	10.33	1155	8.695	1034	9.98	1160	9.444	1123

Table 5. 50 °C at 2 wt %

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
3.587	274.5	3.232	282	3.229	278.5	2.989	272.3	3.087	275.4	2.912	276.7	2.743	278.5	2.696	271.9	2.776	277.6
3.927	292.6	3.643	290.9	3.687	297.5	3.309	291.7	3.406	295.7	3.187	293.5	3.223	298.8	2.983	291.7	3.137	300.5
4.288	319.1	3.936	318.6	3.895	321.7	3.628	316	3.495	314.2	3.534	325.2	3.495	322.6	3.335	324.3	3.377	324.8
4.691	347.3	4.244	344.6	4.137	348.1	4.057	348.6	3.927	349	3.732	350.3	3.643	349	3.593	349.9	3.684	355.2
4.939	375.5	4.448	367.5	4.398	372.8	4.259	376.3	4.12	376.8	3.989	376.3	3.909	373.3	3.782	378.5	3.853	383.4
5.188	397.5	4.922	399.7	4.608	399.3	4.569	401.5	4.401	401	4.297	403.2	4.161	400.6	4.049	404.5	4.105	409
5.632	429.7	5.078	423.5	5.099	432.3	4.791	428.3	4.744	432.8	4.478	430.1	4.454	433.6	4.297	430.5	4.291	419.1
5.83	457	5.401	453	5.339	459.6	5.087	453.9	4.975	458.3	4.7	453.5	4.697	459.2	4.652	461.8	4.708	467.6
6.123	479.9	5.664	476.8	5.709	482.5	5.436	486.5	5.191	483.4	5.138	486.1	4.871	483.4	4.803	486.1	4.673	479.9
6.514	511.2	6.07	509.9	5.922	509.4	5.738	514.7	5.472	509.4	5.306	514.7	5.087	507.7	5.061	516	5.01	507.2
6.727	539	6.289	536.3	6.327	543.4	5.928	539.8	5.735	534.1	5.549	538.1	5.46	542	5.265	539.4	5.442	533.2
6.984	563.2	6.576	561.4	6.576	568.5	6.138	567.6	5.972	560.5	5.857	569.8	5.732	567.6	5.484	564.1	5.505	557.5
7.292	588.3	6.958	585.7	6.789	594.9	6.457	591.8	6.404	597.6	6.206	596.2	5.907	594.9	5.833	597.1	5.943	585.2
7.706	620	7.286	618.7	7.085	620	6.807	622.7	6.638	622.7	6.327	623.6	6.108	621.8	6.04	621.4	6.221	628.9
8.02	645.2	7.612	643.4	7.381	645.2	7.126	649.6	6.848	646.5	6.626	647.8	6.354	646.5	6.262	647.8	6.381	658.4
8.42	670.7	7.875	670.7	7.721	680	7.325	675.6	7.106	672.5	7.026	679.5	6.65	671.6	6.493	676.4	6.579	681.7
8.671	698	8.118	694.5	7.931	703.8	7.635	702	7.526	704.2	7.227	704.7	6.961	707.3	6.736	701.6	6.792	708.2
9.106	728.4	8.538	728.9	8.183	727.1	7.937	728.9	7.769	733.3	7.464	730.7	7.171	731.1	7.126	734.2	7.097	732.9
9.346	757.1	8.837	754	8.594	758.9	8.112	758.9	8.023	758.9	7.78	757.1	7.449	757.1	7.325	760.2	7.354	766.8
9.639	781.3	9.097	779.1	8.872	786.2	8.381	780.9	8.251	784.4	8.044	789.3	7.677	784	7.511	785.7	7.6	793.2
10.09	813.9	9.556	811.3	9.124	815.7	8.772	811.7	8.428	808.7	8.28	814.4	7.993	814.4	7.78	810.4	7.816	817
10.23	831.1	9.837	835.1	9.411	839.9	9	838.2	8.917	842.1	8.455	842.1	8.227	842.1	8.109	841.7	8.263	848.8
10.63	864.6	10.09	863.3	9.802	869.9	9.225	862.4	9.094	869.9	8.683	866.4	8.479	867.7	8.369	867.3	8.514	873.9
10.99	889.3	10.36	885.8	9.923	894.6	9.603	896.3	9.358	893.7	9.085	897.7	8.671	891.5	8.568	898.6	8.716	898.6
11.34	918.4	10.73	917.1	10.3	924.6	9.885	919.7	9.618	917.5	9.328	923.2	9.032	924.1	8.852	923.2	8.967	924.1
11.75	943.1	11.05	945.3	10.64	952.8	10.13	947.5	9.938	948.8	9.494	950.6	9.236	949.2	9.127	950.6	9.352	955.8
12.1	974.3	11.31	968.2	10.86	976.6	10.41	972.6	10.12	977.4	9.793	974.8	9.586	978.3	9.322	974.3	9.654	983.6
12.4	999.5	11.72	998.1	11.22	1005	10.77	1003	10.38	1002	10.04	1001	9.748	1003	9.603	1002	9.834	1008
12.7	1022	11.9	1027	11.43	1033	11.07	1029	10.85	1034	10.42	1033	10.03	1028	9.84	1027	10.22	1039
13.13	1057	12.18	1053	11.77	1059	11.31	1058	11.11	1059	10.62	1060	10.29	1053	10.17	1060	10.55	1064
13.38	1080	12.46	1077	12.04	1085	11.48	1081	11.31	1084	10.89	1086	10.57	1079	10.47	1089	10.78	1093

Table 5. 50 °C at 2 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
13.57	1106	12.94	1108	12.48	1117	12.02	1114	11.49	1112	11.22	1115	10.96	1116	10.59	1107	11.01	1119
14.07	1137	13.09	1137	12.71	1141	12.22	1138	11.77	1135	11.52	1143	11.23	1141	11.04	1141	11.33	1147
14.42	1163	13.47	1166	13.03	1171	12.55	1164	12.11	1168	11.73	1167	11.43	1168	11.24	1169	11.65	1172
14.82	1191	13.78	1192	13.29	1195	12.8	1193	12.39	1196	12.06	1196	11.72	1192	11.56	1196	12.06	1201
15.09	1218	14.08	1218	13.59	1219	13.13	1217	12.7	1222	12.32	1221	12.05	1222	11.84	1223	12.24	1229
15.21	1243	14.34	1243	13.8	1246	13.48	1251	12.99	1247	12.66	1254	12.29	1250	12.12	1249	12.51	1254
15.54	1268	14.6	1268	14.2	1279	13.75	1277	13.26	1272	12.98	1281	12.6	1275	12.39	1276	12.78	1279
15.95	1301	15.06	1299	14.51	1305	14.1	1304	13.61	1308	13.2	1304	12.92	1306	12.67	1302	13.27	1313
16.24	1329	15.33	1327	14.74	1330	14.34	1328	13.9	1331	13.49	1329	13.2	1330	13.06	1333	13.64	1338
16.48	1351	15.57	1352	15.12	1360	14.63	1353	14.21	1359	13.71	1354	13.53	1361	13.3	1359	13.93	1366
16.92	1382	15.82	1376	15.4	1389	15.04	1386	14.42	1384	14.15	1389	13.68	1383	13.57	1383	14.18	1393
17.12	1410	16.27	1408	15.69	1414	15.39	1411	14.77	1412	14.52	1416	14.12	1415	13.99	1416	14.44	1419
17.52	1439	16.62	1434	15.94	1440	15.61	1436	15.02	1435	14.8	1441	14.36	1442	14.29	1441	14.8	1449
17.67	1463	17.04	1465	16.31	1471	16.08	1468	15.45	1468	15.07	1470	14.61	1465	14.56	1467	14.93	1474
18.17	1478	17.24	1492	16.57	1497	16.35	1495	15.76	1496	15.32	1495	14.89	1491	14.79	1497	15.25	1503
18.32	1501	17.43	1516	16.85	1525	16.72	1521	16.03	1520	15.64	1521	15.3	1523	15.08	1521	15.47	1528
17.46	1510	16.22	1487	16.55	1508	16.01	1510	15.21	1488	15.3	1509	15.07	1508	14.89	1510	14.86	1487
16.99	1480	15.81	1456	16.28	1482	15.66	1485	14.98	1452	14.98	1482	14.77	1482	14.59	1482	14.56	1463
16.72	1463	15.54	1430	15.9	1458	15.24	1452	14.62	1426	14.68	1459	14.47	1456	14.36	1454	14.15	1429
16.25	1428	15.18	1398	15.66	1432	14.86	1424	14.33	1400	14.39	1434	14.21	1432	14.06	1429	13.85	1401
15.92	1400	14.83	1374	15.27	1400	14.68	1400	13.97	1371	14	1400	13.82	1397	13.76	1406	13.59	1378
15.54	1376	14.56	1346	14.89	1371	14.39	1373	13.65	1343	13.76	1371	13.5	1371	13.32	1372	13.2	1353
15.16	1344	14.3	1324	14.68	1348	14.03	1346	13.29	1314	13.47	1348	13.2	1348	13.05	1348	12.82	1320
14.8	1318	13.85	1291	14.24	1316	13.79	1319	13.08	1294	13.2	1324	12.97	1325	12.84	1321	12.6	1293
14.56	1294	13.56	1264	13.97	1293	13.26	1286	12.73	1258	12.82	1291	12.49	1288	12.55	1294	12.3	1268
14.24	1270	13.23	1239	13.59	1263	13.02	1259	12.42	1235	12.58	1263	12.33	1264	12.23	1268	11.98	1241
13.85	1236	12.94	1208	13.35	1237	12.78	1234	12.16	1206	12.28	1236	12.03	1236	11.9	1243	11.63	1215
13.53	1213	12.64	1181	13.08	1214	12.52	1210	11.89	1182	11.93	1208	11.73	1212	11.55	1207	11.27	1183
13.17	1182	12.41	1157	12.66	1181	12.1	1177	11.44	1154	11.64	1183	11.27	1180	11.3	1183	10.97	1159
12.84	1155	11.98	1126	12.42	1157	11.91	1158	11.29	1125	11.38	1160	11.07	1153	11.02	1155	10.77	1130
12.64	1131	11.83	1107	12.34	1128	11.34	1124	10.99	1101	11.08	1132	10.84	1128	10.67	1127	10.38	1106

Table 5. 50 °C at 2 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
12.27	1106	11.3	1074	12.02	1104	11.06	1099	10.66	1076	10.76	1107	10.52	1104	10.49	1103	10.21	1077
11.96	1079	11.09	1046	11.47	1073	10.8	1074	10.37	1049	10.55	1081	10.3	1077	10.12	1077	9.87	1050
11.51	1047	10.69	1016	11.18	1049	10.49	1042	9.917	1017	10.18	1053	9.908	1051	9.748	1044	9.574	1025
11.24	1018	10.38	990.7	10.84	1025	10.15	1014	9.725	987.6	9.802	1018	9.583	1016	9.544	1019	9.278	999.5
10.94	995.9	10.09	962.9	10.42	989.8	9.873	988.9	9.432	961.1	9.544	992.9	9.373	990.2	9.343	995.5	8.979	964.2
10.66	965.1	9.828	938.2	10.1	963.8	9.606	961.6	9.195	938.2	9.272	965.1	8.961	966	8.92	963.8	8.692	939.1
10.29	938.2	9.574	914.9	9.799	939.5	9.275	931.2	8.781	903	9.029	941.3	8.787	935.1	8.65	936	8.405	915.3
9.973	915.3	9.183	882.2	9.518	910	8.985	904.3	8.565	884.9	8.727	920.1	8.52	913.5	8.434	911.8	7.973	884
9.737	887.5	8.955	855.8	9.278	884.5	8.701	880.5	8.201	851.8	8.313	895.5	8.115	881.8	8.109	880.5	7.769	857.1
9.287	853.2	8.692	831.6	8.905	857.6	8.346	850.1	7.931	822.8	8.242	885.8	7.934	857.1	7.795	852.3	7.428	827.6
9.059	830.7	8.245	796.3	8.647	831.6	8.07	824.1	7.706	798.1	7.771	836	7.653	828.5	7.561	828.5	7.174	804.7
8.724	806.4	7.973	772.1	8.212	799.8	7.801	799	7.413	774.3	7.511	804.2	7.259	797.2	7.28	802.9	6.969	776.9
8.405	777.8	7.703	744.3	7.996	772.1	7.55	769	7.046	741.7	7.328	790.6	7.005	773.4	6.937	776.5	6.653	749.2
8.026	743.9	7.487	721.4	7.724	748.3	7.283	743.9	6.789	715.2	6.913	750	6.789	745.2	6.632	747.8	6.366	721
7.789	725.8	7.052	689.7	7.393	722.3	7.014	719.6	6.561	691.4	6.694	721	6.534	721	6.434	720.1	6.167	696.7
7.384	690.1	6.866	662.8	7.029	690.5	6.537	686.1	6.241	665.4	6.31	690.1	6.156	688.8	6.203	693.6	5.889	669.4
7.052	666.3	6.546	638.5	6.765	662.8	6.324	660.6	5.895	633.3	6.126	665.4	5.889	662.3	5.94	669.8	5.555	642.1
6.83	639.9	6.221	608.1	6.487	640.3	6.126	633.3	5.647	606.8	5.889	642.1	5.596	635.9	5.543	636.3	5.33	616.5
6.552	612.1	5.972	581.7	6.123	609	5.827	609.9	5.401	581.3	5.519	607.7	5.425	608.6	5.327	612.1	4.963	583
6.233	589.6	5.667	557.5	5.854	584.3	5.576	585.2	5.09	555.7	5.22	583	5.117	583.9	5.105	581.7	4.729	556.6
5.981	561.4	5.321	526.2	5.57	553.9	5.217	549.1	4.779	524.4	5.013	553.5	4.824	550.4	4.916	557.5	4.519	534.1
5.59	527.9	5.087	497.5	5.318	528.4	5.01	525.3	4.608	498.9	4.75	527.5	4.62	525.7	4.623	532.8	4.155	500.2
5.309	501.1	4.948	473.7	5.052	502.8	4.777	500.2	4.217	469.8	4.546	500.6	4.356	499.3	4.347	507.2	3.915	476.4
5.037	477.3	4.572	443.8	4.777	479	4.504	475.9	3.963	441.6	4.256	475.9	4.066	472	4.028	472	3.753	446.9
4.679	446	4.336	416	4.469	447.3	4.093	442.4	3.812	419.5	4.007	447.7	3.871	447.7	3.711	444.2	3.409	423.1
4.457	420.4	4.134	394	4.306	420.4	3.809	414.7	3.415	386.5	3.75	424.8	3.504	415.6	3.501	419.1	3.255	395.3
4.164	394.4	3.753	362.7	4.279	390	3.619	386	3.214	362.7	3.451	390.4	3.276	388.7	3.232	392.2	2.877	363.6
3.812	364.9	3.412	335.8	4.069	361.8	3.38	363.6	2.995	335.4	3.175	365.3	3.063	363.6	3.048	368	2.714	338.9
3.528	335.8	3.196	307.6	3.69	334.5	3.104	335.4	2.749	312	2.921	338.9	2.859	338.9	2.681	335.8	2.516	313.8
3.267	312.4	2.924	285.6	3.323	310.7	2.779	305.4	2.391	276.3	2.649	307.6	2.477	307.2	2.427	310.7	2.19	282.9
2.998	281.2	2.699	259.6	3.019	282.9	2.563	277.6	2.125	251.2	2.371	282.9	2.252	279	2.184	281.6	1.965	256.5
2.702	253.4	2.368	236.2	2.761	257.4	2.297	253.8	2.051	236.2	2.205	253.8	1.995	253.8	2.015	256.9	1.799	232.7

Table 7. 25 °C at 10 wt %

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
6.701	325.2	6.402	308	5.606	320.8	5.45	332.7	6.325	323.9	6.716	306.3	5.55	310.7	5.846	334.9	6.681	306.7
7.749	342.4	6.172	320.8	6.891	324.3	6.488	328.7	6.382	324.8	6.814	321.7	6.864	313.3	7.184	329.2	6.962	319.9
8.166	365.8	7.166	342.9	6.811	342.4	7.27	346.8	7.394	344.2	7.358	342.4	7.737	346.8	6.849	343.7	7.429	339.8
8.119	394	7.601	367.1	7.199	369.7	7.172	370.2	7.974	373.7	7.992	365.3	7.503	368.4	7.986	361.4	8.184	375.9
8.592	420	7.554	388.7	8.187	392.6	7.959	393.5	7.844	394.4	7.989	389.6	8.243	395.7	8.122	385.2	8.894	401.9
9.365	444.2	8.598	430.1	8.267	415.1	8.578	414.7	8.231	424.4	8.368	419.1	9.069	423.5	9.243	426.6	9.448	429.2
9.966	468.4	8.877	453	9.362	453.5	8.696	439.8	9.024	447.3	9.226	441.6	9.566	446.4	9.202	447.7	9.525	452.1
10.03	490.9	9.531	479.5	9.445	475.9	9.915	483	9.619	475.1	9.628	470.6	10.11	479	10.15	481.7	9.948	478.1
10.75	520.9	10.1	506.3	9.986	504.1	10.44	505.9	10.19	499.7	10.4	495.8	10.32	501.9	10.4	506.3	10.71	511.2
11.27	558.8	10.46	535.9	10.16	526.2	10.77	531	10.78	523.5	10.67	535	10.61	524.9	10.79	530.6	10.98	535.4
11.81	589.2	10.98	559.2	11.41	564.1	11.39	557.5	11.17	563.6	11.58	565.8	11.07	550.4	11.48	558.3	11.52	560.1
12.33	612.1	11.54	582.6	11.86	587.9	11.79	582.6	11.79	590.1	12.14	591.4	11.84	589.6	12.04	584.8	12.12	585.7
13.08	639.4	11.96	607.7	12.27	613	12.06	609	12.27	612.1	12.71	615.6	12.21	614.3	12.54	607.7	12.64	609.5
13.53	669.8	13.16	646.5	12.47	640.8	12.33	635	13.06	640.8	13.11	638.1	13.17	646	13.14	647.8	13.06	644.7
13.91	694.1	13.51	670.3	12.93	662.8	13.16	664.1	13.12	671.2	13.13	666.8	13.42	672.5	13.7	671.2	13.93	674.7
14.53	717.9	14	699.8	13.55	685.7	13.73	691.4	13.84	696.3	13.93	691.4	13.74	696.7	14.04	698.5	14.19	699.8
15.25	741.2	14.6	723.2	14.72	729.8	14.05	714.8	14.43	720.5	14.6	729.3	14.65	724	14.36	722.3	14.51	724
16.06	781.3	15.04	752.2	15.16	750.9	14.53	739	14.66	744.8	15.42	755.3	14.85	751.8	15.14	747.4	15.25	748.3
16.32	804.2	15.71	774.3	15.55	780.4	15.45	778.2	15.2	769	15.61	781.3	15.41	775.6	15.46	777.4	15.6	774.7
17.06	835.1	16.6	812.6	16.23	802.5	15.98	803.4	15.87	795.4	16.48	808.7	16	800.7	16.19	802	16.29	800.7
17.53	859.3	16.95	835.1	16.38	825.4	16.67	832.4	16.51	835.5	16.66	832.4	16.45	825.8	16.38	828.5	16.58	825
18	882.7	17.3	857.1	17.13	851	16.83	856.2	17.23	858.5	17.09	863.7	17.1	848.8	17.17	851.8	17.56	871.2
18.33	903.8	17.94	889.7	17.38	876.1	17.5	880.5	17.68	890.2	17.68	892.4	17.65	889.3	17.5	891.1	17.44	877.4
18.92	931.6	18.39	913.5	17.91	902.5	18.15	918.4	17.89	913.1	18.36	917.5	18.27	914.4	18.27	915.3	18.33	919.3
19.63	957.2	18.86	936	18.54	932	18.68	940.4	18.65	935.6	18.57	940.9	18.83	946.1	18.65	947.5	18.98	945.3
20.34	983.2	19.63	975.2	19.6	973	19.25	972.6	18.77	956.7	19.07	967.7	18.8	954.1	19.19	973.5	19.54	971.7
20.87	1009	20.37	997.3	20.02	997.7	19.81	998.1	19.66	998.6	19.81	991.1	19.84	995.5	19.78	999.9	19.78	1005
21.7	1049	20.9	1025	20.58	1026	20.16	1023	20.19	1025	20.28	1018	20.37	1025	20.02	1024	20.28	1024
22.35	1080	21.38	1054	20.93	1050	20.76	1053	20.79	1056	21.14	1058	20.84	1053	20.4	1048	20.81	1058
22.89	1103	21.94	1077	21.29	1075	21.29	1076	21.2	1077	21.5	1081	21.35	1075	21.02	1070	21.29	1084
23.36	1126	22.27	1106	21.97	1099	21.53	1099	21.67	1102	22	1110	21.61	1100	21.76	1111	21.82	1111

Table 7. 25 °C at 10 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
23.95	1153	22.89	1132	22.38	1123	22.06	1123	22.27	1129	22.56	1136	21.97	1123	22.18	1134	22.38	1137
24.43	1175	23.45	1159	23.42	1164	23.09	1164	22.92	1159	22.92	1159	22.65	1151	22.71	1160	22.83	1164
24.84	1203	23.95	1183	23.77	1187	23.54	1187	23.33	1184	23.36	1182	23.39	1189	23.27	1189	23.3	1189
25.96	1245	24.43	1208	24.45	1216	23.92	1216	23.92	1210	23.8	1209	23.89	1218	23.66	1212	23.83	1212
26.35	1266	25.4	1246	24.9	1240	24.43	1239	24.4	1244	24.37	1235	24.45	1241	23.92	1237	24.1	1237
26.82	1295	25.91	1269	25.19	1263	24.93	1266	24.87	1267	25.17	1275	24.93	1267	24.43	1262	24.51	1263
27.27	1316	26.35	1298	26.17	1301	25.67	1300	25.25	1289	25.52	1301	25.37	1300	25.34	1303	25.43	1303
27.86	1342	26.85	1321	26.62	1324	26.02	1324	25.82	1315	26.02	1328	25.7	1322	25.7	1329	25.82	1326
28.81	1384	27.24	1348	27.06	1347	26.5	1348	26.62	1354	26.44	1352	26.14	1348	26.29	1354	26.29	1352
28.95	1395	28.15	1388	27.5	1378	26.91	1370	26.59	1362	26.97	1385	26.59	1371	26.73	1385	26.85	1382
29.43	1418	28.72	1409	28.01	1401	27.74	1409	27.65	1407	27.53	1407	27.03	1397	27.15	1404	27.15	1408
30.4	1462	29.19	1432	28.6	1425	28.27	1432	28.07	1436	27.86	1430	27.59	1421	27.62	1436	27.59	1434
31.05	1489	29.72	1464	28.98	1450	28.83	1459	28.6	1456	28.24	1458	28.24	1462	28.07	1464	28.18	1458
31.5	1514	30.26	1489	29.96	1486	29.37	1486	29.07	1486	28.89	1487	28.81	1488	28.72	1486	28.54	1487
32.09	1538	30.61	1514	30.37	1511	29.9	1518	29.55	1516	29.43	1511	29.34	1513	29.1	1508	29.07	1509
29.66	1516	29.57	1524	29.16	1543	28.81	1549	28.24	1546	28.1	1538	28.39	1570	28.3	1572	27.62	1545
29.16	1492	28.69	1489	28.51	1517	28.21	1525	27.77	1520	27.59	1516	27.89	1545	27.92	1546	27.27	1515
28.66	1460	28.21	1466	28.1	1490	27.8	1500	26.97	1477	27.09	1488	27.41	1517	27.53	1520	26.82	1490
28.12	1436	27.53	1434	27.65	1467	26.88	1458	26.94	1468	26.64	1462	26.85	1487	27	1496	26.44	1467
27.68	1415	27.09	1408	27.03	1434	26.38	1434	25.96	1427	26.11	1430	26.41	1460	26.53	1472	25.91	1443
26.88	1376	26.64	1387	26.5	1407	25.88	1407	25.52	1403	25.61	1404	25.91	1433	26.08	1447	25.46	1416
26.26	1351	26.08	1365	25.96	1383	25.37	1383	24.99	1370	25.11	1380	25.46	1407	25.61	1417	24.84	1378
25.76	1326	25.28	1323	25.58	1358	24.9	1353	24.51	1343	24.69	1352	24.99	1382	24.72	1371	24.37	1352
25.17	1296	24.84	1301	25.17	1335	24.43	1331	24.07	1319	24.13	1329	24.6	1361	24.28	1349	23.92	1324
24.72	1272	24.25	1272	24.54	1309	24.19	1306	23.6	1293	23.83	1304	23.77	1323	23.86	1326	23.45	1305
24.19	1246	23.69	1244	24.13	1283	23.72	1283	23.12	1269	22.83	1263	23.42	1300	23.39	1294	22.89	1276
23.63	1226	23.15	1218	23.15	1243	22.71	1243	22.56	1245	22.5	1234	22.8	1270	22.89	1269	22.5	1252
23	1191	22.8	1191	22.65	1215	22.21	1220	22.12	1220	21.94	1210	22.38	1248	22.44	1244	21.88	1215
22.38	1167	22.15	1165	22.03	1185	21.82	1192	21.79	1194	21.35	1179	21.79	1215	22.03	1219	21.44	1191
21.94	1144	21.7	1141	21.53	1162	21.38	1167	21.32	1169	20.9	1158	21.41	1190	21.47	1195	20.99	1166
21.02	1104	21.2	1116	21.11	1138	20.64	1136	20.13	1126	20.52	1126	20.87	1166	21.08	1170	20.64	1141

Table 7. 25 °C at 10 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
20.52	1077	20.73	1090	20.46	1107	20.34	1113	19.75	1097	20.1	1101	20.55	1140	20.52	1141	19.9	1110
20.13	1055	20.1	1066	20.28	1087	19.84	1089	19.51	1075	19.57	1079	20.02	1116	19.84	1103	19.6	1086
19.78	1030	19.6	1038	19.78	1064	19.13	1056	18.71	1038	19.28	1056	19.48	1091	19.42	1079	19.31	1063
19.07	999	18.45	998.6	18.89	1025	18.8	1033	18.18	1014	18.36	1016	19.13	1066	19.01	1051	18.86	1038
18.62	972.6	18.27	975.7	18.33	994.2	18.42	1010	17.68	989.3	17.97	992.9	18.21	1023	18.48	1028	17.91	999.9
17.94	949.7	17.8	945.7	17.77	972.1	17.89	981.8	17.47	967.3	17.44	961.1	17.77	994.6	18	996.4	17.53	968.6
17.62	925.4	17.12	921	17.35	942.2	17.2	956.7	17.03	934.2	16.79	936.9	17.59	971.3	17.53	969.5	17.12	946.1
16.94	902.1	16.43	892.4	16.97	915.7	16.49	915.7	16.46	909.1	16.49	911.8	17.17	943.1	16.94	947	16.79	921
16.55	874.3	16.17	869	16.29	891.9	16.11	887.5	15.81	882.2	16.08	880.9	16.41	918.8	16.67	921.9	16.05	895.9
16.08	848.8	15.46	844.8	16.14	867.7	15.37	862.9	15.55	856.7	15.31	856.7	16.29	895	16.05	896.3	15.34	859.8
15.34	819.2	14.54	807.8	15.34	844.3	14.98	832.4	14.78	832.4	15.16	831.6	15.67	866.4	15.58	867.7	15.22	837.7
14.75	791.5	14.36	782.2	15.1	818.3	14.48	808.7	14.63	802.9	14.48	806.4	15.34	847.9	15.28	840.8	14.45	809.5
13.98	751.8	13.62	755.8	14.45	793.2	14.36	784.4	13.86	780	14.19	782.7	14.45	806.4	14.54	816.1	14.22	780.4
13.36	727.6	13.33	724.9	13.42	751.8	13.77	761.1	13.53	754	13.68	756.7	13.83	781.3	13.74	776	13.74	751.4
12.97	695.8	12.68	707.3	13.12	727.1	13.09	735.9	13.24	728	12.97	716.1	13.68	754.9	13.53	750	13.39	726.7
12.54	670.3	11.91	672	12.79	704.7	12.85	709.5	12.35	686.1	12.47	694.1	12.97	728.4	12.68	722.3	12.91	710.4
11.84	645.6	11.6	646	12.2	676.9	12.43	684.4	11.74	661	11.85	669	12.47	705.5	12.47	691.9	12.39	671.2
11.34	621.4	11.23	620	11.66	643.8	11.61	641.2	11.26	637.7	11.87	637.7	12.12	681.7	12.2	683.9	11.96	645.2
11.13	601.5	10.63	598	10.68	605.5	11.16	615.2	10.67	613	11.45	613	11.25	639.9	11.34	641.6	11.5	618.7
9.806	562.8	9.972	559.2	11.01	596.7	10.75	591.8	10.49	579.5	10.85	586.1	11.01	612.5	10.85	617.4	11.18	597.1
9.4	534.1	9.483	533.7	10.23	566.7	9.889	561.4	10.01	554.8	10.54	565.4	10.48	591.4	10.37	588.3	10.72	571.1
8.808	509.4	9.087	505.5	9.693	535.9	9.341	535	9.572	526.6	9.386	527.5	10.08	565.4	10.13	561.4	9.516	531.5
8.296	485.2	8.646	478.1	9.454	513	8.918	509.4	8.939	502.4	9.11	502.4	9.903	532.8	9.536	538.1	9.119	504.1
8.187	459.6	8.214	453.9	8.871	486.5	8.794	484.3	8.131	479	8.971	479.9	9.187	512.1	9.01	513	8.515	480.8
7.358	425.3	7.246	429.7	8.027	463.6	8.477	463.6	8.042	453.5	8.515	450.8	8.545	488.7	8.737	489.2	8.169	450.4
7.095	400.6	7.045	405.9	7.622	423.5	7.675	423.1	7.87	426.1	7.986	421.3	8.43	465.4	7.962	448.6	8.205	426.6
6.26	368.9	6.959	380.3	6.692	397.9	7.054	399.7	7.385	401.9	7.133	397.9	7.743	434.5	7.432	420	7.841	397.5
6.003	350.3	5.867	356.5	6.257	369.7	6.299	374.1	6.704	361.4	7.012	371.5	7.802	410.7	7.317	393.5	6.784	374.6
5.621	318.2	5.171	317.7	6.331	345.1	6.145	342.4	5.751	334.5	6.843	345.1	6.923	366.2	6.911	375.5	6.87	349.5
4.647	294.8	5.31	293.9	5.334	314.6	5.683	319.1	5.876	311.1	5.796	320.4	6.293	338.9	6.109	343.3	6.305	325.7
4.686	272.3	4.186	263.1	5.367	288.2	5.266	294.8	4.869	282.5	5.589	282.9	5.716	316.9	5.973	312.4	6.006	301.4
4.242	250.3	4.467	236.2	4.337	264.9	4.878	268.4	4.733	251.6	4.76	259.6	5.509	290.9	5.556	286.9	5.615	261.3

Table 8. 50 °C at 10 wt %

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
6.562	313.3	6.861	325.7	5.893	334.9	5.31	371.1	6.758	317.3	6.574	312.9	6.468	316.4	6.397	303.2	6.926	350.3
6.763	312	7.432	349	7.065	324.8	5.822	325.7	6.977	332.7	7.11	339.8	6.769	322.1	6.746	319.1	7.441	374.1
7.225	331.4	7.873	368.9	7.299	342	6.624	320.4	7.465	366.2	7.332	368.9	7.349	345.5	7.438	344.6	7.867	392.6
7.882	371.1	7.79	392.2	7.358	363.6	7.524	339.8	7.696	396.6	7.965	392.6	7.601	373.7	7.506	371.9	8.009	420.9
8.495	397.9	8.199	418.2	8.08	386.9	7.48	367.1	8.282	418.2	8.341	416.4	7.675	396.2	7.61	393.1	8.672	457
8.24	407.2	8.708	453.5	8.299	412.9	7.799	391.3	8.726	443.8	8.273	438	8.261	418.6	8.042	430.1	8.924	485.2
8.628	436.7	9.042	485.6	8.444	437.6	8.391	415.6	8.927	468.9	9.267	477.3	8.51	450.4	8.453	458.3	9.036	507.2
8.948	468	9.332	510.8	8.681	464.9	8.767	453.5	9.528	502.8	9.418	501.9	9.036	472	8.817	483	9.175	530.6
9.406	494	9.829	539	8.974	490	9.273	476.4	9.729	533.7	9.61	528.8	9.229	511.2	9.338	505.9	9.46	552.6
10.2	536.3	10.14	561.9	9.347	516	9.462	500.6	10.1	554.4	10.02	557.5	9.699	532.3	9.427	535.4	9.72	579.1
10.52	559.2	10.65	589.6	10.36	557.5	9.812	531.9	10.33	576.9	10.37	580.8	9.874	559.2	9.554	565.4	10.31	605.9
10.72	584.8	10.92	612.1	10.55	582.1	10.1	556.6	10.65	616.1	10.45	608.1	10.19	580.8	9.862	586.1	10.66	643.4
11.17	613.9	11.29	638.5	10.66	613.9	10.42	579.1	11.05	639.4	10.82	630.2	10.74	621.8	10.16	610.8	11.25	674.7
11.33	639.9	11.52	663.2	10.97	633.7	10.67	599.3	11.34	669.4	11.47	669	10.94	649.6	11	647.8	11.4	698.9
11.62	661.5	12.22	699.4	11.13	657.1	10.71	631.5	11.57	695.4	11.49	698.5	10.95	658.4	11	677.8	11.53	721.8
11.84	685.3	12.38	724	11.54	682.2	11.2	654.4	12.09	720.1	11.95	721.8	11.79	702	11.58	702.9	11.9	745.6
12.58	726.7	12.83	750.5	12.06	719.2	11.75	693.6	12.38	742.1	12.28	743.9	11.96	728.9	11.77	728	12.68	788.4
13.09	750	12.93	781.3	12.43	750	12.21	725.8	12.9	779.1	12.45	769.4	12.27	753.6	11.9	750.5	12.85	808.7
13.19	780.4	13.47	806.4	12.58	771.6	12.34	751.4	13.06	807.3	12.95	793.7	12.62	777.8	12.41	775.2	13.29	834.2
13.59	801.6	13.69	834.2	13.14	795.9	12.8	774.7	13.49	828	13.19	817	12.91	809.5	12.54	801.2	13.46	865.5
13.88	825	14.01	859.3	13.37	821	13.11	797.6	13.65	849.2	13.71	855.8	13.24	831.6	13.14	839.5	13.76	888.9
14.35	859.3	14.41	884	13.67	847	13.48	825.4	14.25	888.4	13.93	886.7	13.39	856.7	13.39	868.1	14.12	913.1
14.85	885.8	14.88	922.3	14.38	881.4	13.7	850.5	14.46	912.7	14.34	904.7	14.14	891.1	13.88	891.1	14.28	936
15.15	915.7	15.33	945.3	14.53	914	14.23	877	14.92	939.1	14.87	936.5	14.32	920.6	14.08	911.8	14.83	978.3
15.35	937.3	15.59	972.6	15	940	14.67	915.3	15.25	965.5	15.1	962	14.67	942.2	14.51	938.7	15.31	1003
15.71	960.2	15.88	997.7	15.28	957.2	15.11	942.2	15.41	988	15.36	984.5	14.73	972.6	14.89	965.1	15.61	1028
16.36	999.9	16.21	1029	15.64	987.6	15.4	971.3	16.05	1024	15.96	1021	15.27	992.9	15.21	992.9	15.8	1049
16.48	1022	16.53	1054	16	1016	15.72	996.4	16.4	1048	16.35	1048	15.48	1017	15.48	1018	16.34	1085
16.91	1052	16.84	1080	16.33	1048	16.08	1019	16.72	1075	16.49	1071	15.75	1044	15.66	1042	16.58	1108
17.02	1075	17.11	1101	16.66	1069	16.46	1047	16.94	1101	16.75	1092	16.3	1072	16.13	1072	16.92	1132
17.37	1097	17.34	1125	16.96	1093	16.61	1067	17.38	1125	17.07	1119	16.7	1108	16.64	1097	17.19	1166

Table 8. 50 °C at 10 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
18.02	1131	17.96	1163	17.61	1130	17.13	1098	17.49	1149	17.79	1158	17.15	1140	17.24	1137	17.52	1189
18.26	1159	18.32	1189	17.79	1159	17.34	1121	18.05	1188	17.94	1184	17.25	1164	17.39	1161	17.67	1214
18.5	1185	18.65	1221	18.05	1180	18.05	1163	18.44	1211	18.41	1205	17.64	1189	17.64	1192	18.08	1241
18.94	1210	19	1244	18.38	1207	18.35	1188	18.68	1242	18.53	1237	17.94	1212	17.88	1214	18.44	1267
19.27	1234	19.27	1269	18.73	1233	18.56	1212	19.03	1267	18.85	1260	18.17	1234	18.44	1249	18.73	1295
19.62	1259	19.62	1290	19.09	1257	18.97	1243	19.36	1288	19.18	1284	18.82	1271	18.65	1279	19.09	1317
20.21	1294	20.15	1329	19.47	1287	19.33	1266	19.98	1326	19.68	1320	19.12	1297	19.06	1304	19.39	1348
20.63	1325	20.57	1357	19.77	1309	19.53	1290	20.21	1349	20.15	1348	19.33	1323	19.44	1326	19.8	1371
20.89	1347	20.81	1379	20.36	1349	20.01	1316	20.57	1379	20.39	1369	19.74	1351	19.56	1352	19.95	1397
21.4	1379	21.13	1403	20.75	1379	20.27	1344	20.81	1400	20.72	1402	19.98	1374	19.98	1374	20.42	1421
21.66	1404	21.4	1426	20.75	1389	20.69	1371	21.28	1434	21.07	1426	20.33	1396	20.21	1400	20.63	1449
22.08	1432	22.05	1464	21.43	1428	21.37	1407	21.61	1458	21.25	1450	20.66	1425	20.87	1439	21.4	1494
22.52	1465	22.34	1491	21.81	1460	21.61	1430	21.99	1487	21.69	1477	21.01	1453	21.16	1461	21.72	1521
22.85	1485	22.64	1512	22.11	1486	21.9	1459	22.29	1511	21.99	1505	21.28	1480	21.37	1492	21.99	1544
23.23	1515	23.08	1553	22.4	1510	22.11	1481	22.52	1534	22.26	1528	21.96	1523	21.66	1515	22.34	1571
21.22	1519	20.72	1516	20.87	1541	21.13	1536	20.1	1484	20.27	1522	20.3	1526	19.59	1497	19.24	1463
20.95	1497	20.33	1491	20.69	1516	20.87	1515	19.8	1460	19.98	1495	19.77	1491	19.3	1473	18.85	1430
20.3	1461	20.18	1465	20.1	1481	20.51	1492	19.53	1441	19.62	1472	19.44	1460	18.97	1450	18.56	1408
19.95	1437	19.89	1434	19.86	1458	19.92	1454	18.88	1405	19.36	1445	19.15	1440	18.47	1407	18.17	1383
19.62	1412	19.47	1412	19.56	1427	19.65	1431	18.68	1379	19	1419	18.97	1415	18.08	1385	18.05	1359
19.27	1384	19.21	1388	19.15	1402	19.27	1404	18.32	1354	18.65	1394	18.53	1392	17.76	1363	17.64	1336
18.97	1360	18.88	1367	18.79	1382	18.91	1378	18.05	1325	18.02	1358	18.23	1361	17.52	1330	16.96	1297
18.56	1326	18.29	1330	18.38	1346	18.65	1355	17.76	1304	17.76	1334	17.58	1324	17.25	1302	16.84	1269
18.14	1299	18.05	1296	18.05	1325	18.17	1325	17.49	1277	17.46	1299	17.37	1300	16.84	1277	16.46	1243
17.79	1274	17.67	1274	17.67	1296	17.85	1293	17.2	1254	17.17	1281	17.25	1289	16.37	1253	16.13	1222
17.61	1246	17.37	1248	17.28	1266	17.67	1270	16.81	1224	16.93	1257	16.81	1257	16.22	1231	15.8	1198
17.28	1221	17.02	1226	17.02	1237	17.23	1241	16.46	1201	16.43	1223	16.25	1216	15.92	1206	15.21	1157
16.9	1194	16.9	1206	16.57	1207	16.81	1219	15.86	1160	16.25	1197	16.19	1196	15.77	1178	15.39	1144
16.49	1170	16.28	1164	16.28	1181	16.57	1194	15.57	1133	16.01	1173	15.98	1178	14.95	1144	14.62	1103
15.86	1133	15.83	1142	16.13	1163	15.98	1156	15.21	1110	15.51	1145	15.21	1133	14.8	1116	14.41	1074
15.69	1110	15.69	1111	15.69	1141	15.63	1130	14.83	1085	15.18	1120	14.92	1110	14.35	1083	14.12	1056

Table 8. 50 °C at 10 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
15.3	1085	15.24	1090	15.18	1106	15.33	1101	14.59	1052	15.01	1097	14.62	1085	14.24	1061	13.88	1022
15.04	1050	15.04	1062	14.98	1078	15.18	1075	14.3	1027	14.68	1070	14.35	1056	13.76	1038	13.38	1001
14.62	1025	14.56	1037	14.68	1048	14.74	1053	13.91	1004	14.06	1031	13.94	1031	13.53	1014	13.26	975.7
14.24	998.6	14.3	1013	14.15	1016	14.27	1015	13.53	977.9	13.82	999.9	13.67	1006	13.26	986.7	12.99	951.4
14.09	977.4	13.88	983.2	13.79	993.7	13.91	995.5	13.35	954.5	13.29	978.8	13.44	984	12.79	948.3	12.24	911.8
13.64	955	13.38	943.1	13.47	967.3	13.61	971.3	12.7	912.7	13.29	954.5	12.93	942.6	12.32	924.1	12.14	888.4
13.11	915.3	12.93	920.1	13.08	932.9	13.29	946.1	12.45	888.4	12.85	929.4	12.58	915.7	12.09	896.3	11.7	861.1
12.82	889.7	12.64	888.4	12.99	912.7	12.87	921.5	12.17	866.4	12.47	903.4	12.42	892.4	11.94	866.8	11.46	832.9
12.57	861.1	12.45	865.1	12.72	895	12.69	886.2	11.76	832	12.15	875.2	12.01	872.1	11.47	845.7	11.2	806.4
12.35	835.1	12.07	833.8	12.34	864.6	12.4	863.7	11.65	810.4	12.04	847.9	11.88	844.8	11.25	820.6	10.47	773.4
11.91	809.1	11.82	815.7	11.77	829.8	11.91	840.8	11.18	784.4	11.51	821	11.3	808.7	10.71	781.8	10.47	748.3
11.66	785.7	11.37	782.2	11.55	798.1	11.56	806.9	10.73	747.8	11.38	794.1	10.77	785.3	10.25	756.2	10.05	720.1
11.32	758.9	11.19	759.3	11.14	780.9	11.42	779.6	10.26	723.2	10.7	755.3	10.76	755.8	10.08	730.7	9.732	698.9
10.87	733.7	10.51	725.8	10.81	747.4	10.89	756.2	10.29	695.4	10.15	730.7	10.16	724.5	9.898	700.2	9.539	672.5
10.76	706.4	10.25	703.8	10.62	725.8	10.6	721	10.04	671.6	10.05	703.3	9.989	701.1	9.421	676.9	9.38	648.2
10.19	677.3	9.945	670.7	9.972	694.5	10.22	697.6	9.631	650	9.98	677.8	9.705	674.2	9.078	652.2	8.622	612.5
9.791	654	9.613	652.2	9.652	666.8	9.815	669.4	9.054	621.4	9.693	654	9.072	645.2	8.811	629.3	8.222	586.5
9.569	616.5	9.229	621.8	9.661	642.1	9.646	642.5	8.77	583.9	9.208	628.4	8.826	621.8	8.566	594	8.184	554.4
9.235	592.7	8.965	598.9	8.885	608.6	9.356	618.7	8.542	573.8	8.714	591.8	8.598	597.1	8.264	565	7.817	529.3
8.681	559.7	8.586	575.1	8.595	579.9	8.737	584.3	8.107	547.8	8.613	563.2	8.311	561.4	8.072	541.6	7.441	502.8
8.382	534.5	8.356	534.5	8.589	559.7	8.527	561	7.722	507.2	8.353	539	8.086	537.2	7.867	514.3	7.092	479
8.255	510.8	8.057	525.7	7.856	527.9	8.009	528.4	7.536	478.6	7.947	516	7.817	512.1	7.492	491.8	7.006	457.4
8.006	486.1	7.737	479	7.512	498.4	7.808	503.7	6.968	454.8	7.506	490.5	7.631	482.5	7.213	458.3	6.254	415.6
7.74	460.5	7.249	457	7.625	479	7.731	481.7	6.864	432.3	7.068	463.2	7.042	460.5	6.829	431	6.302	395.7
7.175	423.1	6.861	428.8	7.338	450.8	7.311	461	6.281	395.7	6.817	438.9	6.761	437.6	6.328	402.8	5.953	366.2
6.763	396.2	6.494	402.3	6.914	429.7	6.879	417.3	6.169	385.6	6.843	412.9	6.669	410.7	5.935	379.4	5.376	341.5
6.394	374.6	6.503	379	6.37	391.3	6.435	393.5	5.577	342.9	6.305	376.8	6.323	387.4	5.97	355.6	5.559	318.2
6.399	352.5	6.077	348.1	5.843	367.1	5.843	365.8	5.37	313.8	5.793	348.6	5.814	341.1	5.328	316.4	4.828	289.5
5.666	316.9	5.645	324.8	5.882	339.8	6.006	344.2	5.316	284.7	6.047	337.1	5.077	319.1	4.804	292.6	4.935	265.3
5.438	292.6	5.526	299.2	5.364	312.4	5.473	312.4	4.721	261.3	5.328	293.1	5.31	292.2	4.733	267.5	4.212	242.8
5.195	263.5	4.985	272.3	5.367	289.1	5.432	291.3	4.624	255.6	4.606	269.7	4.511	266.6	4.852	258.2	0	154.6
5.065	243.3	4.884	246.3	4.858	252.5	4.772	265.3	0	179.3	4.686	259.1	4.624	258.7	0	176.4	0	161.7

Table 9. Rheometer Response for Blank – 13 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
7.496	1090	7.49	1101	8.987	1124	8.289	1132	8.57	1124	7.812	1100	7.141	1128	7.265	1130	6.747	1100
7.36	1066	7.241	1076	8.824	1102	7.975	1098	8.457	1096	7.895	1085	7.004	1099	7.108	1101	6.516	1072
7.075	1035	7.123	1048	8.472	1070	7.815	1072	8.333	1071	7.374	1061	6.83	1075	6.809	1071	6.368	1046
6.883	1009	6.919	1025	8.256	1041	7.581	1049	8.244	1046	7.179	1015	6.694	1050	6.708	1044	6.265	1017
6.753	981.4	6.708	992.9	8.008	1015	7.416	1020	7.916	1020	6.99	989.3	6.398	1017	6.513	1019	6.087	993.7
6.498	951.4	6.537	967.7	7.824	992.9	7.259	995.1	7.718	995.1	6.762	960.2	6.185	991.5	6.362	992.4	5.909	965.1
6.282	926.8	6.306	934.7	7.65	966.4	6.916	963.8	7.321	965.1	6.552	934.7	5.983	962.9	6.173	969.1	5.72	936
6.182	899	6.075	908.2	7.265	933.4	6.777	936	7.019	936.5	6.356	907.4	5.782	937.8	6.001	942.2	5.483	907.8
5.986	874.3	5.921	882.2	7.084	904.3	6.59	909.6	6.791	914.4	6.194	882.2	5.693	909.1	5.711	909.1	5.312	883.1
5.827	850.1	5.773	860.2	6.91	880	6.353	884	6.522	880.9	5.889	851.4	5.566	881.8	5.415	883.1	5.119	858
5.596	817.5	5.528	827.6	6.691	854.5	6.167	858.9	6.256	854.5	5.696	826.3	5.362	856.7	5.344	854	4.965	831.6
5.424	793.2	5.4	799.8	6.486	829.4	5.856	825	6.004	825	5.516	797.2	5.193	832	5.101	830.2	4.655	797.2
5.205	767.7	5.238	777.4	6.191	794.1	5.661	799.8	5.877	801.2	5.383	772.5	4.918	798.5	5.001	802.5	4.521	772.1
5.099	739.5	4.951	744.3	6.057	771.6	5.507	772.5	5.679	775.2	5.164	744.8	4.788	771.2	4.794	777.4	4.341	743.4
4.803	708.6	4.82	717.9	5.785	745.2	5.329	748.3	5.362	741.7	4.965	721.4	4.646	746.5	4.607	750.5	4.157	718.8
4.696	681.3	4.661	693.6	5.468	713.9	5.119	722.3	5.178	717.9	4.672	687.5	4.53	721.4	4.347	719.2	3.998	691
4.465	656.2	4.53	665.4	5.273	686.1	4.989	695.4	4.939	688.3	4.542	661.9	4.223	693.6	4.205	692.8	3.935	665.4
4.359	633.3	4.308	639	5.09	663.2	4.655	662.3	4.776	664.1	4.37	636.8	4.149	665.9	4.042	668.1	3.678	638.1
4.146	598.9	4.122	610.8	4.808	631.9	4.587	642.5	4.587	636.3	4.223	609.5	3.918	642.5	3.876	643.4	3.497	613.4
3.965	574.7	3.956	585.7	4.566	603.3	4.397	616.1	4.32	608.6	3.95	583.5	3.672	609	3.616	609.9	3.329	586.1
3.796	548.2	3.696	556.6	4.412	580.8	4.009	579.1	4.228	582.6	3.663	552.6	3.497	581.3	3.518	582.6	3.068	552.6
3.64	524	3.521	527.5	4.255	555.7	4.033	558.3	4.03	557.5	3.53	526.6	3.376	553.5	3.367	558.8	2.935	524.9
3.355	489.2	3.403	504.6	3.921	523.5	3.687	524.9	3.817	530.1	3.332	499.3	3.267	530.1	3.086	527.9	2.775	500.6
3.196	461.4	3.281	478.6	3.82	496.6	3.53	498.9	3.56	505	3.237	475.9	3.092	505	2.965	500.6	2.627	476.4
3.03	439.4	3.006	445.1	3.53	466.7	3.37	476.8	3.258	469.8	2.956	443.8	3.003	492.7	2.761	472.9	2.376	443.3
2.873	407.6	2.888	418.2	3.352	442.4	3.278	450.4	3.119	445.1	2.802	418.2	2.728	449.5	2.66	446.9	2.269	415.1
2.734	382.5	2.663	391.3	3.181	417.3	3.006	424.4	2.929	416.4	2.616	391.3	2.394	432.3	2.488	421.7	2.074	390.4
2.536	358.3	2.542	368	2.956	392.2	2.746	389.1	2.734	390.4	2.444	365.8	2.414	406.3	2.228	390	1.935	365.3
2.246	326.5	2.275	335.8	2.69	359.6	2.53	360.9	2.542	365.3	2.257	339.8	2.107	366.2	2.044	365.8	1.731	334.5
2.118	299.2	2.16	312	2.5	334.5	2.411	334.5	2.373	340.2	2.024	306.7	2.183	361.4	2.003	337.6	1.532	308
1.938	273.7	2	282.5	2.326	307.6	2.24	311.6	2.166	312	1.849	279.8	1.772	312	1.834	313.3	1.435	281.6
1.834	247.2	1.731	252.5	2.133	281.2	2.018	279	1.917	278.5	1.743	256	1.689	280.7	1.592	279.8	1.201	249.4

Table 10. 10 °C at 13 wt %

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
16.53	272.3	15.95	272.8	16.63	276.3	16.64	271.9	16.67	276.3	16.83	276.7	16.32	273.2	17.12	279.8	17.29	271.9
17.7	295.3	17.39	295.7	17.51	296.1	17.47	292.6	17.42	298.8	17.73	291.7	16.8	270.6	18.01	294.8	18.01	296.1
18.4	320.4	18.1	319.9	18.25	319.5	18.43	325.2	18.37	322.6	18.43	319.9	17.92	291.7	18.9	318.6	18.75	321.3
19.2	344.6	18.66	346.8	19.31	352.1	19.58	352.5	19.2	345.1	19.14	345.9	19.64	344.6	19.97	351.7	19.46	344.6
20.62	375	20.11	377.2	20.26	375.9	20.11	377.7	20.26	378.5	20.56	375.9	20.71	373.7	20.91	379	20.85	379
21.27	401	20.73	405	20.94	405	21.3	404.5	21.47	405.9	21.12	403.2	20.97	389.1	21.5	403.2	21.47	401.9
22.42	425.3	21.86	428.8	21.95	430.1	21.98	427.9	22.21	433.2	22.21	427.9	21.74	411.2	22.51	433.2	22.54	429.2
23.66	457.4	22.36	453.5	22.81	455.7	22.95	453.5	23.1	460.1	23.34	460.1	23.28	450.4	23.4	455.7	23.46	456.1
24.43	483.9	23.69	485.2	23.46	481.2	23.72	480.3	24.14	489.2	24.02	482.5	24.4	487.8	24.43	486.1	24.23	482.5
25.2	508.5	24.61	513.8	24.79	513.4	24.97	513.8	25.03	514.7	24.85	510.8	25.2	513.4	25.23	512.5	25.5	514.3
26.57	539.4	25.53	541.2	25.65	541.6	25.8	541.6	25.8	536.8	25.97	540.7	26.06	537.6	26	536.8	26.36	542.5
27.51	567.2	26.48	567.6	26.42	567.2	26.57	564.1	26.71	568.5	26.86	567.6	27.19	569.8	27.19	568.5	27.22	568.5
28.28	592.3	27.19	591	27.16	590.5	27.36	591.4	27.39	592.7	27.54	593.6	28.07	597.6	27.99	593.6	27.99	594.9
29.29	622.7	28.1	622.2	28.07	621.8	28.55	624.9	28.28	620	28.28	618.7	28.7	622.2	28.67	621.4	28.78	619.6
30.23	649.6	28.99	648.7	29.08	649.6	29.17	648.2	29.08	643.8	29.26	646	29.47	646	29.73	652.7	29.64	645.2
30.97	675.6	29.79	675.1	29.67	673.8	30.03	676	30.18	679.1	29.97	670.7	30.56	678.7	30.59	679.1	30.71	679.5
31.86	700.7	30.74	702	30.71	705.5	31.03	706.4	30.83	704.2	30.89	702	31.39	704.7	31.3	704.7	31.42	706.4
32.72	728.4	31.68	733.7	31.48	732.9	31.77	733.7	31.57	729.3	31.74	730.2	32.28	732.4	32.1	729.8	32.19	729.3
33.52	756.2	32.51	761.1	32.37	758	32.48	759.3	32.37	756.2	32.54	755.8	32.78	755.3	32.9	757.1	32.9	755.3
34.35	783.1	33.13	783.1	32.99	782.7	33.19	783.5	33.34	787.9	33.43	787.1	33.87	788.8	33.79	787.9	33.85	787.1
35.12	807.8	34.11	814.4	33.76	809.1	33.96	807.8	34.17	815.3	34.2	810.4	34.64	816.6	34.5	812.6	34.59	813.5
36.01	838.2	34.88	838.2	34.5	835.5	35	841.7	34.76	838.6	34.91	837.3	35.38	841.3	35.21	839.9	35.38	840.8
36.75	864.6	35.71	865.5	35.65	869.5	35.77	869.5	35.5	862.9	35.47	858.5	36.15	866.4	36.24	869.9	36.24	868.6
37.43	888	36.54	896.8	36.36	896.8	36.48	896.3	36.48	895.5	36.66	894.1	36.8	892.4	36.89	894.1	36.98	892.4
38.46	921.5	37.25	917.9	36.98	920.1	37.19	922.3	37.25	923.2	37.37	920.1	37.93	925.9	37.69	922.3	37.69	917.5
39.23	946.6	38.02	946.6	37.99	952.3	37.9	945.3	37.93	947	38.11	946.1	38.61	951.9	38.55	952.8	38.61	949.7
39.85	970.8	38.73	973	38.79	979.2	38.82	978.3	38.73	973.5	38.91	975.2	39.35	979.6	39.23	974.3	39.26	972.6
40.89	1002	39.59	999.5	39.56	1005	39.53	1003	39.65	1006	39.56	999.5	40.06	1004	39.2	985.8	39.97	998.1
41.57	1029	40.53	1032	40.33	1033	40.39	1033	40.42	1035	40.5	1031	40.95	1034	40.03	1002	40.8	1027
42.28	1055	41.36	1060	41.04	1058	41.07	1059	41.18	1061	41.16	1057	41.66	1059	40.47	1029	41.81	1060
42.96	1079	42.07	1087	41.78	1086	41.84	1085	41.84	1086	41.84	1082	42.4	1085	41.27	1046	42.4	1085

Table 10. 10 °C at 13 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
43.67	1104	42.75	1112	42.46	1111	42.61	1110	42.49	1111	42.46	1106	42.99	1110	42.99	1117	43.23	1114
44.59	1138	43.46	1138	43.4	1144	43.55	1142	43.23	1137	43.55	1141	43.61	1136	43.43	1126	43.97	1142
45.33	1167	44.14	1164	44	1170	44.32	1170	44.2	1170	44.2	1166	44.29	1164	44.47	1165	44.8	1168
45.98	1191	44.85	1189	44.62	1192	44.97	1196	44.82	1197	44.8	1191	45.09	1191	45.27	1196	45.48	1193
46.96	1223	45.89	1222	45.24	1216	45.65	1222	45.42	1221	45.56	1220	46.04	1226	45.92	1220	46.25	1223
47.61	1247	46.48	1247	46.3	1251	46.33	1249	46.45	1252	46.3	1248	46.57	1249	46.57	1244	46.87	1249
48.26	1272	47.37	1278	46.99	1280	46.99	1273	47.1	1279	47.07	1274	47.22	1274	47.52	1278	47.61	1274
48.97	1299	48.08	1307	47.61	1304	47.81	1300	47.73	1305	47.7	1298	48.2	1306	48.2	1304	48.2	1298
49.83	1330	48.76	1329	48.32	1331	48.49	1327	48.44	1330	48.58	1330	48.85	1333	48.88	1330	49.09	1330
50.51	1354	49.65	1359	49.2	1361	49.41	1359	49.38	1363	49.32	1358	49.62	1360	49.53	1357	49.8	1358
51.22	1384	50.27	1386	49.71	1380	49.97	1385	49.77	1380	49.91	1382	50.24	1385	50.27	1382	50.39	1382
51.96	1409	51.04	1415	50.39	1407	50.74	1412	50.74	1415	50.74	1412	50.86	1410	50.89	1407	51.16	1413
52.82	1441	51.66	1436	51.1	1435	51.37	1438	51.45	1441	51.16	1430	51.57	1435	51.72	1440	51.84	1441
53.44	1465	52.58	1470	52.02	1469	52.37	1471	52.13	1469	52.13	1465	52.49	1471	52.4	1467	52.52	1465
54.21	1494	53.26	1494	52.7	1495	52.96	1497	52.67	1493	52.87	1494	53.17	1496	52.96	1490	53.32	1492
54.89	1520	53.94	1519	53.47	1523	53.58	1521	53.35	1519	53.53	1519	53.82	1524	53.91	1524	54	1519
51.37	1539	51.31	1542	50.57	1516	50.51	1510	51.25	1536	51.45	1538	51.39	1533	51.66	1542	50.92	1509
50.63	1514	50.42	1511	49.71	1482	49.89	1487	50.6	1511	50.74	1508	50.86	1510	50.65	1510	50.3	1486
49.71	1483	49.77	1482	49.03	1455	49.03	1455	50	1484	50.15	1486	50.15	1481	50	1481	49.44	1453
49.09	1458	49.09	1457	48.49	1434	48.35	1430	49.35	1461	49.35	1456	49.47	1456	49.35	1455	48.76	1426
48.38	1432	48.38	1431	47.55	1404	47.7	1400	48.32	1425	48.64	1427	48.76	1430	48.67	1430	48.02	1400
47.49	1400	47.37	1399	46.87	1378	46.93	1374	48.05	1410	48.02	1405	47.9	1398	48.02	1404	47.28	1371
46.84	1375	46.78	1375	46.04	1346	46.3	1348	46.96	1372	47.19	1375	47.19	1373	47.34	1379	46.72	1348
46.04	1347	46.13	1348	45.39	1319	45.56	1322	46.33	1348	46.54	1349	46.54	1344	46.39	1345	45.83	1316
45.51	1325	45.39	1322	44.77	1297	44.88	1298	45.62	1319	45.86	1323	45.92	1319	45.77	1319	45.15	1292
44.59	1292	44.47	1290	43.91	1266	44.23	1272	44.88	1293	44.97	1291	45.12	1294	45	1291	44.35	1261
43.85	1266	43.91	1268	43.23	1238	43.26	1236	44.32	1270	44.23	1265	44.44	1267	44.35	1265	43.7	1237
43.11	1238	43.14	1241	42.55	1215	42.58	1210	43.61	1243	43.52	1237	43.55	1236	43.61	1240	43.05	1211
42.4	1212	42.4	1211	41.72	1183	41.87	1184	42.72	1210	42.9	1212	42.84	1210	43.05	1215	42.25	1179
41.66	1186	41.78	1187	40.95	1154	41.1	1155	41.98	1185	42.19	1186	42.19	1182	42.04	1182	41.57	1156
40.95	1161	41.01	1161	40.3	1131	40.47	1131	41.24	1155	41.3	1155	41.48	1158	41.39	1155	40.86	1129

Table 10. 10 °C at 13 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
40	1129	40.15	1130	39.44	1099	39.76	1106	40.56	1131	40.53	1129	40.62	1128	40.8	1132	40	1100
39.41	1104	39.41	1103	38.64	1073	39.08	1081	39.7	1100	39.88	1101	39.91	1100	40.15	1107	39.26	1074
38.76	1080	38.85	1081	37.9	1046	38.28	1055	39.08	1077	39.29	1079	39.17	1072	39.11	1074	38.64	1047
37.75	1047	37.84	1046	37.31	1020	38.11	1047	38.34	1050	38.4	1046	38.49	1047	38.43	1048	38.02	1023
37.01	1019	37.16	1020	36.57	993.7	36.75	999	37.49	1019	37.69	1019	37.69	1018	37.72	1022	37.07	990.2
36.48	999.5	36.45	996.4	35.65	962.5	36.04	974.8	36.83	993.7	36.95	995.5	36.98	993.7	36.86	989.3	36.27	962
35.47	964.7	35.56	966	34.97	938.7	35.5	954.1	36.06	966	36.01	963.3	36.24	967.3	36.18	965.1	35.65	938.7
34.76	936.9	34.91	939.5	34.23	909.6	34.44	918.8	35.35	941.7	35.41	940	35.38	933.8	35.41	935.6	34.76	905.6
34.05	912.7	34.11	912.2	33.43	883.1	33.46	884.5	34.38	908.2	34.56	911.3	34.7	910	34.79	913.1	34.05	880.5
33.08	881.4	33.46	885.3	32.72	857.6	32.84	856.7	33.73	880.5	33.9	883.6	33.79	881.8	33.93	884	33.25	854
32.4	854.9	32.75	859.8	31.8	825.8	31.8	821.9	33.05	857.1	33.28	859.3	33.19	852.7	33.13	854.5	32.51	828
31.63	827.6	31.83	828.9	31.15	801.2	31.36	807.3	32.31	832.4	32.45	834.2	32.48	830.2	32.42	827.6	31.66	795.9
30.89	801.6	31	803.8	30.41	773.8	30.35	772.5	31.6	807.3	31.48	800.7	31.71	802.9	31.71	801.6	30.92	771.6
30.15	774.7	30.23	773.4	29.58	749.2	29.7	747	30.53	773.8	30.8	776	30.77	772.1	31.06	776.5	30.15	744.3
29.32	749.6	29.44	749.6	28.76	718.3	28.99	721	29.85	748.3	29.97	748.3	29.97	743	30.18	749.6	29.52	720.5
28.37	718.3	28.64	721.8	27.84	692.3	28.02	689.2	29.11	721.8	29.11	719.6	29.29	720.1	29.49	724.5	28.4	687.9
27.54	691	28.02	696.3	27.25	666.8	27.19	663.2	28.25	694.1	28.49	695.4	28.34	690.1	28.34	691	27.72	663.2
26.89	669.4	26.98	664.5	26.3	637.7	26.45	637.7	27.3	662.8	27.78	670.3	27.69	663.2	27.72	663.7	26.89	634.6
25.85	637.2	26.27	638.1	25.68	611.2	25.62	609	26.71	639.9	26.8	639.4	26.71	634.6	26.89	639	26.09	609.5
25.23	609	25.53	615.2	24.91	584.8	24.73	581.3	25.83	609.5	25.91	611.2	26.06	608.1	26.09	613.4	25.47	581.7
24.58	584.3	24.61	583	23.78	553.1	23.93	556.1	25.03	585.2	25.2	587.4	25.38	584.8	25.41	588.8	24.64	556.1
23.75	561.4	23.87	556.6	23.43	535.9	23.19	530.1	24.23	559.2	24.35	555.7	24.26	553.5	24.76	561.9	23.72	526.6
22.92	534.5	23.22	533.7	22.04	500.2	22.27	498.4	23.4	527.1	23.58	527.9	23.43	525.7	23.87	534.1	22.98	499.7
21.95	502.4	22.39	506.8	21.59	475.5	21.33	471.1	22.54	502.4	22.87	505.5	22.92	502.4	22.72	501.5	22.04	476.8
21.15	473.7	21.36	473.3	20.59	445.5	20.76	446.9	21.65	473.7	21.8	472.9	21.8	470.2	21.77	471.5	21	444.2
20.2	449.9	20.53	446.9	19.7	418.2	19.91	418.2	21	450.8	20.97	445.1	21.12	444.2	21.15	449.1	20.35	417.8
19.11	419.1	19.46	418.6	18.93	392.2	19.2	394.4	20.08	419.1	20.29	421.7	20.05	416.4	20.2	417.8	19.46	393.1
18.6	393.5	18.99	395.3	18.04	369.3	18.19	361.8	19.14	391.3	19.31	391.3	19.52	392.6	19.37	390.9	18.93	368
17.48	364.9	18.04	368.9	17.24	335.8	17.48	337.6	18.49	365.8	18.37	364.4	18.52	366.6	18.4	365.8	17.51	334
16.74	339.8	17.09	337.1	16.5	312	16.59	311.1	17.86	354.7	17.51	341.5	17.69	340.6	17.69	342.9	16.83	308
16	308.5	16.41	312	15.53	284.2	15.67	285.1	17.69	344.6	16.77	308	16.83	307.6	16.89	309.8	16.18	282.5
15.29	284.7	15.53	282.9	14.82	259.6	14.99	260	17.12	326.1	16.03	284.2	16	279	16.06	282.5	15.29	255.6

Table 11. 15 °C at 13 wt %

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
12.92	275	12.44	301.4	12.95	276.7	14.66	301.9	14.4	280.7	14.5	274.5	14.11	276.7	14.75	278.5	14.9	273.2
13.82	291.7	13.79	300.5	13.9	290.4	15.35	327.9	15.06	300.1	15.17	293.5	14.93	287.3	15.51	293.1	15.87	295.7
14.65	322.6	14.56	320.4	14.78	315.1	16.72	362.7	15.61	322.6	15.85	319.9	16.13	316.9	16.11	318.6	16.56	319.1
15.71	348.6	15.33	345.1	15.55	347.3	17.28	387.4	16.41	349.5	16.79	344.6	16.98	344.6	16.83	342	17.17	345.1
16.56	371.1	15.72	371.5	16.37	372.8	18.22	415.1	17.31	373.7	17.7	370.6	17.48	370.2	18.1	374.1	17.7	370.2
17.68	405	17.01	405.4	17.16	397.9	18.87	442	18.26	407.6	18.66	403.7	18.52	397.9	18.69	401.5	18.75	404.1
18.38	429.7	17.88	433.6	18.21	430.1	19.37	468	18.75	435.8	19.25	428.3	18.96	423.5	19.46	427.5	19.7	428.8
19.37	455.2	18.28	457	18.57	453.5	20.47	501.1	19.7	458.8	20.2	455.2	19.85	454.3	20.26	452.1	20.41	457.9
20.14	480.8	19.23	479.9	19.34	481.7	21.03	524.9	20.62	490.9	20.68	479	20.73	479.9	21.15	485.2	21.03	481.2
20.85	506.3	19.99	514.3	20.17	506.3	21.77	550	21.21	513.8	21.89	512.5	21.36	504.1	21.89	510.8	21.83	512.5
22.27	540.3	20.65	540.7	21.03	532.8	22.66	578.2	22.04	543.4	22.51	535.9	22.04	529.7	22.63	536.8	22.66	538.5
22.92	561.9	21.44	566.3	21.62	559.7	23.37	604.2	22.72	569.4	23.37	563.2	22.98	563.2	23.22	561.9	23.46	566.7
23.78	587.9	22.13	591.4	22.63	591	24.23	635.5	23.4	594.5	24.26	594	23.75	590.5	23.99	588.3	24.17	591
24.82	620	23.07	623.6	23.31	618.3	24.97	661	24.02	619.2	25	621.4	24.52	616.1	24.61	614.8	24.91	615.6
25.65	647.8	23.84	650	23.96	641.6	25.65	689.2	24.88	646.5	25.35	643.8	25.17	645.2	25.23	639.4	25.85	648.2
26.48	673.8	24.61	679.1	24.46	666.3	26.27	713	25.47	673.8	25.82	669.4	25.8	668.1	26.42	676	26.51	678.2
27.25	697.6	25.38	705.5	25.59	698.9	26.83	736.4	26.51	708.6	26.51	695.4	26.71	699.4	26.92	700.7	27.25	702.4
28.22	731.5	26.06	729.8	26.12	725.8	27.84	772.1	27.19	732.9	27.19	723.2	27.48	728.9	27.75	726.2	27.96	728.9
29.08	758.9	26.62	754.4	26.89	750.5	28.52	798.1	27.87	761.9	28.22	756.7	28.1	754	28.49	754.4	28.49	753.6
29.88	782.7	27.36	780.4	27.78	783.5	29.29	826.7	28.58	786.2	28.9	783.5	28.84	779.6	28.99	776.9	29.46	785.3
30.74	813.5	28.01	808.2	28.46	807.8	29.94	849.2	29.32	816.1	29.52	807.3	29.55	806	30	810.4	30.17	811.3
31.24	829.4	29.02	839.5	29.29	838.2	30.53	874.3	30	842.6	30.29	834.7	30.2	831.6	30.62	836.9	30.8	837.3
32.04	858.9	29.67	869	29.85	861.1	31.48	909.1	30.8	869.9	30.97	860.7	30.97	862.9	31.48	866.8	31.48	867.7
33.08	894.1	30.35	893.7	30.2	873.9	32.1	936	31.42	897.7	31.71	894.1	31.63	891.9	32.07	892.4	32.22	892.8
33.84	920.1	31	918.4	31.18	910.9	32.78	961.1	32.01	922.3	32.45	920.1	32.31	917.1	32.69	918.4	32.84	916.6
34.55	945.7	31.83	950.1	31.92	940.4	33.4	985.4	32.78	947.5	33.16	946.6	33.05	942.6	33.46	949.2	33.67	948.8
35.21	971.3	32.48	975.7	32.31	956.3	34.08	1011	33.55	979.6	33.82	973.9	33.58	967.3	34.11	973	34.23	975.7
36.01	996.8	33.16	1005	33.43	994.6	34.7	1038	34.14	1003	34.58	998.6	34.61	1001	34.73	1000	34.82	1000
36.66	1022	33.84	1029	33.46	1001	35.68	1072	34.85	1031	35.41	1024	35.09	1025	35.47	1030	35.62	1031
37.69	1059	34.7	1061	34.88	1055	36.24	1098	35.41	1055	36.21	1056	35.71	1052	36.01	1054	36.27	1058
38.43	1086	35.38	1088	35.53	1081	36.86	1124	36.12	1083	37.04	1084	36.33	1079	36.6	1078	36.86	1083

Table 11. 15 °C at 13 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
39.02	1110	35.92	1111	36.09	1108	37.57	1151	36.92	1116	38.22	1109	36.95	1104	37.51	1112	37.43	1107
39.67	1134	36.6	1140	36.77	1132	38.34	1182	37.6	1144	39.67	1141	37.69	1131	38.17	1137	38.37	1140
40.44	1169	37.46	1170	37.66	1166	38.93	1207	38.17	1166	40.47	1166	38.55	1165	38.82	1166	38.99	1166
41.18	1196	38.05	1196	38.25	1191	39.53	1234	38.93	1200	40.98	1193	39.17	1191	39.44	1192	39.56	1192
41.81	1222	38.67	1220	38.85	1218	40.09	1258	39.53	1224	41.98	1218	39.73	1214	39.97	1216	40.27	1221
42.46	1246	39.44	1251	39.41	1241	40.77	1283	40.12	1248	42.52	1242	40.41	1245	40.59	1241	40.83	1247
43.2	1275	40.15	1278	40.18	1275	41.6	1318	41.01	1281	43.67	1276	41.15	1272	41.27	1268	41.48	1271
43.91	1302	40.74	1304	40.8	1299	42.19	1345	41.63	1307	44.71	1300	41.66	1296	42.13	1304	42.28	1304
44.44	1326	41.33	1328	41.48	1326	42.78	1369	42.22	1334	48.05	1327	42.34	1322	42.49	1322	42.87	1332
45.12	1351	42.16	1359	42.16	1353	43.67	1399	42.78	1361	47.69	1351	42.96	1348	43.14	1351	43.52	1357
46.01	1388	42.81	1386	42.87	1383	44.17	1424	43.49	1386	44.29	1383	43.58	1374	44.08	1382	44.14	1383
46.6	1413	43.4	1410	43.52	1409	44.76	1452	44.29	1417	44.5	1408	44.44	1408	44.59	1408	44.74	1412
47.19	1438	44.23	1442	44.03	1434	45.45	1476	44.85	1441	45.12	1438	45.06	1437	45.24	1434	45.42	1437
47.84	1464	44.88	1469	44.68	1461	46.07	1502	45.53	1469	45.83	1467	45.71	1462	45.92	1467	46.13	1469
48.46	1488	45.5	1491	45.3	1486	46.81	1534	46.1	1495	46.39	1493	46.33	1490	46.57	1492	46.51	1488
49.32	1521	46.39	1523	46.1	1519	47.4	1559	46.87	1526	47.04	1520	46.95	1516	47.07	1516	47.37	1520
44.38	1535	44.23	1537	43.85	1510	43.88	1490	45.03	1534	45.15	1535	45.33	1534	46.19	1558	45.59	1535
43.55	1504	43.64	1510	43.26	1486	43.14	1464	44.35	1508	44.47	1508	44.74	1508	44.97	1514	44.85	1506
42.96	1481	42.99	1483	42.49	1453	42.34	1430	43.76	1482	44	1484	44.14	1481	44.91	1510	44.26	1478
42.28	1454	42.22	1456	41.81	1425	41.66	1404	42.9	1450	43.2	1454	43.43	1455	43.97	1471	43.64	1453
41.72	1430	41.51	1426	41.18	1399	41.04	1378	42.37	1423	42.57	1428	42.78	1426	43.4	1442	43.11	1430
40.92	1397	40.92	1404	40.5	1372	40.24	1347	41.75	1399	41.98	1403	42.13	1397	42.43	1404	42.37	1399
40.24	1368	40.33	1374	39.76	1342	39.62	1321	41.15	1374	41.18	1371	41.51	1373	41.78	1378	41.78	1374
39.5	1345	39.56	1346	39.17	1316	39.02	1296	40.3	1343	40.62	1345	40.95	1347	41.18	1352	41.01	1342
38.79	1317	38.88	1320	38.52	1292	38.46	1272	39.76	1318	40.06	1322	40.33	1321	40.5	1324	40.36	1318
38.28	1295	38.25	1295	37.93	1264	37.72	1242	39.23	1292	39.14	1289	39.65	1294	39.88	1299	39.73	1291
37.37	1259	37.57	1266	37.4	1241	36.98	1213	38.58	1268	38.61	1263	38.85	1262	39.2	1270	39.11	1262
36.8	1234	36.86	1234	36.48	1207	36.3	1188	37.72	1233	37.99	1235	38.14	1235	38.31	1237	38.49	1236
36.21	1211	36.18	1208	35.86	1182	35.8	1159	37.13	1207	37.37	1210	37.57	1209	37.78	1211	37.9	1210
35.32	1178	35.62	1185	35.24	1153	35.15	1135	36.54	1182	36.8	1186	36.98	1185	37.22	1189	37.25	1185
34.7	1153	35.09	1161	34.55	1127	34.32	1103	35.71	1153	35.92	1154	36.15	1153	36.39	1155	36.63	1159

Table 11. 15 °C at 13 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
33.9	1122	34.5	1135	33.9	1099	33.67	1074	35.09	1124	35.38	1126	35.56	1126	35.8	1128	36.01	1133
33.31	1100	33.49	1101	33.25	1074	33.05	1049	34.44	1096	34.7	1099	34.97	1102	35.15	1103	35.09	1098
32.6	1071	32.9	1075	32.66	1048	32.31	1020	33.87	1072	34.05	1077	34.41	1077	34.47	1076	34.44	1071
31.83	1041	32.34	1049	31.98	1020	31.63	994.6	33.28	1048	33.49	1050	33.55	1045	33.82	1050	33.73	1044
31.21	1014	31.6	1023	31.27	993.7	30.91	968.2	32.31	1013	32.63	1015	32.9	1017	32.99	1018	33.22	1018
30.47	988.9	30.71	989.3	30.59	966.4	30.26	941.3	31.71	988.5	31.95	989.8	32.28	990.2	32.63	999.9	32.63	993.7
29.94	965.1	30.12	964.2	29.97	940	29.58	915.3	31.12	963.3	31.3	962	31.68	966	31.71	963.8	32.01	968.2
29.14	932	29.44	937.3	29.17	909.6	28.99	886.7	30.41	934.7	30.62	936	30.8	933.4	31.15	939.5	31.06	936.5
28.46	907.4	28.75	911.8	28.46	880.5	28.31	861.5	29.73	904.7	30.06	911.3	30.12	905.6	30.35	909.1	30.44	910
27.63	876.5	28.13	885.3	27.9	856.2	27.69	836.9	29.08	880.9	29.46	884.9	29.55	881.8	29.76	885.8	29.7	874.8
27.01	852.7	27.51	860.7	26.92	825.4	26.8	802.5	28.4	851.4	28.52	852.7	28.96	857.1	29.2	861.1	28.93	854.5
26.39	825.8	26.62	828.9	26.27	798.5	26.12	774.7	27.63	826.7	27.99	826.3	28.01	824.5	28.22	828	28.81	836.9
25.71	800.3	26	800.7	25.56	772.1	25.44	751.4	27.07	801.2	27.33	801.2	27.39	800.3	27.6	800.7	27.9	811.7
25.06	773.8	25.08	770.8	25.11	747.8	24.52	718.8	26.24	770.8	26.59	775.6	26.62	772.5	26.89	774.7	26.92	772.5
24.23	743	24.52	744.3	24.14	714.8	24.08	695.4	25.62	745.6	25.85	748.7	26.21	749.6	26.27	749.6	26.39	741.7
23.46	719.2	23.75	719.2	23.49	691	23.22	668.5	24.82	714.8	25.06	716.6	25.47	724	25.41	719.2	25.65	728.9
22.98	692.8	23.31	695.8	22.89	664.1	22.75	641.2	24.23	688.8	24.49	691.9	24.58	690.5	24.82	691	24.82	691
21.95	658.8	22.48	664.5	22.15	636.8	21.83	612.1	23.43	662.3	23.78	662.8	23.84	662.3	24.11	667.6	24.05	662.3
21.27	635	21.62	636.8	21.53	609.9	21.18	587	22.89	639	23.1	638.1	23.22	639.9	23.61	642.1	23.46	634.1
20.65	610.8	21.15	614.8	20.91	584.8	20.56	565.4	21.95	604.2	22.24	605.9	22.27	605.5	22.57	612.1	22.78	609
19.7	576.4	20.29	581.7	20.2	557.9	19.88	539.8	21.3	581.3	21.59	579.9	21.68	578.6	22.01	583.5	22.24	584.3
18.99	549.5	19.52	553.5	19.23	525.3	19.11	503.7	20.62	555.3	20.79	551.3	21	553.5	21.24	554.4	21.09	552.2
18.46	526.2	18.9	528.8	18.43	498	18.37	477.3	19.94	528.8	20.14	525.3	20.29	530.6	20.59	527.9	20.44	525.3
17.51	495.3	18.28	503.3	18.01	475.5	17.69	453.9	19.2	502.4	19.46	500.2	19.49	497.1	19.91	502.4	19.79	499.7
16.95	469.8	17.57	476.4	17.18	445.5	16.71	421.3	18.34	469.8	18.81	471.1	18.75	472.9	19.08	479	19.34	475.1
16.3	444.2	16.71	443.3	16.35	420.4	16.15	393.5	17.69	445.1	17.89	445.5	17.98	442.9	18.19	447.7	18.6	450.4
15.41	416.9	15.7	416	15.64	390	15.53	368.9	17.12	415.6	17.24	417.3	17.45	419.5	17.66	420.4	17.51	416.4
14.93	391.8	15.35	392.2	14.82	362.2	14.55	338.4	16.18	390.4	16.53	391.8	16.62	391.8	16.8	396.6	16.98	390.9
13.81	360	14.7	368.9	14.4	339.3	14.05	312	15.56	366.2	15.67	360.5	15.94	365.3	15.97	363.6	16.09	360.9
13.36	332.3	13.69	334.9	13.42	306.7	13.42	287.3	14.58	330.5	14.85	337.1	15.05	332.7	15.14	339.3	15.56	337.6
12.79	309.4	13.17	310.7	12.89	281.6	12.8	262.2	13.81	305.4	14.31	305.8	14.34	308	14.7	309.8	14.93	311.1
11.92	277.6	12.58	284.7	12.31	256.5	11.92	238	13.07	278.5	13.76	281.6	13.51	282.9	14.05	285.6	13.96	281.2

Table 12. 25 °C at 13 wt %

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
13.77	280.3	14.93	278.5	15.04	276.3	14.7	272.8	14.93	272.3	15.06	276.7	14.93	273.7	14.82	271.5	14.86	275
14.89	298.3	15.55	295.7	15.57	292.6	15.6	298.8	15.59	296.6	15.59	295.3	15.65	293.1	15.23	293.5	15.67	296.6
15.31	319.9	15.8	322.6	15.9	324.3	16.21	323.5	15.93	321.3	15.97	321.7	15.99	320.4	16.13	323.9	16.1	321.7
15.82	349.5	16.63	351.2	16.45	349.9	16.65	347.7	16.51	349.5	16.72	353.9	16.35	345.1	16.64	347.7	16.42	350.3
16.3	377.2	17.2	375.9	17.09	372.8	16.85	373.3	17.15	372.4	17.13	378.5	16.97	371.1	16.85	372.4	16.89	374.1
16.9	402.3	18.18	404.5	17.32	400.1	17.68	405.9	17.65	405	17.47	404.1	17.38	396.6	17.68	405.4	17.47	407.2
17.63	433.2	18.06	435.8	18.09	433.6	18.21	434.5	17.88	433.2	18.06	435.4	17.88	422.6	17.88	429.2	18.24	435
17.77	456.5	18.59	462.3	18.71	457.4	18.54	458.3	18.65	456.5	18.62	460.5	18.54	454.3	18.54	457.4	18.65	459.2
18.42	487.8	19.22	485.2	19.19	486.5	19.04	484.8	18.89	478.6	19.07	483.4	18.95	482.5	19.19	481.7	19.07	482.5
19.01	509.4	19.75	516.9	19.72	512.5	19.63	512.5	19.63	509.9	19.51	510.3	19.48	505.9	19.6	505.9	19.66	509
19.57	540.7	20.25	539.8	20.02	537.2	20.34	537.2	19.96	530.6	20.37	544.2	20.02	531.5	20.16	534.1	20.34	542
20.34	568.9	20.81	568.5	20.9	568.9	20.76	561.9	20.78	564.1	20.87	566.7	20.78	565	20.81	568.5	20.96	569.4
20.81	592.3	21.2	595.4	21.2	597.1	21.49	596.2	21.44	594.5	21.32	597.1	21.26	591	21.41	594.5	21.32	591.4
21.52	624.9	22.03	624.9	21.7	621.4	21.82	625.3	21.47	611.7	21.94	623.1	21.61	612.5	22	620.5	21.94	622.7
22.23	652.2	22.38	652.7	22.26	643.8	22.47	650.9	22.21	631.1	22.41	652.7	22.23	643.8	22.44	647.8	22.59	650.4
22.62	676.9	23	676.9	22.97	677.3	23.03	677.3	23.03	674.7	23.09	677.8	22.8	667.6	23.12	675.1	23.03	676
23.24	702.4	23.66	707.7	23.42	704.7	23.45	700.7	23.54	706	23.48	700.2	23.57	700.7	23.77	704.7	23.57	699.4
24.07	731.5	24.01	734.2	24.1	729.3	24.22	735.9	24.07	728.9	24.07	733.3	23.98	726.2	24.25	732.4	24.31	732.4
24.81	758.9	24.63	761.1	24.54	754	24.66	757.5	24.66	758.4	24.63	759.3	24.42	752.7	24.6	756.7	24.84	761.1
25.02	782.7	25.11	787.9	25.22	784.4	25.31	787.9	25.08	784	25.11	787.9	25.02	778.7	25.19	781.8	25.34	786.6
25.55	814.4	25.67	814.4	25.76	813.1	25.73	813.1	25.67	810	25.67	813.1	25.67	808.2	25.73	807.8	25.87	813.1
25.85	842.1	26.11	839.1	26.23	839.9	26.26	838.2	26.23	839.1	26.17	837.7	26.23	835.5	26.26	836.4	26.35	839.5
26.41	870.8	26.79	870.3	26.76	863.3	26.79	863.7	26.67	864.6	26.88	868.6	26.7	860.2	26.73	860.7	26.88	863.3
27.06	897.7	27.21	894.6	27.41	896.3	27.5	899.4	27.35	895	27.3	896.8	27.35	891.9	27.33	887.1	27.35	889.7
27.62	924.1	27.95	924.1	28.01	923.2	28.04	925	27.89	921.5	27.74	918.8	27.83	918.4	27.95	916.2	28.09	922.8
28.12	951.4	28.45	951	28.42	947	28.54	951.4	28.51	951.9	28.72	953.2	28.39	943.5	28.36	943.5	28.6	950.1
28.8	981.8	28.92	978.3	28.83	971.7	28.89	975.2	28.98	978.3	29.04	979.6	28.92	969.9	28.98	971.3	29.13	974.3
29.16	1005	29.49	1001	29.43	998.6	29.46	1002	29.52	1003	29.46	1005	29.52	1001	29.6	1003	29.78	1006
29.81	1034	30.14	1033	30.23	1032	29.9	1025	30.05	1033	30.02	1030	30.08	1029	30.08	1031	30.28	1033
30.31	1060	30.64	1059	30.82	1060	30.7	1059	30.55	1059	30.4	1055	30.52	1055	30.64	1055	30.82	1060
30.79	1087	31.08	1087	31.29	1083	31.17	1087	31.08	1084	31.23	1090	31.08	1080	31.29	1088	31.35	1085

Table 12. 25 °C at 13 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
31.5	1113	31.56	1110	32.06	1116	31.73	1111	31.56	1110	31.76	1116	31.59	1107	31.79	1114	31.79	1113
32.06	1144	32.27	1142	32.53	1140	32.44	1144	32.09	1135	32.21	1141	32.18	1139	32.3	1140	32.33	1138
32.53	1166	32.77	1166	32.89	1163	32.8	1171	32.77	1169	32.8	1171	32.71	1163	32.86	1169	32.89	1163
32.92	1194	33.3	1197	33.75	1196	33.3	1194	33.21	1196	33.18	1193	33.21	1189	33.24	1194	33.51	1196
33.69	1223	33.95	1225	34.19	1221	33.81	1221	33.75	1220	33.48	1209	33.66	1217	33.75	1219	34.01	1223
34.22	1252	34.37	1248	34.72	1250	34.4	1253	34.22	1245	33.36	1214	34.19	1243	34.46	1250	34.52	1247
34.72	1278	34.9	1279	35.26	1276	34.99	1279	34.96	1279	34.63	1250	34.63	1267	35.05	1277	35.14	1280
35.14	1302	35.4	1304	35.88	1305	35.4	1307	35.32	1305	35.61	1313	35.11	1293	35.49	1303	35.61	1304
35.79	1330	36	1335	36.41	1330	35.91	1333	35.82	1328	35.76	1324	35.85	1329	36	1331	36.17	1331
36.29	1356	36.41	1357	36.82	1359	36.41	1356	36.35	1354	36.35	1347	36.35	1354	36.47	1355	36.65	1360
36.85	1386	37.15	1386	37.33	1384	37	1388	36.97	1386	36.94	1386	36.82	1378	36.97	1381	37.12	1384
37.33	1413	37.65	1415	37.77	1408	37.51	1415	37.54	1415	37.45	1416	37.54	1412	37.65	1415	37.65	1411
37.8	1435	38.22	1440	39.22	1440	37.86	1439	37.98	1441	37.98	1442	37.92	1435	38.13	1441	38.13	1437
38.51	1471	38.9	1471	39.61	1469	38.42	1464	38.51	1464	38.51	1471	38.48	1462	38.63	1469	38.81	1470
38.96	1497	39.37	1493	40.02	1491	39.01	1491	39.19	1498	39.01	1499	38.96	1490	39.07	1495	39.28	1495
39.55	1521	40.02	1525	40.64	1523	39.78	1523	39.67	1523	39.55	1523	39.37	1513	39.64	1523	39.73	1521
39.75	1510	41.29	1505	38.81	1541	38.01	1508	42.63	1539	38.07	1509	38.51	1535	38.54	1508	36.62	1426
39.19	1484	40.85	1482	38.25	1514	37.54	1483	41.86	1508	37.65	1483	37.95	1507	38.04	1482	36.2	1403
38.54	1458	39.73	1451	37.71	1489	37.09	1460	40.85	1482	36.97	1451	37.62	1484	37.42	1452	35.64	1375
38.16	1431	39.22	1423	37.03	1453	36.59	1432	40.38	1453	36.53	1425	37.12	1459	36.85	1426	35.17	1349
37.51	1404	38.69	1399	36.8	1436	35.85	1399	40.05	1430	35.97	1400	36.62	1433	36.38	1400	34.72	1325
36.91	1376	38.13	1370	36.08	1400	35.35	1372	39.49	1398	35.55	1371	35.94	1397	35.85	1375	34.04	1292
36.35	1348	37.68	1342	35.49	1375	34.84	1347	38.9	1374	35.08	1347	35.43	1372	35.14	1343	33.54	1265
35.76	1322	36.91	1319	35.02	1349	34.37	1317	37.98	1345	34.61	1322	34.99	1348	34.66	1319	33.01	1241
35.14	1291	36.08	1286	34.55	1320	33.92	1292	37.54	1319	33.78	1288	34.58	1322	34.16	1292	32.53	1217
34.66	1266	35.55	1259	34.07	1296	33.42	1267	36.74	1295	33.27	1263	33.98	1296	33.75	1268	31.88	1182
34.22	1240	34.96	1235	33.33	1263	32.74	1235	34.66	1263	32.8	1235	33.57	1269	33.01	1236	31.41	1157
33.51	1208	34.43	1210	32.89	1238	32.21	1207	33.39	1235	32.36	1211	32.86	1236	32.53	1207	30.88	1131
32.92	1181	33.78	1182	32.3	1211	31.82	1182	33.3	1207	31.91	1187	32.36	1211	32.03	1183	30.46	1108
32.42	1153	33.24	1157	31.82	1181	31.08	1152	32.77	1181	31.35	1154	31.85	1186	31.5	1158	29.72	1073
31.82	1129	32.56	1125	31.29	1159	30.61	1126	31.97	1155	30.73	1126	31.47	1160	30.82	1125	29.25	1047

Table 12. 25 °C at 13 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
31.26	1100	32.21	1099	30.7	1128	30.14	1099	31.47	1130	30.2	1100	30.61	1126	30.31	1100	28.72	1019
30.7	1075	31.5	1071	30.25	1101	29.66	1073	30.64	1097	29.6	1070	30.14	1098	29.81	1072	28.18	992.9
30.28	1047	30.76	1047	29.84	1074	29.1	1047	30.2	1072	29.1	1044	29.75	1076	29.43	1048	27.71	969.5
29.66	1021	30.23	1022	29.28	1048	28.57	1018	29.66	1046	28.57	1022	29.1	1043	29.16	1023	26.94	936
29.13	996.8	29.49	988.5	28.63	1018	28.09	992	28.8	1017	28.09	991.5	28.54	1020	28.3	995.9	26.47	910.9
28.42	963.8	29.01	961.1	28.09	990.2	27.65	968.2	28.06	994.2	27.53	966	28.06	990.2	27.62	964.7	25.96	884.5
27.77	938.2	28.66	943.1	27.62	966.9	27.09	942.6	27.56	958.5	27.12	942.6	27.59	965.5	27.12	936	25.37	856.7
27.21	909.6	27.68	911.3	27.09	943.9	26.64	916.2	27.24	942.2	26.35	908.7	27.09	939.5	26.61	907.8	24.93	832
26.7	883.1	27.47	891.5	26.5	910.5	25.99	883.6	26.41	907.8	25.79	880	26.59	913.5	26.05	884.9	24.4	806
26.26	861.1	26.44	847.9	25.96	884	25.4	855.8	25.87	879.6	25.31	851.8	25.9	880.9	25.52	856.7	23.74	773.4
25.49	827.2	25.9	833.3	25.28	856.7	24.93	832	25.46	855.4	24.87	826.7	25.34	852.3	25.08	832	23.18	748.3
24.93	800.7	25.43	803.8	24.78	827.6	24.25	798.5	25.02	828.9	24.37	802.9	24.96	828.5	24.28	797.2	22.65	720.5
24.31	772.1	24.78	784.4	24.28	801.6	23.8	772.5	24.31	796.8	23.77	776	24.45	803.4	23.83	770.8	22.21	693.6
23.71	748.3	23.95	741.2	23.68	775.6	23.3	744.3	23.86	770.3	23.21	748.7	23.68	771.6	23.21	745.2	21.58	667.6
23.12	716.6	23.36	717.9	23.15	747	22.71	721	23.39	747	22.53	714.3	23.27	747	22.71	718.3	21.2	643
22.5	691.4	22.8	688.8	22.8	723.2	21.94	689.2	22.86	721	22.03	688.8	22.74	717.9	22.21	693.6	20.34	612.1
22.15	664.5	22.38	663.7	22.26	697.2	21.64	665	22.32	696.3	21.61	663.2	22.12	693.6	21.76	668.1	20.04	583
21.55	640.3	21.67	636.3	21.61	669	21.02	636.8	21.44	661	21.05	636.8	22.21	669	20.96	634.1	19.45	556.6
20.78	613.4	21.08	612.1	21.2	642.1	20.64	610.3	20.9	635	20.4	610.8	21.29	637.2	20.4	609	18.77	528.8
20.34	583	20.7	587.4	20.7	616.1	20.1	586.1	20.34	604.6	20.07	584.8	20.55	608.6	19.99	581.3	18.39	502.4
19.72	556.1	20.04	559.2	20.02	580.8	19.69	560.1	19.72	579.1	19.28	552.6	19.99	583.5	19.45	556.6	17.85	477.7
19.28	531.9	19.22	525.7	19.51	557	18.95	528.4	19.28	552.6	18.68	524.4	19.66	561.4	19.01	529.3	17.26	453.5
18.68	504.1	18.71	498.9	18.95	528.4	18.27	498.9	18.83	528.8	18.36	499.3	18.95	528.8	18.36	498.9	16.58	420.9
18.18	479.9	18.21	475.5	18.54	502.8	17.88	471.5	18.45	503.3	17.91	472.4	18.39	498.4	17.74	473.7	16.38	392.6
17.47	442.9	17.56	440.7	17.91	478.6	17.44	445.1	17.59	469.8	17.29	447.3	17.77	475.1	17.17	445.1	15.72	368.4
16.73	419.1	16.85	416.4	17.29	451.7	16.73	417.8	17.29	445.5	16.82	421.7	17.11	442.4	16.85	422.2	15.19	345.1
16.46	391.8	16.52	388.7	16.76	418.6	16.46	392.2	16.7	416.4	16.23	390	16.79	418.2	16.14	392.6	14.69	312.9
15.69	361.4	15.75	362.7	16.38	391.3	15.81	366.6	16.35	392.6	15.55	361.4	16.08	391.3	15.9	367.1	14.24	286
15.25	343.3	15.43	333.6	15.61	364.9	15.28	339.8	15.49	360.9	15.25	335.4	15.81	362.7	14.9	333.6	13.68	255.2
14.84	308.5	14.87	305.8	15.31	336.7	14.81	308	15.25	334.5	14.78	309.4	15.31	337.6	14.48	309.4	13.27	229.2
14.39	282.9	14.51	282	14.95	312.4	14.3	282.5	14.84	309.8	14.21	279.8	14.39	306.7	14.19	280.7	0	172.9
13.98	260.4	13.74	249.9	14.45	286.4	13.74	253	14.21	279	13.74	253	13.92	280.3	13.53	256.5	0	171.6

Table 13. 25 °C Repeat at 13 wt %

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
13.05	275	14.21	305	13.29	274.1	13.37	274.5	13.2	275.4	13.14	272.8	13.62	280.3	13.62	276.3	13.36	274.1
13.88	293.1	14.75	332.3	13.83	296.6	13.89	293.5	13.72	295.7	13.78	290.4	14.19	301	14.28	298.8	14.18	297
14.19	321.7	15	357.4	14.44	322.6	14.25	318.2	14.28	318.6	14.6	320.4	14.85	327.9	14.79	322.1	14.74	317.7
14.63	344.6	15.9	388.7	15.13	345.9	14.77	343.7	15.1	345.5	15.29	345.5	15.64	355.2	15.25	346.8	15.36	345.9
15.52	371.1	16.12	414.7	15.8	377.2	15.68	375.9	15.64	378.5	15.7	369.7	15.87	384.7	16.14	379	16.35	375.5
16.1	404.5	16.83	438.5	17.09	403.7	16.03	400.6	16.52	404.5	16.53	403.7	16.68	409	16.41	405.4	16.71	400.6
16.68	430.1	17.09	462.7	17.54	429.7	16.56	429.2	16.89	432.8	17.06	431	17.24	440.2	17.24	432.3	17.39	430.5
17.27	454.8	18.01	496.6	18.07	457.9	17.27	453.5	17.45	457.4	17.6	453.9	17.68	463.6	17.86	461.4	18.16	457
18.07	486.5	18.57	521.3	18.34	484.8	17.77	480.8	18.07	488.7	18.28	479.5	18.34	490.5	18.31	487	18.78	482.1
18.57	513	19.19	550.9	18.9	507.7	18.6	513.4	18.69	514.3	18.93	507.7	18.81	519.6	18.9	514.3	19.34	507.7
19.16	539.4	19.7	575.1	19.82	539.8	19.1	537.6	19.19	541.2	19.55	541.2	19.43	543.4	19.4	539.4	20.2	538.1
19.7	563.6	20.29	607.7	20.32	565.4	19.67	565	19.79	567.2	20.17	568.5	20.14	576.9	20.08	565	20.82	565.8
20.23	588.8	21.09	633.7	20.64	591	20.2	592.3	20.56	596.2	20.82	593.2	20.41	594.9	21.12	597.1	21.35	593.2
20.88	622.7	21.71	657.5	21.29	622.7	20.73	617.4	21.06	624	21.56	619.6	21.38	629.3	21.56	624.4	21.98	621.4
21.29	645.2	22.06	687.9	21.56	639.9	21.32	642.1	21.59	650	22.12	643.8	22.03	657.5	22.48	649.6	22.54	645.2
21.86	669	22.6	712.1	22.42	665.9	22.15	674.2	22.24	676.4	22.57	669	22.42	682.2	23.04	677.8	23.16	676.9
22.51	702	23.1	739.9	23.34	713.9	22.69	703.3	22.48	701.1	23.6	703.3	23.1	707.3	23.84	702.9	23.46	702.4
23.16	728.9	23.69	764.1	23.4	723.6	23.37	728.9	22.95	727.6	24.05	728.9	23.84	738.6	24.4	728.4	24.11	727.6
23.51	752.2	24.43	795.9	23.34	731.1	23.87	752.7	23.81	761.5	24.7	758	24.46	766.3	25.35	762.8	24.7	758.9
24.37	784	24.88	821.4	24.58	773.8	24.52	781.8	24.34	779.1	25.29	781.3	24.82	789.7	26	787.5	25.32	782.2
24.88	812.2	25.41	846.1	25.35	803.4	25.11	811.7	25.35	814.4	25.82	806.4	25.23	814.8	26.53	813.1	26.21	810
25.47	835.1	26.06	877.4	25.97	840.4	25.73	835.1	25.91	843.5	26.65	841.7	25.91	845.7	27.18	839.1	26.83	835.1
26.09	865.9	26.74	905.6	26.62	865.9	26.24	865.5	26.44	867.7	27.18	865.1	26.68	877.4	27.86	868.1	27.6	864.6
26.62	894.6	27.15	930.3	27.01	890.2	26.86	893.3	26.95	894.1	27.66	890.6	27.01	903	28.58	898.1	28.25	893.7
27.24	916.2	27.69	955.8	27.75	922.8	27.39	918.8	27.6	918.8	28.43	923.7	27.54	930.3	29.29	924.6	28.72	918.4
27.78	943.1	28.52	988	28.43	951.9	28.07	943.1	28.04	943.1	29.11	950.6	27.89	955.8	30.11	949.2	29.43	943.9
28.6	977	29.02	1016	28.93	976.1	28.84	977.9	28.9	977	29.55	973.9	28.37	978.3	30.59	975.2	30.23	972.6
29.08	1000	29.46	1039	29.46	1006	29.37	1003	29.4	1005	30.35	1006	29.26	1012	31.18	999.9	31.03	1004
29.46	1028	30.23	1070	29.88	1029	29.91	1030	29.82	1029	30.85	1030	29.64	1038	31.95	1034	31.45	1027
29.91	1053	30.77	1096	30.44	1056	30.47	1056	30.56	1061	31.42	1059	30.17	1061	32.6	1060	32.04	1053
30.65	1085	31.27	1120	31.27	1088	31.03	1082	31.09	1088	32.07	1086	30.68	1087	33.28	1088	32.96	1085

Table 13. 25 °C Repeat at 13 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
31.12	1111	31.98	1152	31.8	1114	31.53	1108	31.71	1116	32.57	1111	31.36	1114	33.93	1112	33.55	1112
31.62	1134	32.54	1179	32.48	1137	32.19	1134	32.27	1142	33.22	1137	33.19	1150	34.67	1138	34.29	1141
32.36	1168	33.04	1202	33.22	1169	32.81	1163	32.96	1168	33.75	1164	33.67	1175	35.35	1171	34.85	1165
32.87	1192	33.64	1226	33.84	1193	33.34	1189	33.46	1194	34.32	1190	34.38	1200	35.94	1197	35.23	1188
33.4	1218	34.52	1259	34.61	1219	34.08	1223	34.05	1226	35.12	1220	34.85	1226	36.65	1224	35.8	1219
33.75	1241	35.2	1284	35.5	1250	34.55	1249	34.7	1253	35.74	1251	35.38	1255	37.19	1248	36.42	1246
34.64	1275	35.71	1311	36.03	1275	35.17	1275	35.29	1278	36.27	1277	36.21	1285	37.69	1274	37.19	1278
35.23	1303	36.27	1342	36.48	1306	35.62	1299	35.8	1301	36.68	1301	36.65	1311	38.37	1301	37.81	1302
35.8	1327	36.74	1370	37.34	1333	36.42	1331	36.24	1327	37.42	1334	37.57	1337	39.23	1333	38.31	1331
36.48	1359	37.36	1399	37.84	1354	36.83	1356	36.8	1355	38.05	1356	38.43	1367	39.73	1361	38.96	1356
37.01	1386	37.96	1425	38.81	1388	37.57	1386	37.39	1382	38.34	1376	38.96	1390	40.29	1386	39.55	1384
37.51	1409	38.58	1452	39.35	1411	37.57	1396	38.19	1417	39.35	1415	39.41	1416	40.92	1411	40.12	1409
38.28	1438	38.96	1474	39.76	1438	38.46	1444	38.7	1443	39.76	1439	40.21	1447	41.6	1443	40.71	1433
38.79	1464	39.61	1507	40.38	1467	38.99	1453	39.2	1471	40.24	1462	40.5	1473	42.16	1471	41.51	1467
39.35	1490	40.18	1533	41.06	1495	39.47	1485	39.55	1495	41.12	1496	41.21	1503	42.6	1496	41.95	1494
37.16	1516	38.02	1483	38.61	1509	37.66	1510	37.87	1510	40.38	1485	40.12	1479	40.47	1516	40.47	1513
36.86	1483	37.42	1456	37.93	1481	37.28	1482	37.54	1485	39.79	1457	39.5	1450	39.67	1482	39.79	1482
36.62	1458	36.95	1426	37.28	1456	36.92	1457	36.27	1452	39.26	1432	38.9	1423	39.17	1456	39.23	1454
35.62	1432	36.39	1403	36.92	1432	36.15	1432	35.53	1427	38.49	1400	38.28	1397	38.34	1432	38.61	1429
34.91	1401	35.77	1376	36	1397	35.88	1405	35	1402	38.13	1374	37.78	1374	37.78	1399	38.02	1404
34.41	1374	35.2	1345	35.5	1372	35.44	1379	34.41	1372	37.51	1348	36.89	1344	37.36	1375	37.36	1370
33.75	1343	34.64	1319	35.09	1343	34.85	1343	33.9	1350	36.89	1321	36.33	1317	36.71	1350	36.68	1347
33.22	1318	34.14	1291	34.58	1316	34.46	1317	33.22	1317	36.21	1294	35.91	1291	35.97	1317	36.09	1319
32.78	1292	33.67	1266	34.11	1293	34.05	1293	32.72	1289	35.65	1270	35.32	1266	35.41	1292	35.47	1293
32.33	1266	33.16	1241	33.61	1267	33.46	1262	32.16	1265	34.79	1235	34.73	1241	35	1265	35.12	1268
31.8	1242	32.3	1209	32.84	1235	33.04	1244	31.71	1237	34.26	1211	33.9	1208	34.46	1241	34.46	1236
31.3	1217	31.74	1183	32.57	1216	32.07	1208	31.15	1213	33.69	1185	33.31	1182	33.81	1214	33.87	1210
30.74	1182	30.91	1153	31.86	1186	31.48	1180	30.41	1179	33.01	1159	32.81	1152	33.25	1186	33.13	1180
30.03	1155	30.47	1129	31.18	1159	31.09	1155	29.97	1151	32.33	1128	32.24	1129	32.6	1155	32.69	1156
29.43	1126	30.03	1100	30.44	1126	30.53	1130	29.43	1128	31.95	1102	31.71	1099	32.1	1130	32.66	1150
29.05	1103	29.55	1077	29.85	1097	29.97	1105	28.96	1102	31.3	1080	31	1070	31.42	1104	31.48	1108

Table 14. 50 °C at 13 wt %

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
12.28	273.2	11.8	276.3	11.04	275	11.07	275.4	10.64	277.6	10.76	275	10.89	273.7	10.75	273.7	10.57	271
12.8	296.6	12.2	296.1	11.53	290.9	11.44	294.8	11.42	297	10.96	292.2	11.15	292.6	11.09	295.3	11.07	293.9
13.49	326.5	12.32	315.1	12.12	323.9	11.81	318.6	11.7	321.7	11.74	322.6	11.6	319.5	11.33	320.8	11.27	322.1
13.67	353	12.7	348.1	12.55	348.6	12.21	351.7	11.91	351.2	12.01	349	11.91	343.3	11.53	345.9	11.74	345.5
13.99	376.3	13.3	376.8	12.79	378.5	12.71	379.4	12.56	378.1	12.55	378.5	12.51	376.8	12.29	379.9	12.29	380.8
14.59	400.6	13.56	399.7	13.38	405.4	13.01	405	12.8	402.8	12.96	403.2	12.72	404.5	12.59	405	12.82	404.5
15.16	432.3	14.19	433.2	13.63	431.4	13.47	429.7	13.35	427.5	13.26	428.3	13.3	429.2	12.98	433.2	13.01	431.9
15.42	457	14.53	456.5	14.1	457	14.13	463.2	13.94	462.7	13.86	462.3	13.46	453.5	13.5	456.5	13.62	453.9
15.87	486.1	14.9	486.1	14.57	487.8	14.44	489.6	14.08	485.2	14.05	486.5	13.94	483.4	14.09	488.3	14.11	487.8
16.47	509.9	15.24	511.6	14.97	515.6	14.75	513.4	14.47	509.9	14.53	515.6	14.33	511.6	14.43	514.3	14.64	514.3
16.9	542.5	15.6	537.6	15.45	539.4	15.12	539.4	15.16	542	14.87	539.4	14.79	537.2	14.82	541.2	14.89	542.5
17.24	569.4	16.11	561	15.97	572	15.66	568.5	15.53	571.1	15.47	569.8	15.41	567.2	15.08	564.5	15.19	568
17.74	594.9	16.78	593.6	16.26	587.9	16.03	591.8	15.93	594.5	15.89	597.1	15.78	592.7	15.61	591.8	15.74	595.8
18.25	621.4	17.06	621.4	16.88	623.6	16.6	624.9	16.25	618.7	16.25	624.9	16.21	624	16.1	624	16.27	620.9
18.51	646.5	17.42	647.4	17.2	648.7	17.19	651.8	16.7	653.1	16.73	650.4	16.68	647.8	16.46	652.2	16.66	645.6
19.1	678.2	17.86	672	17.6	676.4	17.42	675.6	17.24	680	17.17	680	17.04	675.1	16.91	676.9	17.24	677.8
19.61	706.4	18.16	697.6	17.92	699.4	17.92	706.9	17.57	705.1	17.54	706.4	17.42	698.5	17.24	701.6	17.48	702
19.9	730.2	18.87	731.1	18.39	727.6	18.34	732	18.1	731.1	17.98	732.4	17.98	732.4	17.8	733.7	17.89	732.4
20.5	759.3	19.25	757.5	18.99	761.1	18.39	744.8	18.37	755.8	18.28	755.8	18.45	758	18.25	757.1	18.39	754
20.88	785.3	19.73	784.9	19.31	787.1	19.25	785.3	18.69	781.3	18.72	780.9	18.84	786.2	18.54	787.5	18.81	783.5
21.18	810.9	20.11	811.3	19.82	814.4	19.19	789.3	19.22	807.3	19.31	815.7	19.1	809.5	19.02	812.6	19.19	808.7
21.83	844.3	20.53	837.7	20.29	841.7	20.05	838.2	19.82	842.1	19.7	843	19.7	841.7	19.58	843.5	19.76	841.7
22.3	868.6	20.94	864.2	20.67	867.7	20.53	858.5	20.23	868.1	20.08	868.6	20.08	868.1	19.84	860.7	20.08	869.5
22.77	897.2	21.56	896.3	21.03	890.2	20.85	891.5	20.58	891.9	20.58	894.6	20.44	890.6	20.44	895.9	20.56	892.8
23.1	920.1	21.89	919.7	21.5	925.4	21.35	914.4	21.24	925	20.97	919.7	20.85	915.7	20.76	921.5	20.97	921
23.63	954.1	22.39	950.6	21.95	951.9	21.89	947.5	21.35	943.1	21.5	951	21.41	949.7	21.21	949.2	21.27	946.1
24.17	977.9	22.86	975.7	22.36	977	22.3	971.7	22.06	980.1	21.8	975.7	21.77	974.8	21.62	974.3	21.71	973
24.55	1006	23.19	1003	22.83	1001	22.77	1006	22.48	1004	22.21	1002	22.27	1001	22.03	1000	22.3	1007
24.88	1032	23.6	1028	23.28	1033	23.28	1033	22.95	1033	22.75	1030	22.69	1026	22.63	1033	22.69	1033
25.38	1056	24.02	1054	23.63	1060	23.69	1057	23.28	1056	23.16	1054	23.28	1058	23.04	1062	23.16	1062
25.88	1089	24.58	1087	24.14	1083	24.31	1089	23.63	1081	23.51	1075	23.72	1087	23.37	1084	23.51	1088

Table 14. 50 °C at 13 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
26.27	1115	25.23	1112	24.52	1109	24.7	1117	24.31	1117	24.11	1108	24.05	1110	24.02	1116	24.02	1115
26.65	1138	25.53	1139	25.08	1143	25.11	1141	24.7	1141	24.37	1131	24.46	1134	24.34	1141	24.22	1137
27.18	1170	25.85	1163	25.44	1170	25.47	1167	25.17	1169	25.2	1164	25.08	1166	24.67	1164	24.91	1169
27.72	1196	26.33	1194	25.82	1193	25.91	1191	25.47	1192	25.47	1195	25.38	1194	25.26	1196	25.23	1195
28.1	1225	26.74	1221	26.39	1224	26.53	1222	26.09	1224	25.88	1218	25.82	1218	25.67	1222	25.62	1222
28.37	1247	27.12	1244	26.77	1252	26.95	1250	26.5	1247	26.21	1241	26.41	1251	26.15	1251	26.27	1248
28.81	1274	27.75	1278	27.15	1278	27.36	1278	26.92	1275	26.68	1272	26.65	1269	26.44	1275	26.59	1279
29.34	1305	28.1	1304	27.6	1305	27.86	1306	27.51	1305	27.24	1305	27.24	1302	27.04	1307	27.01	1305
29.82	1334	28.37	1324	28.01	1329	28.31	1334	27.78	1334	27.72	1331	27.72	1330	27.42	1334	27.36	1334
30.14	1357	28.99	1359	28.58	1360	28.72	1358	28.28	1360	27.95	1351	28.1	1355	27.75	1359	27.86	1359
30.56	1383	29.4	1386	28.96	1388	29.08	1382	28.69	1386	28.63	1385	28.58	1379	28.19	1383	28.19	1382
30.94	1409	29.76	1408	29.4	1411	29.73	1416	29.08	1411	29.02	1412	29.26	1413	28.75	1415	28.58	1408
31.56	1443	30.35	1442	29.73	1436	30.03	1442	29.49	1437	29.34	1436	29.52	1438	29.55	1442	29.11	1438
31.92	1470	30.71	1469	30.32	1467	30.44	1466	30.05	1470	29.88	1466	30.05	1466	29.73	1469	29.55	1466
32.33	1497	31.18	1494	30.74	1496	30.79	1491	30.26	1486	30.32	1496	30.41	1490	30.14	1493	29.94	1490
31.36	1535	30.88	1535	30.41	1537	30.47	1536	29.82	1508	30.94	1544	30.11	1544	29.94	1542	29.82	1536
30.94	1510	30.44	1510	29.94	1510	29.97	1512	29.43	1483	30.41	1512	29.49	1509	29.31	1508	29.37	1512
30.44	1485	29.97	1482	29.58	1485	29.64	1487	28.87	1454	29.85	1484	29.08	1481	28.93	1482	28.93	1486
29.94	1453	29.76	1459	29.08	1454	29.02	1453	28.46	1426	29.43	1461	28.63	1455	28.49	1456	28.37	1453
29.49	1426	29.11	1426	28.6	1427	28.69	1431	28.04	1400	28.99	1432	28.25	1430	28.07	1430	27.95	1425
29.17	1402	28.66	1400	28.22	1402	28.16	1401	27.51	1372	28.63	1405	27.81	1405	27.72	1405	27.6	1400
28.72	1376	28.25	1376	27.75	1376	27.78	1374	27.12	1346	28.1	1379	27.3	1373	27.1	1371	27.12	1375
28.25	1346	27.6	1344	27.39	1352	27.39	1351	26.74	1317	27.48	1347	26.77	1348	26.71	1347	26.71	1348
27.78	1318	27.3	1320	26.74	1319	26.8	1320	26.3	1292	27.27	1320	26.44	1319	26.3	1318	26.21	1316
27.36	1294	26.83	1293	26.36	1292	26.44	1295	25.76	1267	26.59	1288	26.06	1296	25.88	1293	25.76	1289
26.86	1263	26.47	1268	26.03	1268	25.94	1263	25.44	1241	26.09	1270	25.53	1265	25.41	1265	25.38	1265
26.39	1236	25.82	1236	25.56	1243	25.38	1237	24.79	1209	25.7	1241	25.02	1237	24.99	1242	24.94	1242
26	1212	25.47	1210	24.99	1210	24.96	1207	24.46	1184	25.29	1214	24.67	1211	24.46	1210	24.43	1210
25.44	1181	25.08	1186	24.58	1181	24.52	1183	23.84	1154	24.85	1187	24.28	1188	24.02	1181	24.08	1181
24.96	1155	24.52	1153	24.22	1157	24.08	1154	23.54	1127	24.49	1164	23.72	1155	23.63	1158	23.57	1157
24.46	1126	24.14	1127	23.66	1128	23.66	1130	23.13	1104	23.96	1130	23.37	1131	23.19	1133	23.19	1129

Table 14. 50 °C at 13 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
24.05	1102	23.66	1103	23.28	1104	23.13	1096	22.6	1071	23.46	1103	22.83	1101	22.86	1104	22.63	1095
23.48	1070	23.07	1071	22.86	1074	22.75	1070	22.12	1044	23.1	1075	22.45	1075	22.42	1077	22.24	1071
23.1	1044	22.72	1047	22.36	1046	22.3	1046	21.71	1017	22.6	1051	21.86	1044	21.92	1050	21.83	1045
22.66	1016	22.3	1018	21.92	1018	21.89	1017	21.32	991.1	22.12	1024	21.44	1018	21.38	1016	21.38	1017
22.27	992.4	21.89	992.4	21.5	991.5	21.53	995.1	20.82	964.7	21.65	996.4	21.06	990.7	20.97	988	20.94	991.5
21.95	969.1	21.53	968.2	21.12	970.8	21.15	969.5	20.47	940.9	21.24	970.8	20.7	967.7	20.56	964.7	20.47	959.8
21.21	934.7	20.91	936	20.64	938.7	20.44	933.4	19.96	906.9	20.67	939.1	20.29	941.7	20.14	936.9	20.14	940.9
20.94	907.4	20.47	908.7	20.11	910.9	20.02	909.1	19.55	881.8	20.2	912.2	19.79	914	19.79	913.1	19.58	906.9
20.53	884	20.05	882.2	19.73	887.1	19.58	880.9	19.13	856.7	19.76	888.4	19.46	890.2	19.34	887.1	19.19	883.1
19.93	854	19.55	855.8	19.16	855.8	19.28	858	18.72	832	19.22	858	19.02	862.4	18.78	854.5	18.84	858.5
19.46	827.2	19.16	831.1	18.81	827.2	18.72	827.6	18.16	799.4	18.84	832	18.42	828	18.37	828	18.25	825.8
19.25	807.8	18.78	805.1	18.37	801.2	18.31	800.7	17.71	771.6	18.28	801.2	17.98	798.5	17.89	798.5	17.83	798.5
18.57	773.4	18.28	771.2	17.92	776	17.92	774.3	17.33	747	17.83	772.5	17.54	775.6	17.51	773.8	17.45	772.5
18.13	745.6	17.68	747	17.57	750.5	17.42	748.3	16.91	720.5	17.24	747	17.09	747	17.15	749.2	17.12	747
17.83	721.8	17.21	717.4	16.89	717.9	16.97	719.6	16.35	689.7	17	720.5	16.62	719.2	16.68	721.4	16.41	714.8
17.36	697.6	17.03	693.2	16.56	690.5	16.56	695	15.88	662.8	16.59	696.3	16.32	693.6	16.12	688.8	16.09	691.4
16.86	676	16.35	665	16.15	666.8	16.06	661.9	15.67	639	15.97	665.4	15.85	666.8	15.82	665.9	15.67	664.5
16.65	655.7	16.12	637.2	15.7	636.3	15.55	637.2	15.08	611.2	15.67	641.2	15.55	642.1	15.32	635.9	15.29	635
15.91	613.9	15.58	612.1	15.29	611.7	15.08	609.9	14.61	585.7	15.02	609.5	14.93	608.1	14.99	611.2	14.9	609.9
15.94	602	15.17	580.4	14.87	587	14.84	581.7	14.22	559.2	14.58	585.7	14.61	582.1	14.64	586.5	14.37	582.1
15.11	561.4	14.72	555.3	14.46	553.9	14.34	557	13.78	534.1	14.25	558.3	14.07	561	14.22	561.4	14.1	559.2
14.55	531.9	14.37	526.6	14.07	528.8	13.99	530.1	13.33	498.9	13.81	528.8	13.66	527.5	13.51	526.2	13.48	526.6
14.34	509	13.87	504.1	13.72	500.2	13.42	498.4	12.92	471.5	13.45	501.9	13.27	500.6	13.04	499.7	13.04	498.4
13.9	470.2	13.45	478.1	13.07	474.2	13.16	471.1	12.4	446	12.92	476.4	12.83	475.1	12.83	475.5	12.83	475.9
13.3	446.4	12.8	445.1	12.68	447.7	12.57	446	12.23	420.4	12.53	451.7	12.34	446.4	12.29	442.9	12.21	442.9
12.89	417.8	12.62	418.6	12.43	423.5	12.36	422.2	11.53	393.5	12.15	419.5	11.95	420.4	11.87	417.8	11.94	416
12.66	390.4	12.13	395.3	11.74	391.3	11.75	395.3	11.35	367.5	11.56	393.1	11.58	392.6	11.59	392.2	11.6	394
12.37	367.5	11.85	364	11.51	363.6	11.55	370.6	11	340.6	11.38	366.2	11.24	367.5	11.02	367.5	11.02	362.2
11.56	335.4	11.37	338	10.95	336.7	10.76	334.9	10.25	306.7	10.87	340.2	10.7	342.4	10.75	335.8	10.77	334.5
11.39	309.4	10.96	315.1	10.52	310.7	10.53	308.9	10.01	282.9	10.35	316	10.39	309.4	10.32	310.2	10.41	310.7
11.08	283.4	10.68	280.3	10.28	282	10.31	279.4	9.584	256.5	9.993	288.6	10.1	282	9.857	280.7	10.06	286
10.76	255.2	10.34	254.3	9.869	259.1	9.951	256	9.306	231.4	9.658	263.1	9.818	258.7	9.614	256.5	9.422	252.5

Table 15. Rheometer Response for Blank – 16 wt %

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
2.399	274.1	2.562	271.9	2.473	275.4	2.455	278.5	1.955	302.3	2.174	297	2.497	268.8	2.224	276.3	2.13	298.8
2.784	294.8	2.784	294.4	2.716	293.1	2.642	293.5	2.615	286	2.642	290.9	2.698	289.5	2.701	300.5	2.618	288.6
2.858	311.6	2.896	323.9	2.964	320.4	2.94	323.9	2.763	313.3	2.943	324.3	2.813	312.9	2.834	322.1	2.757	312.9
3.236	346.4	3.103	349.9	3.044	349.9	3.047	349.9	3.142	351.2	3.118	350.3	2.938	338.9	2.929	349.9	2.911	336.7
3.148	354.3	3.222	372.8	3.207	374.6	3.239	379.9	3.266	375	3.272	371.9	3.091	359.6	3.103	371.9	3.05	360.5
3.464	400.1	3.352	397.1	3.411	398.8	3.381	401.9	3.396	401.9	3.408	396.2	3.109	394	3.26	394.9	3.305	408.5
3.396	412.5	3.544	431.9	3.615	432.3	3.482	429.7	3.497	424.8	3.58	421.7	3.417	430.5	3.396	421.7	3.423	435
3.701	439.8	3.737	457.9	3.742	454.8	3.606	458.8	3.6	446.4	3.719	444.2	3.541	456.1	3.473	442.4	3.55	455.2
3.973	479.5	3.858	483.9	3.953	480.8	3.757	482.5	3.592	479.9	3.71	478.6	3.692	479.5	3.497	477.3	3.704	481.2
4.047	513.8	3.947	513	4.169	511.6	3.973	508.5	3.677	503.7	3.964	515.6	3.816	503.7	3.834	513.4	3.748	503.3
4.118	537.6	4.151	542.5	4.323	536.8	4.092	533.7	4.035	542	4.041	539.4	3.932	528.4	3.861	540.3	3.876	525.7
4.249	561.9	4.272	567.2	4.559	565	4.219	567.2	4.121	567.2	4.133	559.7	3.988	560.5	3.95	560.1	3.976	552.6
4.426	596.7	4.388	592.7	4.84	596.2	4.34	596.2	4.216	589.6	4.257	583	4.266	600.7	4.121	588.3	4.213	598.9
4.542	620.5	4.55	617.4	4.956	620	4.488	620	4.326	614.8	4.373	611.2	4.352	623.6	4.249	610.8	4.305	625.3
4.728	646.5	4.604	647.8	5.095	646.5	4.598	643.8	4.411	639.9	4.473	634.1	4.429	647.8	4.337	634.6	4.497	646
4.911	678.2	4.728	674.2	5.19	672.9	4.716	678.2	4.473	660.6	4.462	669	4.429	672.5	4.373	669	4.583	670.7
4.988	707.3	4.764	698.9	5.296	706	4.858	704.2	4.725	711.3	4.781	707.3	4.642	695.4	4.648	706	4.681	696.7
5.083	732.4	4.974	732	5.385	729.8	4.971	732.4	4.817	733.3	4.962	728.4	4.775	720.5	4.755	730.2	4.82	718.8
5.27	761.5	5.006	757.5	5.456	758	5.077	753.6	4.9	754.4	4.983	754.9	4.781	753.1	4.873	753.1	4.903	752.2
5.329	785.7	5.11	781.3	5.515	783.1	5.202	786.2	5.056	781.8	5.11	777.4	5.012	791.9	4.9	780	5.24	786.2
5.5	812.2	5.204	807.8	5.571	809.5	5.311	810.4	5.151	803.4	5.193	801.2	5.148	813.9	5.086	802	5.358	810.4
5.616	843.5	5.373	840.8	5.764	836.4	5.388	835.5	5.302	826.3	5.341	826.3	5.258	838.6	5.122	835.1	5.497	834.7
5.773	866.8	5.486	867.3	5.785	859.8	5.539	867.3	5.338	860.7	5.347	859.3	5.344	864.6	5.311	873.9	5.604	856.2
5.861	895	5.589	891.5	6.027	895	5.708	896.3	5.681	898.1	5.648	896.8	5.459	886.2	5.42	895	5.696	881.8
5.944	917.9	5.705	916.2	6.069	919.3	5.808	919.7	5.841	921.9	5.69	920.1	5.471	909.6	5.574	921.5	5.773	914.9
6.154	951.4	5.932	949.2	6.261	945.3	5.856	945.7	5.956	944.8	5.841	945.3	5.705	936	5.663	945.3	6.166	951.9
6.225	979.2	6.024	977.4	6.4	976.1	6.08	976.6	5.974	969.5	5.932	971.3	5.731	969.1	5.779	968.6	6.359	976.6
6.285	1004	6.134	1000	6.566	1001	6.137	1003	6.119	992	6.066	992.4	5.947	1007	5.879	991.5	6.498	998.1
6.468	1028	6.368	1032	6.652	1029	6.252	1027	6.116	1025	6.19	1018	6.033	1030	5.921	1025	6.595	1023
6.56	1055	6.385	1059	6.788	1055	6.391	1060	6.397	1061	6.169	1052	6.246	1053	6.279	1064	6.658	1050
6.823	1089	6.779	1108	6.945	1082	6.548	1087	6.507	1084	6.518	1088	6.225	1079	6.258	1089	6.865	1071

Table 15. Rheometer Response for Blank – 16 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
5.861	1105	5.98	1133	5.702	1098	5.965	1172	4.003	803.4	5.77	1133	5.705	1136	5.708	1134	5.829	1137
5.604	1072	5.743	1101	5.598	1074	5.941	1137	3.935	782.2	5.69	1108	5.557	1113	5.489	1119	5.731	1106
5.506	1044	5.58	1075	5.494	1050	5.787	1114	3.816	755.8	5.332	1068	5.515	1079	5.24	1080	5.394	1066
5.397	1019	5.512	1048	5.267	1015	5.492	1072	3.654	732	5.184	1044	5.237	1044	5.344	1063	5.299	1044
5.234	994.2	5.275	1018	5.178	991.1	5.376	1051	3.473	684.8	5.13	1021	5.083	1022	5.009	1040	5.184	1019
5.006	962.9	5.083	992.9	4.988	963.8	5.234	1026	3.328	659.7	5.012	999.5	4.941	998.1	4.722	996.4	5.054	995.5
4.977	938.2	5.122	966.4	4.876	940	5.042	1003	3.207	638.5	4.903	971.7	4.837	973.5	4.929	974.8	4.897	971.7
4.734	906.9	4.938	942.2	4.734	913.1	5.021	979.6	3.091	612.5	4.787	947.5	4.725	951.4	4.465	953.2	4.772	946.6
4.645	882.7	4.698	910.9	4.542	878.3	4.873	954.5	2.97	587.9	4.71	913.5	4.636	916.2	4.468	918.4	4.707	921
4.456	855.4	4.509	884.5	4.444	854	4.784	921.5	2.849	565	4.414	873.9	4.361	879.6	4.308	893.3	4.432	876.5
4.346	828.9	4.491	855.8	4.293	825	4.53	881.8	2.727	539.8	4.222	851.4	4.249	854.9	4.328	859.3	4.29	854.5
4.225	803.4	4.349	828.9	4.186	798.5	4.405	858	2.716	506.3	4.148	825	4.127	831.6	4.012	820.6	4.219	828.9
4.068	773.4	4.222	802.9	4.077	774.3	4.216	834.7	2.426	470.2	3.953	802.5	4.047	809.5	3.87	799.8	4.062	806.4
3.964	746.5	4.089	777.4	3.816	743.9	4.127	810.4	2.304	444.2	3.885	774.7	3.956	786.2	3.74	777.8	3.923	782.2
3.802	721.8	3.979	749.2	3.769	717	3.991	786.2	2.195	420.4	3.757	752.7	3.873	750.9	3.618	753.6	3.852	758
3.592	691	3.87	723.2	3.55	686.6	3.867	758.9	1.996	397.5	3.621	730.2	3.589	714.8	3.615	730.7	3.808	724.5
3.521	662.3	3.751	698	3.479	661.5	3.666	738.1	1.958	372.8	3.455	703.8	3.42	690.1	3.435	704.7	3.538	687.5
3.376	634.6	3.512	665	3.34	634.1	3.695	702.9	1.846	348.6	3.482	671.6	3.337	669.8	3.435	671.6	3.325	665
3.263	613	3.414	637.2	3.263	606.8	3.42	662.3	1.627	301	3.157	635.5	3.195	644.3	3.162	630.6	3.254	641.2
3.109	583	3.278	610.8	3.083	582.6	3.21	639.4	1.467	279	3.068	613.9	3.142	621.4	3.029	609.5	3.139	615.6
2.979	555.3	3.154	585.7	2.872	550.4	3.086	615.2	1.387	253.4	2.991	590.5	3.094	588.3	2.914	587	3.038	592.3
2.852	528.8	2.878	553.5	2.763	525.3	3.041	588.3	1.464	244.1	2.914	563.2	2.801	553.5	2.813	559.7	2.982	559.7
2.73	505	2.775	528.8	2.665	499.3	2.858	566.3			2.73	539.4	2.713	527.5	2.727	539	2.855	543.4
2.568	473.7	2.713	503.3	2.606	475.5	2.787	546			2.727	505.5	2.594	505	2.553	510.3	2.5	515.2
2.429	446	2.579	472.9	2.369	442.9	2.798	511.6			2.378	469.3	2.39	481.2	2.455	485.2	2.68	489.2
2.363	421.3	2.446	444.6	2.254	416.9	2.529	476.8			2.31	445.5	2.357	456.1	2.39	452.1	2.349	467.6
2.15	388.7	2.319	422.2	2.168	390	2.349	450.8			2.23	419.1	2.346	423.1	2.07	414.2	2.233	427.9
2.082	364.9	2.248	396.6	2.053	367.1	2.189	427.5			2.106	399.3	2.023	386	1.999	390	2.307	403.2
1.979	340.2	2.041	362.7	1.896	332.3	2.094	403.7			2.002	372.8	1.94	361.8	1.902	368	2.047	392.2
1.884	313.8	1.979	335.8	1.748	307.2	2.062	378.5			1.878	349.9	1.819	336.2	1.772	341.5	1.763	353.4
1.709	279.4	1.837	311.6	1.671	281.2	1.834	355.6			1.653	301.4	1.86	316	1.57	319.1	1.692	323
1.579	254.7	1.609	281.6	1.529	257.8	1.644	308			1.449	278.5	1.825	289.5	1.597	286	1.706	287.3

Table 16. 10 °C at 16 wt %

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
15.79	274.1	15.38	268.4	14.27	323.5	16.48	274.5	17.07	273.7	16.93	272.3	15.8	274.1	14.64	274.5	17.45	274.5
17.03	293.9	15.71	295.3	16.06	287.8	16.65	296.1	16.17	295.3	17.28	289.5	16.55	293.5	15.74	296.1	17.31	295.7
17.64	323.9	17.63	320.8	17.84	327	16.59	324.3	16.49	319.9	18.37	319.9	17.59	316.4	16.69	318.2	16.8	322.6
20.31	349.5	19.63	349	18.71	349.5	18.75	349	19.35	348.6	17.54	346.4	18.31	350.3	19.86	353	18.58	347.3
20.14	377.2	19.43	371.1	19.57	371.5	20.44	375	20.89	372.8	19.97	371.5	19.37	375	19.63	379.4	21.16	372.4
22.37	405.9	19.99	395.7	20.41	396.2	21.83	406.3	19.62	397.9	19.86	401.5	20.93	402.8	21.96	405.4	20.11	396.6
22.11	433.6	21.85	430.5	21.52	421.7	20.89	432.8	21.07	429.7	22.82	428.8	21.98	427.9	22.08	432.3	21.67	429.7
24.2	457	21.93	456.1	21.66	453.9	22.24	463.2	23.58	458.3	21.71	451.3	23.1	459.6	22.26	459.6	23.91	456.5
24.79	481.2	23.14	484.8	23.59	489.6	24.61	486.1	24.1	482.5	24.36	474.6	23.14	485.2	24.61	483.4	24.17	482.5
25.77	508.5	25.27	509	24.79	510.8	25.12	516	24.88	509.9	23.22	493.6	24.14	512.5	25.74	509.9	25.74	513.8
26.39	535.4	26.15	535	25.77	538.1	26.42	539	26.06	542.9	24.17	514.7	25.47	540.7	25.5	541.6	26.18	537.2
27.75	568	27.01	560.1	26.39	560.1	26.72	572.4	27.25	567.2	27.13	560.1	26.04	565.4	26.6	569.4	26.83	567.2
28.7	597.1	27.69	594	27.07	583.9	28.25	598.4	27.28	594.9	27.37	577.7	27.31	590.5	28.08	594.9	27.46	591.8
30.15	620.9	29.08	619.6	27.72	607.3	28.55	626.7	29.32	621.8	29.17	635.5	28.08	624	29.38	619.6	27.99	617.4
31.21	646	29.68	650	28.49	639.9	29.08	650.9	29.35	650	29.41	644.7	30.15	650.9	30.39	652.7	29.59	642.5
31.95	679.5	30.56	674.7	30.5	678.2	30.92	675.1	31.24	676	30.21	674.2	30.15	675.1	30.3	677.8	31.1	676.4
33.11	705.1	31.87	703.3	31.33	703.8	31.95	706.9	31.13	702.4	31.42	703.3	31.39	700.2	32.19	704.2	31.13	701.6
33.32	729.8	31.69	727.1	32.04	725.4	32.87	734.6	32.9	727.1	32.4	727.1	31.84	724.9	32.96	732.4	32.93	727.1
34.71	755.8	33.32	750.9	32.78	749.2	32.78	758.9	33.64	761.9	33.94	758	33.82	757.5	33.29	758	33.17	758.4
35.42	788.4	34.23	785.7	33.49	771.6	33.97	783.5	34.32	785.3	34.74	784.4	34.71	786.6	33.97	782.2	33.85	785.7
35.98	813.1	34.56	808.7	34	804.2	35.42	817	34.91	813.9	35.21	812.2	35.48	812.6	35.15	807.8	35.54	808.2
37.25	838.6	36.22	839.9	35	828.9	36.07	842.6	35.98	839.5	36.39	836.4	36.25	838.2	36.33	839.9	35.83	838.6
38.05	868.1	36.39	866.4	36.84	869.9	36.96	867.3	36.75	863.3	36.63	863.7	36.9	863.7	36.6	868.6	37.1	864.6
39.2	891.9	37.34	891.9	37.43	891.9	37.87	896.3	37.81	895	37.67	896.3	37.58	888.9	37.9	897.2	37.67	891.5
40.39	922.3	38.29	922.8	38.02	914.4	38.85	921	38.7	919.7	38.55	920.1	38.29	921.5	38.49	922.8	38.52	915.3
40.98	950.1	39.41	946.6	39.26	938.7	39.41	947.9	39.35	947.9	39.8	946.6	39.83	947.5	39.12	945.3	39.32	945.3
41.66	975.7	39.92	973	39.94	962.9	40.57	981.8	40.65	975.2	40.74	974.3	40.12	971.7	40.27	969.1	40.65	972.1
42.31	1005	41.04	996.8	40.8	995.9	41.39	1007	41.34	1003	41.22	1001	41.42	1006	41.28	1004	41.39	999.9
43.26	1027	41.78	1031	41.69	1035	42.13	1034	42.28	1033	41.81	1026	42.05	1030	41.93	1032	41.72	1026
44.62	1061	42.87	1057	42.87	1062	42.76	1059	43.17	1058	42.93	1052	42.96	1057	43.11	1055	42.87	1059
45.27	1087	43.47	1083	43.76	1088	43.79	1086	43.88	1085	43.91	1083	43.97	1080	43.94	1088	43.94	1083

Table 16. 10 °C at 16 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
46.16	1116	44.3	1108	44.74	1111	44.68	1118	44.83	1111	44.86	1111	44.71	1115	44.5	1115	44.62	1111
47.11	1140	45.39	1138	45.48	1136	45.66	1144	45.63	1140	45.57	1137	45.72	1141	45.21	1139	45.54	1137
47.82	1163	46.16	1166	45.57	1159	46.19	1171	46.25	1167	46.66	1164	46.31	1168	46.43	1167	46.07	1160
48.7	1192	47.2	1191	46.72	1183	46.84	1195	46.99	1192	47.67	1197	46.87	1191	47.37	1191	47.25	1195
49.8	1226	47.96	1218	47.46	1215	48.11	1226	47.79	1216	47.91	1215	47.91	1214	48.41	1227	47.88	1219
50.39	1244	48.79	1242	49	1253	48.76	1253	48.62	1243	49.15	1247	48.56	1246	48.85	1252	48.73	1247
51.43	1278	49.59	1274	49.59	1278	49.53	1280	49.83	1276	49.89	1276	49.33	1276	49.95	1277	49.77	1274
52.4	1302	50.66	1303	50.04	1301	50.27	1306	50.72	1302	50.69	1300	50.04	1286	50.21	1301	50.69	1305
53.11	1333	51.13	1327	51.1	1324	51.22	1330	51.22	1330	51.22	1326	51.07	1330	51.52	1330	51.46	1330
53.94	1360	51.87	1352	51.84	1354	51.93	1357	52.2	1356	52.4	1358	52.05	1345	52.29	1360	52.17	1356
54.89	1389	52.94	1383	52.94	1383	52.61	1385	52.94	1381	53.08	1383	52.97	1384	53.14	1387	52.97	1386
55.42	1412	53.74	1409	53.29	1404	53.71	1417	53.91	1413	53.97	1408	53.62	1410	53.88	1412	53.74	1412
56.4	1442	54.65	1441	54.15	1430	54.68	1445	54.8	1441	54.86	1438	54.39	1435	54.59	1436	54.48	1437
57.05	1467	55.42	1467	55.51	1471	55.42	1470	55.51	1464	55.45	1462	55.66	1470	55.66	1470	55.1	1461
57.73	1493	56.16	1492	56.07	1497	56.07	1498	56.46	1495	56.46	1496	56.37	1496	56.52	1496	55.84	1486
58.59	1518	56.93	1516	56.84	1519	56.72	1521	57.41	1523	57.29	1521	57.17	1520	57.35	1522	57.05	1522
54.83	1535	54.71	1537	54.18	1514	55.78	1540	56.4	1536	53.82	1505	54.83	1534	53.77	1506	55.19	1544
54.15	1510	53.97	1512	53.08	1478	55.16	1507	55.66	1514	53.26	1481	54.15	1507	53.14	1479	54.15	1509
53.41	1481	53.71	1502	52.14	1452	54.42	1482	54.33	1483	52.58	1456	53.32	1482	52.4	1452	53.47	1486
52.46	1454	52.79	1475	51.37	1426	53.56	1454	53.41	1455	51.81	1431	52.46	1450	51.6	1425	52.61	1457
51.96	1430	52.46	1457	50.66	1397	52.97	1428	52.58	1429	50.54	1398	51.58	1423	50.98	1400	51.75	1430
50.69	1397	52.05	1438	50.1	1376	52.11	1404	51.9	1403	49.92	1370	50.6	1398	50.07	1374	50.81	1404
50.15	1375	51.43	1417	48.88	1341	51.04	1371	51.01	1378	49.15	1345	50.01	1372	49.06	1344	49.95	1372
49.39	1351	49.89	1394	48.05	1315	50.3	1346	50.33	1347	48.47	1321	48.97	1341	48.2	1318	49.3	1348
48.32	1315	48.26	1321	47.46	1289	49.53	1318	49.65	1319	47.46	1293	48.53	1317	47.43	1290	48.38	1319
47.58	1291	46.84	1277	46.6	1266	48.79	1295	48.53	1293	46.84	1267	47.61	1288	46.99	1264	47.55	1293
46.84	1268	47.02	1274	45.72	1235	47.76	1263	47.88	1267	45.75	1233	46.78	1260	46.07	1239	46.93	1267
45.89	1242	46.04	1256	44.92	1208	46.72	1238	46.66	1234	44.92	1206	45.75	1235	45.33	1212	45.83	1237
45.12	1208	44.71	1220	44.3	1180	46.28	1213	45.83	1209	44.06	1182	45.21	1209	44.12	1182	45.15	1208
43.94	1182	43.58	1175	43.41	1157	44.92	1180	44.89	1183	43.47	1155	44.06	1182	43.53	1153	44.15	1182
43.23	1158	43.26	1151	42.43	1123	44.24	1155	44.15	1158	42.7	1131	43.17	1152	42.52	1126	43.38	1158

Table 16. 10 °C at 16 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
42.46	1124	42.13	1128	41.1	1094	43.64	1128	43.67	1133	41.63	1097	42.67	1123	41.9	1101	42.58	1133
41.6	1100	41.31	1104	40.57	1070	42.58	1104	42.34	1102	40.89	1071	41.87	1097	41.07	1074	41.6	1100
40.77	1073	40.98	1081	39.89	1044	41.6	1070	41.57	1075	39.89	1044	40.92	1073	39.83	1044	40.74	1075
39.65	1043	39.83	1058	39.18	1018	40.8	1047	40.6	1050	39.23	1018	40.36	1045	39.26	1020	39.97	1046
39.09	1018	39.12	1023	38.46	990.7	40.18	1019	39.86	1017	38.08	991.5	38.76	1013	38.29	988.5	39.15	1021
38.32	989.3	38.08	987.6	37.43	959.8	39.5	993.7	39.06	991.5	37.84	967.7	38.26	987.1	37.55	962.5	38.67	994.6
37.73	966	36.87	964.7	36.45	941.3	38.08	966.4	37.78	965.5	36.45	935.1	37.31	962.5	36.48	937.3	37.78	965.1
35.95	933.4	36.13	942.6	35.89	907.8	37.31	934.7	37.46	939.1	35.39	909.6	36.22	932.5	36.04	911.3	36.33	939.1
35.15	908.7	35.06	911.3	34.5	880.5	36.39	908.2	36.63	914.4	35.12	881.8	35.83	906.9	35.06	879.2	35.83	914.9
35	881.8	34.35	877.8	33.43	854	35.74	884.5	35.56	883.1	33.4	851.4	34.71	883.1	34.35	854	35.56	888.9
34.11	856.2	33.7	852.7	33.49	848.8	34.53	856.7	34.29	854	33.11	824.5	33.55	851	32.72	824.1	34.2	854.5
33.43	832	33.02	833.8	33.17	827.2	33.55	832.4	33.23	829.4	31.95	802	32.69	824.5	32.04	798.5	33.46	828.9
31.84	799.4	32.16	811.7	30.92	769.4	32.49	799	32.22	803.4	31.57	769.9	32.52	794.6	31.66	773.4	32.84	803.4
31.07	770.3	30.74	778.7	31.24	757.5	31.78	778.7	31.89	778.7	30.53	742.1	31.45	768.6	30.36	743	31.45	773.4
30.68	748.3	30.06	744.3	30.12	732.9	30.98	744.8	31.21	743.9	28.88	715.2	30.15	745.6	30.21	716.1	31.01	746.5
28.61	715.2	29.2	719.6	28.37	698.9	30.09	720.5	29.65	720.5	28.85	688.8	29.97	718.3	28.49	692.8	29.62	724.9
28.61	691.9	28.43	695.8	28.17	667.2	28.52	689.7	28.34	690.1	27.43	663.7	28.25	693.6	28.2	668.1	28.46	691
27.78	667.2	27.66	674.2	26.75	639.9	28.64	666.3	28.46	664.1	27.25	639.4	27.84	658.4	26.54	635.9	28.46	667.6
27.04	636.3	27.37	641.6	25.47	604.2	27.19	634.1	27.31	638.5	25.35	606.8	27.43	635.5	26.63	609	26.89	636.8
24.97	608.1	25.21	604.2	24.14	577.7	26.57	610.3	25.86	609.5	25.47	579.5	25.35	604.6	24.41	579.5	26.36	608.6
24.14	583	24.53	585.2	23.55	554.8	26.04	583.5	25.98	583	24.38	555.7	25.27	578.6	23.49	554.4	24.73	583
24.38	551.3	23.82	558.8	22.84	528.8	24.85	558.8	24.88	559.2	23.82	526.2	24.7	551.3	22.6	527.5	23.96	557.5
22.99	527.5	23.25	536.8	21.27	500.2	24.2	532.3	24.17	533.2	23.02	498.4	23.85	523.5	22.28	502.4	22.96	530.6
22.69	498.9	21.89	494	22.13	475.1	23.22	505.9	23.25	505.5	21.86	472	22.04	499.7	22.19	475.1	21.74	498.9
20.74	472.9	20.8	472	21.21	444.6	21.06	471.5	21.42	479	20.18	442.9	20.62	473.3	20.5	451.3	21.06	472.9
20.31	448.2	20.32	449.5	18.56	417.8	21.42	443.8	20.83	445.1	20.65	419.5	19.32	441.6	19.02	423.5	21.48	447.7
19.9	416.4	19.49	425.7	17.27	385.6	18.79	419.5	18.51	417.8	19.19	387.8	19.47	412	18.62	389.1	19.28	424.4
17.19	391.3	18.43	394.9	16.6	368	19.3	392.6	19.82	390.9	18.02	364.4	17.72	388.7	17.28	362.2	19.13	392.2
17.69	367.5	17.7	373.7	16.42	341.5	17.01	367.5	17.46	366.6	15.43	336.7	18.9	362.7	18.1	335.8	17.21	363.6
15.14	334.9	16.88	349.9	16.17	307.6	17.79	335.8	16.4	337.1	15.54	308.5	17.79	337.6	17.38	311.6	17.41	339.8
14.06	310.7	15.49	315.5	13.66	279	16.97	310.7	17.05	309.8	15.95	280.7	14.67	305.4	13.47	277.2	16.02	308
13.76	282	14.65	277.6	13.7	254.7	13.85	280.3	16.11	282	14.42	254.7	14.34	277.6	13.62	253.8	14.08	281.2

Table 17. 15 °C at 16 wt %

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
13.46	272.3	11.87	271.5	9.993	278.5	11.93	272.8	12.42	272.3	12.42	271.5	11.77	274.1	11.91	275	11.07	275.4
14.29	294.4	13	293.5	11.1	291.7	13.7	296.1	11.31	294.4	13.46	291.3	13.33	294.8	12.92	293.1	11.86	298.8
14.12	319.1	11.79	321.3	14.58	322.6	13.45	320.4	13.45	322.1	12.87	324.8	14.86	323	12.5	321.3	13.83	325.2
13.43	345.1	12.46	342.9	15.03	346.4	13.03	347.3	15.37	346.4	14.01	351.7	13.71	351.2	15.62	348.6	16.15	353
16.41	374.6	15.44	375.5	13.63	372.8	16.15	378.5	14.19	376.3	16.38	378.5	14.8	374.1	16.12	372.8	16.12	374.6
15.52	401.9	14.94	402.3	16.16	397.1	15.03	403.2	17.06	401.9	15.27	401.5	16.64	402.8	15.37	398.8	17.16	409
17.83	425.3	16.73	427.9	17.19	430.5	17.67	428.3	16.94	432.3	16.44	434.5	17.9	432.3	16.7	432.8	18	436.7
19.22	457.4	17.85	453.9	16.62	457.4	17.82	456.1	17.29	457	18.84	459.2	17.72	459.6	18.79	456.1	17.41	461
18.66	482.5	18.15	481.7	18.88	480.8	17.47	480.8	19.27	480.8	19.41	486.1	17.97	485.2	19.65	483.9	18.33	491.4
19.63	510.3	19.76	513	19.46	510.8	19.78	514.7	19.69	513.4	18.66	509	18.78	512.5	18.85	506.8	19.69	515.6
21.57	539.4	20.23	538.1	20.13	536.8	20.63	540.3	19.78	531.9	21.36	542	20.09	541.6	21.08	538.5	20.21	543.4
22.43	565.4	21.1	563.2	21.12	568.9	21.69	568.5	20.8	565.8	21.31	568.9	21.7	568.9	20.86	568.5	21.59	571.1
22.96	594.5	22.03	588.3	21.19	589.2	21.57	594.9	21.75	594	21.48	596.7	22.58	594.9	21.87	594.9	22.64	596.7
23.85	623.6	22.73	620.9	22.19	614.8	21.96	619.6	23.17	621.4	23.32	624	22.37	623.6	22.52	618.3	23.7	620.9
25.15	650.4	23.47	647.8	23.47	641.2	22.7	643.8	23.08	647.8	24.21	647.4	23.2	647.8	23.41	650	24.53	654
25.51	676.9	24.47	675.6	24.35	675.1	24.65	678.2	24.35	672.5	23.82	673.8	24.86	672	25.18	676	24.35	681.7
26.99	700.7	25.18	698	24.41	698.9	25.54	700.7	24.71	697.6	25.75	698.9	25.42	705.5	25.66	703.3	25.95	706.9
27.85	728.4	25.48	730.7	25.18	726.2	25.92	731.5	25.92	732	25.95	734.6	26.63	732	25.75	728.9	26.07	731.1
28.41	756.2	26.43	757.5	26.37	754	27.17	757.1	26.72	755.8	26.49	761.1	26.4	756.2	27.05	752.7	27.76	762.8
29.3	782.7	27.64	782.7	27.52	786.2	27.26	781.8	27.05	785.3	27.4	787.9	28.17	787.9	27.31	777.4	27.94	786.6
30.3	810.4	27.97	806.4	28.17	811.7	28.29	813.9	27.97	810.4	28.29	813.9	28.88	812.6	28.5	813.1	29.3	815.7
30.75	838.2	28.73	839.9	28.73	836.9	28.88	839.1	28.76	835.5	28.82	839.1	29.59	839.5	29.8	840.8	29.33	843.5
31.52	866.4	29.36	864.2	30.16	864.2	30.24	869	29.3	860.7	29.86	862.4	29.92	865.1	30.54	866.4	30.04	868.6
32.32	895	30.78	890.2	30.78	895.5	30.45	895.9	30.42	892.4	30.92	898.1	30.78	893.7	30.63	892.4	30.75	894.1
32.64	910	31.07	919.3	31.69	918.8	31.07	919.7	31.72	921	31.4	920.6	31.55	920.6	31.22	917.1	31.9	925.9
33.74	945.7	32.05	946.6	32.32	947.5	32.11	951	32.26	948.3	32.67	951.9	32.38	946.6	32.32	948.8	32.58	954.5
34.06	957.2	32.7	977.4	33.06	971.7	32.79	978.3	32.94	977	32.88	974.3	32.79	973.5	33.2	976.1	33.23	981
35.01	991.5	33.68	1003	33.47	1003	33.77	1002	33.65	999.5	33.91	1002	34.06	999	33.77	1005	33.94	1004
36.31	1016	34.39	1028	34.68	1028	34.56	1031	34.39	1033	34.62	1033	34.33	1032	34.74	1031	34.68	1031
36.55	1040	35.16	1060	35.04	1052	34.8	1054	35.19	1059	35.25	1061	35.39	1058	35.66	1057	35.75	1064
38.15	1082	35.96	1085	35.6	1077	36.07	1086	35.81	1085	36.19	1084	36.07	1082	36.37	1090	36.78	1088

Table 17. 15 °C at 16 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
38.62	1109	36.78	1110	36.81	1111	36.64	1112	36.64	1110	36.73	1107	36.9	1115	37.35	1114	37.29	1112
39.74	1142	37.17	1136	37.55	1137	37.47	1138	37.32	1134	37.55	1134	37.58	1142	37.94	1139	38.12	1144
40.57	1168	38.26	1167	38.32	1162	38.09	1170	38.21	1167	38.53	1171	38.44	1167	38.38	1166	38.74	1169
41.13	1192	39.03	1195	38.89	1195	38.77	1195	38.97	1195	39.18	1195	39.15	1192	39.24	1189	39.71	1197
41.79	1224	39.77	1218	39.6	1224	39.68	1222	39.57	1220	40.04	1225	39.86	1225	40.04	1221	40.1	1220
42.32	1245	40.34	1244	40.4	1248	40.54	1247	40.42	1249	40.45	1250	40.42	1243	40.66	1247	41.05	1256
43.5	1276	41.16	1276	41.13	1276	41.16	1277	41.08	1274	41.11	1273	41.4	1277	41.25	1276	41.55	1280
44.18	1302	41.79	1303	41.93	1303	41.79	1304	41.85	1304	41.99	1304	41.9	1304	42.02	1300	42.5	1309
44.86	1332	42.73	1327	42.41	1328	42.53	1333	42.53	1329	42.59	1331	42.85	1334	43.03	1333	43.06	1334
45.75	1357	43.56	1359	43.18	1355	43.24	1355	43.41	1353	43.21	1357	43.3	1360	43.47	1352	43.74	1359
46.2	1381	44.21	1383	44.01	1384	43.89	1384	44.09	1387	44.27	1389	44.27	1388	44.39	1385	44.3	1385
46.99	1406	45.04	1410	44.75	1408	44.83	1414	44.72	1411	44.89	1413	44.8	1412	45.1	1409	44.98	1409
47.94	1439	45.96	1442	45.6	1441	45.49	1441	45.31	1437	45.72	1440	45.4	1437	45.6	1434	45.9	1445
48.53	1464	46.34	1466	46.17	1464	46.14	1467	46.05	1462	46.25	1465	46.25	1470	46.52	1467	46.55	1468
49.27	1492	47.17	1493	46.88	1493	46.82	1491	46.64	1489	47.08	1498	46.99	1495	47.26	1496	47.47	1499
49.98	1519	47.7	1517	47.68	1519	47.53	1523	47.7	1522	47.68	1523	47.68	1524	47.85	1519	48.12	1527
46.31	1541	44.95	1505	45.16	1516	45.22	1510	46.05	1537	45.99	1531	45.37	1507	45.31	1507	46.14	1538
45.34	1513	44.33	1480	44.39	1483	44.48	1482	45.4	1508	45.37	1517	44.69	1482	44.72	1480	45.37	1510
44.78	1490	43.68	1452	43.8	1455	43.95	1457	44.66	1485	45.13	1507	44.09	1456	44.04	1457	44.51	1484
44.04	1458	43.03	1428	42.85	1431	43.21	1432	43.74	1456	43.71	1449	43.38	1429	43.53	1431	44.06	1458
43.18	1432	41.99	1398	42.17	1399	42.53	1407	43.24	1427	43.71	1440	42.61	1403	42.35	1399	43.35	1432
42.64	1408	41.46	1370	41.28	1371	41.49	1372	42.56	1403	42.53	1409	41.55	1369	41.87	1371	42.73	1407
41.7	1382	40.69	1346	40.72	1347	40.87	1348	41.49	1369	42.11	1390	41.02	1345	41.19	1345	42.14	1379
41.31	1355	39.92	1321	39.89	1315	40.28	1319	41.05	1354	40.81	1341	40.37	1319	40.42	1322	41.19	1355
40.31	1329	39.24	1294	39.54	1300	39.57	1294	40.22	1318	39.98	1315	39.63	1291	39.66	1289	40.34	1321
39.57	1303	38.41	1261	38.65	1264	38.92	1269	39.54	1290	39.66	1291	38.89	1267	39.03	1263	39.74	1295
38.62	1267	37.49	1236	37.85	1237	37.97	1238	38.8	1267	38.62	1258	38.09	1236	38.21	1239	39.12	1266
37.82	1239	37.02	1205	37.14	1211	37.26	1210	38.03	1239	37.88	1232	37.29	1207	37.67	1210	38.06	1240
37.26	1216	35.99	1182	36.19	1180	36.55	1185	37.23	1214	37.29	1206	36.64	1181	36.87	1181	37.55	1212
36.52	1188	35.45	1154	35.54	1154	35.84	1160	36.55	1180	36.37	1176	35.96	1156	36.16	1158	36.78	1185
35.84	1160	34.98	1126	35.01	1129	34.77	1128	35.87	1155	35.69	1154	35.22	1131	35.1	1127	36.37	1160

Table 17. 15 °C at 16 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
34.98	1137	33.8	1102	33.88	1100	34.15	1102	34.86	1128	34.77	1120	34.39	1099	34.56	1102	35.45	1130
34.24	1111	33.14	1071	33.23	1075	33.44	1074	34.06	1103	34.06	1095	33.62	1071	33.88	1072	34.48	1106
33.23	1075	32.64	1044	32.82	1051	32.67	1047	33.68	1079	33.68	1067	32.79	1046	33.23	1048	34.06	1077
32.61	1048	31.66	1020	31.99	1022	31.78	1021	32.73	1044	32.97	1040	32.32	1019	32.29	1023	33.03	1052
31.81	1024	30.75	987.1	31.34	994.2	31.58	997.3	32.32	1019	32.02	1017	31.52	995.5	31.66	996.8	32.64	1027
31.19	994.6	30.16	962.9	30.6	969.9	30.54	965.1	31.37	988.9	31.13	992	30.81	966.9	30.75	967.7	31.58	995.5
30.75	971.3	29.42	935.1	29.65	936	29.83	938.7	30.42	962.9	30.57	963.3	29.47	934.7	30.19	941.3	30.75	966.9
29.74	940	28.68	909.6	28.94	910	28.68	909.6	29.5	934.7	30.01	937.3	29.15	906.5	29.3	914.4	30.04	940.4
28.5	914.4	28.14	884.5	27.91	882.2	28.23	886.7	29.27	908.7	28.76	911.3	28.62	883.1	28.11	880	29.27	914.9
27.52	883.1	27.67	859.3	27.49	855.8	27.26	862	27.85	879.6	28.02	877	27.7	850.5	27.55	856.2	28.97	888.4
27.31	859.8	26.22	826.3	26.6	830.2	26.28	828	27.58	852.7	27.88	849.6	26.57	827.6	26.84	831.6	27.79	855.8
26.19	831.6	25.66	799.4	25.86	800.3	26.43	807.3	26.81	828.5	26.49	826.7	26.25	808.7	26.22	797.6	26.96	830.7
25.69	802.5	24.89	773	24.56	771.6	24.68	772.1	26.04	801.2	25.45	794.6	26.66	802.5	25.78	772.1	26.1	800.3
25.09	775.2	23.85	747	24.59	745.6	24.65	748.3	24.83	776.5	25.36	770.3	24.59	783.1	24.77	747	25.89	776.9
23.64	751.8	22.67	717.4	22.96	721.4	23.14	725.4	24.89	751.8	24.83	742.1	24.24	741.2	23.44	717.9	24.53	754.9
23.59	728.9	22.11	688.3	22.7	694.5	22.96	691.4	23.2	717.4	23.76	712.6	22.52	696.7	23.32	692.3	23.41	722.7
22.19	694.1	21.37	664.5	21.93	663.2	22.64	669	23.05	692.3	22.37	686.1	22.61	668.1	21.87	667.6	22.85	694.1
21.34	669	21.54	638.5	20.45	639.4	21.34	637.2	22.02	665.4	22.55	661	21.31	639.9	20.8	633.7	22.11	670.3
20.18	638.5	20.06	613	20.74	608.1	21.04	611.2	20.74	637.7	21.87	637.2	20.92	608.6	21.07	608.1	21.69	642.5
19.44	613.9	18.82	586.5	19.47	581.7	19.24	580.4	20.63	608.1	20.92	603.7	20.27	584.3	20.54	583	21.31	610.3
19.68	583.9	19	551.7	19.09	557	18.94	554.8	19.71	583.9	19.95	577.3	18.11	554.4	19.62	556.1	20	583.5
19.12	560.5	18.38	525.7	17.05	525.3	17.58	529.7	19.09	558.3	18.5	550	17.96	529.7	17.55	522.2	19.47	558.3
18.5	534.1	17.6	501.5	16.9	500.2	16.53	503.3	18.05	526.2	18.17	524.9	17.13	496.2	17.1	498.4	19.09	533.7
16.92	502.4	15.4	477.3	16.88	474.2	15.83	473.7	17.41	497.5	18.17	499.7	16.38	473.3	17.19	471.1	18.58	508.1
16.89	476.4	15.1	442.4	16.44	445.1	15.41	446.4	16.34	475.9	16.27	466.2	16.85	446.9	15.94	447.3	17.03	476.4
14.36	453.5	14.99	417.8	13.86	420.4	14.53	422.6	16.04	443.3	15.77	441.6	15.15	416.4	14.62	420.4	16.88	448.2
13.62	420.4	14.5	387.8	14.37	397.1	13.03	391.8	14.92	419.1	14.27	414.7	13.96	390	15.25	394	14.5	424.4
14.43	396.6	12.72	360.9	12	364.9	14.26	364	15.15	389.6	15.12	387.4	13.59	361.8	12.74	359.6	14.22	391.3
11.66	365.3	11.35	334	12.54	337.6	13.9	341.1	12.74	362.7	12.15	358.7	13.09	339.8	13.64	334.5	13.09	365.3
11.99	340.2	10.9	310.2	12.9	312	10.65	310.7	11.51	338.4	11.39	335.4	12.98	312.4	13.33	308.5	13.98	338.4
12.25	315.5	11.79	279.4	11.41	281.2	9.786	285.1	12.08	310.7	11.29	309.8	10.14	280.3	12.58	283.8	13	312.9
11.82	291.3	10.64	254.3	10.36	253	8.939	254.7	11.55	286.4	12.34	275	10.5	256.5	10.08	250.7	11.21	285.1

Table 18. 25 °C at 16 wt %

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
13.45	278.1	13.52	276.7	12.8	276.3	12.05	273.2	13.7	272.8	13.36	281.6	13.62	279	14.17	272.3	14.94	276.3
13.85	293.1	12.62	292.2	13.84	289.1	12.76	294.4	15.13	296.1	14.74	294.4	14.18	292.6	13.05	294.4	15.45	290.9
14.12	315.1	13.98	318.6	13.25	313.3	15.14	323	15.75	323	13.85	323.9	14.38	315.5	13.97	320.4	14.15	317.7
13.08	340.6	14.82	341.5	15.83	345.1	16.33	348.1	14.96	346.8	16.67	352.1	16.51	349	15.82	344.2	14.2	342.4
15.87	372.8	14.9	374.1	15.55	371.1	15.7	371.5	16.85	378.1	15.33	379.4	15.39	376.3	14.95	373.3	17.05	373.3
14.7	401	16.92	399.3	17.17	400.6	16.95	405.4	16.17	402.8	17.43	405	16.47	401	16.73	399.3	15.68	397.1
15.37	431	16.19	428.3	16.26	415.1	17.14	433.2	17.29	427	16.49	433.2	17.1	426.6	16.14	427.5	17.69	425.7
17.7	456.1	18.34	453	17.95	450.8	17.37	456.5	16.86	452.6	18.63	457	18.47	453	17.09	459.2	18.23	452.1
16.67	479.9	18.06	476.8	18.41	465.4	18.68	482.5	18.64	478.6	18.66	488.7	17.7	479	18.4	485.6	18.05	479
18.58	512.1	18.37	503.3	17.76	486.5	19.23	508.1	19.02	513.8	19.91	513	19.8	513	19.15	513.4	18.3	505.5
18.77	536.3	19.9	538.1	18.91	504.6	19.06	540.7	19.14	539	20.43	539	19.92	540.7	20.47	537.2	20.34	537.6
19.55	562.8	20.78	561.9	18.92	543.8	19.54	567.2	19.85	564.5	19.88	569.8	19.88	568.5	20.59	563.2	20.92	562.8
19.57	594.5	20.81	587.9	21.13	578.6	20.16	592.7	21.67	593.2	20.51	594.5	20.46	593.6	20.48	590.5	21.16	592.3
20.31	618.7	21.19	616.5	22.01	612.1	21.24	617.4	22.18	617.4	22.32	624.4	21.83	620.5	22.38	622.2	21.49	616.5
21.83	646.5	22.54	644.7	21.38	639.9	22.5	652.2	22.65	651.3	22.02	649.6	22.65	644.3	22.45	650.4	22.95	646
21.53	673.4	23	672	23.19	667.2	23.08	676.4	22.41	675.1	23.26	677.8	22.5	672.5	22.89	677.8	22.29	659.3
22.89	698	23.8	694.1	22.59	693.2	23.57	703.3	23.77	700.2	23.92	705.1	23.54	704.2	23.83	702	23.54	700.7
22.89	731.1	23.57	728.4	23.65	720.1	23.57	728.4	24.45	728.9	23.77	731.5	24.13	729.3	24.34	726.7	24.6	727.1
23.86	757.5	25.08	752.2	24.87	746.5	24.93	761.1	24.25	754	24.45	759.3	25.05	756.2	24.99	758.9	25.55	754
24.99	782.2	25.61	779.6	25.64	781.8	25.43	788.4	24.84	780.9	25.25	785.3	25.25	784.9	25.76	787.5	25.25	778.2
24.66	805.6	25.58	810.4	26.2	809.1	25.31	811.7	25.82	815.3	26.53	816.6	26.53	808.7	26.5	813.9	26.35	810.9
25.73	839.9	26.2	837.3	26.05	831.6	26.76	839.5	26.53	842.6	26.5	839.9	27.15	842.1	27.41	840.8	27	835.1
26.05	863.7	27.06	862.9	26.88	863.3	26.85	862.9	27.24	868.1	27.8	865.9	27.74	867.3	27.77	864.6	27.68	864.6
26.88	889.7	27.8	888.4	27.62	889.7	27.83	896.3	27.83	894.6	28.45	897.7	28.33	891.5	28.27	895	28.21	888.9
27.41	918.8	28.42	912.2	27.89	917.9	28.57	921	28.24	918.8	28.77	925.4	28.36	917.9	29.19	920.1	29.04	913.1
28.48	946.6	28.77	944.4	28.95	943.9	28.86	944.8	29.25	952.3	29.75	950.1	29.25	944.8	29.87	950.1	29.28	938.2
29.01	972.1	29.69	971.7	29.6	966.9	29.69	978.3	29.78	977.4	29.75	976.6	29.63	970.4	30.05	977	30.05	971.3
29.69	996.8	30.28	999.5	29.63	992.4	29.99	1003	30.7	1004	30.91	1003	30.17	997.7	30.67	1002	30.28	997.7
29.9	1029	30.61	1023	30.55	1029	30.79	1030	31.2	1033	31.32	1033	30.79	1025	31.44	1028	31.2	1023
30.7	1056	31.47	1056	31.02	1055	31.02	1059	31.44	1056	32	1062	31.82	1062	31.91	1054	31.73	1048
31.56	1082	31.56	1074	31.91	1078	32.06	1081	31.91	1081	32.59	1086	32.27	1087	32.41	1084	32.3	1080

Table 18. 25 °C at 16 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
32.03	1112	32.5	1105	32.39	1112	32.41	1106	32.44	1107	32.95	1111	32.95	1112	33.24	1112	33.15	1108
32.89	1136	33.07	1137	33.12	1135	32.95	1142	33.45	1141	33.78	1136	33.48	1138	33.63	1140	33.57	1132
33.33	1166	33.75	1162	33.84	1165	33.54	1161	33.86	1165	34.87	1170	34.16	1166	34.52	1169	34.52	1164
33.95	1194	34.16	1188	34.25	1190	34.19	1199	34.52	1190	35.4	1195	34.66	1191	34.99	1194	34.99	1189
34.52	1216	34.66	1219	34.81	1212	34.04	1204	35.31	1224	35.82	1225	35.4	1218	35.49	1225	35.7	1217
35.02	1243	35.26	1247	35.14	1238	35.43	1226	35.58	1252	36.82	1250	35.97	1251	36.03	1248	36.29	1248
35.85	1274	35.76	1270	36.11	1273	36.14	1266	36.38	1275	37.5	1280	36.77	1275	36.56	1274	36.85	1272
36.38	1303	36.47	1300	36.56	1302	36.77	1302	36.62	1300	38.04	1305	37.24	1304	37.18	1302	37.45	1301
36.82	1326	37.06	1328	37.18	1327	37.24	1325	37.48	1333	38.81	1332	37.65	1327	37.92	1328	37.68	1325
37.5	1356	37.71	1352	37.56	1352	38.07	1360	37.95	1358	39.49	1364	38.39	1355	38.48	1359	38.27	1348
38.07	1380	38.1	1377	38.1	1377	38.48	1382	38.54	1386	39.87	1380	38.96	1380	39.13	1384	38.78	1375
38.72	1405	38.84	1411	38.69	1402	38.96	1409	39.19	1411	40.79	1416	39.69	1411	39.61	1408	39.55	1409
39.4	1437	39.4	1436	39.49	1437	39.67	1434	39.75	1438	41.26	1442	40.11	1438	40.32	1440	40.17	1437
39.93	1467	40.02	1463	40.08	1463	40.14	1461	40.29	1470	41.77	1468	40.64	1464	40.91	1467	40.91	1465
40.55	1491	40.61	1487	40.7	1488	40.94	1497	40.82	1497	42.65	1492	41.47	1495	41.35	1493	41.29	1488
41.03	1515	41	1513	41.14	1512	41.53	1524	41.44	1522	43.51	1524	41.88	1522	41.91	1522	41.94	1515
40.14	1538	40.23	1507	39.81	1540	39.78	1533	40.17	1535	40.88	1538	37.42	1394	40.67	1538	40.67	1540
39.64	1509	39.52	1484	39.34	1517	39.16	1507	39.55	1513	40.29	1514	36.79	1371	40.14	1512	39.96	1507
39.07	1485	39.01	1452	38.78	1486	38.69	1481	39.16	1488	39.9	1489	36.2	1341	39.25	1483	39.52	1489
38.24	1453	38.22	1425	38.19	1458	38.01	1453	38.27	1455	38.93	1456	35.55	1313	38.9	1458	38.72	1458
37.98	1436	37.71	1400	37.53	1434	37.33	1426	37.59	1427	38.57	1430	35.05	1288	38.07	1426	38.42	1440
37.15	1402	37.06	1376	37	1405	36.94	1401	37.21	1403	37.71	1406	34.58	1262	37.65	1399	37.77	1410
36.59	1375	36.56	1345	36.5	1376	36.08	1367	36.62	1374	37.18	1372	33.81	1236	37.09	1375	37.48	1384
35.85	1351	36.03	1319	35.7	1352	35.49	1342	36.05	1348	36.79	1347	33.1	1206	36.44	1350	36.62	1362
35.37	1326	35.43	1296	35.34	1327	34.87	1315	35.46	1322	36.11	1323	32.59	1178	35.85	1324	36.47	1336
34.72	1290	34.66	1262	34.52	1297	34.28	1288	34.63	1291	35.34	1291	32.15	1151	35.14	1296	35.17	1289
34.01	1264	33.81	1237	33.98	1268	34.07	1263	34.13	1263	34.81	1264	31.53	1123	34.43	1263	34.72	1261
33.54	1241	33.36	1210	33.66	1245	33.36	1234	33.69	1235	34.16	1237	30.76	1098	34.1	1236	34.22	1238
32.74	1207	32.71	1182	32.77	1218	32.68	1207	33.07	1211	33.48	1211	29.93	1068	33.63	1213	33.24	1205
32.12	1181	32.21	1155	32.27	1186	31.94	1183	32.41	1185	32.89	1183	29.43	1041	32.62	1181	32.65	1181
31.67	1154	31.41	1125	31.53	1158	31.62	1149	31.79	1154	32.47	1161	29.25	1017	32.3	1155	32.36	1155

Table 18. 25 °C at 16 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
30.96	1127	30.76	1099	30.99	1134	30.73	1127	31.47	1126	31.94	1134	28.3	991.1	31.5	1126	31.79	1130
30.73	1104	29.99	1074	30.31	1103	30.17	1097	30.73	1101	31.08	1101	27.92	965.5	30.93	1101	30.85	1096
29.93	1072	29.4	1047	29.75	1077	29.54	1069	30.28	1078	30.49	1074	26.7	932.9	30.43	1074	30.49	1070
28.98	1047	28.63	1021	29.04	1049	29.07	1044	29.04	1042	30.17	1050	26.55	905.6	29.93	1049	29.93	1044
28.42	1021	28.6	995.9	28.66	1025	28.74	1018	28.6	1026	29.22	1020	25.46	875.2	28.92	1018	28.92	1014
28.36	995.1	27.74	958.9	28.03	993.7	27.68	986.7	27.89	989.3	28.54	991.1	24.93	850.1	28.39	991.5	28.45	990.7
27.68	965.1	26.61	933.4	27.86	974.8	27.35	961.1	27.5	965.1	27.98	968.6	24.37	825	28.09	963.8	28.27	966.4
26.73	936.9	26.08	909.6	26.5	940.4	26.55	936	27.32	940.4	27.15	937.8	24.37	795	27.27	940.9	27.21	940
26.11	910.5	25.96	882.7	26.32	911.3	26.14	909.6	25.99	906.9	27.12	912.2	23.54	770.3	26.94	912.2	26.64	906
25.19	883.6	24.6	852.3	25.52	886.7	25.49	884.9	25.4	882.7	26.14	881.8	22.71	745.6	26.08	880.5	25.73	877.8
24.63	858.5	23.92	826.3	24.87	862	24.75	851.8	24.75	858	25.67	856.2	21.67	714.3	25.52	855.4	25.16	852.7
24.31	832.9	23.77	798.5	24.28	836.4	24.6	824.5	24.01	825	25.13	830.7	21.41	686.6	25.31	828.9	24.51	826.3
23.12	799	22.89	772.5	23.48	802.9	23.27	801.2	23.95	799.8	24.75	802.9	20.43	661.5	24.6	804.2	24.42	795
23.45	776	21.94	743.4	23.09	784	23.03	767.2	23.21	773	23.33	779.1	20.78	636.8	23.98	774.3	23.39	771.2
21.97	744.3	21.41	716.6	22.94	749.6	22.5	740.3	23.15	747.4	23.42	747.4	18.89	605.5	23.12	745.2	22.56	744.3
22.2	717.9	21.73	690.5	22.47	721	21.7	714.8	21.64	722.3	22.65	719.6	19.18	578.2	21.91	722.3	22.74	721.8
20.7	693.2	21.17	669	21.73	699.8	20.75	687.9	21.97	696.7	21.64	689.2	18.82	547.8	22.38	697.2	21.58	687
21.08	667.2	19.63	643	20.9	666.8	20.07	665	21.08	663.7	21.08	664.5	18.22	524.9	20.93	670.3	20.78	662.3
19.93	641.6	19.25	609.9	19.78	639.9	20.1	637.7	19.72	638.5	20.01	638.5	17.58	497.1	20.22	635.9	20.55	637.2
19.63	611.2	18.14	583.5	19.99	613.9	19.19	612.1	20.1	609	20.01	612.5	16.11	469.8	20.16	608.1	19.19	607.3
18.83	584.3	17.52	558.8	19.48	587.4	18.44	576.4	19.33	583.9	19.42	583.5	15.76	445.1	18.65	580.8	18.48	582.1
17.4	553.9	17.77	527.1	17.47	557.9	18.4	552.6	17.7	555.3	18.59	558.3	15.88	419.5	17.84	554.8	19.17	551.3
16.82	528.8	17.21	498.9	16.82	530.6	16.83	521.8	16.98	530.6	18.64	533.7	14.46	384.7	17.46	529.7	18.59	526.2
16.02	502.4	15.51	473.3	16.17	504.1	17.66	499.7	16.5	501.5	18.19	507.2	14.88	362.2	16.57	497.5	17.95	498.4
15.39	472.4	15.25	446.9	16.52	477.7	17.03	471.5	15.87	472	16.06	473.7	12.26	329.2	16.77	473.3	16.01	472.9
16.55	447.3	15.7	420	16.28	453.5	16.07	440.7	16.38	445.1	16.69	445.5	13.21	312	16.86	446.4	15.67	438.9
14.26	423.9	14.06	394.9	15.37	420.4	14.25	414.7	14.76	418.2	14.47	420.9	11.41	277.6	15.53	416	16.05	416.4
14.99	392.6	14.84	364.4	15.2	396.2	14.99	388.7	15.56	393.5	14.44	390.4	11.14	249	15.73	396.2	13.89	391.3
12.71	367.1	13.99	338.9	13.03	369.7	13.76	362.2	13.31	369.3	13.18	366.6	10.05	226.5	14.06	360.5	15.27	362.7
13.64	342.4	11.68	311.6	14.31	337.6	12.15	335.4	13.7	340.6	14.65	338.9	0	178.6	12.81	344.6	12.84	336.7
12.85	310.7	10.86	285.6	14.07	317.7	12.07	310.7	13.23	308.9	14.08	312.4	0	166.8	14.33	315.5	12.7	304.1
12.26	297	10.96	251.2	11.12	283.8	13.39	279.4	12.69	283.8	11.82	282.5	0	141.3	12.86	283.4	12.51	279.4

Table 19. 25 °C Repeat at 16 wt %

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
16.08	275.4	16.12	275.9	18.62	272.3	16.09	280.3	16.83	277.6	17.86	273.2	16.29	274.1	16.65	274.5	15.98	273.7
17.51	294.4	16.83	290.9	17.44	298.3	16.72	293.1	17.66	292.2	18.86	292.2	17.25	290	18.45	297.5	18.11	294.8
18.79	319.1	17.08	316	17.39	325.2	17.71	317.3	17.41	317.3	19.68	319.9	19.36	322.6	18.51	321.3	19.76	319.5
18.84	347.7	20.26	347.7	19.24	349.5	20.09	343.7	18.6	342.4	18.91	344.6	18.22	348.1	18.97	338.9	19.39	348.6
18.81	370.2	18.78	374.1	18.97	383.4	18.95	376.3	19.26	375.5	20.9	376.8	20.34	374.6	20	357.4	19.08	372.8
20.81	402.8	19.94	397.5	20.99	405.9	21.33	402.8	21.04	402.3	20.21	400.6	19.81	403.2	21.2	388.7	21.29	402.8
20.55	427	20.37	429.7	20.29	435	20.31	425.3	20.09	428.3	21.97	428.8	21.49	427.9	20.96	419.5	20.66	427
21.46	452.6	21.18	456.5	22.27	458.8	20.91	457.4	22.37	453.5	20.97	453.5	20.77	453	21.64	440.7	22.01	460.5
21.66	483.9	22.66	480.8	21.76	481.2	22.25	483.9	21.79	478.6	21.99	479.9	22.36	487	22.32	468	22.98	477.3
22.34	511.6	23.49	508.5	23.56	515.6	23.64	507.7	22.29	504.6	22.49	511.6	22.51	513	22.66	515.6	22.75	512.1
23.19	536.8	23.82	537.2	24.07	540.7	24.15	534.1	24.37	537.6	23.09	537.6	23.23	539	23.26	543.8	23.38	541.2
24.35	567.2	24.38	562.8	23.88	570.2	23.86	567.2	24.68	565	23.88	563.2	23.74	562.8	23.98	566.7	24.5	568
25.43	592.7	25.17	595.4	24.8	597.6	24.74	592.3	25.3	589.2	24.38	587	24.94	597.1	25.04	594	25.73	594.5
25.63	620	26.03	621.4	26.18	623.6	26.33	619.6	25.69	618.7	26.19	616.1	25.46	624	25.7	626.7	26.41	618.7
26.84	649.6	25.66	649.1	25.89	648.7	25.89	646	26.28	646.9	25.89	642.5	26.69	647.8	26.45	649.6	26.96	650.4
26.25	675.1	26.07	669.8	26.39	673.4	26.87	670.3	26.42	671.6	26.75	676.9	27.4	671.6	27.22	676.9	26.75	678.2
27.9	700.7	27.07	701.1	27.96	707.3	27.9	702	27.13	701.1	27.58	703.3	27.4	706	27.93	703.3	27.37	700.2
27.9	727.6	27.61	727.6	28.47	733.7	27.84	727.1	27.84	730.7	28.41	727.6	28.67	731.5	28.88	735.5	28.7	723.2
28.88	751.4	28.38	755.8	28.85	761.1	28.67	757.1	29.2	754.9	28.85	754.4	29.06	761.1	29.53	760.6	29.18	758.9
29.83	786.6	29.09	785.3	29.09	787.1	29.29	782.2	29.77	780.9	29.18	780.4	29.77	784	29.89	790.1	29.35	784.4
30.39	811.3	29.62	810.4	30.27	814.4	30.33	811.7	29.89	811.7	30.33	814.4	29.89	808.7	30.92	814.8	30.12	809.1
30.09	834.7	30.18	836	30.3	838.2	30.98	839.5	30.74	839.1	31.01	839.1	30.77	840.8	30.95	838.2	30.98	832.9
31.07	865.9	31.37	866.4	31.1	869.9	31.84	863.3	31.25	862.4	31.45	863.7	31.45	868.1	31.6	868.6	31.69	862
31.66	891.5	31.78	893.7	32.16	898.1	32.16	888	32.13	892.8	32.34	895.9	32.43	892.8	32.82	897.7	32.67	896.3
32.67	917.9	32.79	920.6	32.76	922.3	32.49	913.5	32.76	919.3	32.55	920.1	32.9	918.4	33.29	921	32.99	921
32.73	944.4	33.11	943.9	33.47	954.1	33.61	947.9	33.58	944.8	33.47	949.2	33.47	953.2	34.03	950.6	33.47	945.3
34.15	975.7	33.53	975.7	34.24	981	34.3	977	33.61	969.1	34.03	973.9	34.32	976.1	34.59	980.5	34.74	978.8
34.24	995.1	34.03	1003	34.35	1006	34.56	1003	34.8	1002	34.56	999.5	34.56	1002	35.15	1007	34.86	1004
35.12	1025	34.83	1026	34.83	1032	35.36	1028	35.45	1029	35.21	1026	35.21	1028	35.39	1031	35.36	1022
35.6	1057	35.57	1056	35.89	1064	35.83	1054	36.1	1054	35.83	1051	35.83	1054	36.4	1062	36.51	1058
36.46	1085	36.01	1080	36.31	1091	36.31	1078	36.57	1081	36.4	1081	36.75	1087	37.08	1089	36.54	1072

Table 19. 25 °C Repeat at 16 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
36.43	1107	36.57	1111	36.99	1116	37.25	1112	37.05	1106	37.31	1111	37.08	1114	37.64	1114	36.96	1090
37.55	1141	37.46	1138	37.55	1140	37.58	1140	37.73	1133	37.82	1135	38.05	1144	38.02	1140	38.05	1131
38.26	1166	37.73	1166	37.99	1173	38.35	1163	38.35	1166	38.05	1163	38.44	1168	38.5	1165	38.38	1159
38.7	1192	38.5	1189	38.73	1197	38.88	1195	39.06	1193	38.85	1189	39.24	1195	39.33	1199	38.91	1179
39.09	1215	39.06	1216	39.39	1226	39.62	1220	39.59	1217	39.56	1222	39.53	1223	39.95	1222	39.92	1215
39.95	1249	40.01	1251	40.07	1252	40.04	1247	39.98	1243	40.27	1250	40.18	1250	40.42	1249	40.63	1244
40.39	1274	40.36	1274	40.63	1279	40.78	1272	40.92	1273	40.87	1275	41.01	1276	41.16	1282	41.19	1278
40.89	1299	40.87	1303	41.25	1305	41.04	1296	41.46	1301	41.31	1300	41.4	1301	41.66	1307	41.72	1304
41.75	1331	41.58	1326	41.52	1330	41.78	1328	41.75	1325	41.93	1324	41.99	1327	42.43	1331	42.37	1332
42.17	1359	42.23	1359	42.55	1363	42.4	1355	42.34	1350	42.37	1352	42.67	1359	42.94	1362	42.94	1356
42.76	1386	42.82	1383	43	1388	43.14	1382	43.23	1384	43.11	1383	43.32	1388	43.53	1387	43.71	1386
43.47	1411	43.14	1411	43.5	1411	43.5	1406	43.65	1408	43.74	1412	43.85	1412	43.94	1412	44.18	1413
44.03	1441	43.94	1441	44.12	1445	44.24	1438	44.33	1435	44.24	1438	44.53	1436	44.8	1447	44.71	1438
44.51	1467	44.42	1463	44.86	1472	44.86	1465	44.89	1466	44.77	1463	45.1	1467	45.24	1470	45.22	1467
45.13	1493	44.98	1491	45.3	1495	45.42	1494	45.51	1493	45.39	1494	45.66	1496	45.84	1495	45.98	1497
45.63	1519	45.51	1515	45.98	1524	46.01	1521	45.98	1516	46.07	1520	46.19	1522	46.28	1522	46.58	1522
43.91	1537	43.97	1534	44.18	1538	44.42	1543	44.3	1538	43.94	1509	43.85	1512	44.24	1516	44.48	1535
43.41	1511	43.38	1512	43.77	1513	43.77	1511	43.82	1514	43.2	1484	43.38	1486	43.56	1489	43.88	1507
42.88	1481	42.55	1481	43.17	1489	43.08	1484	43.06	1477	42.82	1460	42.46	1455	42.91	1457	43.2	1484
42.23	1456	42.32	1454	42.49	1457	42.46	1458	42.43	1455	42.2	1434	42.17	1427	42.17	1430	42.85	1453
41.69	1431	41.63	1430	41.93	1430	41.66	1423	42.02	1426	41.31	1399	41.58	1404	41.9	1407	42.14	1430
40.84	1398	41.1	1398	41.43	1402	41.28	1399	41.37	1400	40.78	1374	40.98	1377	41.43	1382	41.43	1397
40.39	1371	40.3	1371	40.72	1378	40.84	1370	40.75	1376	40.39	1345	40.15	1342	40.54	1347	41.07	1373
39.65	1348	39.86	1348	40.1	1348	40.33	1348	40.24	1351	39.86	1320	39.83	1318	39.95	1319	40.27	1345
39.24	1317	39.12	1315	39.33	1322	39.71	1323	39.56	1316	39.18	1291	39.3	1291	39.36	1292	39.68	1315
38.47	1293	38.41	1291	38.88	1296	38.91	1289	39.09	1292	38.5	1264	38.62	1265	38.65	1265	39.21	1290
37.85	1265	37.85	1260	38.5	1267	38.38	1261	38.47	1266	38.02	1239	37.94	1242	37.94	1238	38.79	1261
37.2	1236	37.55	1237	37.73	1243	37.7	1236	37.79	1240	37.31	1213	37.4	1214	37.61	1210	38.17	1237
36.66	1211	37.17	1213	37.28	1217	37.14	1207	37.25	1210	36.9	1187	36.72	1179	36.72	1184	37.76	1213
35.95	1183	36.16	1179	36.4	1182	36.72	1180	36.6	1181	36.25	1161	35.86	1154	36.28	1159	37.02	1183
35.51	1159	35.77	1154	36.19	1156	35.98	1153	36.04	1158	35.33	1129	35.66	1127	35.57	1129	36.4	1152

Table 19. 25 °C Repeat at 16 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
34.86	1128	34.98	1128	35.27	1133	35.45	1123	35.42	1133	35.01	1104	34.89	1103	35.01	1103	35.66	1126
34.18	1102	34.53	1101	34.8	1100	34.71	1096	34.83	1098	33.97	1070	34.41	1075	34.56	1075	35.09	1100
33.79	1071	34.03	1075	34.27	1073	34.15	1072	34.3	1071	34.03	1053	33.79	1045	34	1049	34.32	1072
33.23	1044	33.32	1042	33.35	1048	33.44	1042	33.73	1055	32.96	1020	32.99	1017	33.35	1024	33.91	1046
32.82	1019	32.31	1016	33.02	1023	32.73	1018	33.29	1032	32.34	992.9	32.55	991.5	32.43	992.4	33.41	1021
31.96	994.2	32.4	992.9	32.31	998.1	32.55	989.3	32.76	1014	32.22	968.2	32.13	966.9	32.28	967.7	32.19	988
31.63	968.2	31.07	959.8	31.9	966.4	31.93	965.5	32.11	962	30.98	941.7	31.04	940.9	31.51	938.7	32.19	961.1
30.6	941.7	30.77	930.3	31.31	937.3	30.68	931.6	31.39	956.7	30.24	909.6	30.89	906.9	30.71	912.7	31.34	935.1
30.12	907.4	29.94	906.9	30.66	912.2	30.48	906	31.13	935.6	30	880.9	30.12	882.2	30.06	888.4	31.01	909.6
29.41	883.1	29.35	880	29.5	885.3	29.97	879.2	29.8	883.6	29.62	858	29.86	858	29.68	856.7	30.36	883.6
28.91	855.4	29.15	854.5	29.06	860.7	29.59	855.8	29.74	858.5	29.15	832.9	28.61	832.9	28.61	828.5	29.41	857.6
28.73	831.6	28.73	827.6	28.11	827.6	28.73	828.9	28.91	825	28.58	806.9	28.32	797.6	28.73	806.4	28.94	823.6
27.34	801.2	28.17	801.6	27.61	801.6	27.99	802.5	28.23	799	26.96	773.4	27.99	779.6	27.55	772.1	27.87	796.3
26.66	774.3	26.66	769.4	26.9	773.8	27.49	767.7	27.73	770.8	26.48	745.2	26.99	743.4	27.1	749.2	27.93	773
26.33	748.3	26.13	741.7	27.19	749.6	26.19	743	26.6	745.6	25.98	717.9	25.77	716.6	26.78	724.5	26.75	747.4
26.04	722.7	26.22	716.1	26.36	722.7	25.48	714.8	25.68	717.4	26.01	691.4	25.33	689.7	26.19	692.8	26.13	717.4
25.21	691.4	25.24	693.2	25.09	694.5	25.74	691	25.71	691.9	25.15	667.6	24.68	664.5	24.53	665.9	26.22	693.2
23.85	664.1	24.65	662.3	24.14	664.5	24.2	661	24.56	668.5	23.85	642.5	24.59	640.3	24.59	640.3	24.62	668.1
23.35	641.2	23.64	634.1	24.41	638.1	24.68	635	24.56	642.1	23.11	609.5	23.32	607.7	24.29	617	23.91	635.9
22.9	609.5	22.93	612.1	24.06	613.4	23.23	602.9	24.17	616.1	22.34	583.5	23.55	578.6	23.88	591	23.76	608.1
21.9	581.7	22.16	579.5	22.52	586.1	22.31	580.4	23.46	581.7	22.75	552.6	22.81	552.2	22.22	557.5	23.7	580.4
21.4	557.5	21.64	550.4	22.37	562.3	22.1	553.5	22.31	553.9	22.29	526.6	22.47	526.6	22.25	529.7	22.61	553.9
20.7	531.9	20.65	526.2	21.91	528.8	21.14	528.4	21.42	525.3	20.98	502.4	20.91	503.7	20.77	505	22.49	528.4
20.62	499.7	20.92	501.9	20.4	504.6	21.19	497.1	21.82	501.9	19.79	473.7	20.87	472	20.37	474.2	21.91	502.8
19.26	473.3	19.15	468.4	19.53	474.6	19.51	471.1	21.09	472	18.86	446	19.09	444.2	19.06	446.4	20.97	469.8
20.1	448.6	20.33	444.2	18.91	444.2	18.71	440.2	19.75	444.2	20.01	420	20.05	419.5	20.19	421.7	19.53	444.6
19.65	417.8	17.95	418.2	19.92	417.8	19.77	414.7	19.31	420.4	18.33	387.8	17.55	394.4	17.69	394	18.3	416.4
17.2	392.6	19.11	394.9	17.83	394	17.45	389.1	18.74	393.1	18.79	365.3	18.54	362.2	18.34	370.6	18.42	393.5
18.01	365.3	17.15	360.9	17.11	370.6	17.93	365.3	18.98	368.9	16.91	338.4	16.36	336.2	16.42	337.6	17.15	361.4
18.26	341.5	18.06	334.9	18.37	342.9	16.91	333.2	17	344.2	16.07	334	15.59	312	15.69	311.6	17.24	334
15.1	309.4	17.77	312	15.65	312	15.45	307.2	17.51	308.5	14.98	293.5	15.13	287.3	15.32	286	17.37	307.6
14.59	282.5	15.42	280.3	14.81	282.9	14.85	282.9	17.3	280.7	15.34	266.6	16.14	253.8	15.26	256.5	16.81	282.9

Table 20. 50 °C at 16 wt %

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
12.39	273.7	10.57	279.8	8.905	279.8	10.97	274.1	10.59	273.2	10.91	271	9.287	283.4	10.62	271	9.316	275.4
12.39	293.9	10.62	292.2	9.204	292.2	11.2	294.4	11.13	292.2	11.17	286.9	9.239	297.5	11.16	293.5	9.156	296.1
11.98	319.5	11.25	323	10.21	318.2	10.87	317.7	10.36	317.7	9.731	317.7	9.843	321.3	11.01	320.4	9.529	319.1
11.41	342.9	10.38	347.3	11.87	344.2	10.78	349.5	11.44	349.9	10.2	343.7	11.51	346.8	9.825	347.7	11.95	350.8
11.67	368	12.17	375.9	11.01	370.2	11.98	375.9	10.85	378.5	11.61	373.3	10.49	378.1	12.11	378.1	10.35	377.7
12.04	399.7	11.94	399.7	12.07	404.1	11.27	405	11.88	405.9	10.62	398.4	11.57	400.6	10.78	404.5	12.28	403.2
13.6	428.3	12.68	432.8	11.66	429.2	12.36	428.3	11.61	430.1	12.62	423.9	11.15	430.5	12.63	427.9	11.27	427.9
12.49	451.7	13.05	458.8	12.56	452.1	12.67	460.1	12.67	454.8	12.07	449.9	12.12	457.4	12.48	456.1	11.61	460.1
13.29	482.5	12.27	483.4	12.15	485.2	12.78	483.9	13.21	487.8	12.35	481.2	13.38	484.3	12.1	479.9	12.68	486.1
13.66	511.6	13.82	515.6	13.18	510.3	13.34	513.8	13.1	511.6	13.45	511.2	13.11	508.5	12.89	511.6	13.59	512.5
13.98	533.7	14.28	542.5	13.56	536.8	13.59	538.1	13.92	541.2	13.39	535.4	13.39	534.5	13.9	540.3	13.09	542.9
15.22	566.3	14.47	566.7	13.5	562.8	14.05	568	14.31	566.3	13.22	559.7	13.84	563.2	14.36	565.8	13.35	568.5
15.79	592.3	15.06	591.8	13.86	588.3	13.7	595.4	14.52	589.2	14.28	590.5	13.79	592.3	13.92	596.7	14.21	595.8
15.86	616.1	15.29	624.4	14.8	621.4	13.92	620	14.23	620.9	14.7	620	14.11	616.5	14.51	621.8	14.97	620.5
16.73	648.2	15.9	649.6	14.75	646.9	15.23	647.8	14.81	649.1	15.15	645.6	15.17	647.8	15.45	650	15.57	653.5
16.9	670.3	15.26	674.7	15.25	676.4	14.81	672.5	14.87	673.8	15.14	669.4	16.13	675.6	15.11	675.6	15.65	677.3
16.9	702	16.56	699.8	15.78	698.5	15.31	704.7	15.44	703.8	15.94	695.4	15.75	698.9	16.27	699.4	16.27	705.5
17.79	728.4	16.41	733.3	15.84	727.1	16.22	725.8	15.89	731.1	16.15	728.4	16.91	726.2	16.52	727.1	15.84	729.3
18.03	755.8	17.18	759.3	16.95	752.2	16.31	761.1	16.86	758	16.81	754.4	17.3	753.1	16.93	754.9	17.2	764.1
17.84	779.1	17.72	786.2	16.79	784	17.16	786.2	17.41	784	17.26	783.1	17.14	786.2	17.11	780	17.64	788.8
18.6	813.1	18.1	810.4	17.35	809.5	17.14	814.4	17.8	809.5	17.72	809.1	17.58	812.2	17.57	814.8	17.63	813.5
19.17	832.9	18.33	843.5	18.1	837.7	17.81	839.1	17.74	840.4	18.04	832.4	17.96	838.6	17.95	840.8	18	843.5
19.09	858.5	18.93	868.1	18.77	863.7	18.03	863.3	18.37	865.9	18.38	864.6	18.44	862	18.48	866.8	18.81	867.3
20.3	892.8	19.41	892.8	18.95	889.3	18.77	896.3	18.96	893.3	19.04	891.1	19.07	895	19.32	892.8	19.1	890.6
20.31	919.3	19.75	923.2	18.98	914	19.06	921.9	19.05	920.1	19.01	916.2	19.87	921.5	19.55	917.5	19.39	925.4
21	945.3	20.09	947.5	19.85	948.8	19.83	946.6	19.63	951.4	19.71	943.5	19.72	947.9	20	943.9	20.12	949.7
20.98	971.3	20.45	973.9	19.79	975.2	20.2	978.3	20.05	977.4	19.81	969.1	20.3	970.4	19.98	970.8	20.56	978.3
21.85	1004	20.7	1007	20.71	999	20.72	1005	20.83	1003	20.82	1001	20.65	995.9	20.89	1004	20.74	1003
21.94	1030	21.3	1031	20.97	1028	20.87	1035	20.93	1034	21	1027	20.99	1024	21.17	1033	21.12	1030
22.59	1054	21.67	1058	21.35	1052	21.43	1060	21.61	1058	21.24	1054	21.46	1051	21.43	1056	21.49	1057
23.03	1079	21.99	1091	21.79	1085	21.76	1086	21.67	1083	21.82	1083	22.08	1087	21.94	1088	22.23	1082

Table 20. 50 °C at 16 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
23.53	1112	22.53	1116	22.05	1111	22.17	1111	22.02	1113	22.29	1107	22.44	1113	22.41	1113	22.62	1115
23.86	1137	22.82	1140	22.53	1139	22.47	1137	22.5	1138	22.68	1133	23.06	1139	22.94	1140	22.91	1143
24.1	1164	23.12	1168	22.94	1163	22.88	1166	22.79	1163	22.97	1166	23.3	1163	23.36	1164	23.18	1167
24.57	1190	23.42	1193	23.44	1195	23.62	1196	23.53	1196	23.3	1191	23.56	1189	23.62	1189	23.83	1198
25.22	1205	24.3	1224	23.92	1220	23.71	1222	23.95	1224	23.83	1215	24.15	1224	24.13	1216	24.33	1223
25.16	1236	24.66	1252	24.24	1248	24.45	1248	24.24	1249	24.33	1247	24.45	1248	24.75	1248	24.57	1248
25.04	1243	25.01	1277	24.66	1273	24.72	1273	24.6	1273	24.84	1272	24.95	1276	25.19	1274	25.13	1280
26.05	1257	25.34	1301	25.19	1299	25.34	1307	25.1	1298	25.34	1300	25.49	1300	25.49	1302	25.61	1308
26.55	1300	25.84	1335	25.63	1330	25.46	1331	25.63	1332	25.87	1328	25.93	1330	25.96	1329	26.14	1332
27.41	1351	26.23	1359	25.96	1356	26.05	1360	26.17	1359	26.05	1348	26.55	1359	26.29	1353	26.52	1360
27.82	1384	26.58	1384	26.52	1383	26.46	1386	26.61	1386	26.73	1384	26.73	1386	26.7	1385	26.85	1385
28.09	1408	27.26	1415	26.64	1406	26.88	1412	27.03	1410	27	1412	27.11	1411	27.11	1412	27.32	1417
28.68	1438	27.62	1438	27.35	1438	27.14	1436	27.2	1437	27.32	1436	27.71	1434	27.65	1437	27.79	1444
28.89	1466	28.06	1469	27.68	1466	27.74	1470	27.88	1469	27.85	1462	28.3	1467	28.18	1464	28.12	1471
29.3	1493	28.45	1496	28.03	1492	27.94	1490	28.36	1494	28.15	1487	28.65	1495	28.36	1487	28.68	1496
29.84	1519	28.8	1523	28.65	1523	28.62	1524	28.68	1523	28.51	1512	29.16	1519	29.07	1523	28.92	1519
27.62	1533	27.2	1511	27.68	1543	27.29	1511	27.56	1534	27.2	1507	27.77	1534	27.97	1536	28.15	1534
27.26	1507	26.55	1480	27.26	1514	26.85	1482	27.14	1507	26.97	1481	27.47	1508	27.53	1509	27.77	1511
26.73	1482	26.08	1452	26.88	1488	26.37	1458	26.7	1483	26.61	1457	27.11	1485	27.2	1484	27.23	1485
26.46	1457	25.84	1430	26.29	1453	26.08	1433	26.23	1451	25.93	1423	26.46	1454	26.85	1460	26.73	1452
25.61	1423	25.25	1404	25.99	1430	25.49	1401	25.84	1424	25.55	1398	26.2	1429	26.11	1428	26.32	1424
25.63	1404	24.78	1370	25.55	1406	25.19	1374	25.55	1400	25.19	1374	25.72	1400	25.72	1399	25.9	1400
25.1	1371	24.45	1346	24.87	1372	24.6	1347	24.92	1371	24.54	1342	25.25	1375	25.34	1372	25.49	1376
24.48	1342	23.92	1316	24.48	1345	24.07	1323	24.78	1347	24.24	1315	24.98	1349	24.98	1348	24.81	1343
24.42	1319	23.62	1292	24.1	1319	23.89	1294	24.24	1323	24.04	1290	24.45	1323	24.36	1318	24.45	1316
23.56	1288	23.24	1265	23.77	1295	23.21	1269	23.74	1296	23.3	1265	23.92	1291	24.13	1292	24.01	1290
23.24	1261	22.62	1235	23.18	1268	22.94	1243	23.21	1260	23.33	1256	23.62	1263	23.39	1265	23.47	1261
22.85	1238	22.14	1207	22.59	1234	22.23	1209	22.7	1233	22.76	1216	23.21	1238	23.12	1240	23.27	1236
22.56	1212	21.76	1183	22.08	1211	22.02	1183	22.5	1209	22.11	1185	22.82	1211	22.5	1207	22.88	1209
21.96	1180	21.55	1158	21.99	1184	21.52	1155	22.11	1182	21.46	1141	22.32	1187	22.38	1180	22.53	1183
21.64	1152	21.2	1124	21.73	1159	21.2	1129	21.46	1155	21.2	1132	21.67	1152	22.02	1155	22.14	1159

Table 20. 50 °C at 16 wt % - continued

run1		run2		run3		run4		run5		run6		run7		run8		run9	
[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]	[Pa]	[1/s]
21.25	1127	20.49	1097	20.96	1126	20.46	1105	21.2	1126	21.43	1125	21.2	1135	21.37	1129	21.43	1127
20.96	1101	20.28	1074	20.69	1103	20.01	1072	20.51	1097	20.54	1079	20.69	1100	20.69	1102	21.14	1100
20.28	1077	19.6	1048	19.89	1074	19.63	1045	19.95	1073	20.04	1042	20.51	1074	20.37	1069	20.34	1071
19.69	1042	19.18	1015	19.83	1051	19.42	1019	19.92	1047	19.33	1016	20.13	1051	19.89	1044	20.07	1046
19.69	1020	18.98	990.7	19.15	1025	19.27	993.7	19.39	1023	19.09	986.2	19.6	1024	19.57	1021	20.04	1020
19.21	993.3	18.77	967.7	19.21	996.4	18.77	964.2	18.65	988	18.38	961.1	19.33	989.8	19.42	994.6	19.6	993.3
18.86	964.2	17.82	933.4	18.56	965.1	18.24	942.2	18.68	963.3	17.88	936.9	18.41	962.9	19.15	966.9	18.8	966.4
18.32	937.3	17.35	909.6	18.27	940.4	17.58	907.8	17.97	936	17.47	906	18.53	937.8	18.27	941.3	18.32	935.1
18.15	908.7	17.35	884.5	17.67	908.7	17.02	883.1	17.67	912.2	17.41	879.2	18.18	912.7	17.7	912.7	17.79	908.2
17.32	877	16.46	852.7	17.11	880.5	17.2	854	17.61	887.1	17.08	854.5	17.56	882.2	17.61	879.2	17.29	881.4
16.82	853.6	16.66	824.1	17.01	854.5	16.68	829.4	17.06	854	16.2	822.3	17.29	857.6	16.87	862	17.17	854.9
17	825	15.67	801.2	16.32	830.7	15.69	806	16.76	826.7	16.16	805.1	16.73	825.8	16.49	828.9	16.78	828.9
16.29	801.2	15.6	776.5	15.83	805.1	15.39	779.1	16.24	802.9	15.35	769.9	15.77	801.2	16.37	798.1	16.27	802.9
15.8	768.6	15.17	742.1	15.4	777.8	15.56	744.3	15.57	777.4	14.95	741.7	15.79	770.8	15.55	774.3	15.5	770.3
15.74	743.9	14.67	717.9	15.07	744.8	14.58	719.2	15.08	743	15.26	717	15.29	743.4	14.85	744.3	15.77	745.6
14.95	716.6	14.77	691	14.26	720.1	14.88	696.3	15.2	715.7	14.23	693.6	14.35	717.4	14.87	717.9	15.19	718.3
14.71	691.4	13.68	665.9	14.51	694.1	13.55	669.8	13.84	691.4	13.43	659.7	14.58	689.7	14.85	688.8	14.51	692.8
14.15	658.8	14.05	634.6	13.72	668.1	13.01	635.9	13.86	667.6	13.23	641.6	13.55	665	13.81	664.1	14.02	660.1
13.18	633.3	12.8	606.8	12.93	636.3	13.43	609.9	13.32	634.6	12.96	606.4	13.72	640.3	13.85	635.5	13.59	634.1
13.89	605.5	12.63	581.3	13.53	608.1	13.26	585.7	13.49	609.9	12.26	578.2	12.65	609	12.8	609	13.47	609.5
13.47	582.1	11.79	557	13.24	584.8	12.96	559.2	12.31	580.4	11.86	555.3	12.9	581.3	12.9	585.7	12.91	580.8
12.79	559.2	11.41	530.6	11.64	552.6	12.59	531.9	11.95	555.3	11.72	524.4	12.41	553.5	12.98	551.7	12.54	555.3
12.26	526.2	12.17	496.6	11.54	528.4	12.09	503.7	11.82	529.3	10.97	498	12.6	541.6	12.4	527.1	12.57	530.1
11.94	498.4	10.69	472.4	11.16	502.4	11.52	479	12	505	10.54	468.9	12.42	515.6	11.85	500.6	10.93	496.6
11.79	474.2	10.27	445.1	11.51	474.2	11.21	446.4	10.31	469.8	11.2	445.1	11.73	475.9	11.39	472	11.21	472
11.45	442.4	10.6	421.7	10.74	448.2	9.734	418.6	11.35	442.9	9.698	421.3	11.27	470.6	10.11	445.5	11.54	444.2
9.994	414.7	9.754	388.7	9.606	420.4	10.85	394.4	10.2	417.8	9.162	386.5	11.3	425.3	11.22	417.8	9.828	420
11.2	389.1	10.6	362.7	10.71	394.9	10.16	369.3	10.96	393.1	10.03	361.4	9.885	396.2	9.337	390.9	10.98	391.3
9.994	363.6	8.804	333.6	8.949	364.4	9.663	337.1	9.763	360	10.38	337.1	10.59	374.6	10.25	366.6	9.68	367.1
9.843	331.8	8.585	311.1	9.802	336.7	9.42	315.1	10.38	333.6	9.722	312	8.872	335.8	10.51	342.4	9.876	334
10.12	306.7	8.02	282.5	10.08	308	9.739	283.4	9.825	308.9	7.789	276.7	9.864	307.6	8.183	308	10.1	309.4
10.26	279.8	7.771	254.3	9.352	280.7	8.872	254.3	9.633	284.2	7.449	252.5	9.87	280.7	7.964	282.9	9.494	280.3

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APPENDIX F

ENVELOPE A RHEOGRAMS

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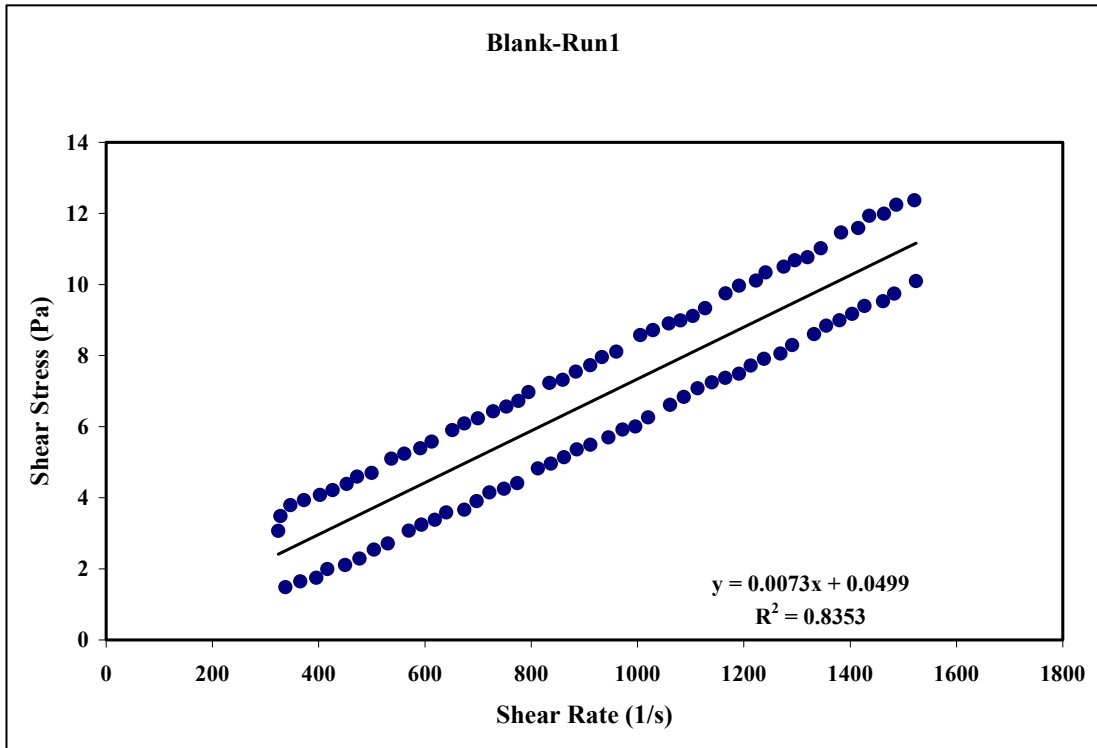


Figure 1. Blank As Received Run 1

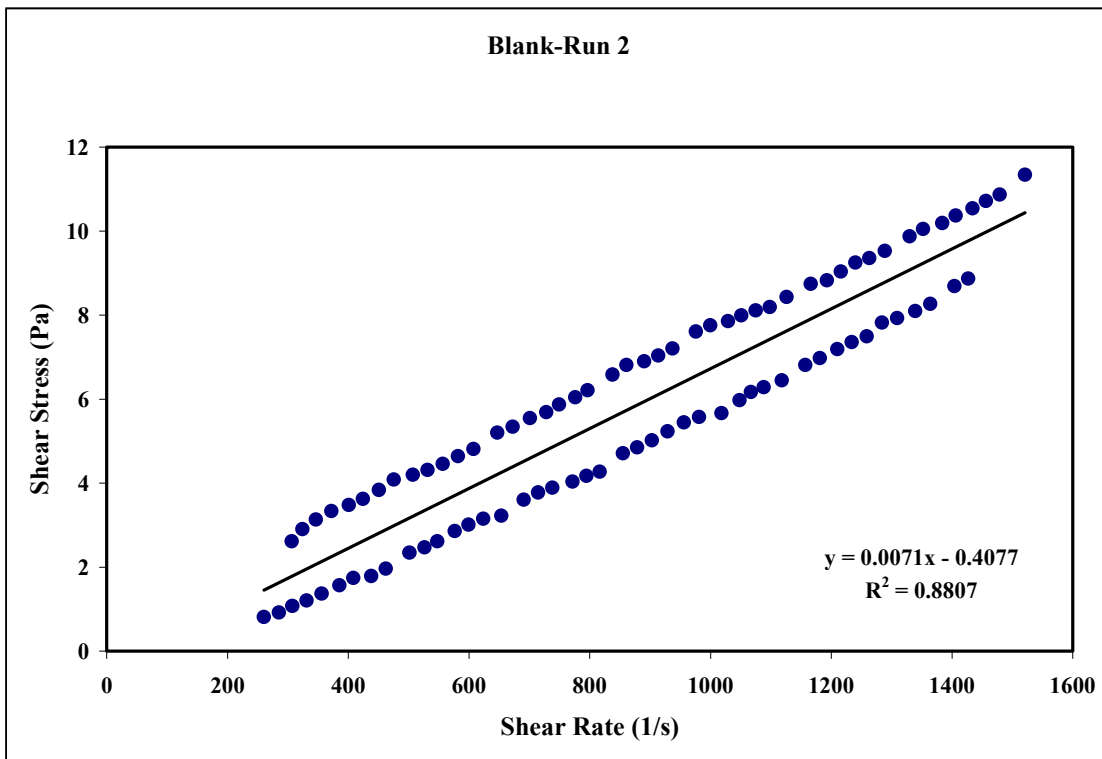


Figure 2. Blank As Received Run 2

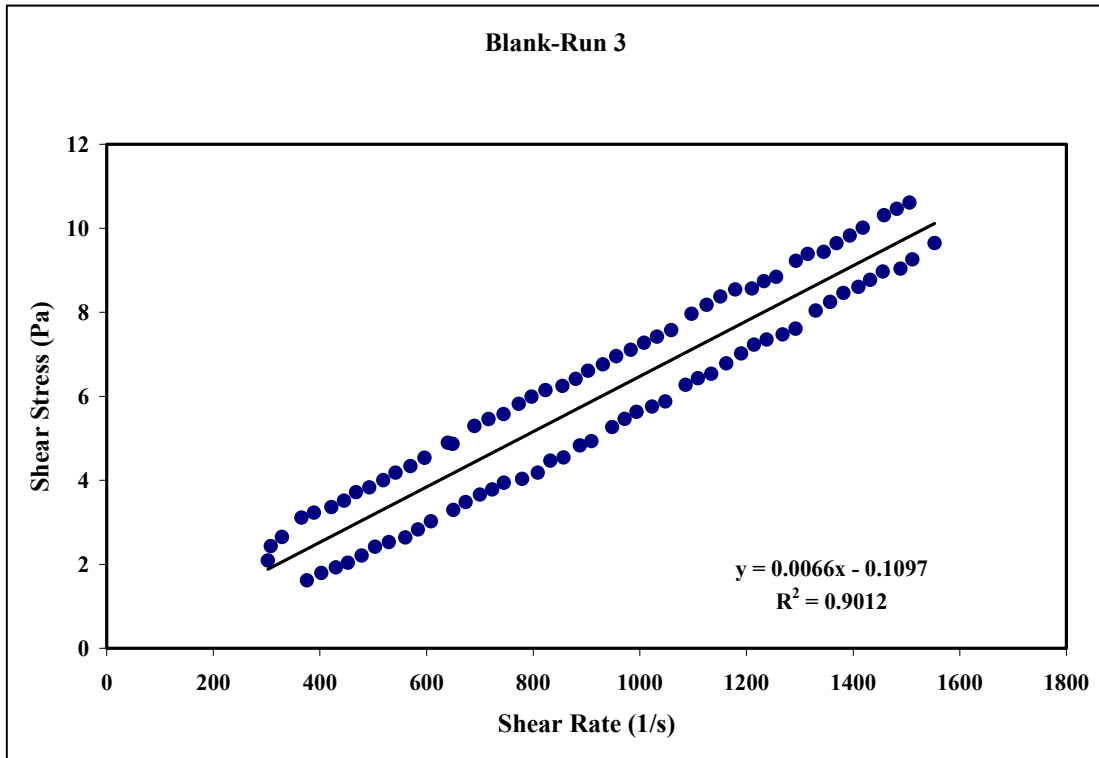


Figure 3. Blank As Received Run 3

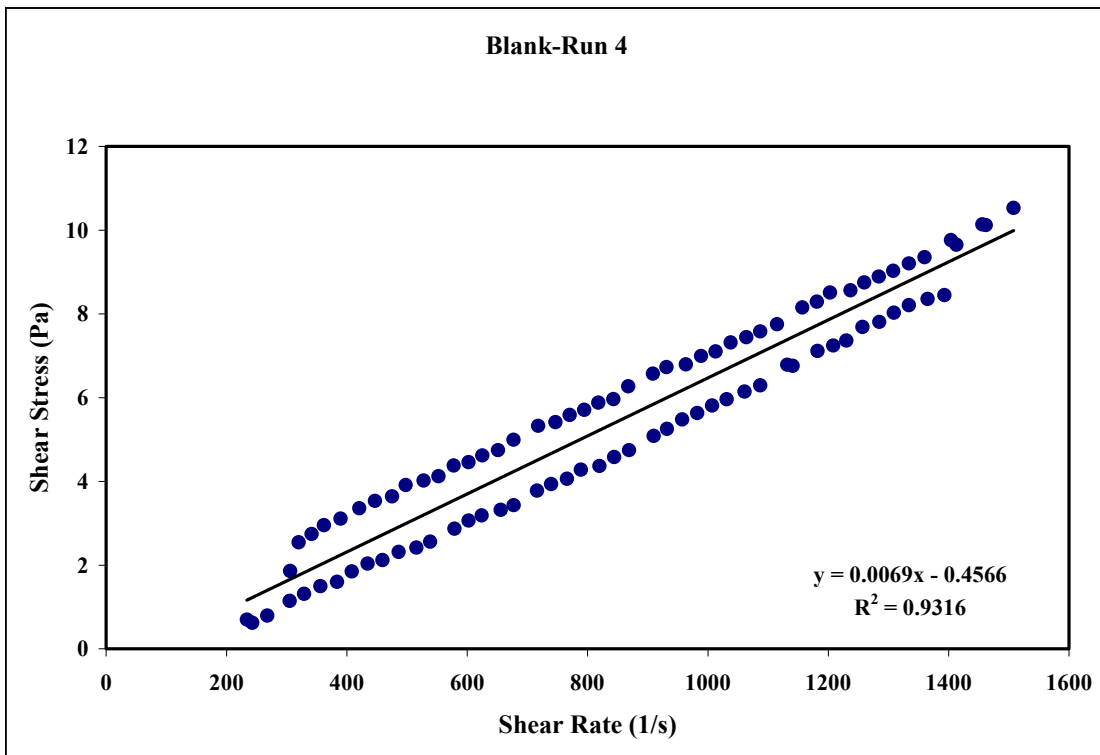


Figure 4. Blank As Received Run 4

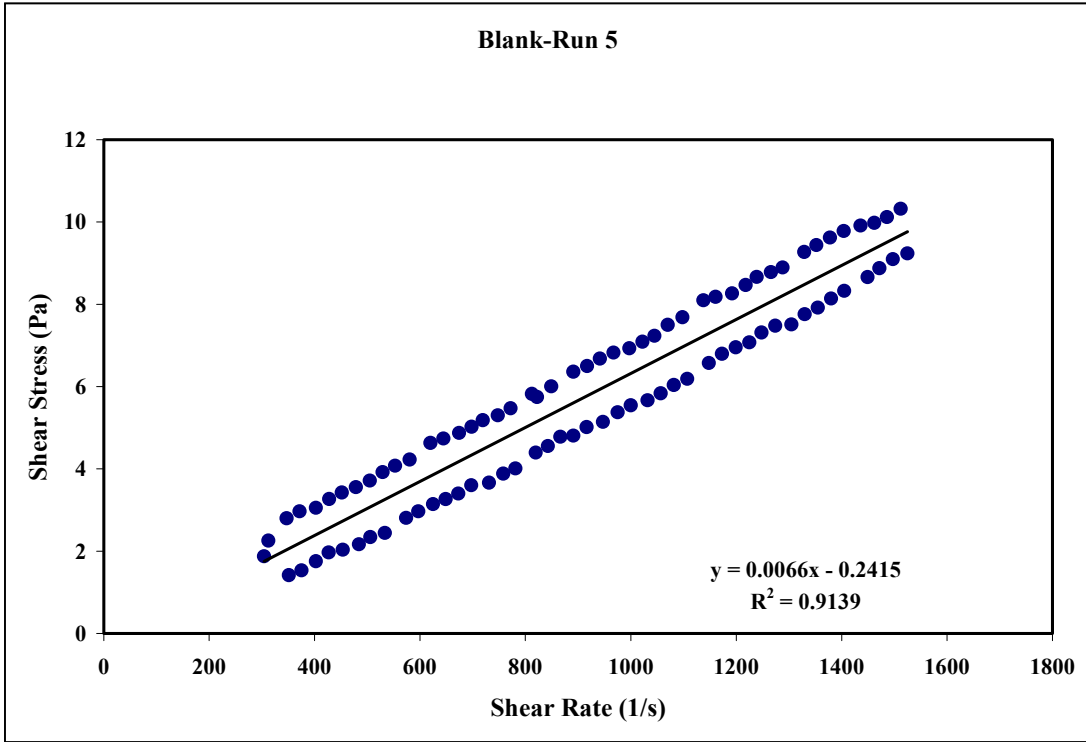


Figure 5. Blank As Received Run 5

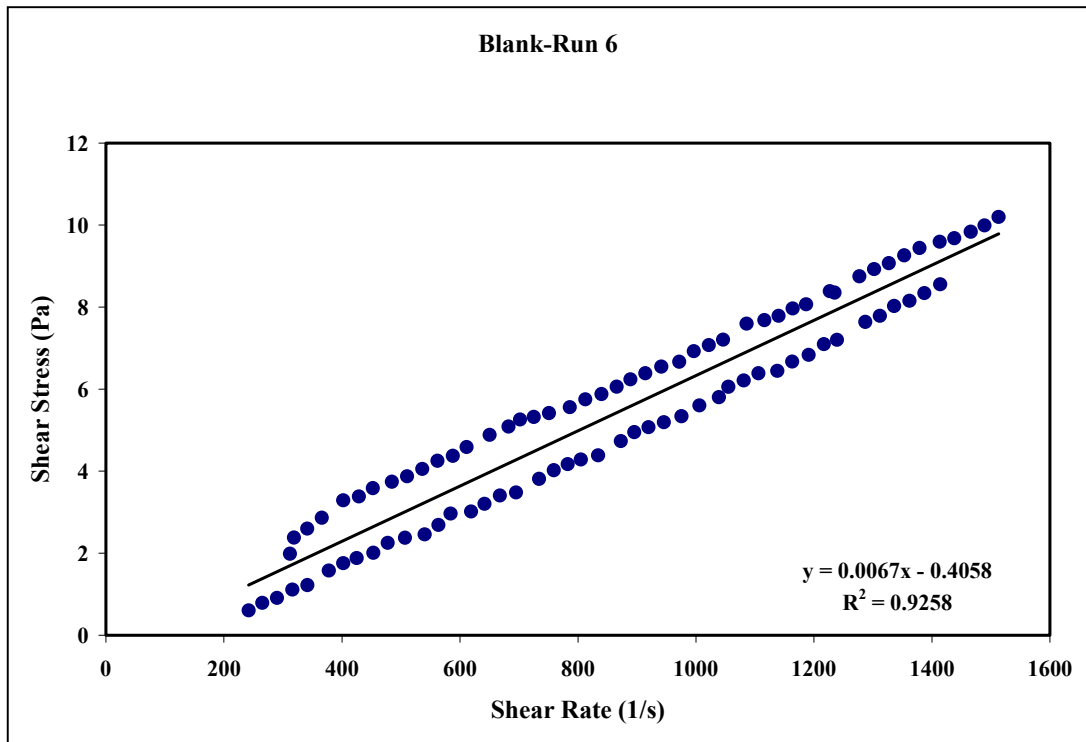


Figure 6. Blank As Received Run 6

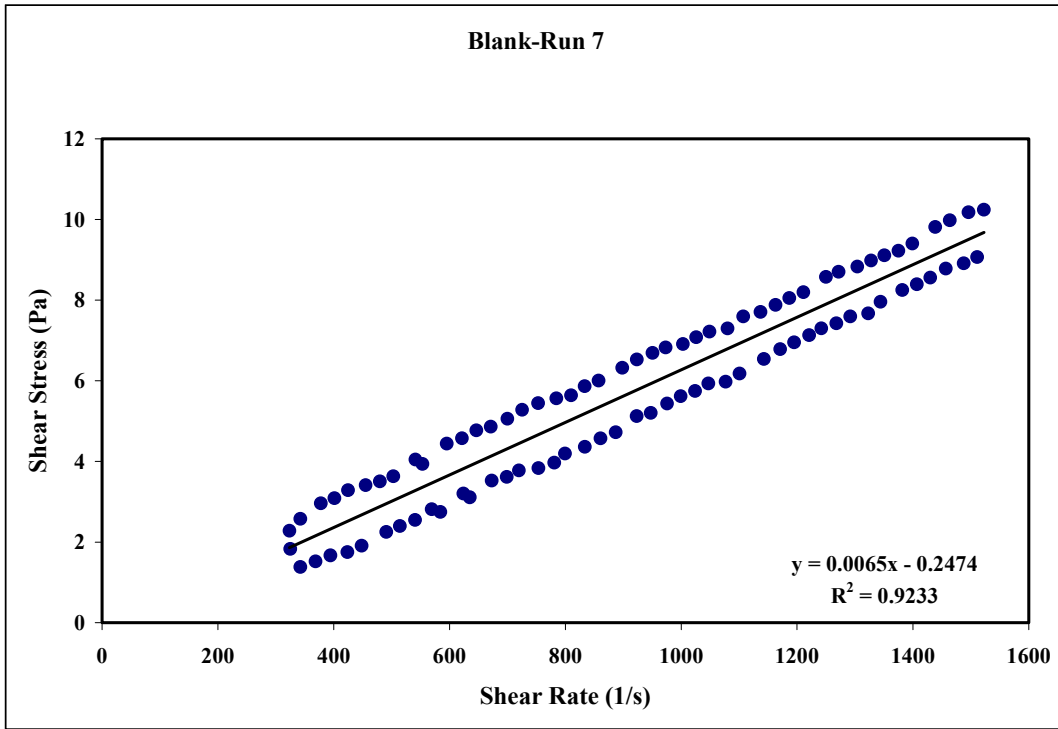


Figure 7. Blank As Received Run 7

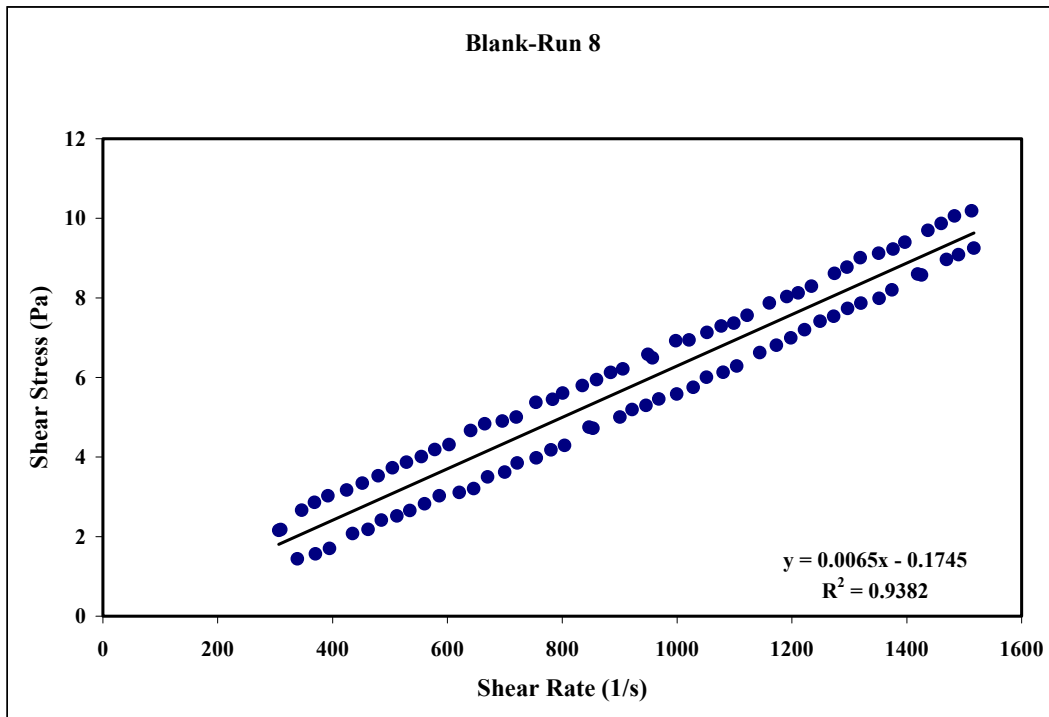


Figure 8. Blank As Received Run 8

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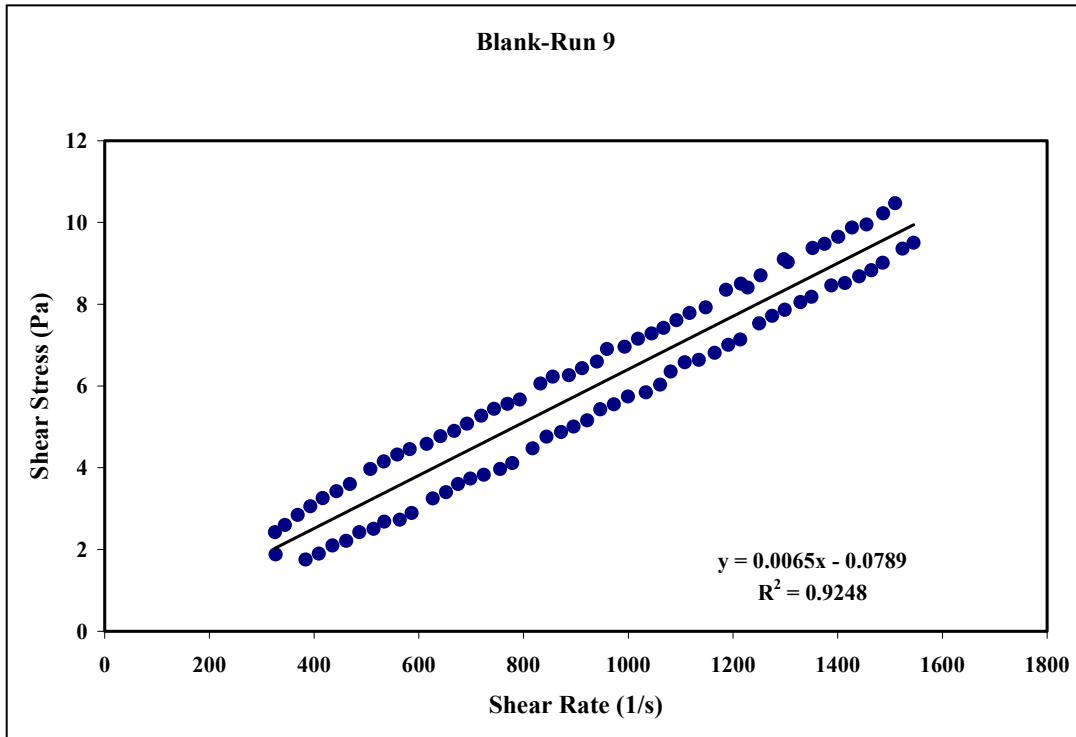


Figure 9. Blank As Received Run 9

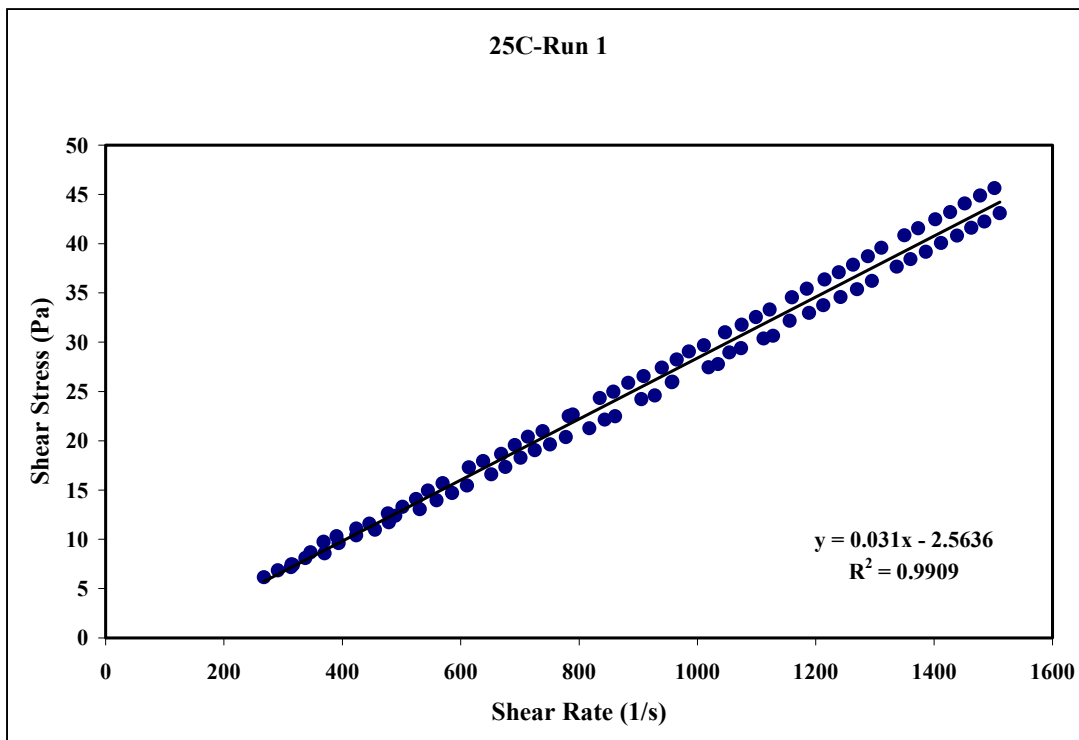


Figure 10. 25 °C As Received Run 1

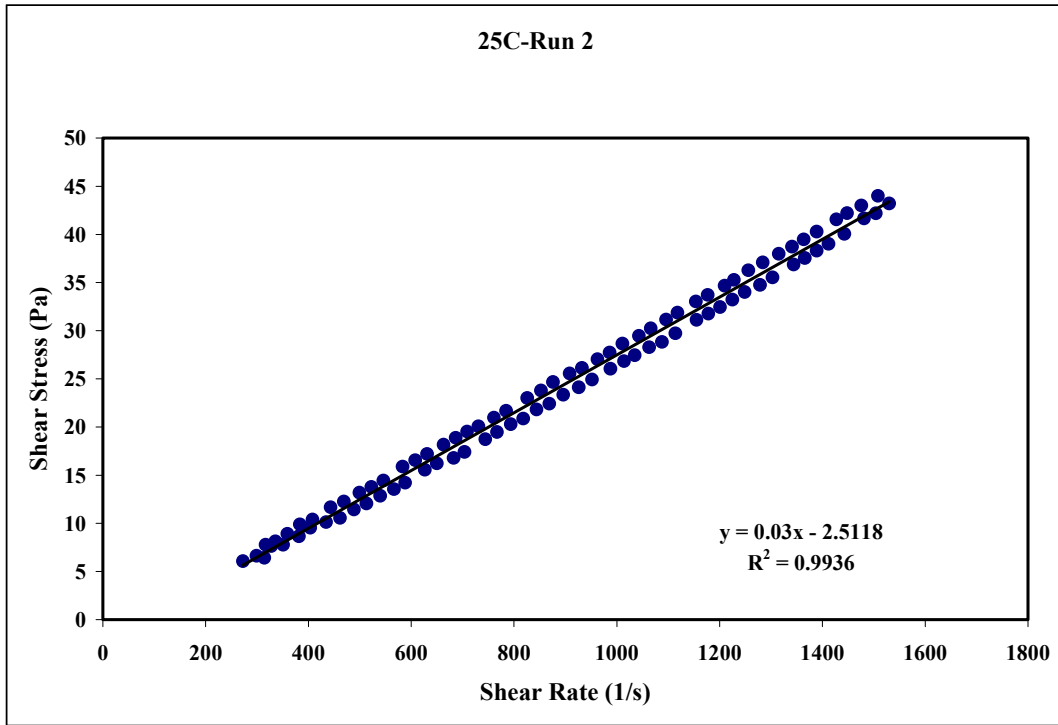


Figure 11. 25 °C As Received Run 2

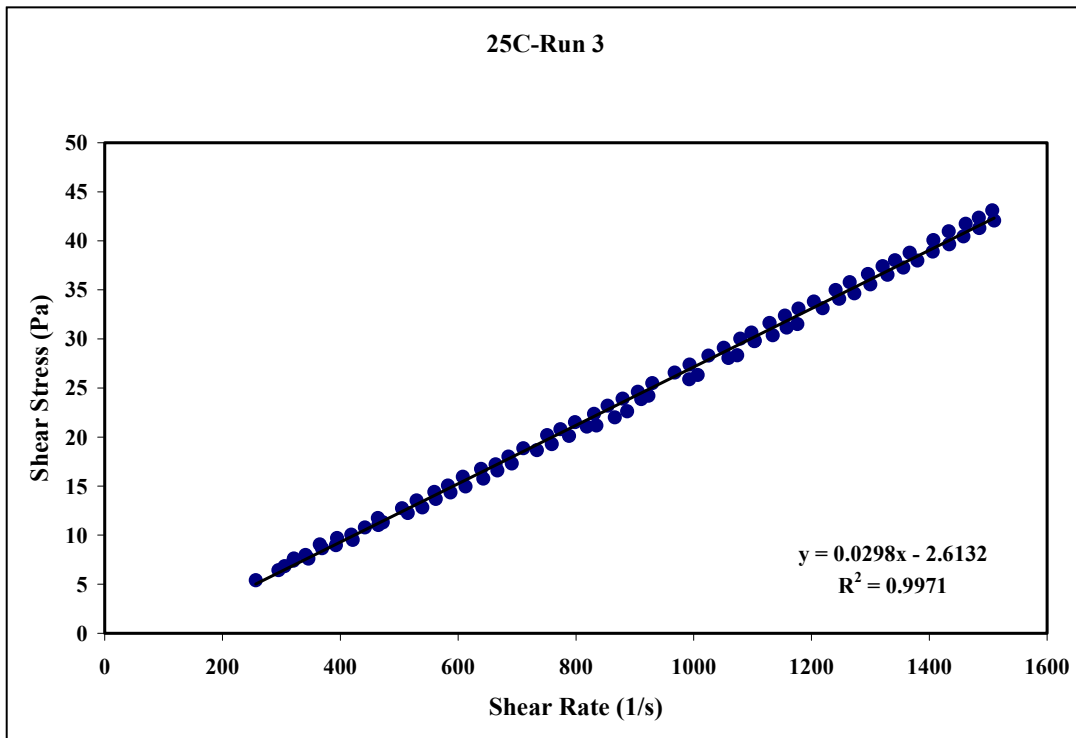


Figure 12. 25 °C As Received Run 3

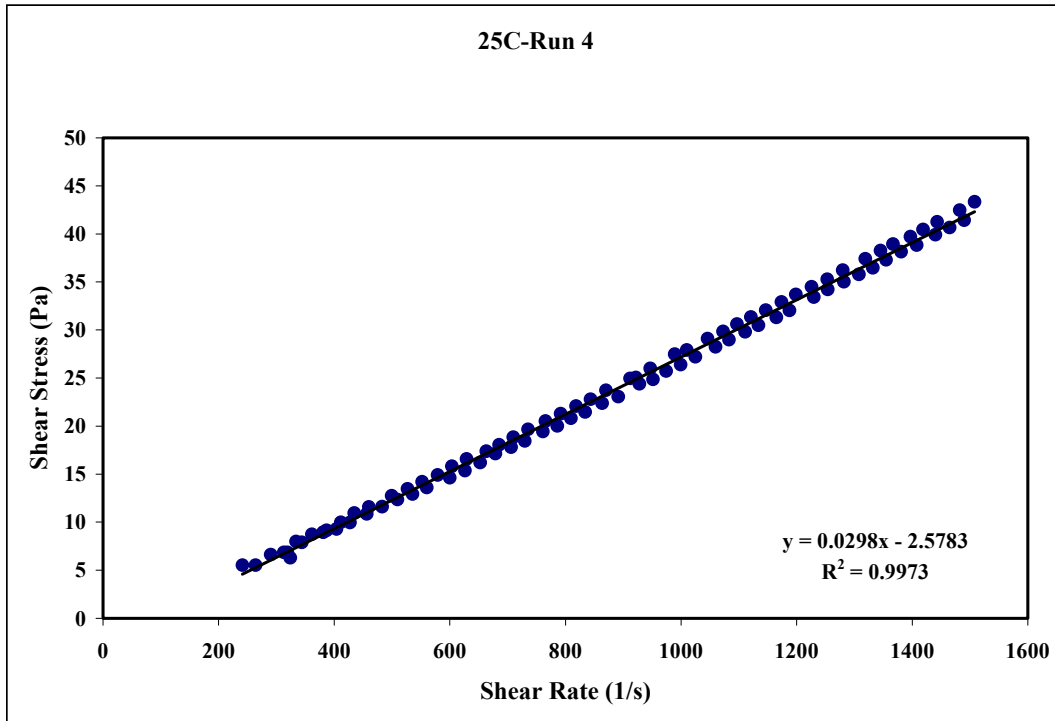


Figure 13. 25 °C As Received Run 4

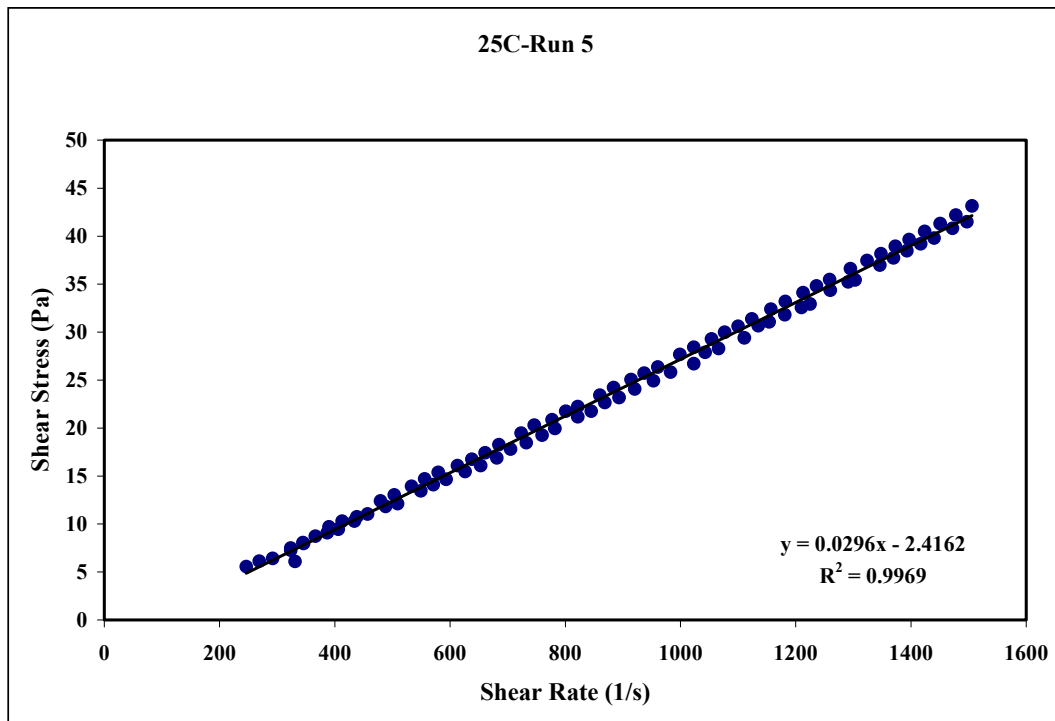


Figure 14. 25 °C As Received Run 5

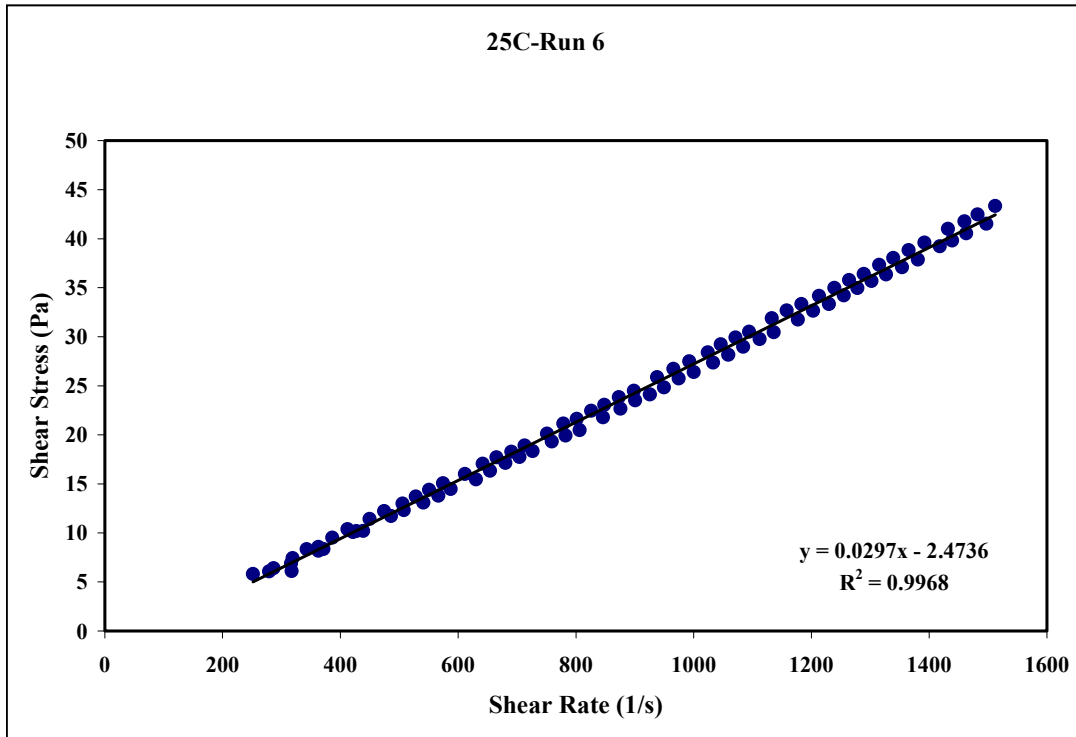


Figure 15. 25 °C As Received Run 6

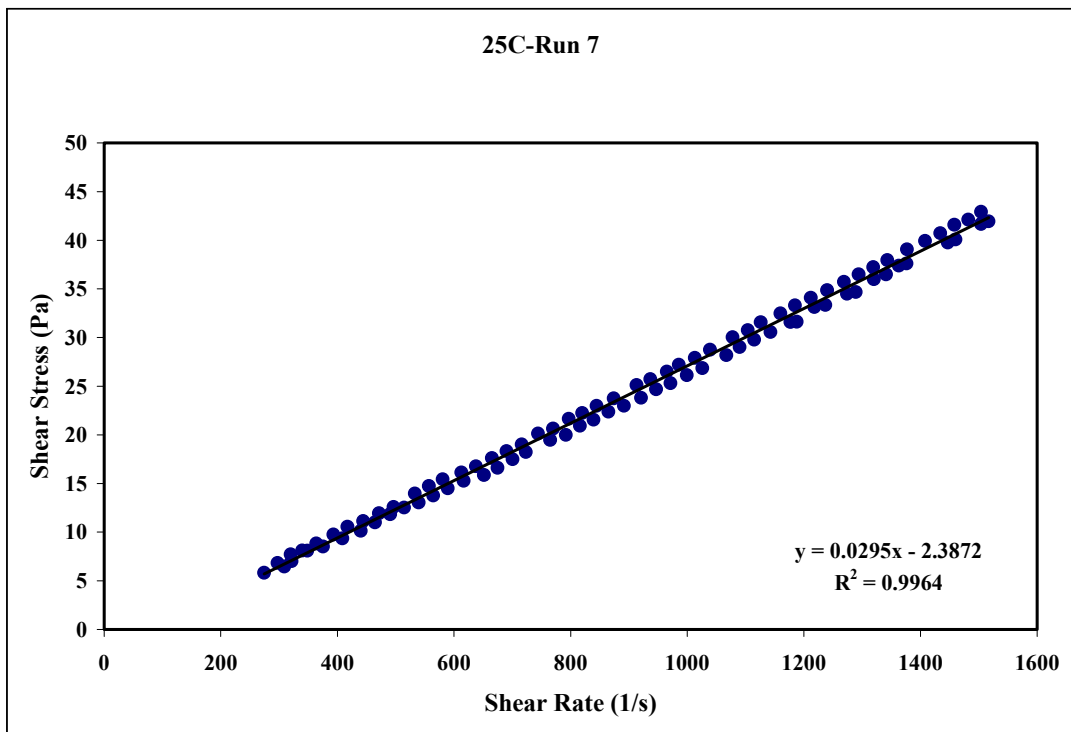


Figure 16. 25 °C As Received Run 7

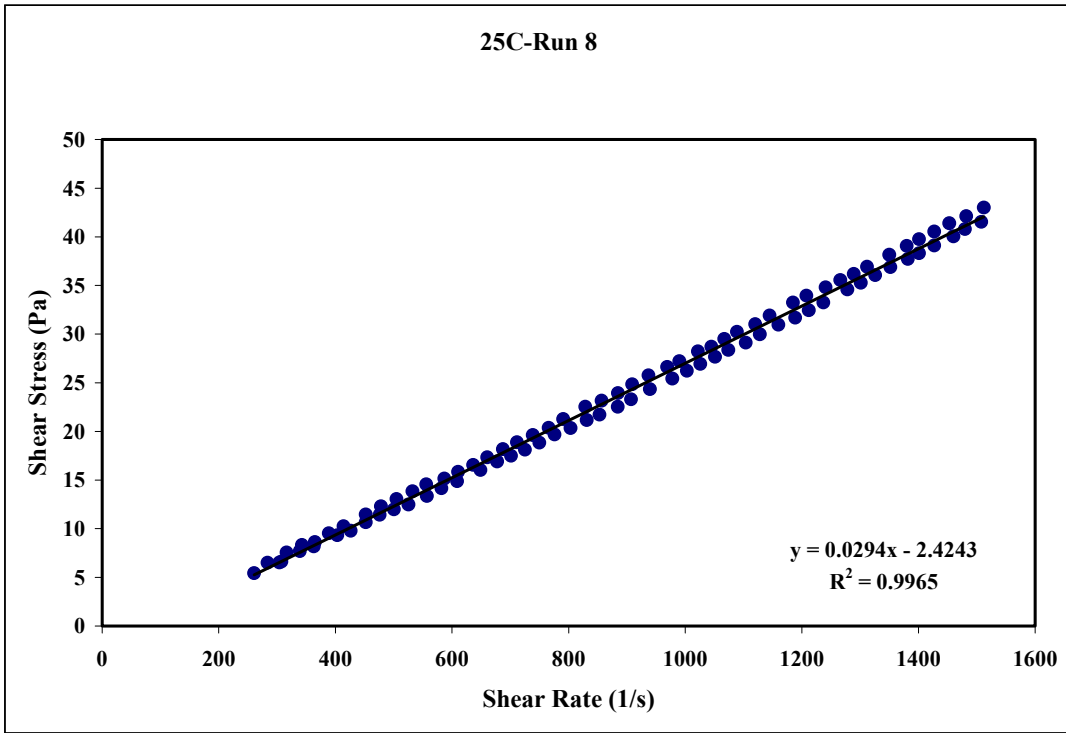


Figure 17. 25 °C As Received Run 8

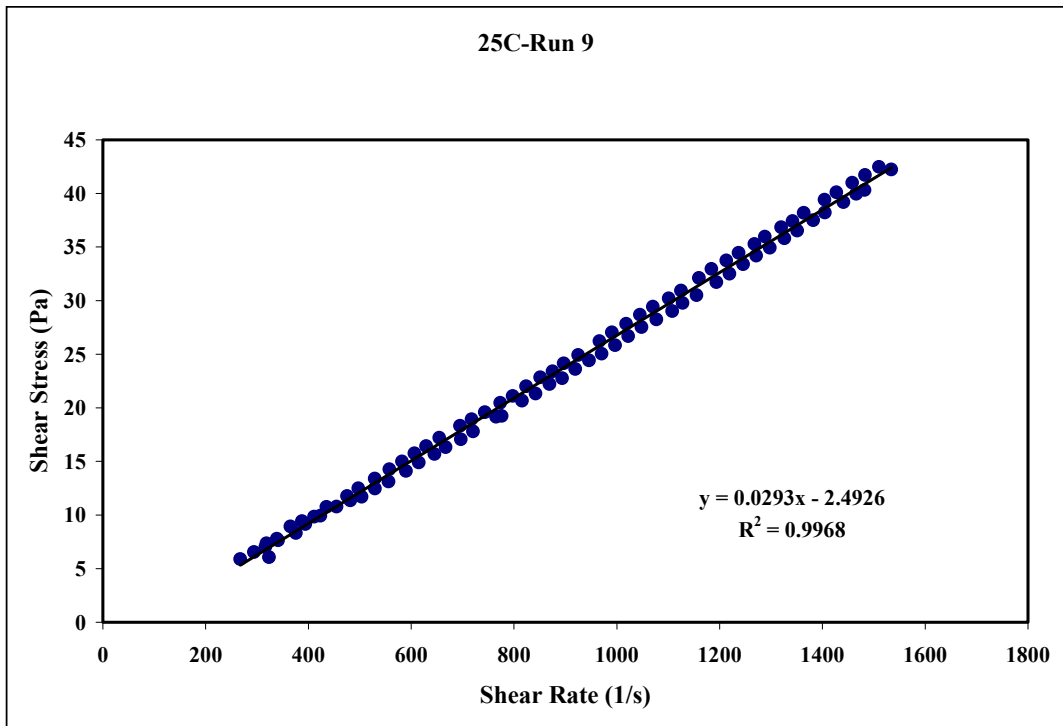


Figure 18. 25 °C As Received Run 9

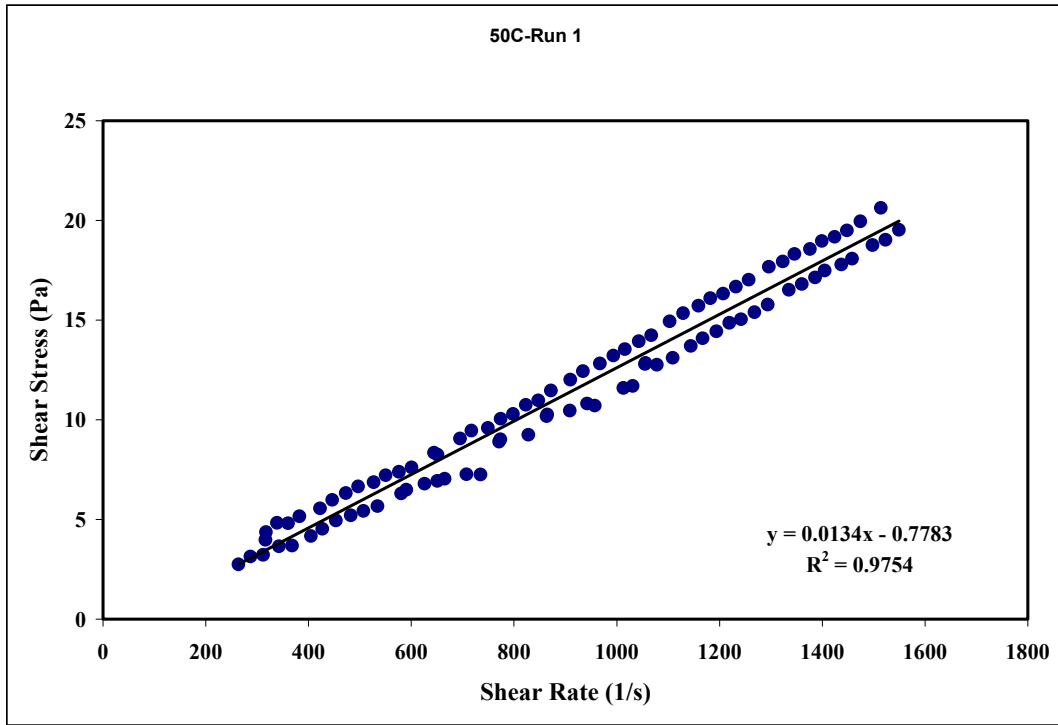


Figure 19. 50 °C As Received Run 1

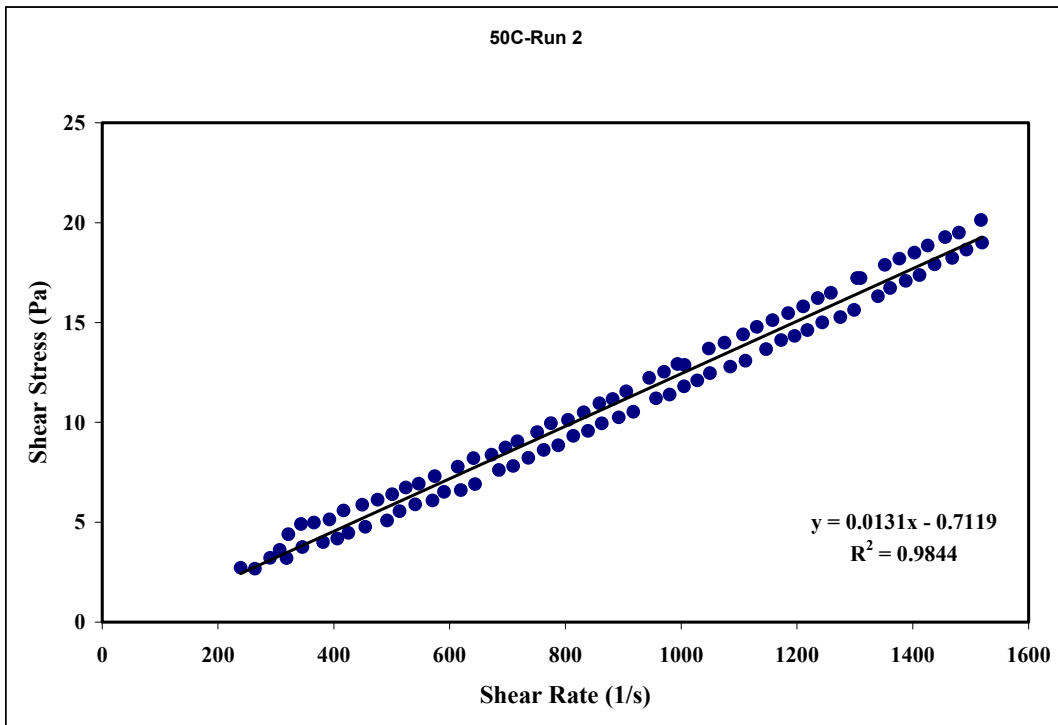


Figure 20. 50 °C As Received Run 2

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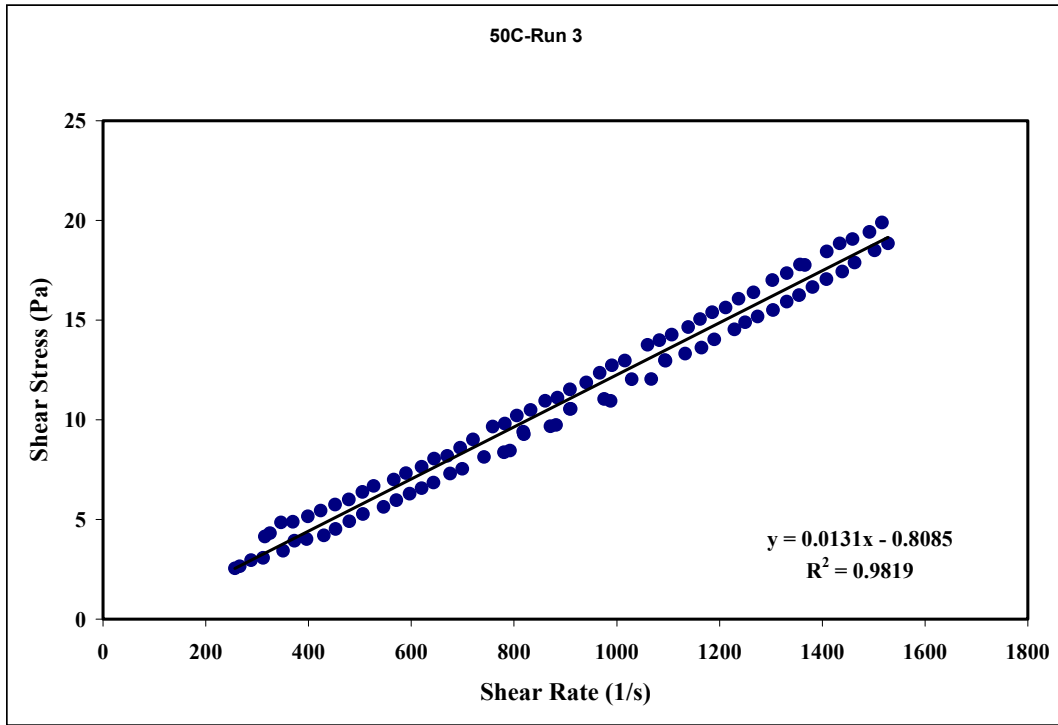


Figure 21. 50 °C As Received Run 3

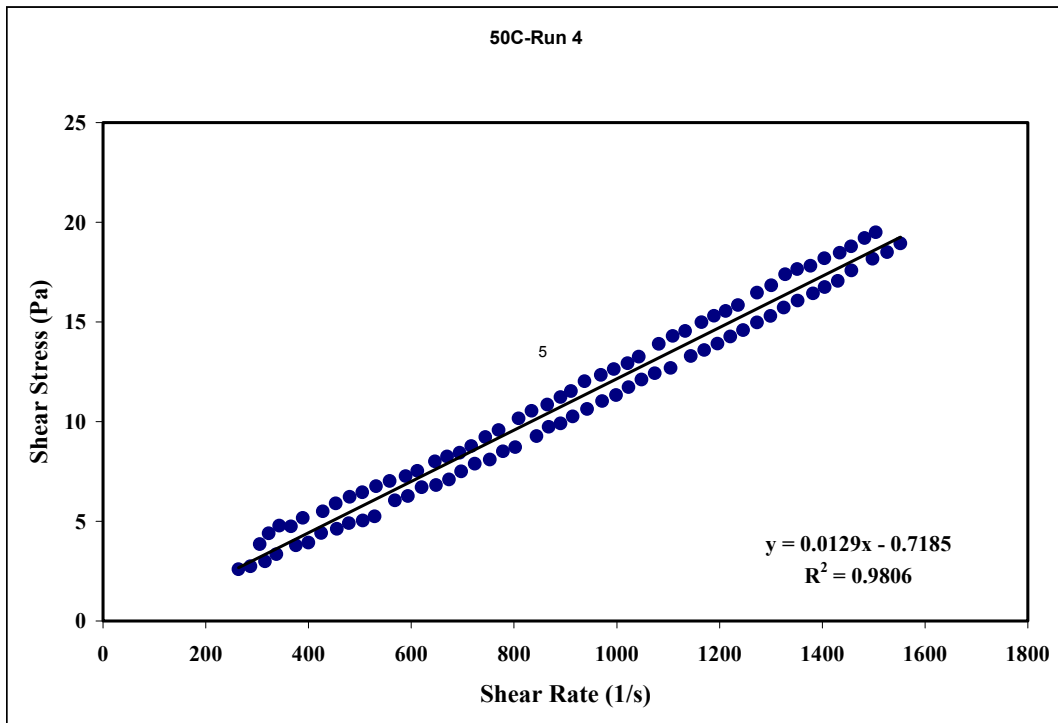


Figure 22. 50 °C As Received Run 4

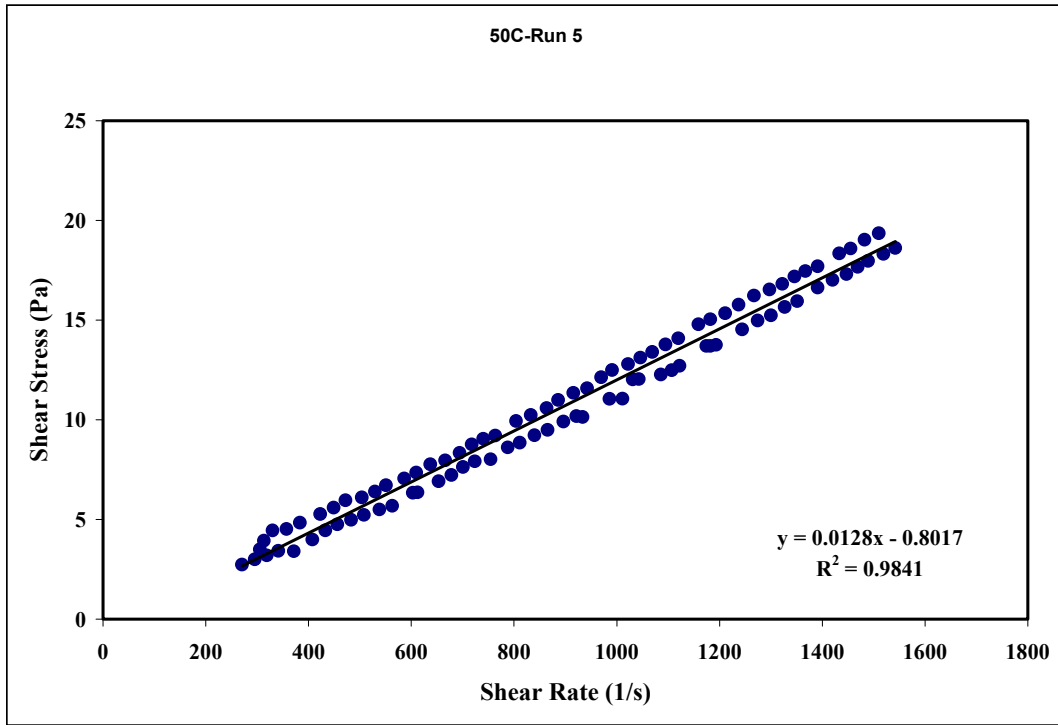


Figure 23. 50 °C As Received Run 5

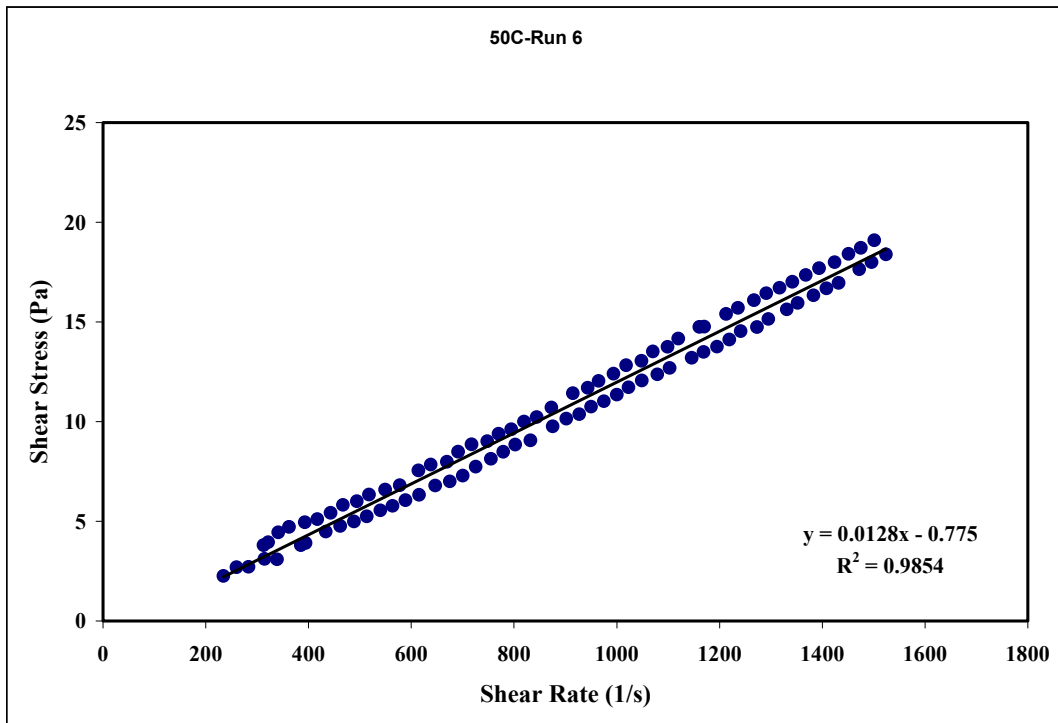


Figure 24. 50 °C As Received Run 6

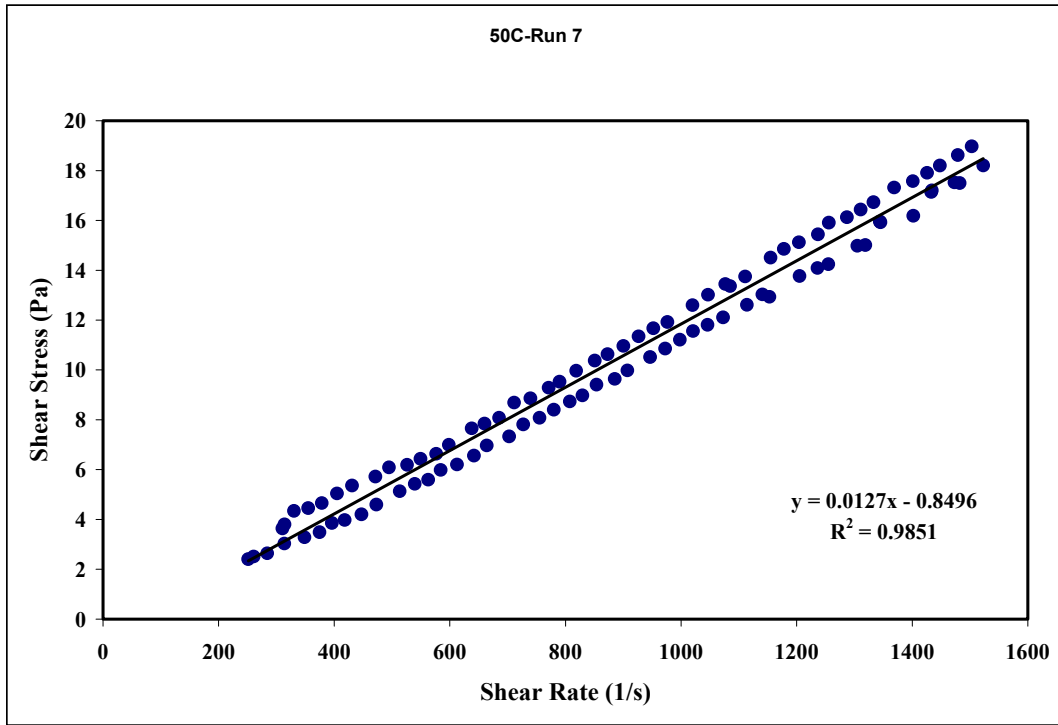


Figure 25. 50 °C As Received Run 7

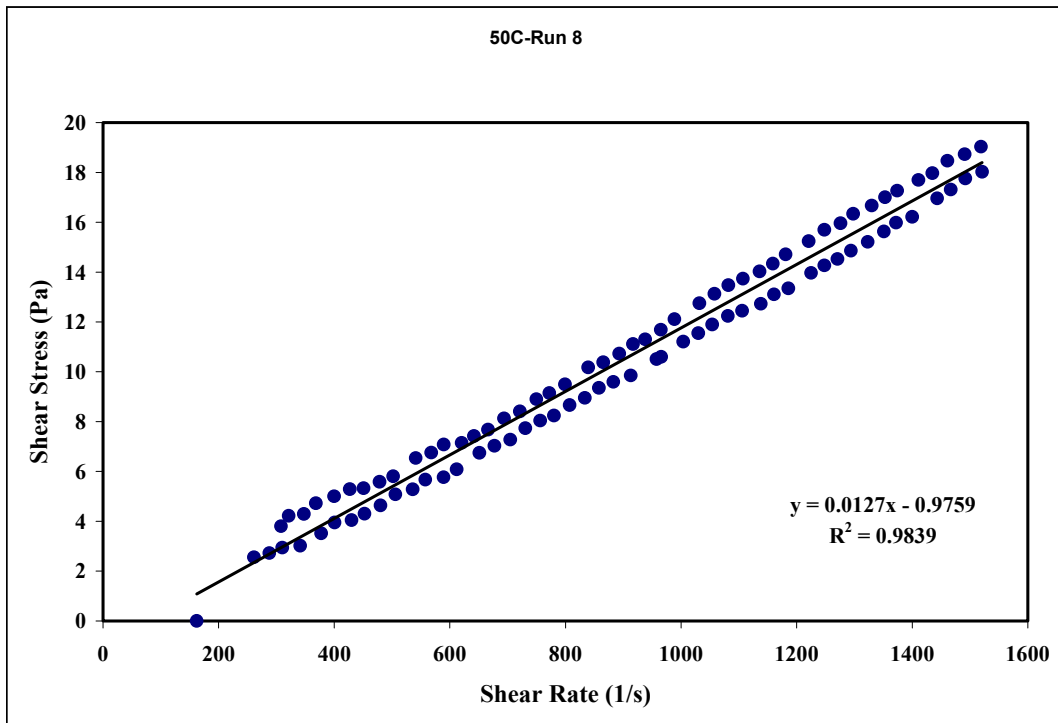


Figure 26. 50 °C As Received Run 8

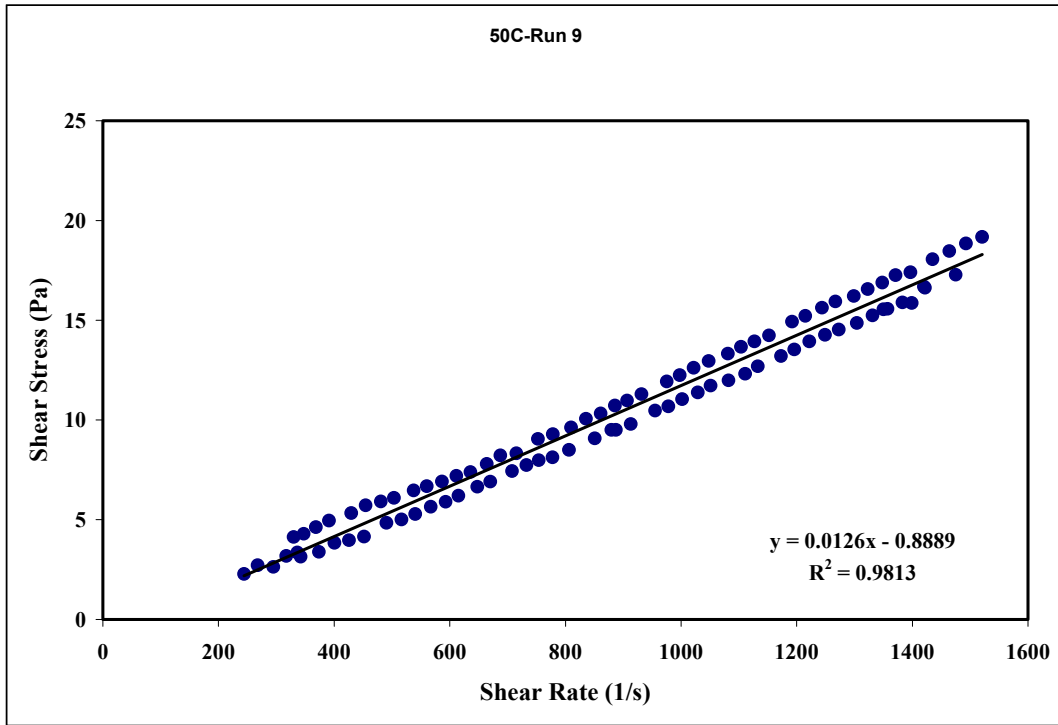


Figure 27. 50 °C As Received Run 9

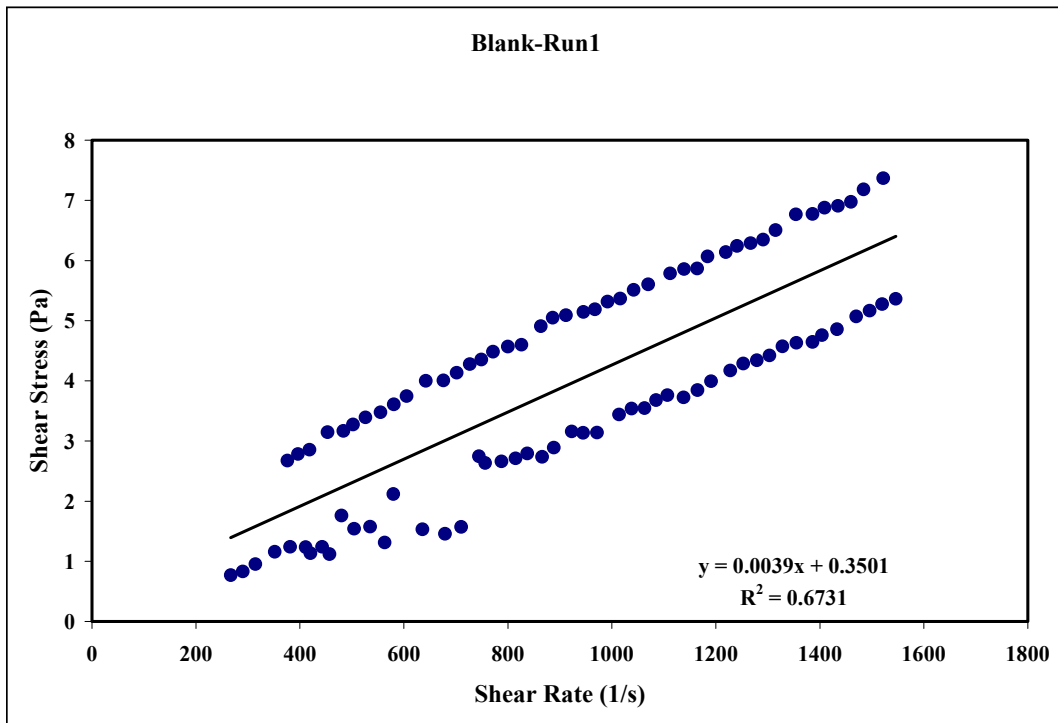


Figure 28. Blank Diluted Run 1

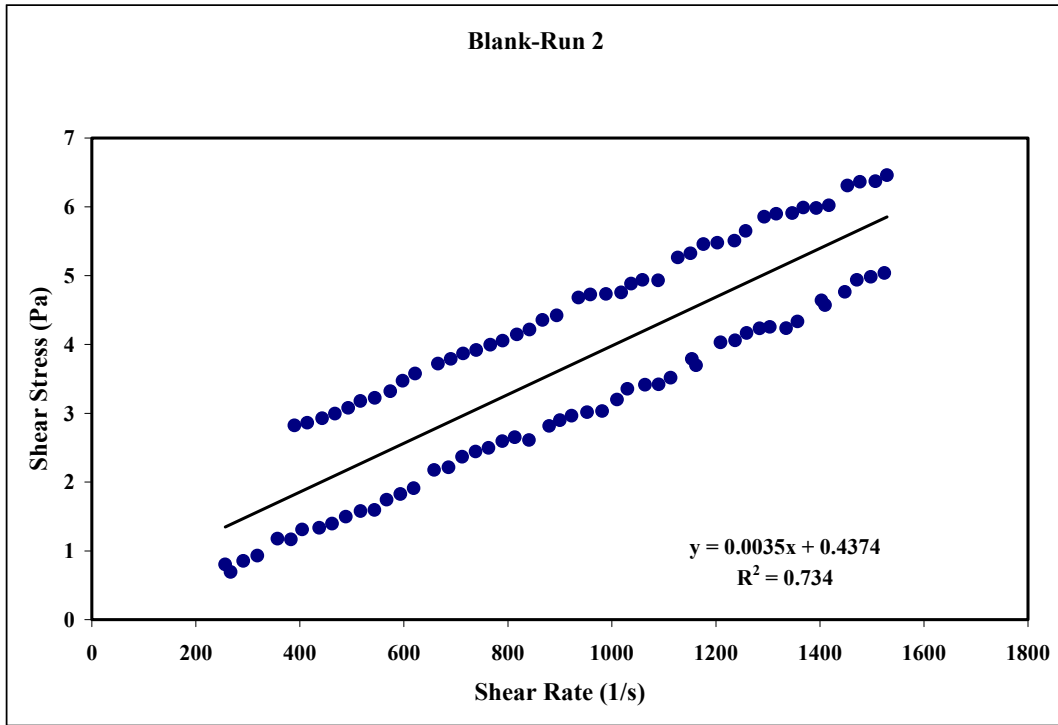


Figure 29. Blank Diluted Run 2

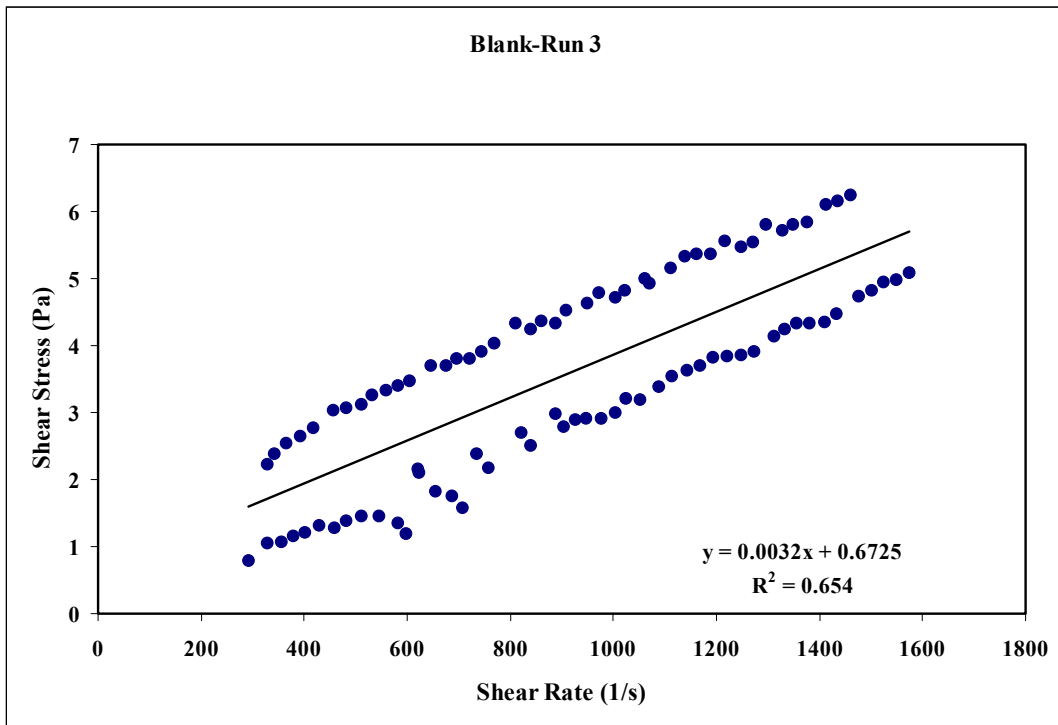


Figure 30. Blank Diluted Run 3

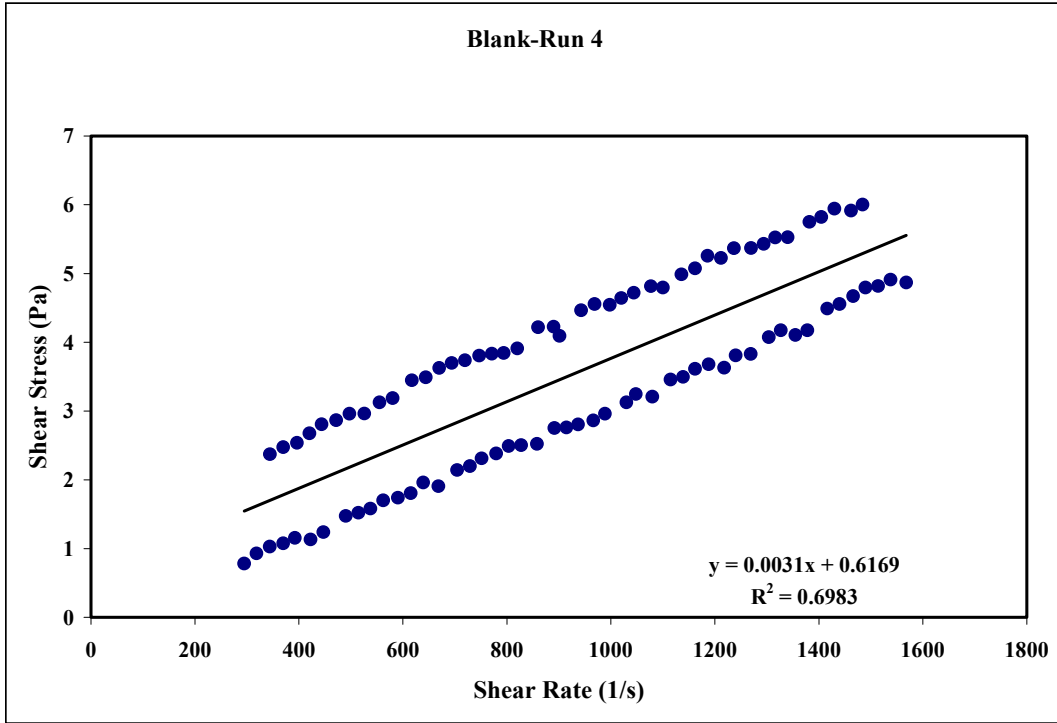


Figure 31. Blank Diluted Run 4

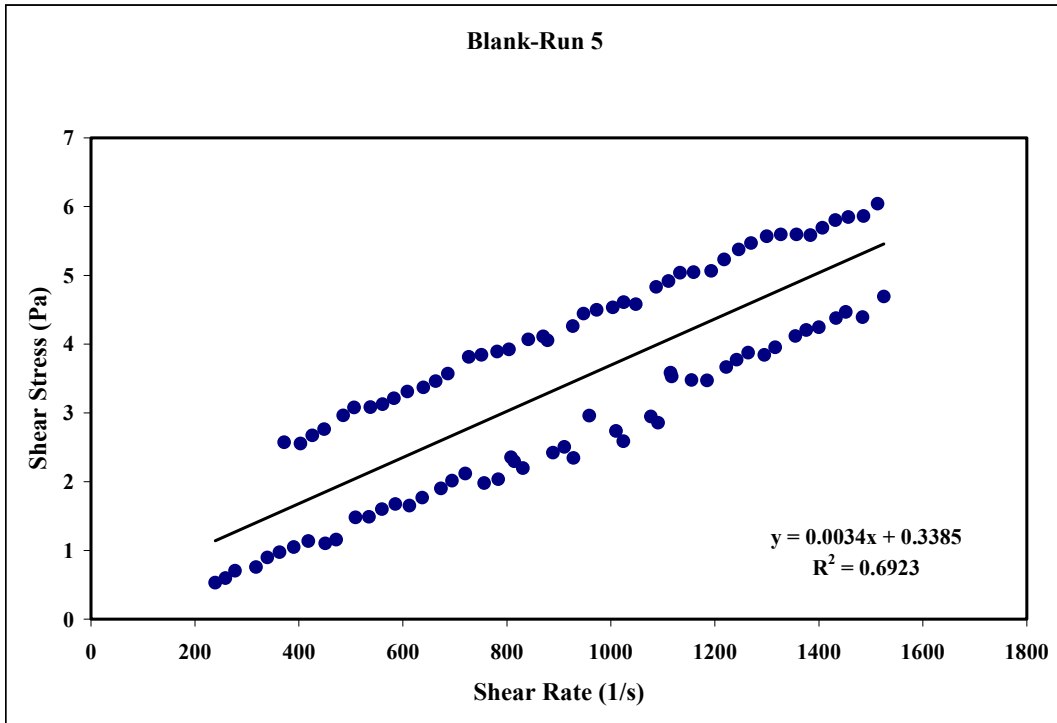


Figure 32. Blank Diluted Run 5

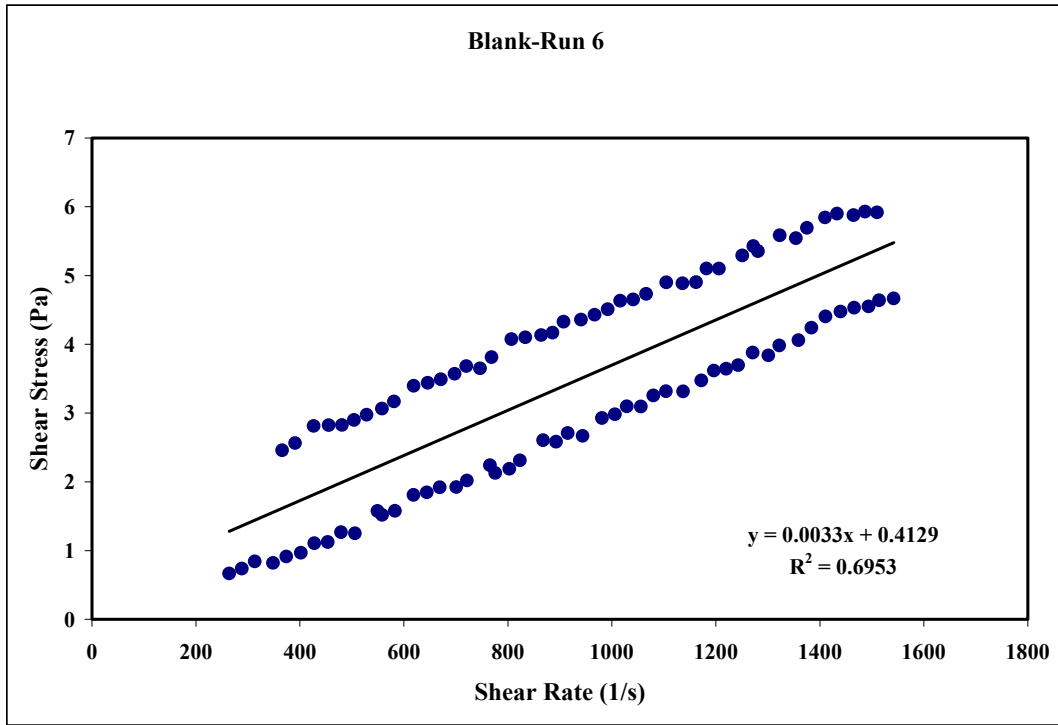


Figure 33. Blank Diluted Run 6

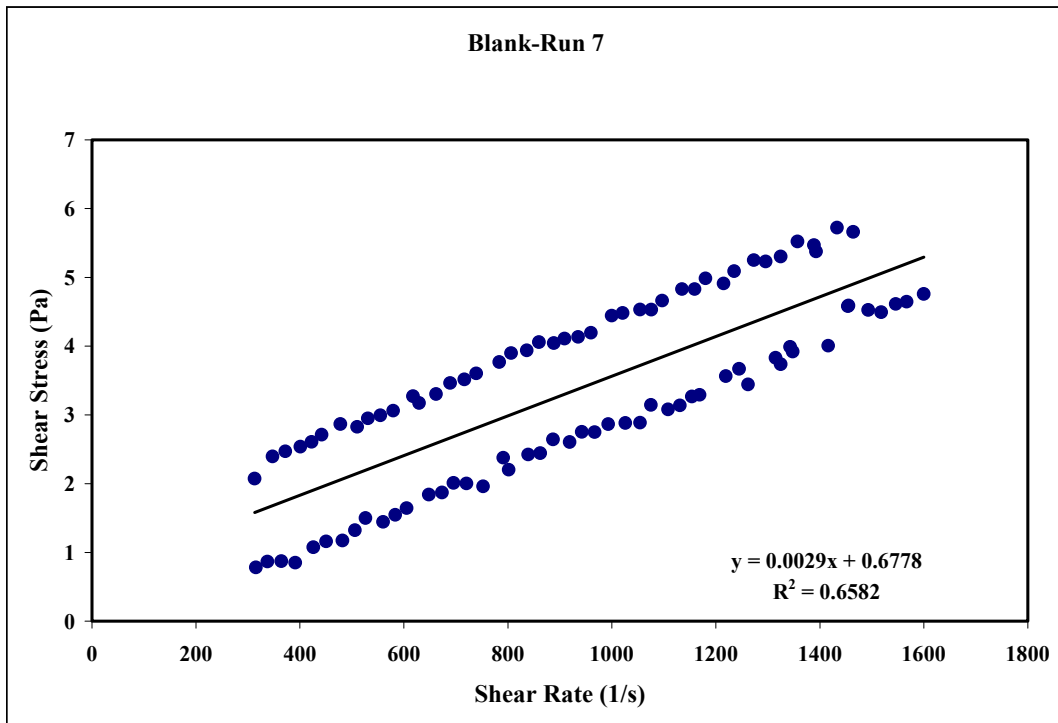


Figure 34. Blank Diluted Run 7

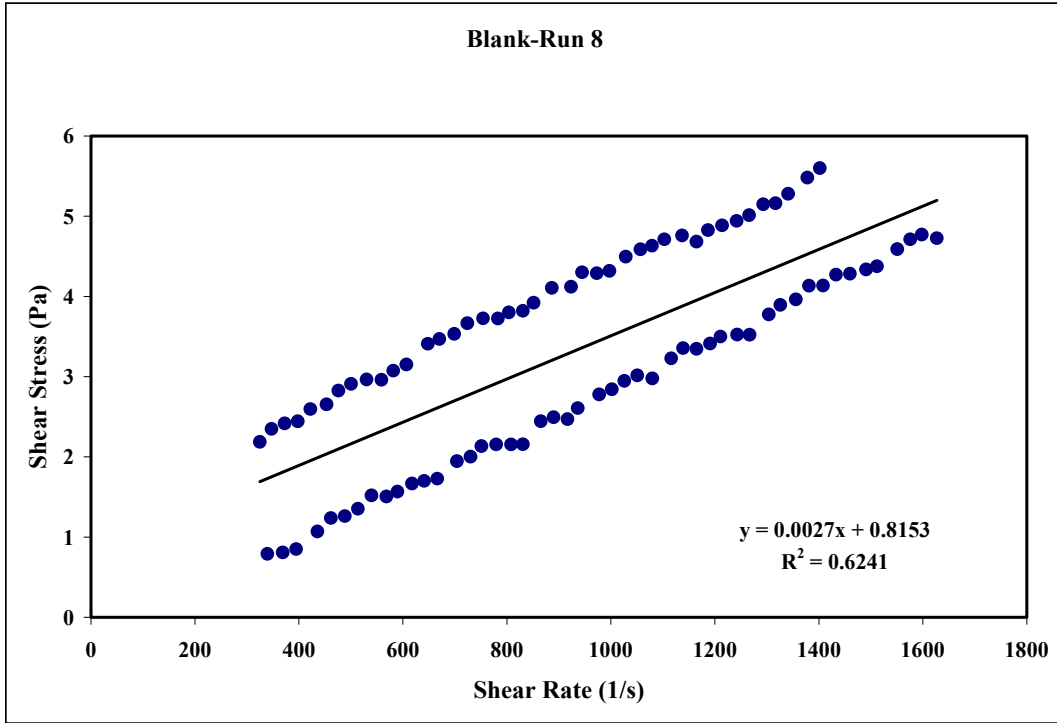


Figure 35. Blank Diluted Run 8

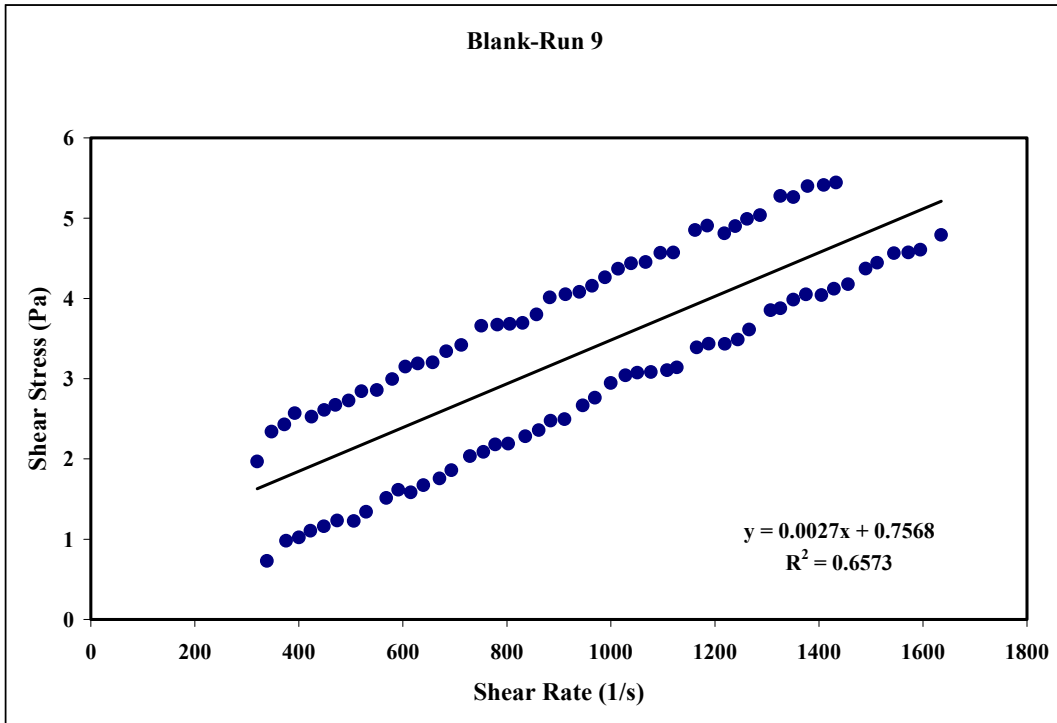


Figure 36. Blank Diluted Run 9

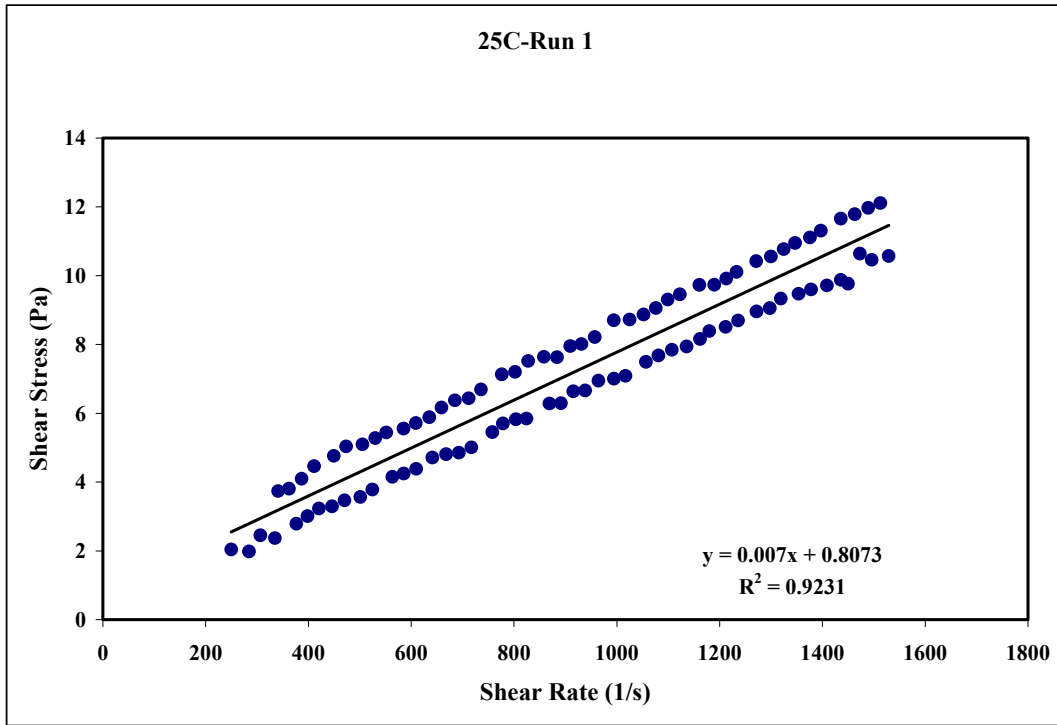


Figure 37. 25 °C Diluted Run 1

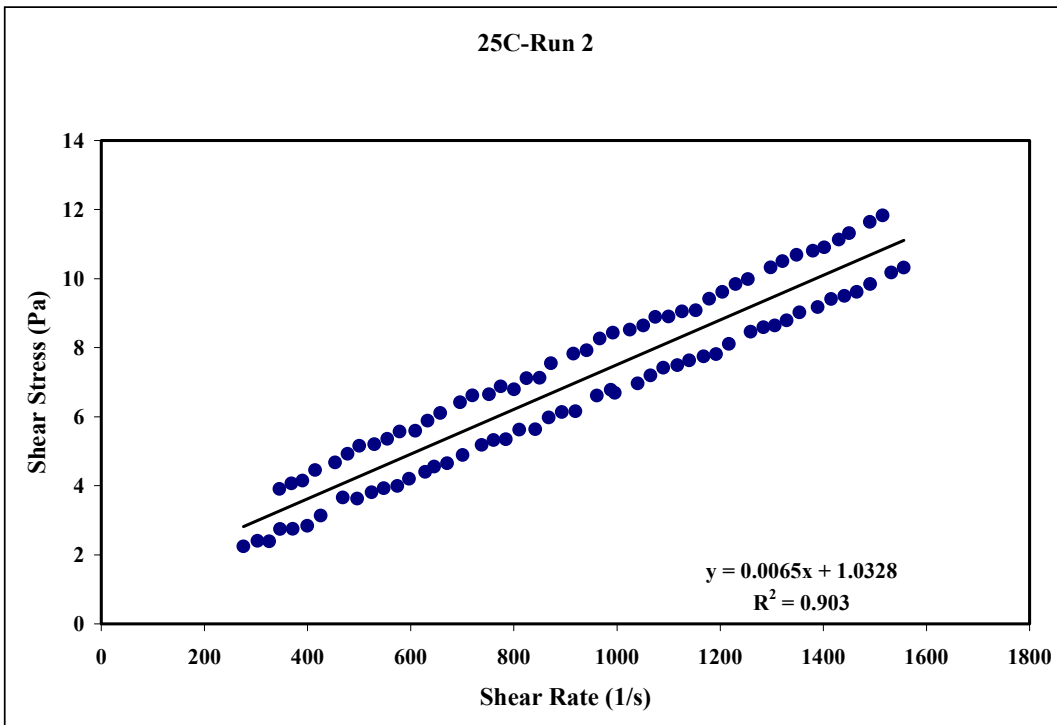


Figure 38. 25 °C Diluted Run 2

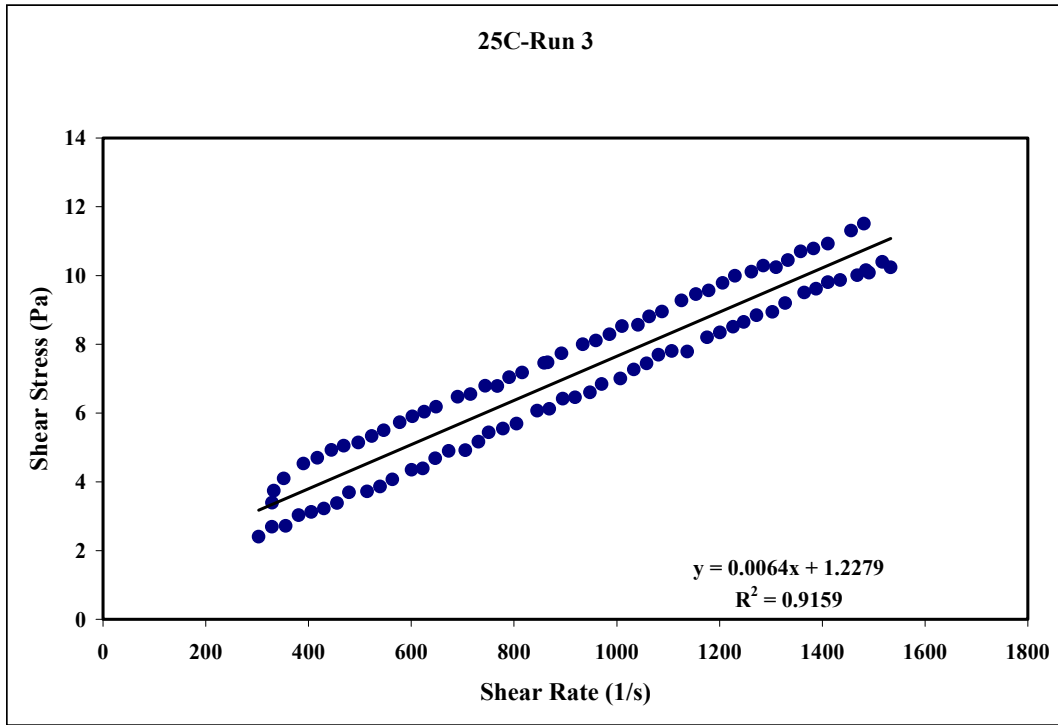


Figure 39. 25 °C Diluted Run 3

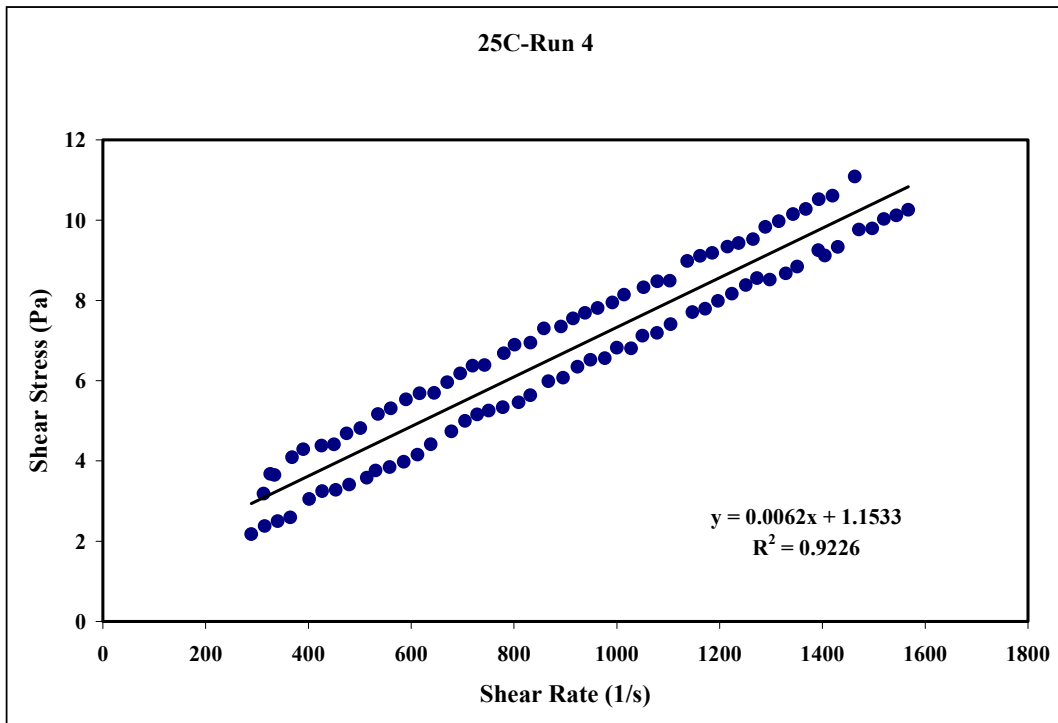


Figure 40. 25 °C Diluted Run 4

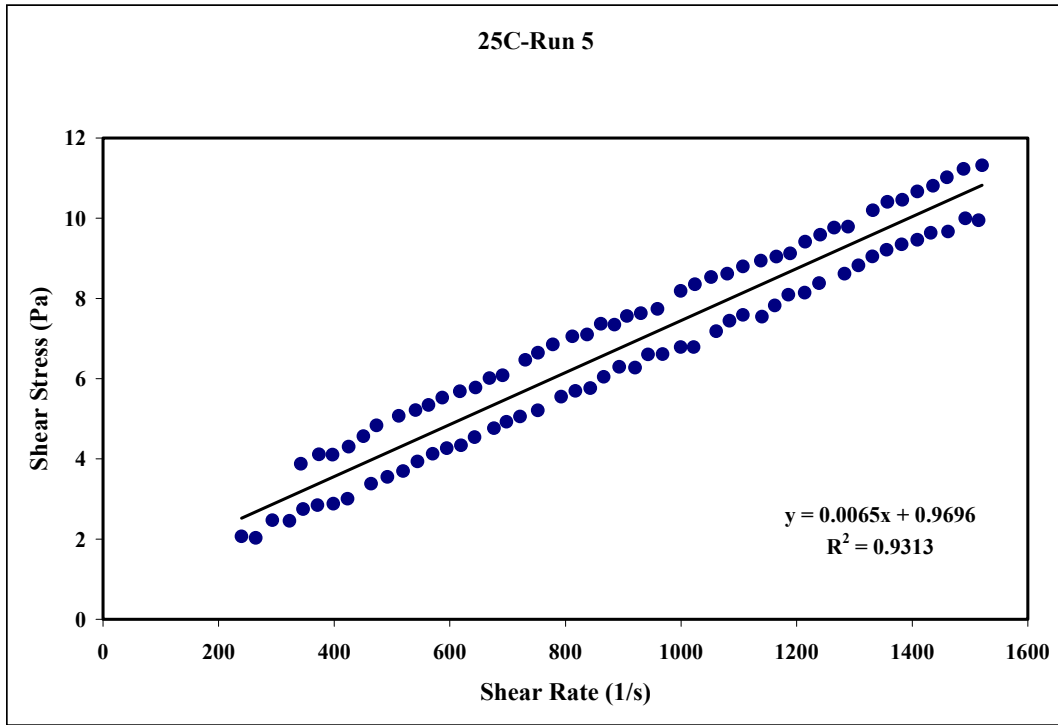


Figure 41. 25 °C Diluted Run 5

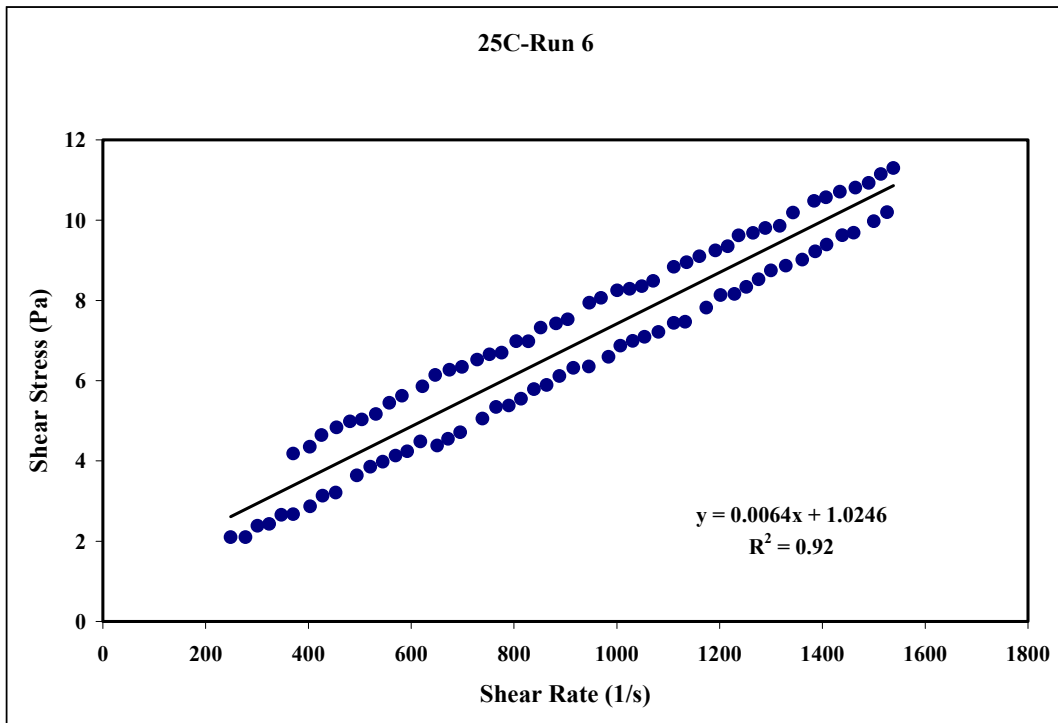


Figure 42. 25 °C Diluted Run 6

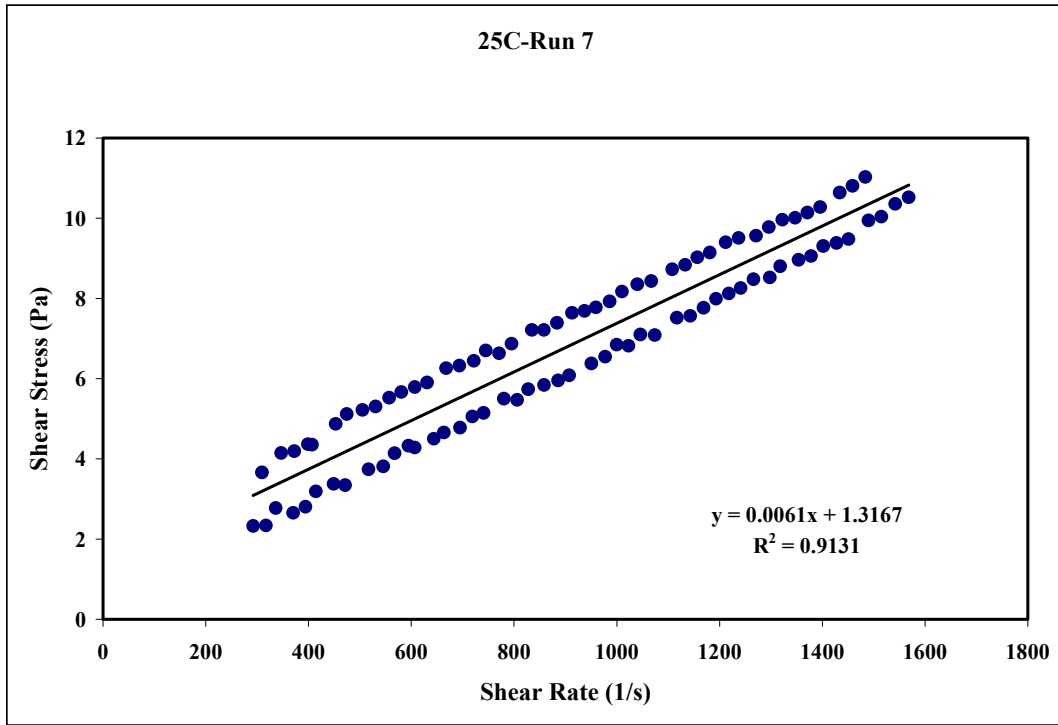


Figure 43. 25 °C Diluted Run 7

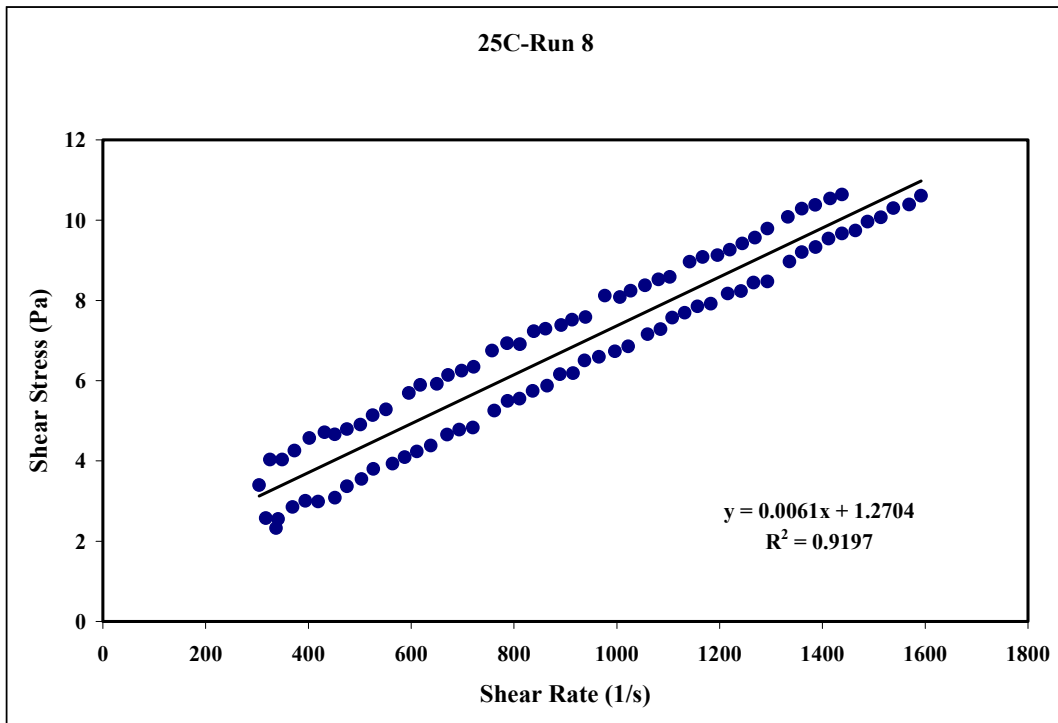


Figure 44. 25 °C Diluted Run 8

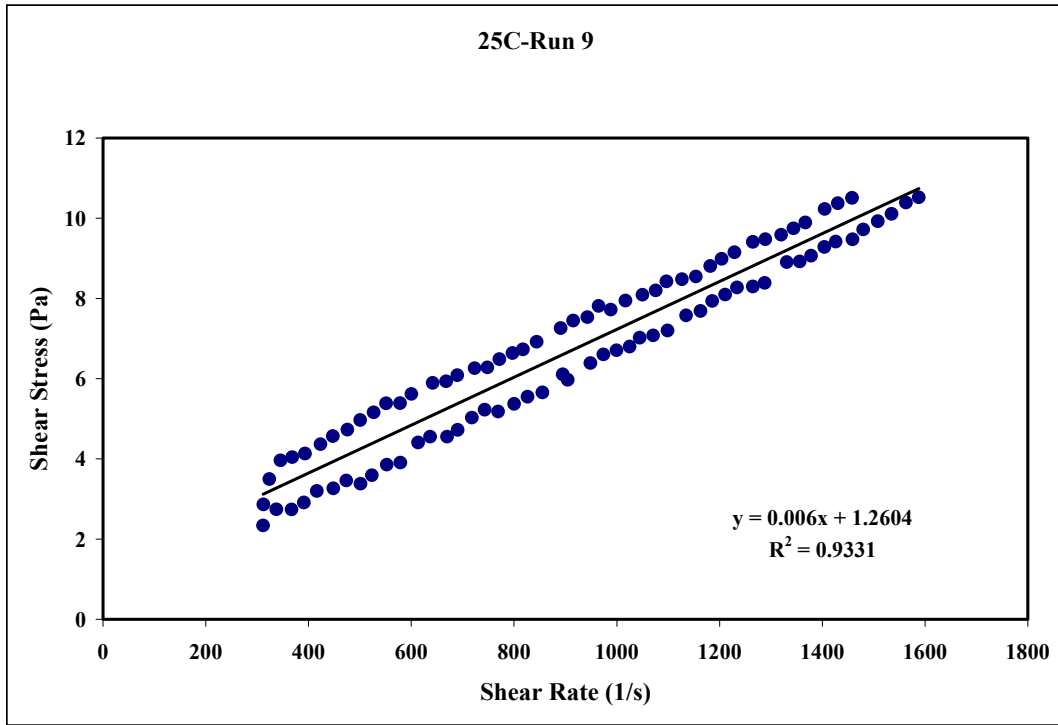


Figure 45. 25 °C Diluted Run 9

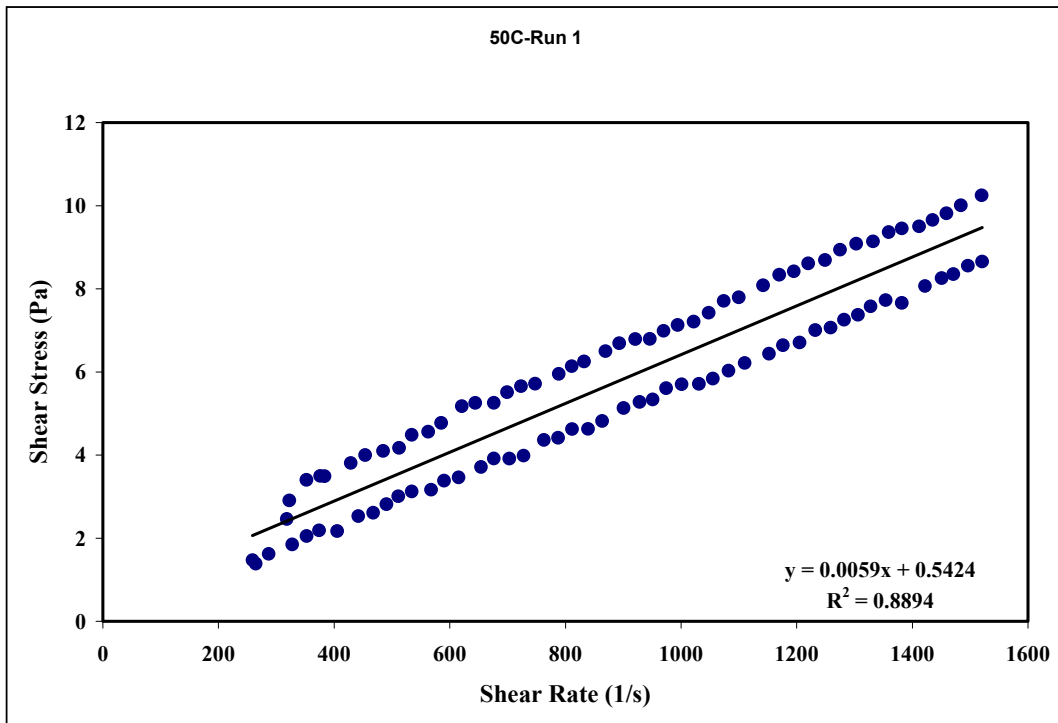


Figure 46. 50 °C Diluted Run 1

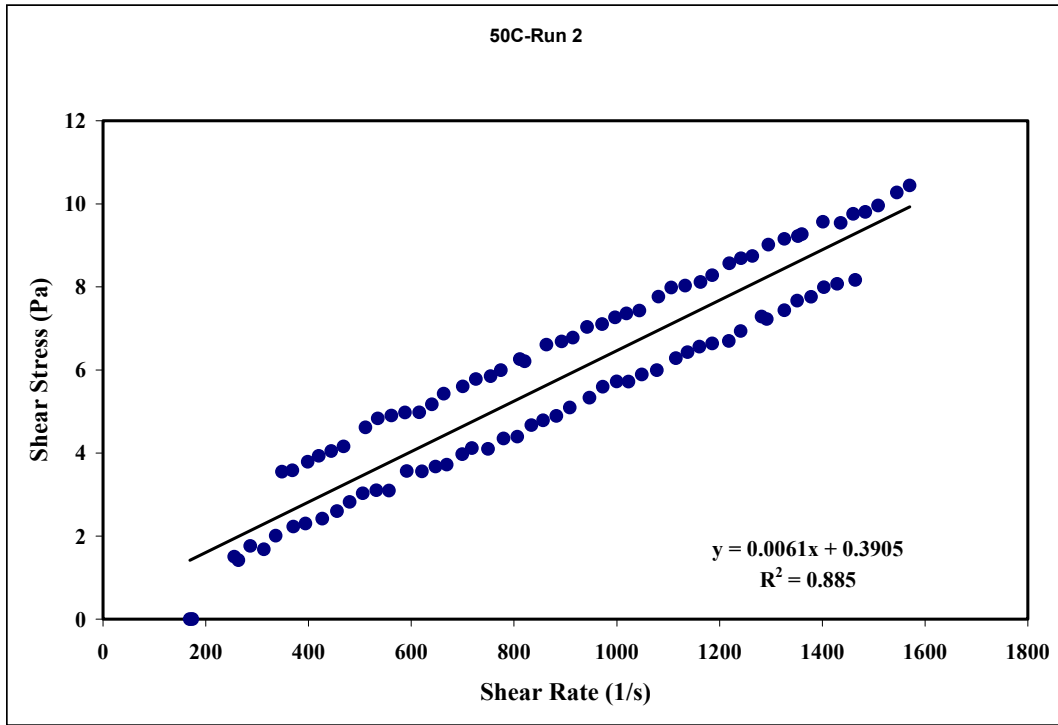


Figure 47. 50 °C Diluted Run 2

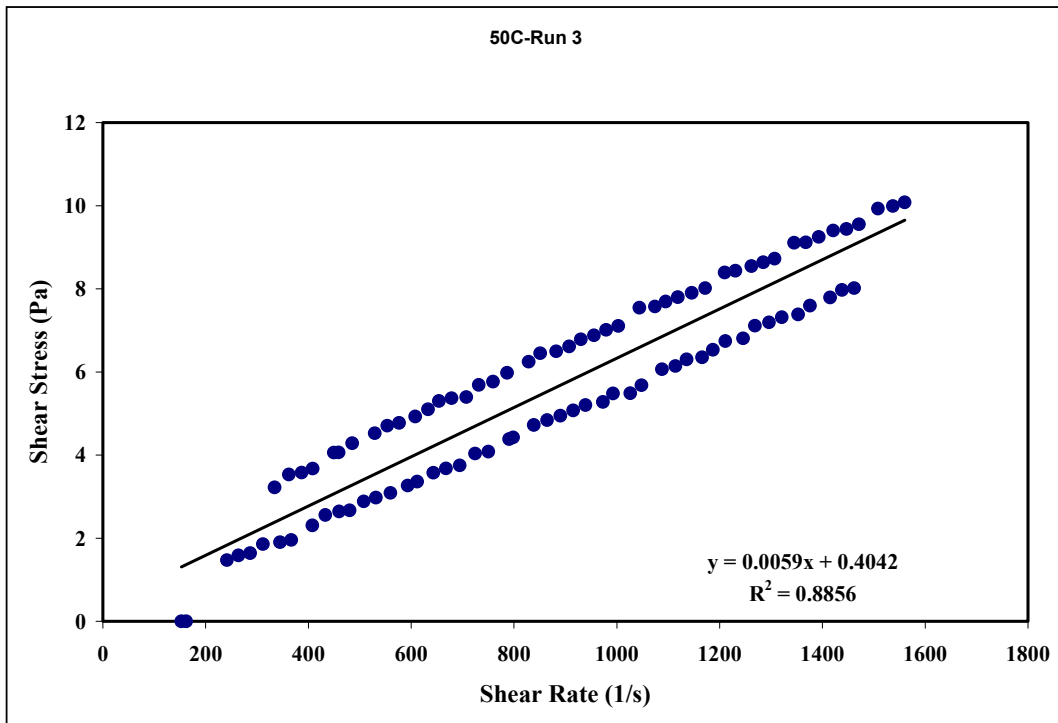


Figure 48. 50 °C Diluted Run 3

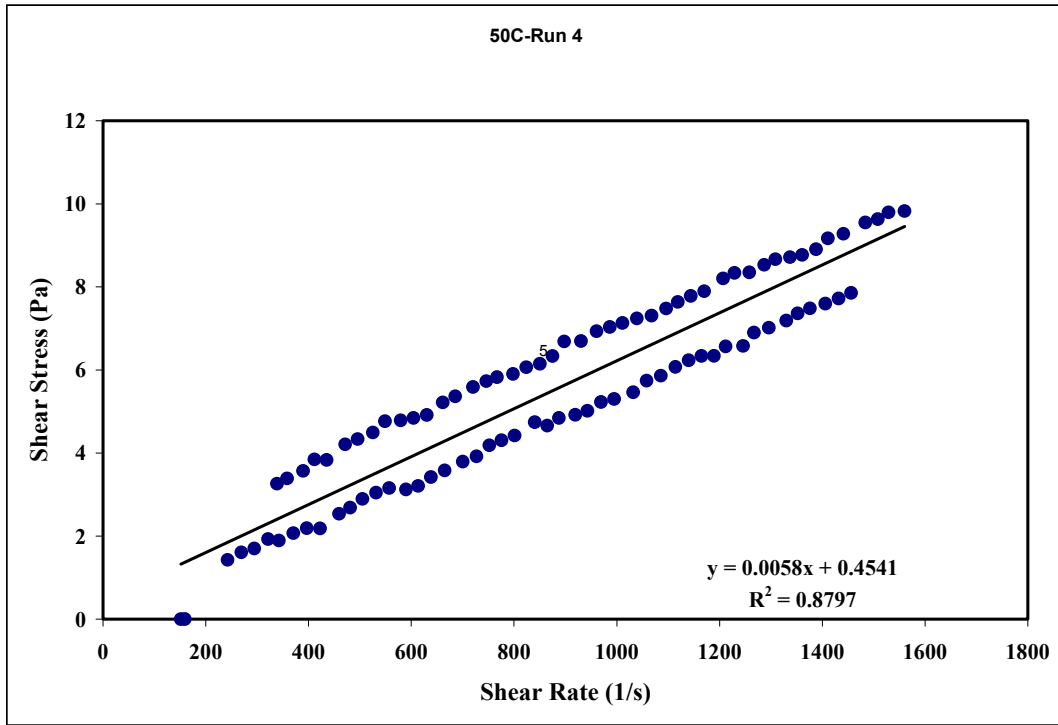


Figure 49. 50 °C Diluted Run 4

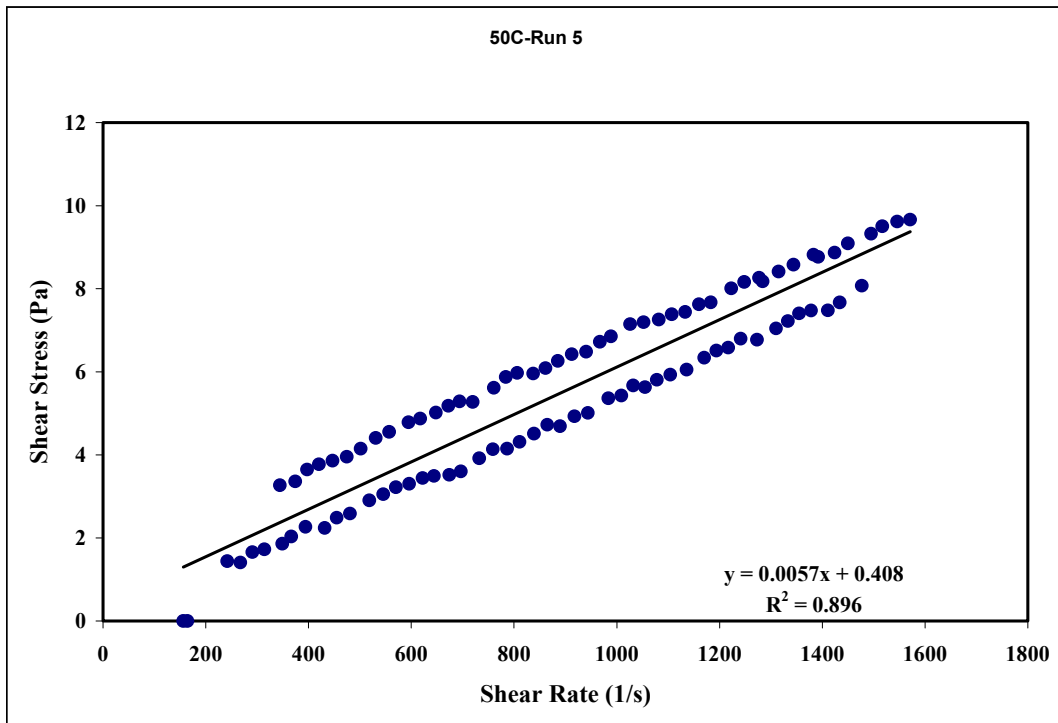


Figure 50. 50 °C Diluted Run 5

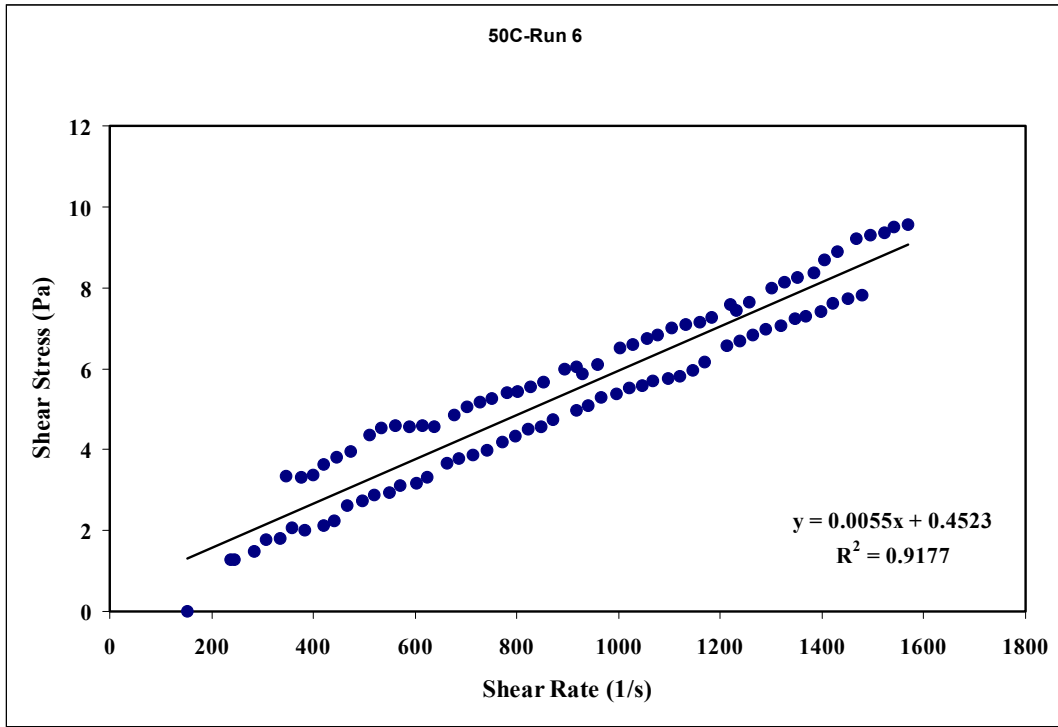


Figure 51. 50 °C Diluted Run 6

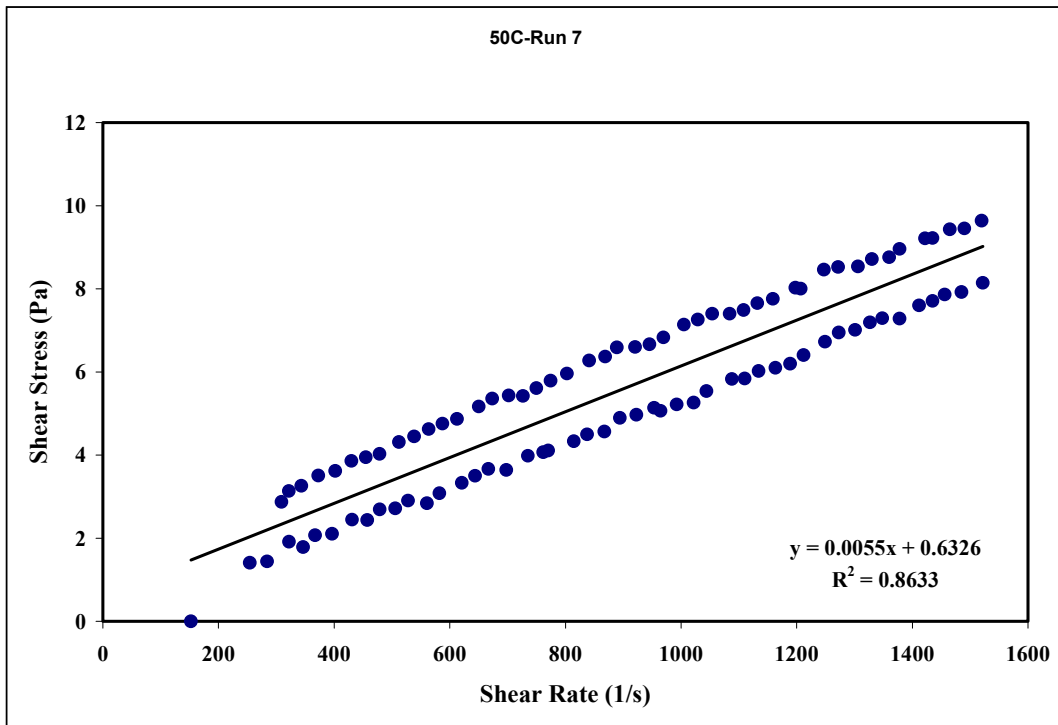


Figure 52. 50 °C Diluted Run 7

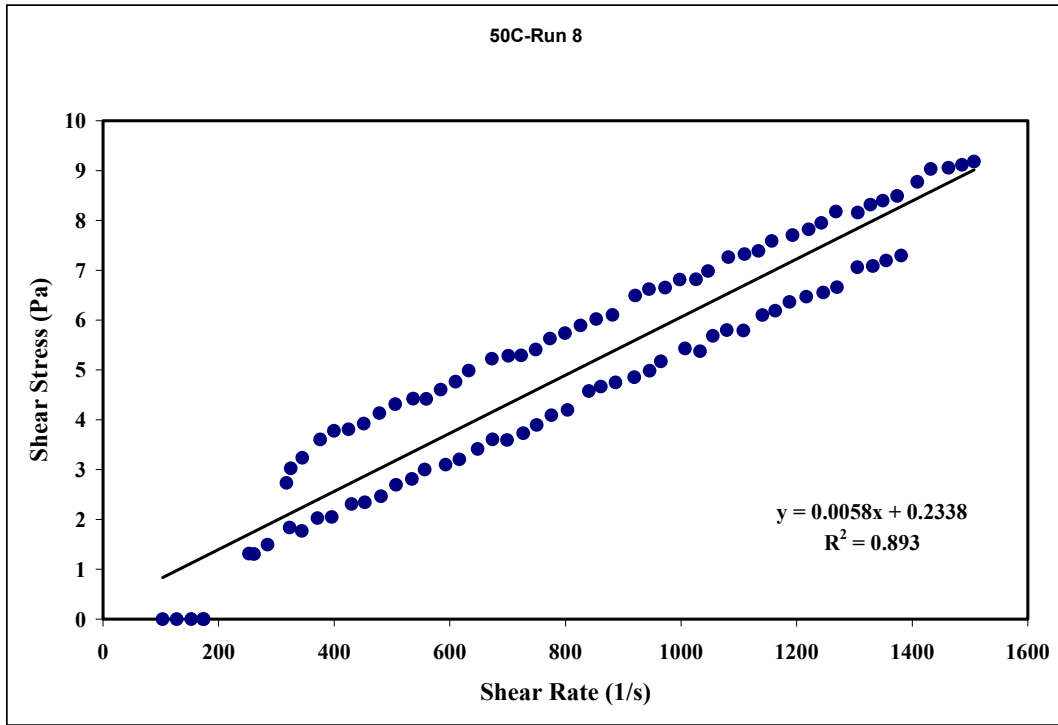


Figure 53. 50 °C Diluted Run 8

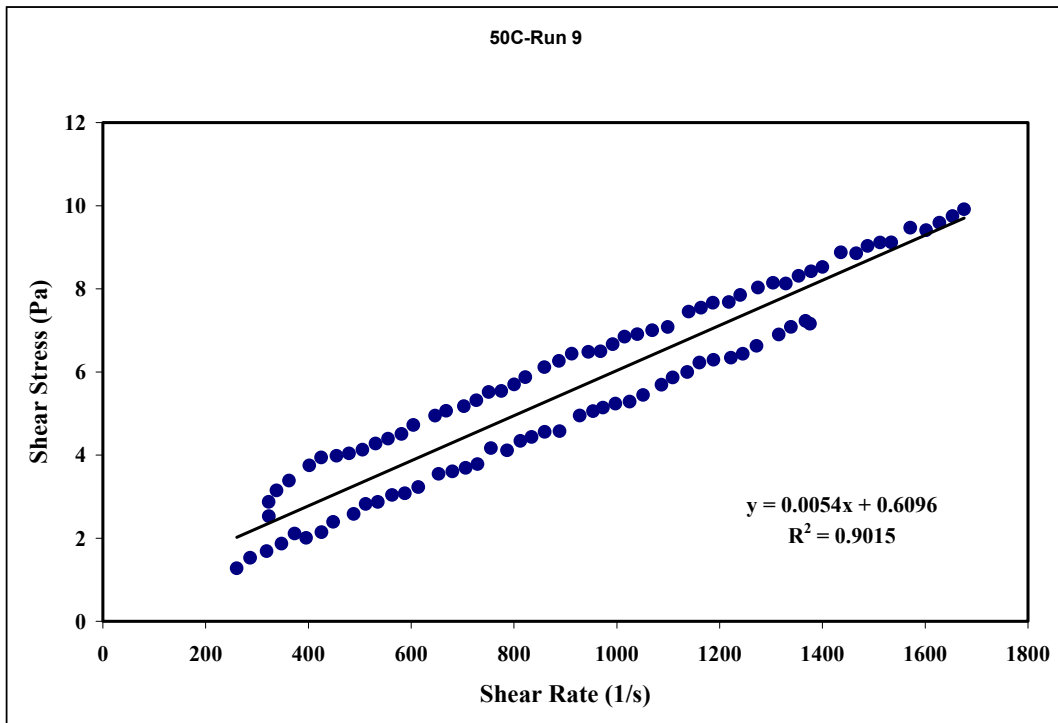


Figure 54. 50 °C Diluted Run 9

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Figure 43. 50 °C Pretreated Run 2292
Figure 44. 50 °C Pretreated Run 3292
Figure 45. 50 °C Pretreated Run 4293
Figure 46. 50 °C Pretreated Run 5293
Figure 47. 50 °C Pretreated Run 6294
Figure 48. 50 °C Pretreated Run 7294
Figure 49. 50 °C Pretreated Run 8295
Figure 50. 50 °C Pretreated Run 9295

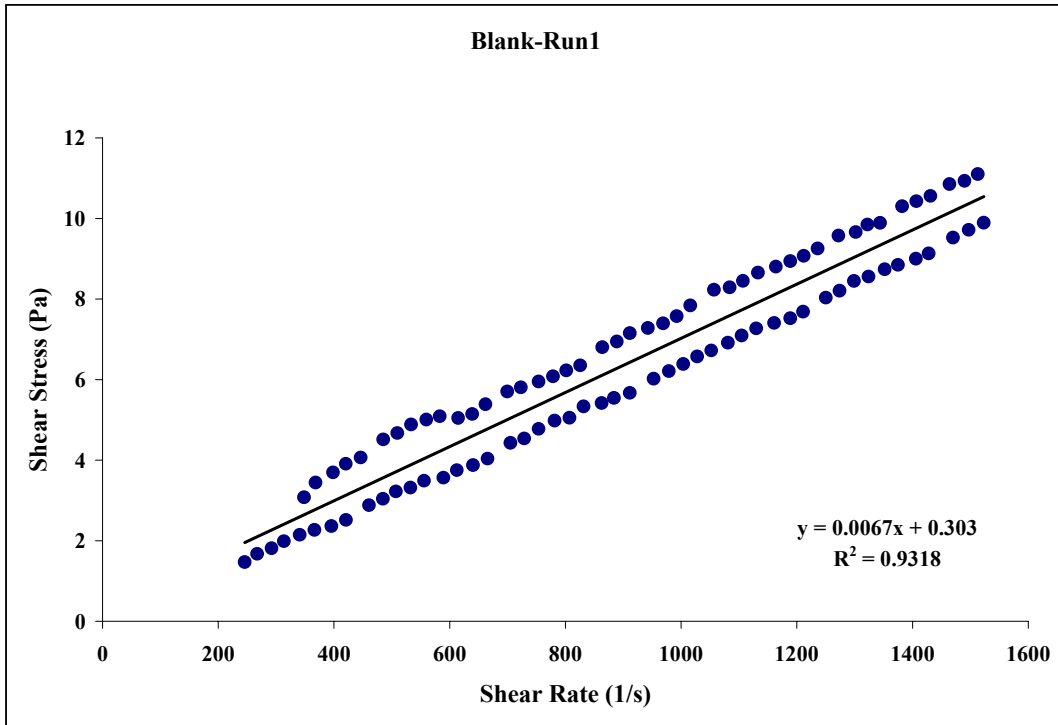


Figure 1. Blank As Received Run 1

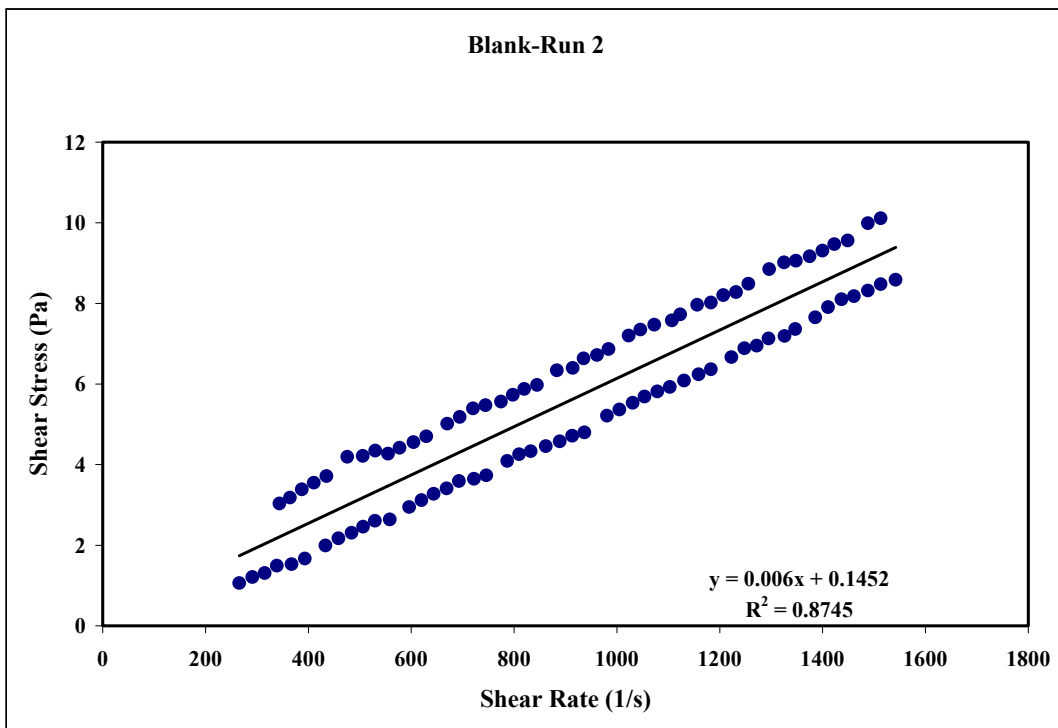


Figure 2. Blank As Received Run 2

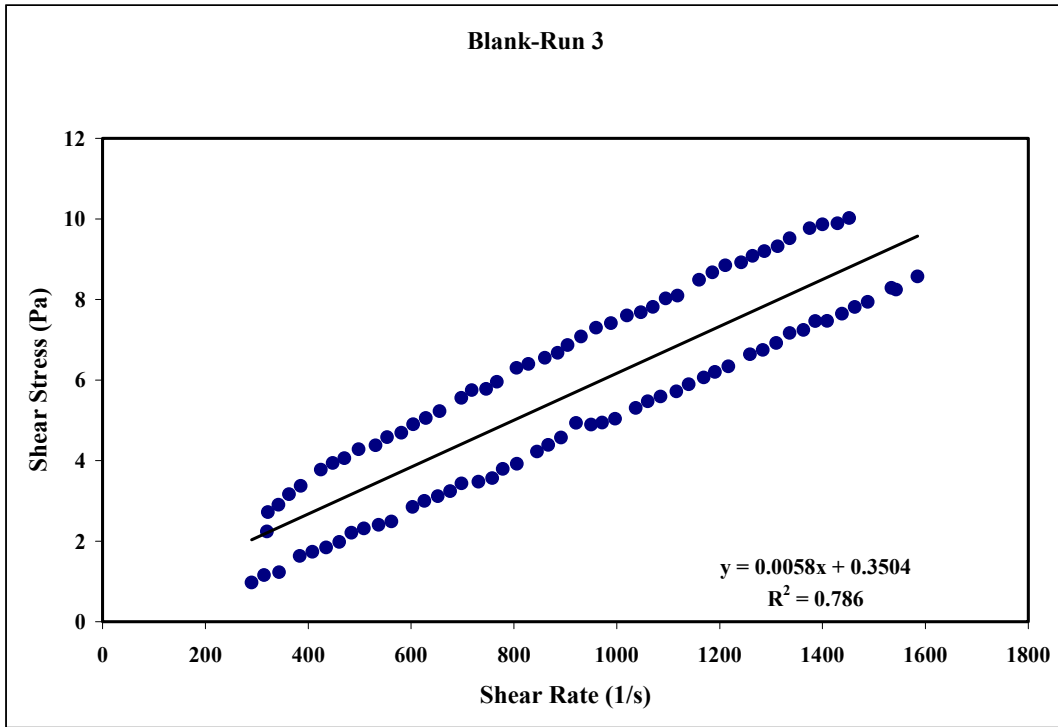


Figure 3. Blank As Received Run 3

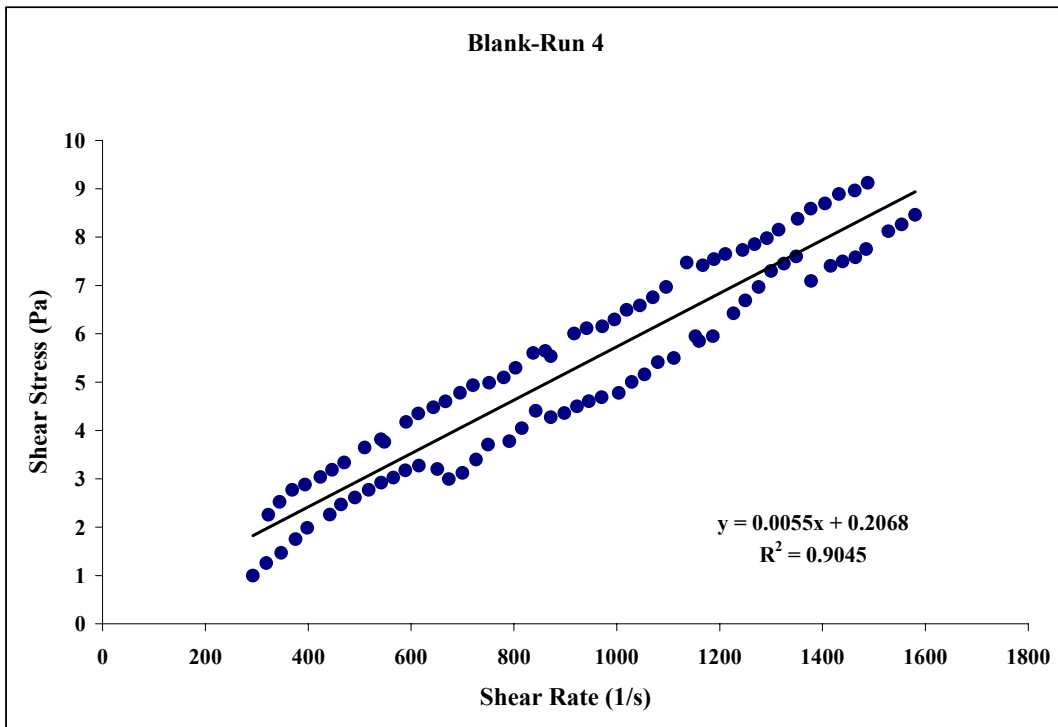


Figure 4. Blank As Received Run 4

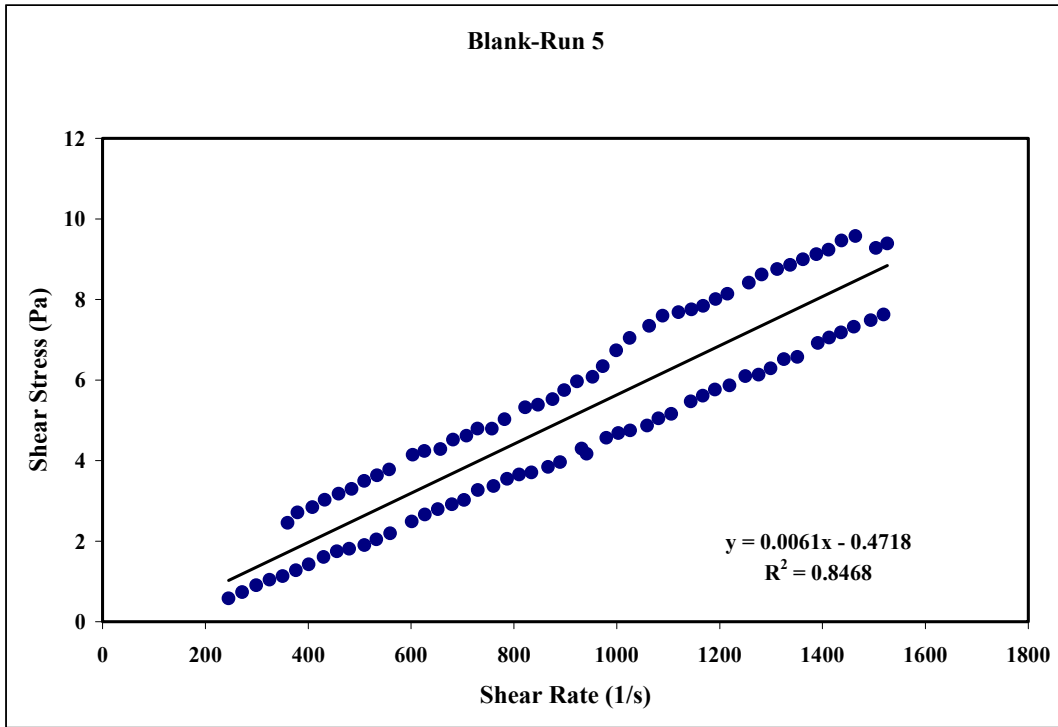


Figure 5. Blank As Received Run 5

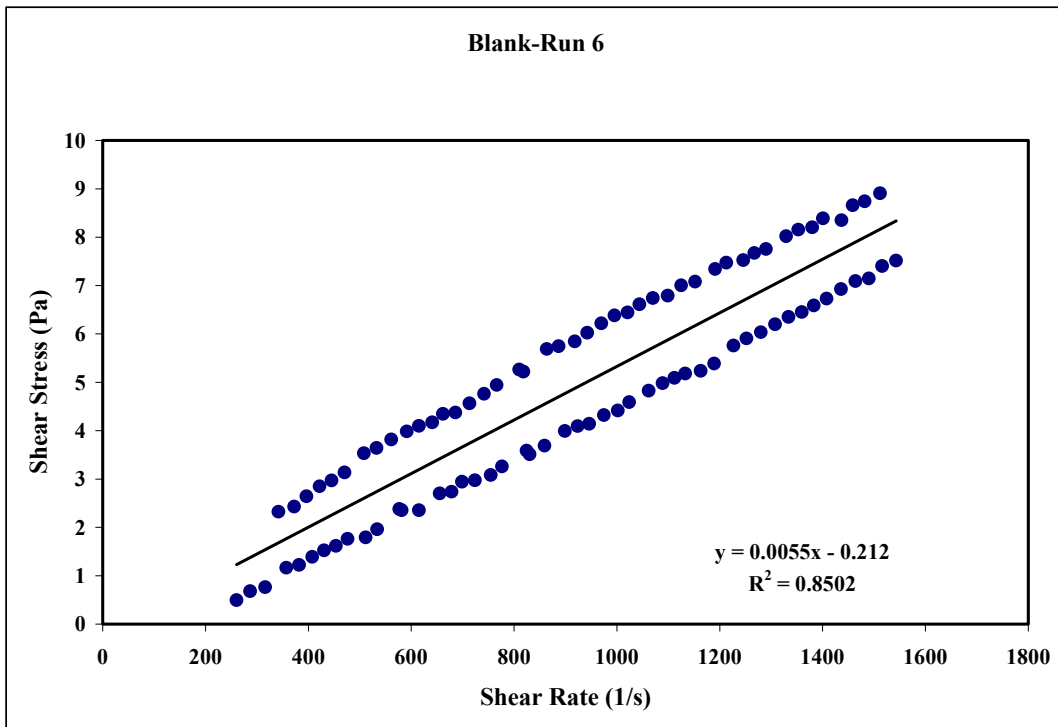


Figure 6. Blank As Received Run 6

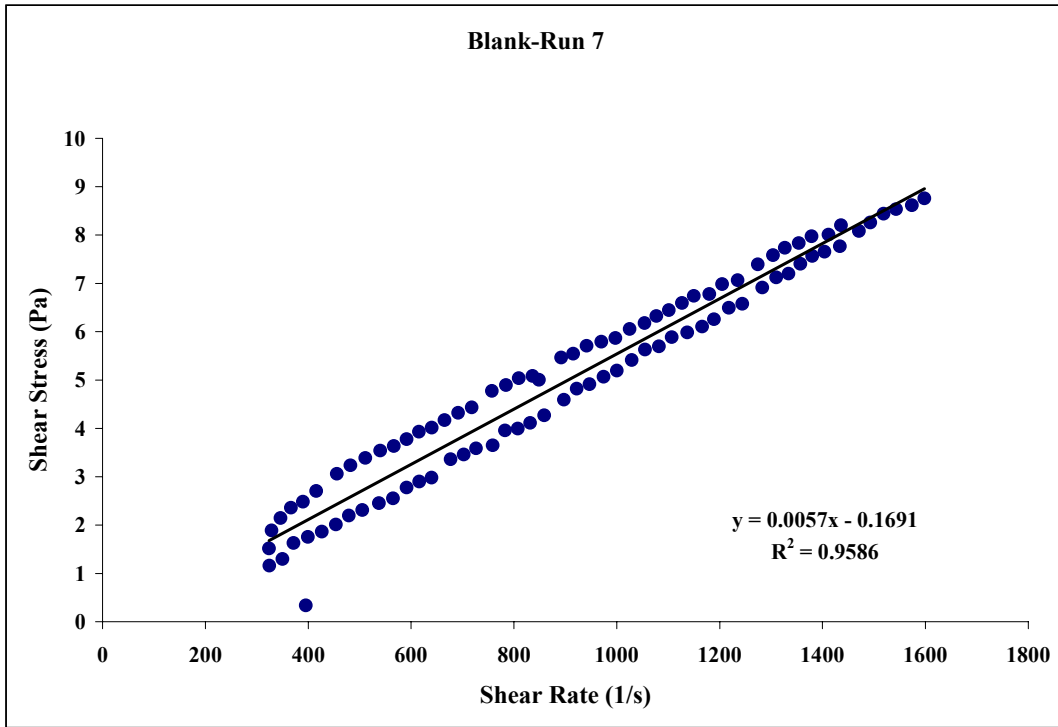


Figure 7. Blank As Received Run 7

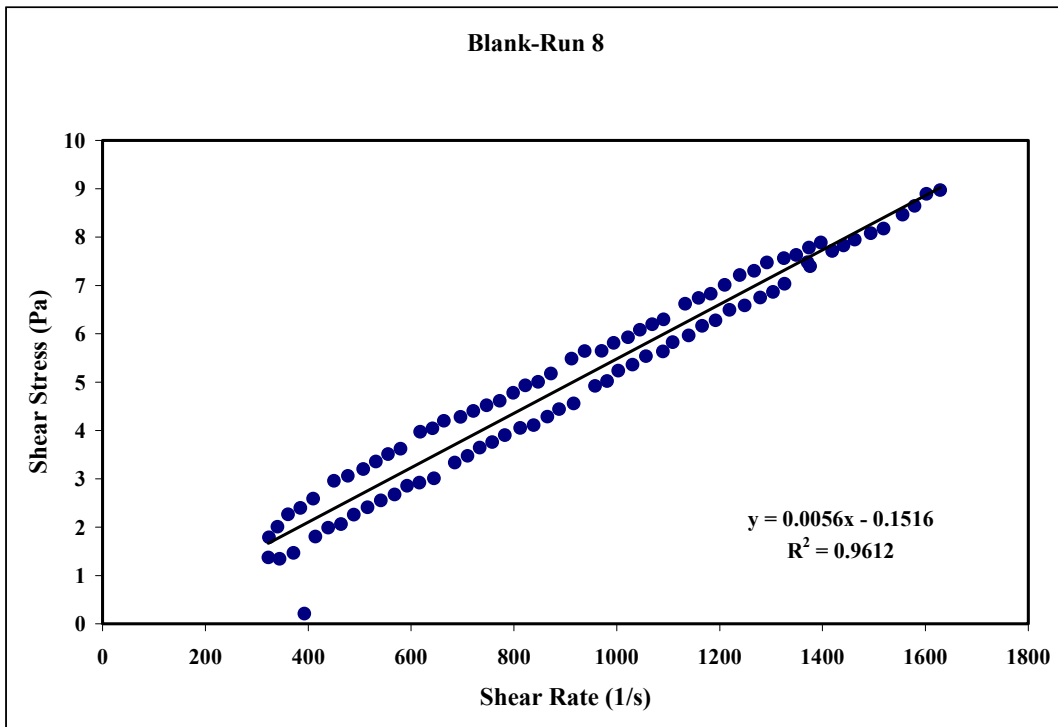


Figure 8. Blank As Received Run 8

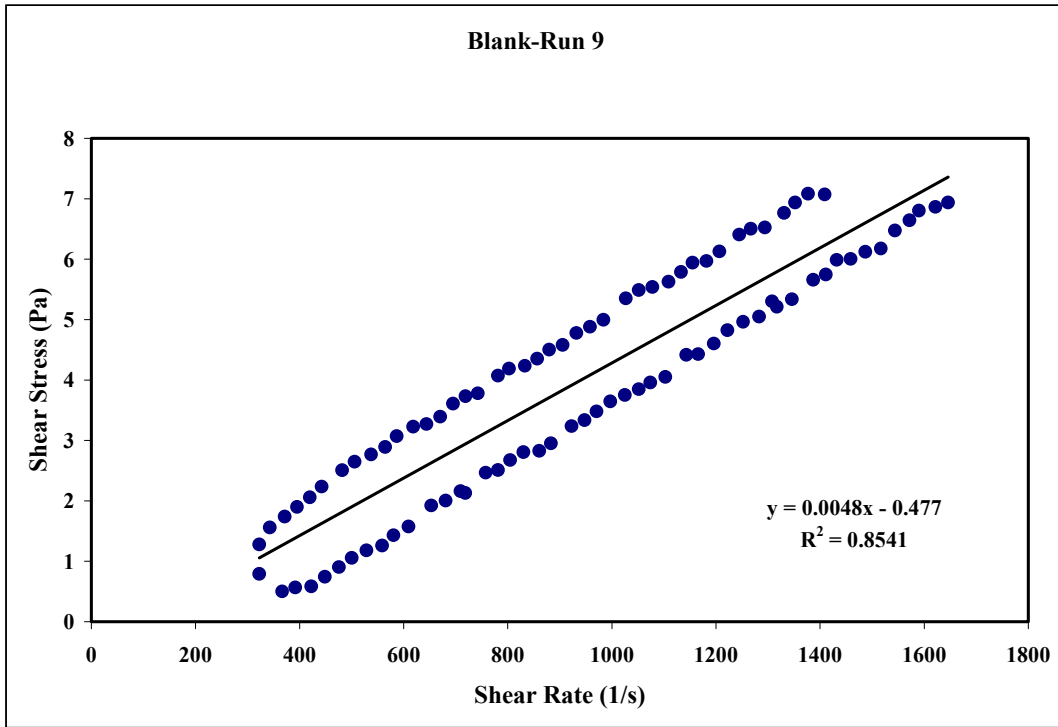


Figure 9. Blank As Received Run 9

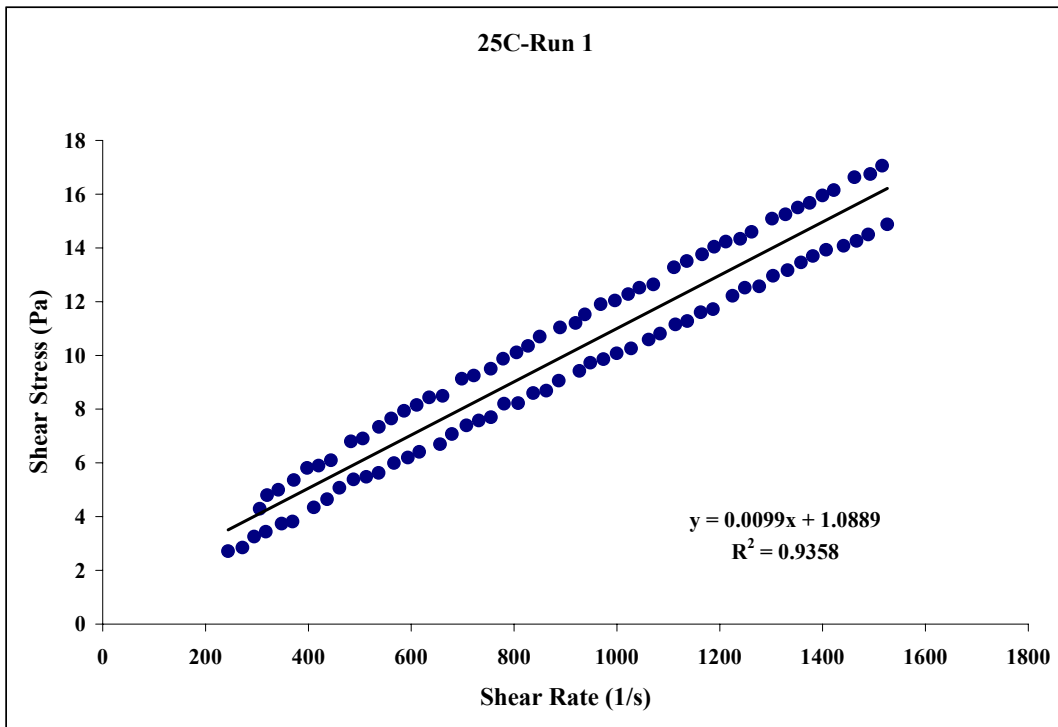


Figure 10. 25 °C As Received Run 1

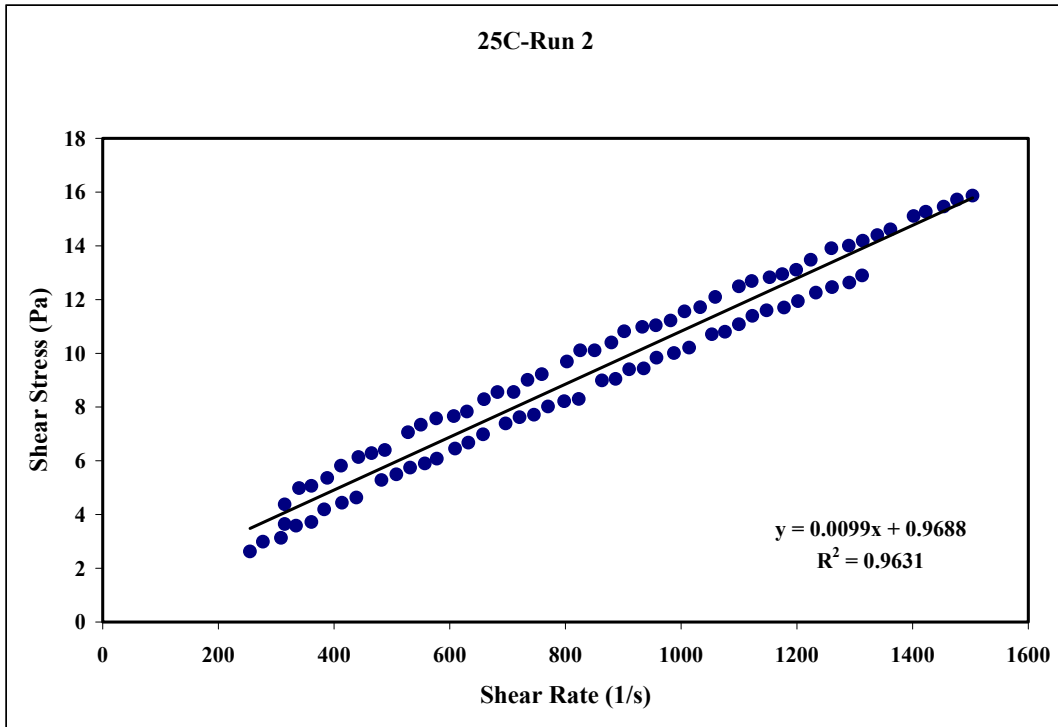


Figure 11. 25 °C As Received Run 2

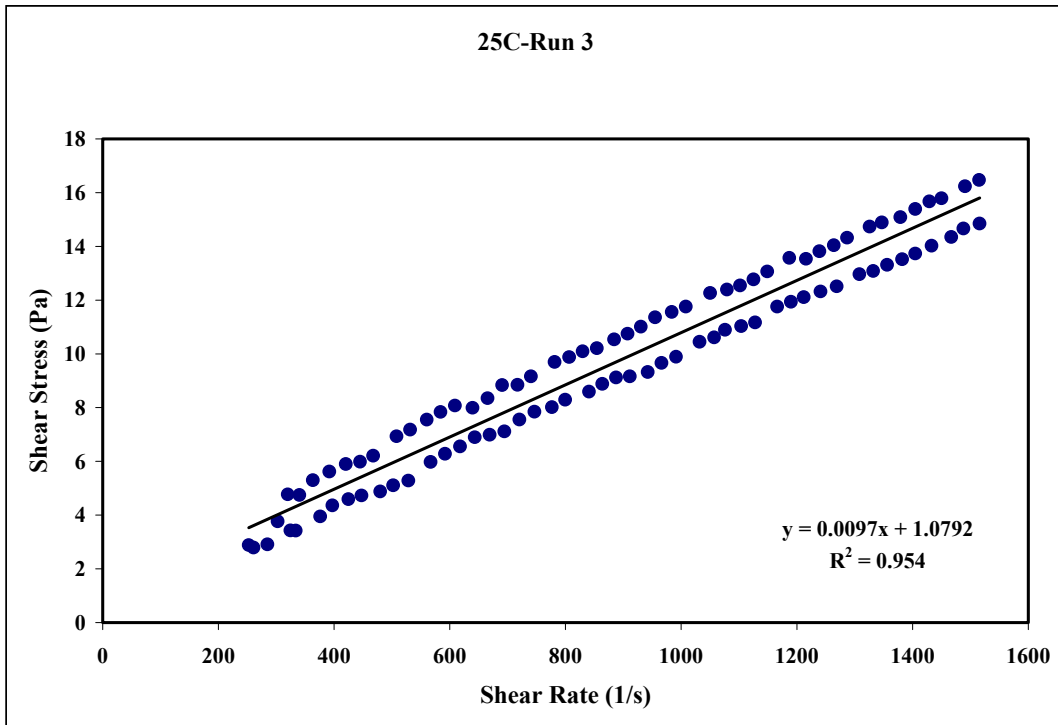


Figure 12. 25 °C As Received Run 3

ENVELOPE B RHEOGRAMS

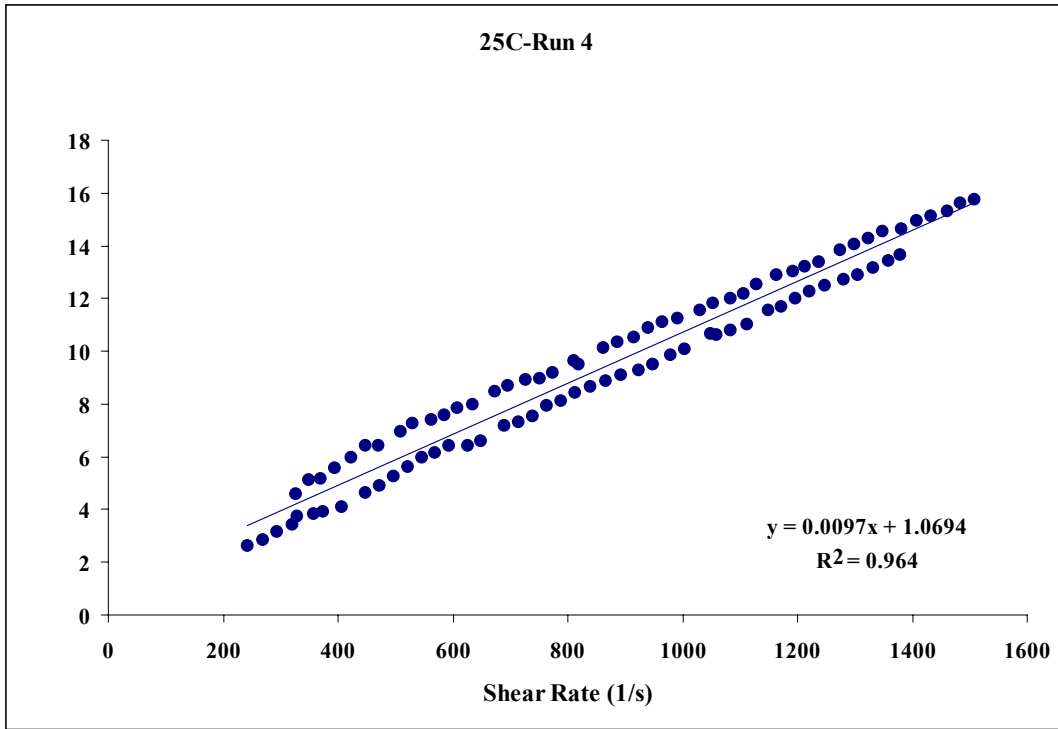


Figure 13. 25 °C As Received Run 4

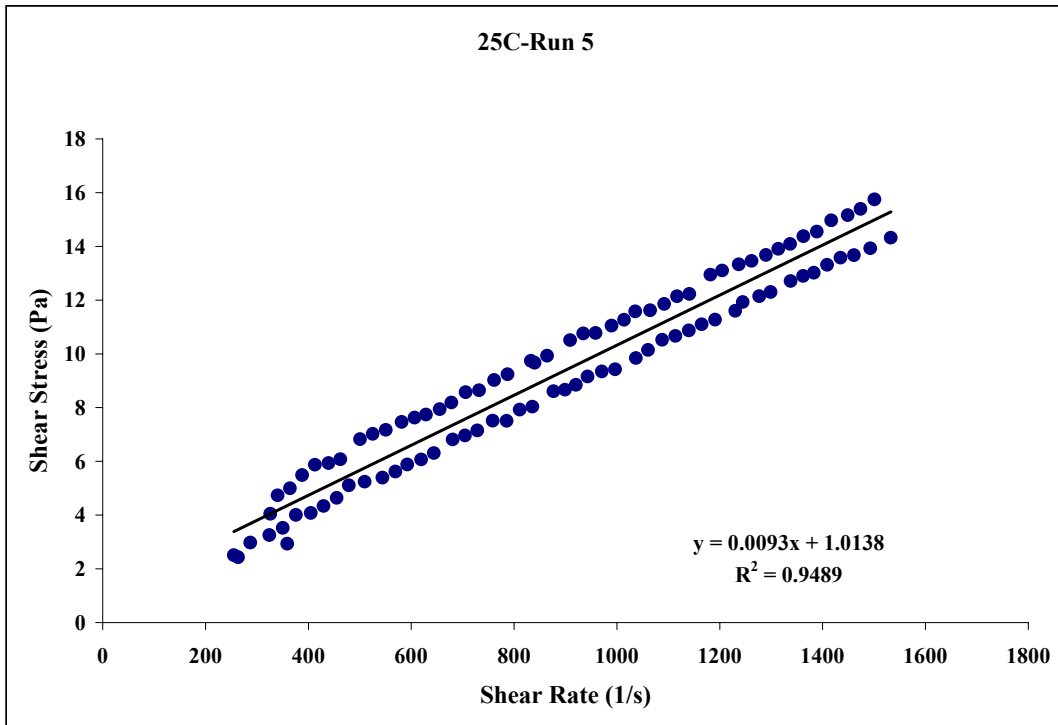


Figure 14. 25 °C As Received Run 5

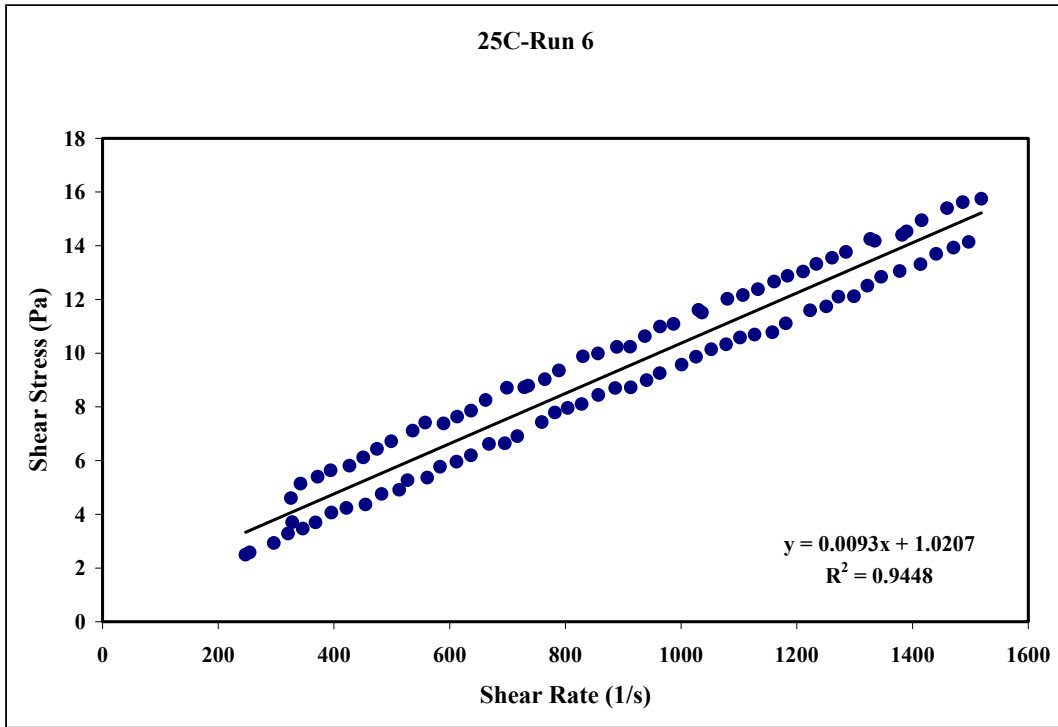


Figure 15. 25 °C As Received Run 6

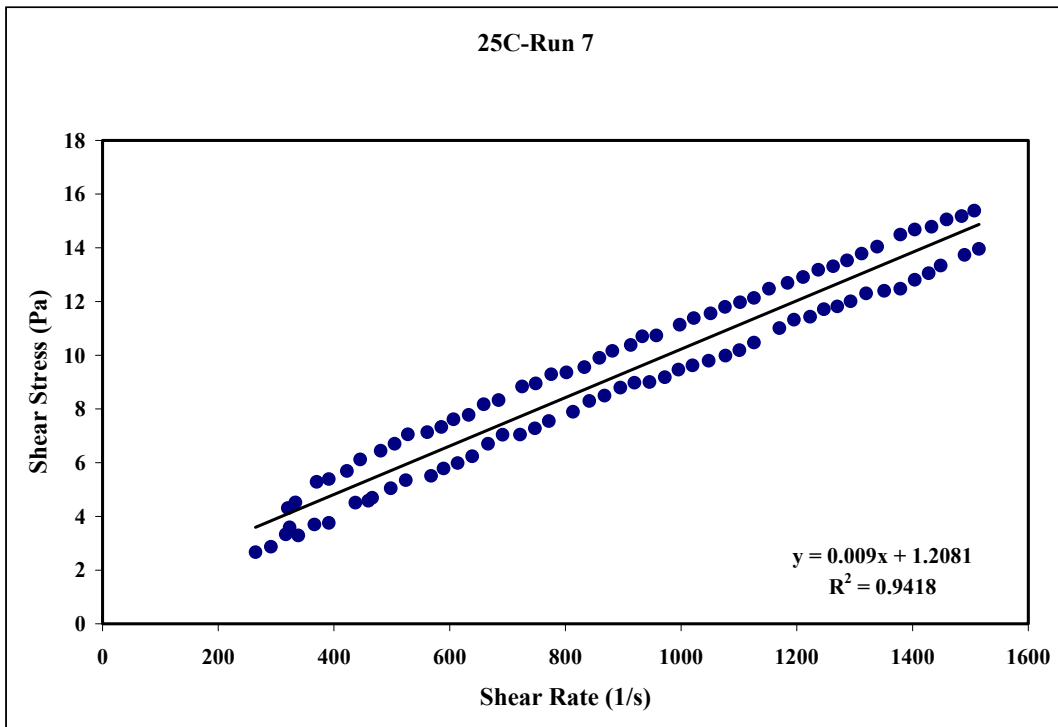


Figure 16. 25 °C As Received Run 7

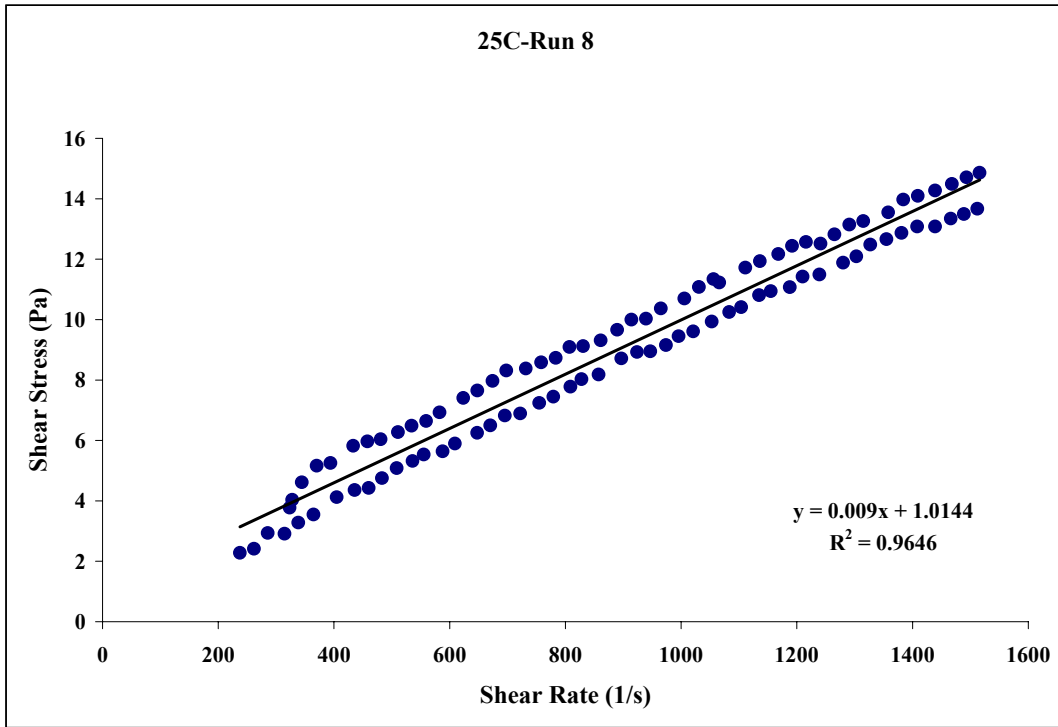


Figure 17. 25 °C As Received Run 8

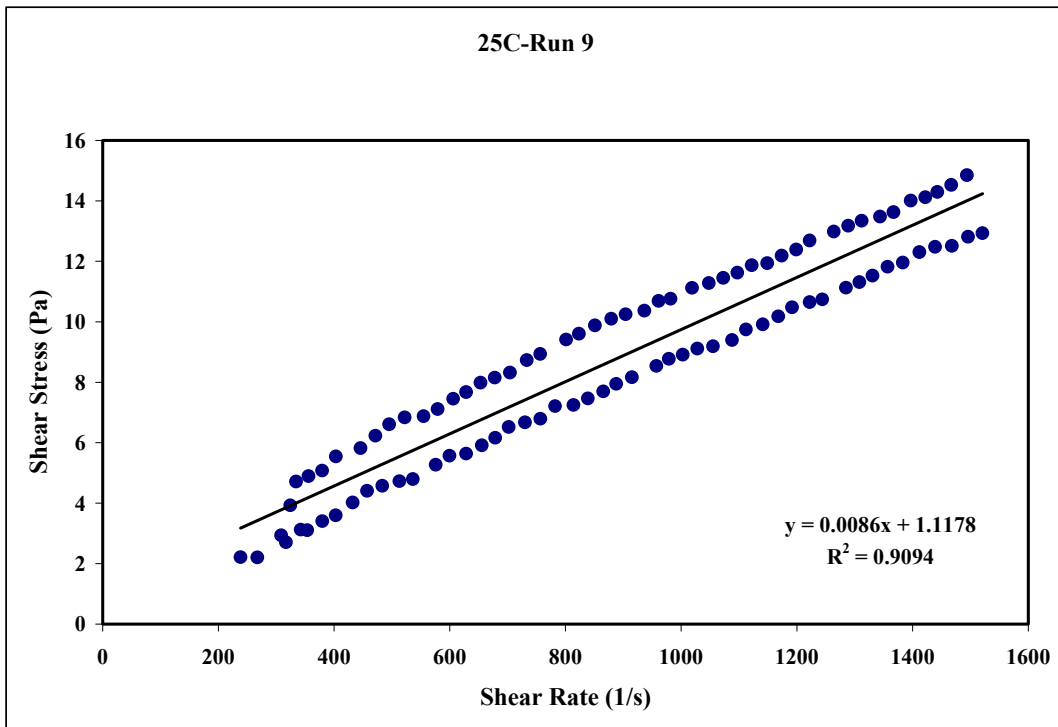


Figure 18. 25 °C As Received Run 9

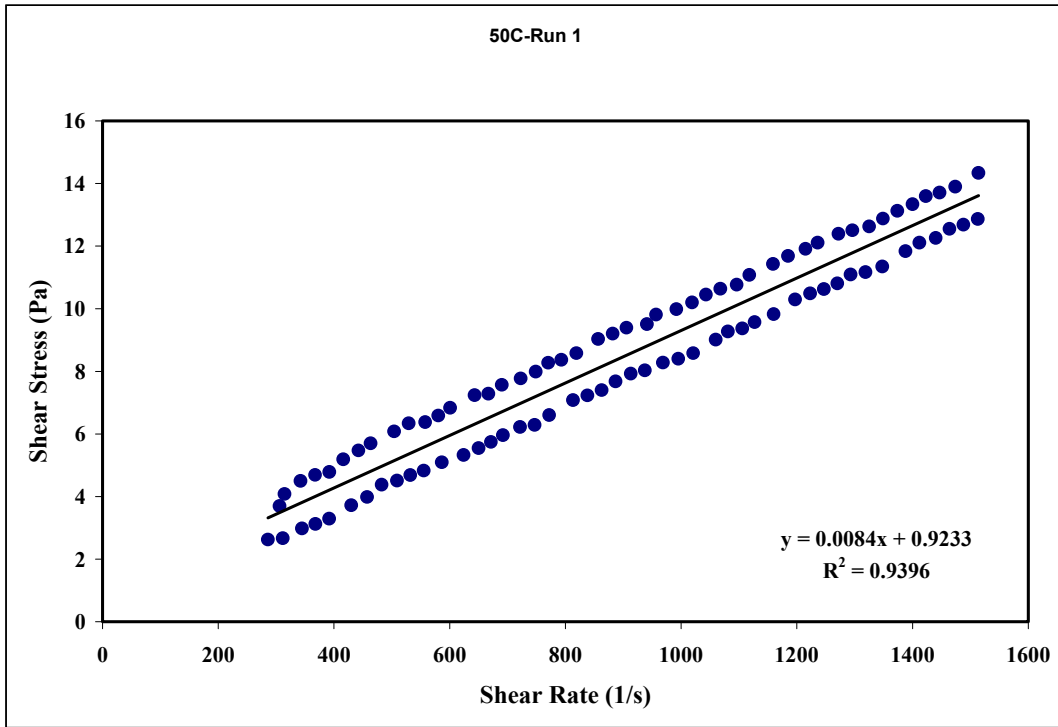


Figure 19. 50 °C As Received Run 1

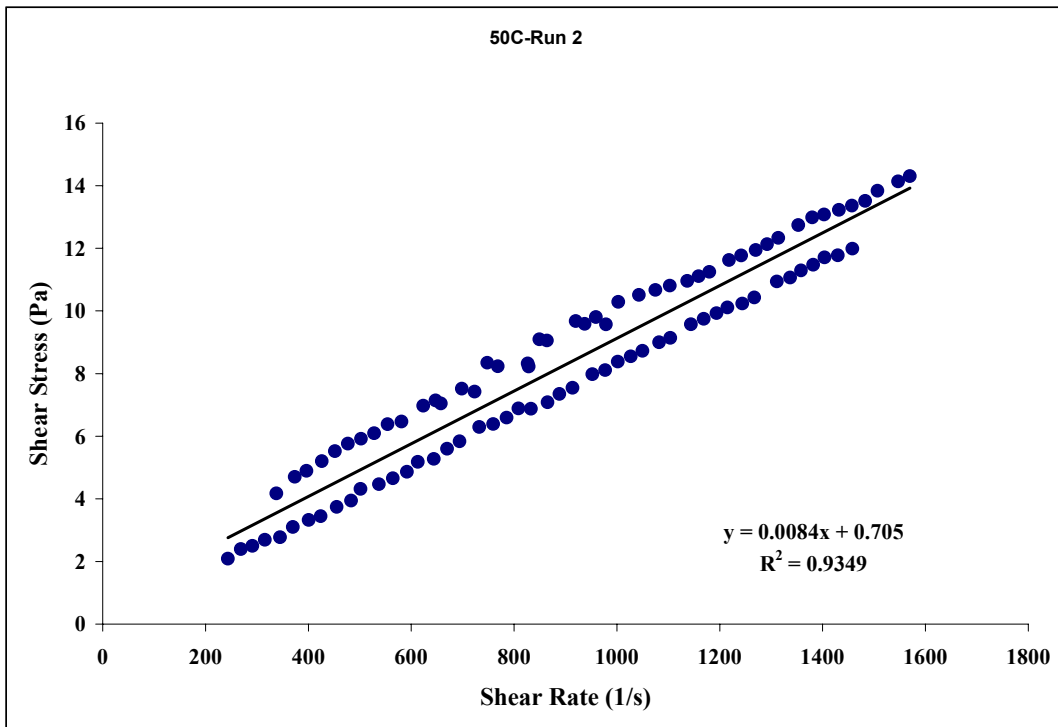


Figure 20. 50 °C As Received Run 2

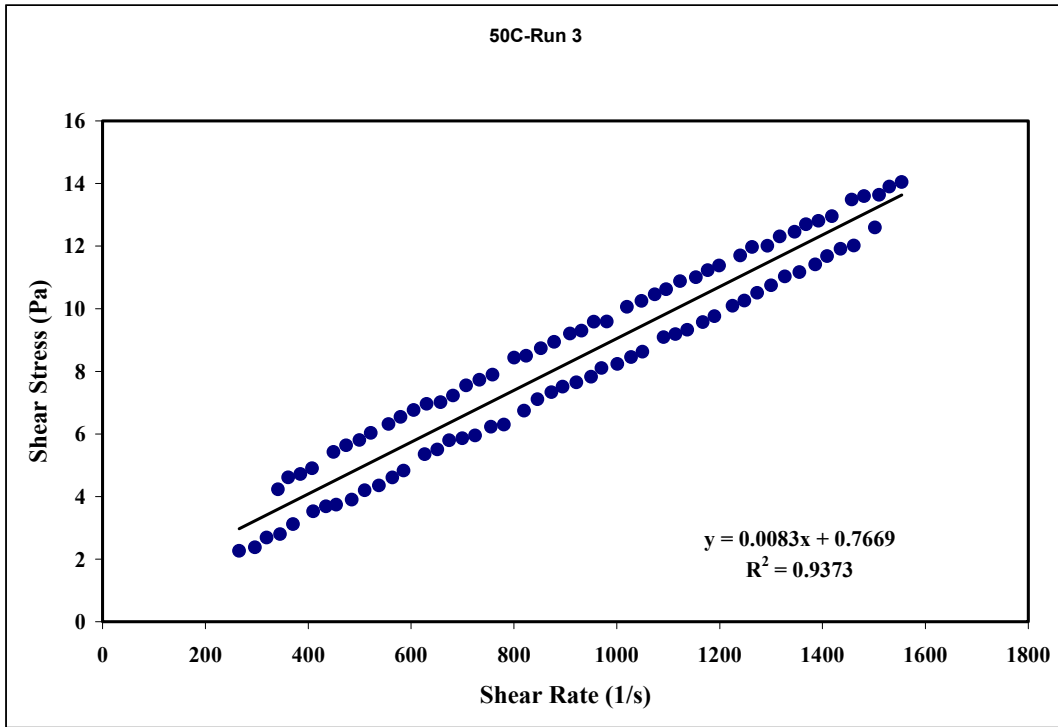


Figure 21. 50 °C As Received Run 3

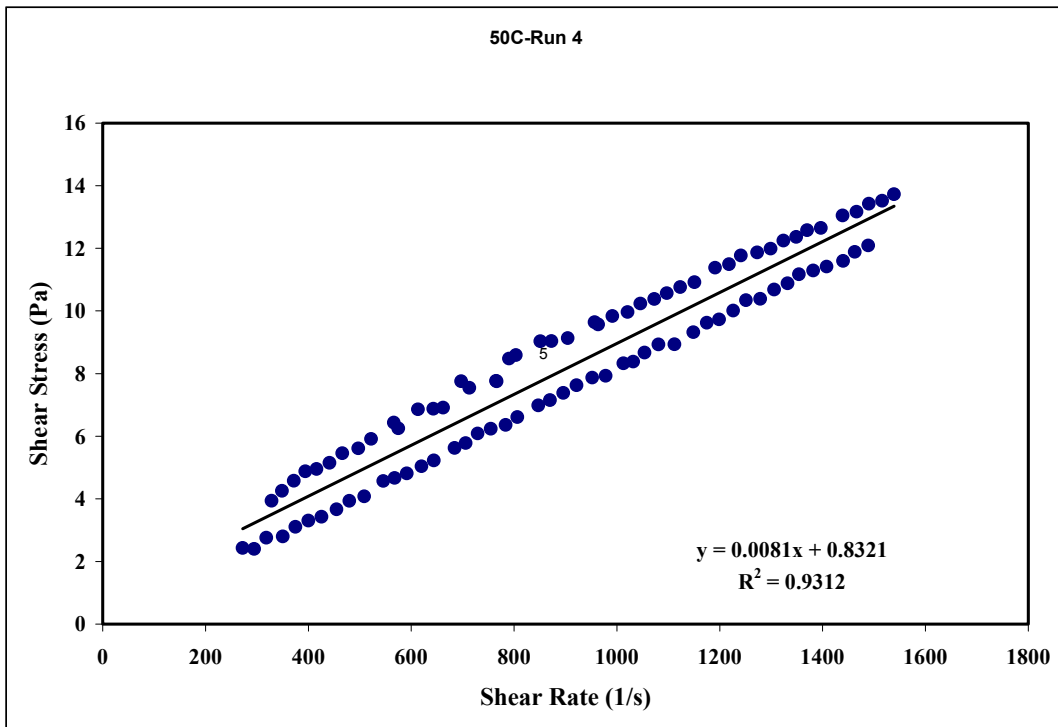


Figure 22. 50 °C As Received Run 4

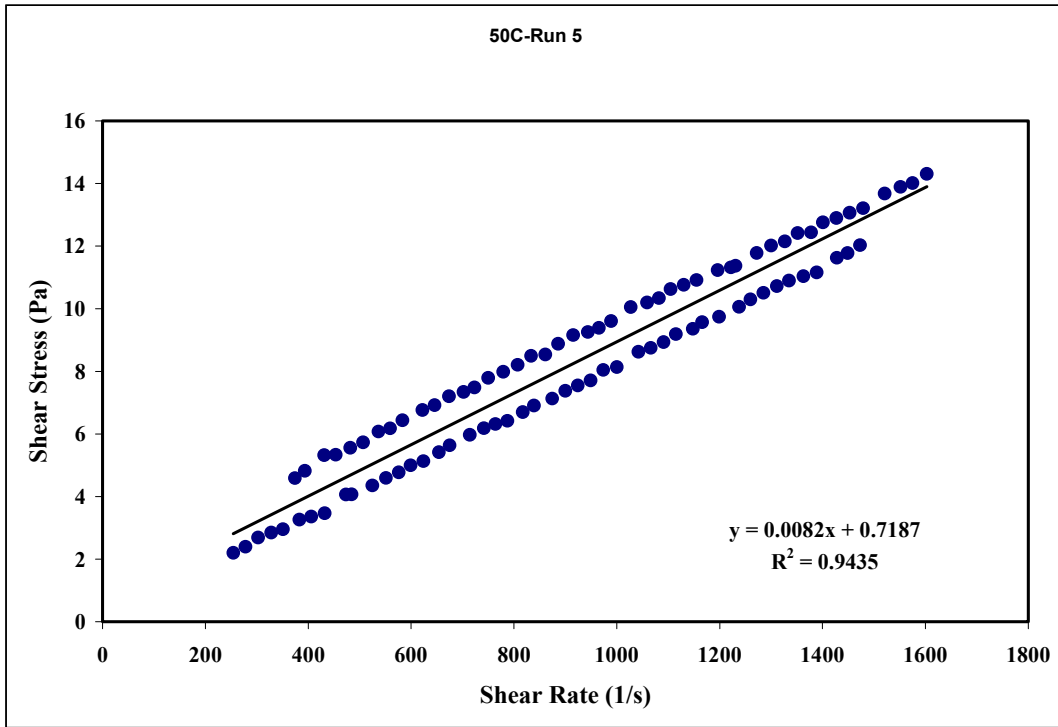


Figure 23. 50 °C As Received Run 5

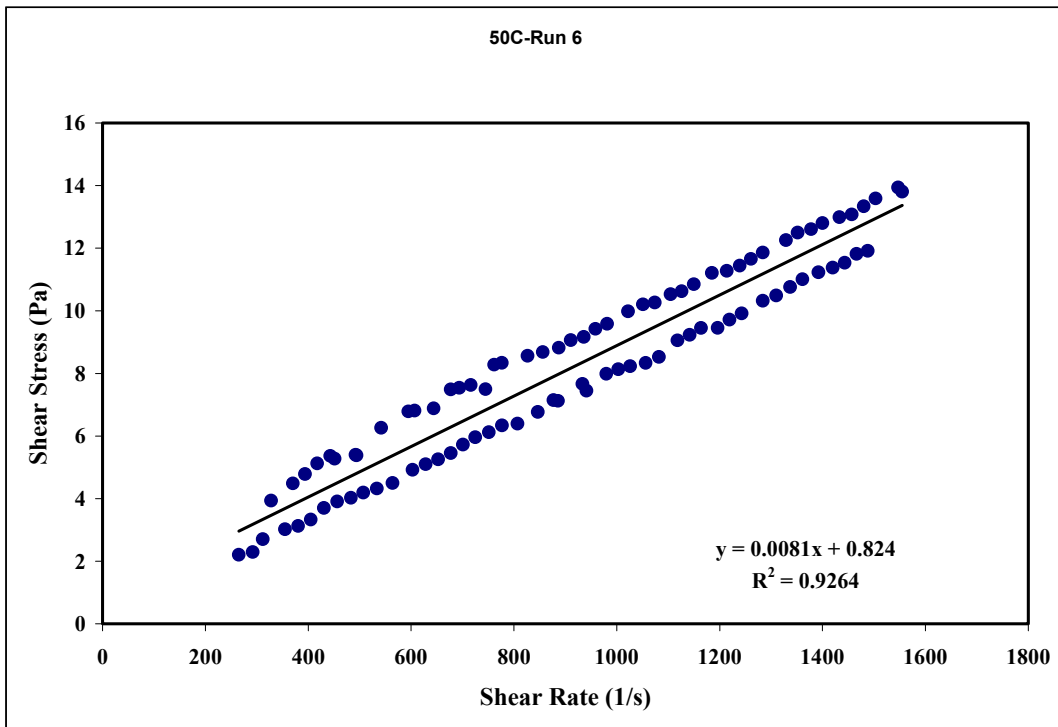


Figure 24. 50 °C As Received Run 6

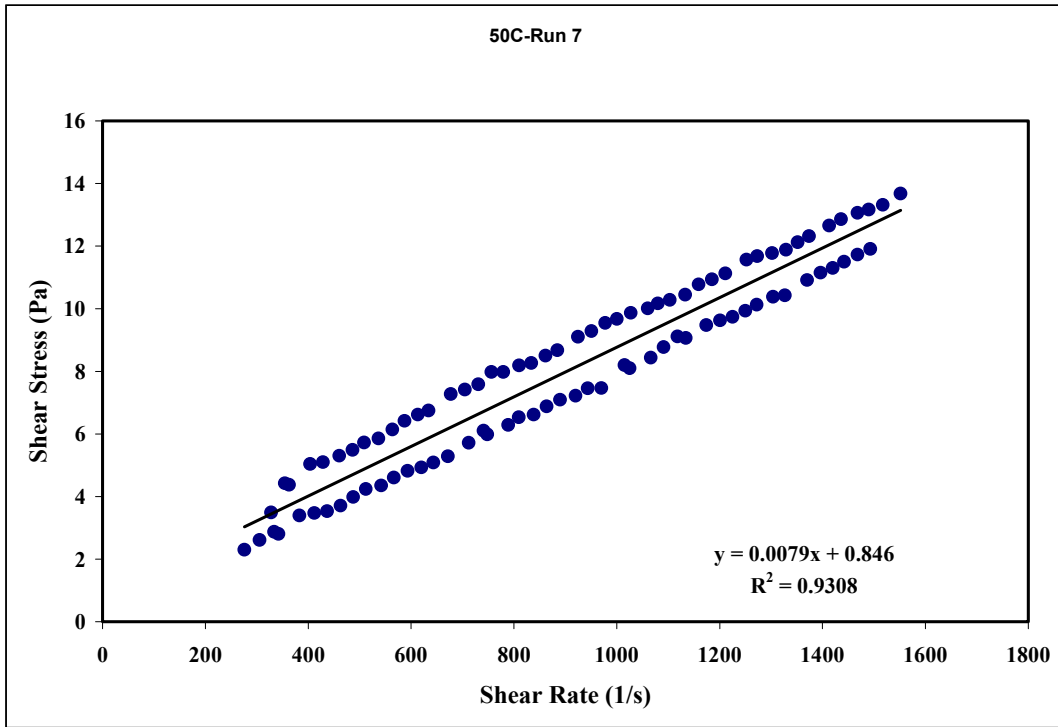


Figure 25. 50 °C As Received Run 7

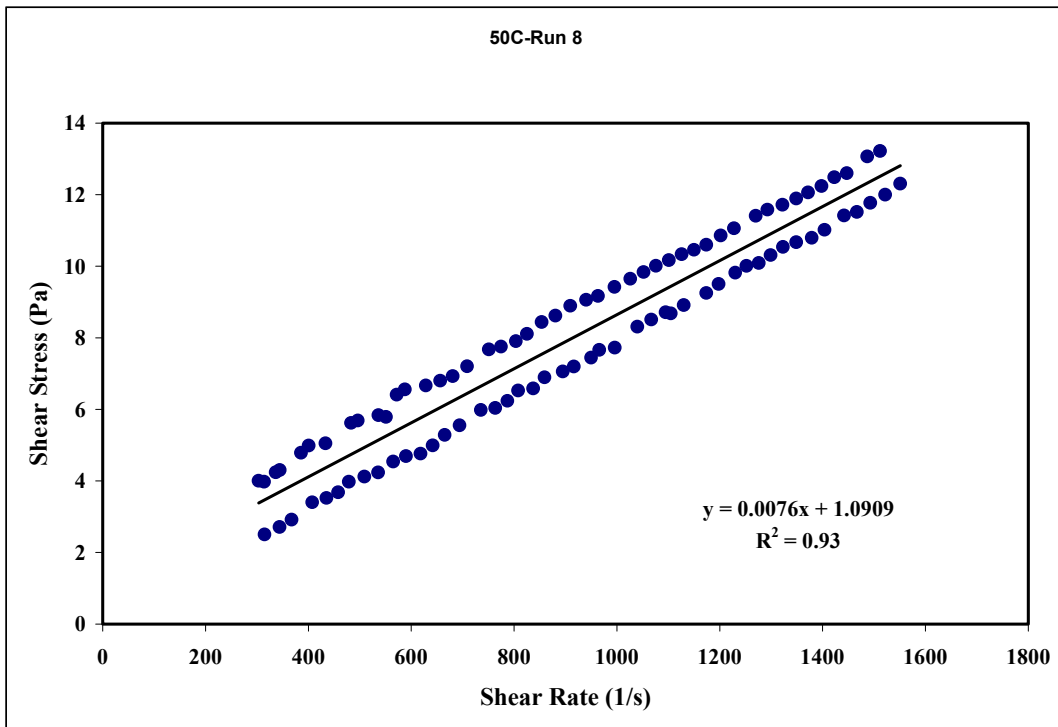


Figure 26. 50 °C As Received Run 8

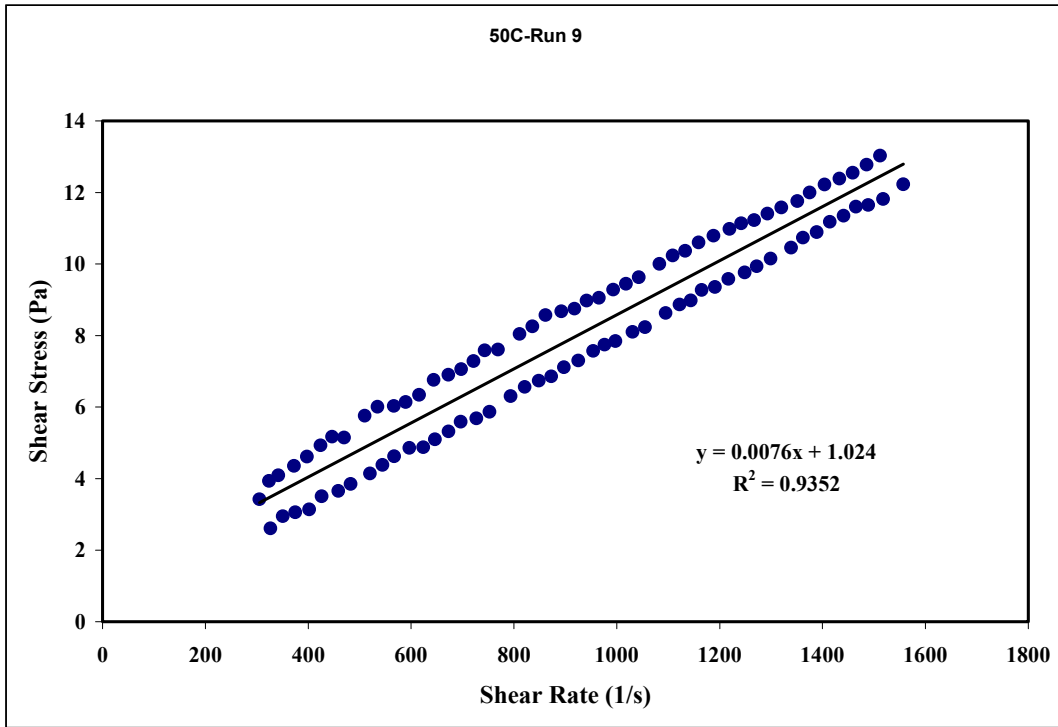


Figure 27. 50 °C As Received Run 9

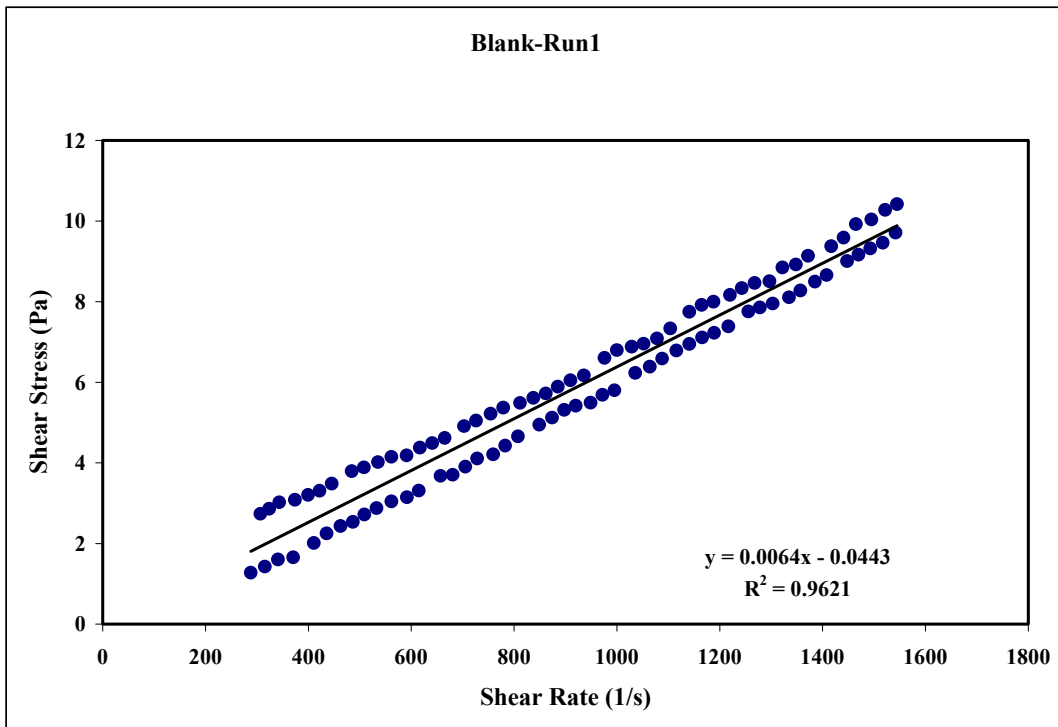


Figure 28. Blank Pretreated Run 1

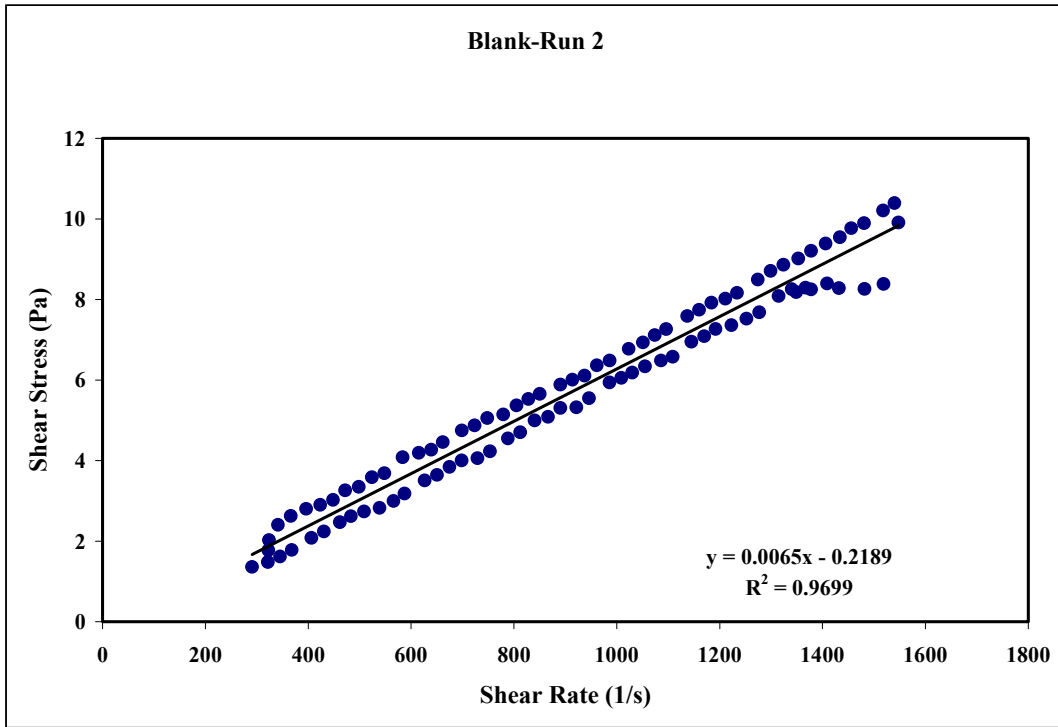


Figure 29. Blank Pretreated Run 2

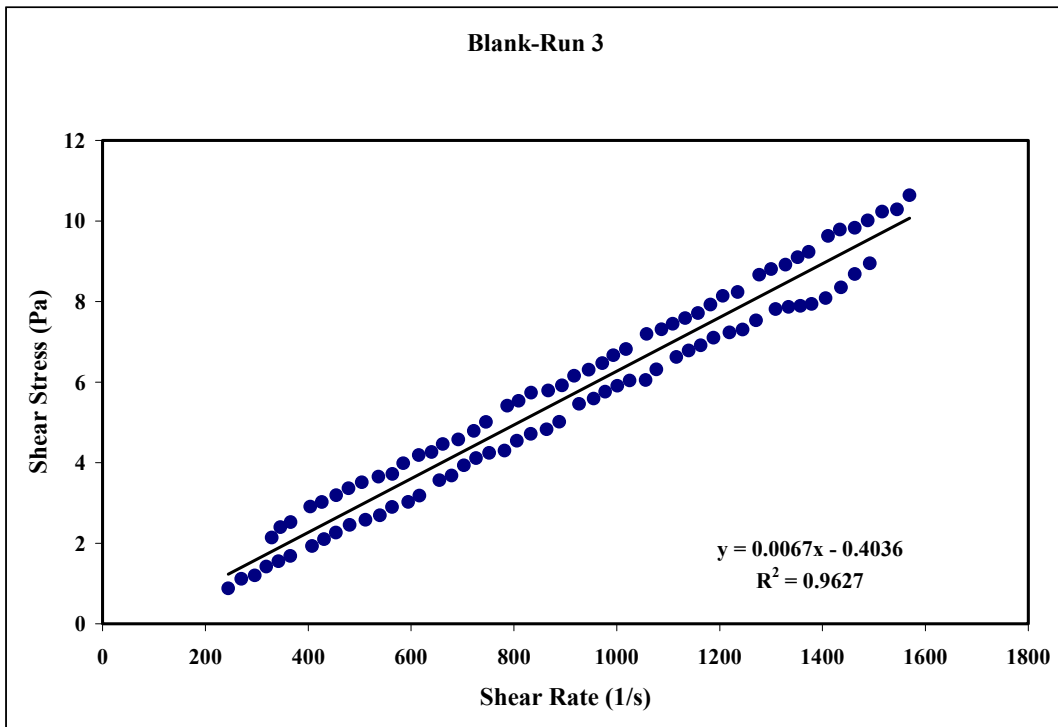


Figure 30. Blank Pretreated Run 3

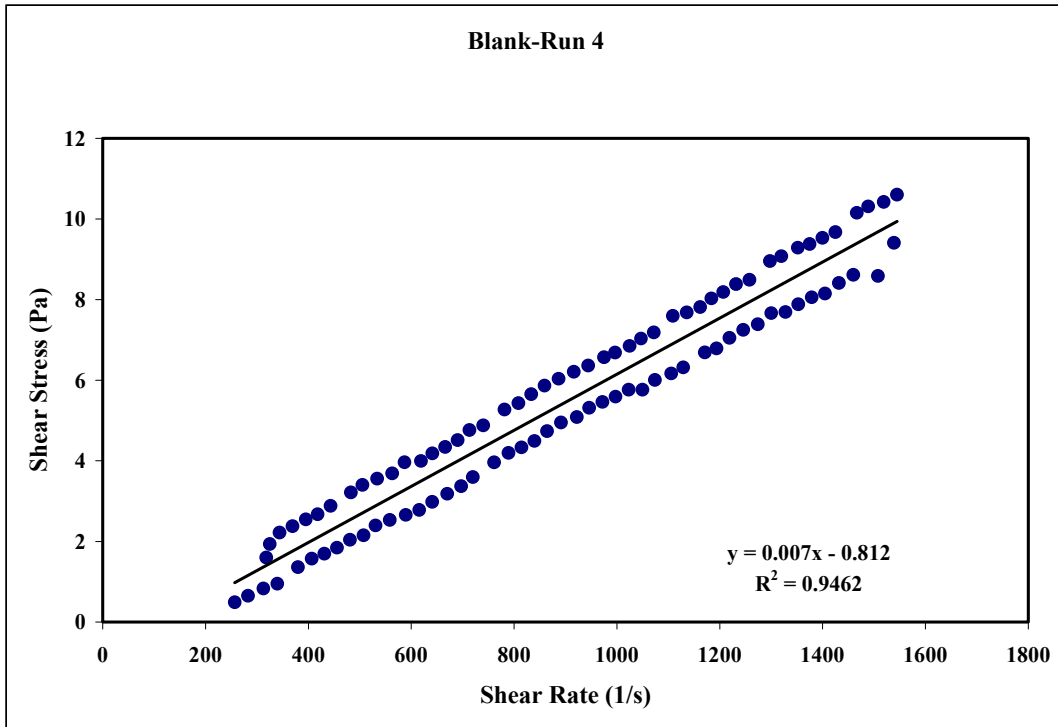


Figure 31. Blank Pretreated Run 4

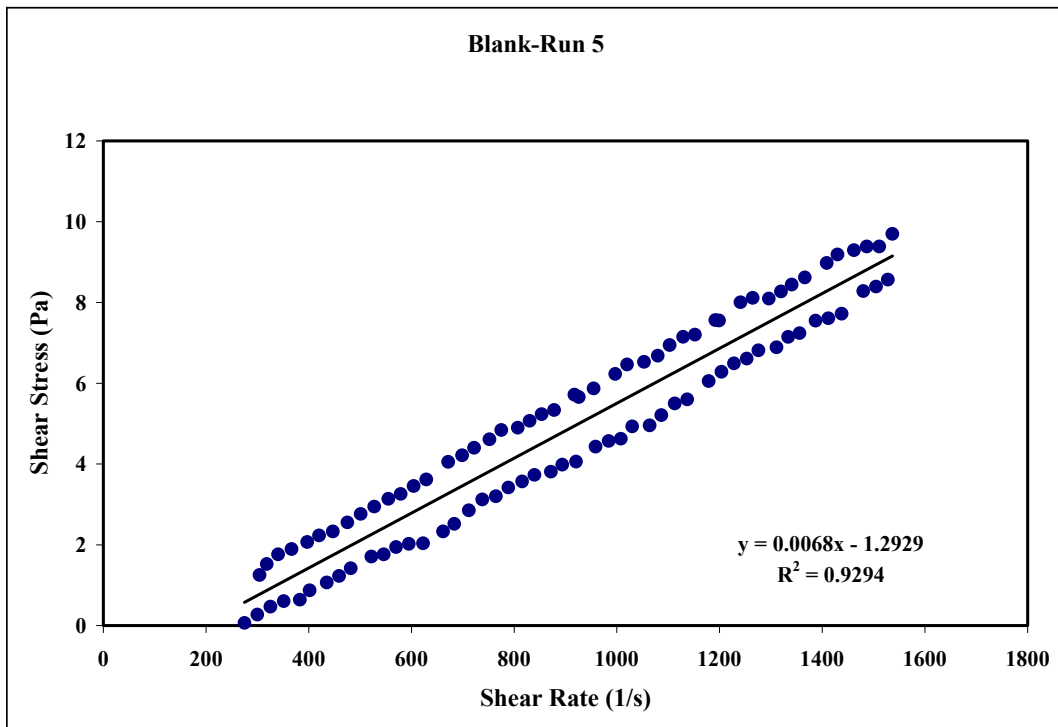


Figure 32. Blank Pretreated Run 5

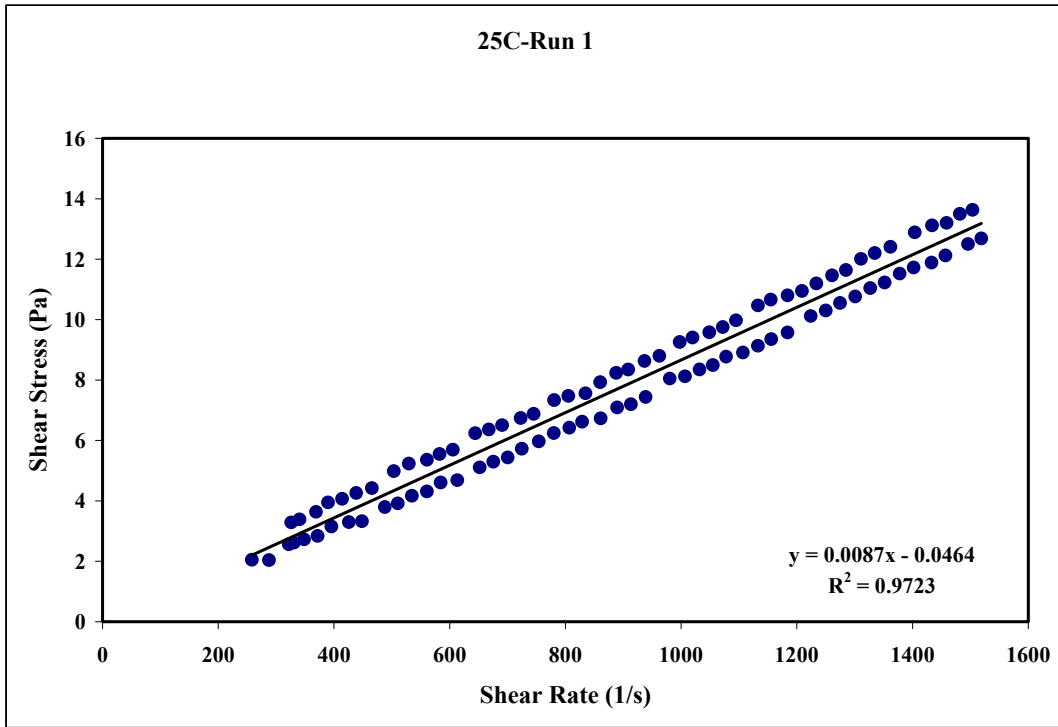


Figure 33. 25 °C Pretreated Run 1

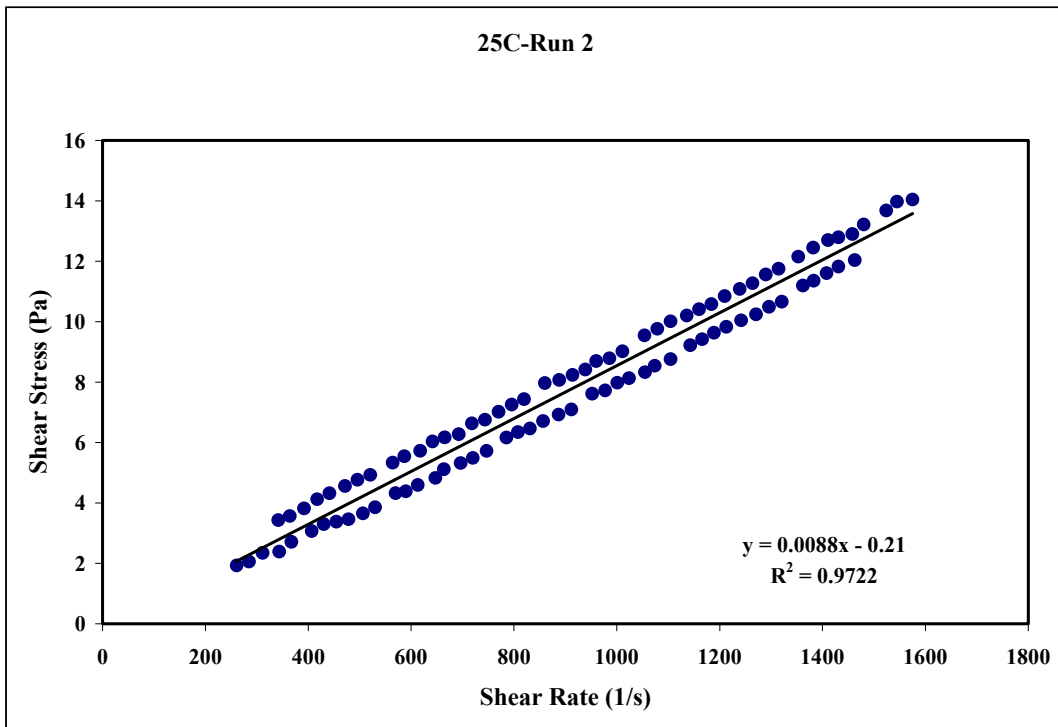


Figure 34. 25 °C Pretreated Run 2

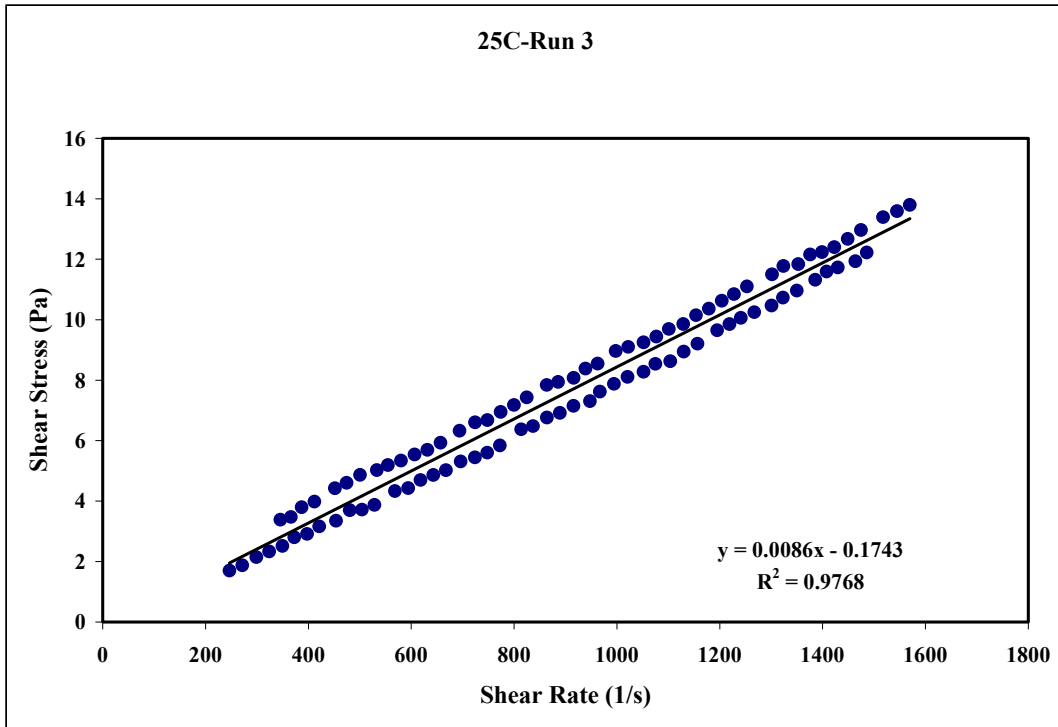


Figure 35. 25 °C Pretreated Run 3

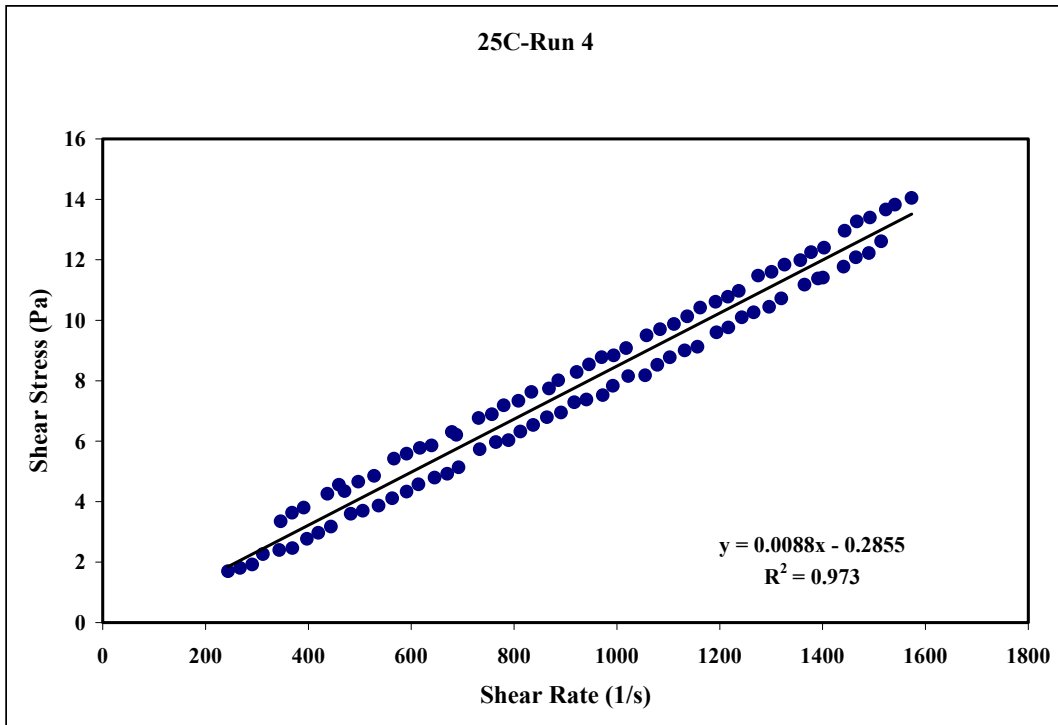


Figure 36. 25 °C Pretreated Run 4

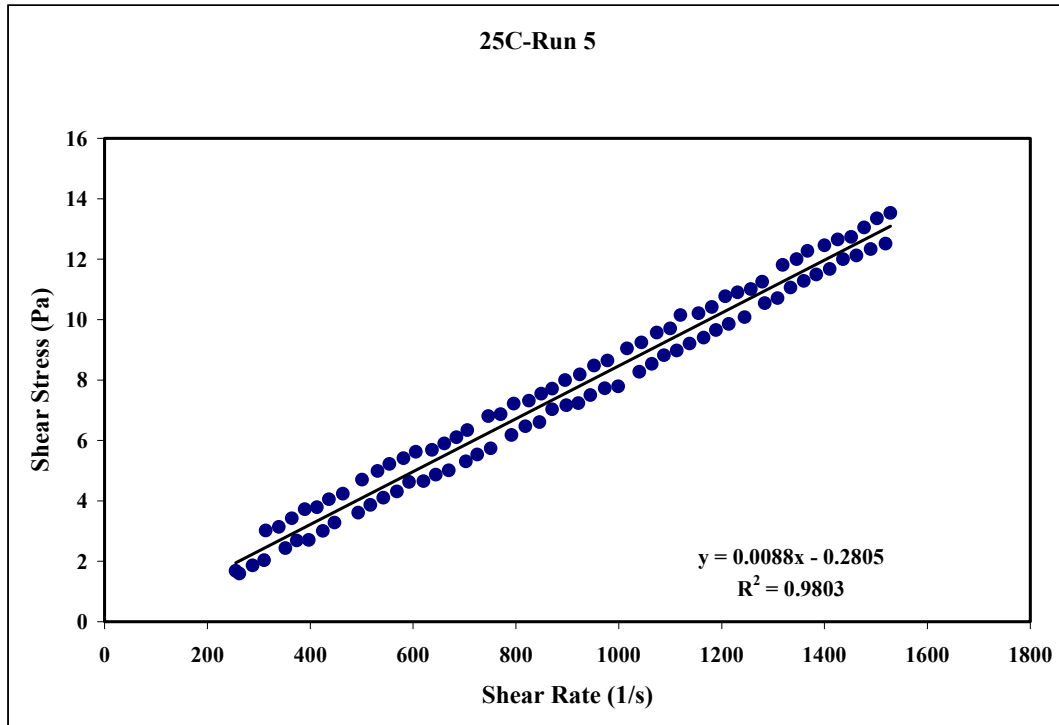


Figure 37. 25 °C Pretreated Run 5

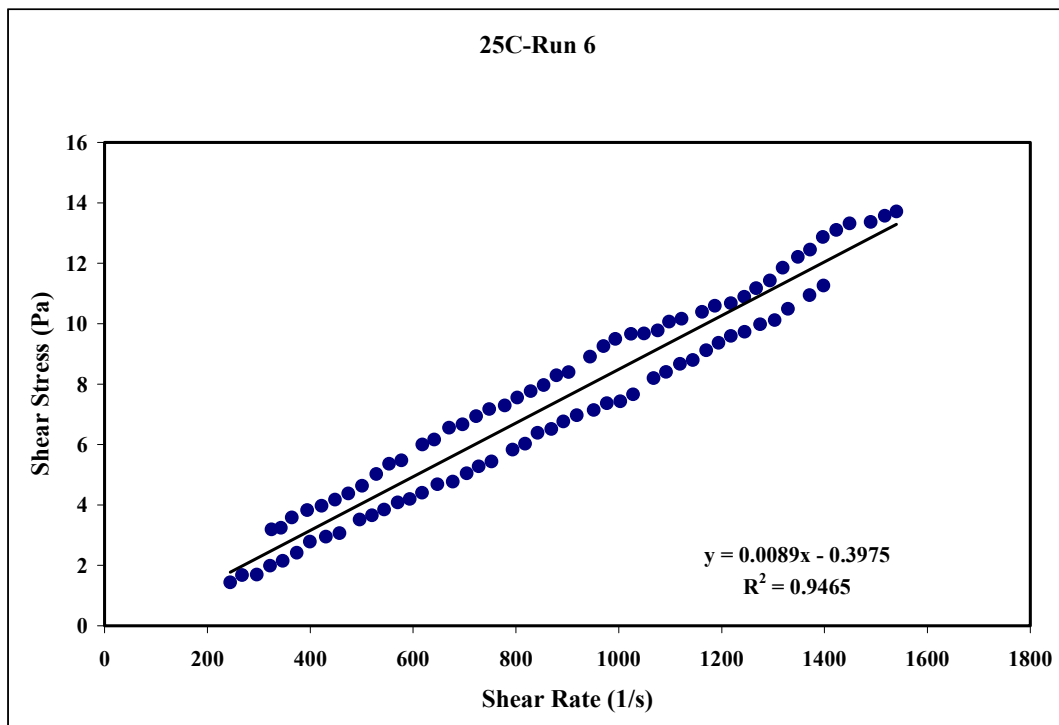


Figure 38. 25 °C Pretreated Run 6

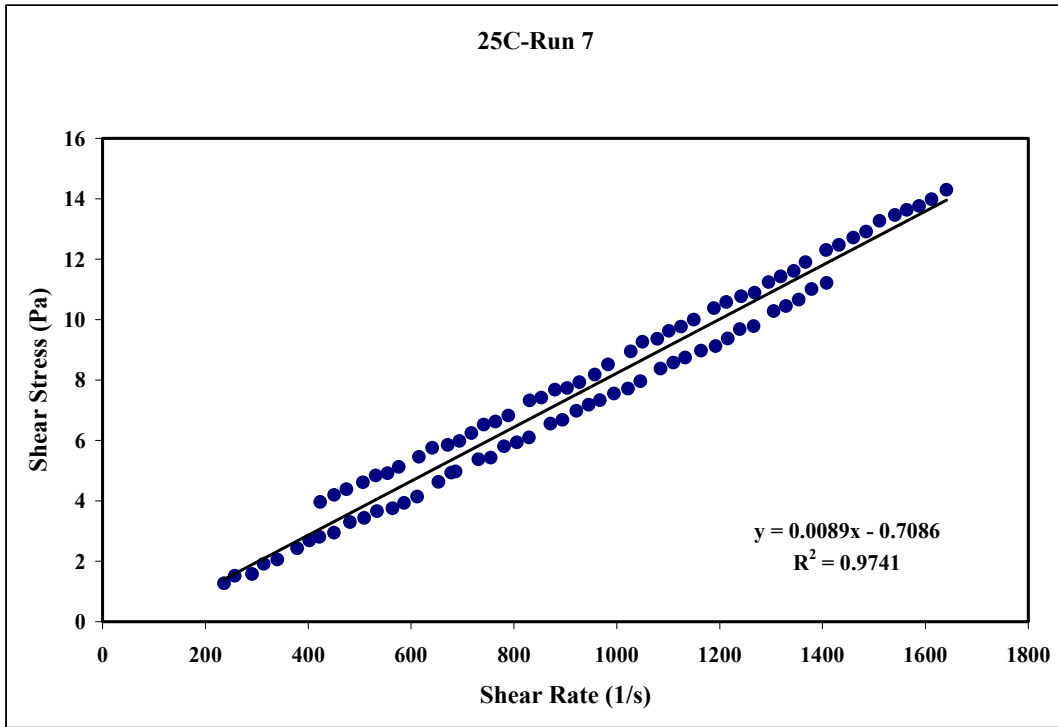


Figure 39. 25 °C Pretreated Run 7

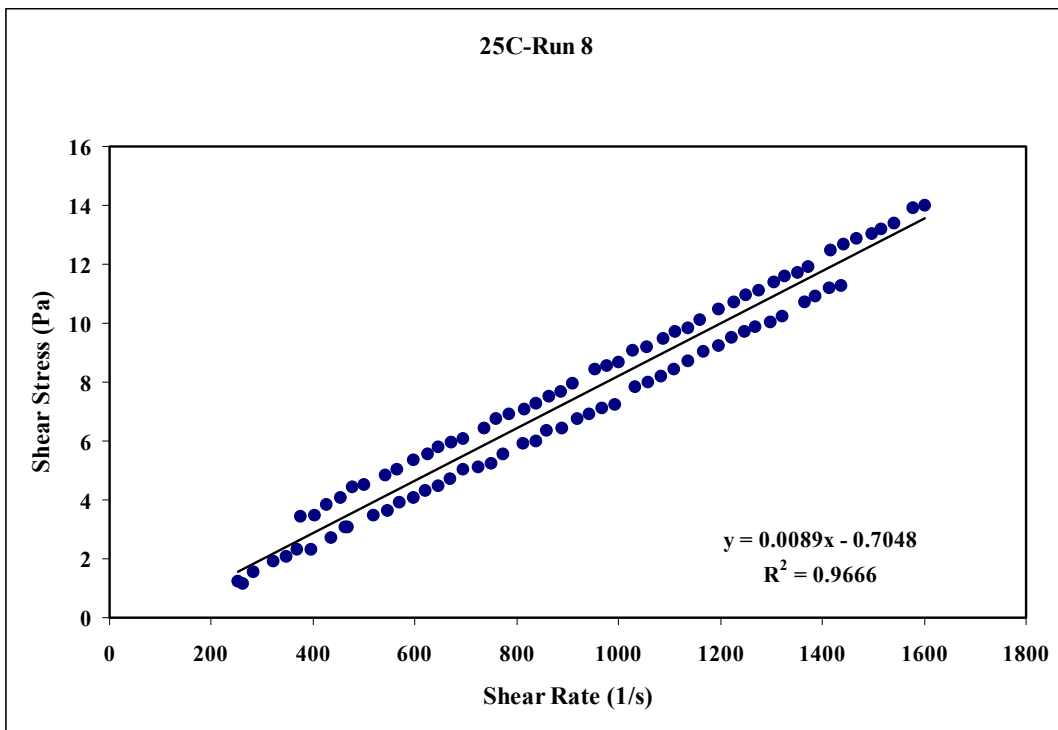


Figure 40. 25 °C Pretreated Run 8

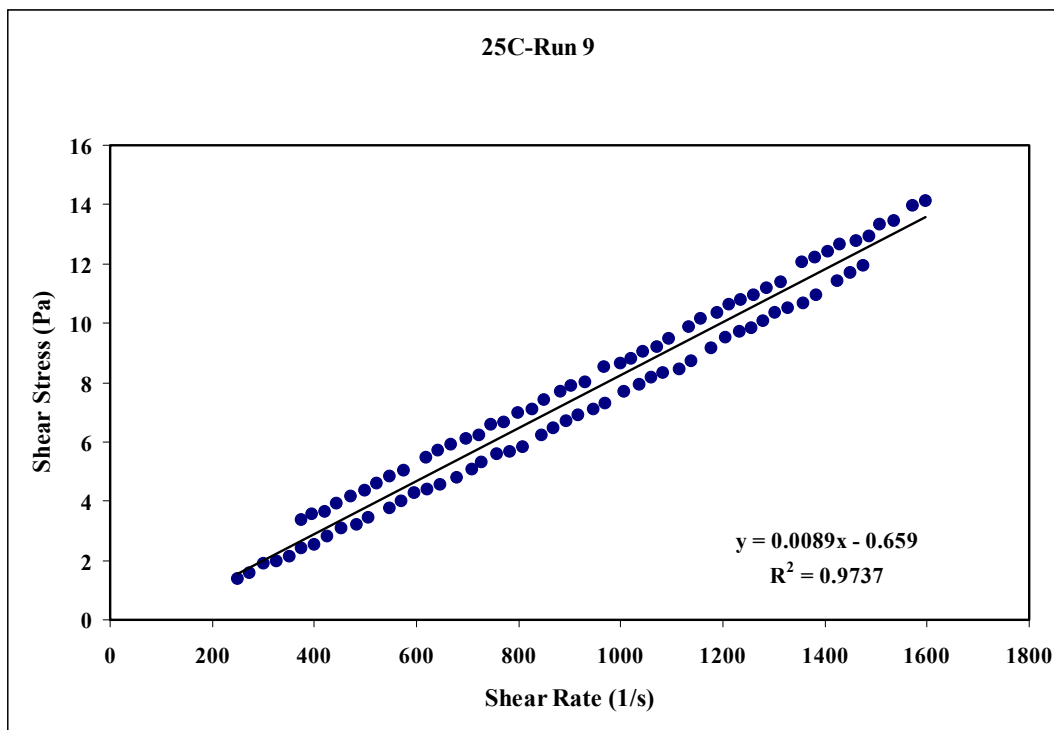


Figure 41. 25 °C Pretreated Run 9

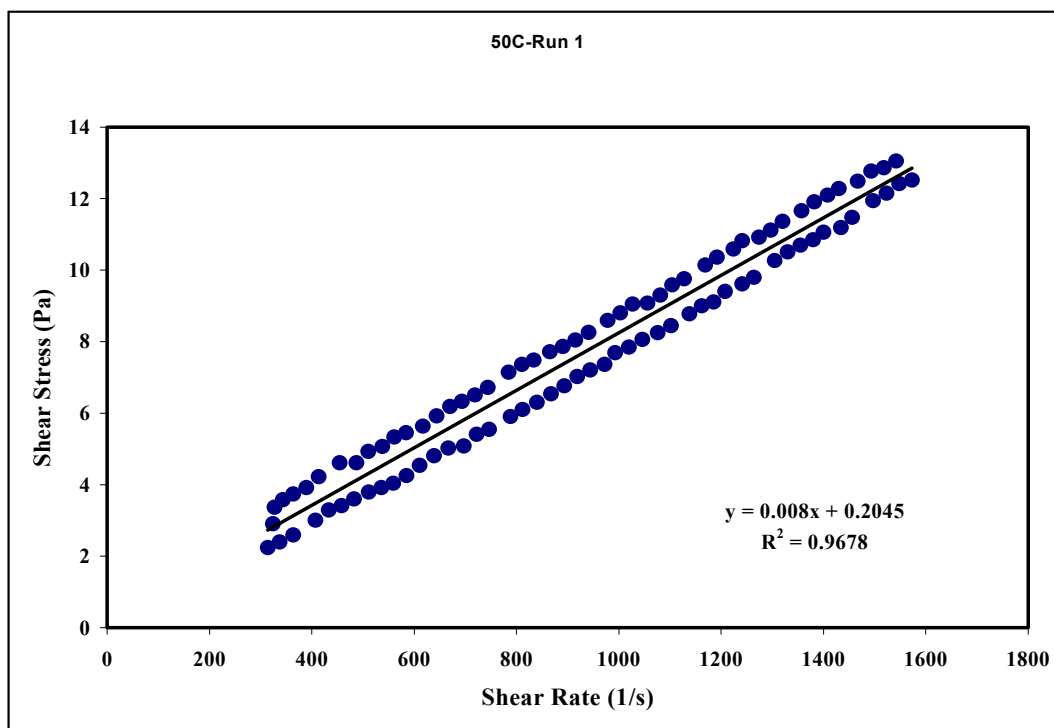


Figure 42. 50 °C Pretreated Run 1

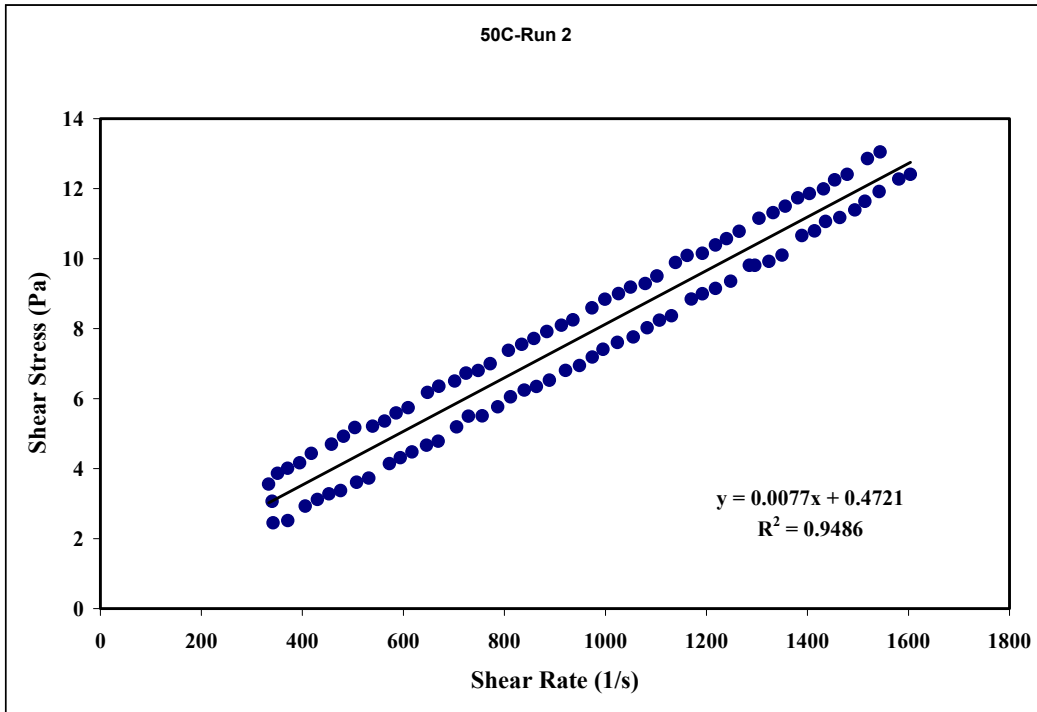


Figure 43. 50 °C Pretreated Run 2

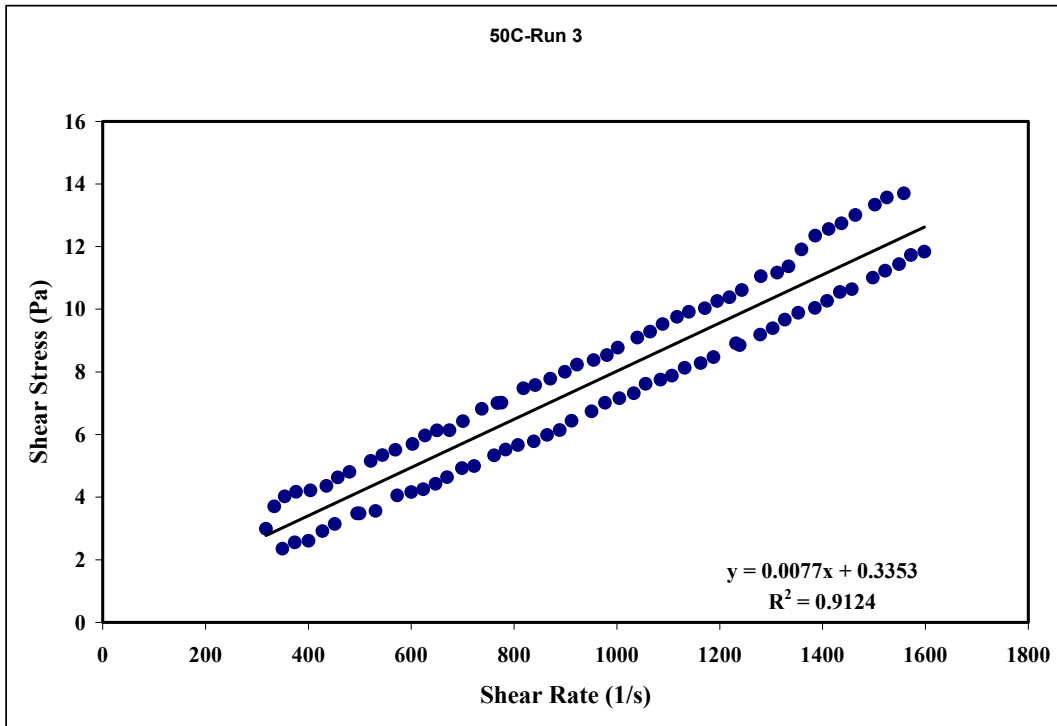


Figure 44. 50 °C Pretreated Run 3

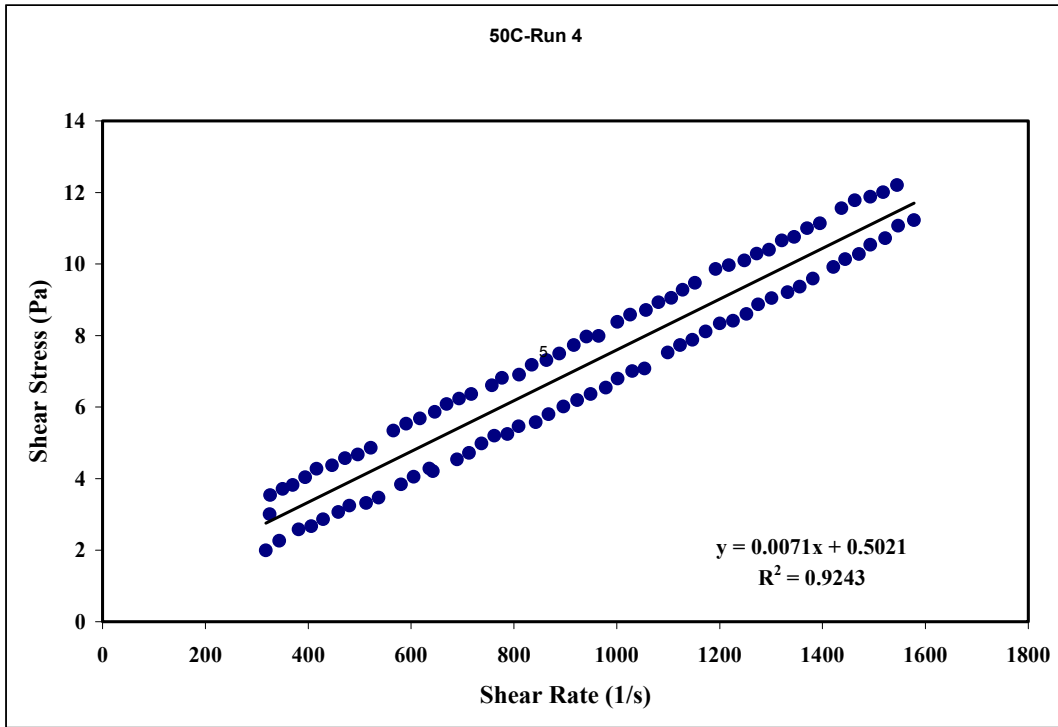


Figure 45. 50 °C Pretreated Run 4

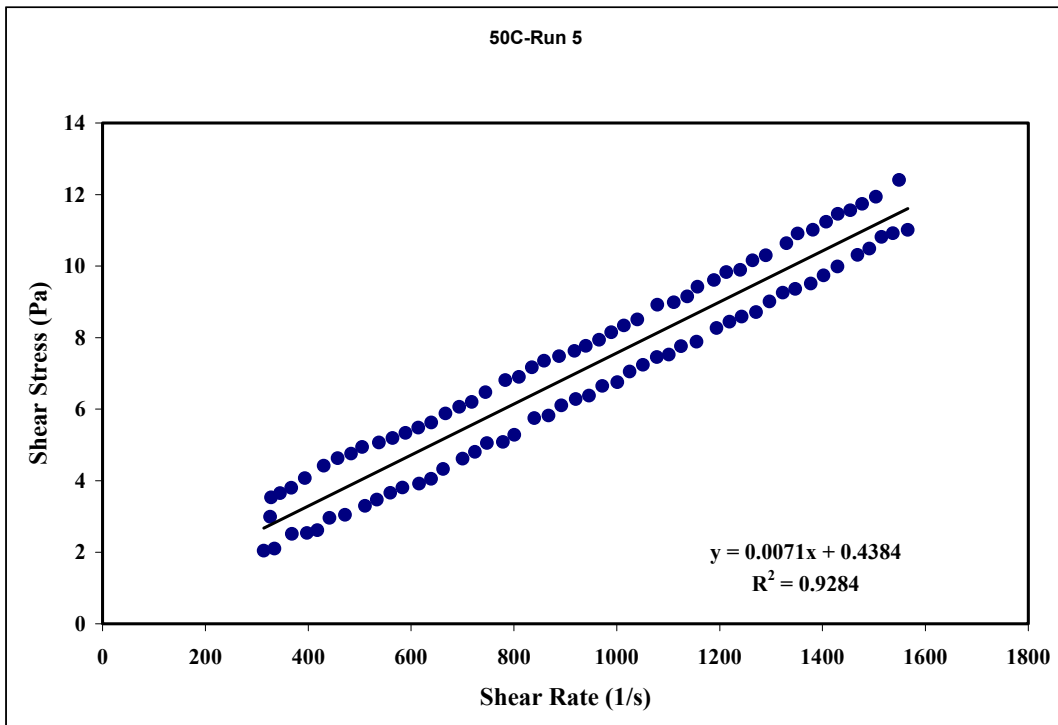


Figure 46. 50 °C Pretreated Run 5

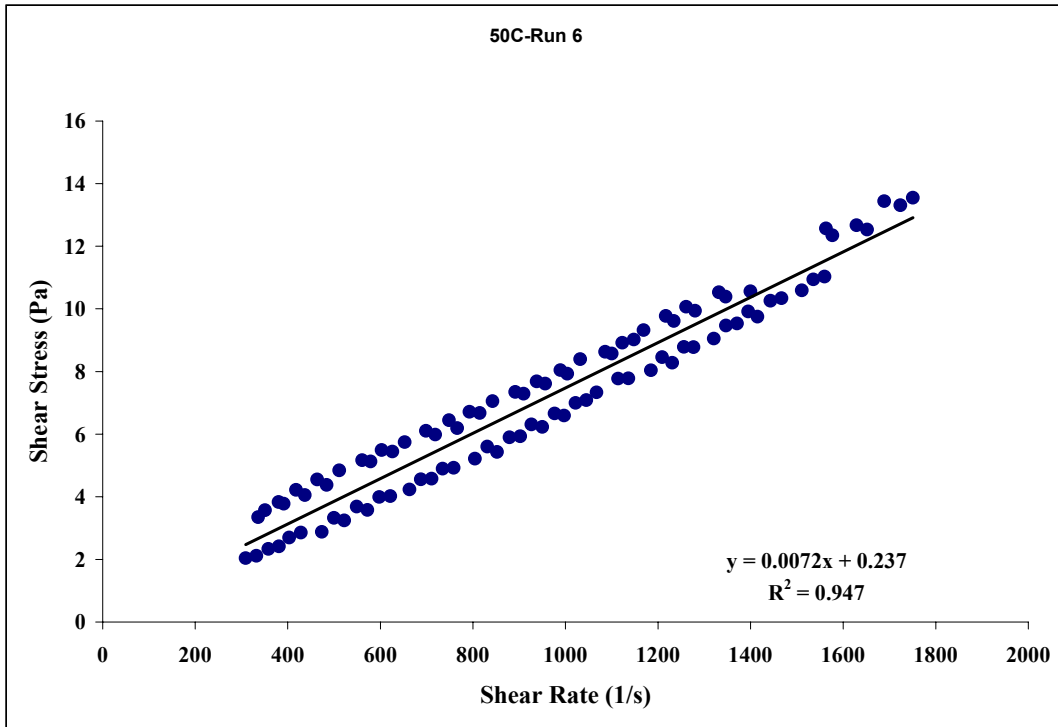


Figure 47. 50 °C Pretreated Run 6

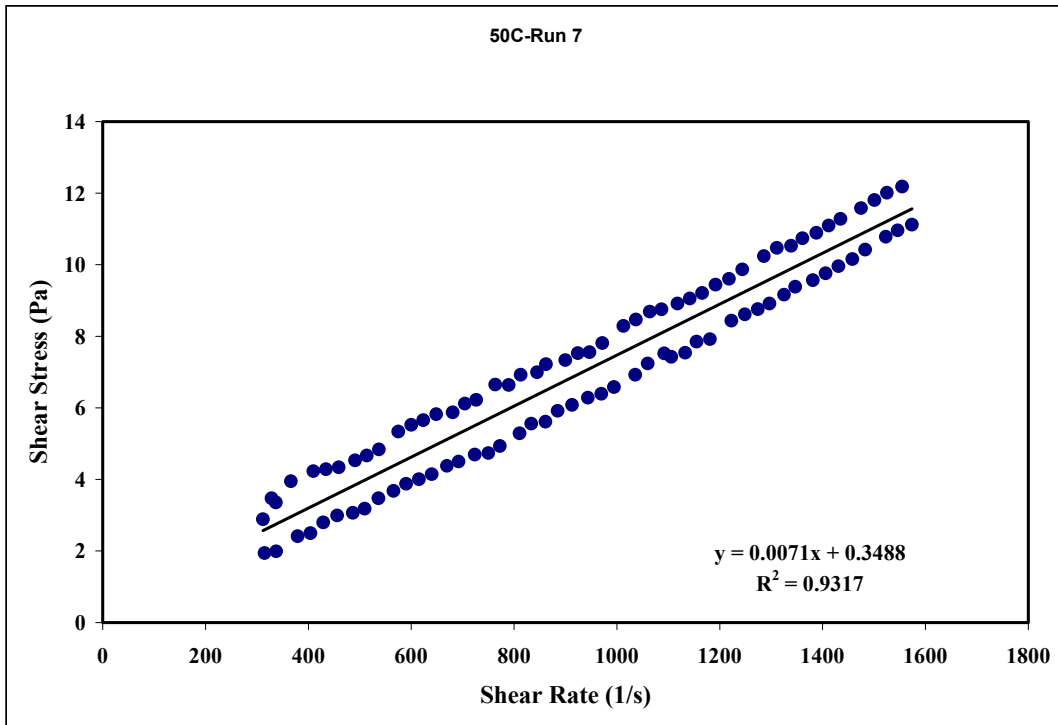


Figure 48. 50 °C Pretreated Run 7

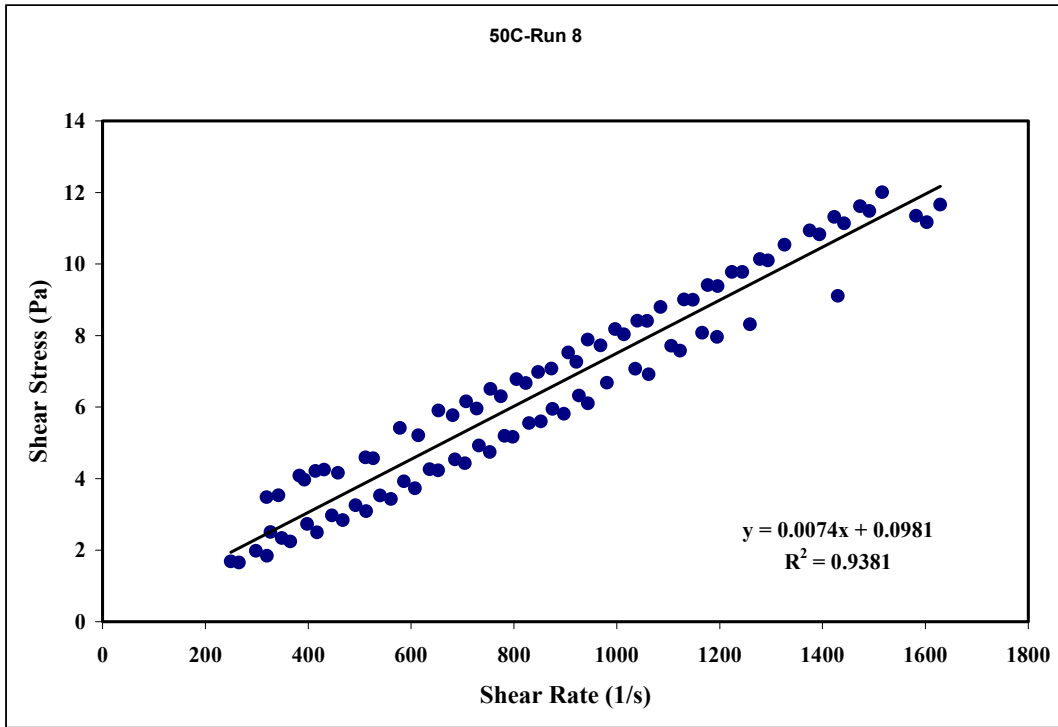


Figure 49. 50 °C Pretreated Run 8

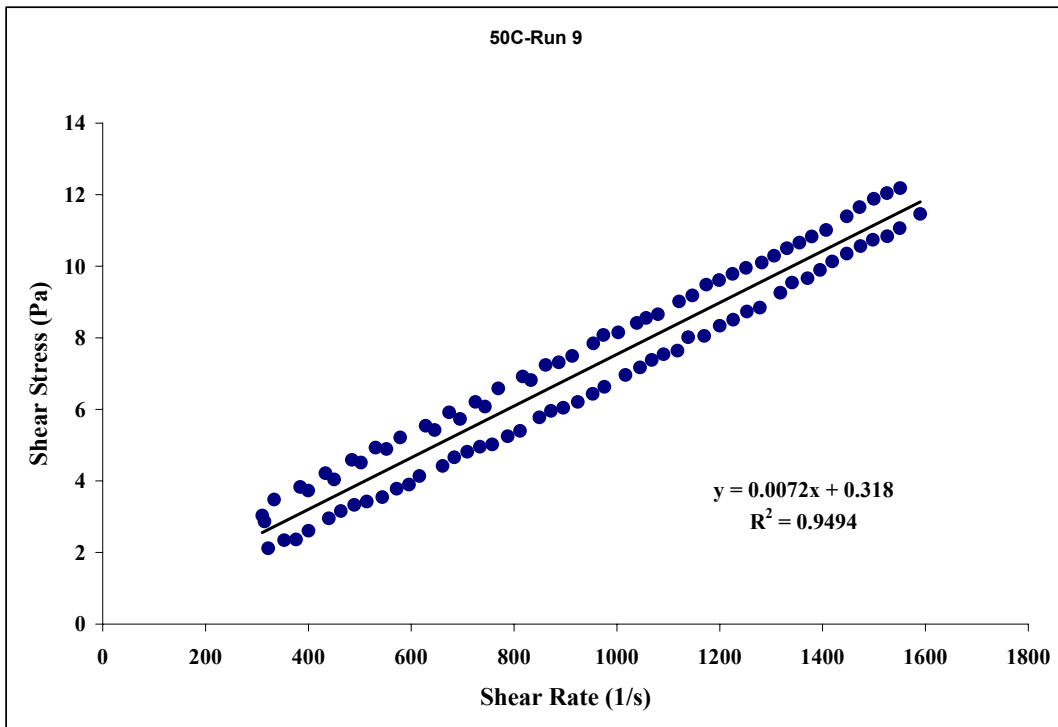


Figure 50. 50 °C Pretreated Run 9

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APPENDIX H

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ENVELOPE C RHEOGRAMS

As Received

Diluted

PART 2 Page 329

ENVELOPE C RHEOGRAMS

Pretreated

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APPENDIX H – PART 1

ENVELOPE C RHEOGRAMS

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Figure 45. 25 °C Diluted Run 9323

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Figure 47. 50 °C Diluted Run 2324

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Figure 49. 50 °C Diluted Run 4325

Figure 50. 50 °C Diluted Run 5325

Figure 51. 50 °C Diluted Run 6326

Figure 52. 50 °C Diluted Run 7326

Figure 53. 50 °C Diluted Run 8327

Figure 54. 50 °C Diluted Run 9327

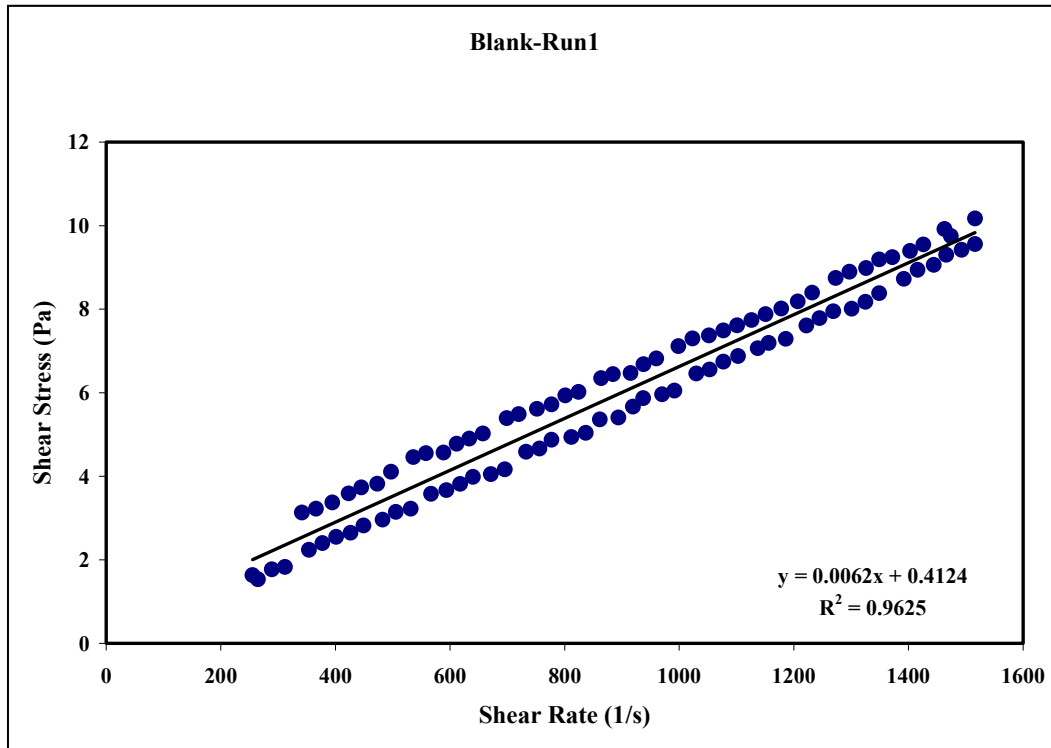


Figure 1. Blank As Received Run 1

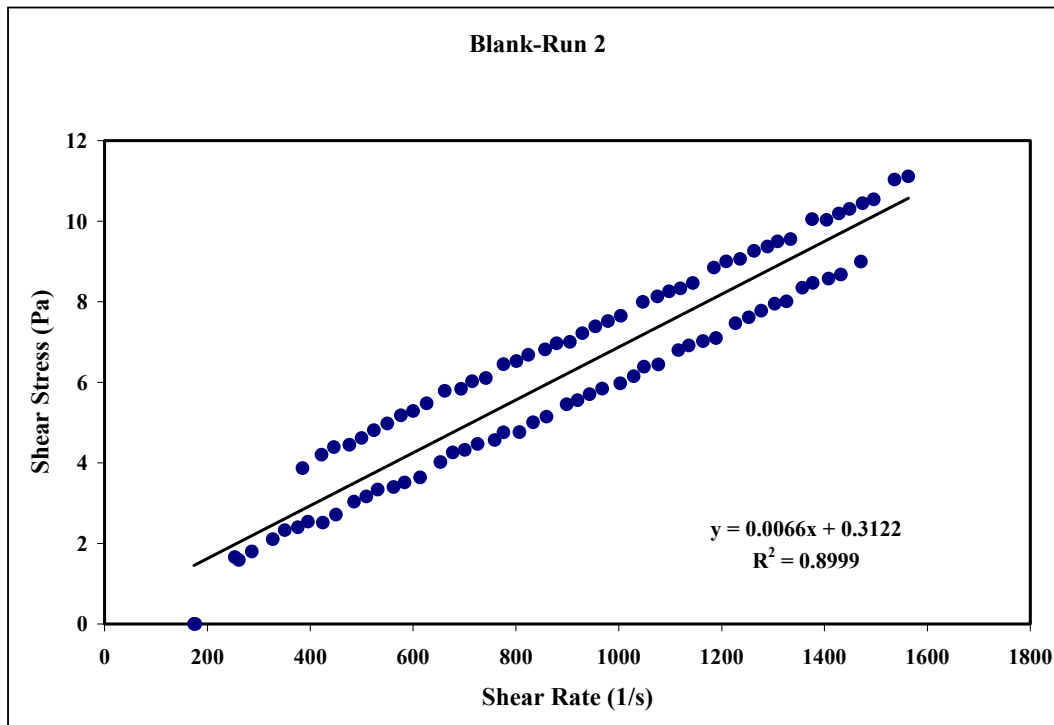


Figure 2. Blank As Received Run 2

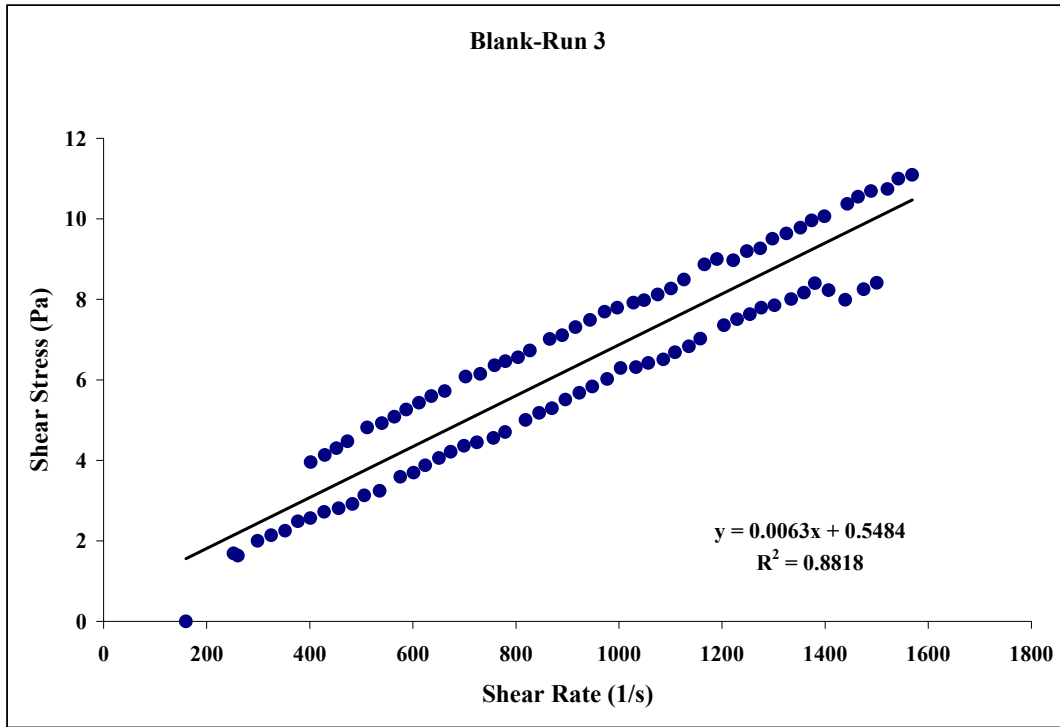


Figure 3. Blank As Received Run 3

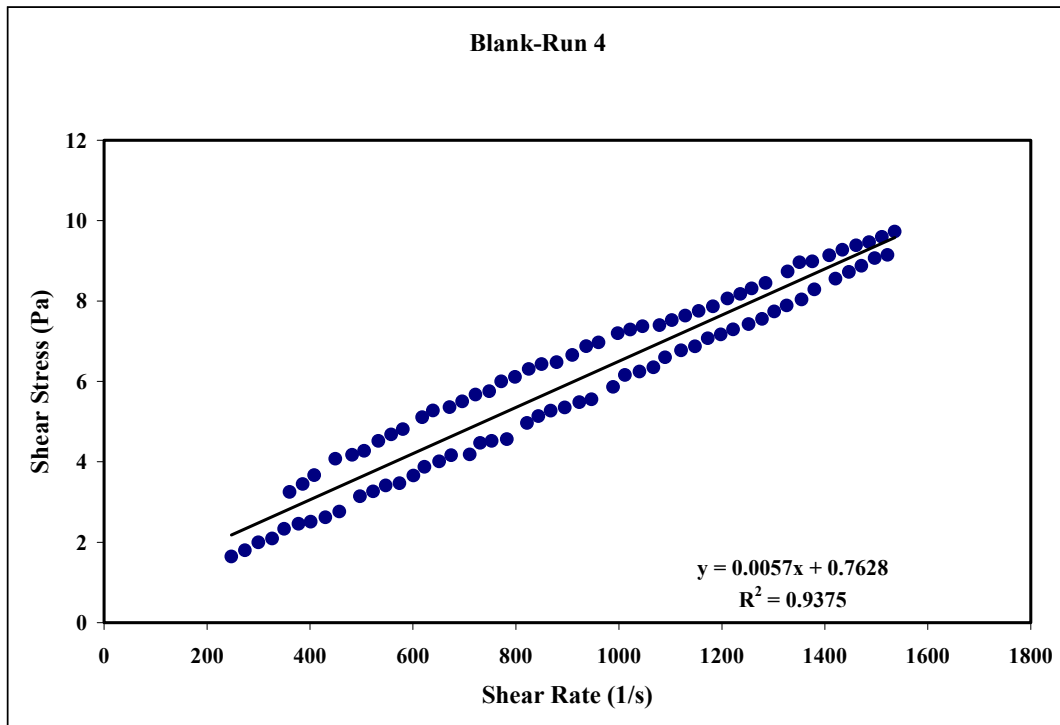


Figure 4. Blank As Received Run 4

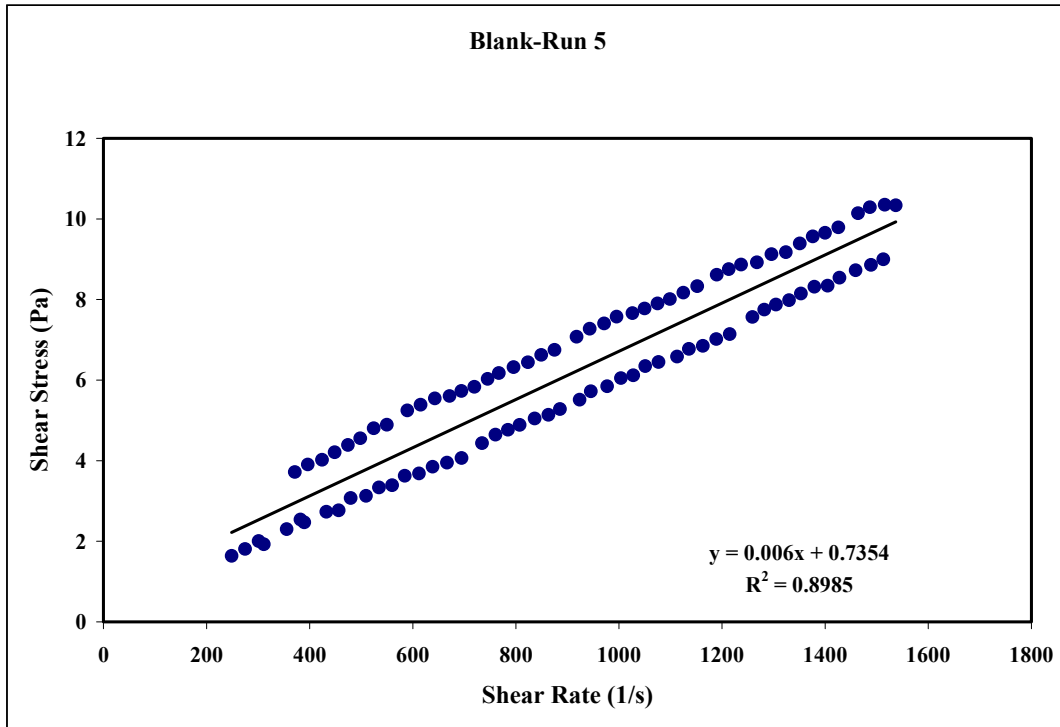


Figure 5. Blank As Received Run 5

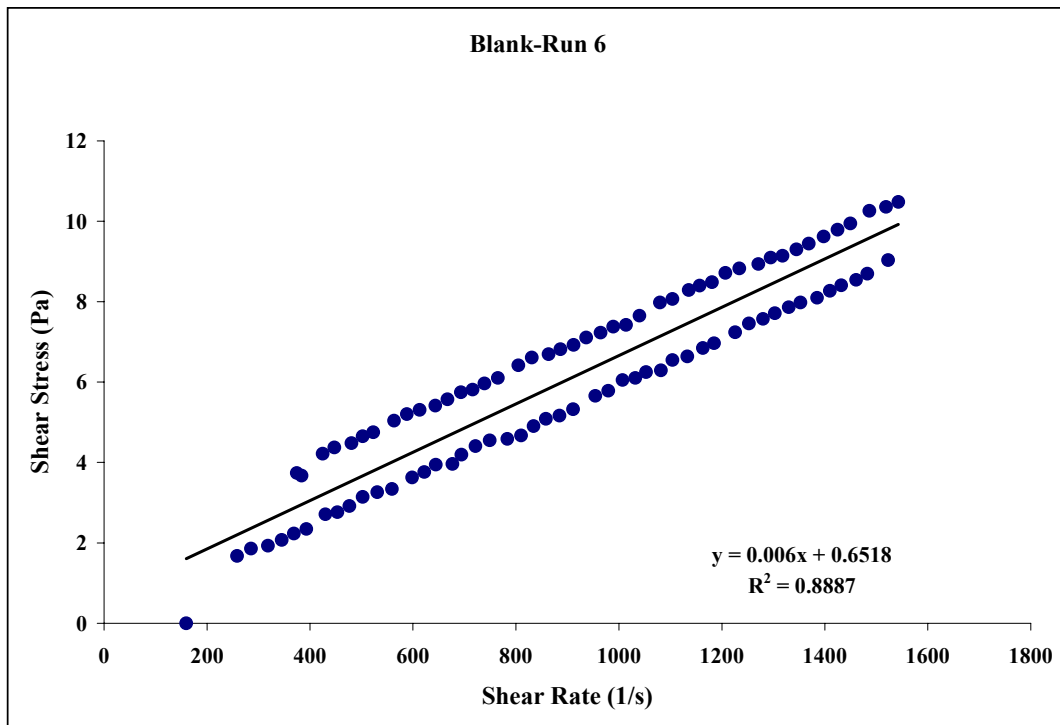


Figure 6. Blank As Received Run 6

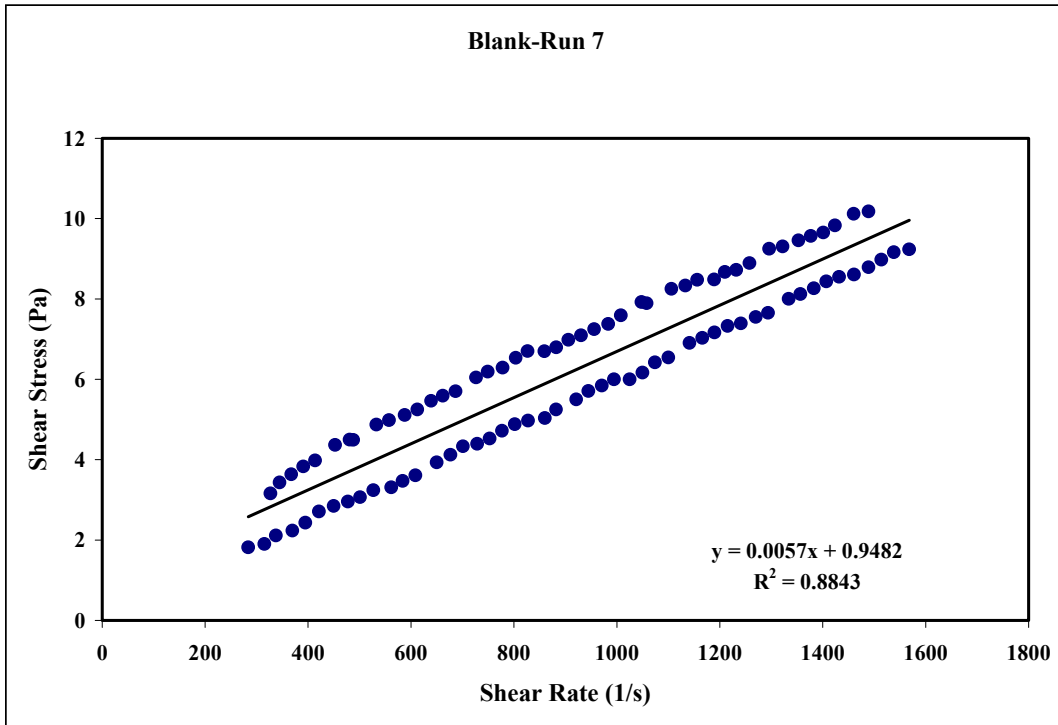


Figure 7. Blank As Received Run 7

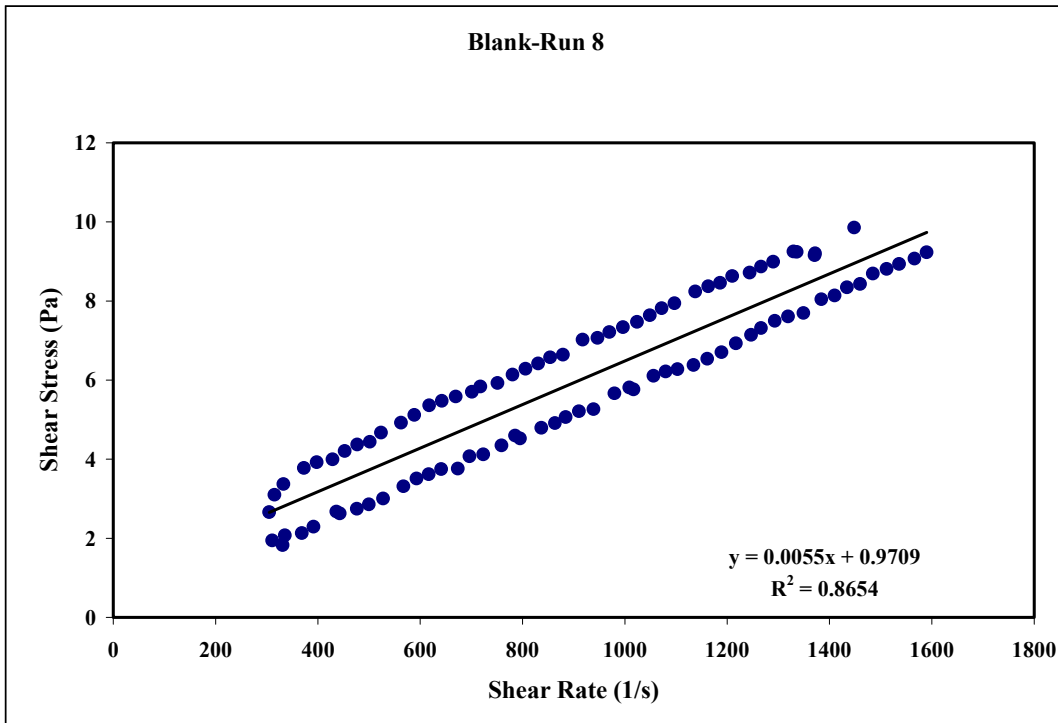


Figure 8. Blank As Received Run 8

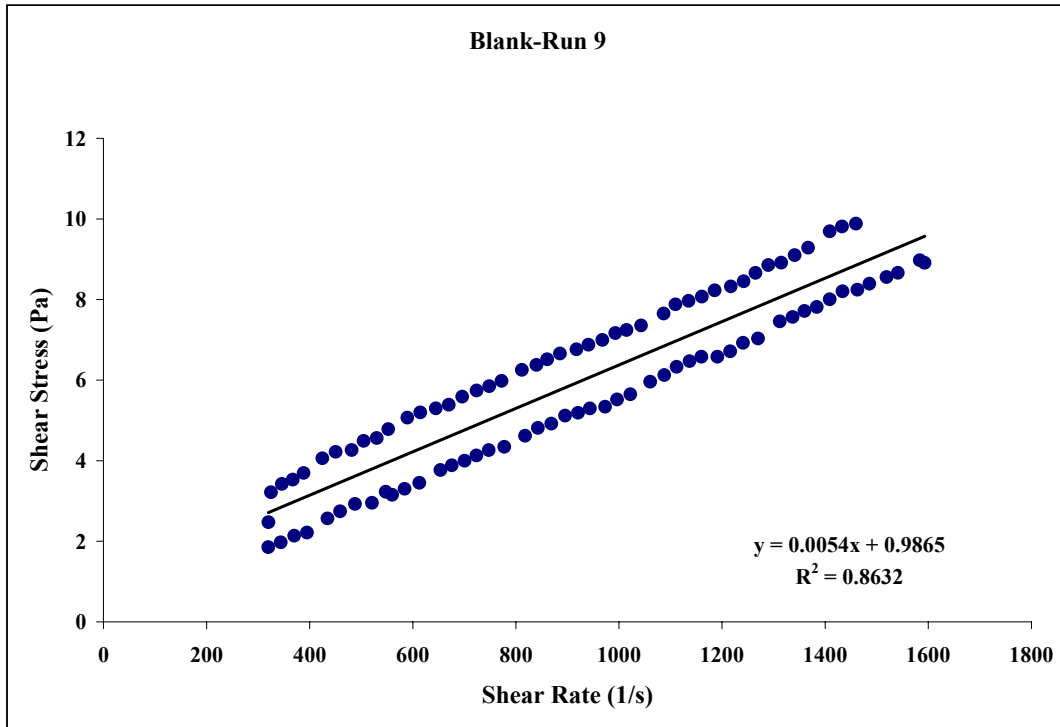


Figure 9. Blank As Received Run 9

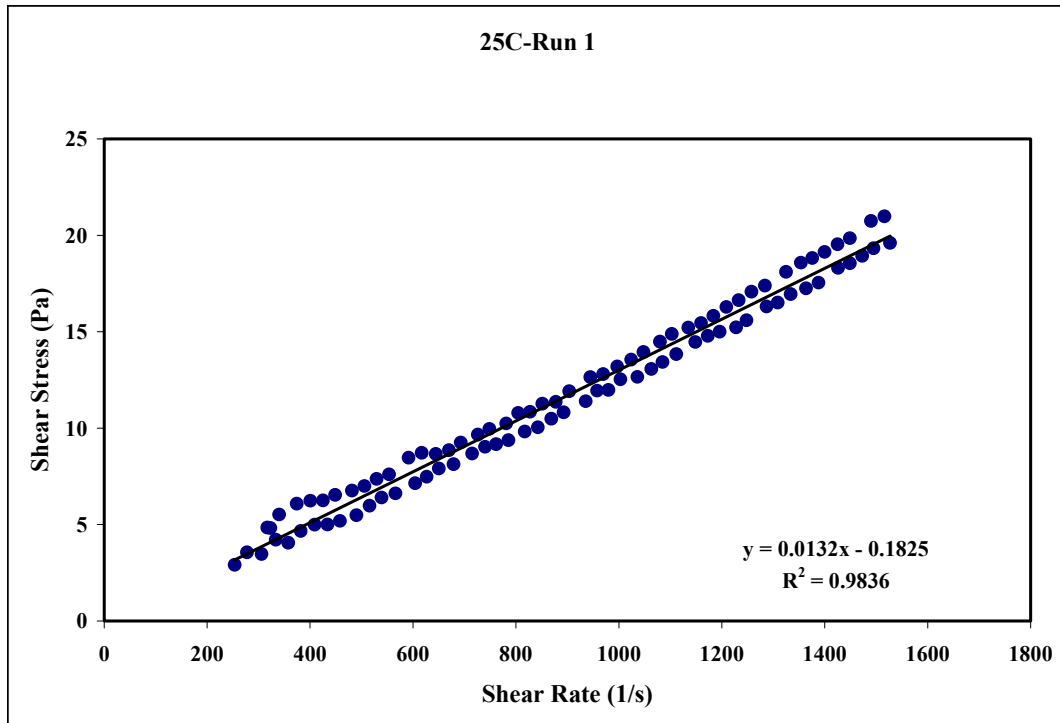


Figure 10. 25 °C As Received Run 1

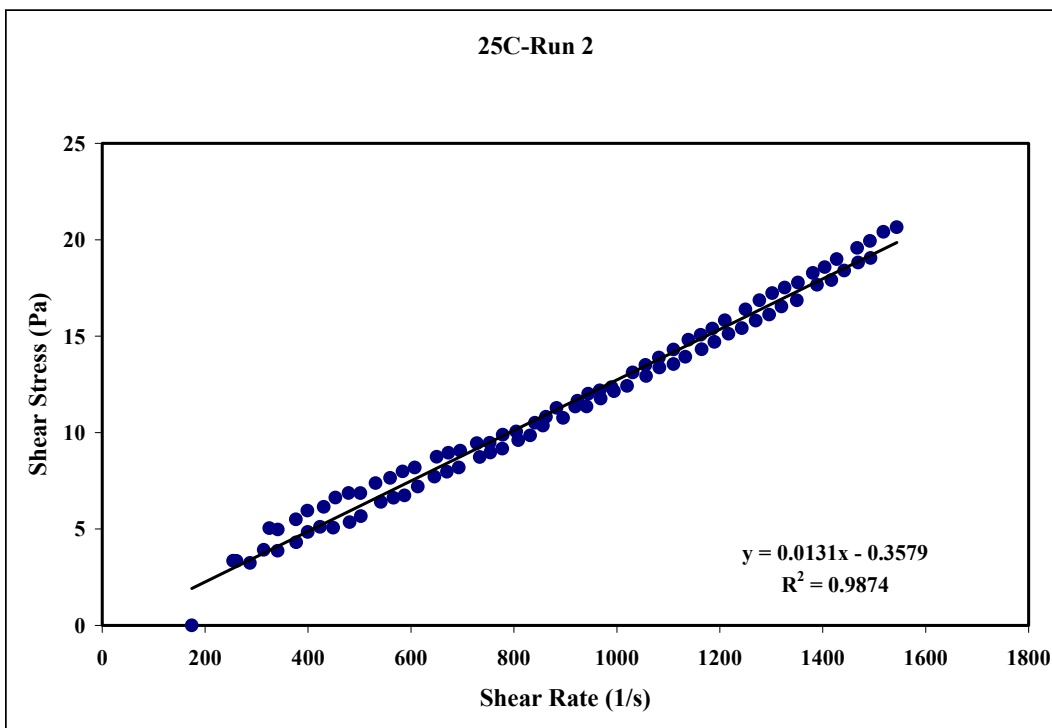


Figure 11. 25 °C As Received Run 2

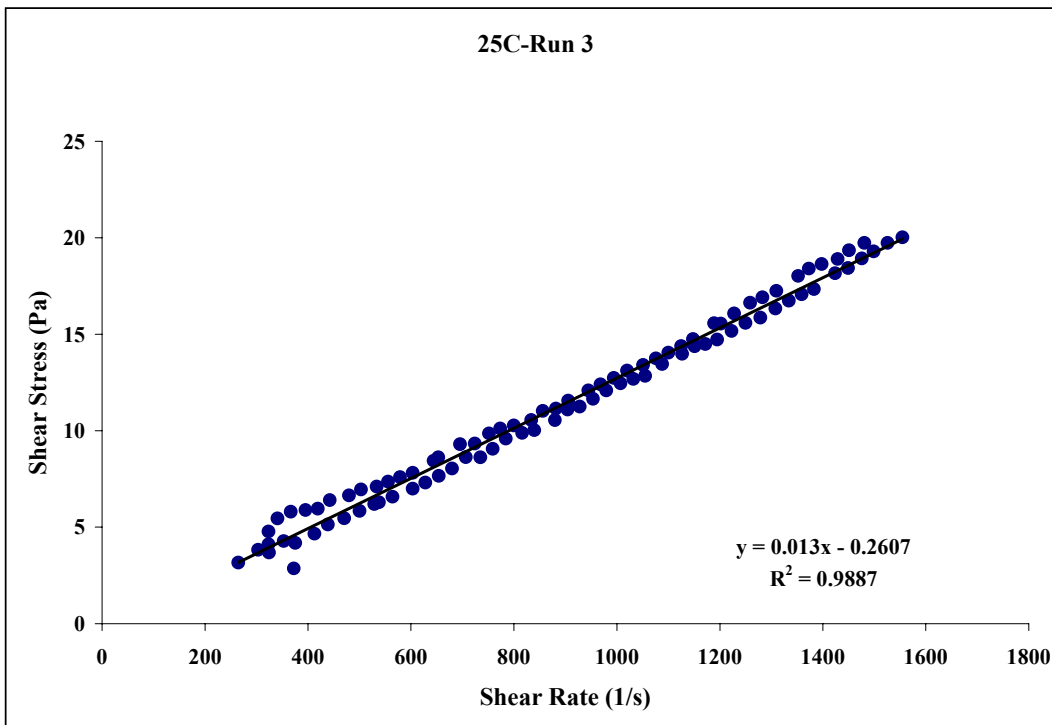


Figure 12. 25 °C As Received Run 3

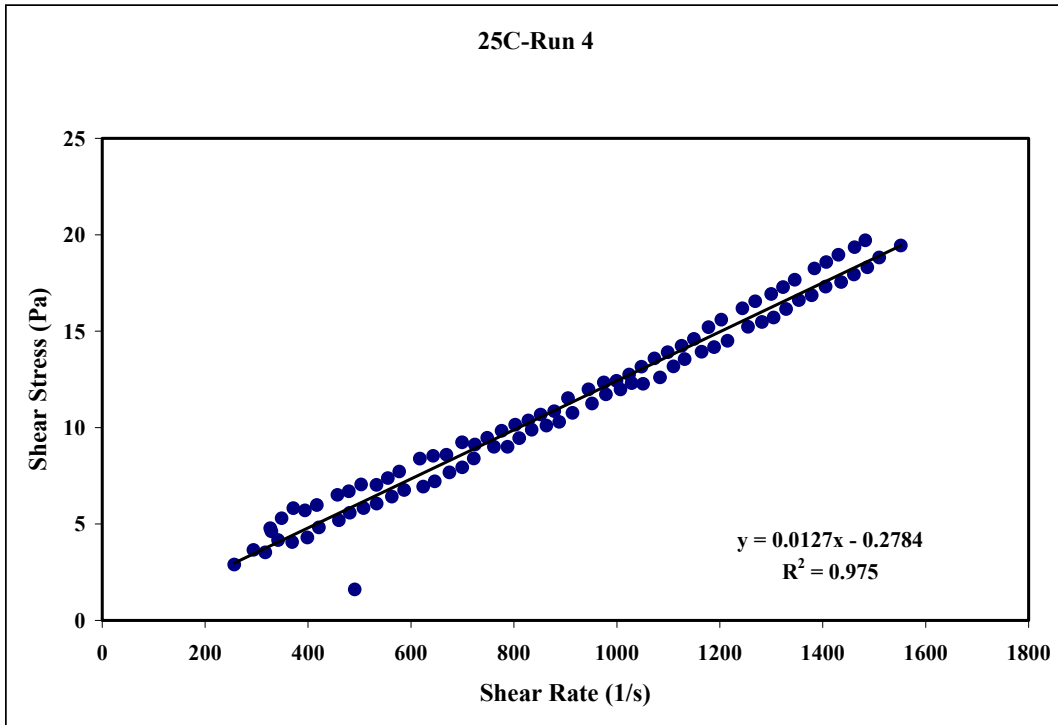


Figure 13. 25 °C As Received Run 4

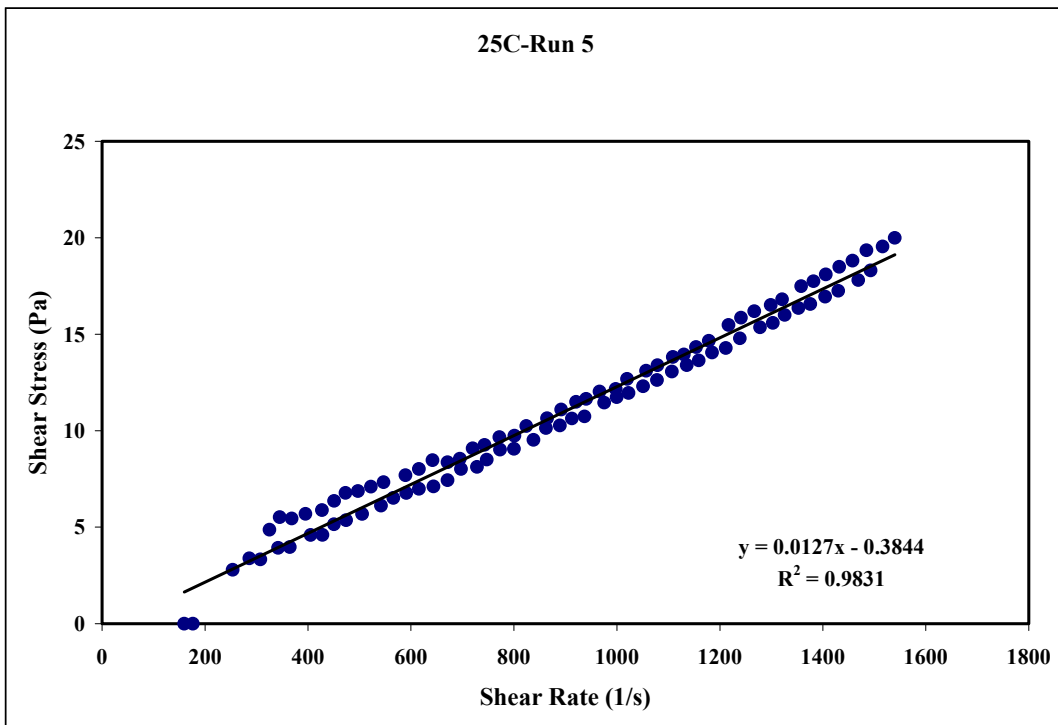


Figure 14. 25 °C As Received Run 5

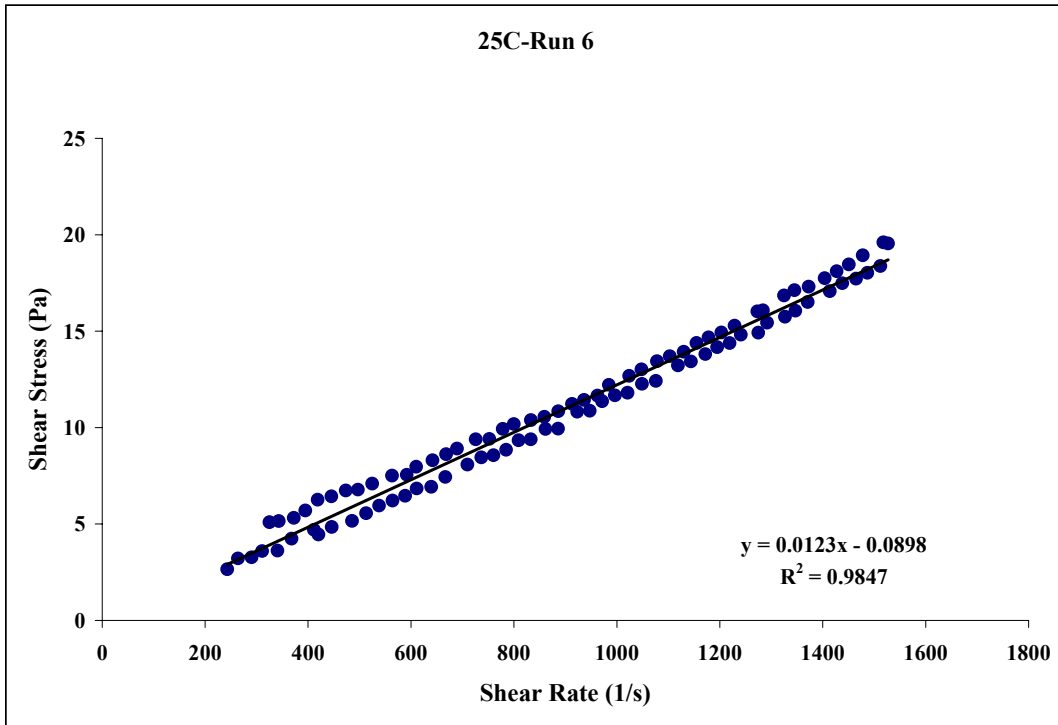


Figure 15. 25 °C As Received Run 6

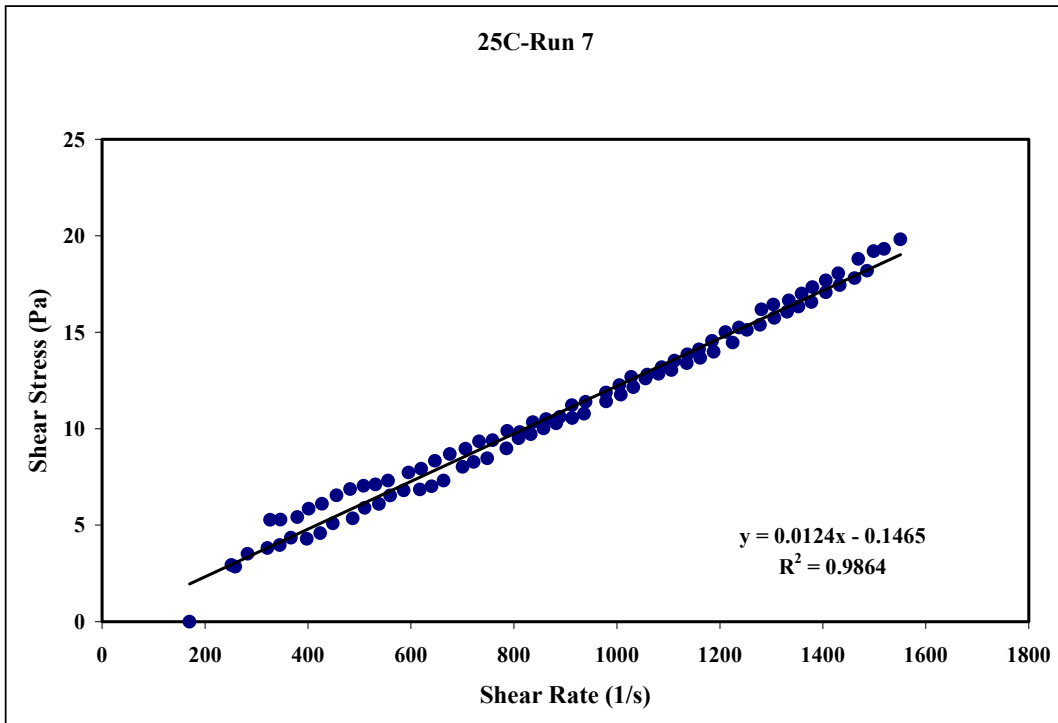


Figure 16. 25 °C As Received Run 7

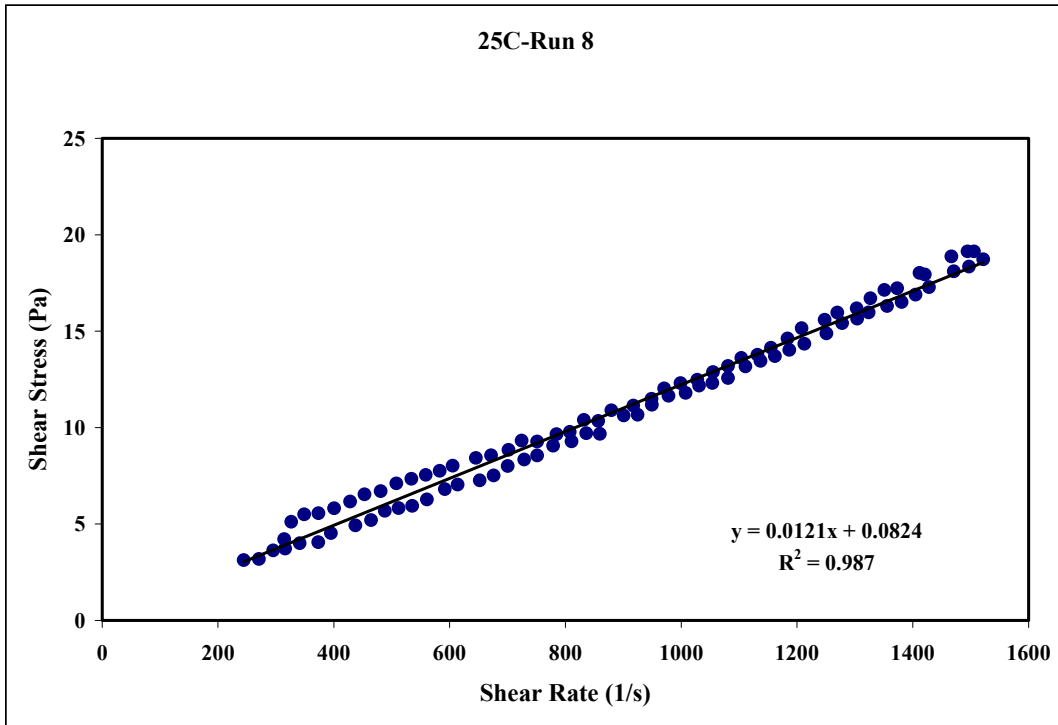


Figure 17. 25 °C As Received Run 8

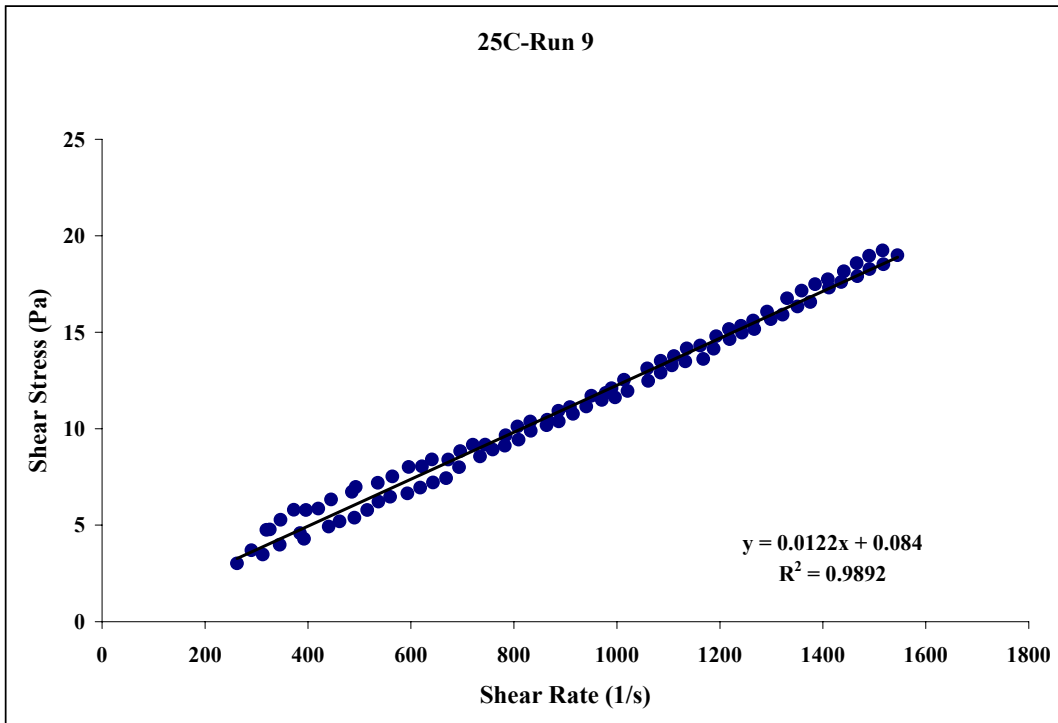


Figure 18. 25 °C As Received Run 9

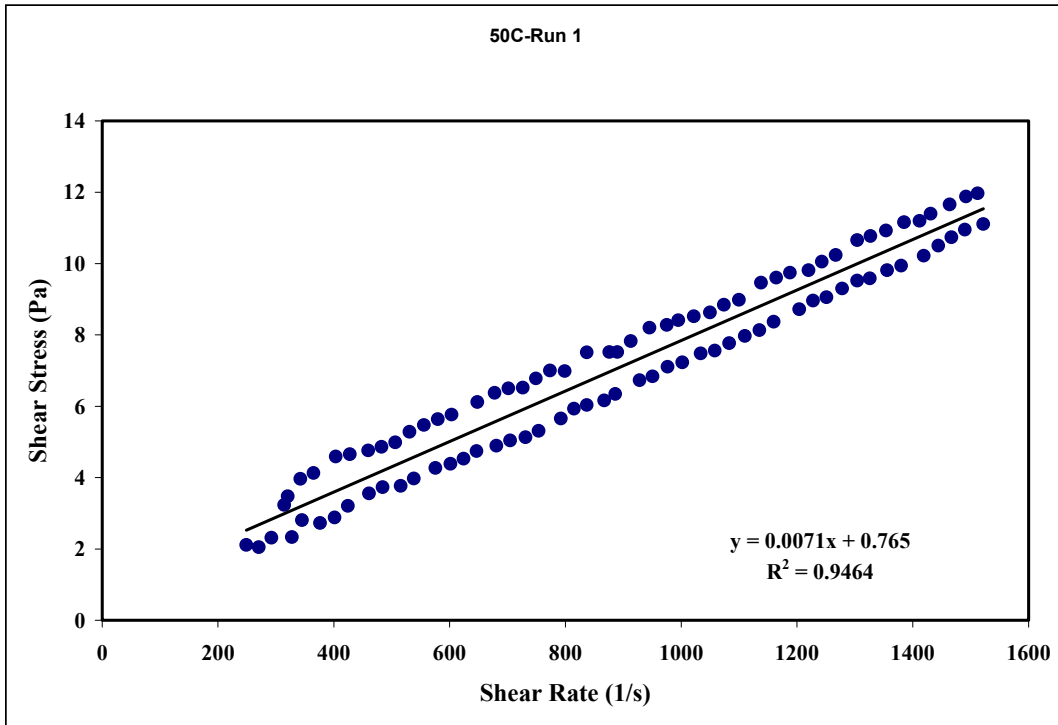


Figure 19. 50 °C As Received Run 1

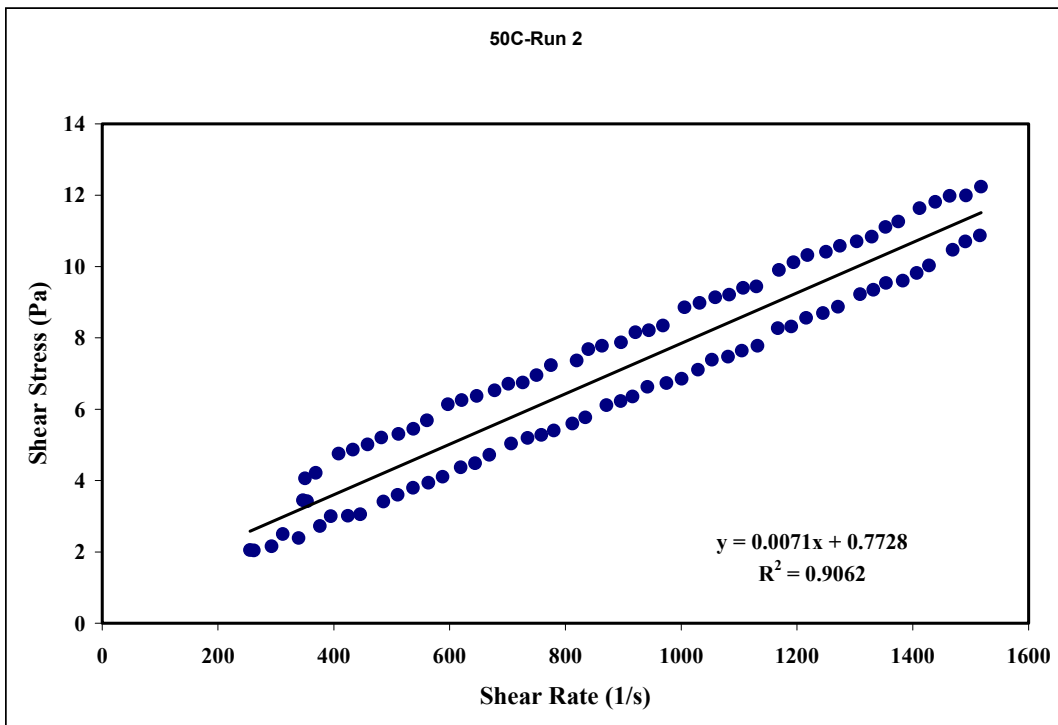


Figure 20. 50 °C As Received Run 2

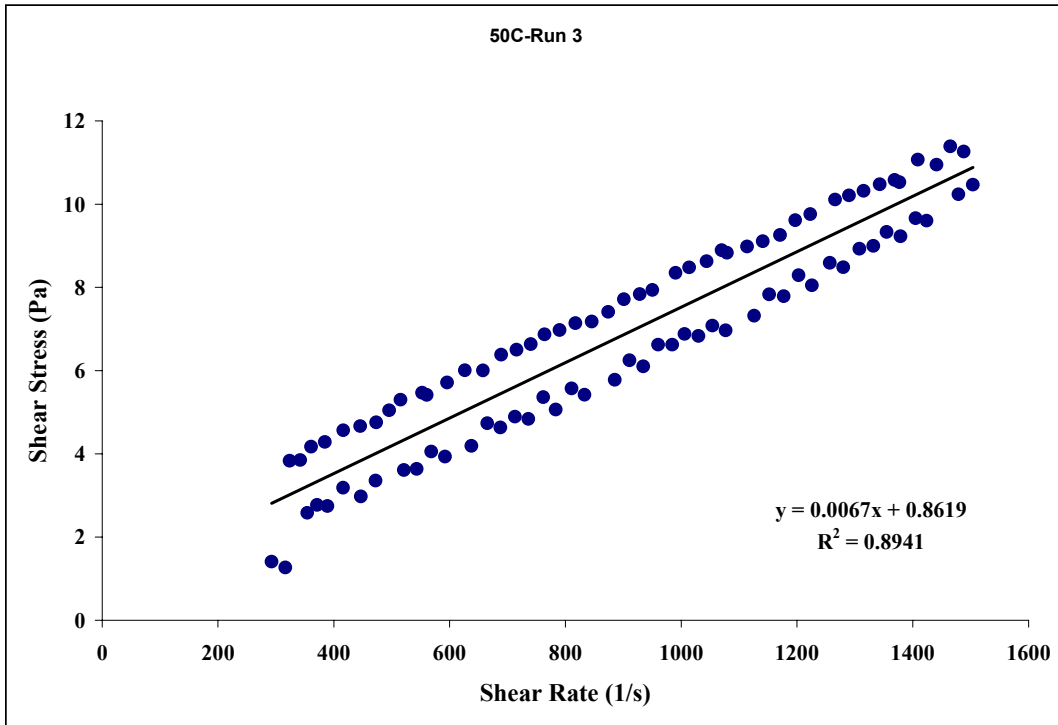


Figure 21. 50 °C As Received Run 3

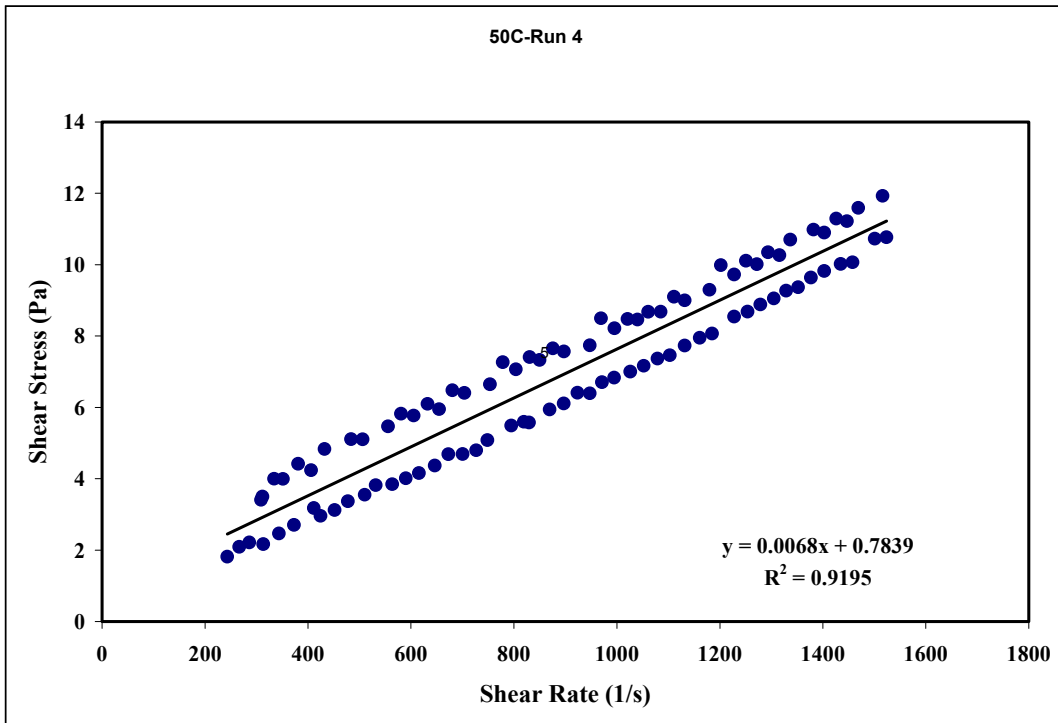


Figure 22. 50 °C As Received Run 4

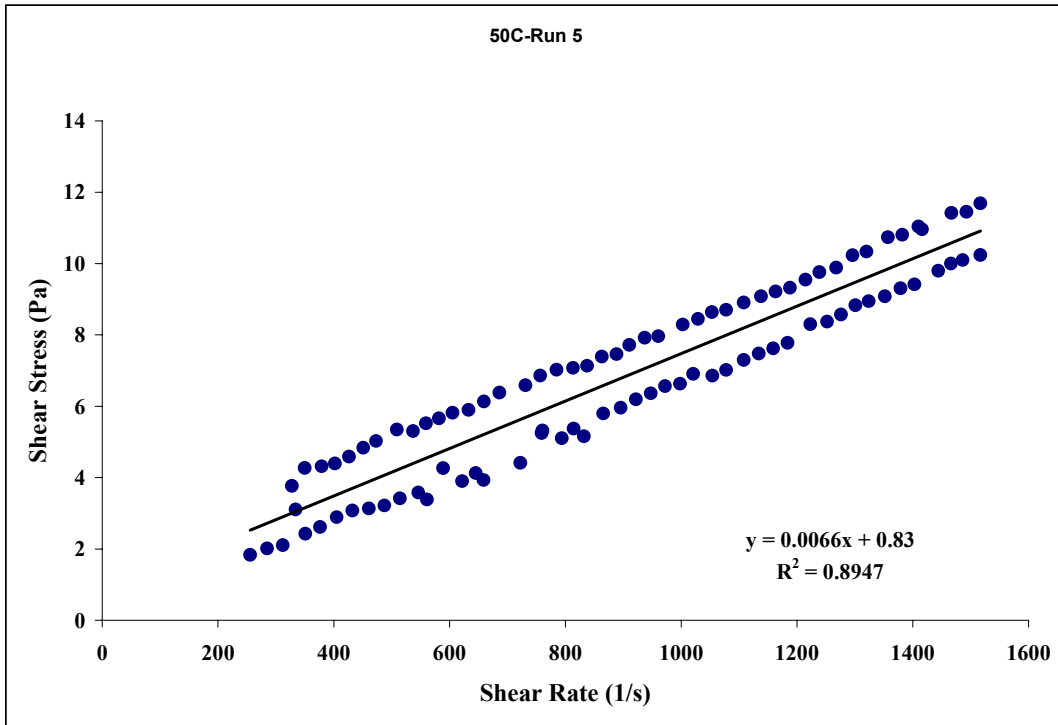


Figure 23. 50 °C As Received Run 5

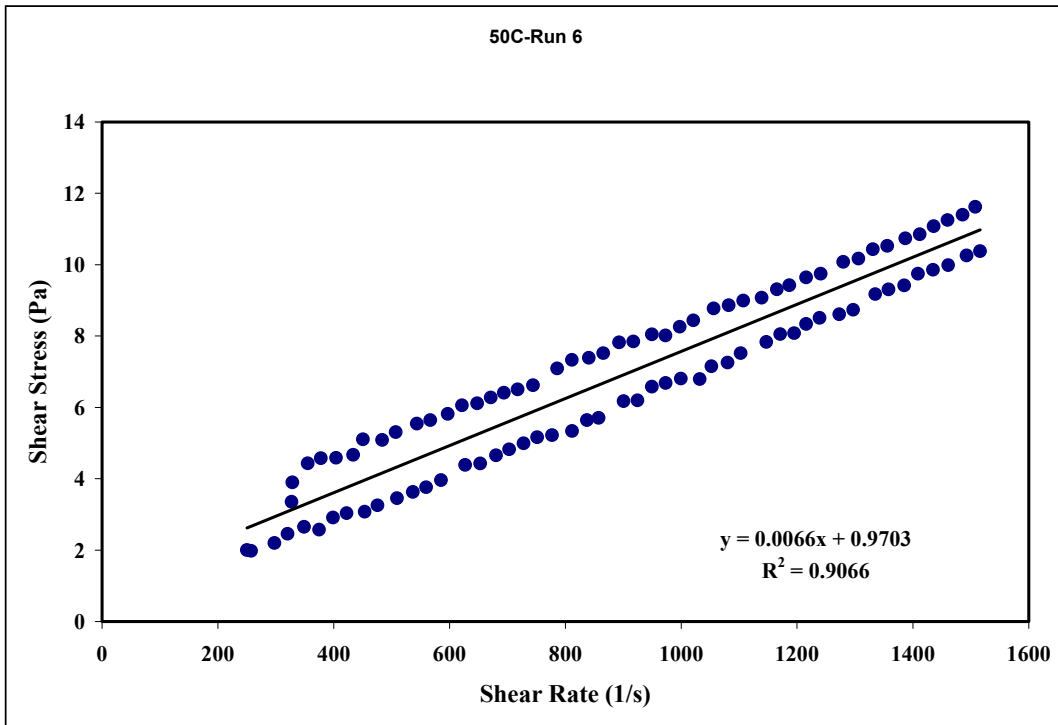


Figure 24. 50 °C As Received Run 6

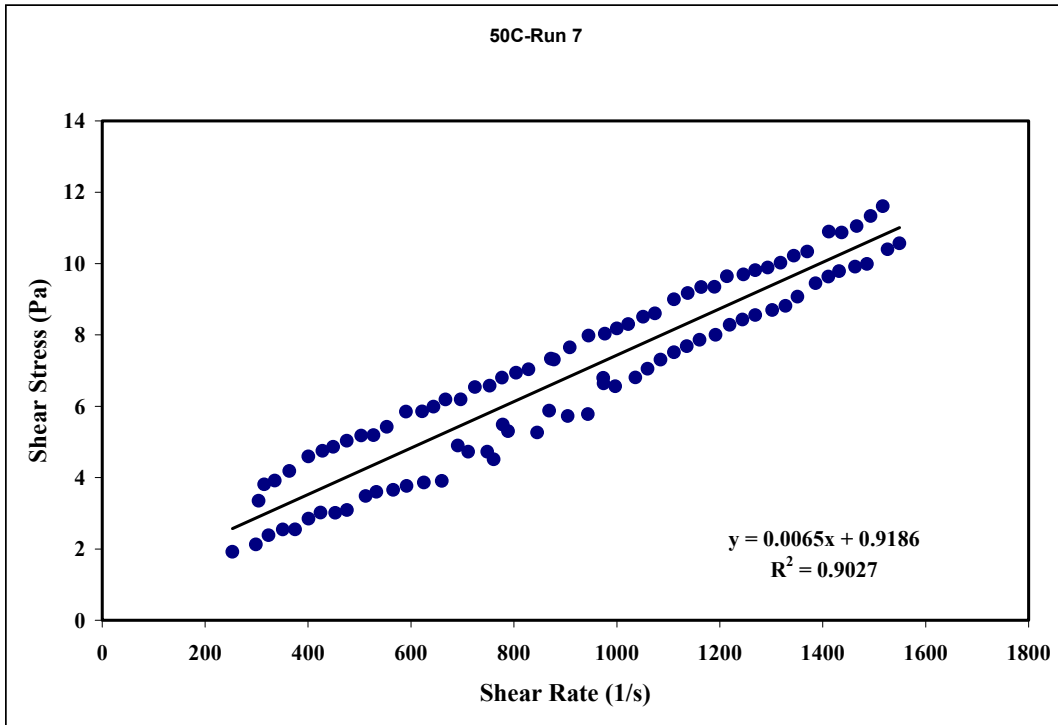


Figure 25. 50 °C As Received Run 7

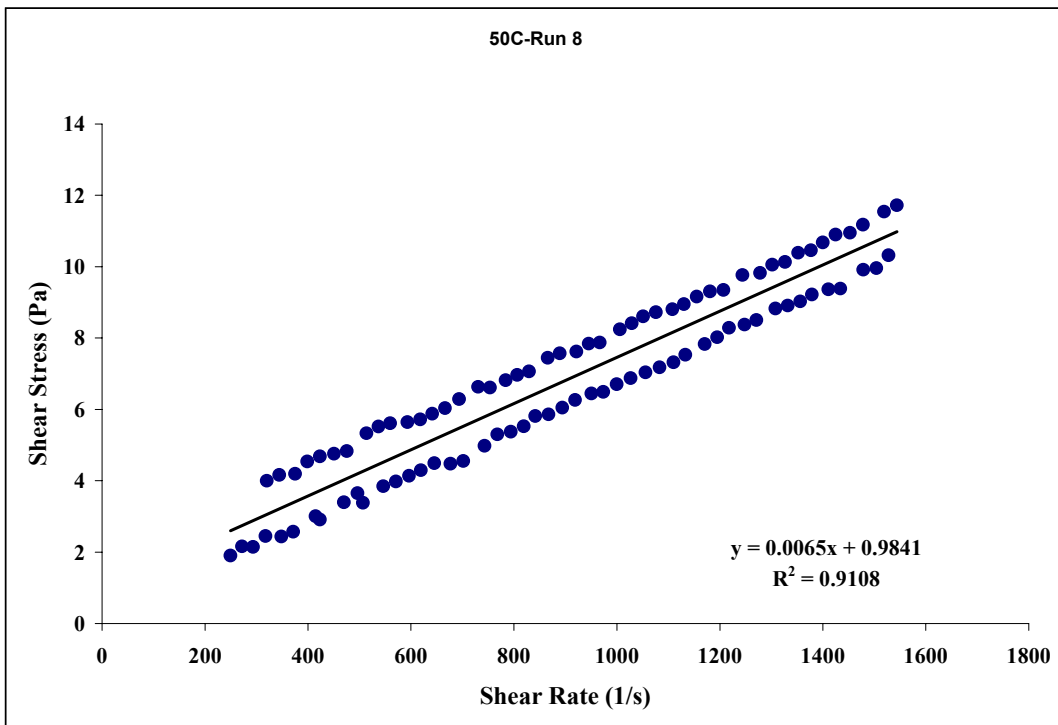


Figure 26. 50 °C As Received Run 8

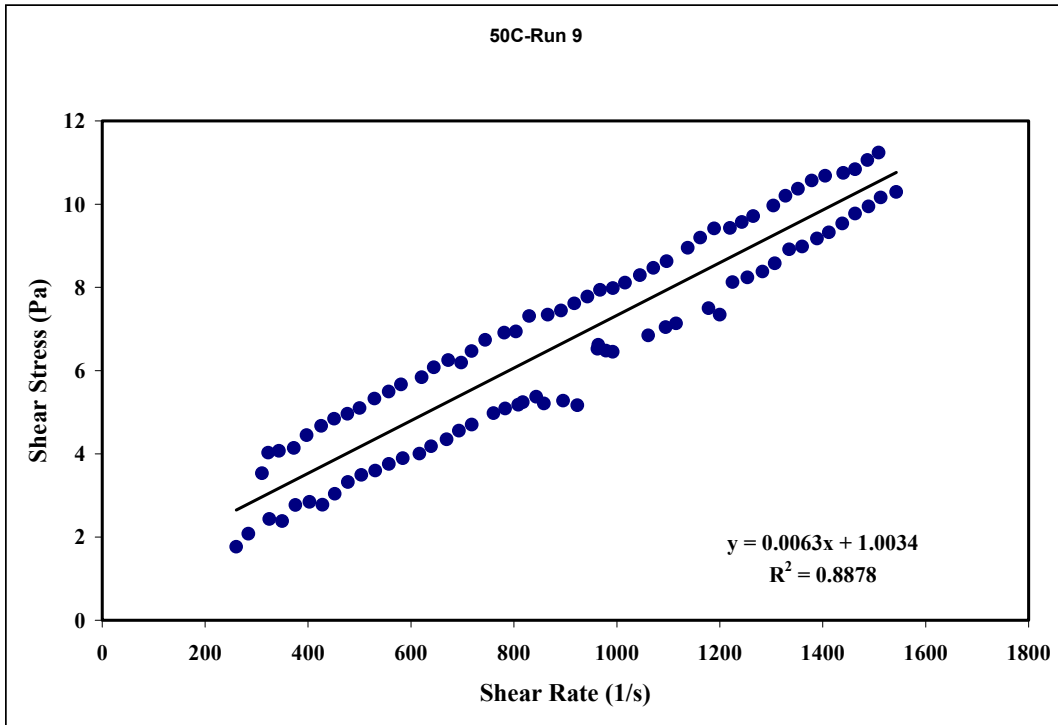


Figure 27. 50 °C As Received Run 9

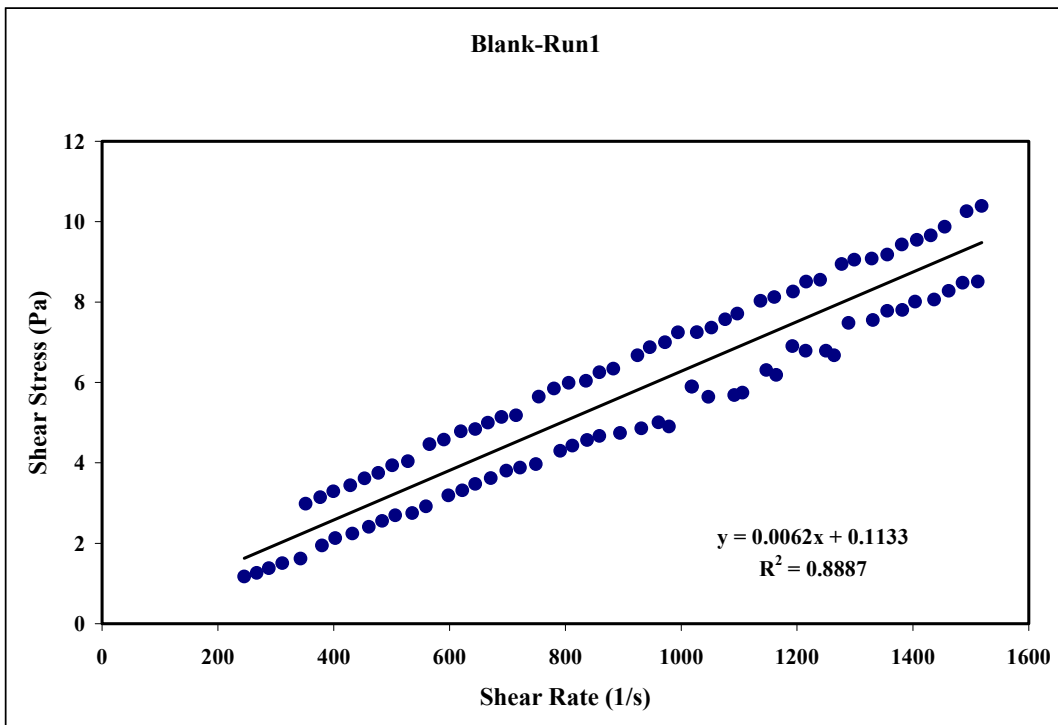


Figure 28. Blank Diluted Run 1

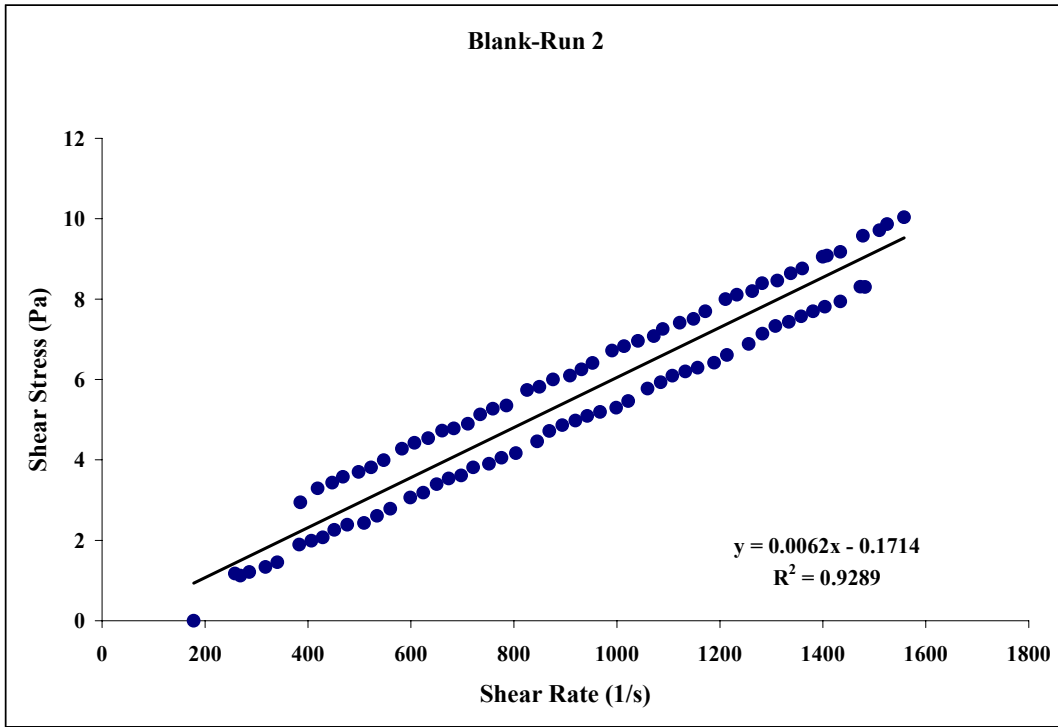


Figure 29. Blank Diluted Run 2

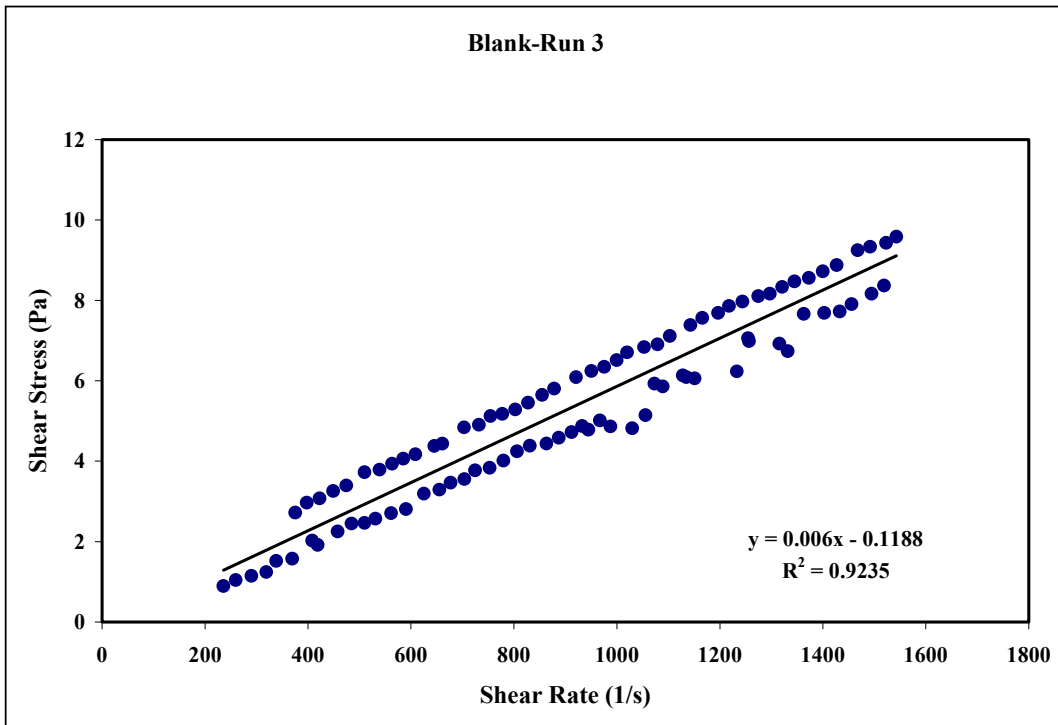


Figure 30. Blank Diluted Run 3

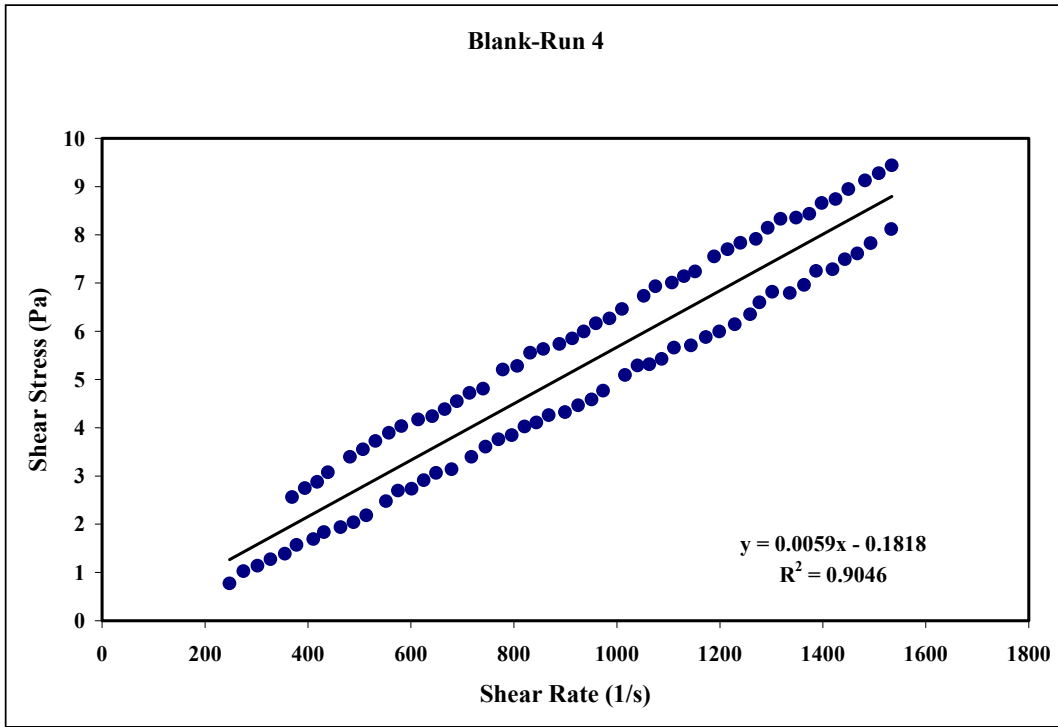


Figure 31. Blank Diluted Run 4

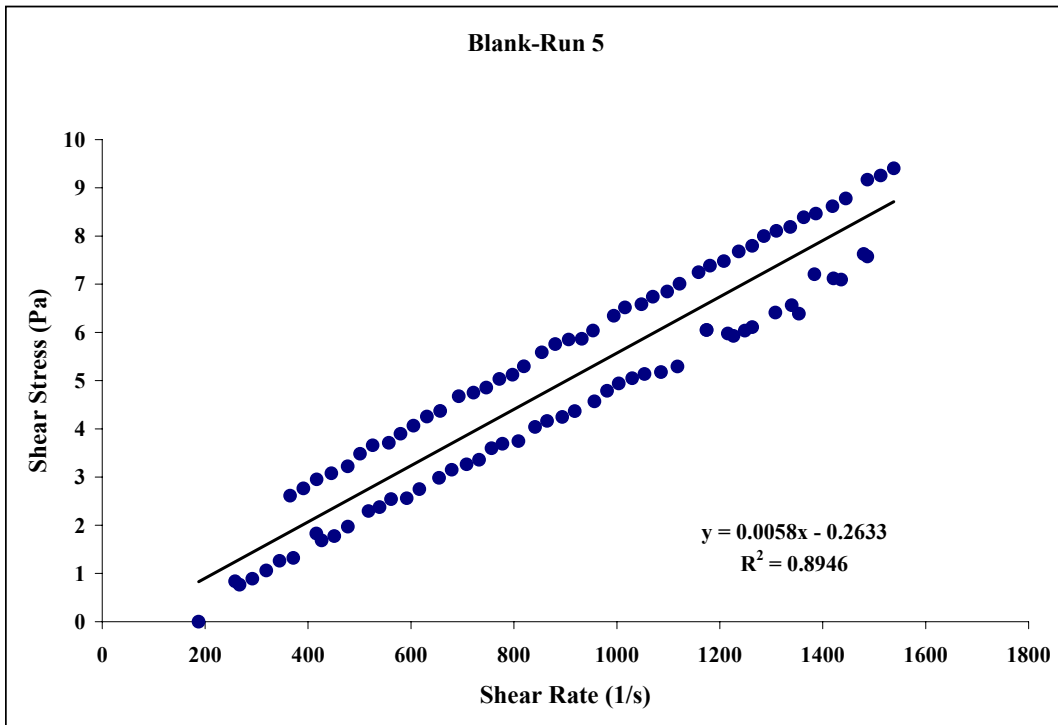


Figure 32. Blank Diluted Run 5

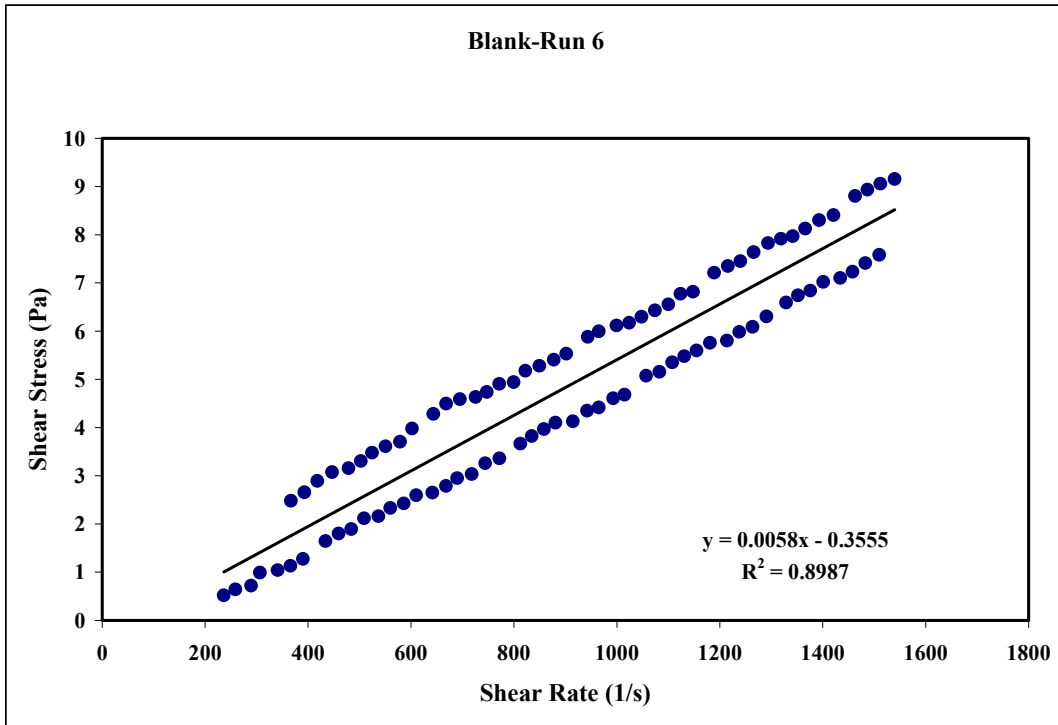


Figure 33. Blank Diluted Run 6

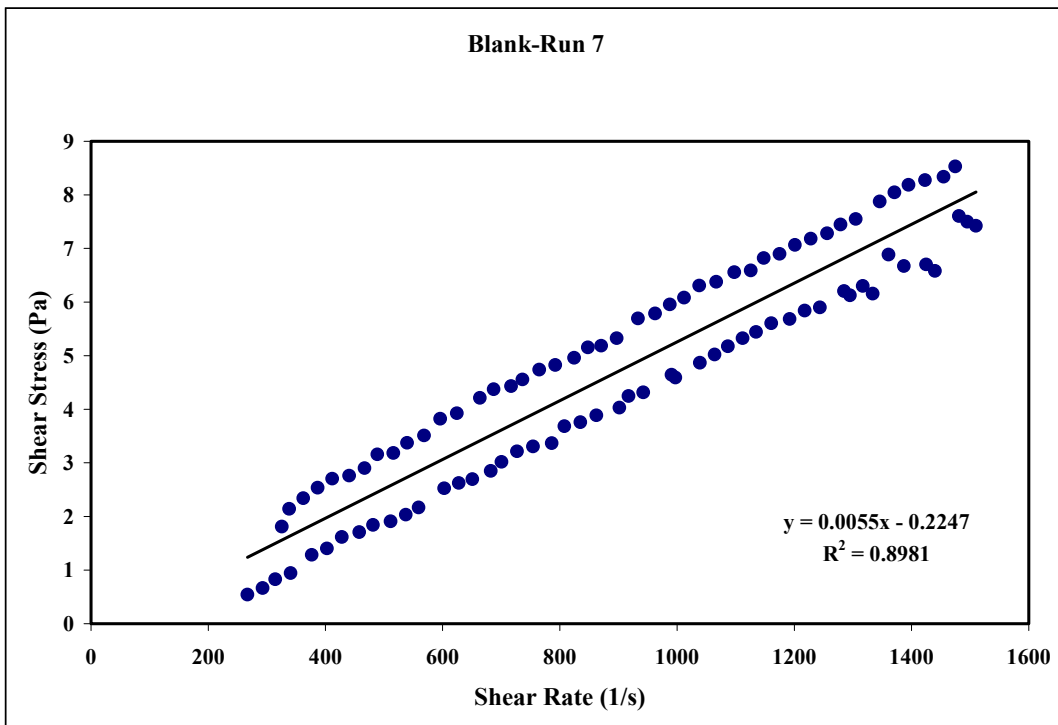


Figure 34. Blank Diluted Run 7

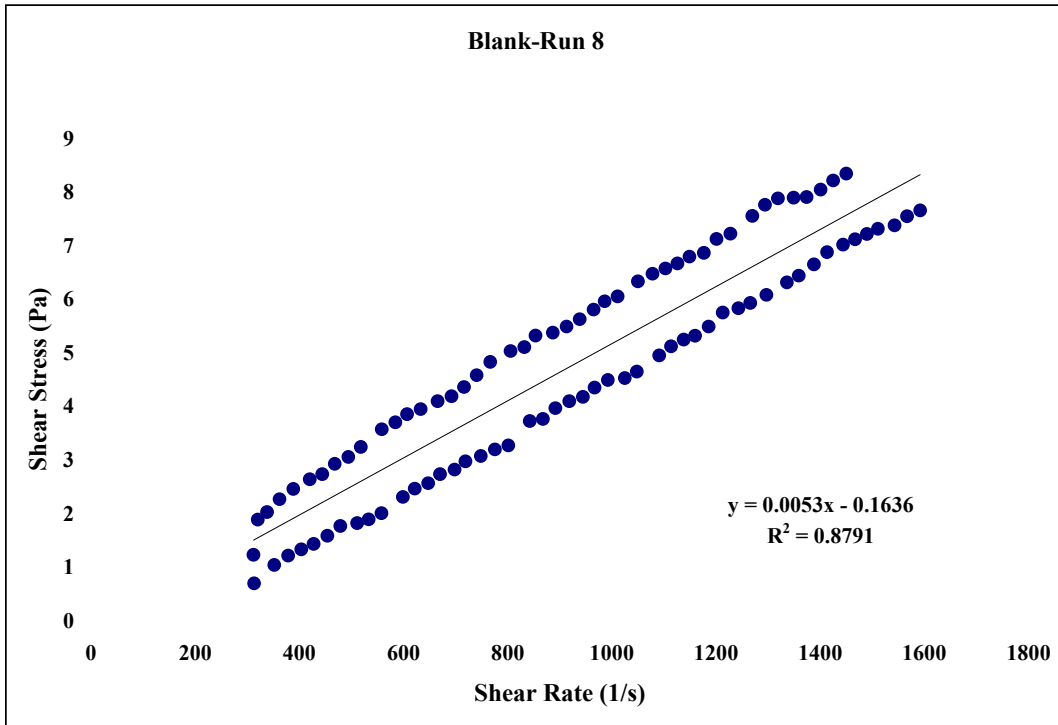


Figure 35. Blank Diluted Run 8

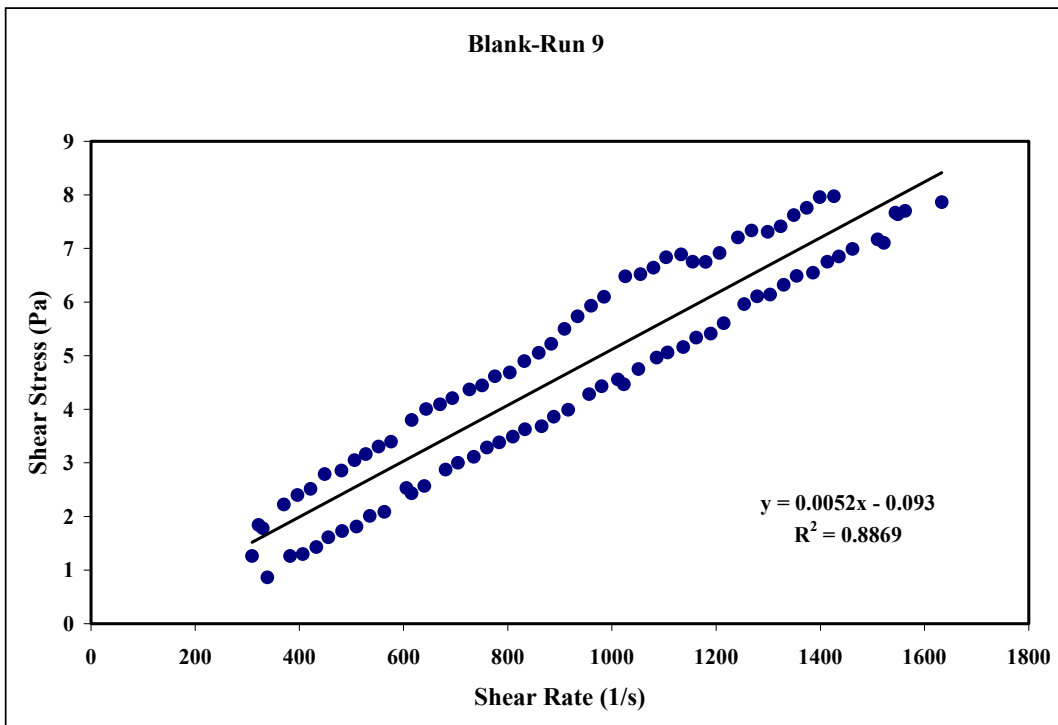


Figure 36. Blank Diluted Run 9

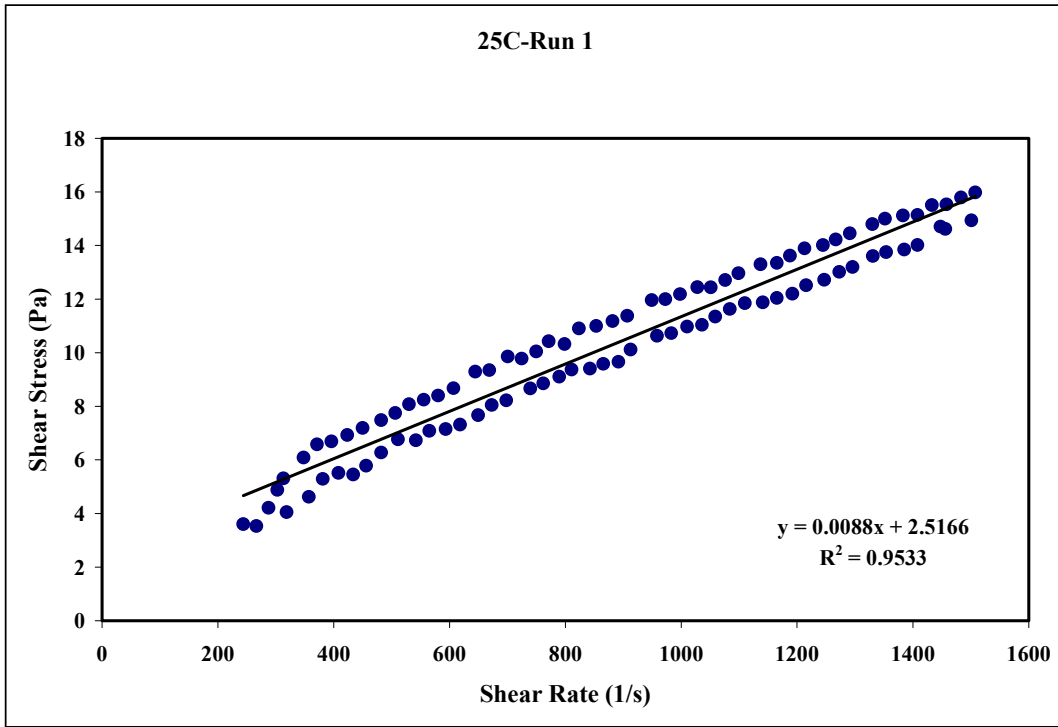


Figure 37. 25 °C Diluted Run 1

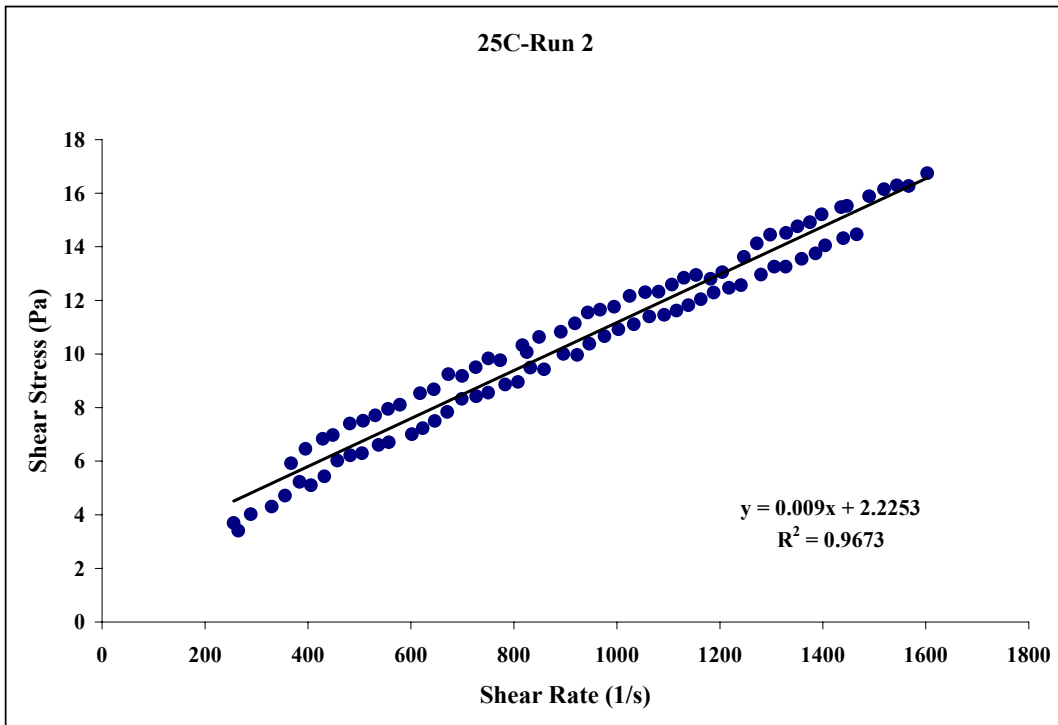


Figure 38. 25 °C Diluted Run 2

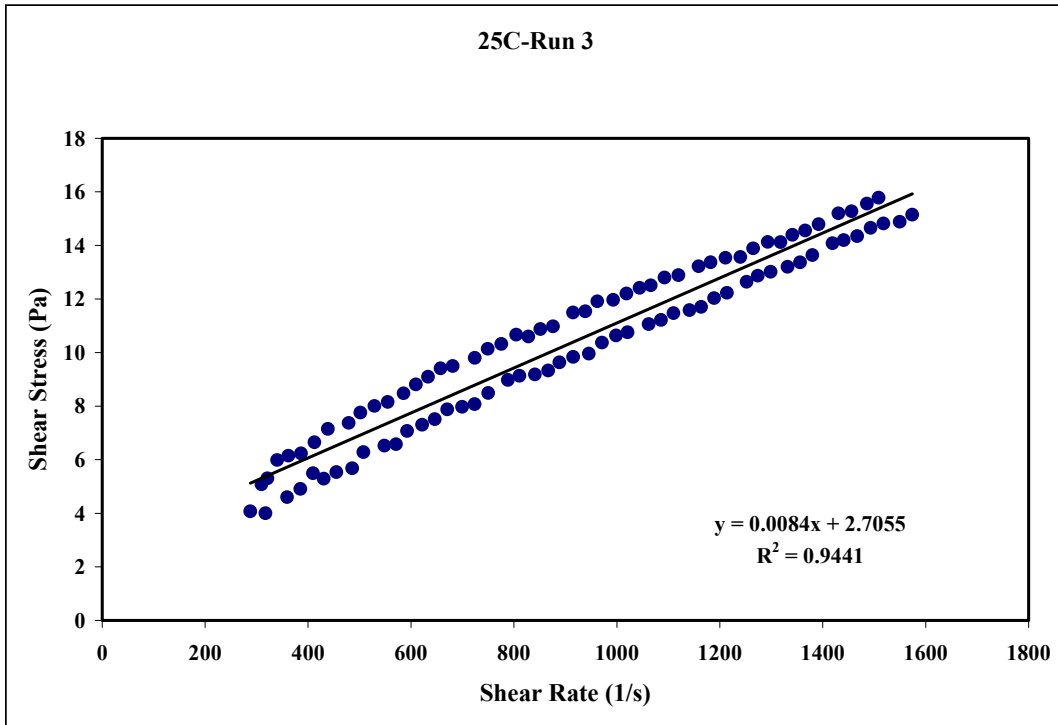


Figure 39. 25 °C Diluted Run 3

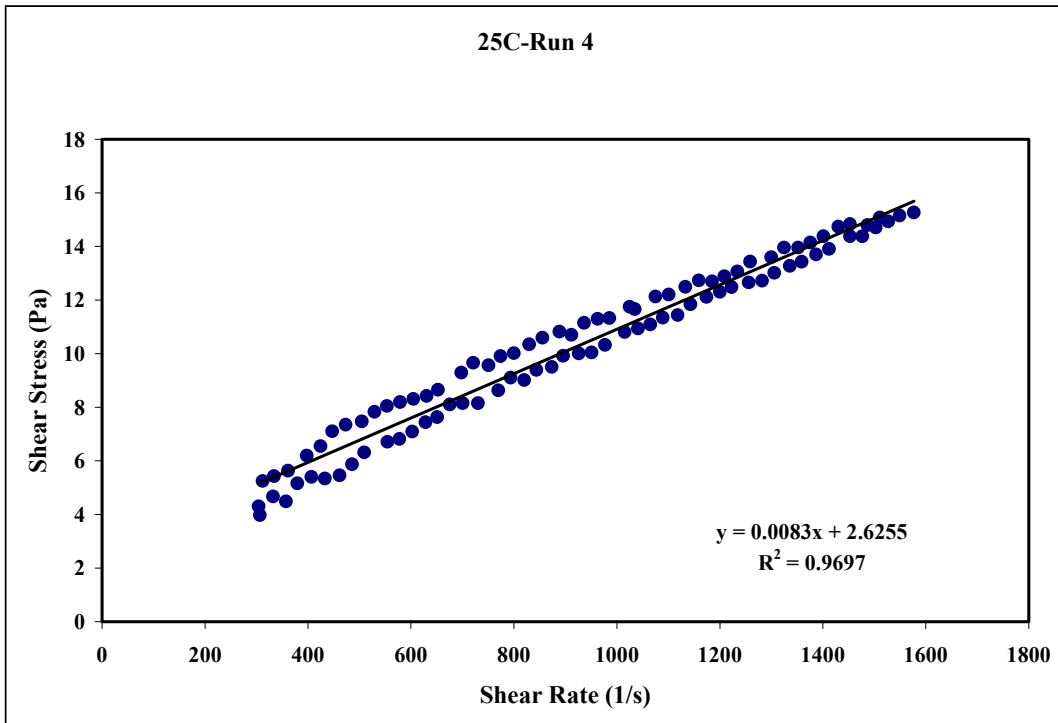


Figure 40. 25 °C Diluted Run 4

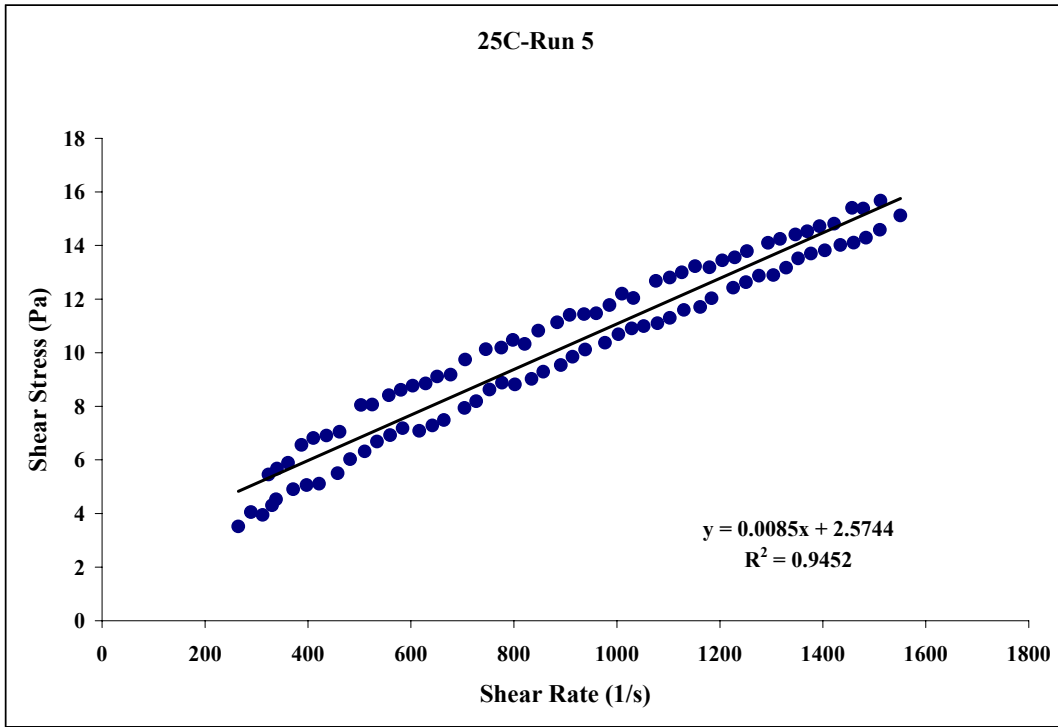


Figure 41. 25 °C Diluted Run 5

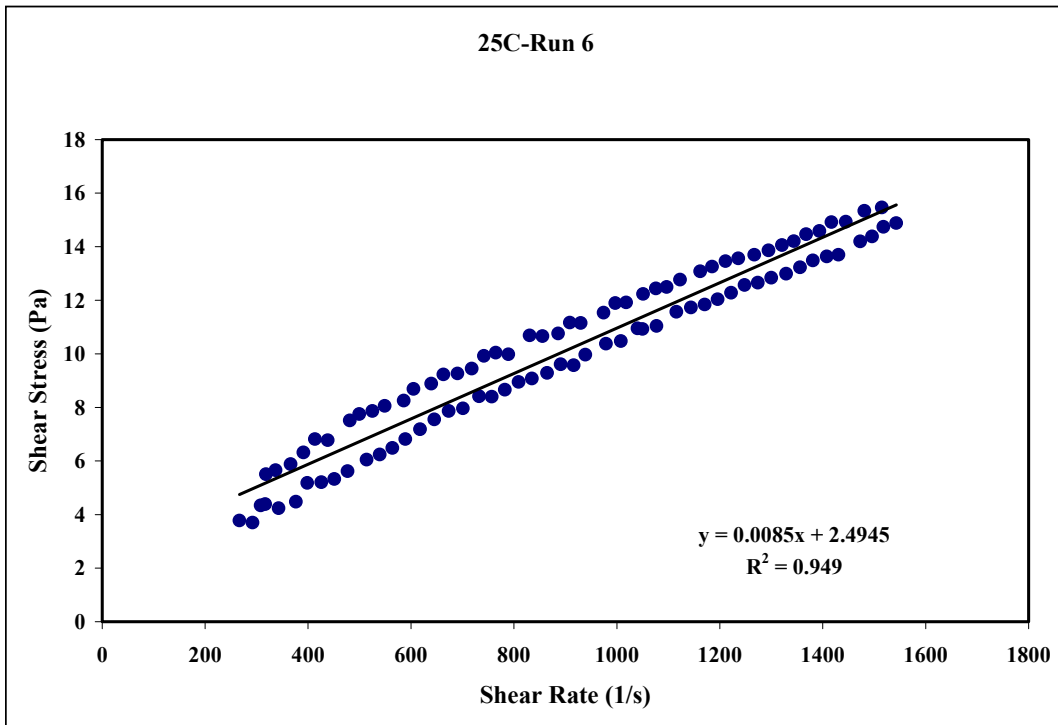


Figure 42. 25 °C Diluted Run 6

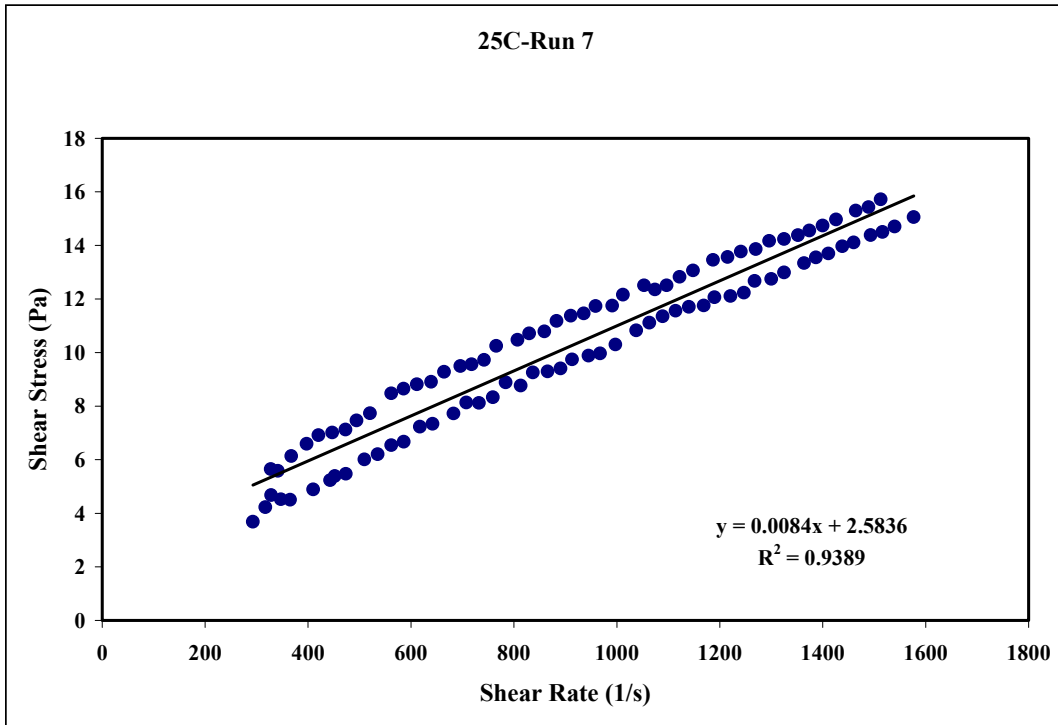


Figure 43. 25 °C Diluted Run 7

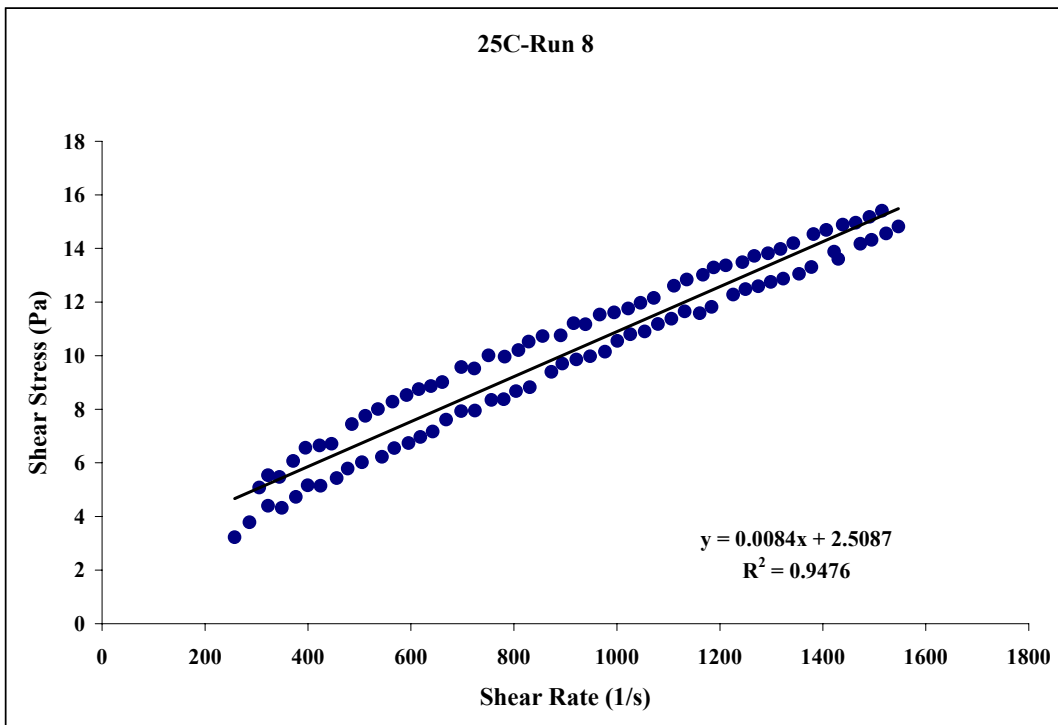


Figure 44. 25 °C Diluted Run 8

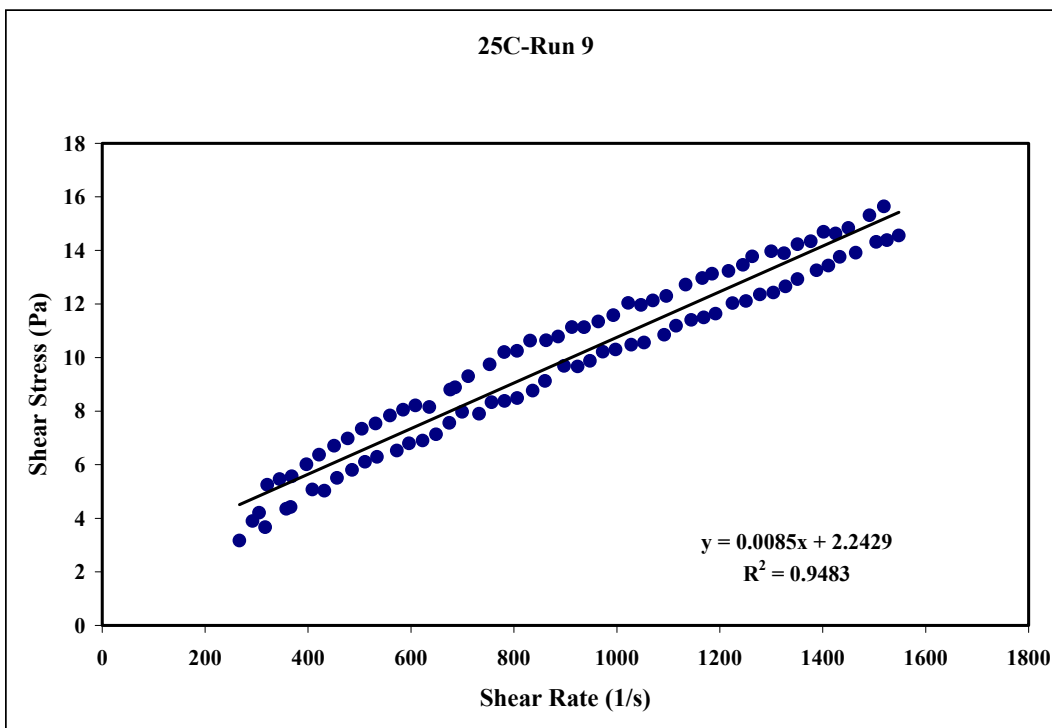


Figure 45. 25 °C Diluted Run 9

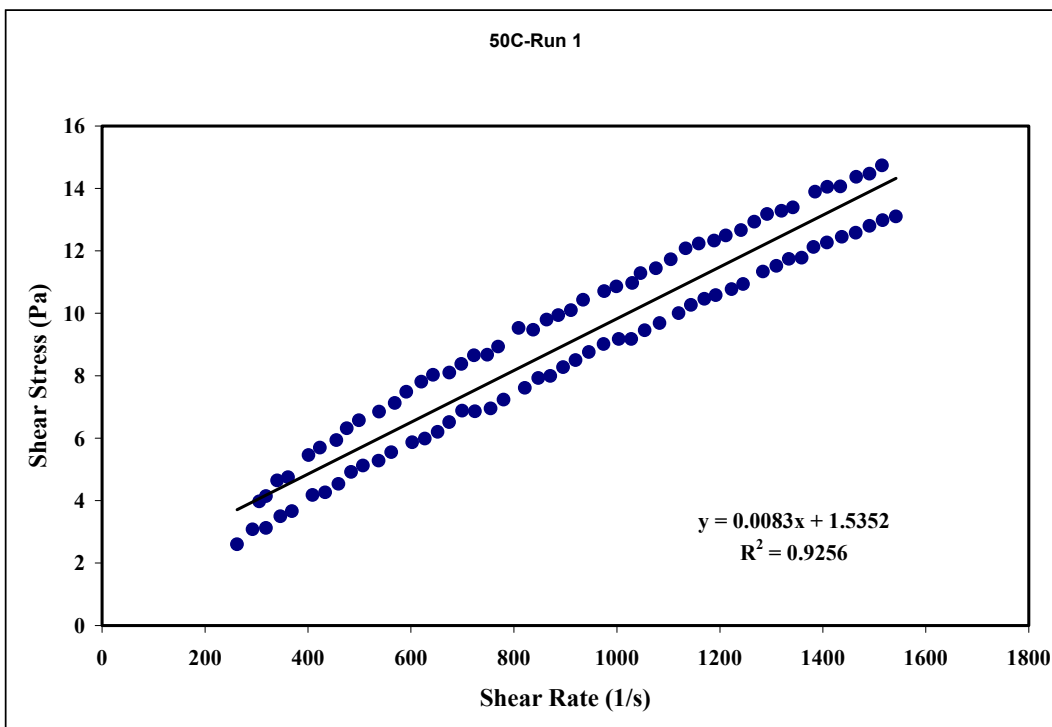


Figure 46. 50 °C Diluted Run 1

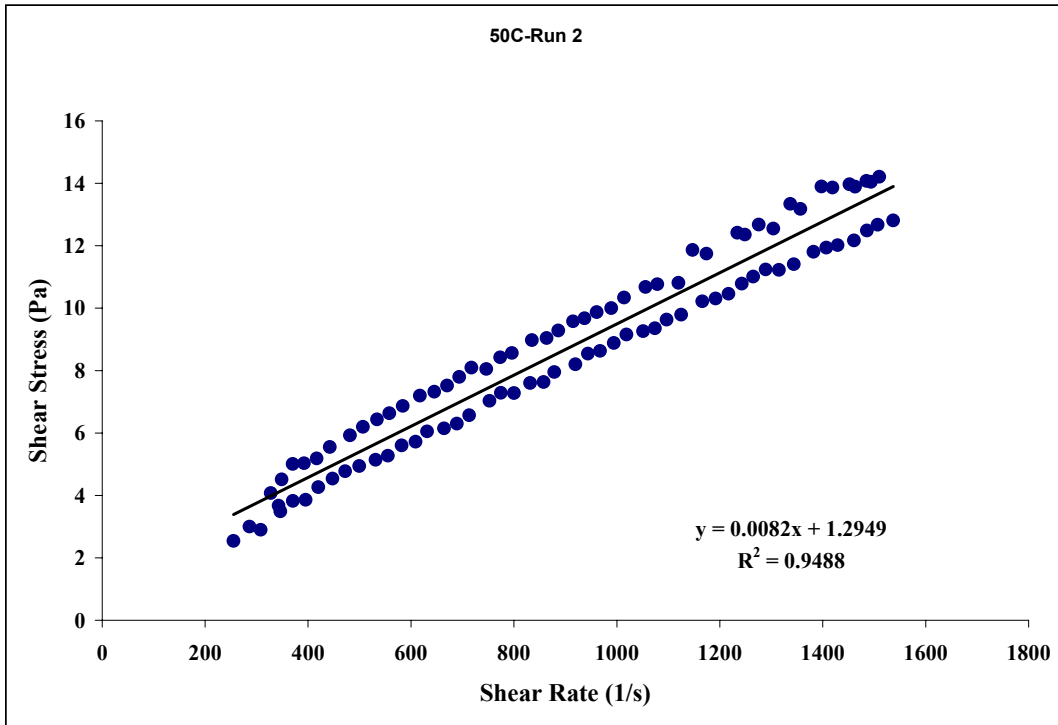


Figure 47. 50 °C Diluted Run 2

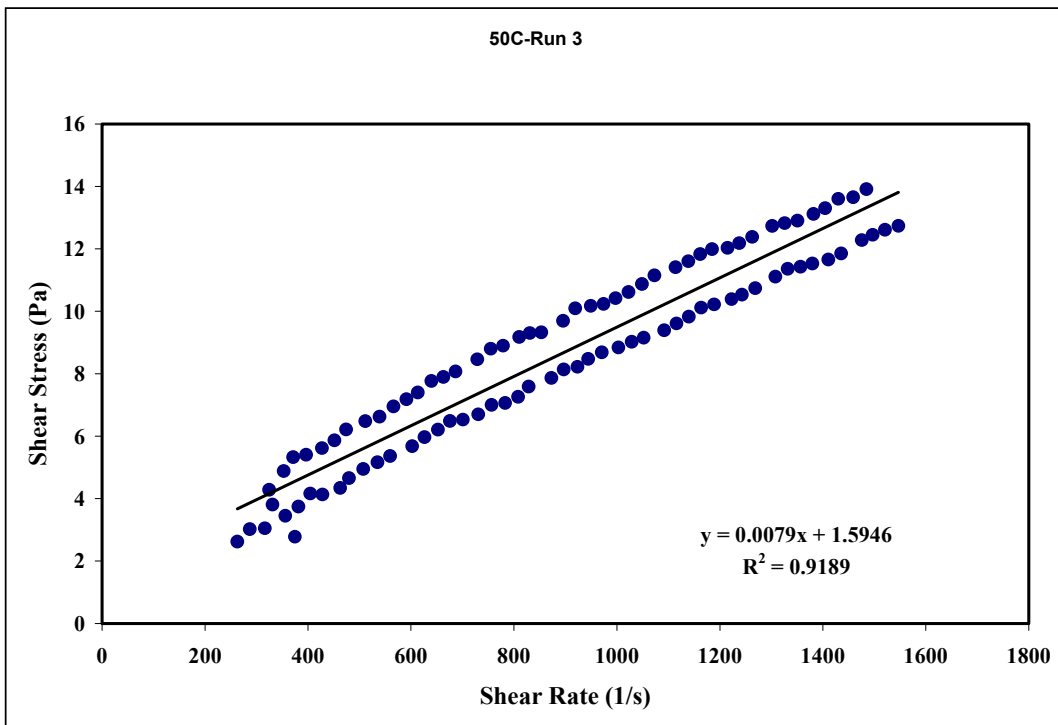


Figure 48. 50 °C Diluted Run 3

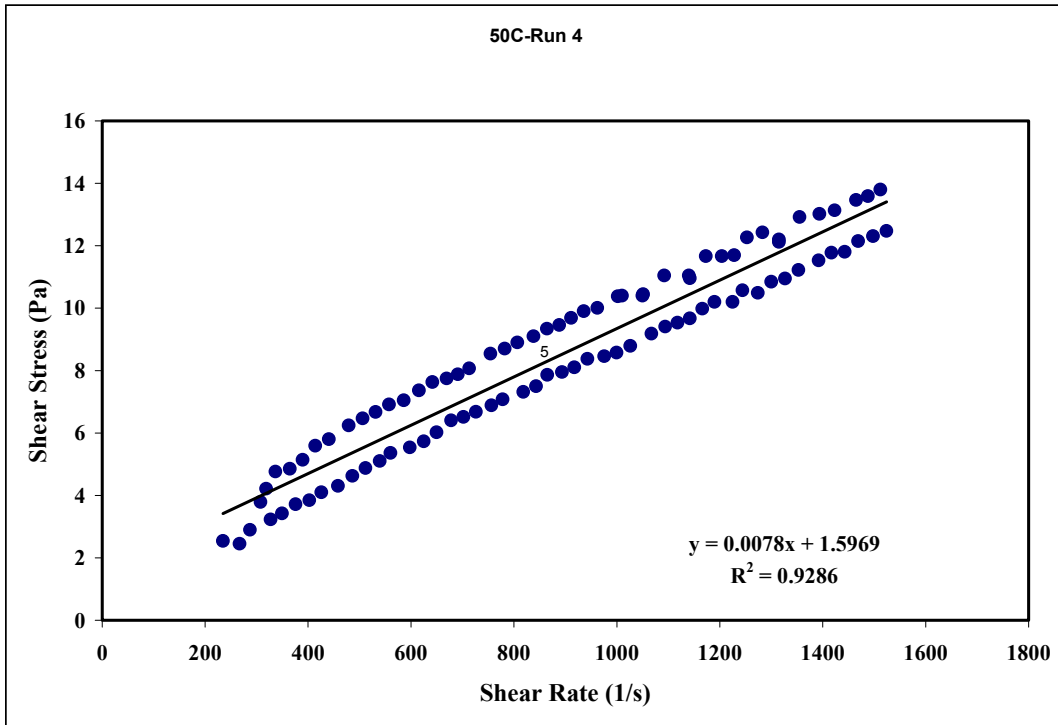


Figure 49. 50 °C Diluted Run 4

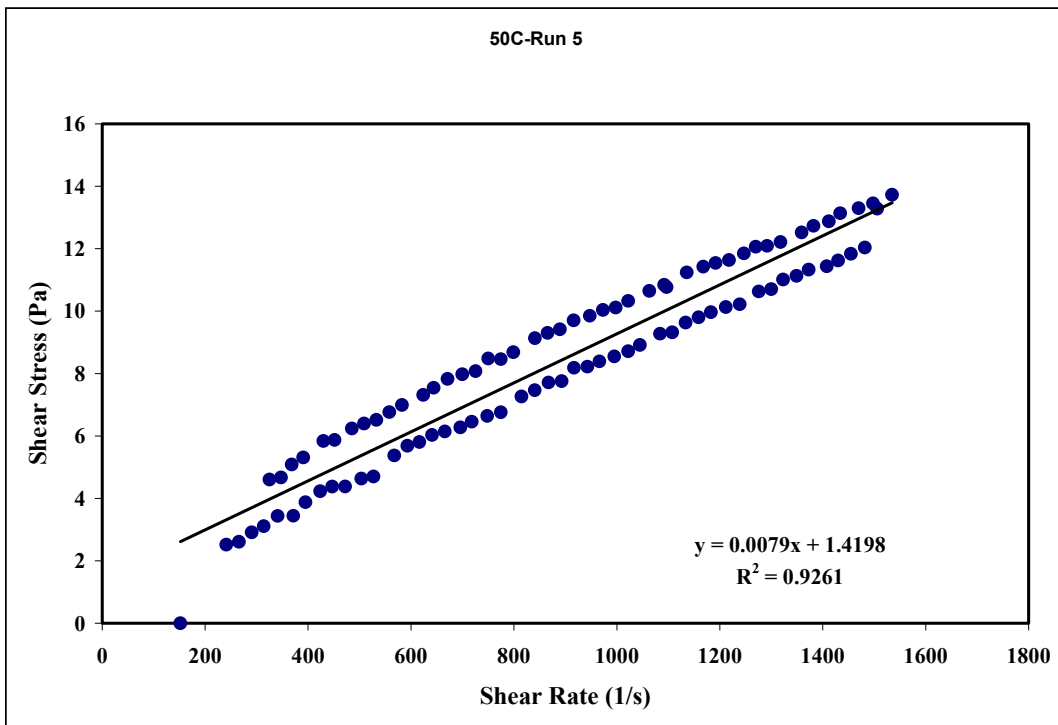


Figure 50. 50 °C Diluted Run 5

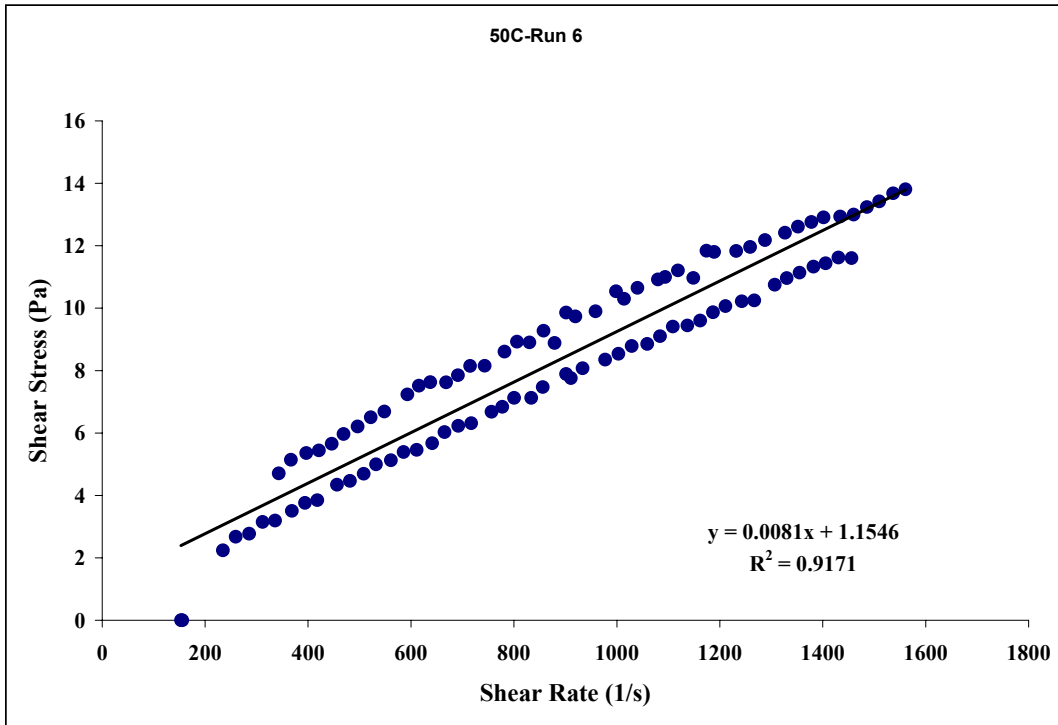


Figure 51. 50 °C Diluted Run 6

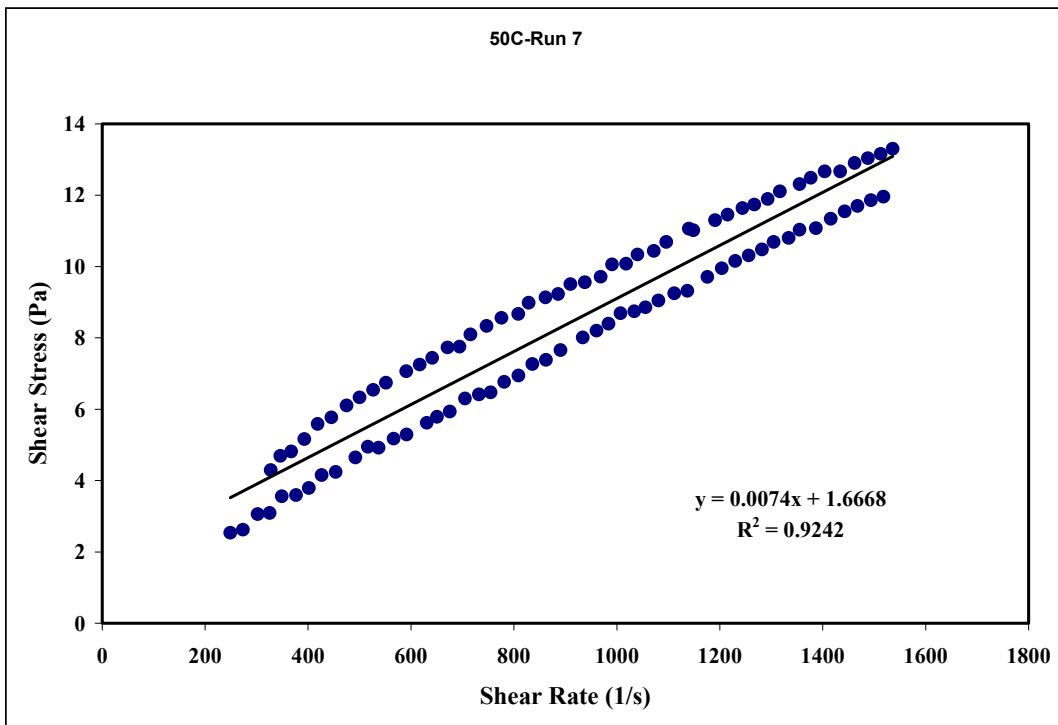


Figure 52. 50 °C Diluted Run 7

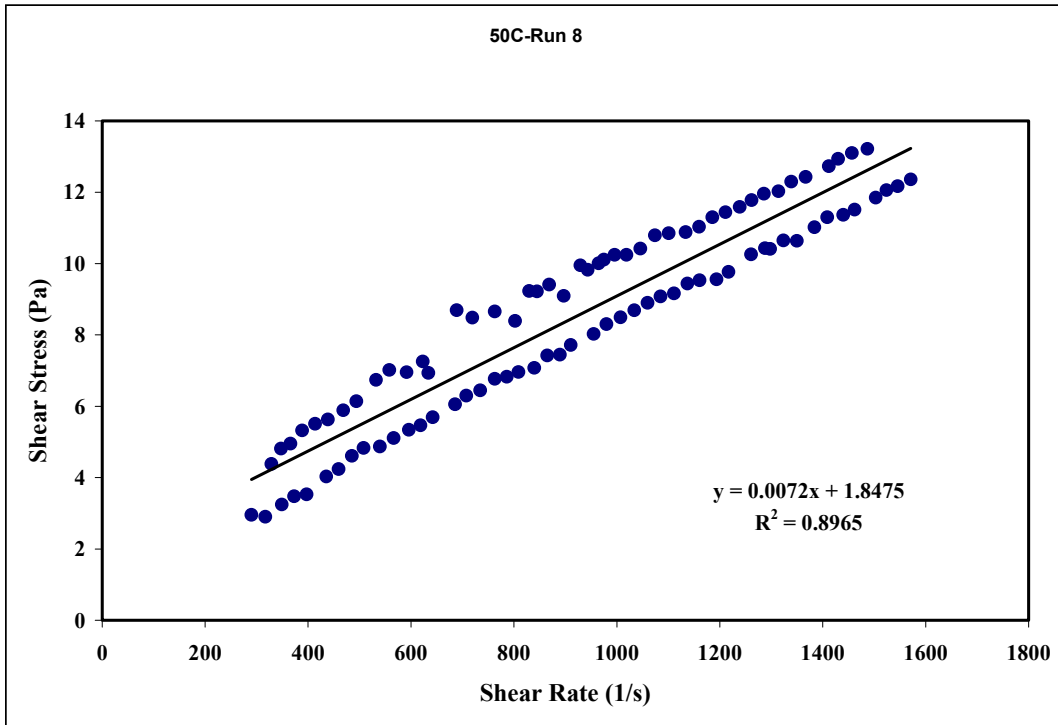


Figure 53. 50 °C Diluted Run 8

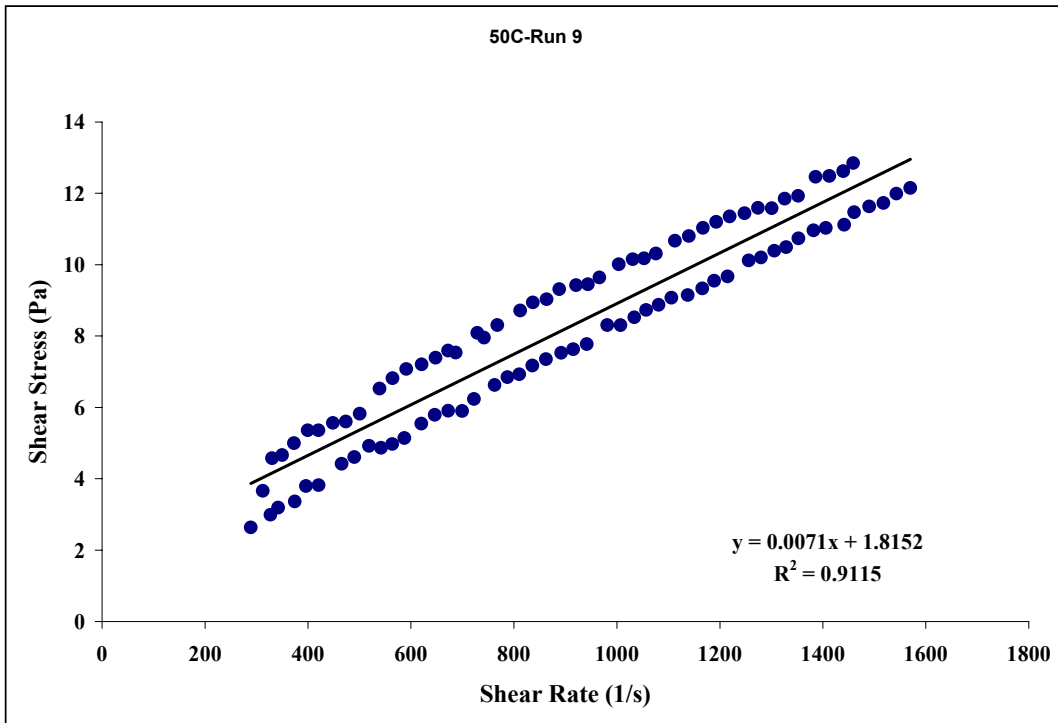


Figure 54. 50 °C Diluted Run 9

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APPENDIX H – PART 2

ENVELOPE C RHEOGRAMS

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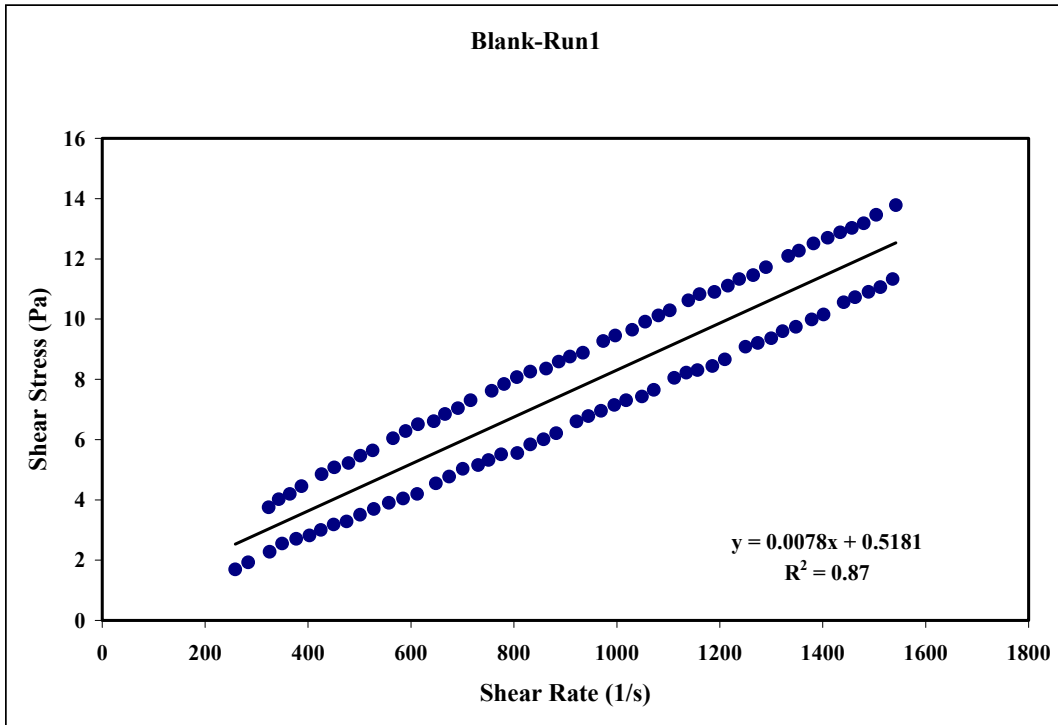


Figure 1. Blank Pretreated Run 1

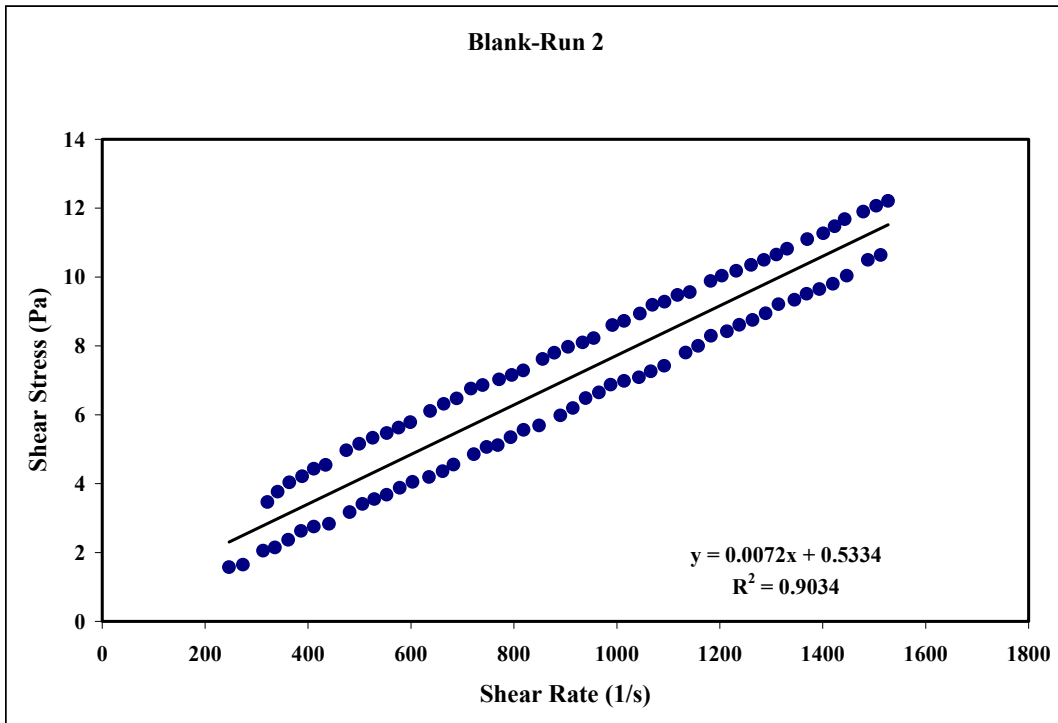


Figure 2. Blank Pretreated Run 2

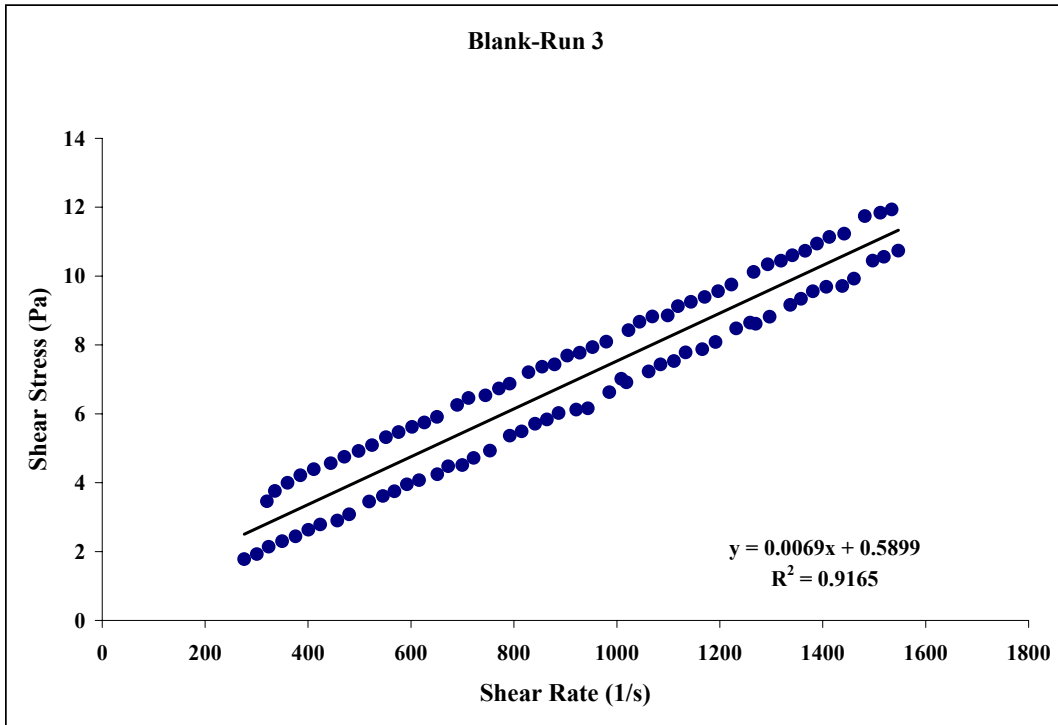


Figure 3. Blank Pretreated Run 3

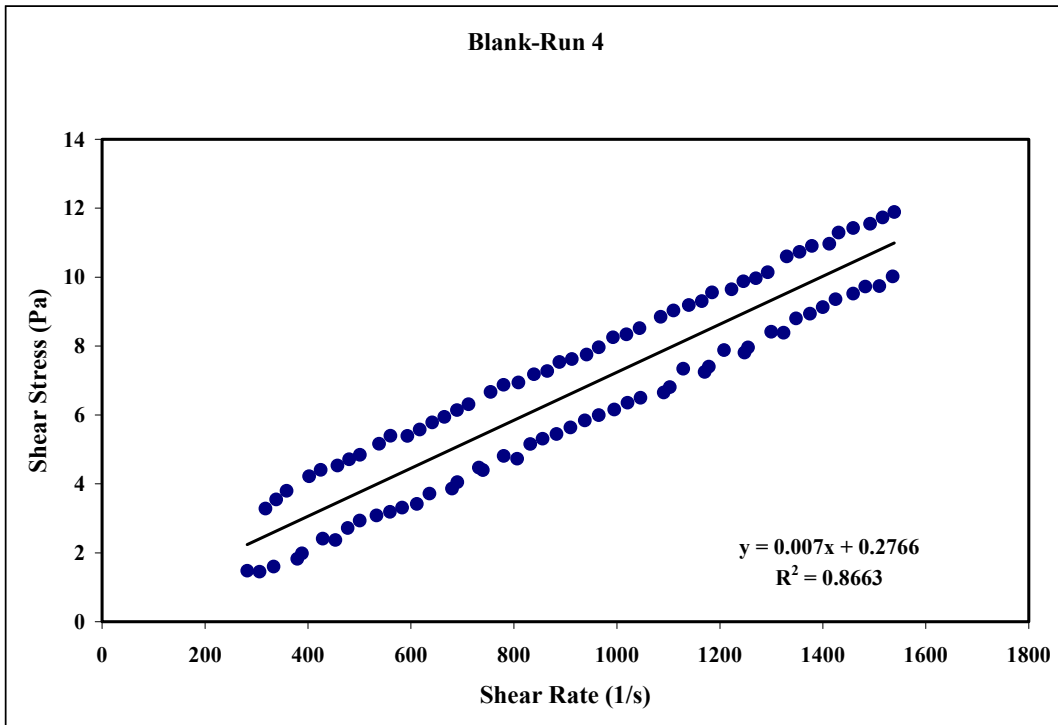


Figure 4. Blank Pretreated Run 4

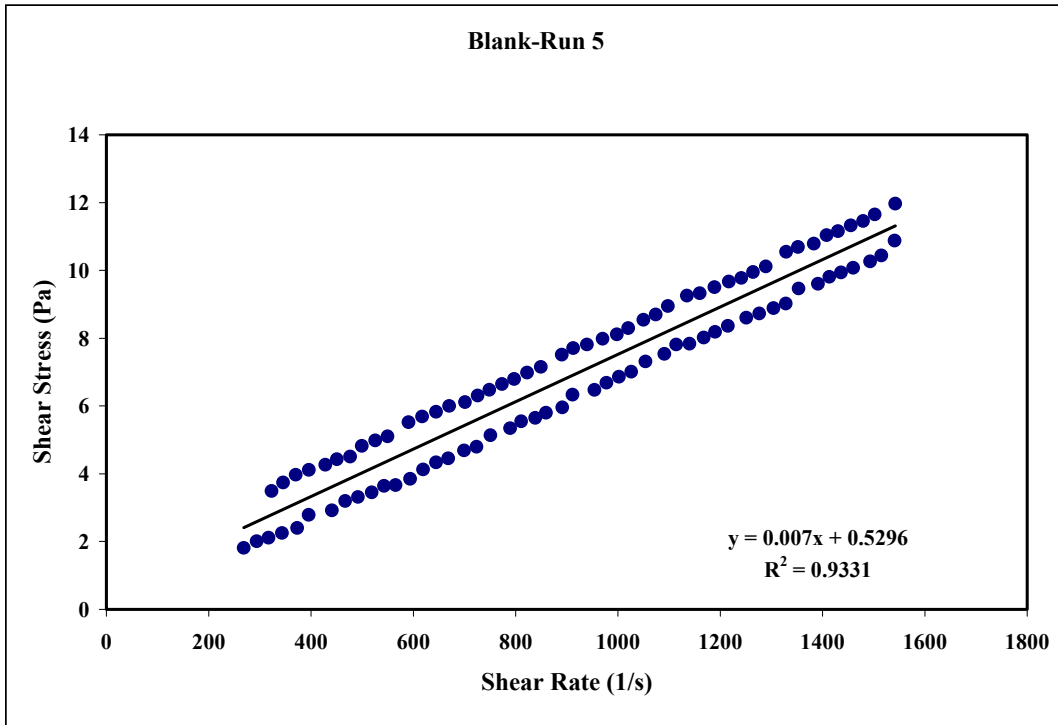


Figure 5. Blank Pretreated Run 5

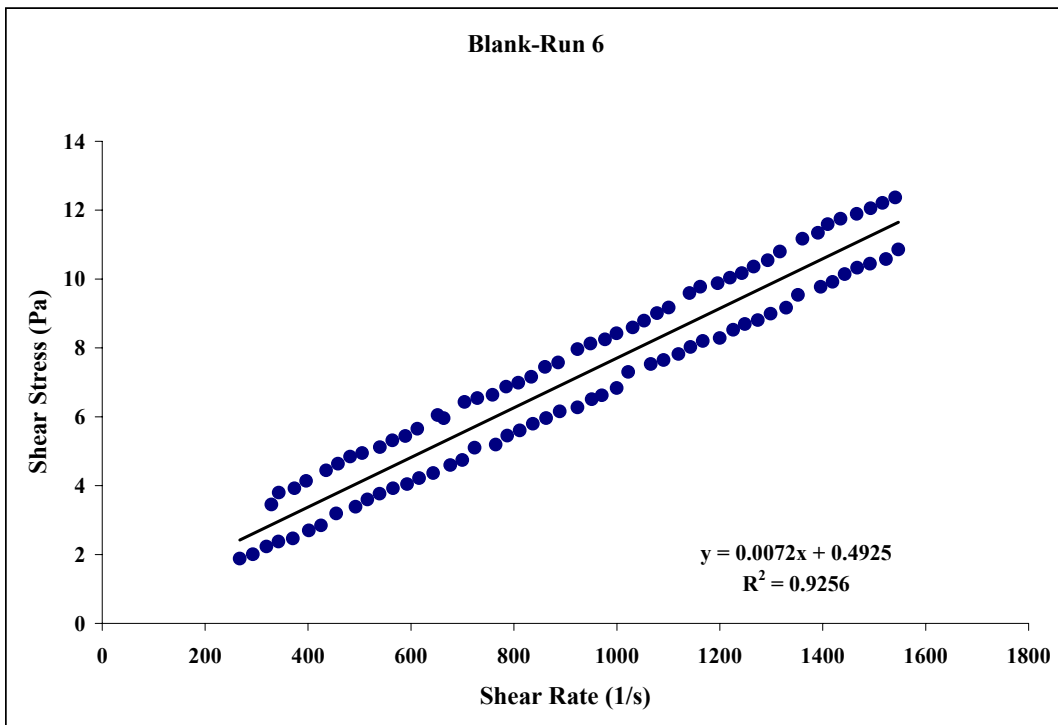


Figure 6. Blank Pretreated Run 6

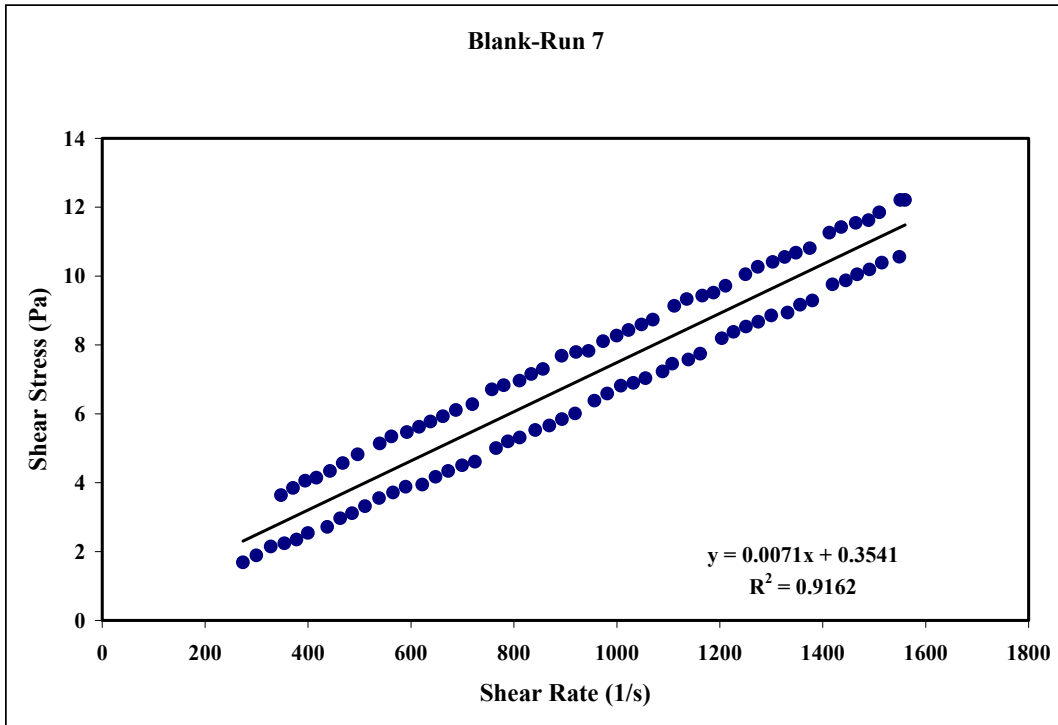


Figure 7. Blank Pretreated Run 7

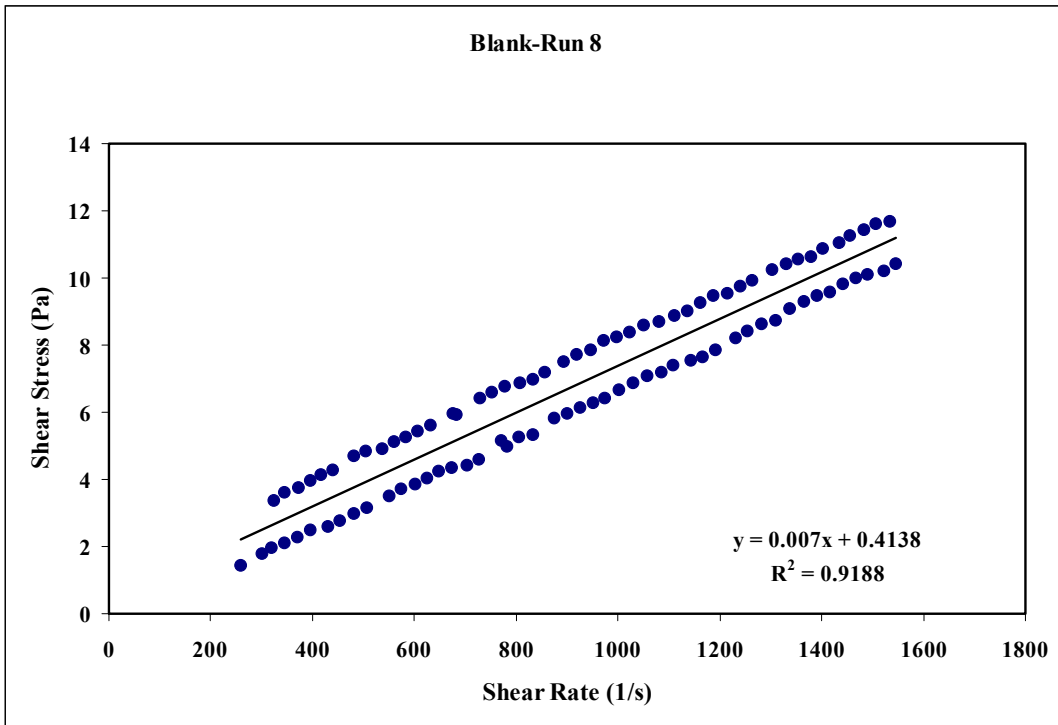


Figure 8. Blank Pretreated Run 8

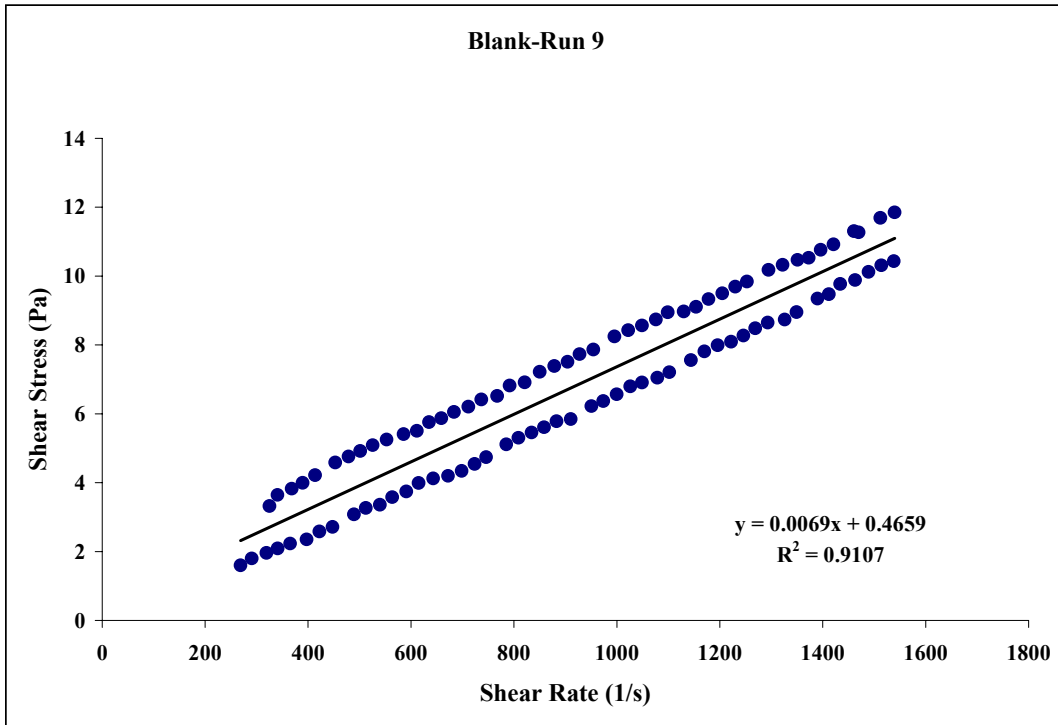


Figure 9. Blank Pretreated Run 9

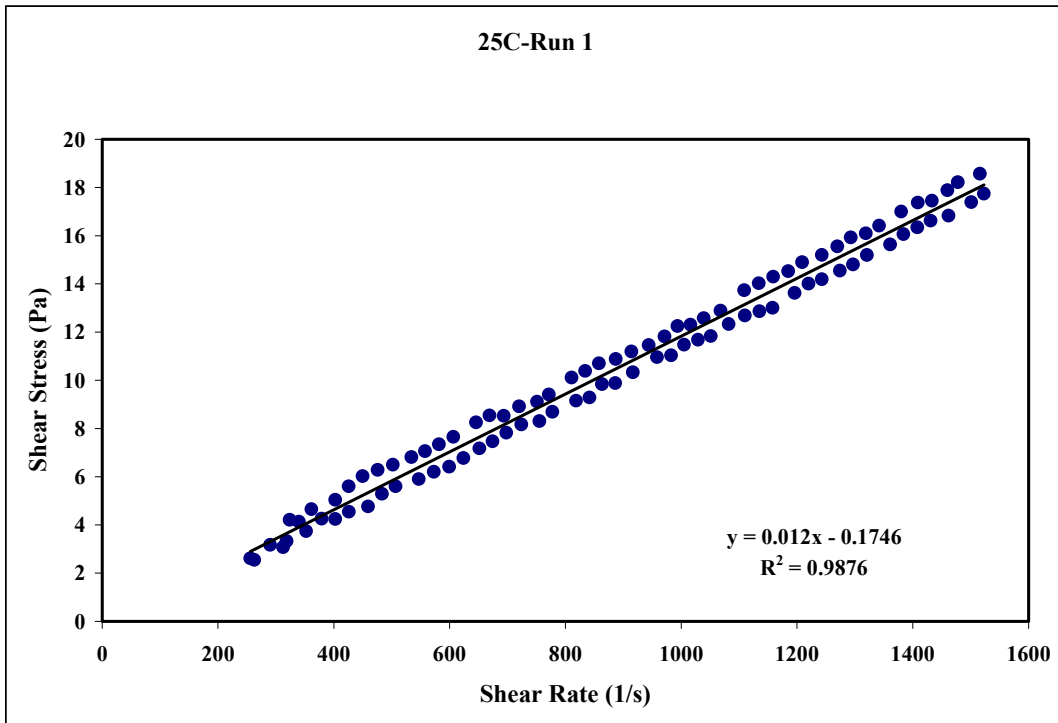


Figure 10. 25 °C Pretreated Run 1

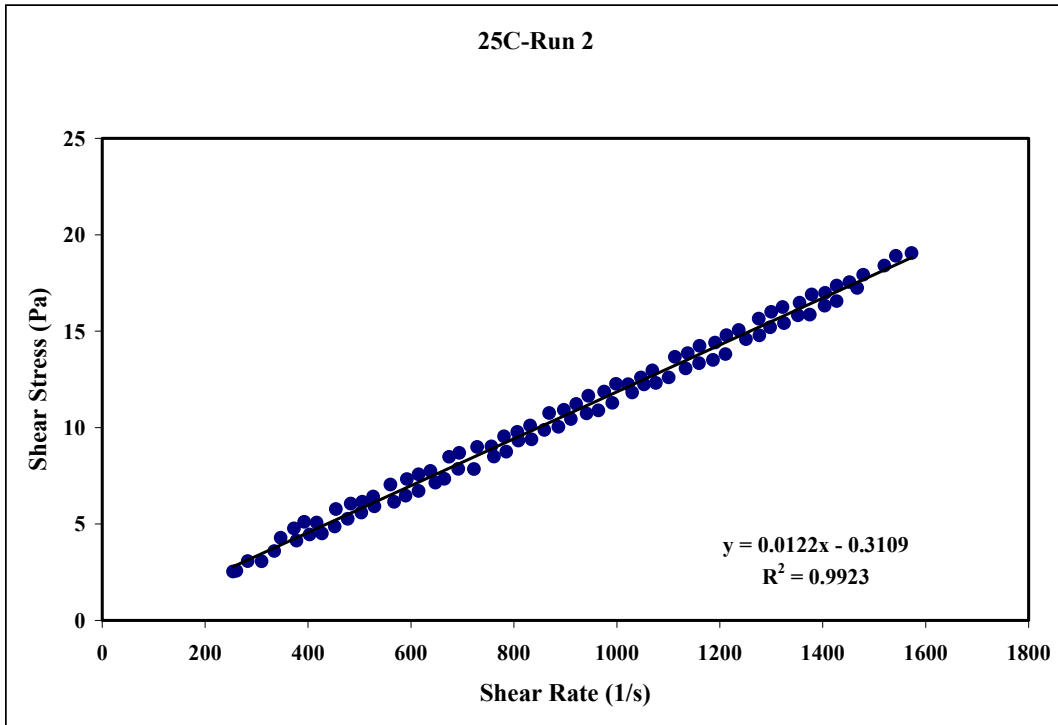


Figure 11. 25 °C Pretreated Run 2

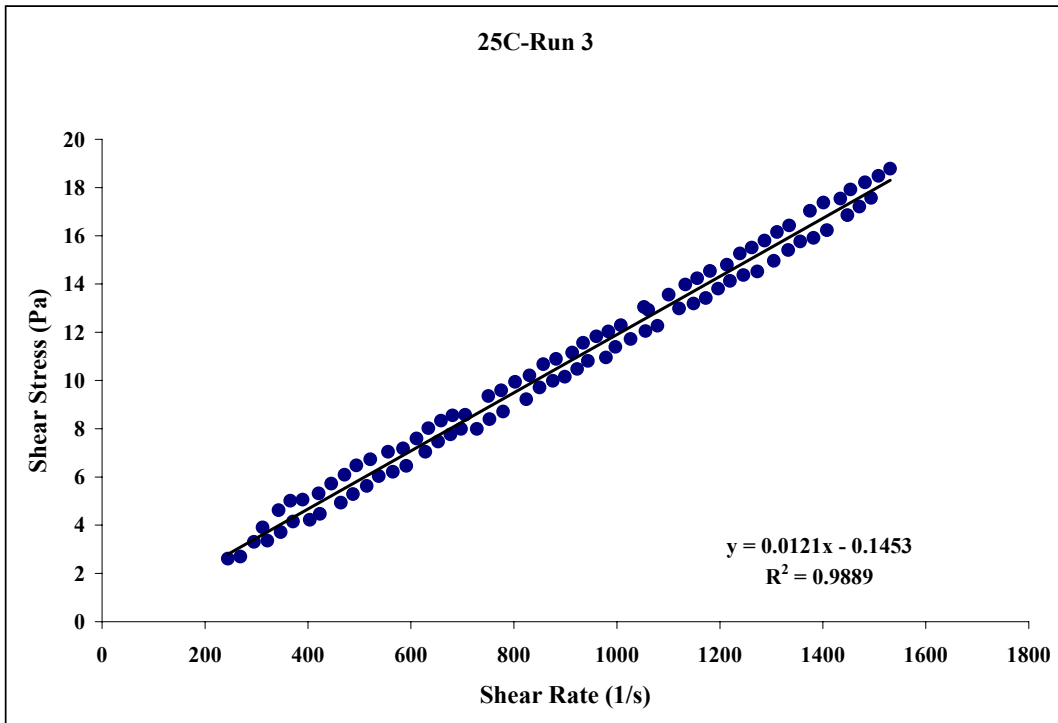


Figure 12. 25 °C Pretreated Run 3

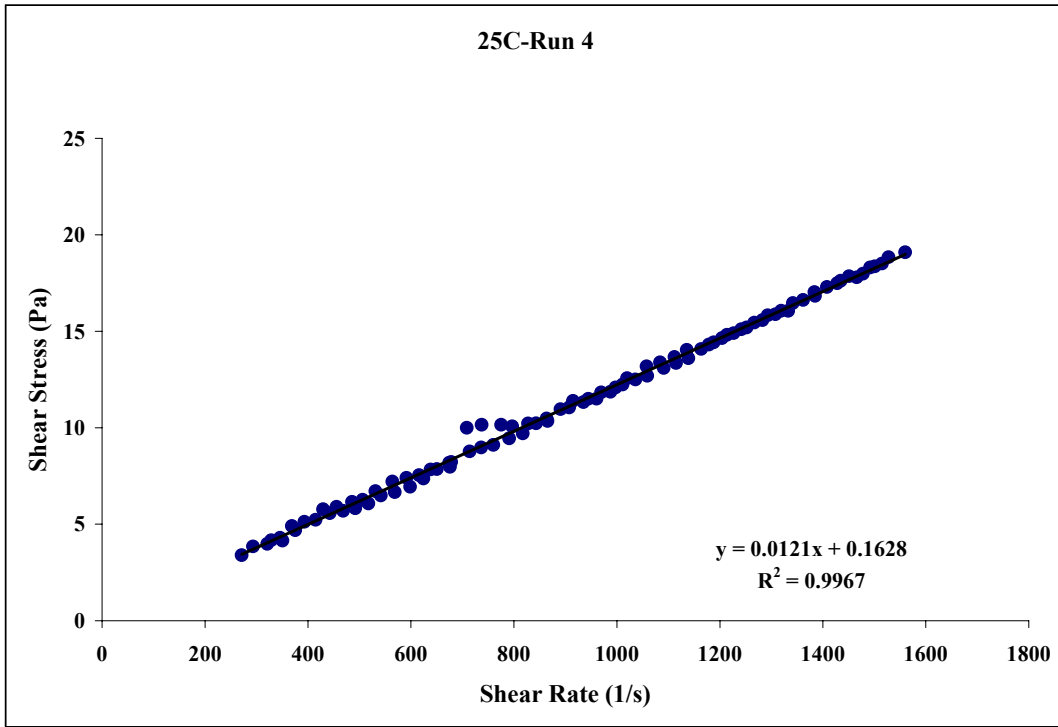


Figure 13. 25 °C Pretreated Run 4

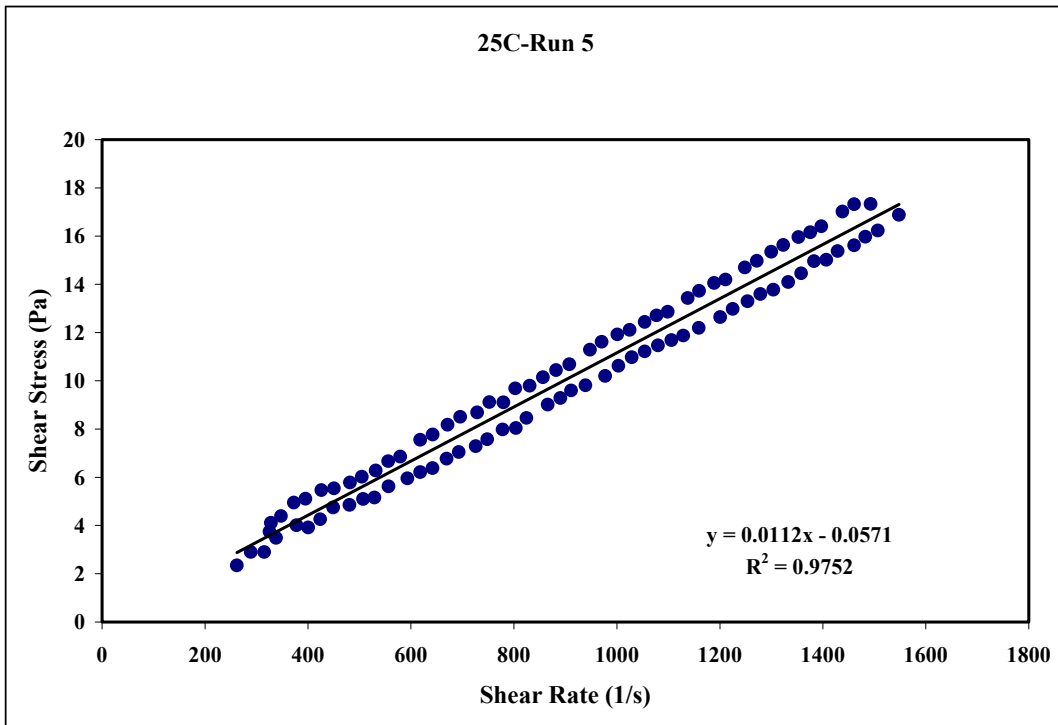


Figure 14. 25 °C Pretreated Run 5

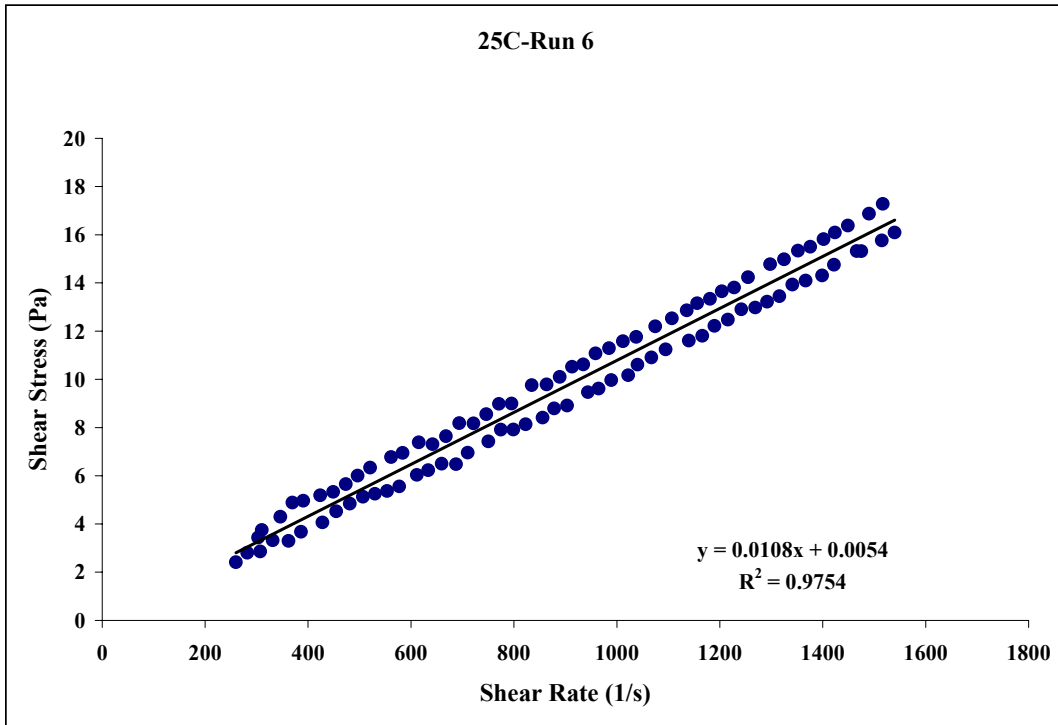


Figure 15. 25 °C Pretreated Run 6

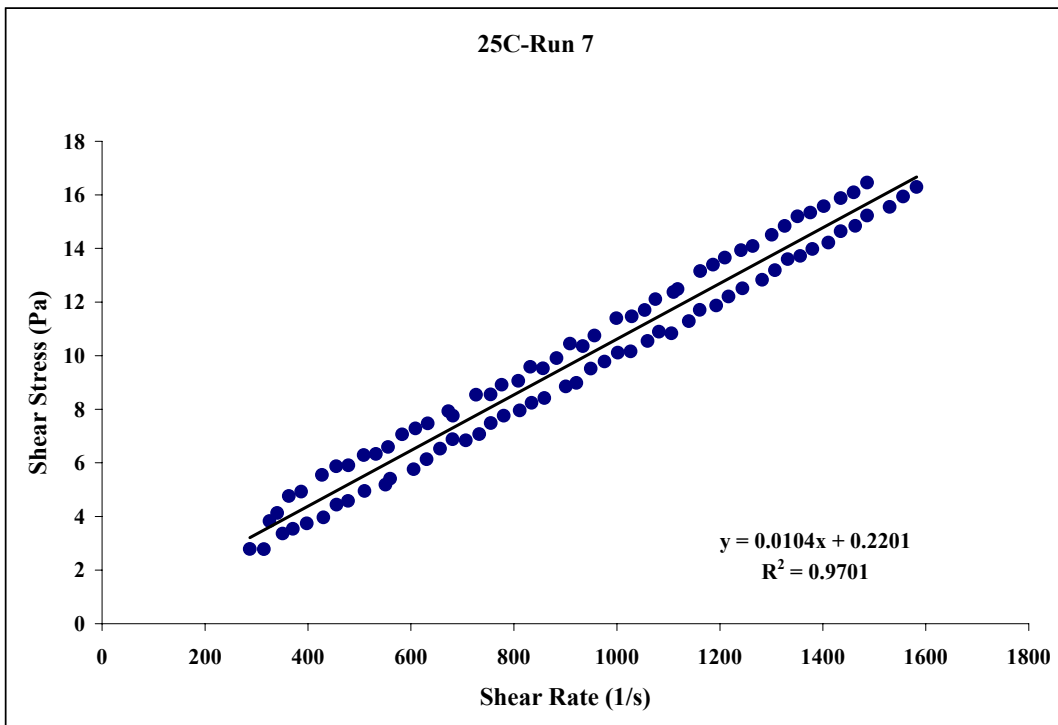


Figure 16. 25 °C Pretreated Run 7

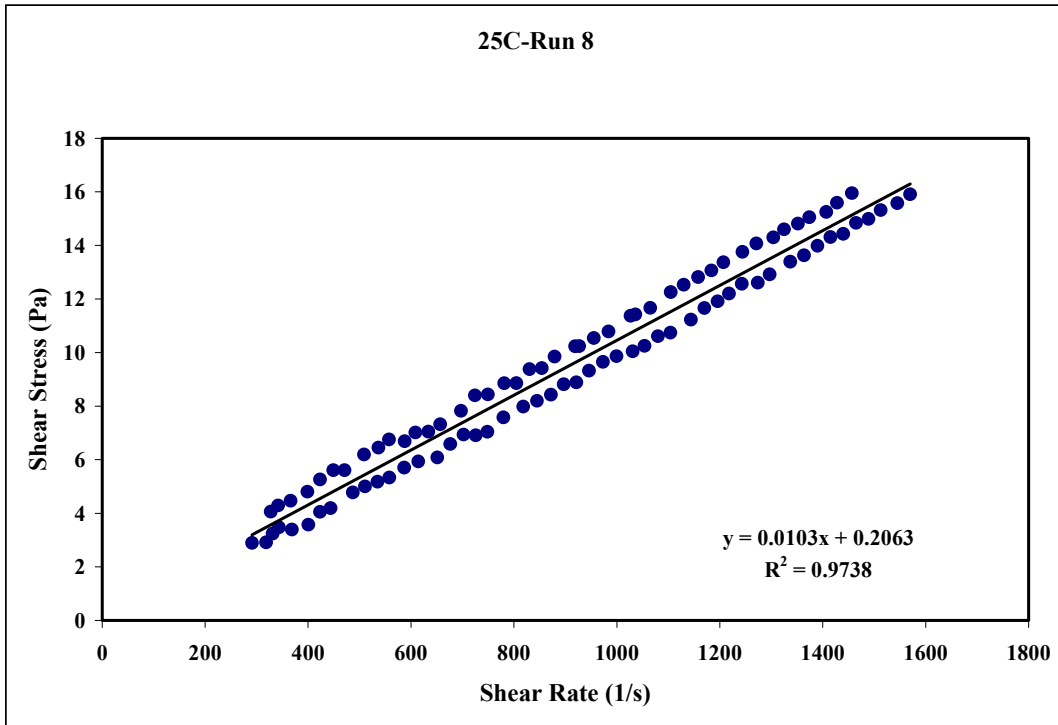


Figure 17. 25 °C Pretreated Run 8

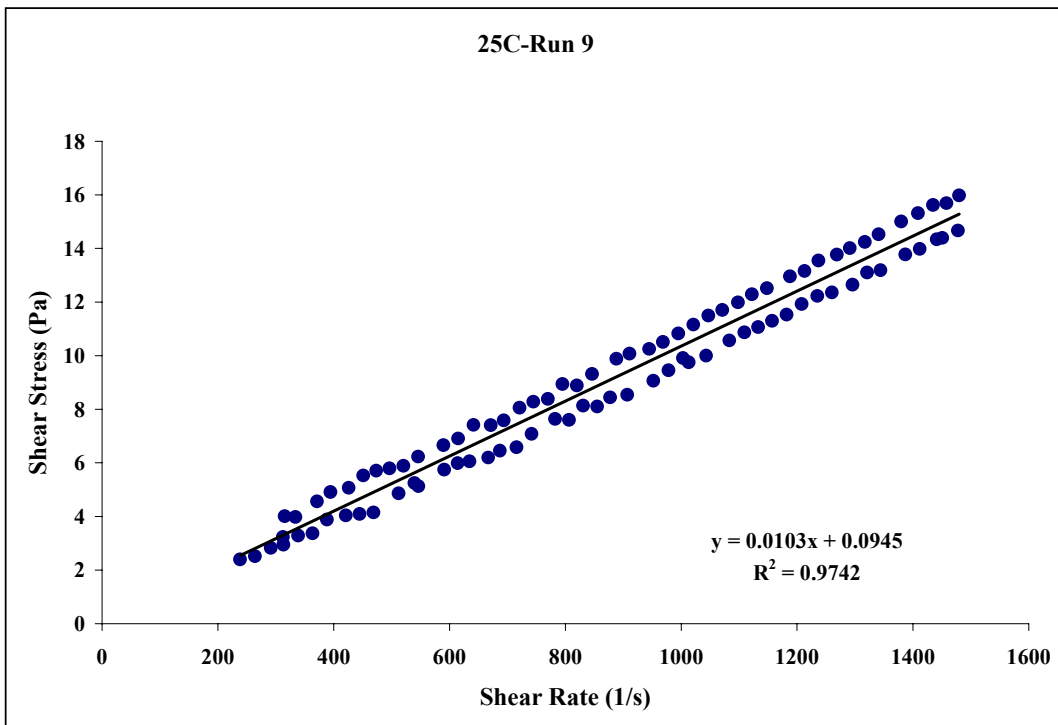


Figure 18. 25 °C Pretreated Run 9

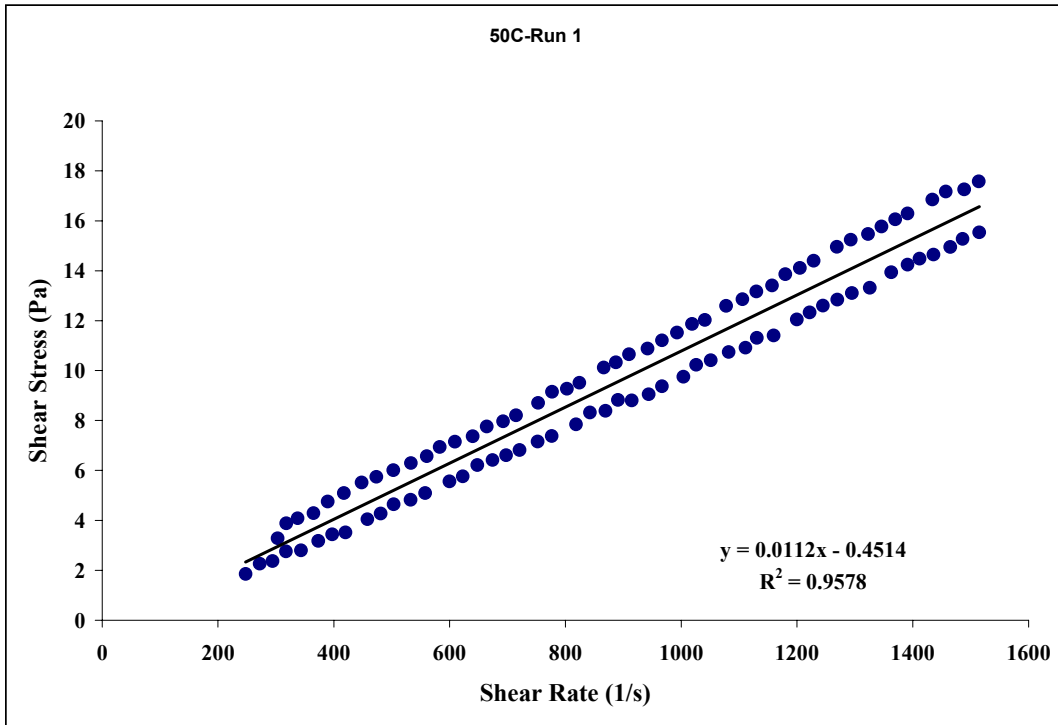


Figure 19. 50 °C Pretreated Run 1

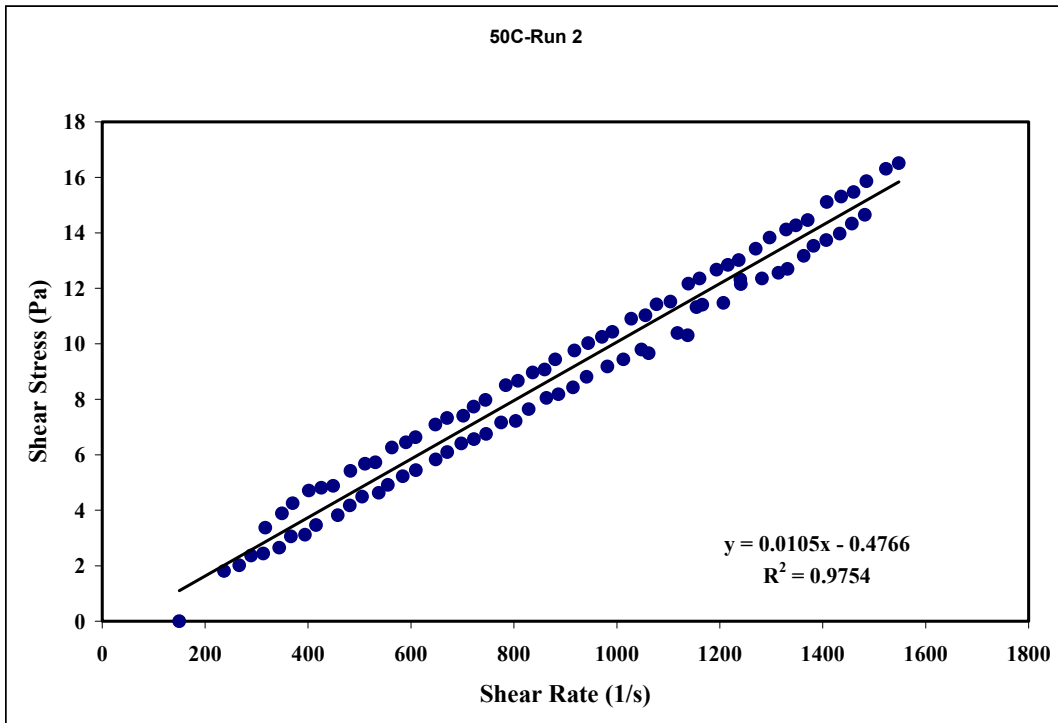


Figure 20. 50 °C Pretreated Run 2

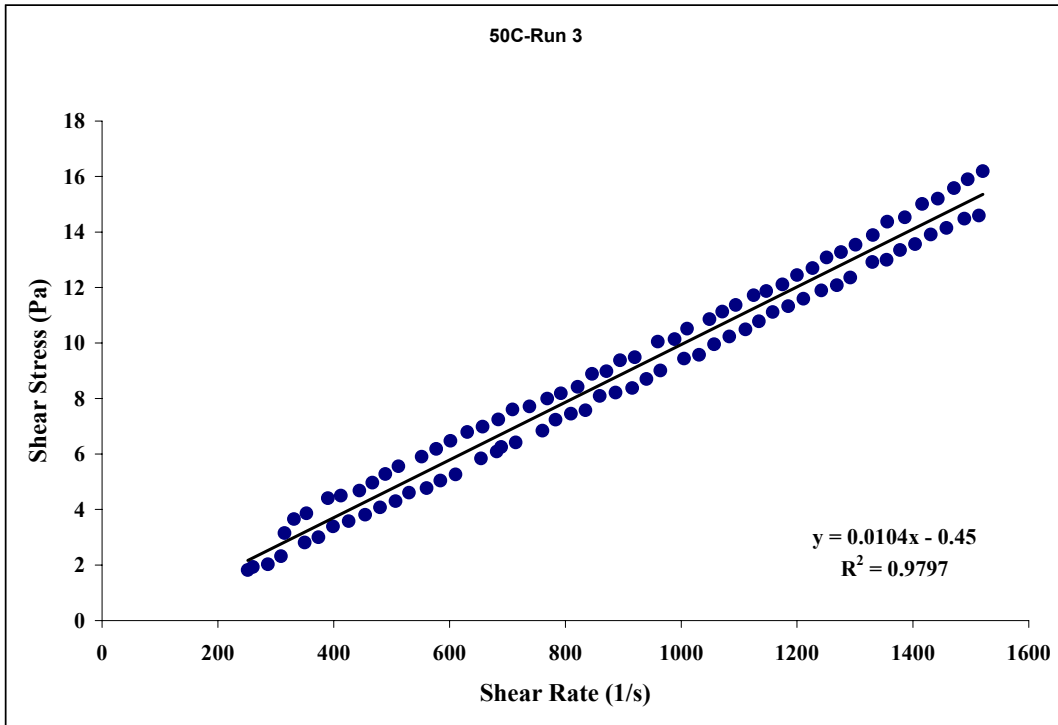


Figure 21. 50 °C Pretreated Run 3

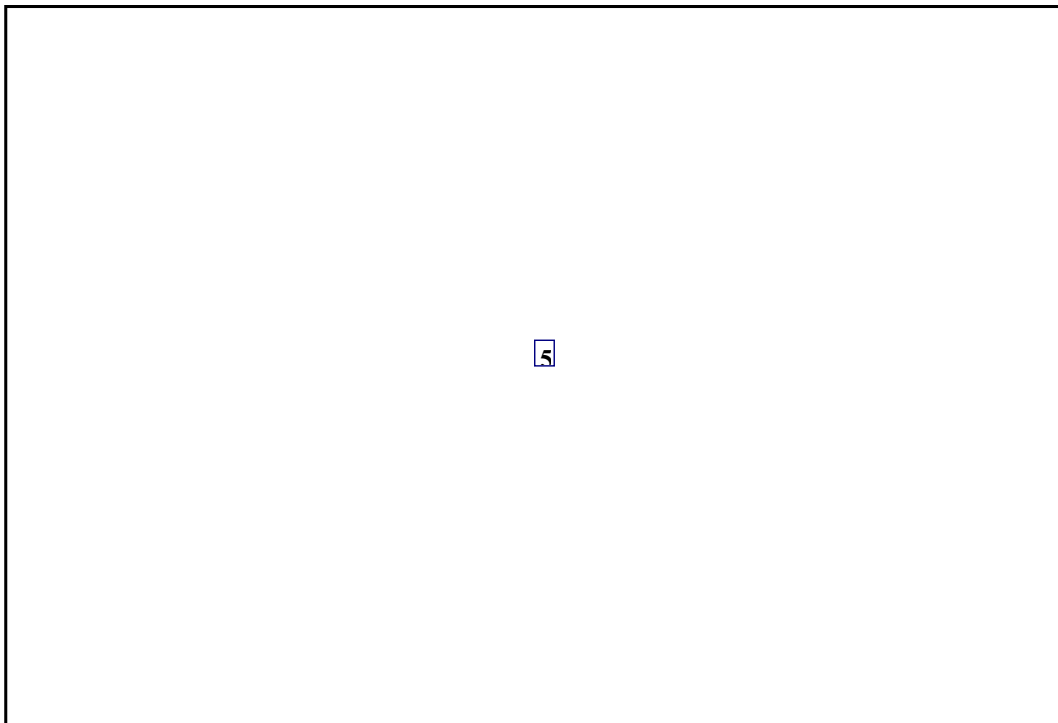


Figure 22. 50 °C Pretreated Run 4

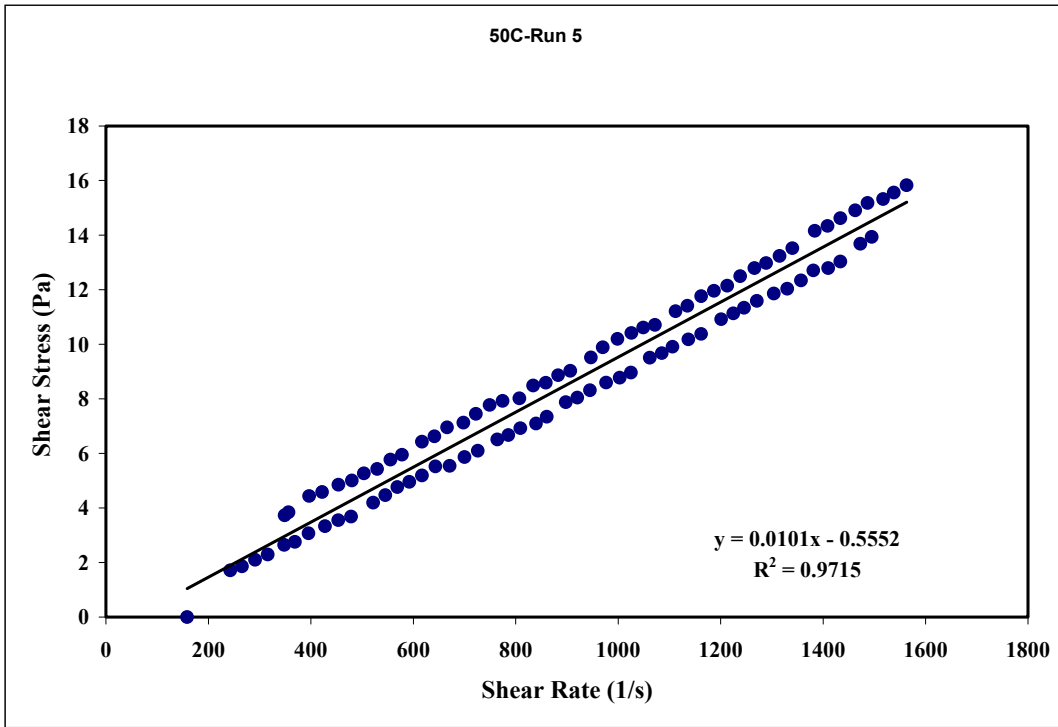


Figure 23. 50 °C Pretreated Run 5

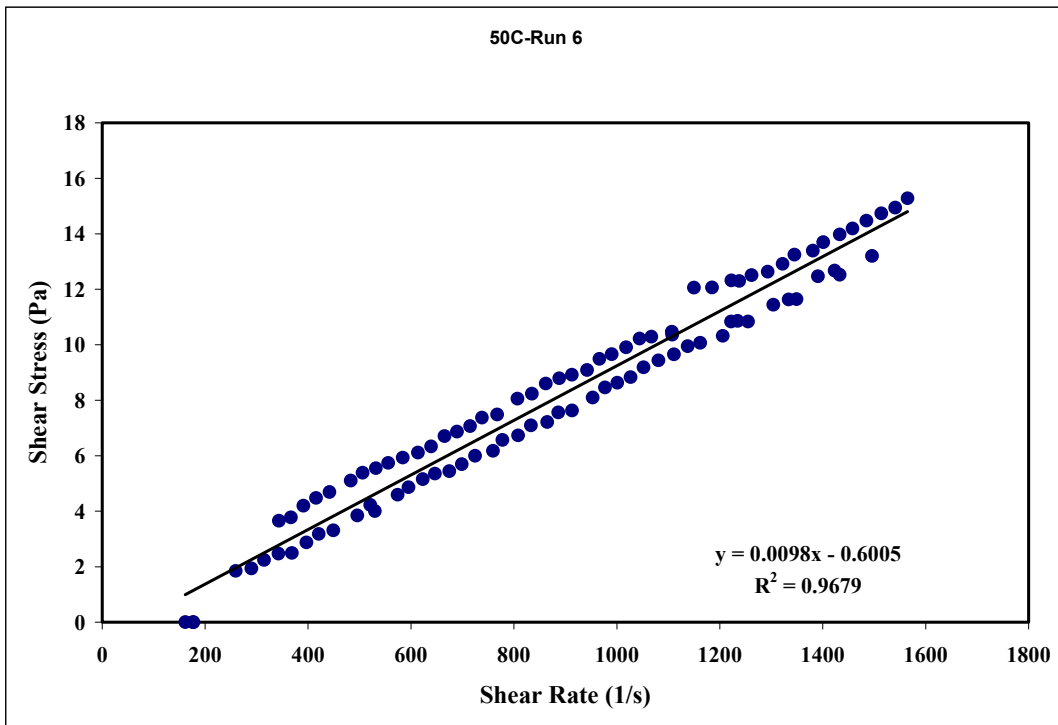


Figure 24. 50 °C Pretreated Run 6

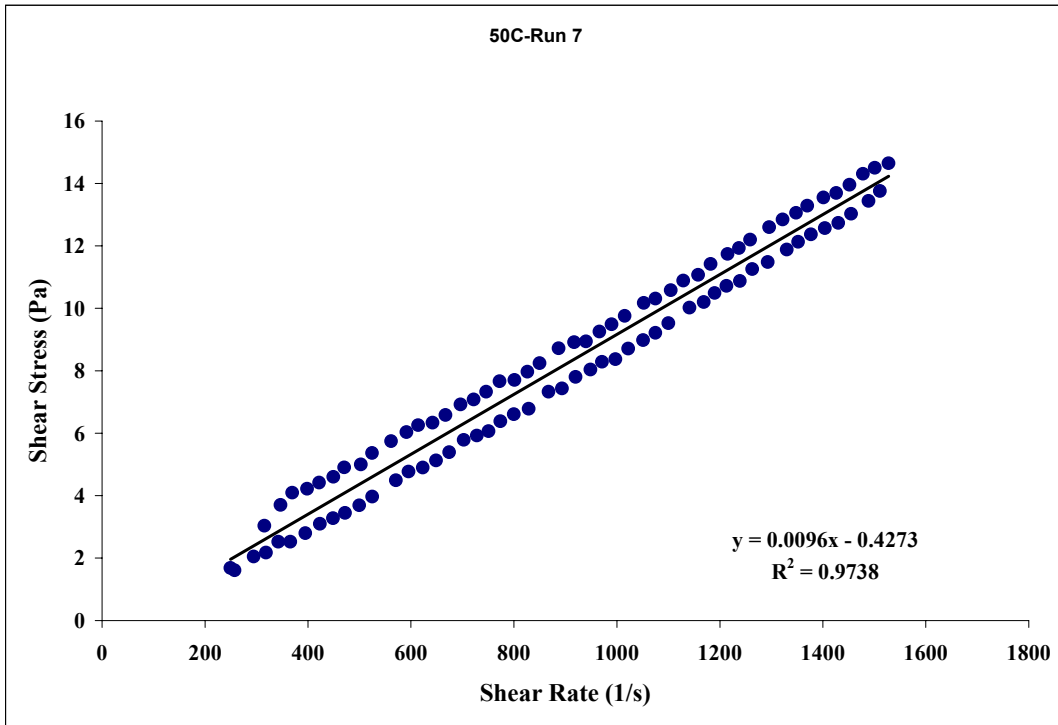


Figure 25. 50 °C Pretreated Run 7

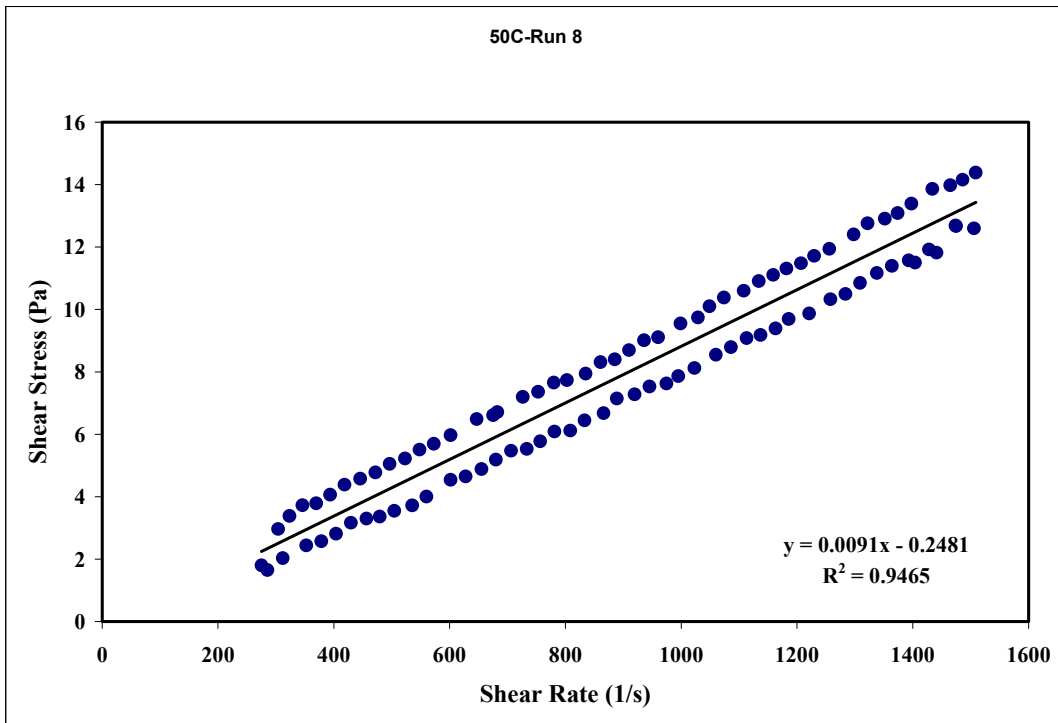


Figure 26. 50 °C Pretreated Run 8

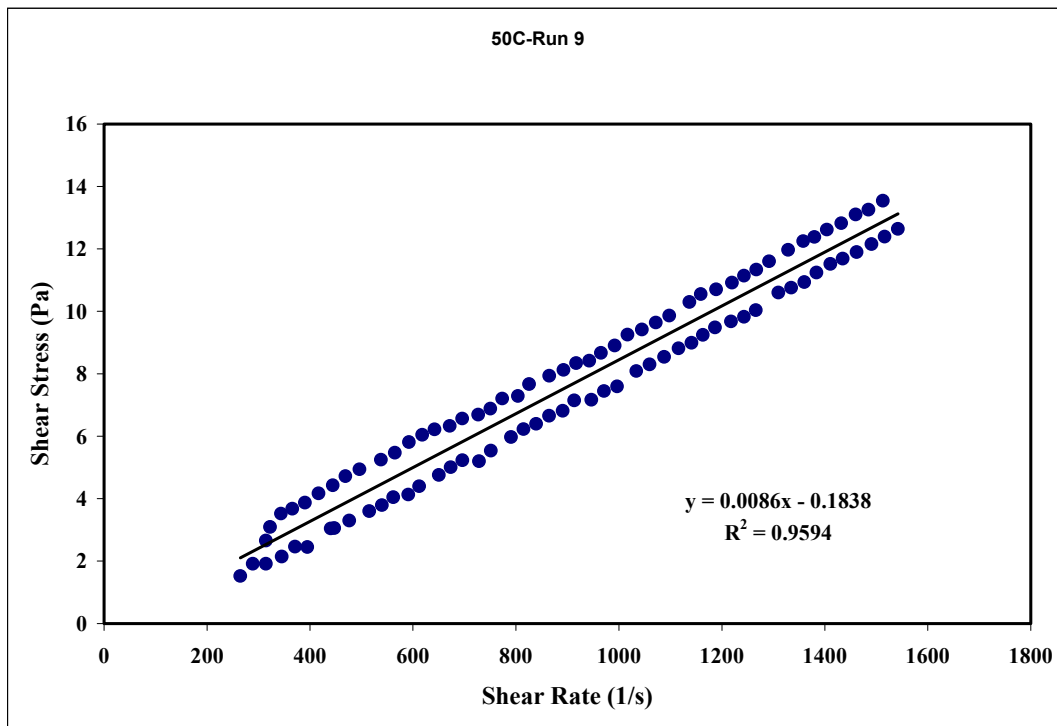


Figure 27. 50 °C Pretreated Run 9

APPENDIX I

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SR/TRU PRECIPITATE SLURRY RHEOGRAMS AT 2 WT %

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SR/TRU PRECIPITATE SLURRY RHEOGRAMS AT 10 WT %

PART 3 Page 387

SR/TRU PRECIPITATE SLURRY RHEOGRAMS AT 13 WT %

PART 4 Page 417

SR/TRU PRECIPITATE SLURRY RHEOGRAMS AT 16 WT %

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AT 2 WT %

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SR/TRU PRECIPITATE SLURRY RHEOGRAMS

Figure 39. 50 °C at 2 wt % Run 5368
Figure 40. 50 °C at 2 wt % Run 6368
Figure 41. 50 °C at 2 wt % Run 7369
Figure 42. 50 °C at 2 wt % Run 8369
Figure 43. 50 °C at 2 wt % Run 9370

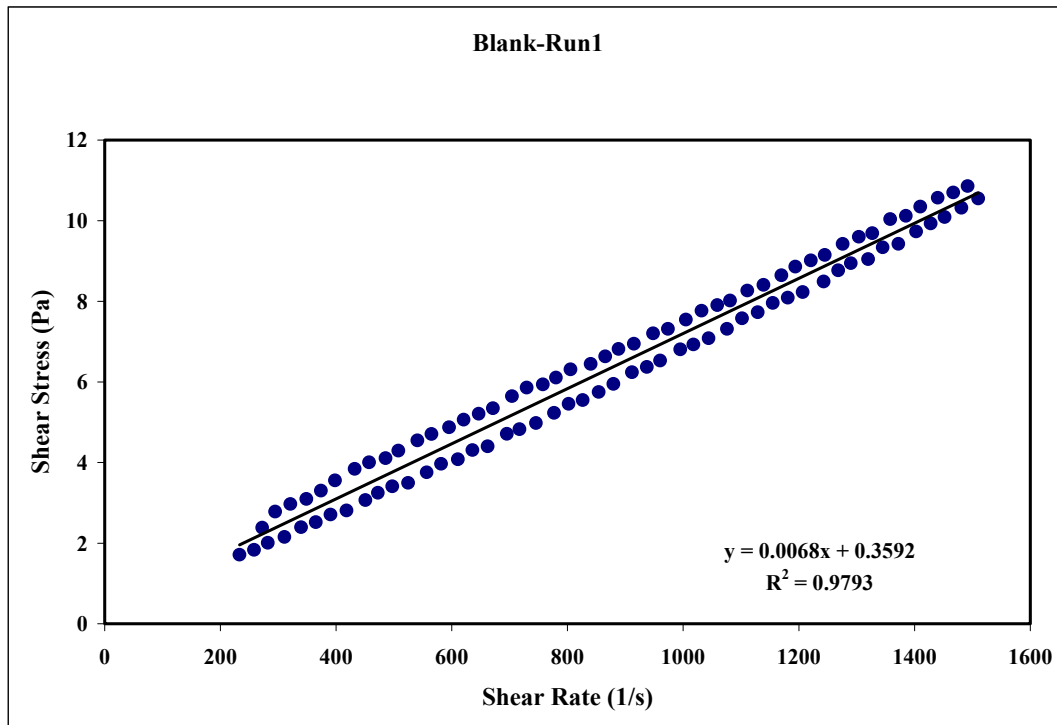


Figure 1. Blank at 2 wt % Run 1

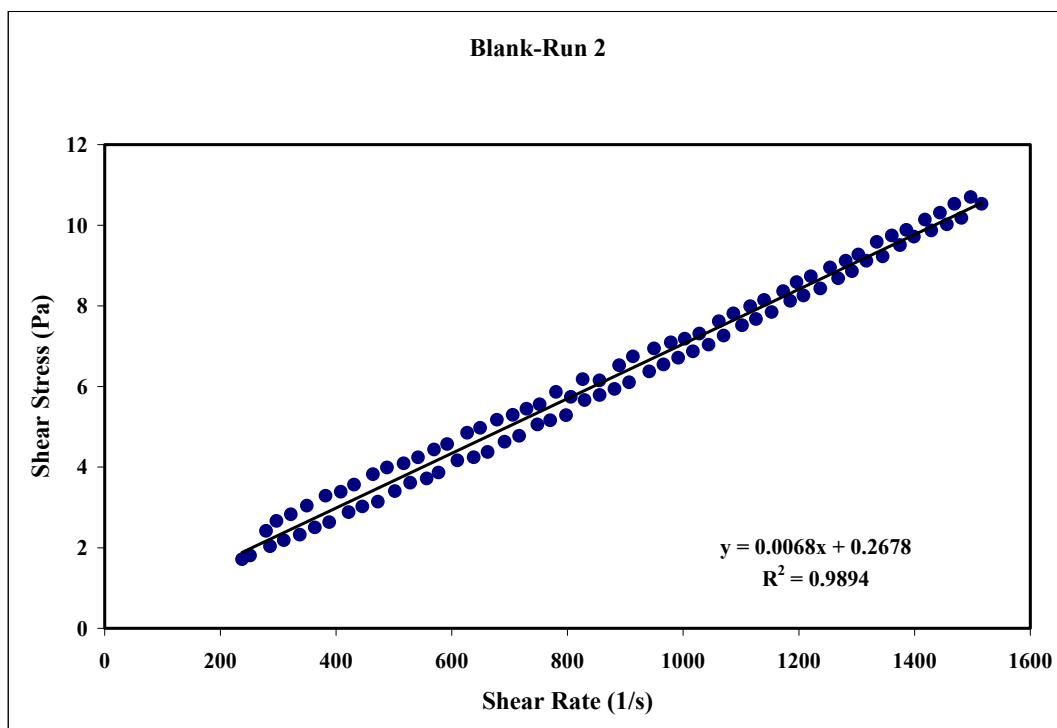


Figure 2. Blank at 2 wt % Run 2

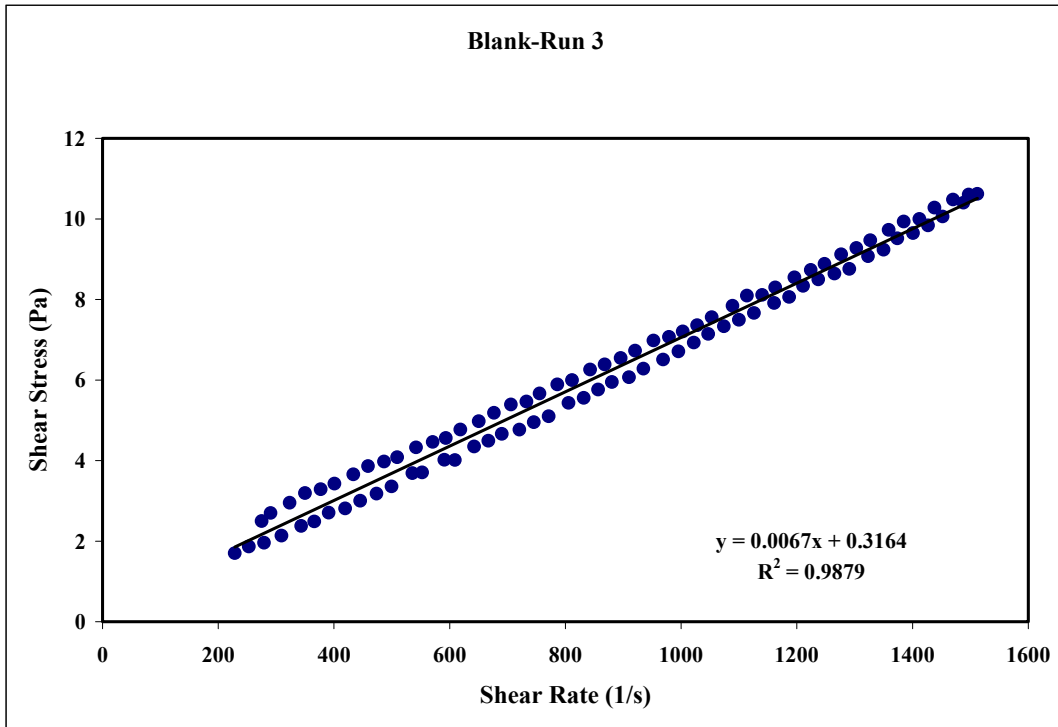


Figure 3. Blank at 2 wt % Run 3

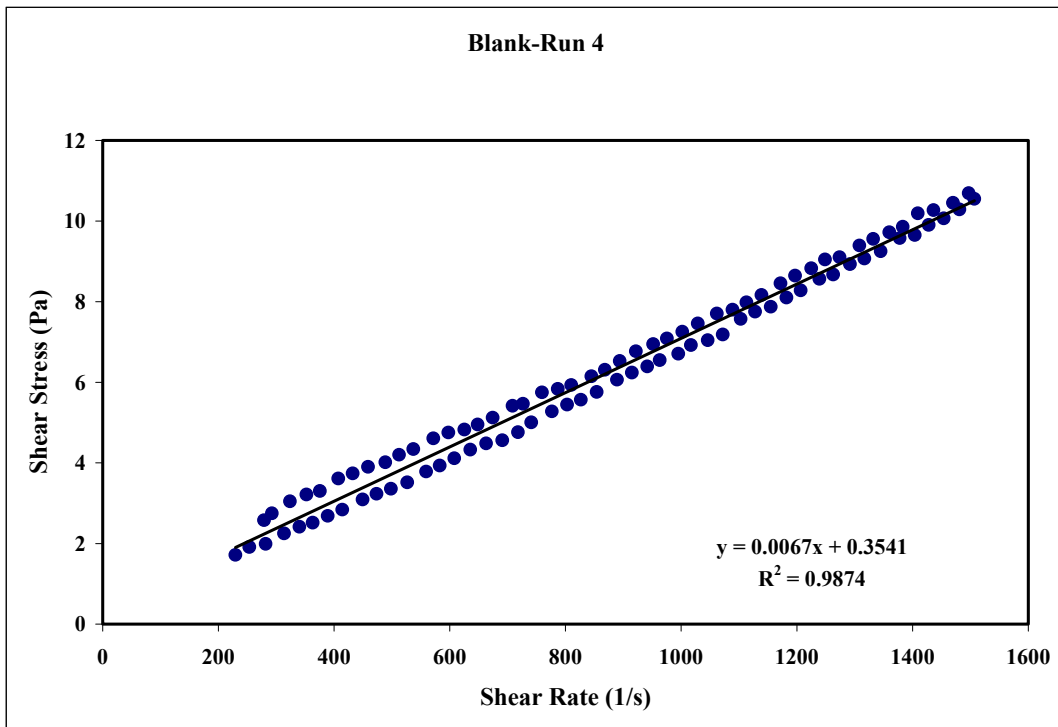


Figure 4. Blank at 2 wt % Run 4

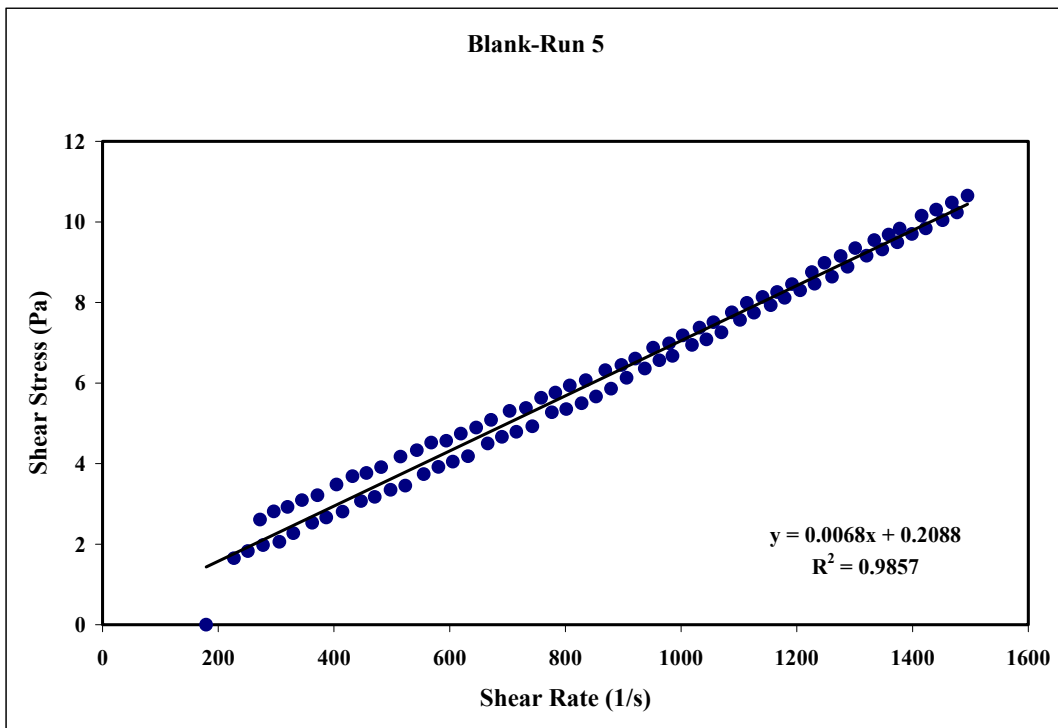


Figure 5. Blank at 2 wt % Run 5

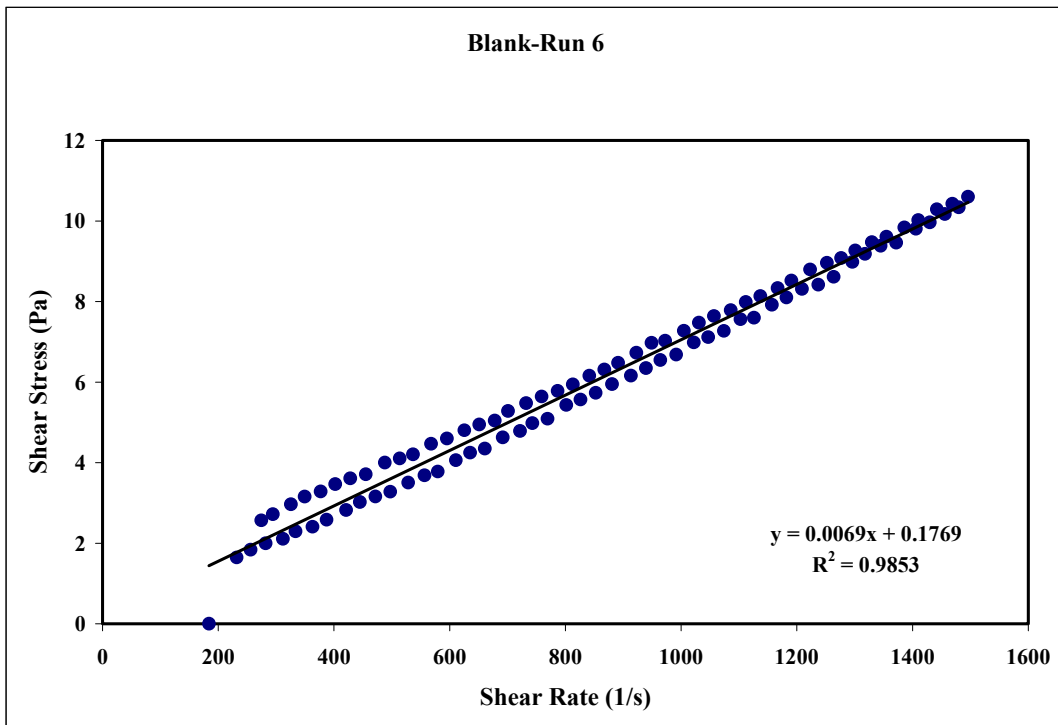


Figure 6. Blank at 2 wt % Run 6

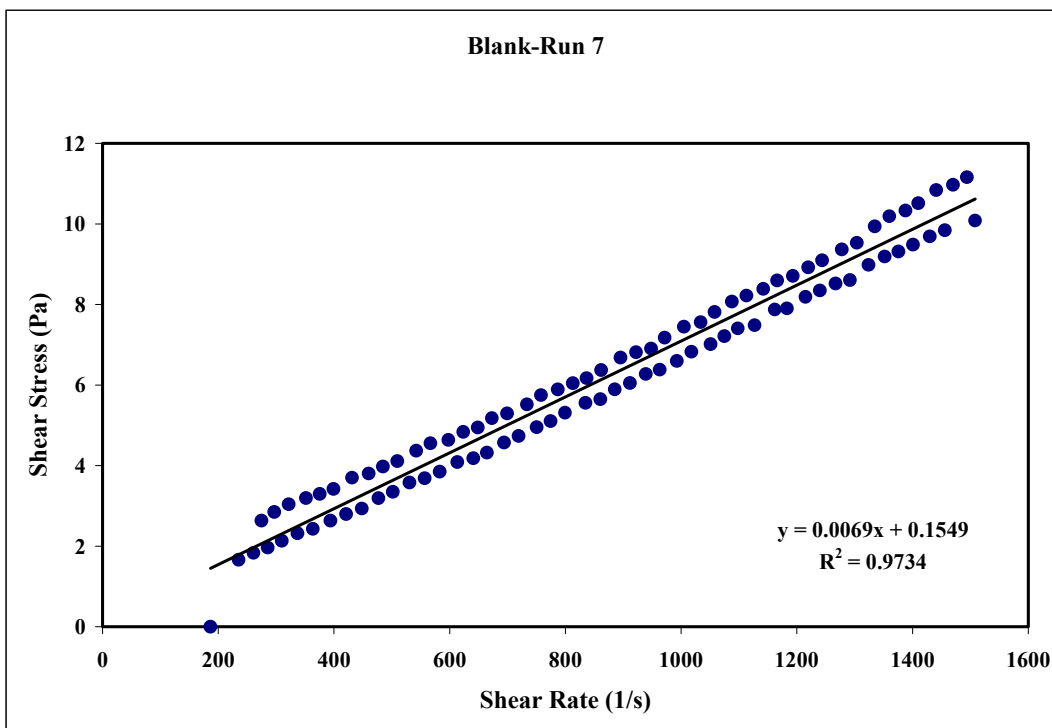


Figure 7. Blank at 2 wt % Run 7

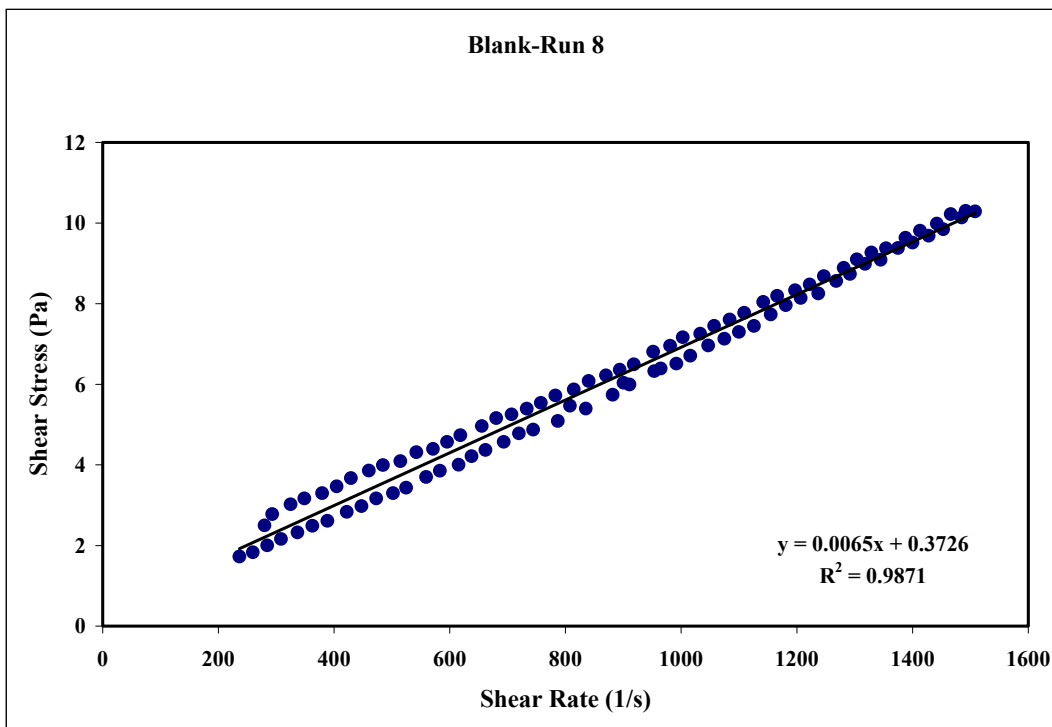


Figure 8. Blank at 2 wt % Run 8

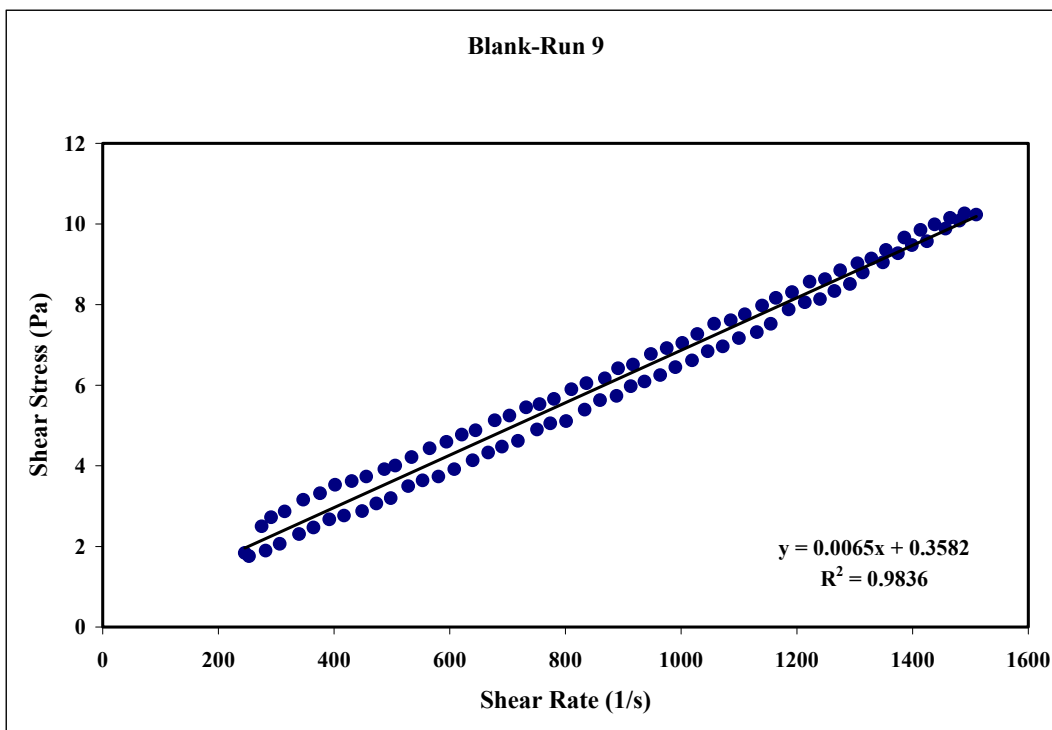


Figure 9. Blank at 2 wt % Run 9

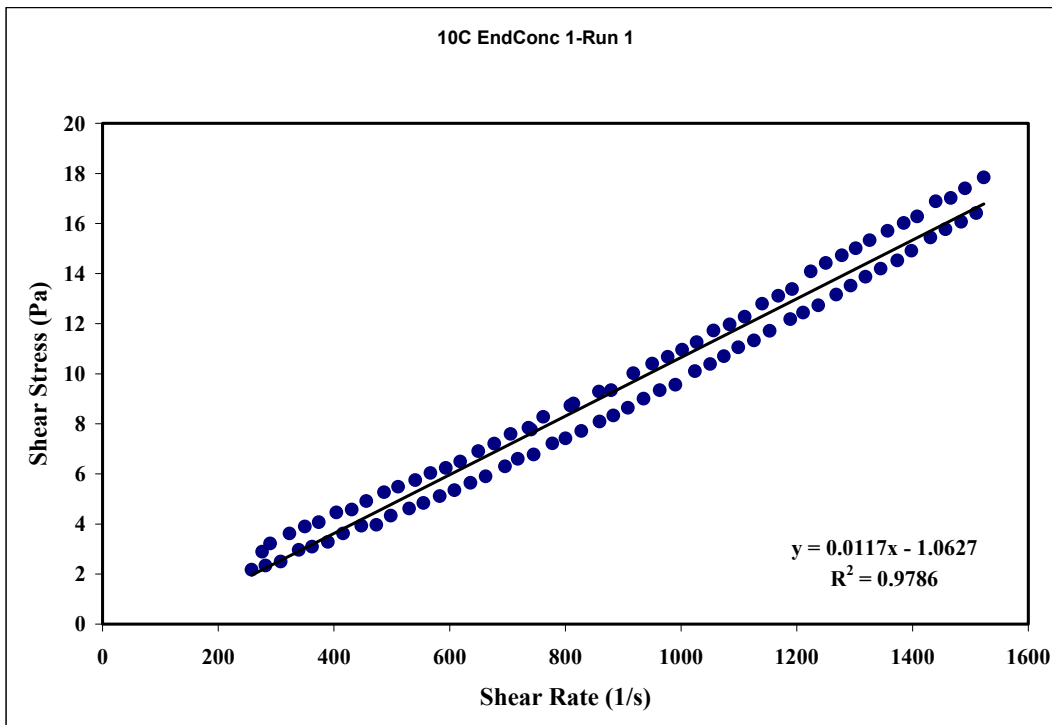


Figure 10. 10 °C at 2 wt % Run 1

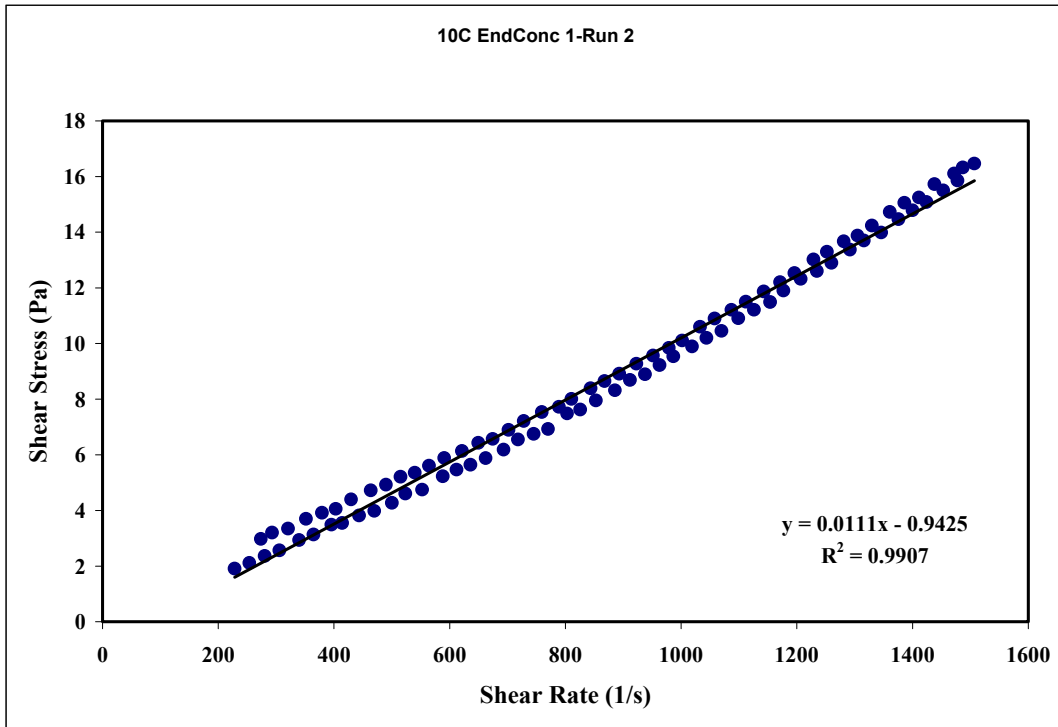


Figure 11. 10 °C at 2 wt % Run 2

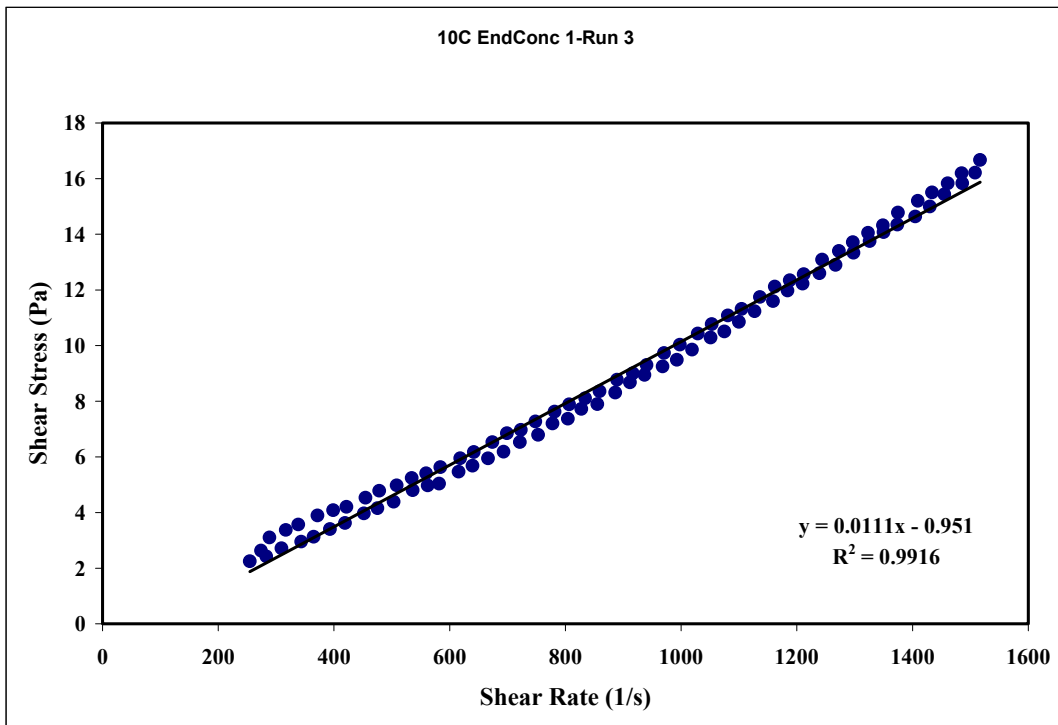


Figure 12. 10 °C at 2 wt % Run 3

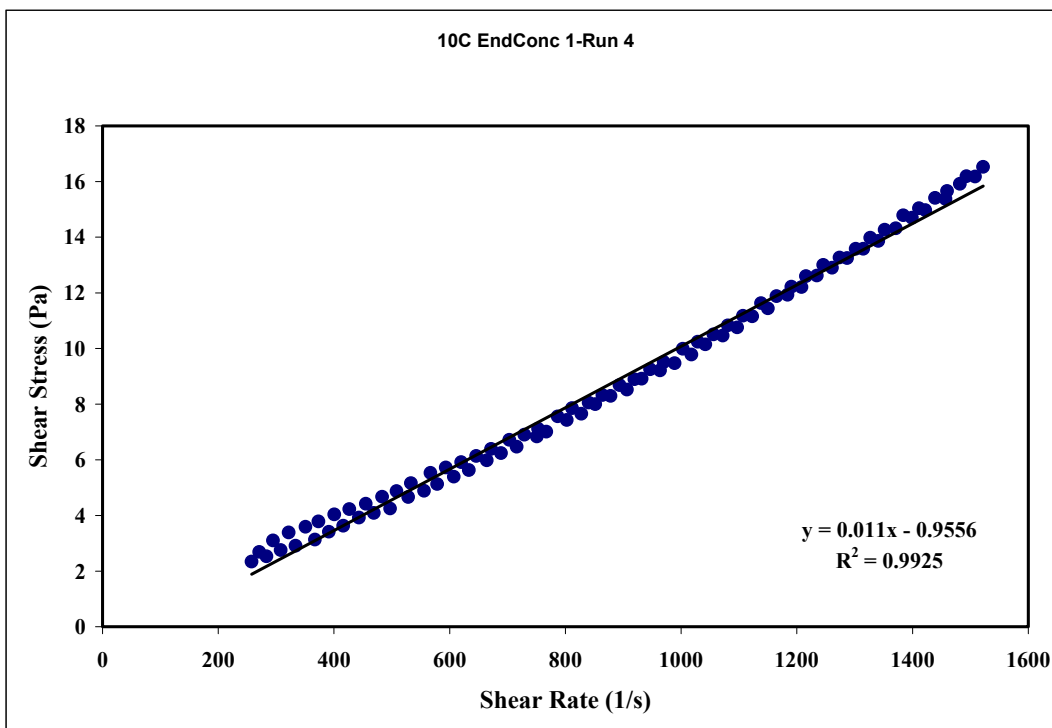


Figure 13. 10 °C at 2 wt % Run 4

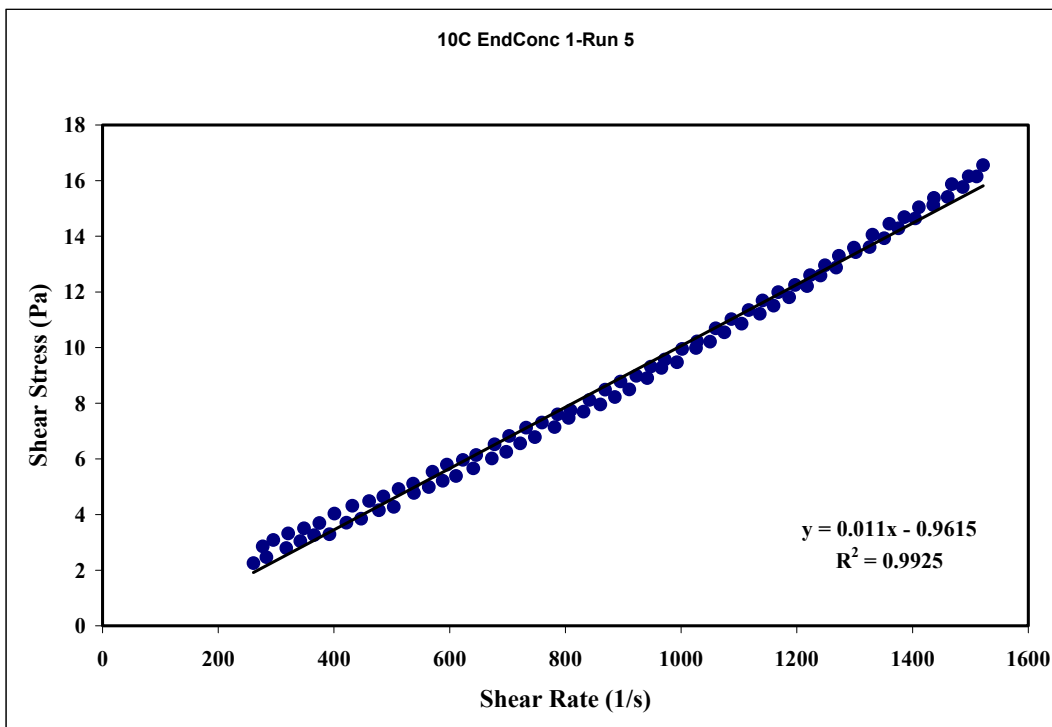


Figure 14. 10 °C at 2 wt % Run 5

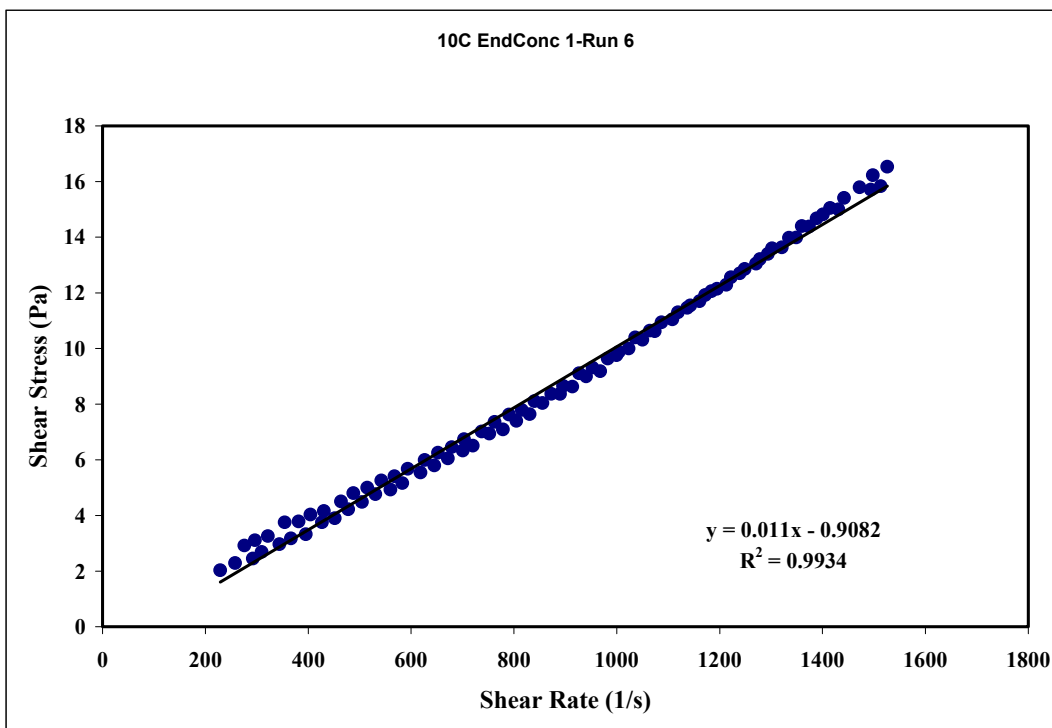


Figure 15. 10 °C at 2 wt % Run 6

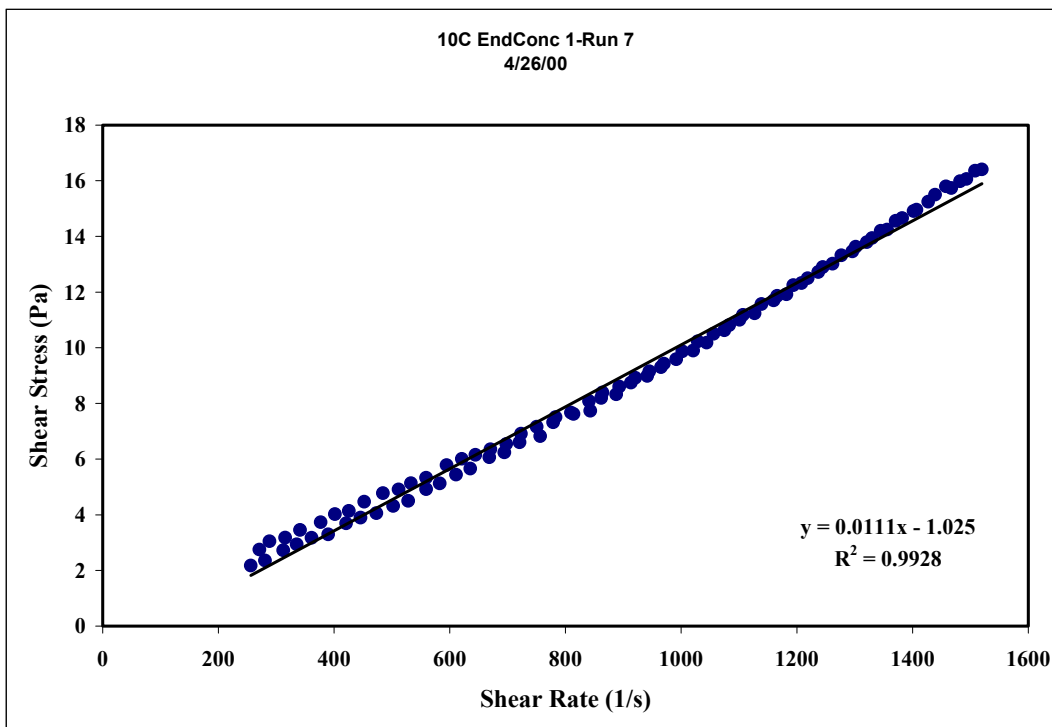


Figure 16. 10 °C at 2 wt % Run 7

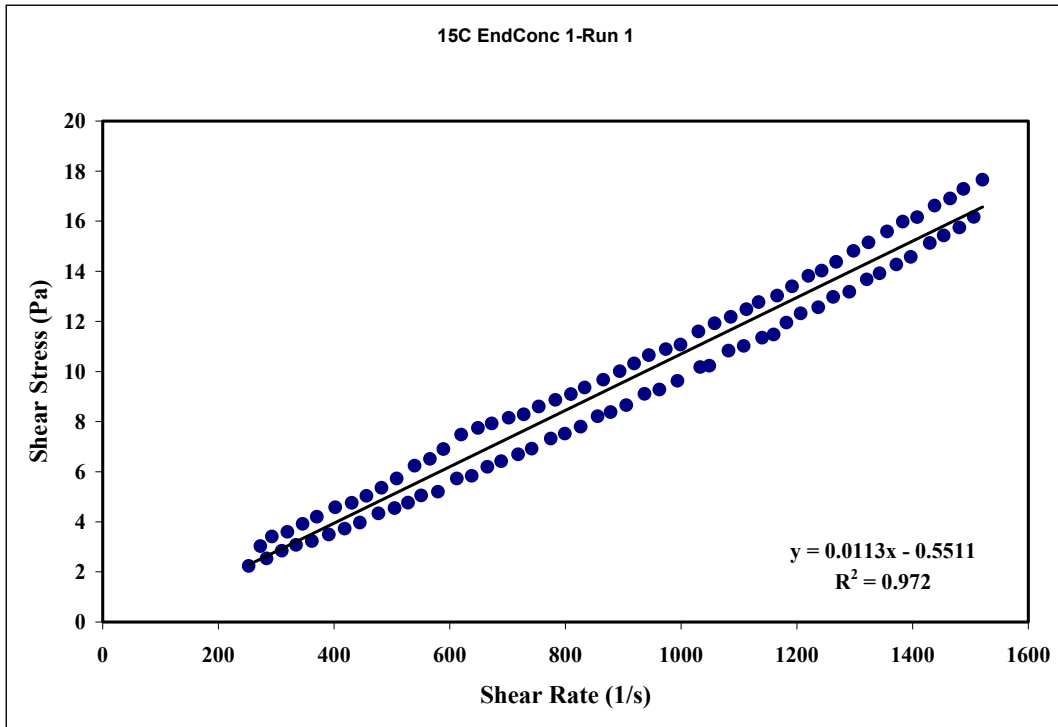


Figure 17. 15 °C at 2 wt % Run 1

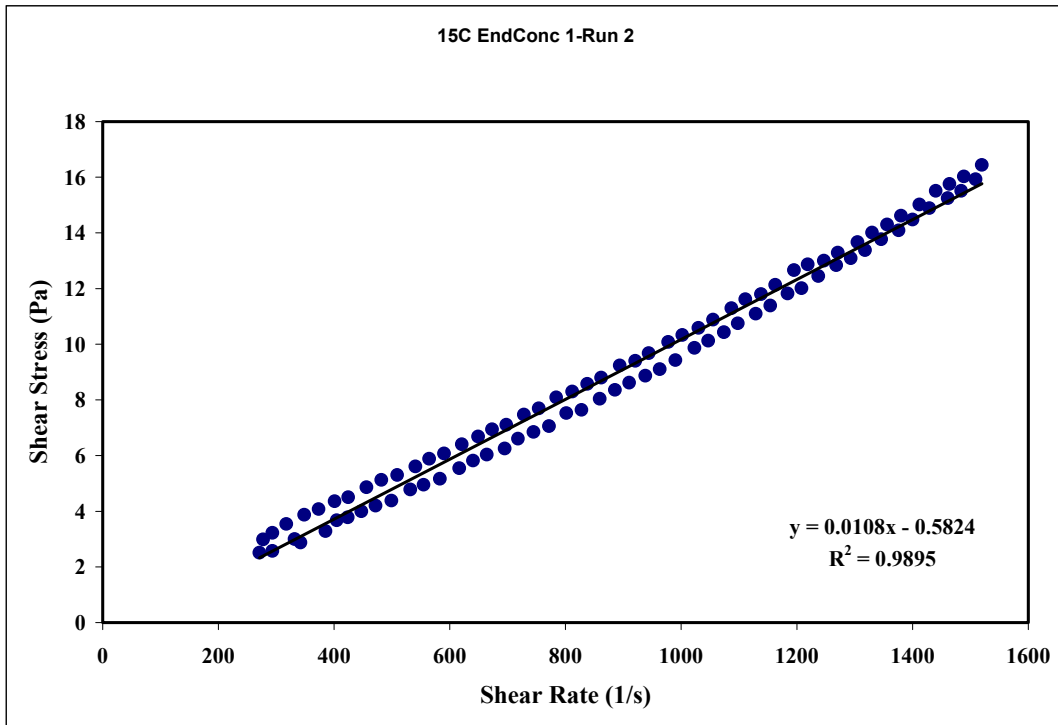


Figure 18. 15 °C at 2 wt % Run 2

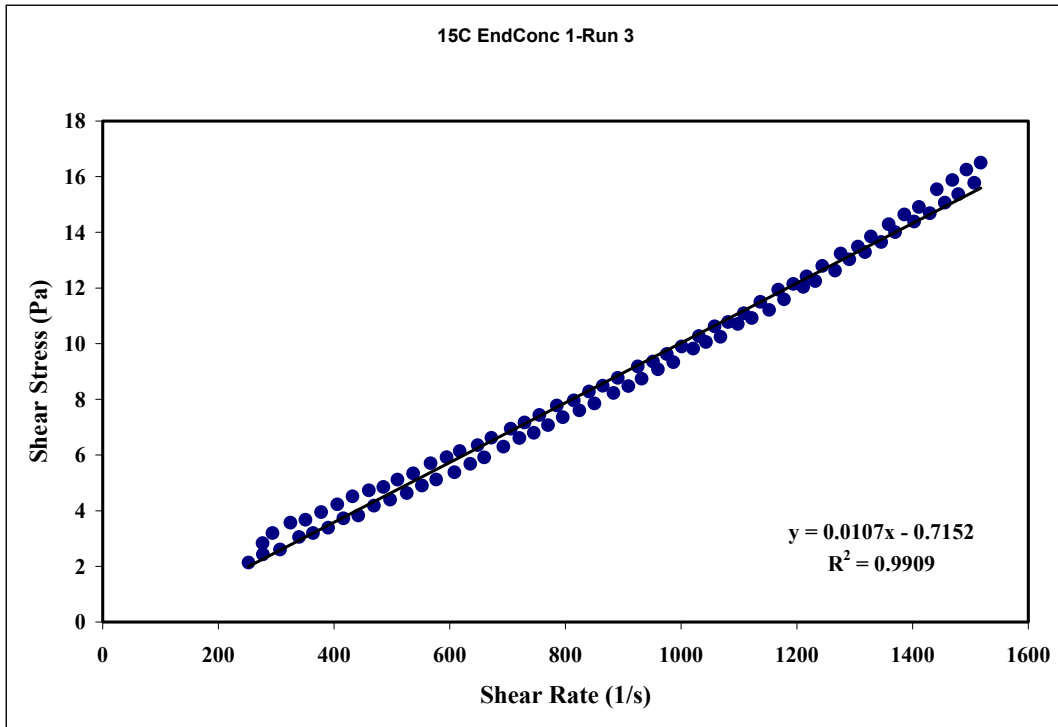


Figure 19. 15 °C at 2 wt % Run 3

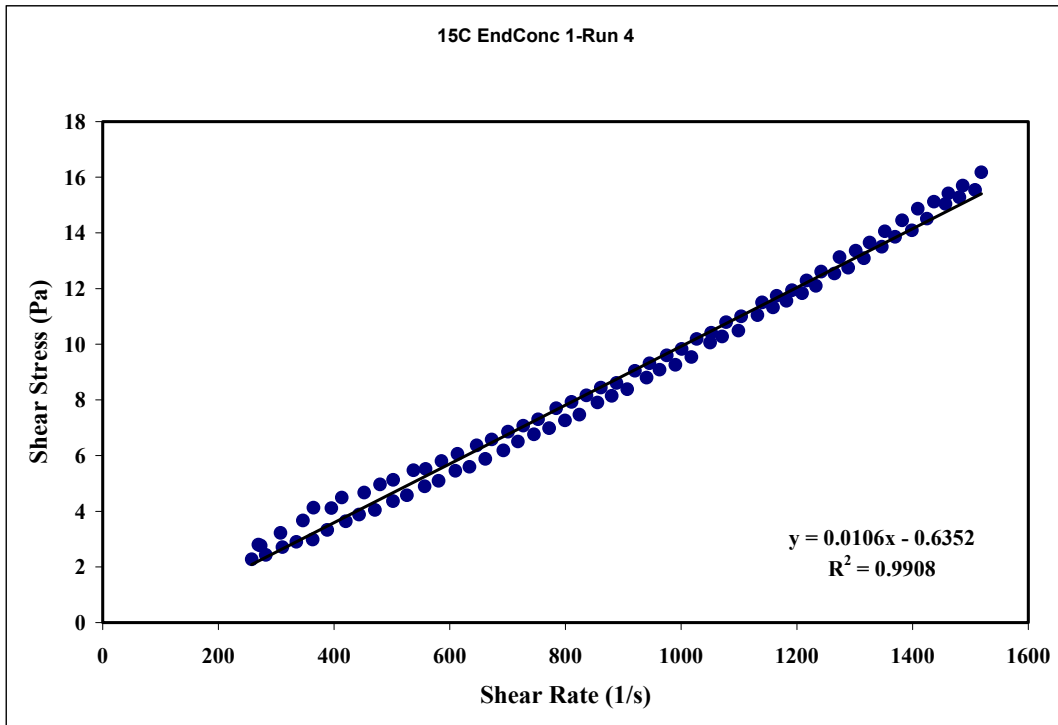


Figure 20. 15 °C at 2 wt % Run 4

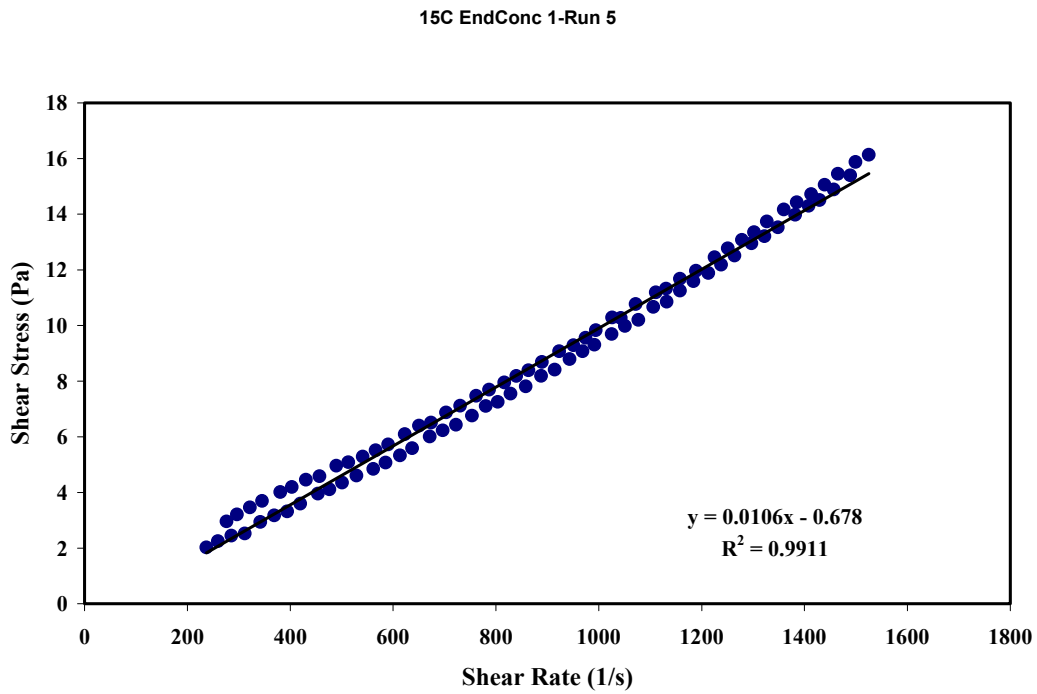


Figure 21. 15 °C at 2 wt % Run 5

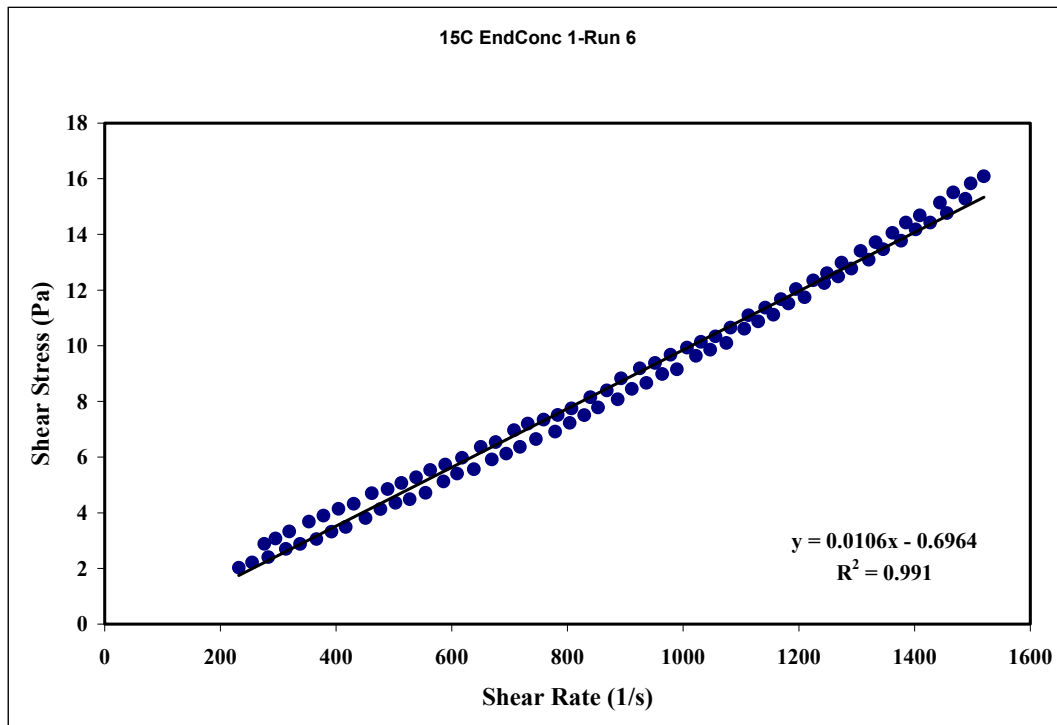


Figure 22. 15 °C at 2 wt % Run 6

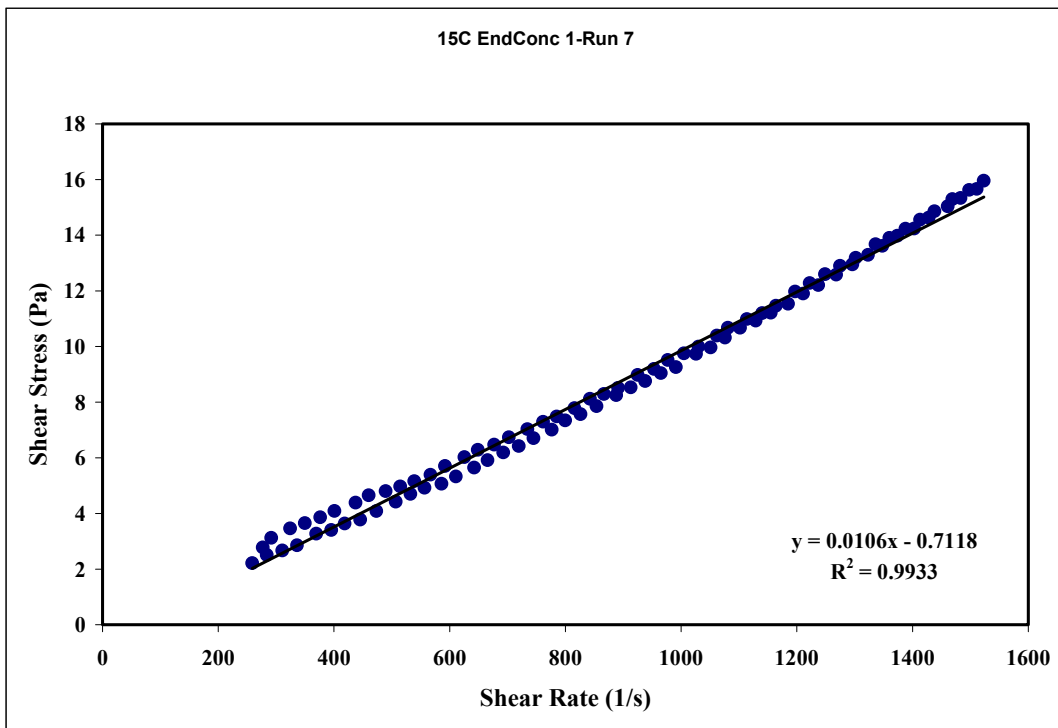


Figure 23. 15 °C at 2 wt % Run 7

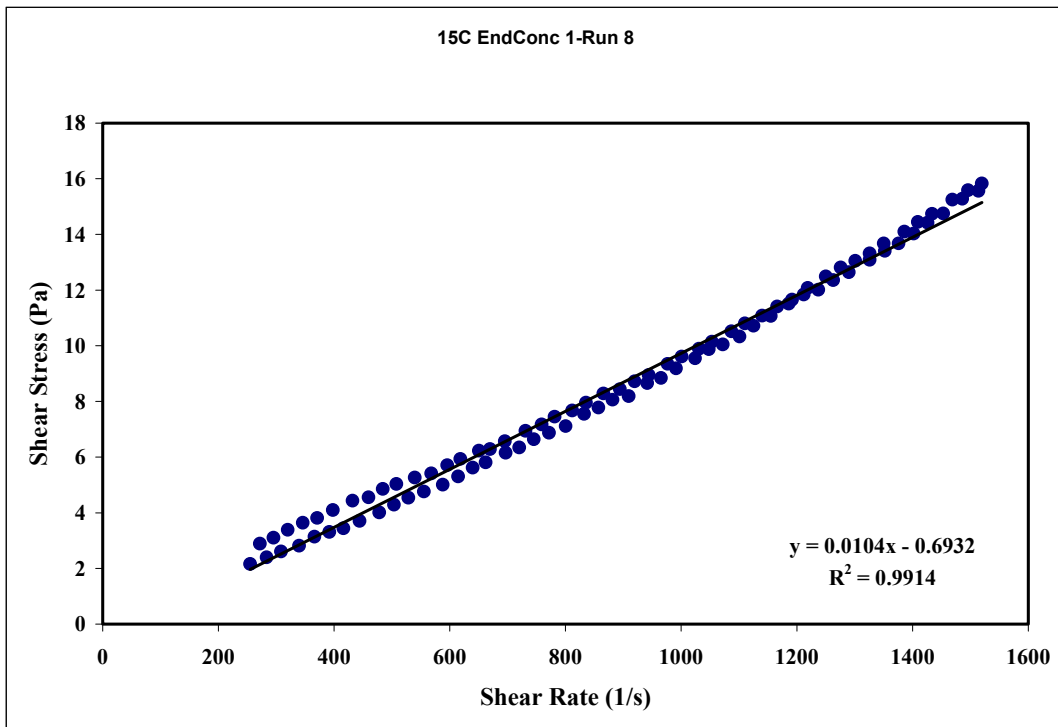


Figure 24. 15 °C at 2 wt % Run 8

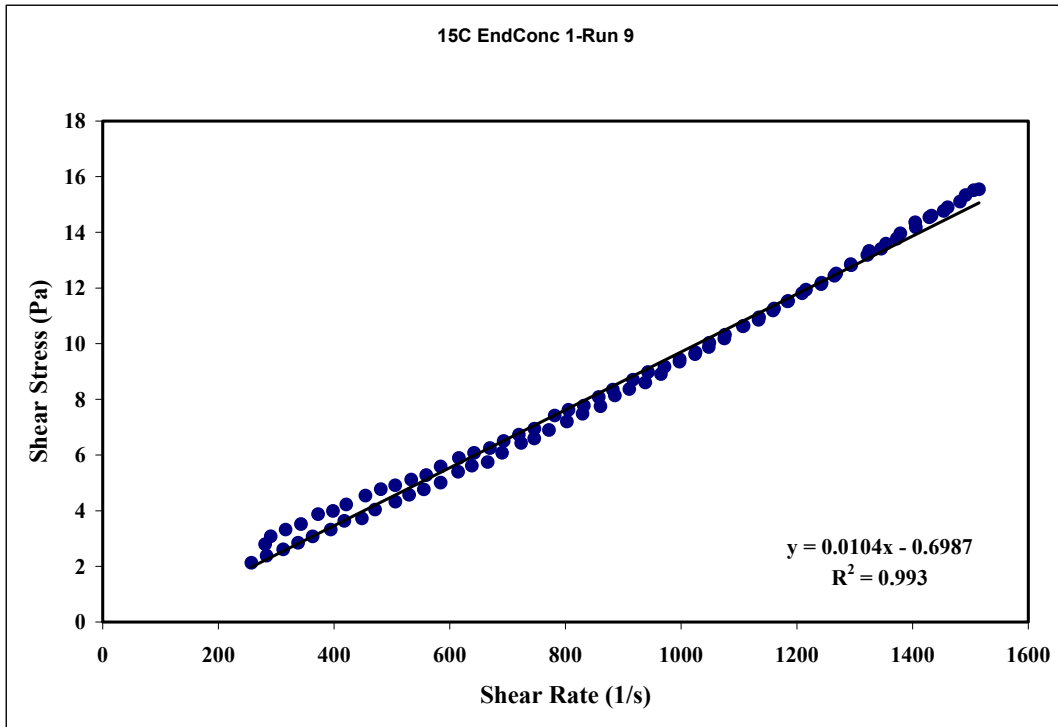


Figure 25. 15 °C at 2 wt % Run 9

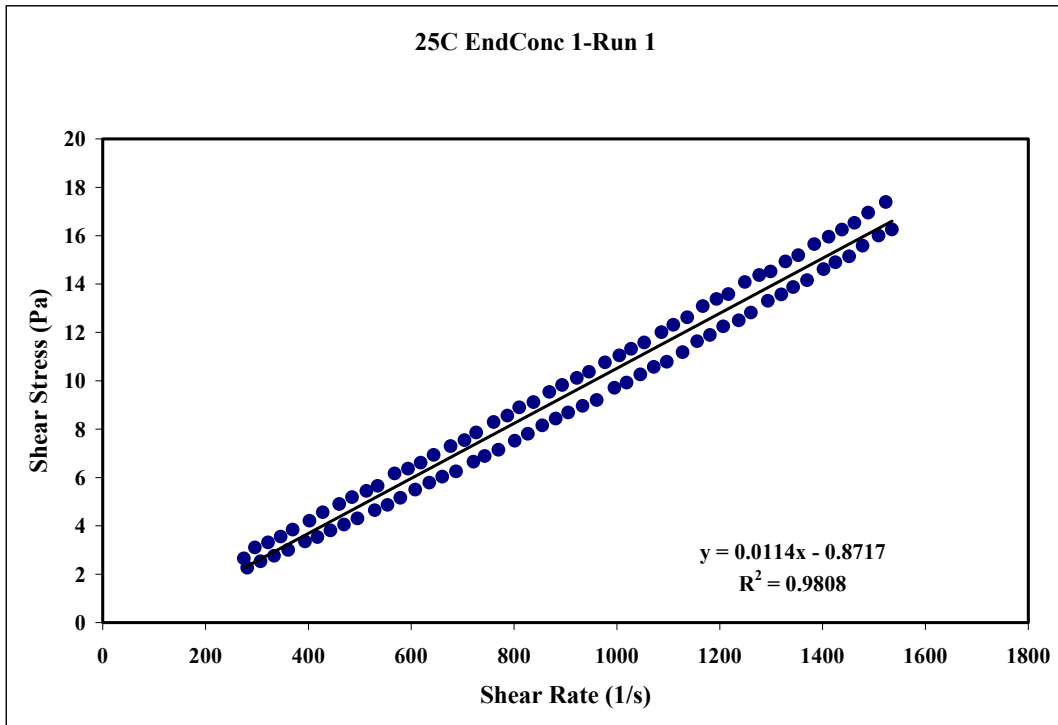


Figure 26. 25 °C at 2 wt % Run 1

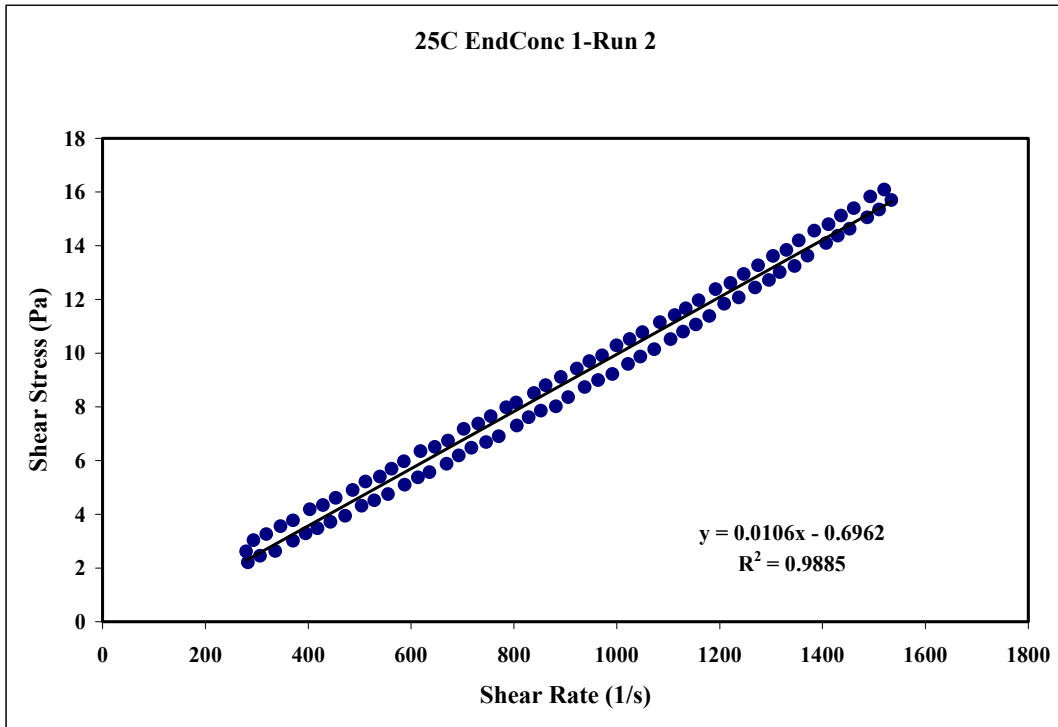


Figure 27. 25 °C at 2 wt % Run 2

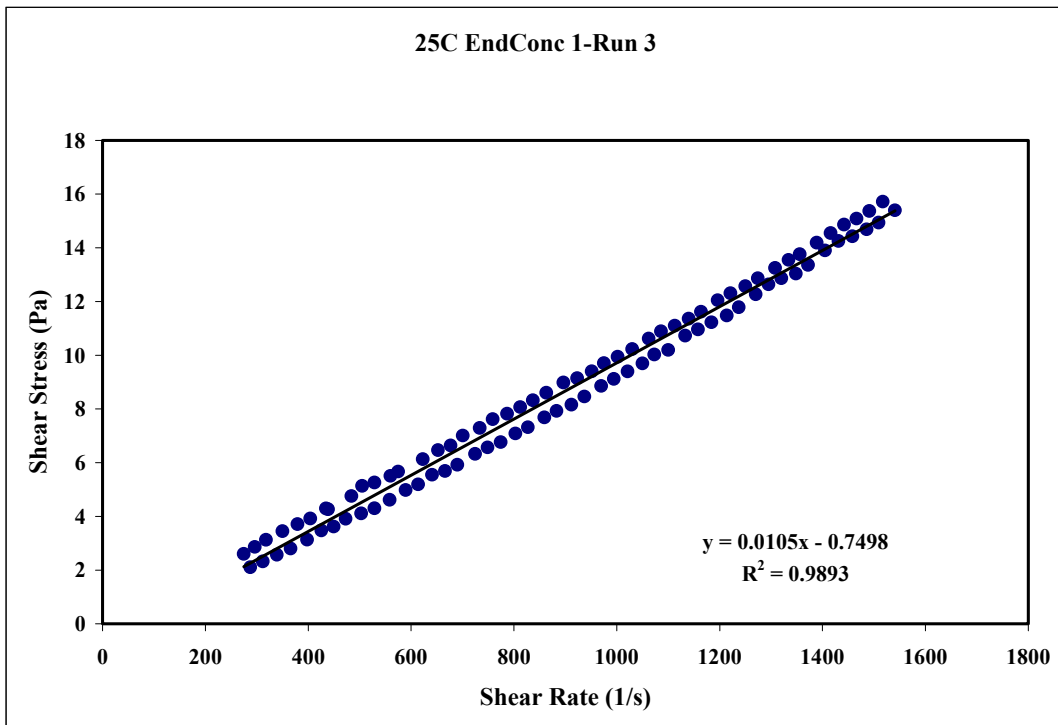


Figure 28. 25 °C at 2 wt % Run 3

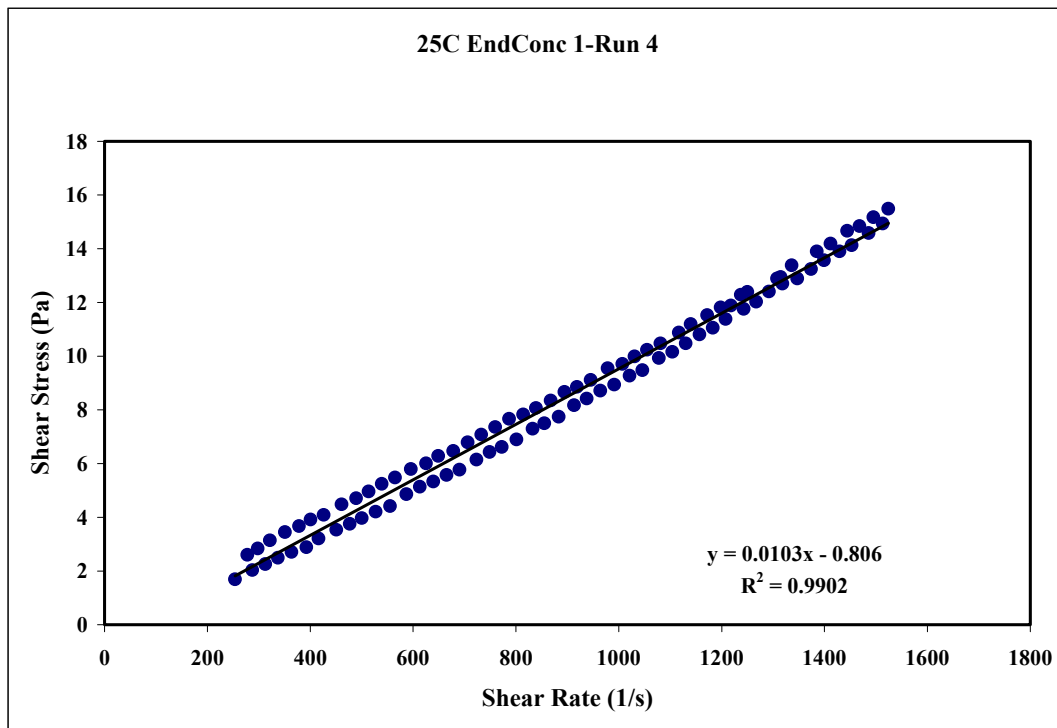


Figure 29. 25 °C at 2 wt % Run 4

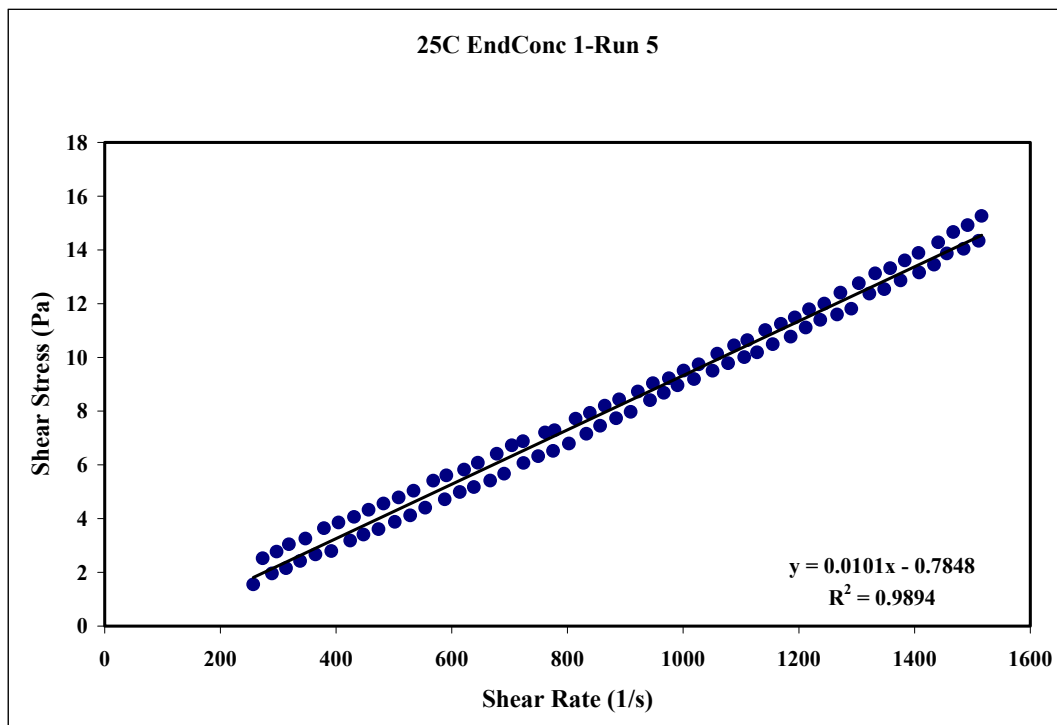


Figure 30. 25 °C at 2 wt % Run 5

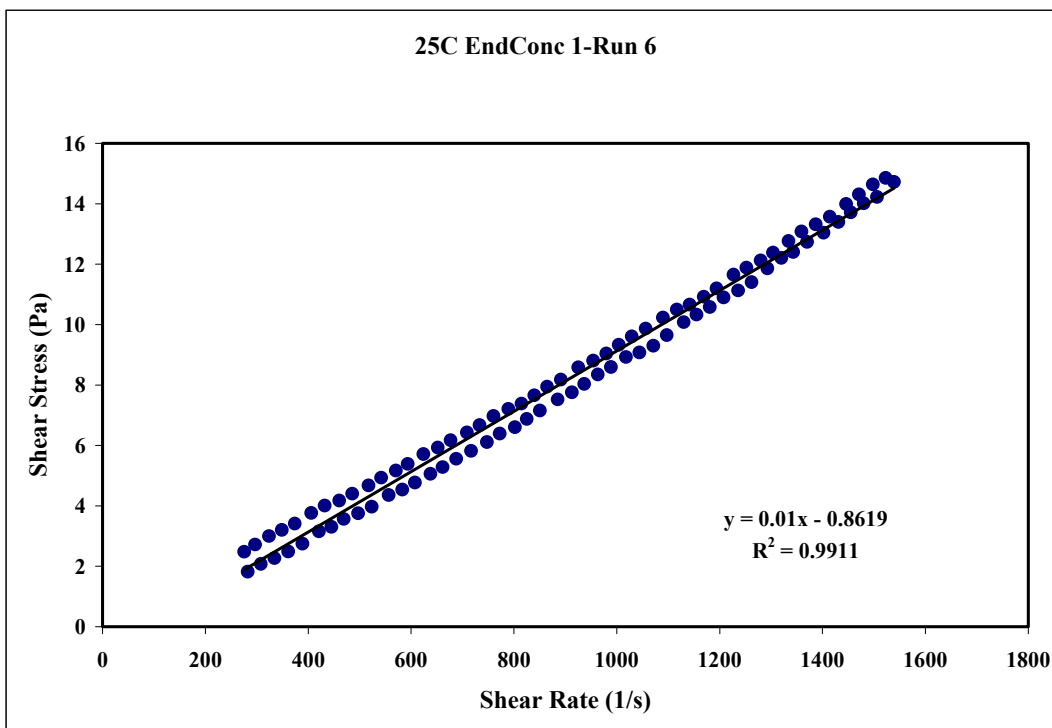


Figure 31. 25 °C at 2 wt % Run 6

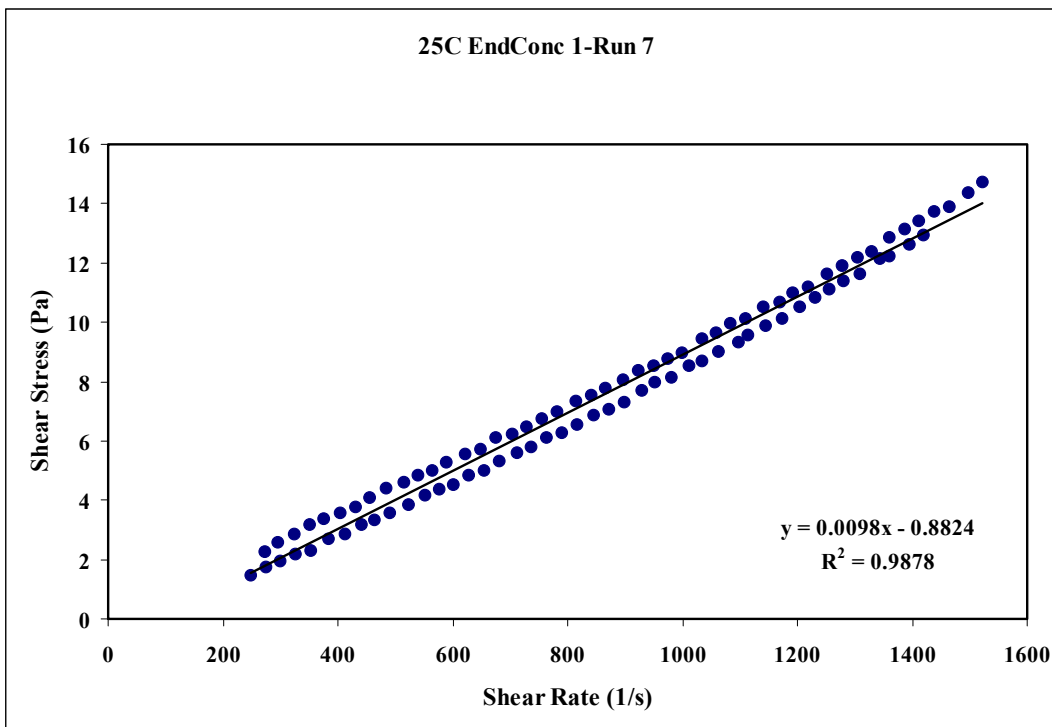


Figure 32. 25 °C at 2 wt % Run 7

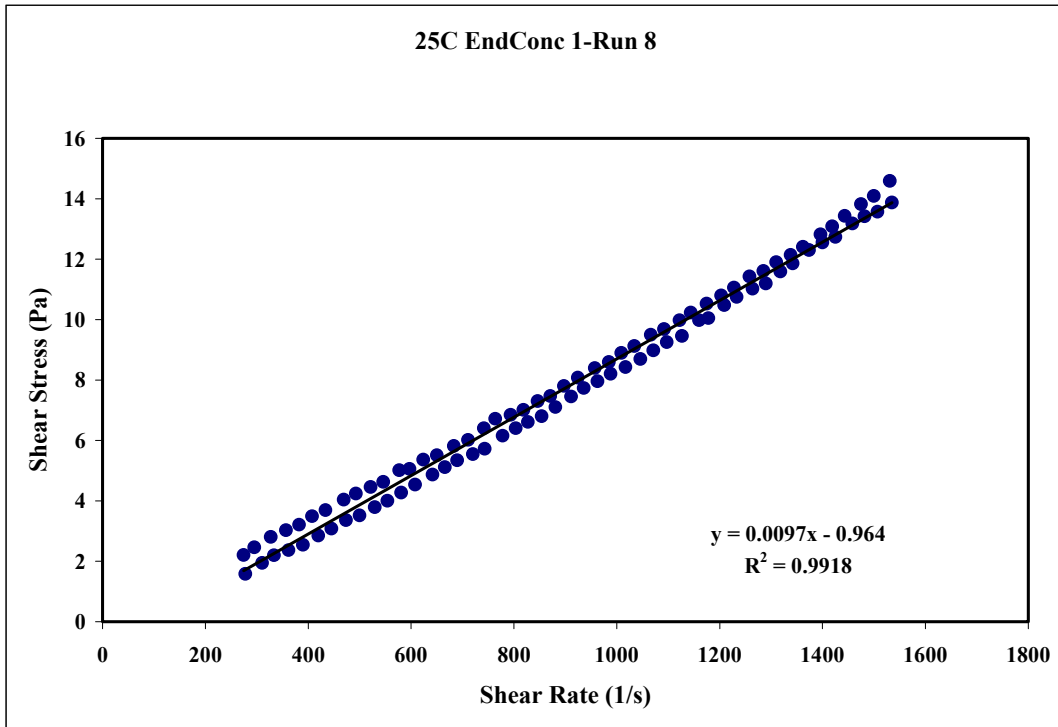


Figure 33. 25 °C at 2 wt % Run 8

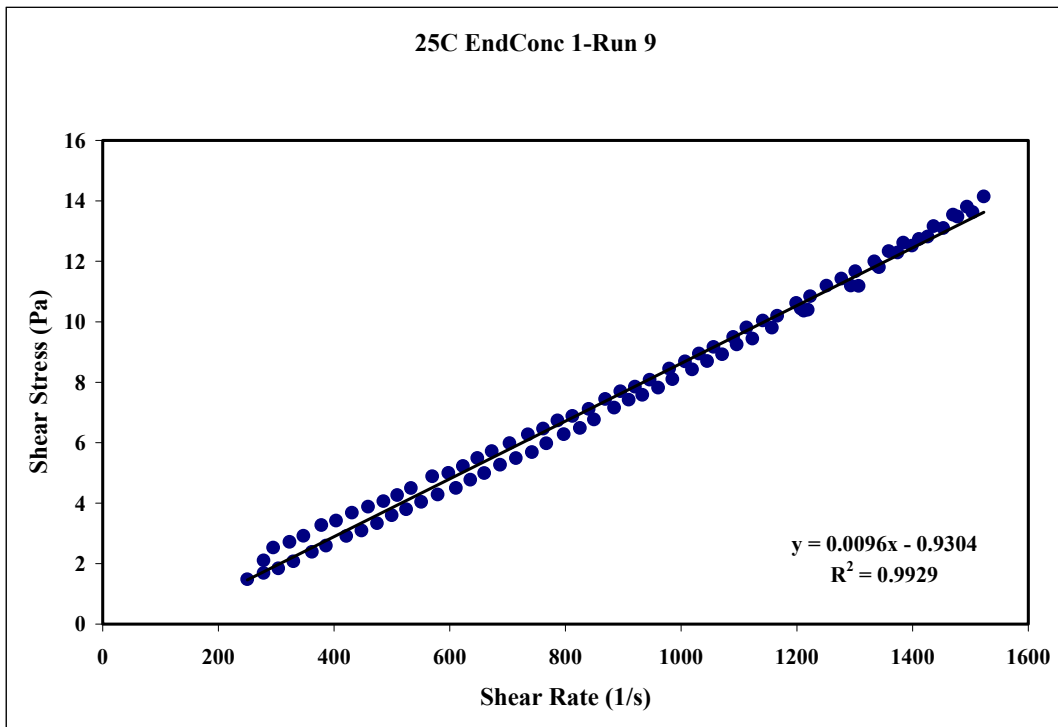


Figure 34. 25 °C at 2 wt % Run 9

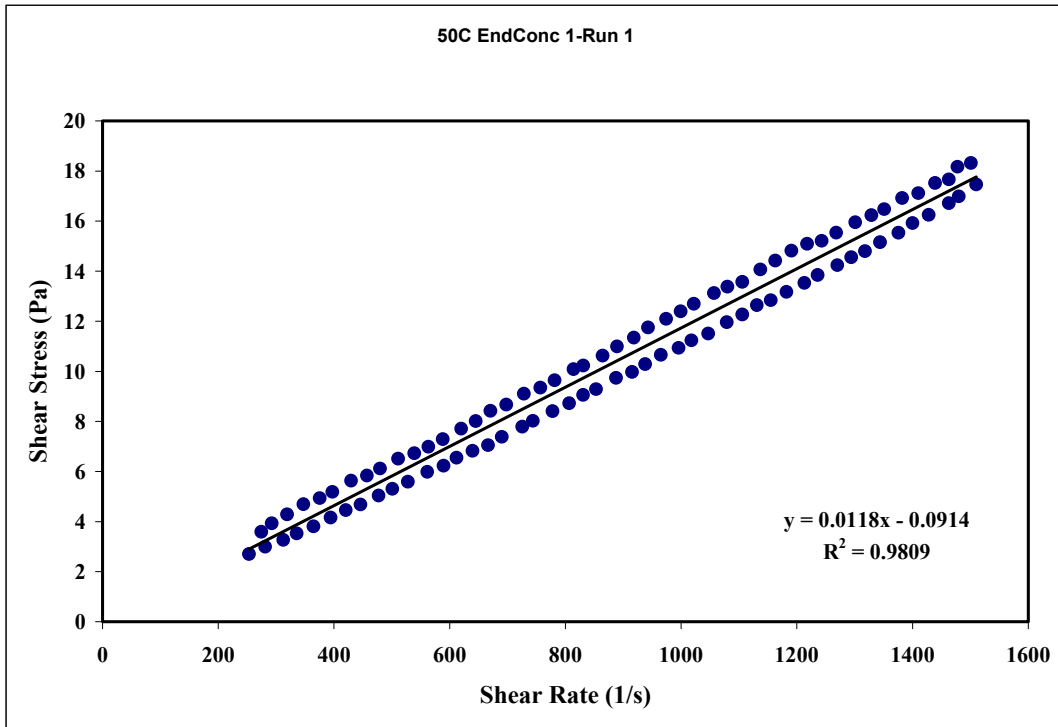


Figure 35. 50 °C at 2 wt % Run 1

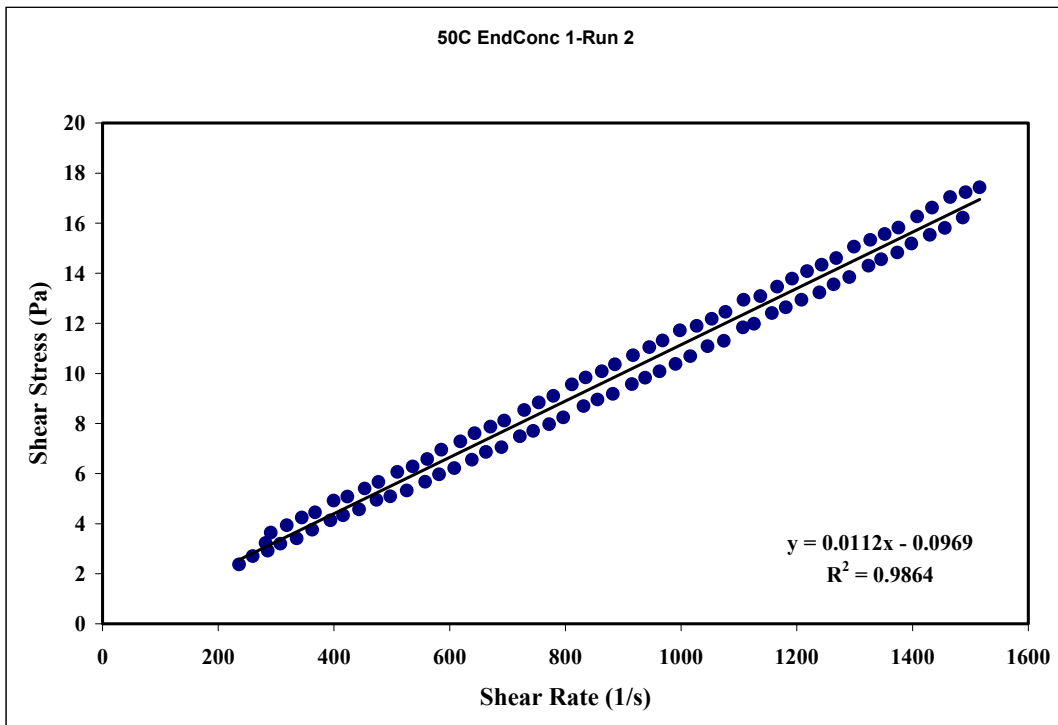


Figure 36. 50 °C at 2 wt % Run 2

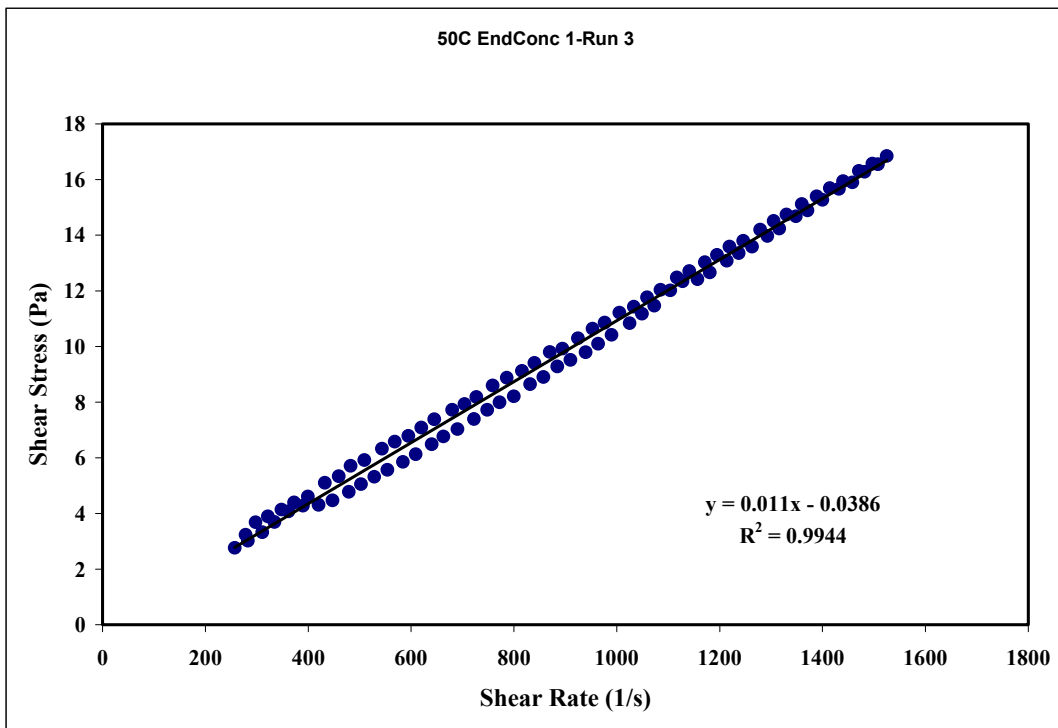


Figure 37. 50 °C at 2 wt % Run 3

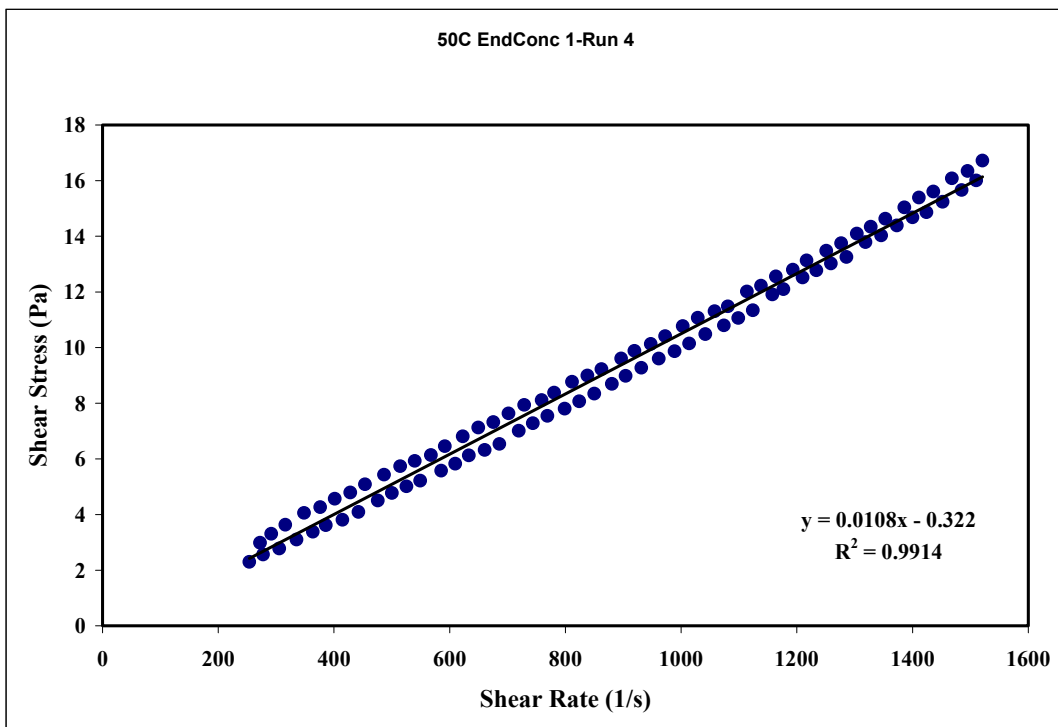


Figure 38. 50 °C at 2 wt % Run 4

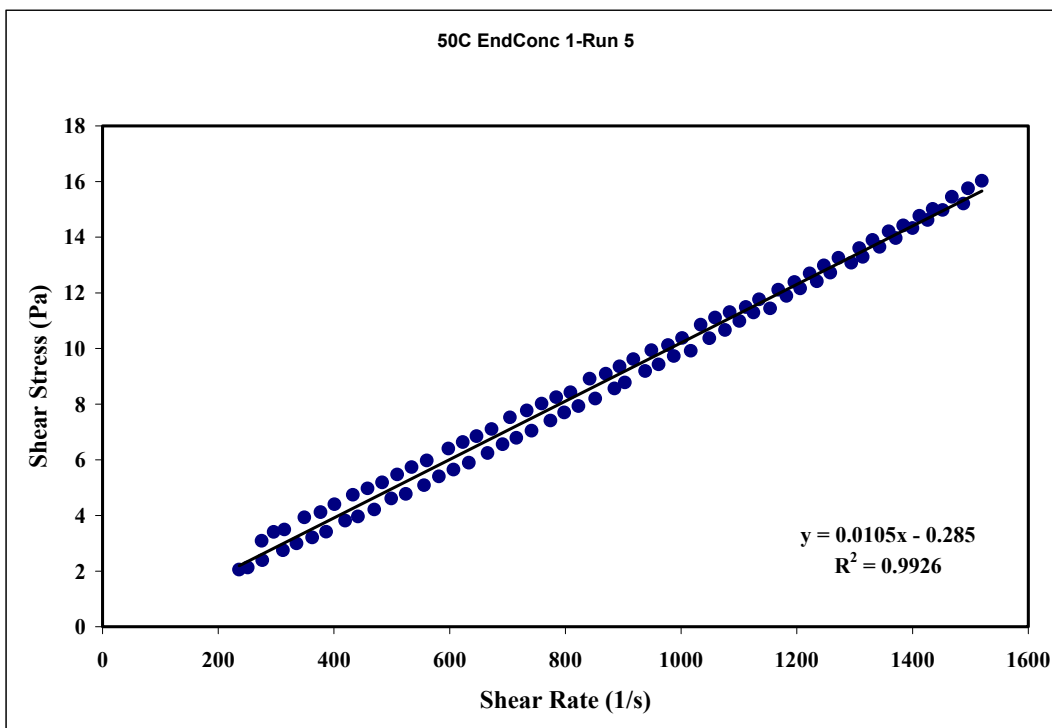


Figure 39. 50 °C at 2 wt % Run 5

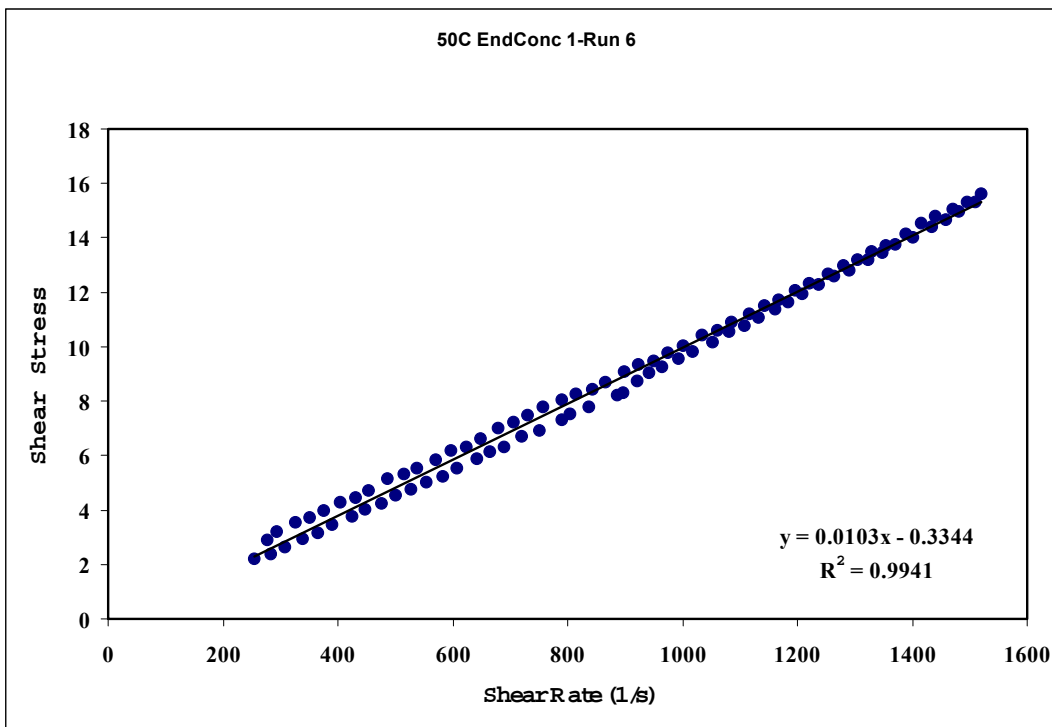


Figure 40. 50 °C at 2 wt % Run 6

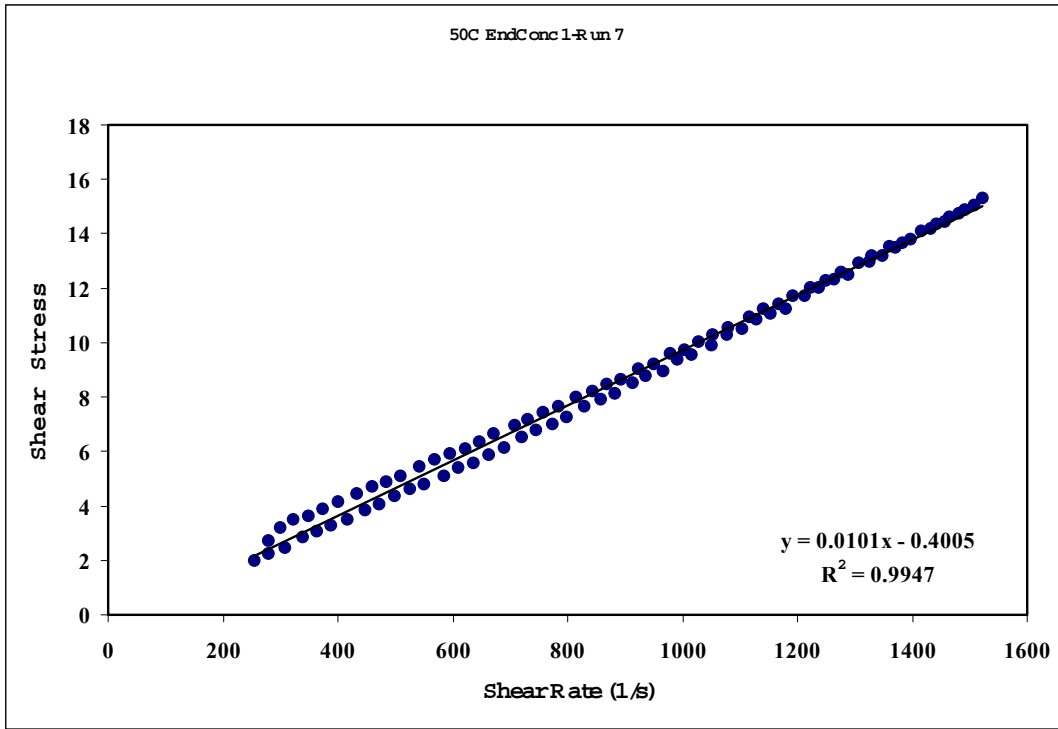


Figure 41. 50 °C at 2 wt % Run 7

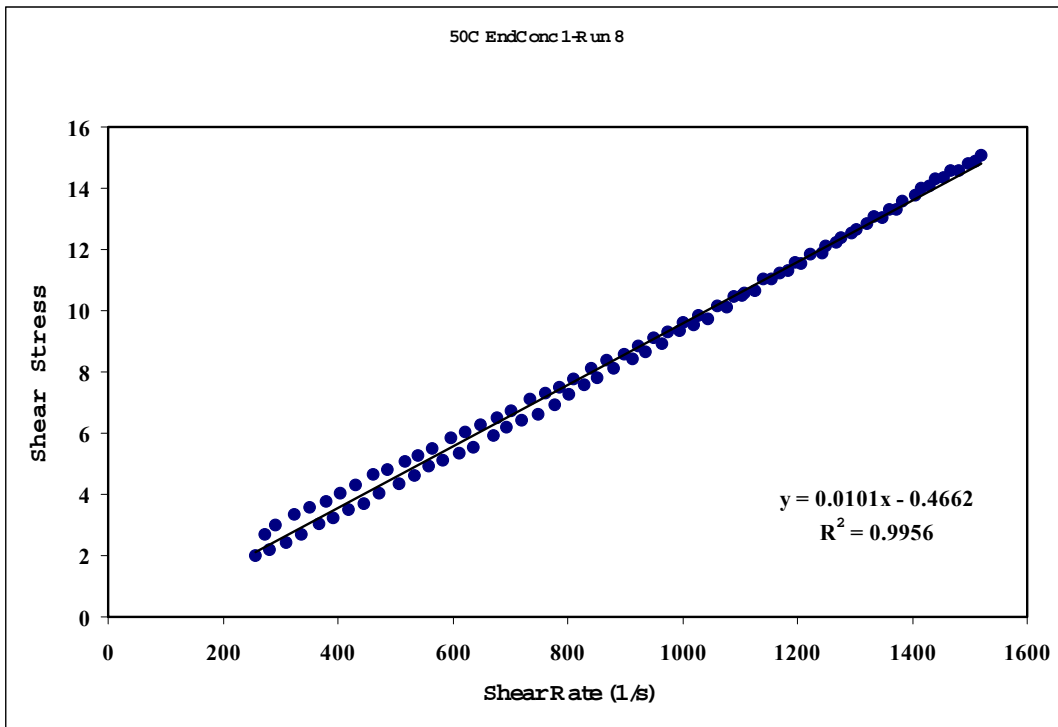


Figure 42. 50 °C at 2 wt % Run 8

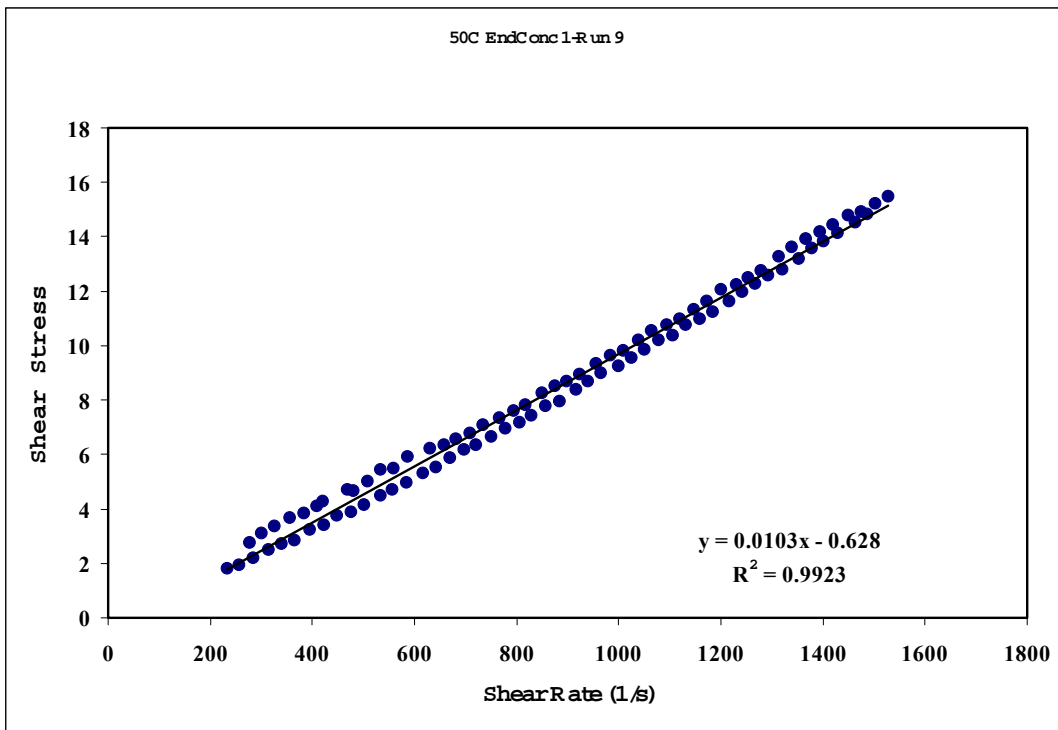


Figure 43. 50 °C at 2 wt % Run 9

APPENDIX I – PART 2

SR/TRU PRECIPITATE SLURRY RHEOGRAMS
AT 10 WT %

Figure 1. Blank at 10 wt% Run 1	373
Figure 2. Blank at 10 wt% Run 2	373
Figure 3. Blank at 10 wt% Run 3	374
Figure 4. Blank at 10 wt% Run 4	374
Figure 5. Blank at 10 wt% Run 5	375
Figure 6. Blank at 10 wt% Run 6	375
Figure 7. Blank at 10 wt% Run 7	376
Figure 8. Blank at 10 wt% Run 8	376
Figure 9. Blank at 10 wt% Run 9	377
Figure 10. 25 °C at 10 wt% Run 1	377
Figure 11. 25 °C at 10 wt% Run 2	378
Figure 12. 25 °C at 10 wt% Run 3	378
Figure 13. 25 °C at 10 wt% Run 4	379
Figure 14. 25 °C at 10 wt% Run 5	379
Figure 15. 25 °C at 10 wt% Run 6	380
Figure 16. 25 °C at 10 wt% Run 7	380
Figure 17. 25 °C at 10 wt% Run 8	381
Figure 18. 25 °C at 10 wt% Run 9	381
Figure 19. 50 °C at 10 wt% Run 1	382
Figure 20. 50 °C at 10 wt% Run 2	382
Figure 21. 50 °C at 10 wt% Run 3	383
Figure 22. 50 °C at 10 wt% Run 4	383
Figure 23. 50 °C at 10 wt% Run 5	384
Figure 24. 50 °C at 10 wt% Run 6	384
Figure 25. 50 °C at 10 wt% Run 7	385
Figure 26. 50 °C at 10 wt% Run 8	385
Figure 27. 50 °C at 10 wt% Run 9	386

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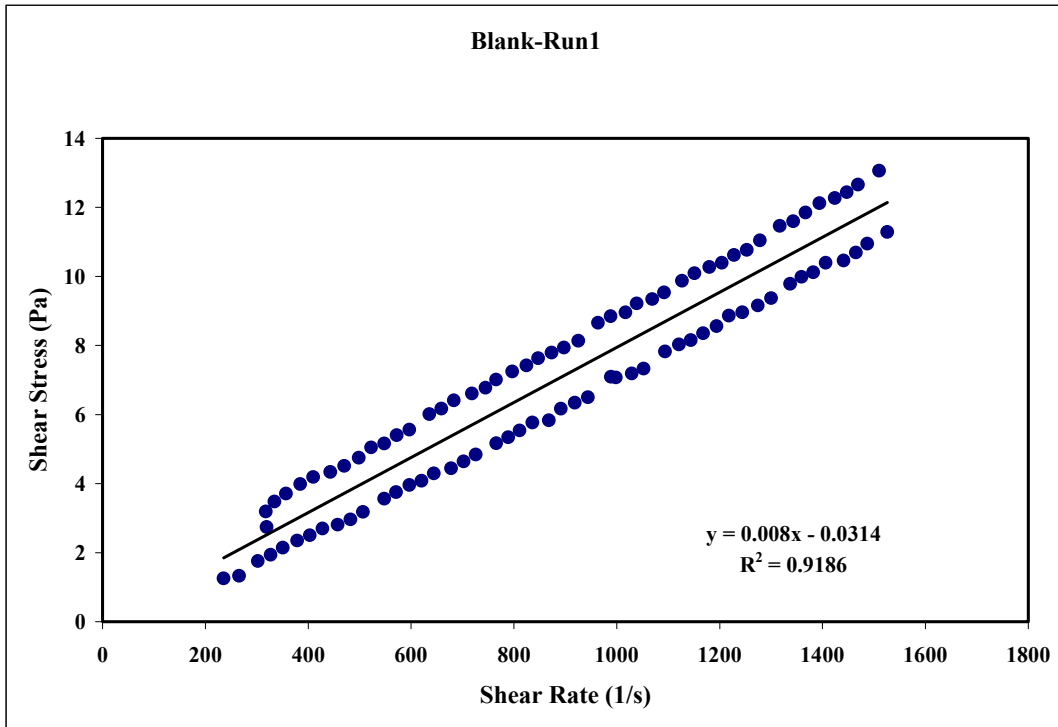


Figure 1. Blank at 10 wt% Run 1

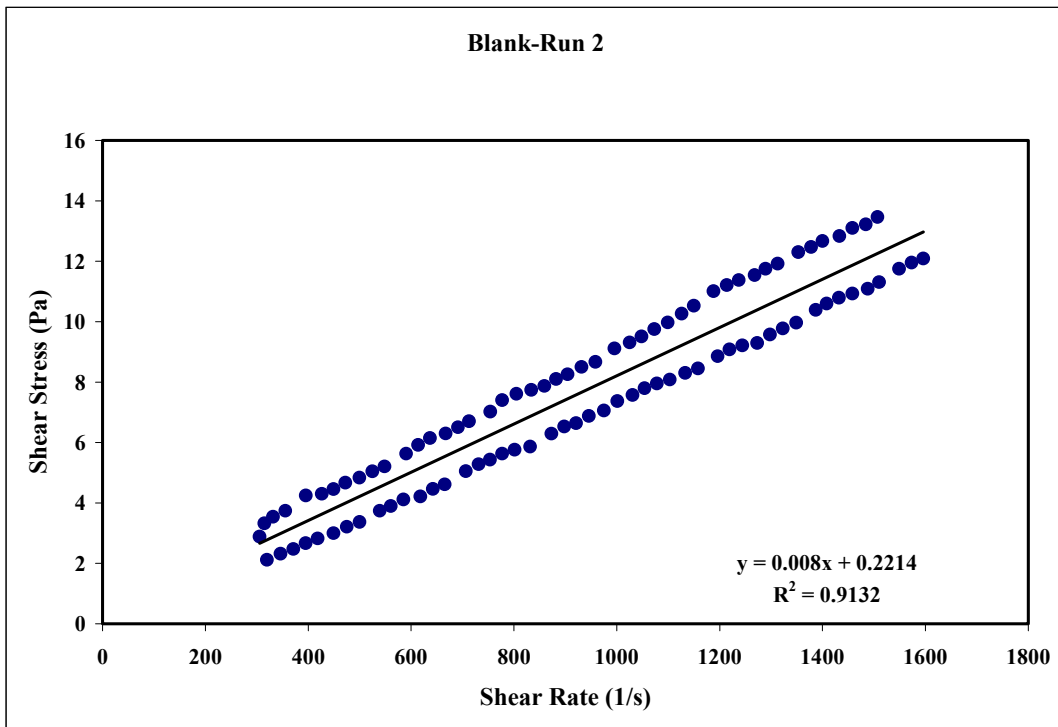


Figure 2. Blank at 10 wt% Run 2

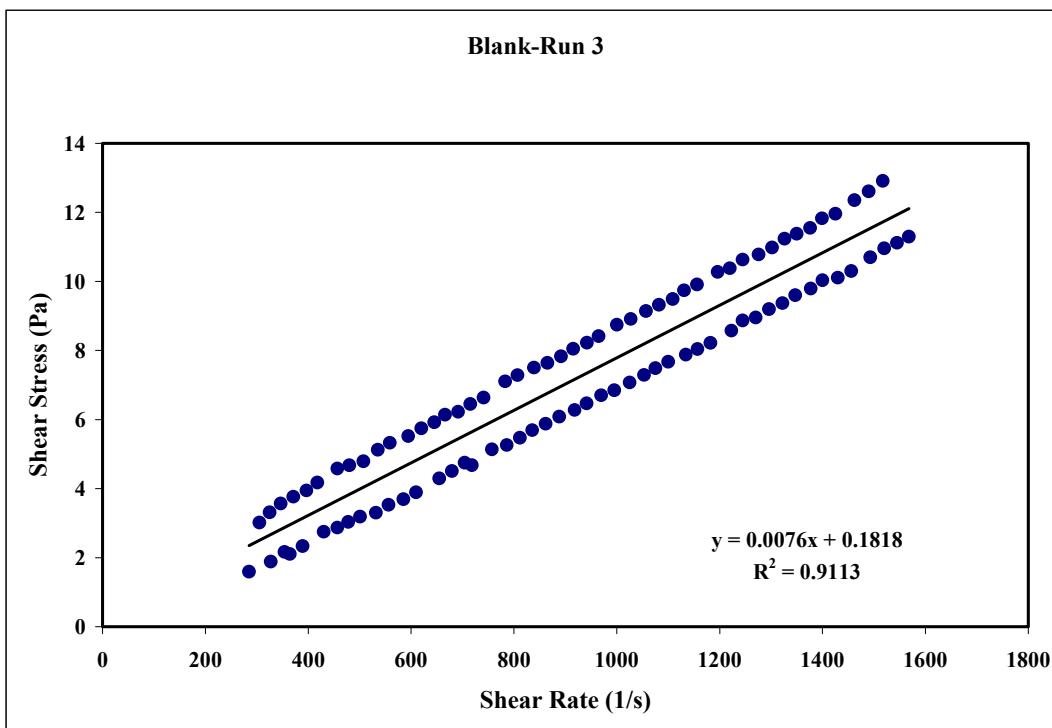


Figure 3. Blank at 10 wt% Run 3

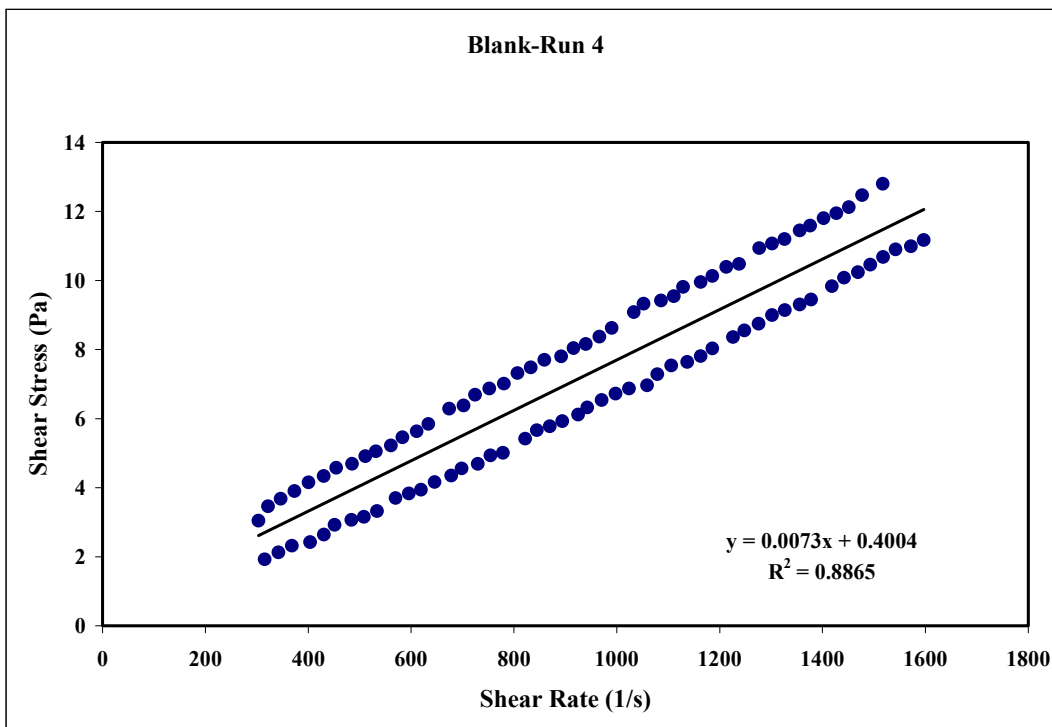


Figure 4. Blank at 10 wt% Run 4

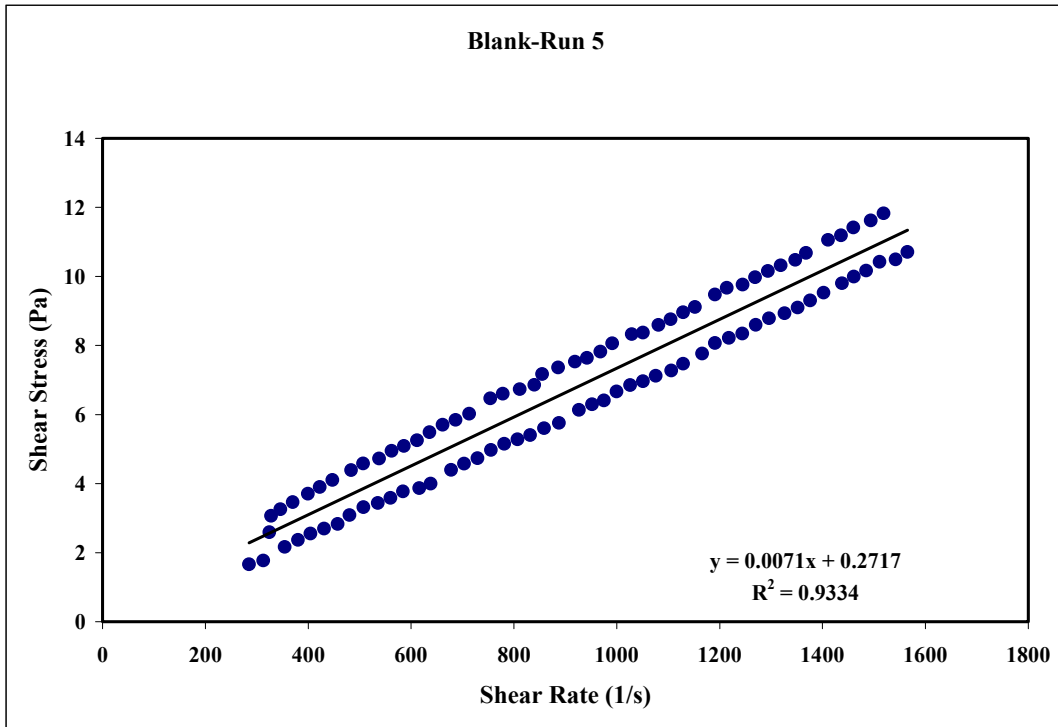


Figure 5. Blank at 10 wt% Run 5

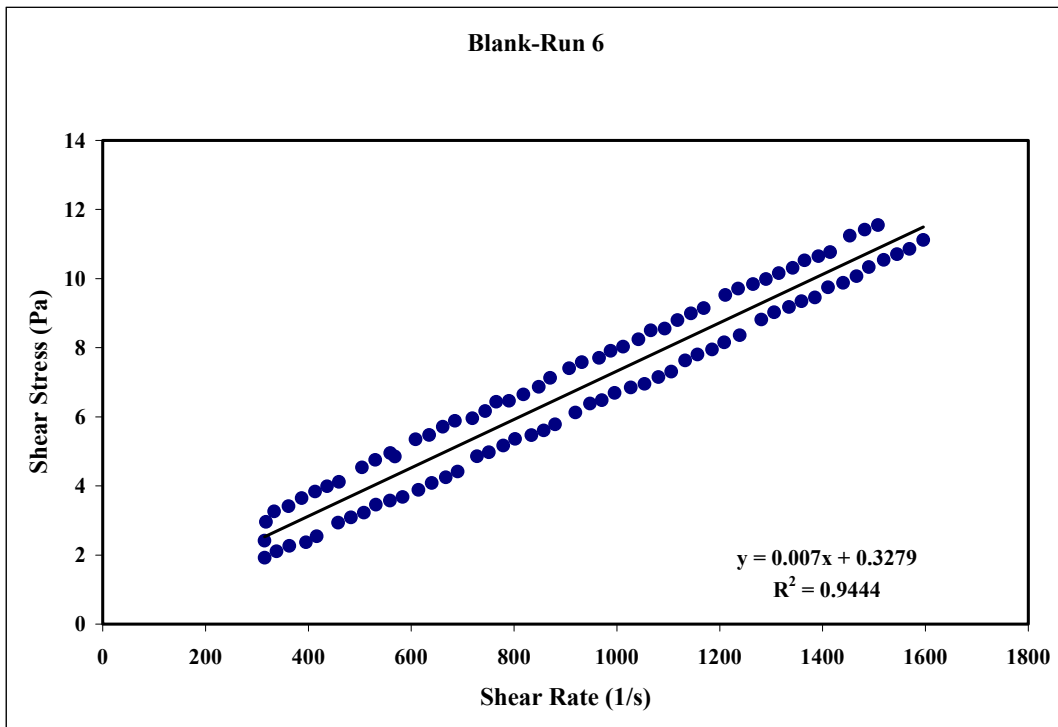


Figure 6. Blank at 10 wt% Run 6

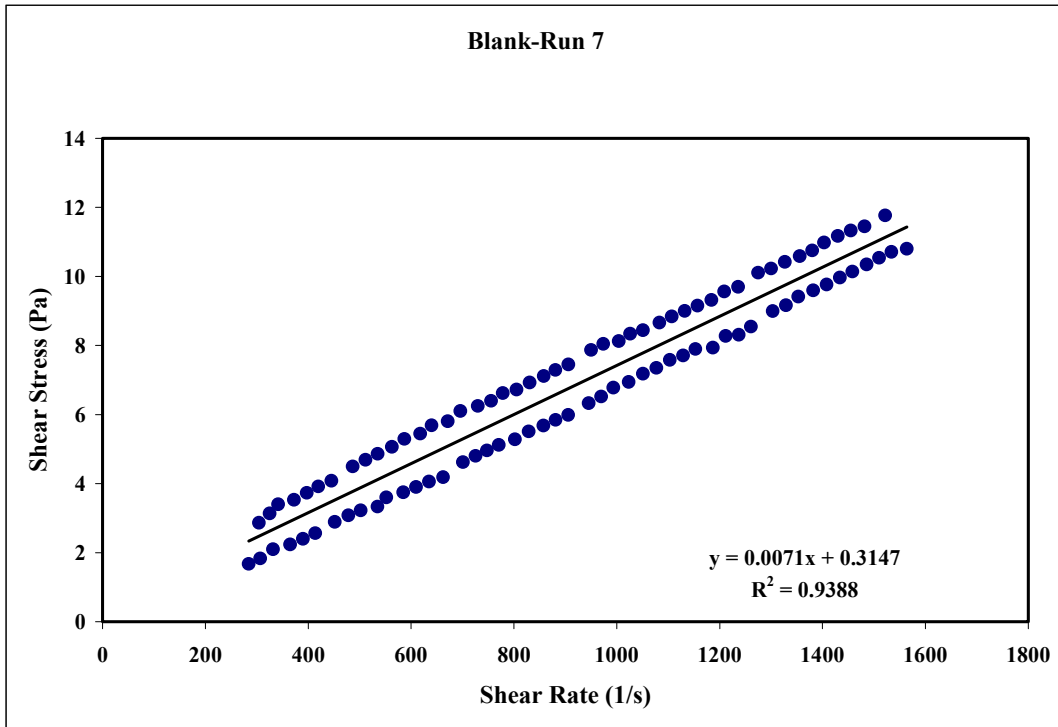


Figure 7. Blank at 10 wt% Run 7

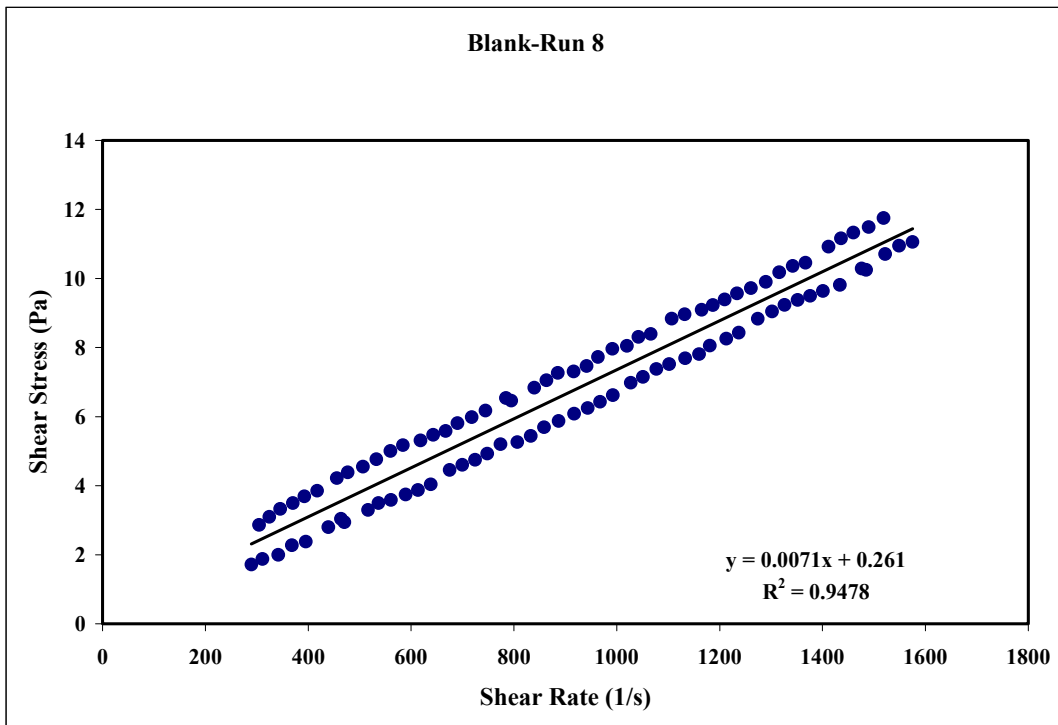


Figure 8. Blank at 10 wt% Run 8

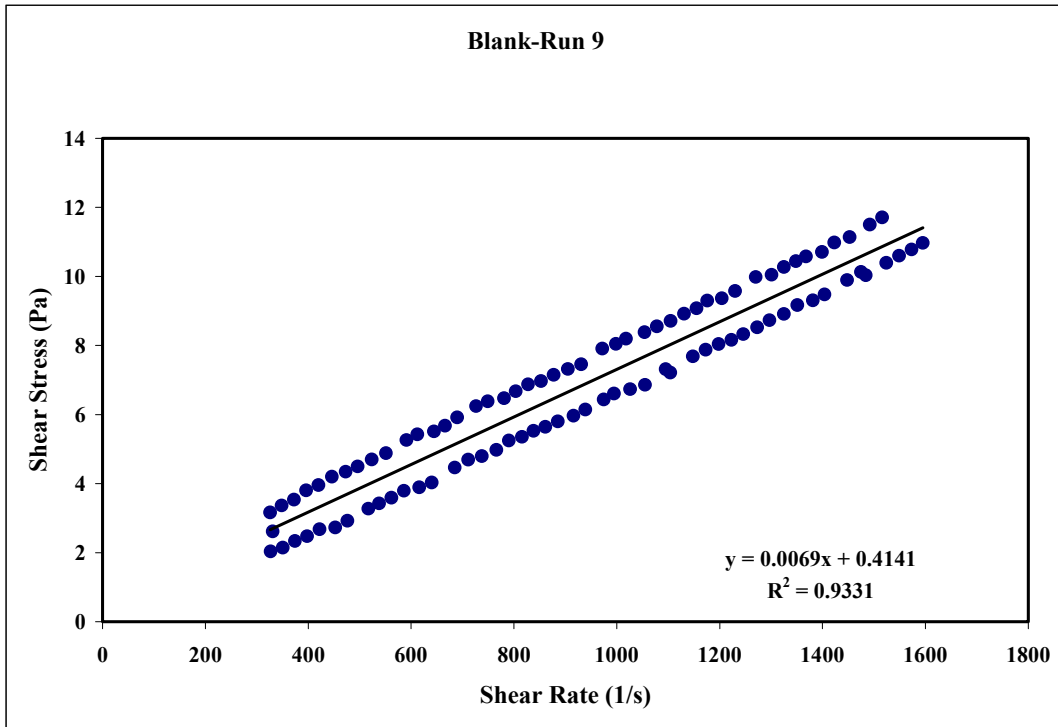


Figure 9. Blank at 10 wt% Run 9

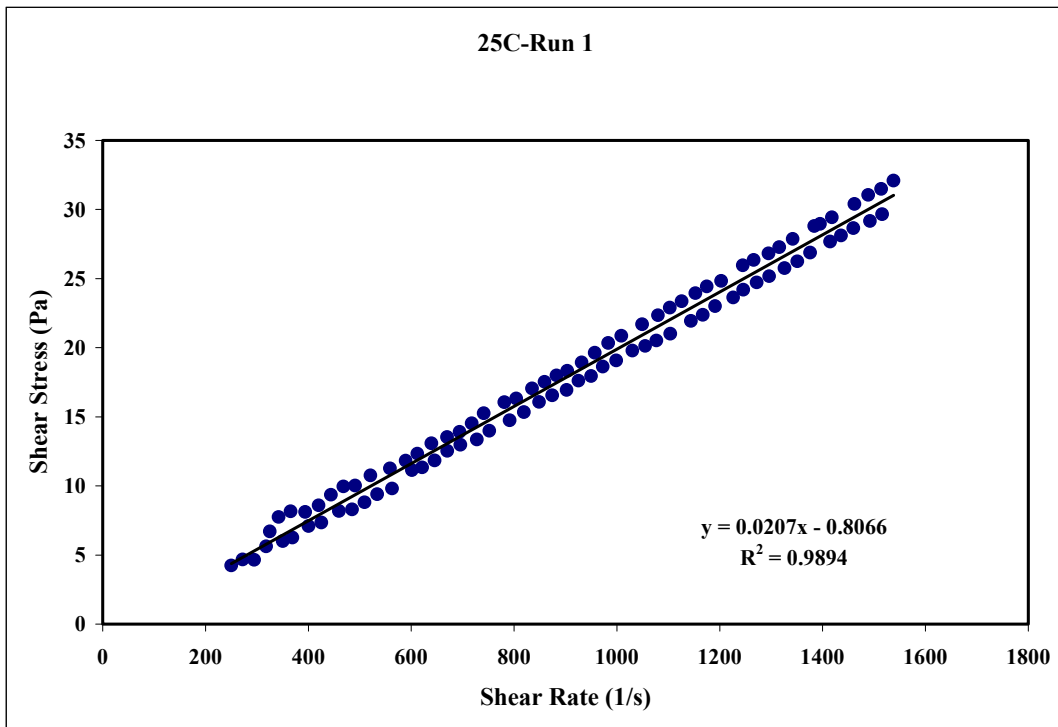


Figure 10. 25 °C at 10 wt% Run 1

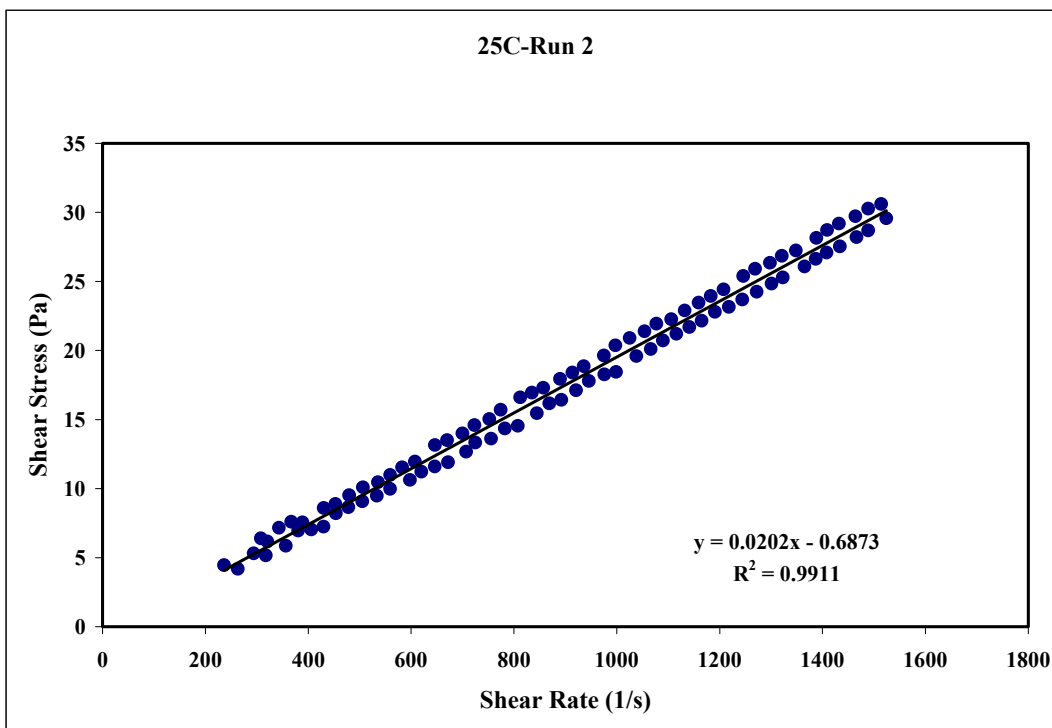


Figure 11. 25 °C at 10 wt% Run 2

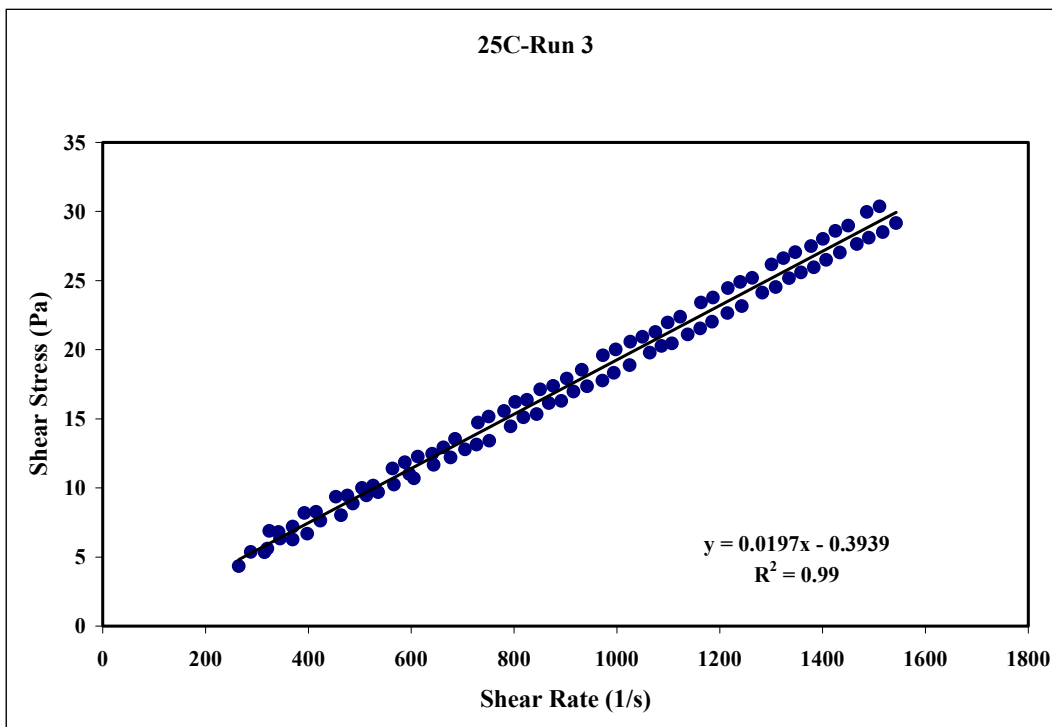


Figure 12. 25 °C at 10 wt% Run 3

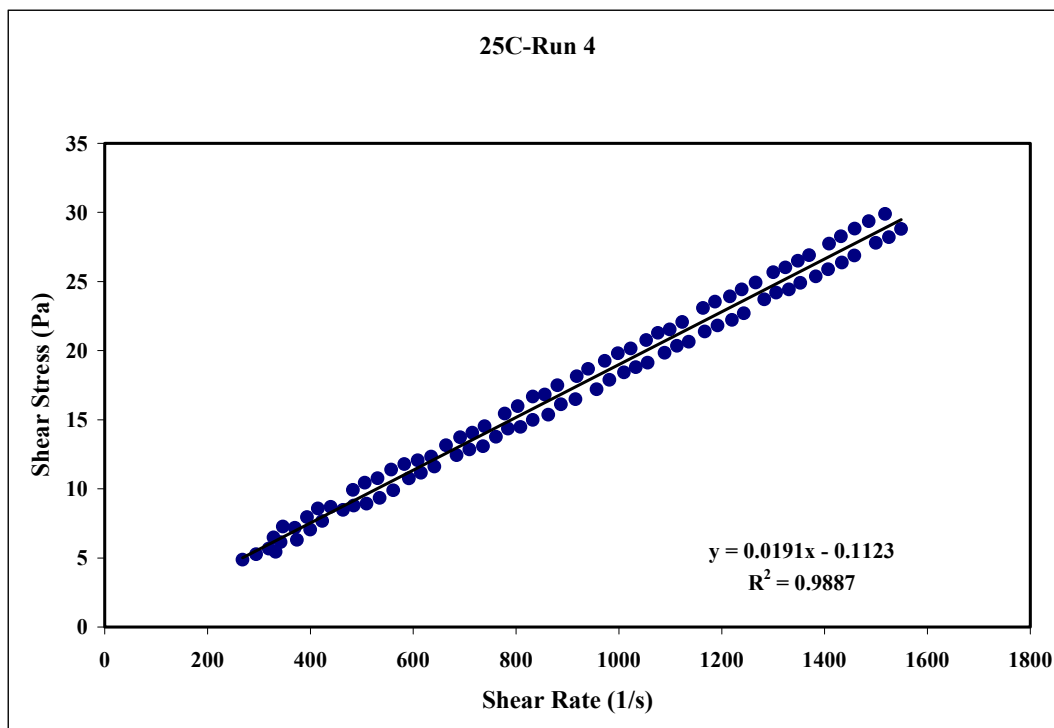


Figure 13. 25 °C at 10 wt% Run 4

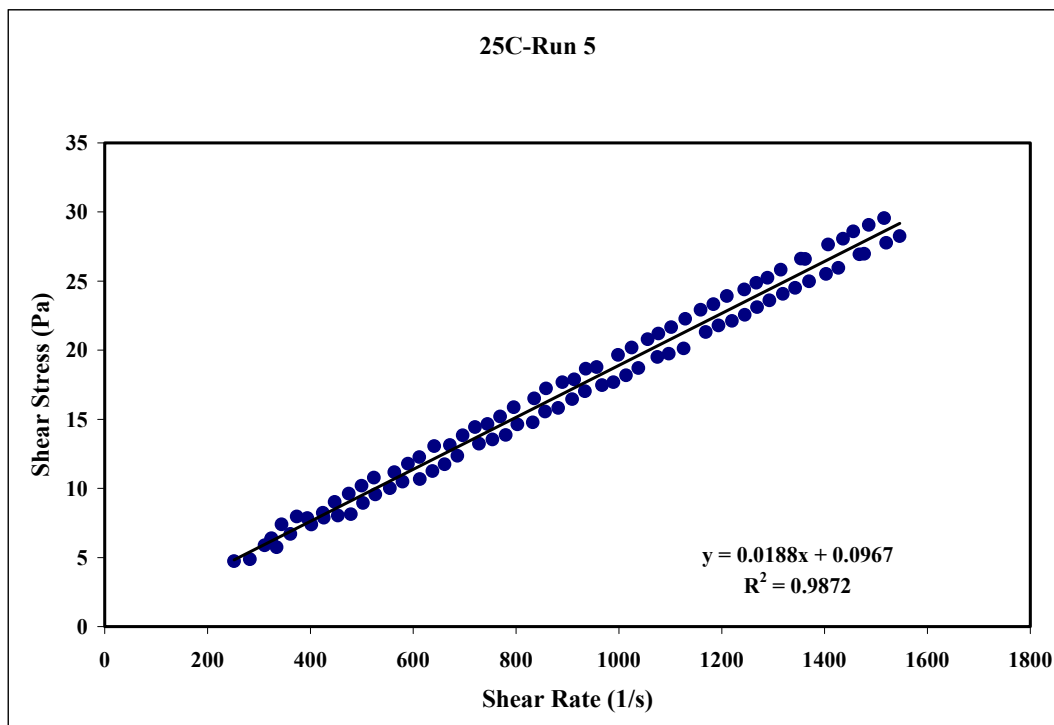


Figure 14. 25 °C at 10 wt% Run 5

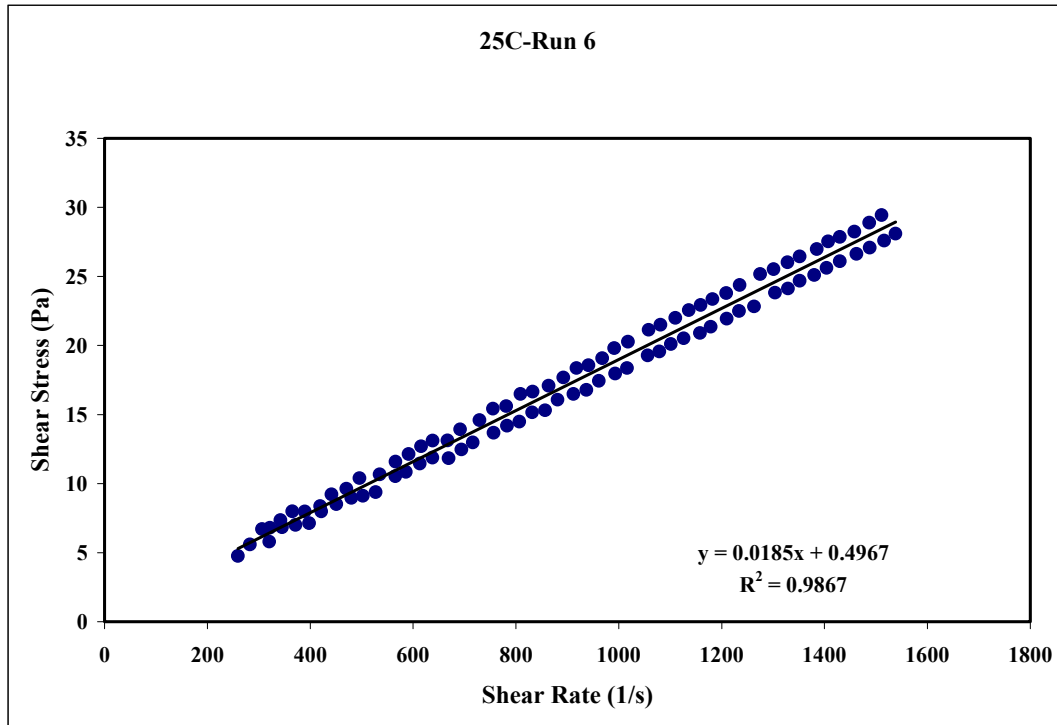


Figure 15. 25 °C at 10 wt% Run 6

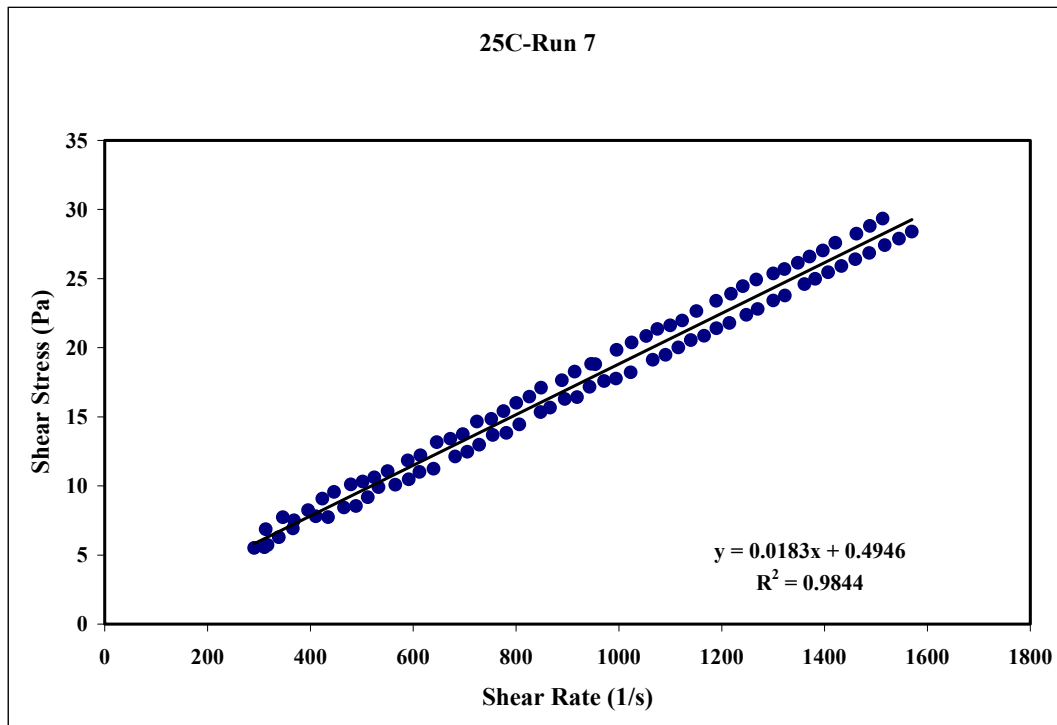


Figure 16. 25 °C at 10 wt% Run 7

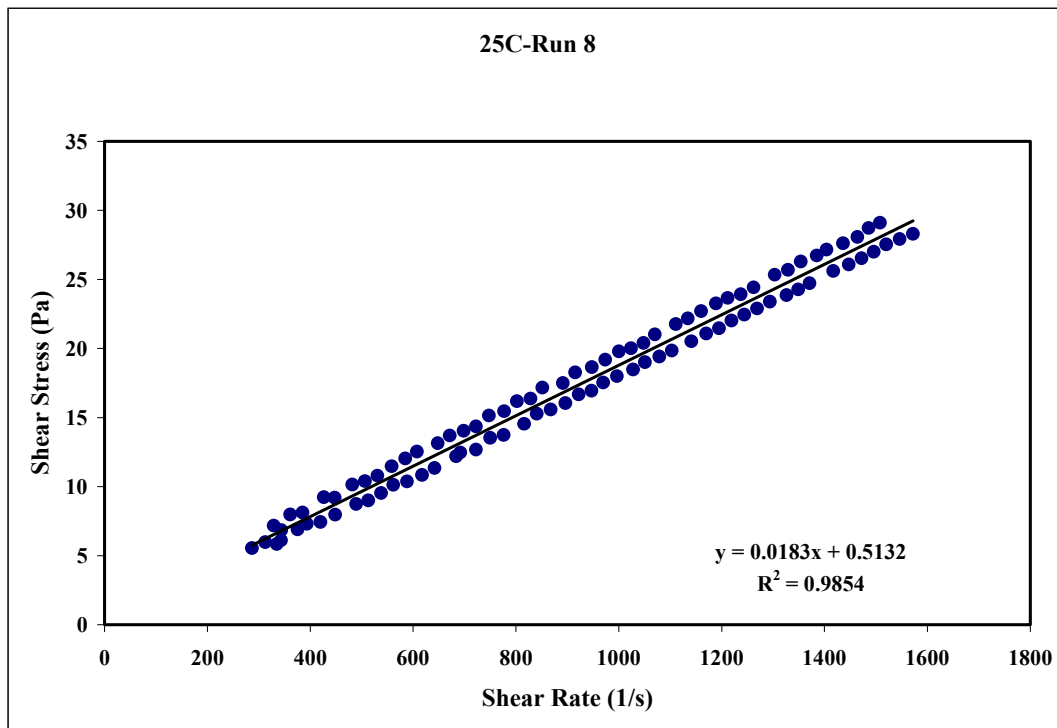


Figure 17. 25 °C at 10 wt% Run 8

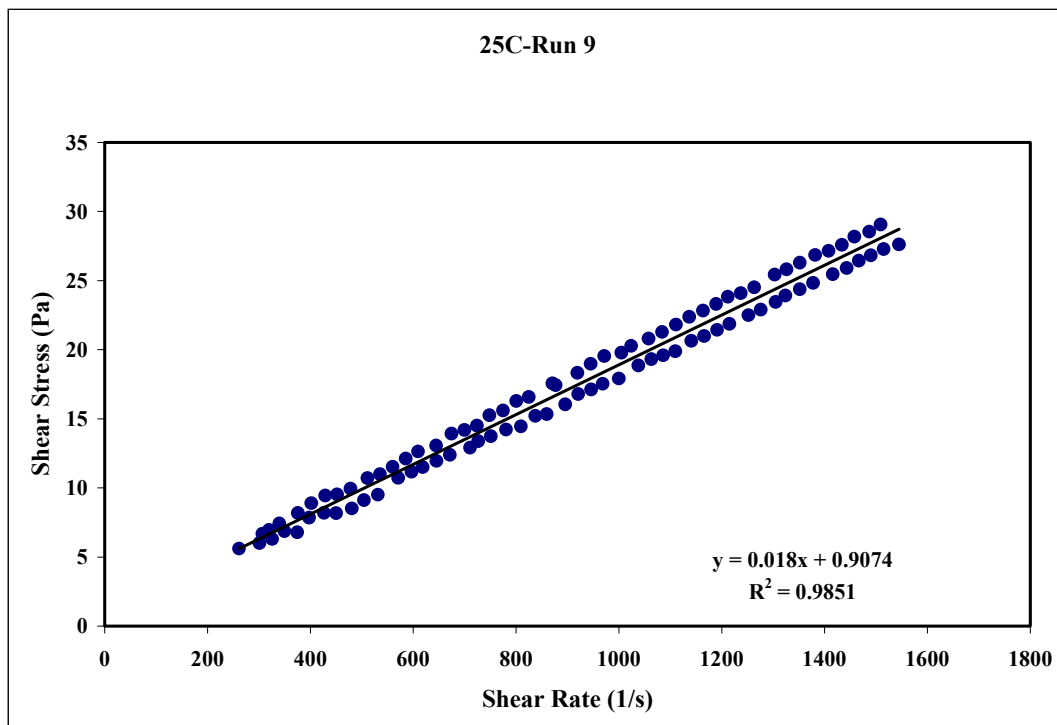


Figure 18. 25 °C at 10 wt% Run 9

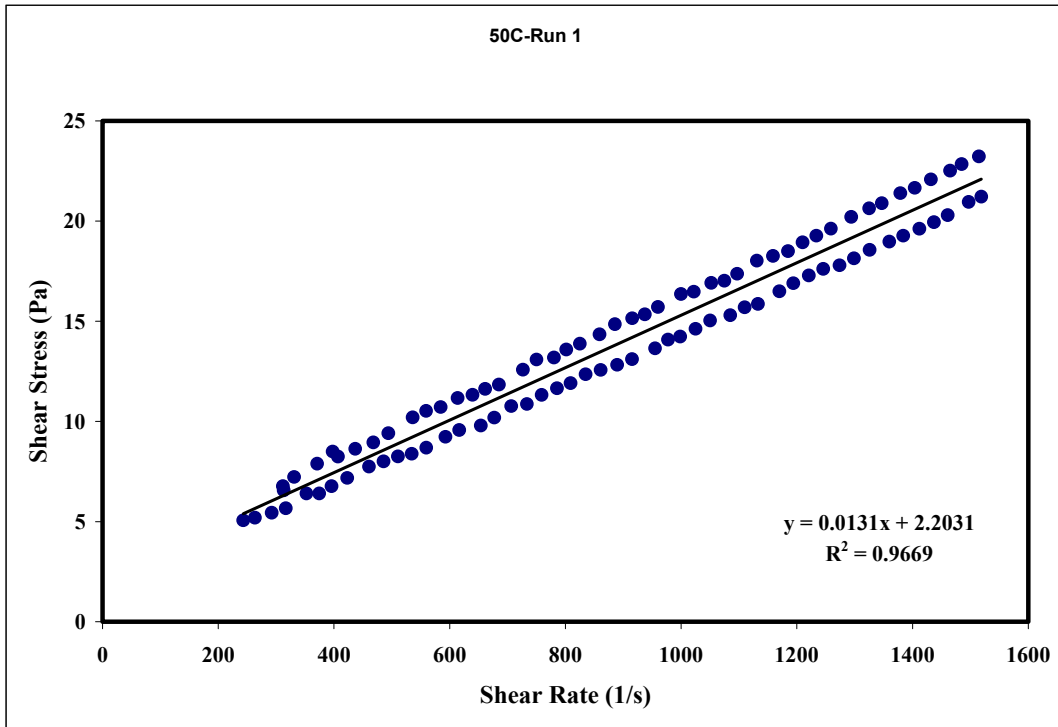


Figure 19. 50 °C at 10 wt% Run 1

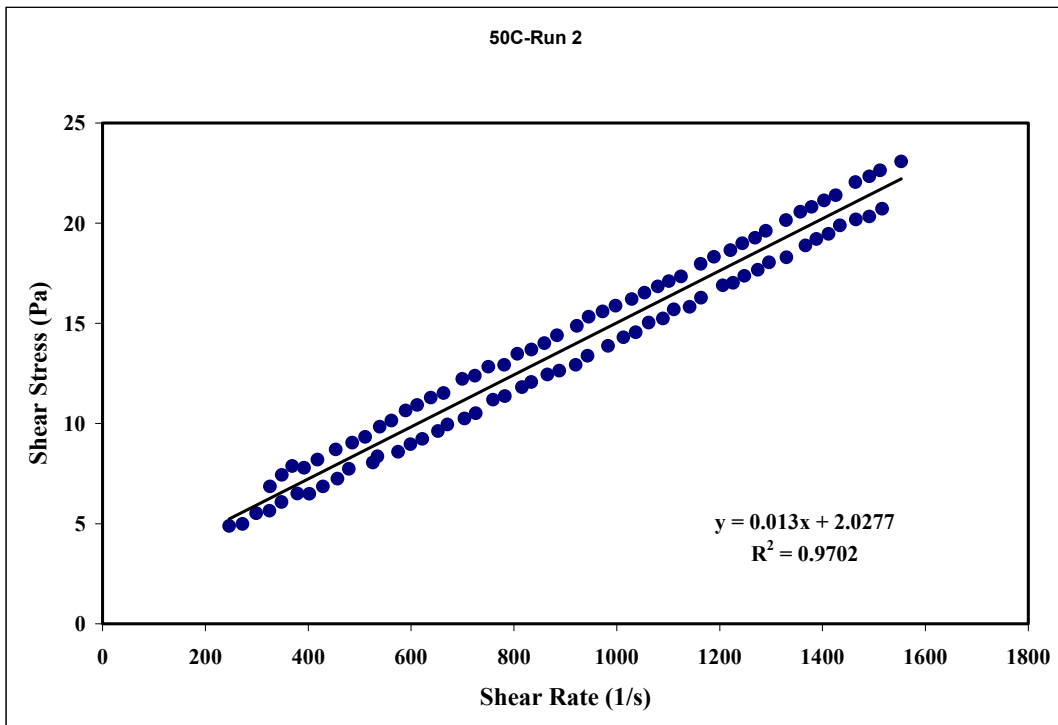


Figure 20. 50 °C at 10 wt% Run 2

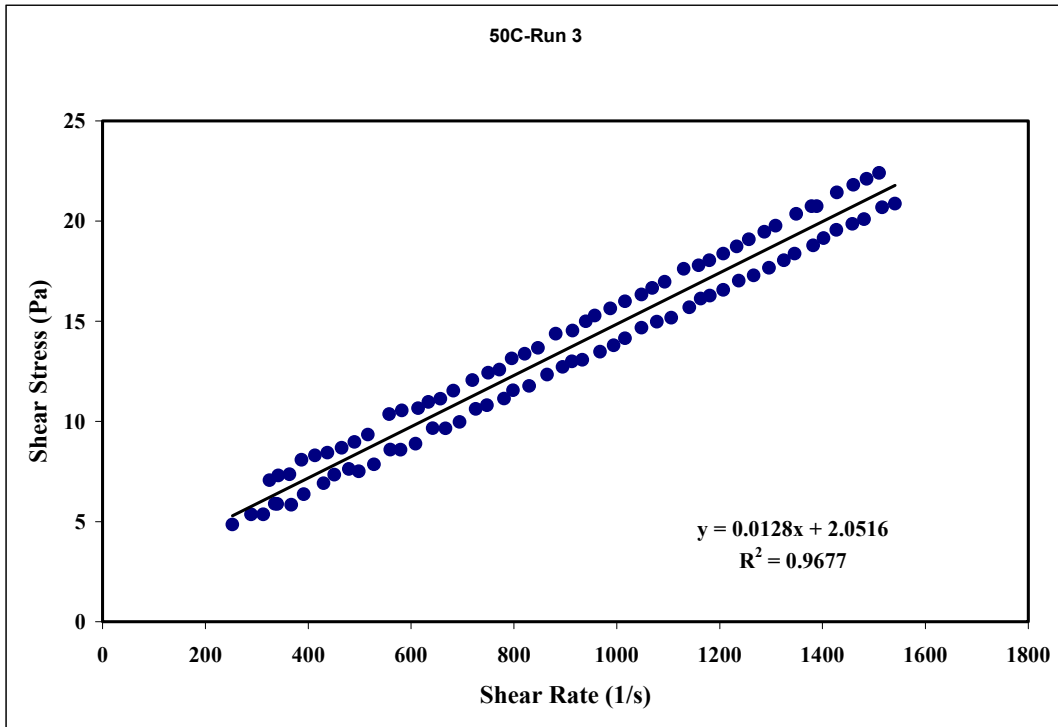


Figure 21. 50 °C at 10 wt% Run 3

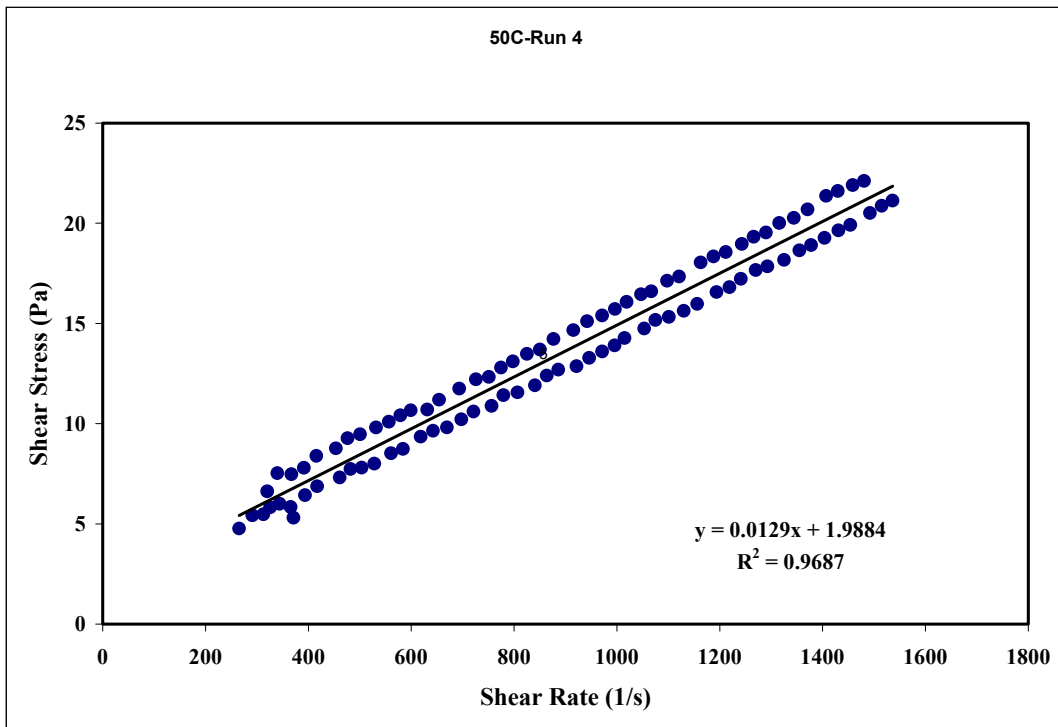


Figure 22. 50 °C at 10 wt% Run 4

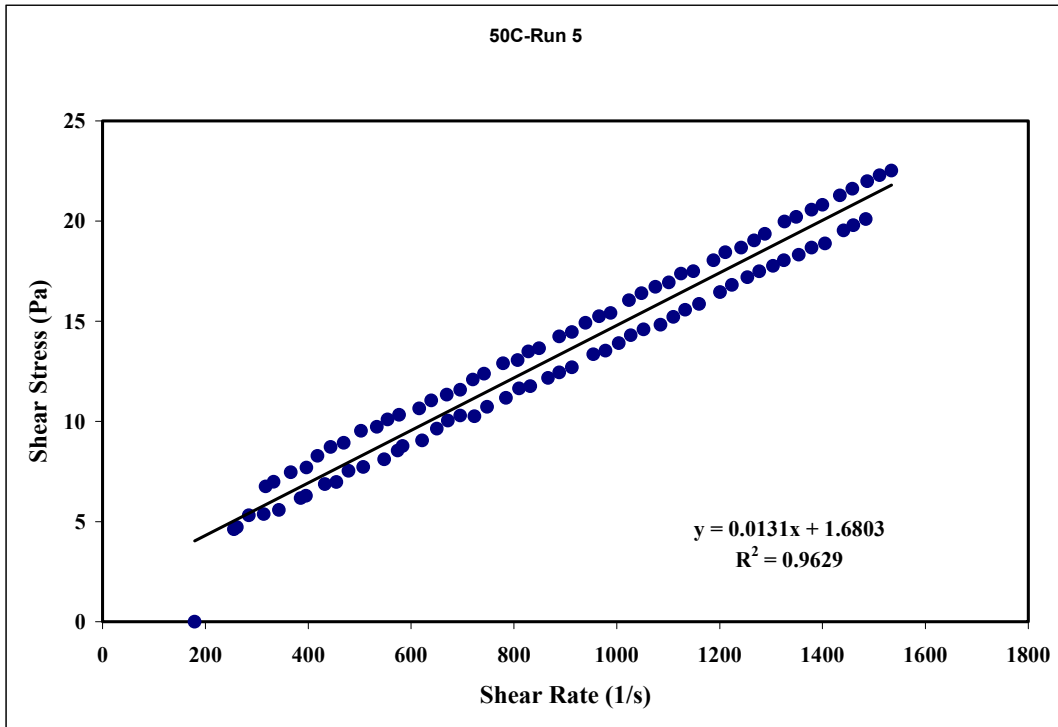


Figure 23. 50 °C at 10 wt% Run 5

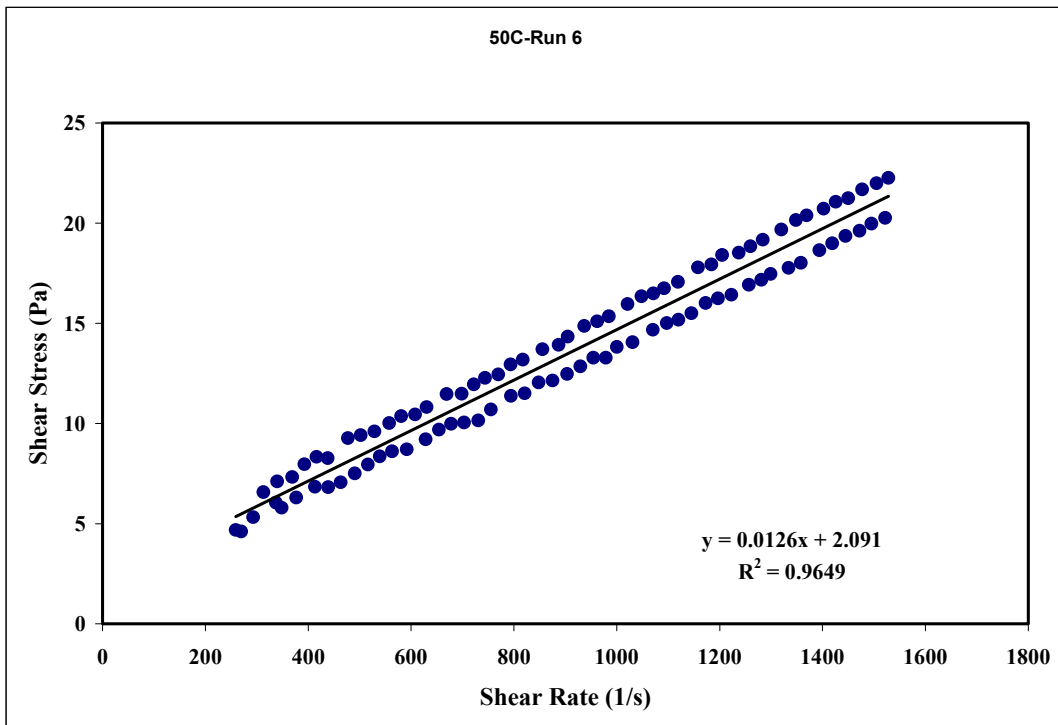


Figure 24. 50 °C at 10 wt% Run 6

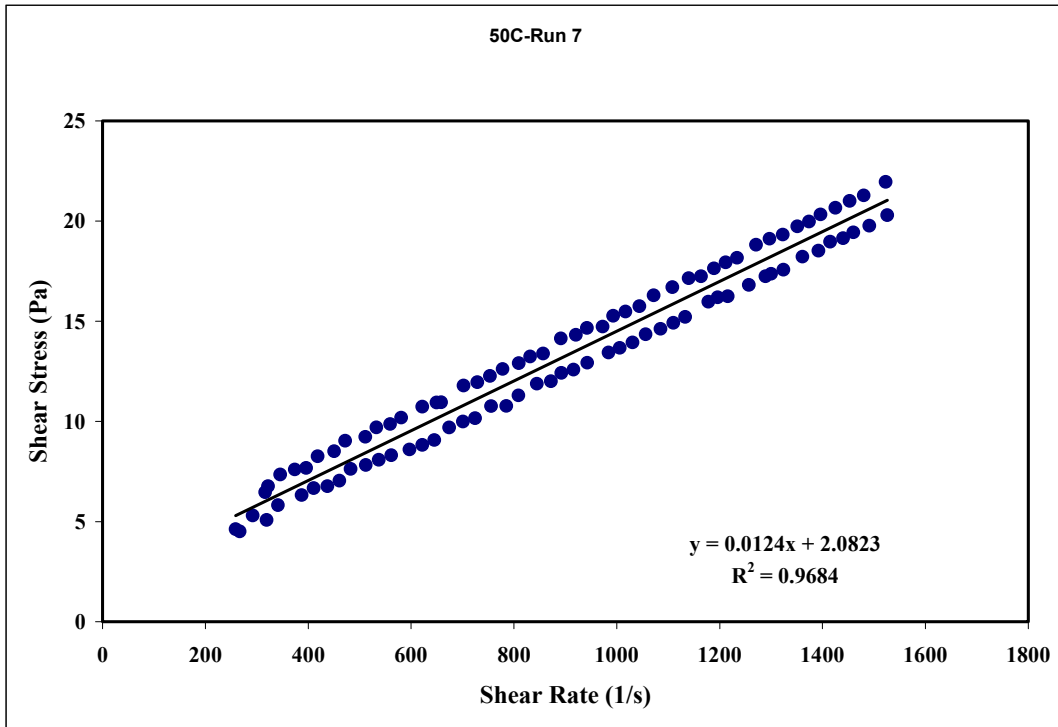


Figure 25. 50 °C at 10 wt% Run 7

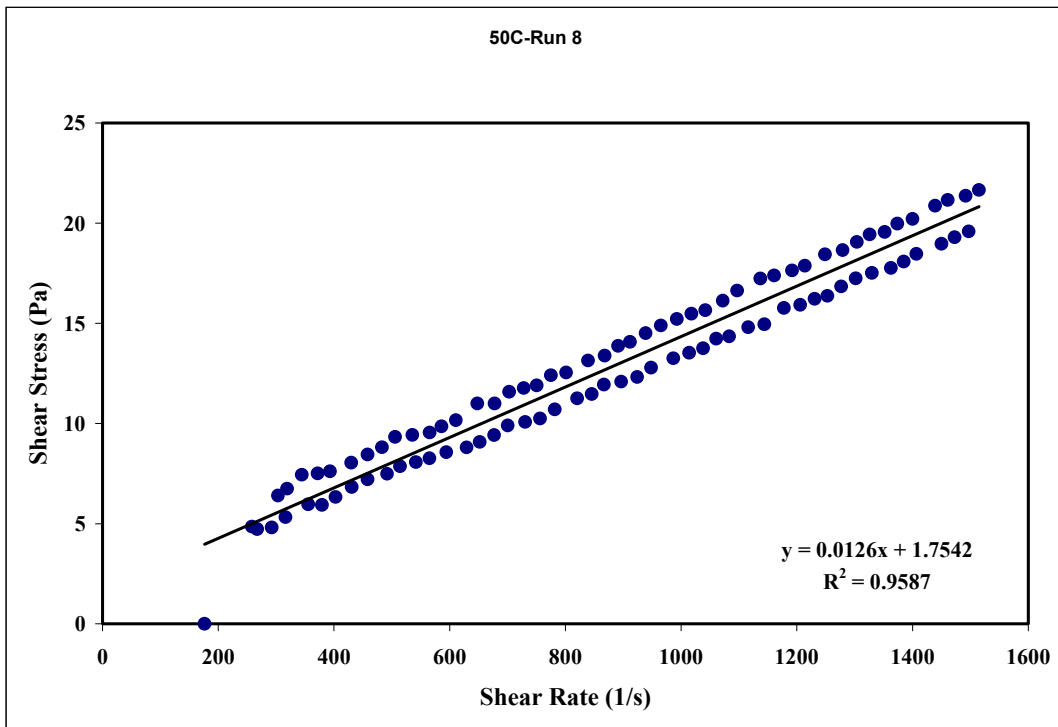


Figure 26. 50 °C at 10 wt% Run 8

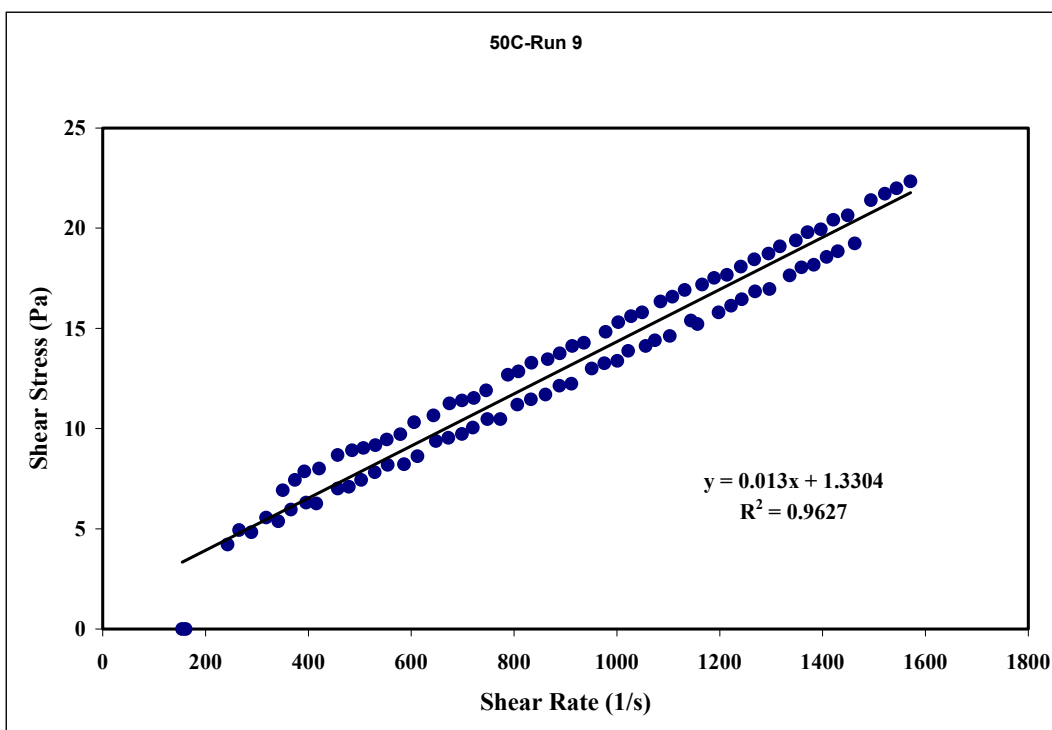


Figure 27. 50 °C at 10 wt% Run 9

APPENDIX I – PART 3

SR/TRU PRECIPITATE SLURRY RHEOGRAMS
AT 13 WT %

Figure 1. Blank at 13 wt% Run 1	389
Figure 2. Blank at 13 wt% Run 2	389
Figure 3. Blank at 13 wt% Run 3	390
Figure 4. Blank at 13 wt% Run 4	390
Figure 5. Blank at 13 wt% Run 5	391
Figure 6. Blank at 13 wt% Run 6	391
Figure 7. Blank at 13 wt% Run 7	392
Figure 8. Blank at 13 wt% Run 8	392
Figure 9. Blank at 13 wt% Run 9	393
Figure 10. 10 °C at 13 wt% Run 1	393
Figure 11. 10 °C at 13 wt% Run 2	394
Figure 12. 10 °C at 13 wt% Run 3	394
Figure 13. 10 °C at 13 wt% Run 4	395
Figure 14. 10 °C at 13 wt% Run 5	395
Figure 15. 10 °C at 13 wt% Run 6	396
Figure 16. 10 °C at 13 wt% Run 7	396
Figure 17. 10 °C at 13 wt% Run 8	397
Figure 18. 10 °C at 13 wt% Run 9	397
Figure 19. 15 °C at 13 wt% Run 1	398
Figure 20. 15 °C at 13 wt% Run 2	398
Figure 21. 15 °C at 13 wt% Run 3	399
Figure 22. 15 °C at 13 wt% Run 4	399
Figure 23. 15 °C at 13 wt% Run 5	400
Figure 24. 15 °C at 13 wt% Run 6	400
Figure 25. 15 °C at 13 wt% Run 7	401
Figure 26. 15 °C at 13 wt% Run 8	401
Figure 27. 15 °C at 13 wt% Run 9	402
Figure 28. 25 °C at 13 wt% Run 1	402
Figure 29. 25 °C at 13 wt% Run 2	403
Figure 30. 25 °C at 13 wt% Run 3	403
Figure 31. 25 °C at 13 wt% Run 4	404
Figure 32. 25 °C at 13 wt% Run 5	404
Figure 33. 25 °C at 13 wt% Run 6	405
Figure 34. 25 °C at 13 wt% Run 7	405
Figure 35. 25 °C at 13 wt% Run 8	406
Figure 36. 25 °C at 13 wt% Run 9	406
Figure 37. 25 °C Repeat at 13 wt% Run 1	407
Figure 38. 25 °C Repeat at 13 wt% Run 1	407

Figure 39. 25 °C Repeat at 13 wt% Run 3	408
Figure 40. 25 °C Repeat at 13 wt% Run 4	408
Figure 41. 25 °C Repeat at 13 wt% Run 5	409
Figure 42. 25 °C Repeat at 13 wt% Run 6	409
Figure 43. 25 °C Repeat at 13 wt% Run 7	410
Figure 44. 25 °C Repeat at 13 wt% Run 8	410
Figure 45. 25 °C Repeat at 13 wt% Run 9	411
Figure 46. 50 °C at 13 wt% Run 1	411
Figure 47. 50 °C at 13 wt% Run 2	412
Figure 48. 50 °C at 13 wt% Run 3	412
Figure 49. 50 °C at 13 wt% Run 4	413
Figure 50. 50 °C at 13 wt% Run 5	413
Figure 51. 50 °C at 13 wt% Run 6	414
Figure 52. 50 °C at 13 wt% Run 7	414
Figure 53. 50 °C at 13 wt% Run 8	415
Figure 54. 50 °C at 13 wt% Run 9	415

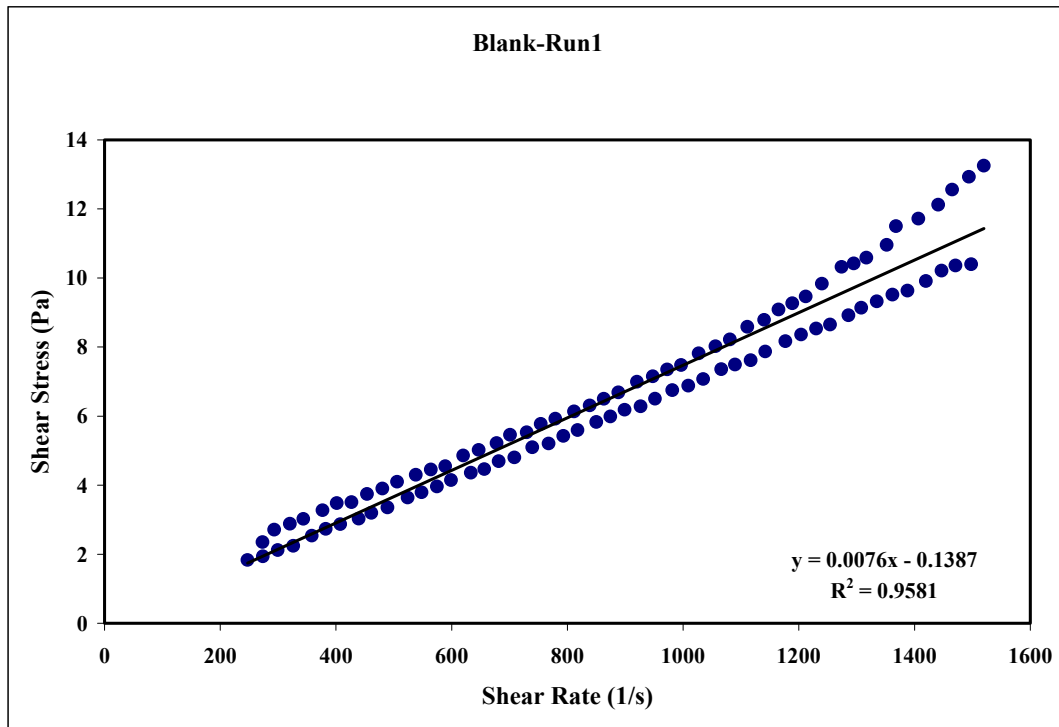


Figure 1. Blank at 13 wt% Run 1

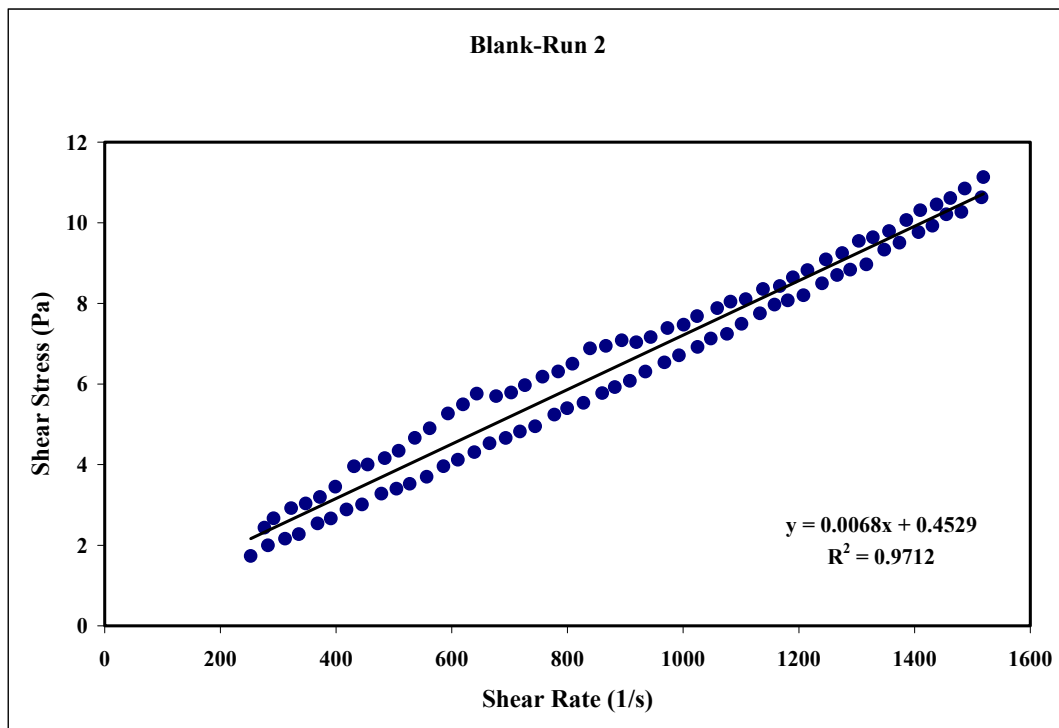


Figure 2. Blank at 13 wt% Run 2

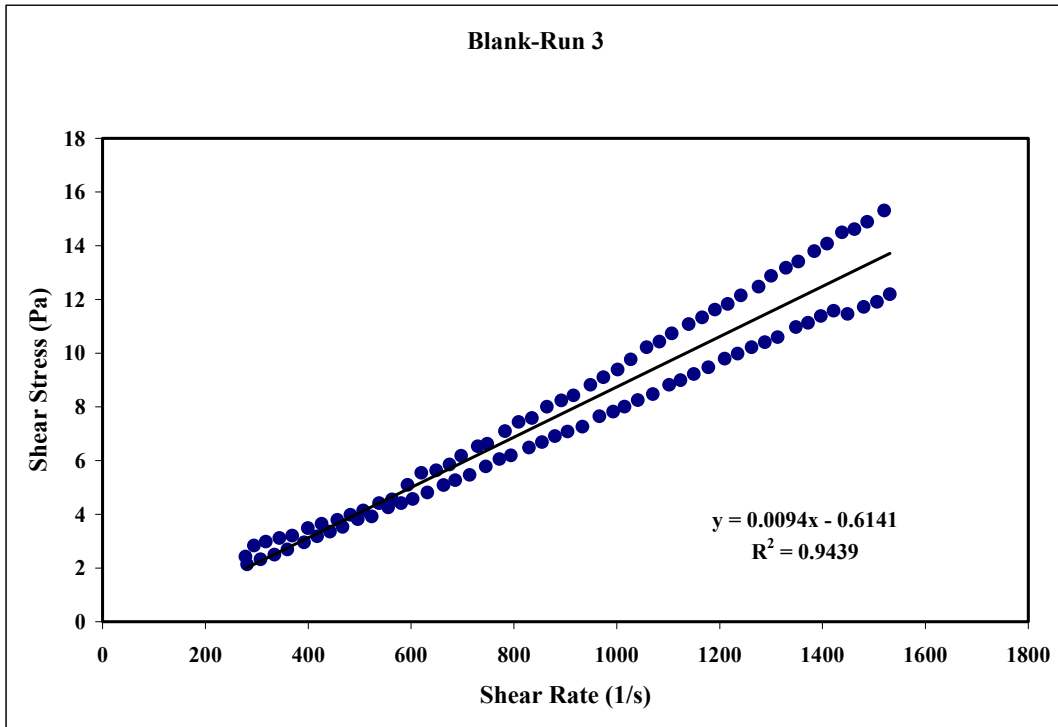


Figure 3. Blank at 13 wt% Run 3

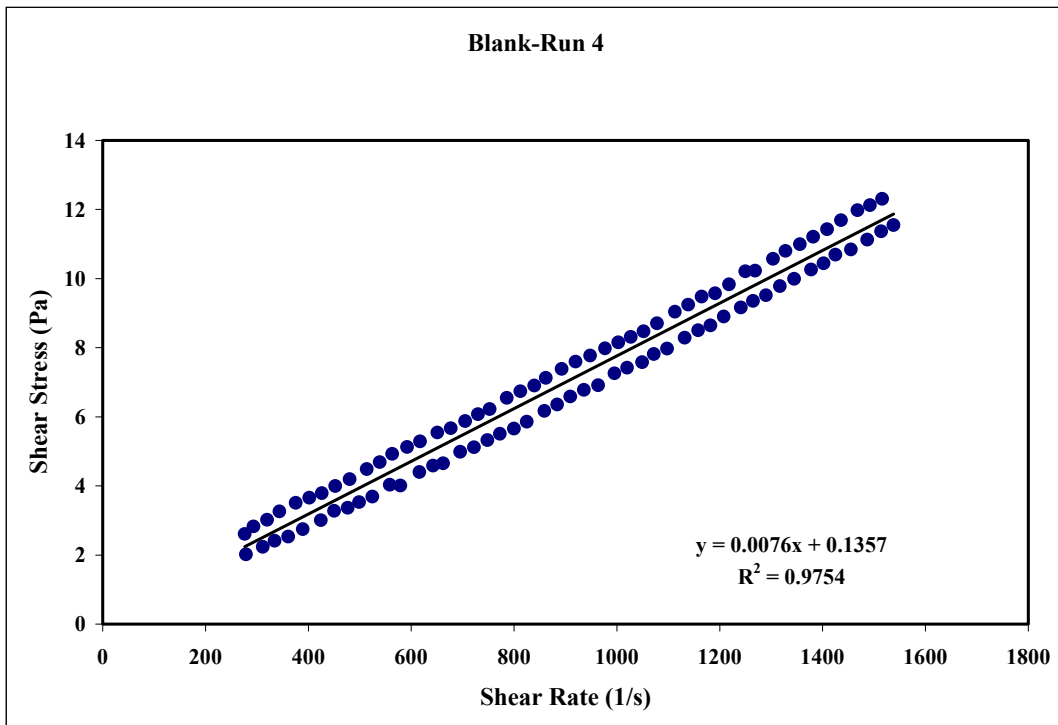


Figure 4. Blank at 13 wt% Run 4

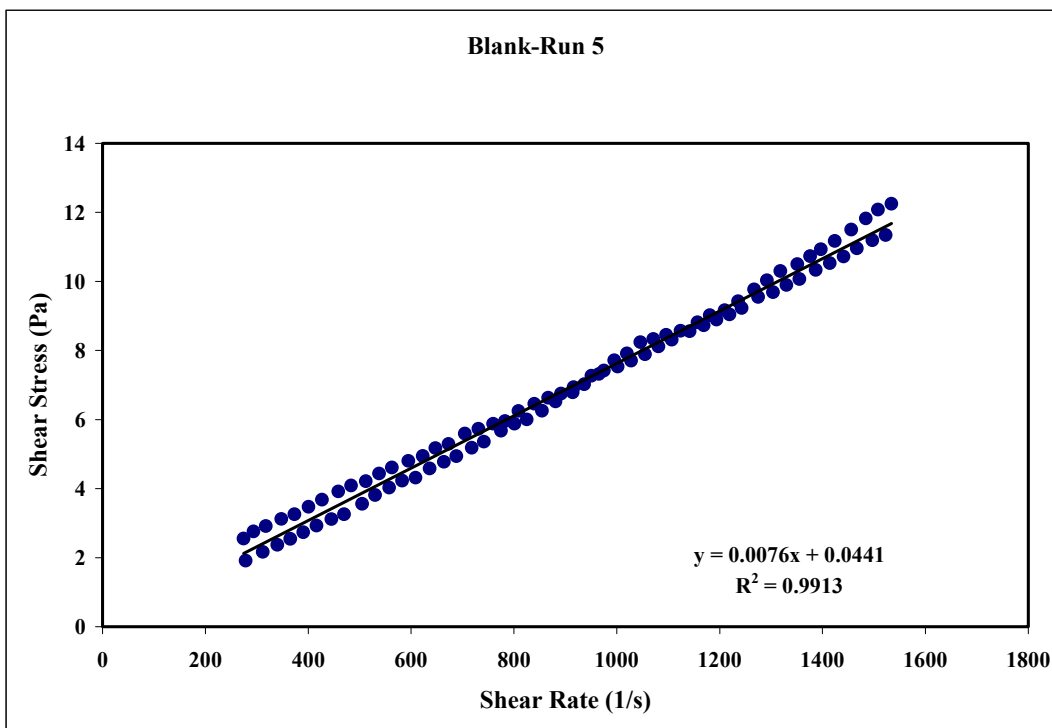


Figure 5. Blank at 13 wt% Run 5

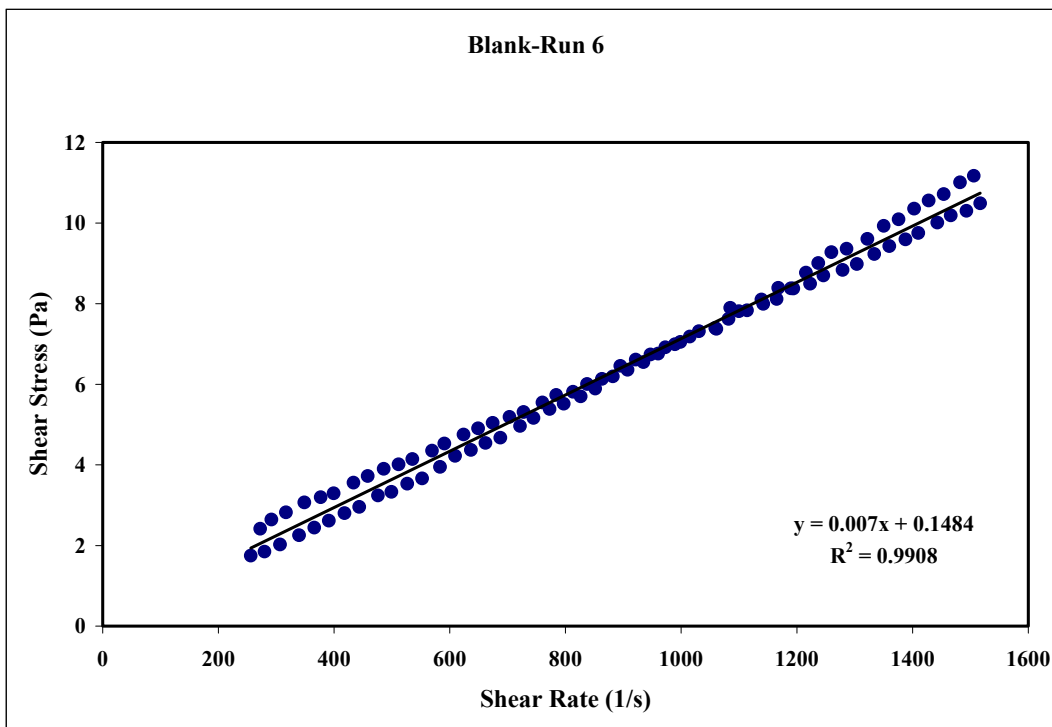


Figure 6. Blank at 13 wt% Run 6

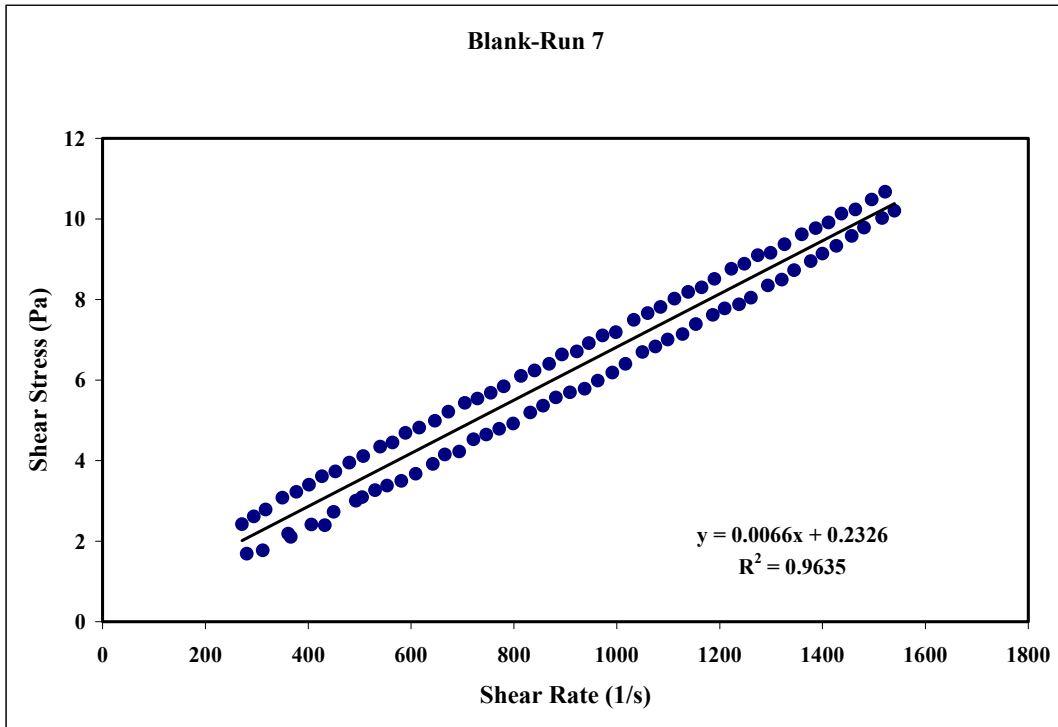


Figure 7. Blank at 13 wt% Run 7

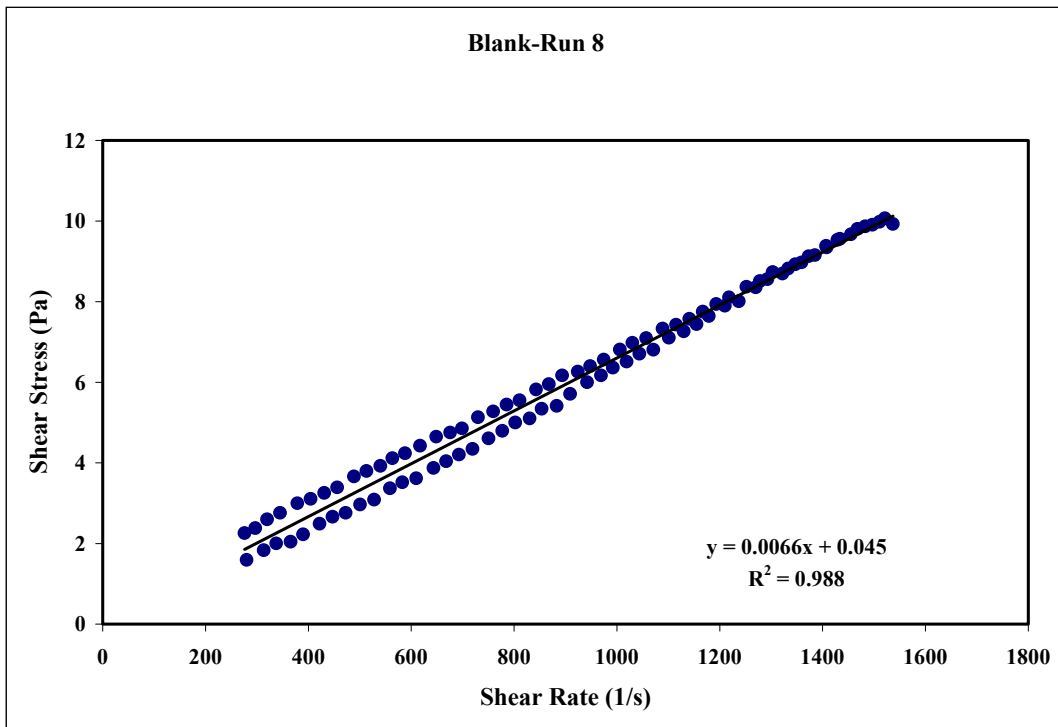


Figure 8. Blank at 13 wt% Run 8

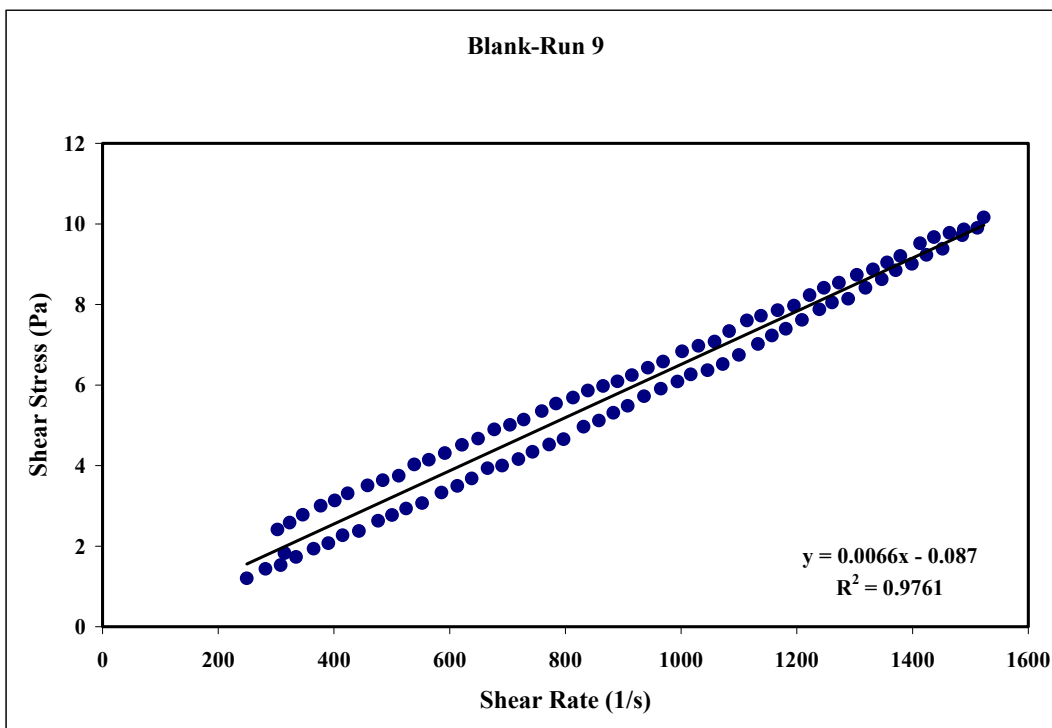


Figure 9. Blank at 13 wt% Run 9

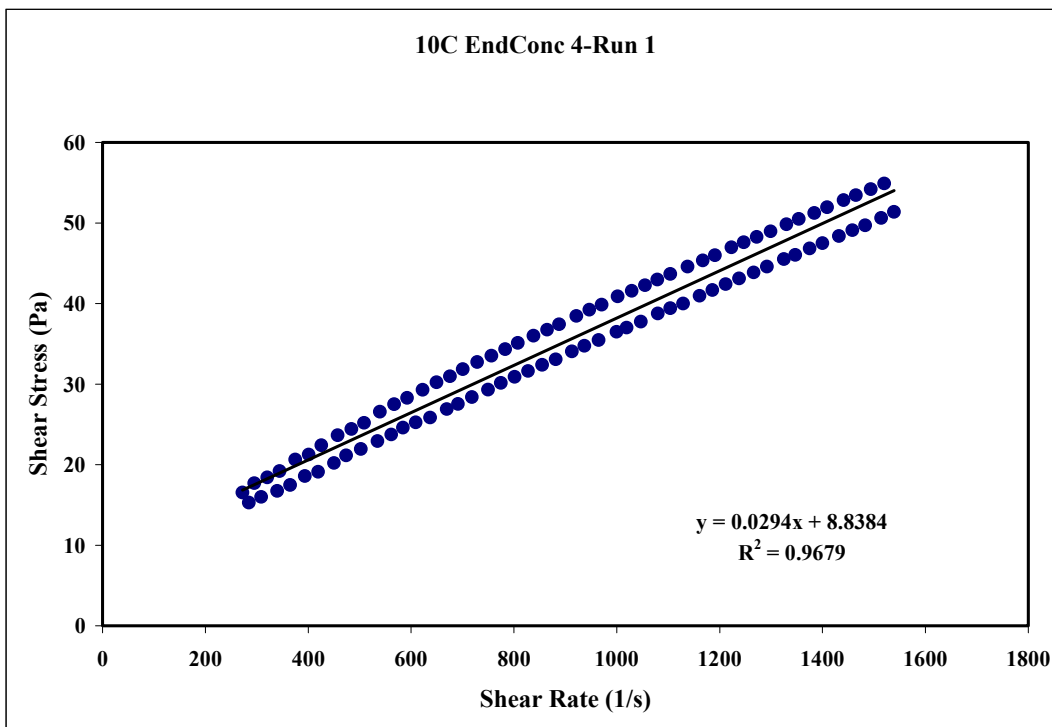


Figure 10. 10 °C at 13 wt% Run 1

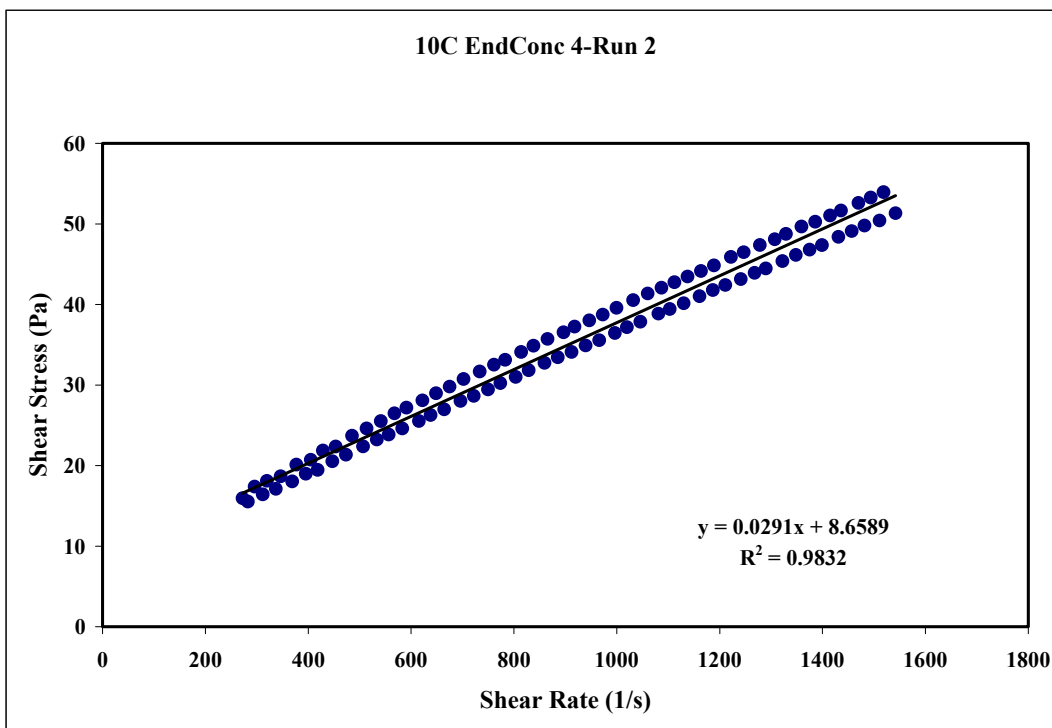


Figure 11. 10 °C at 13 wt% Run 2

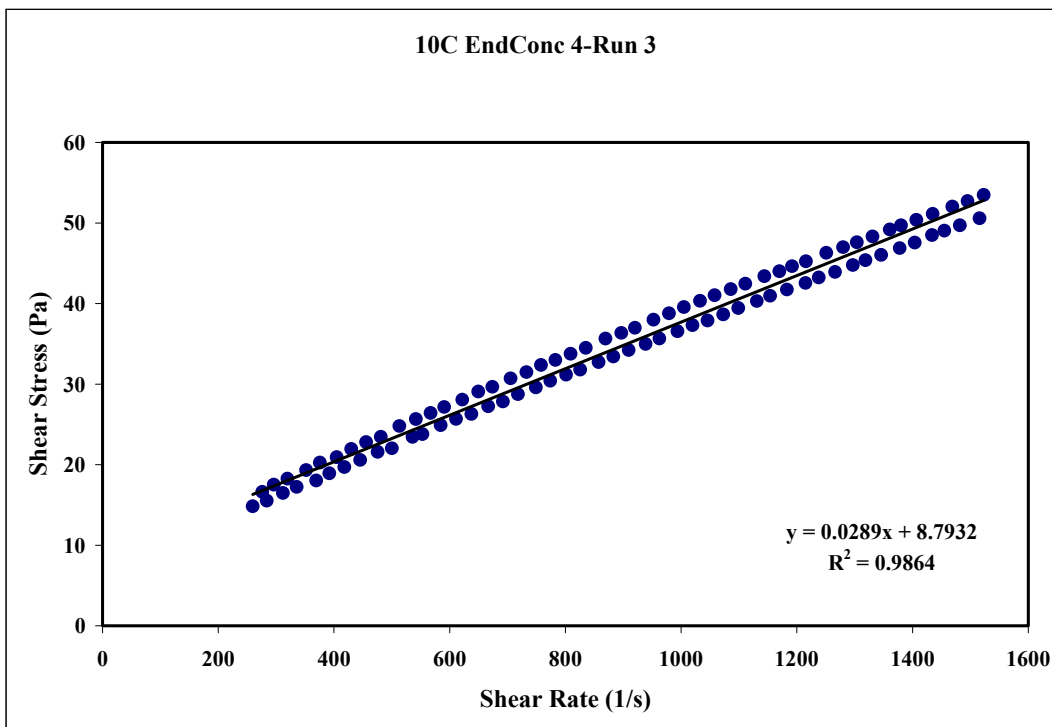


Figure 12. 10 °C at 13 wt% Run 3

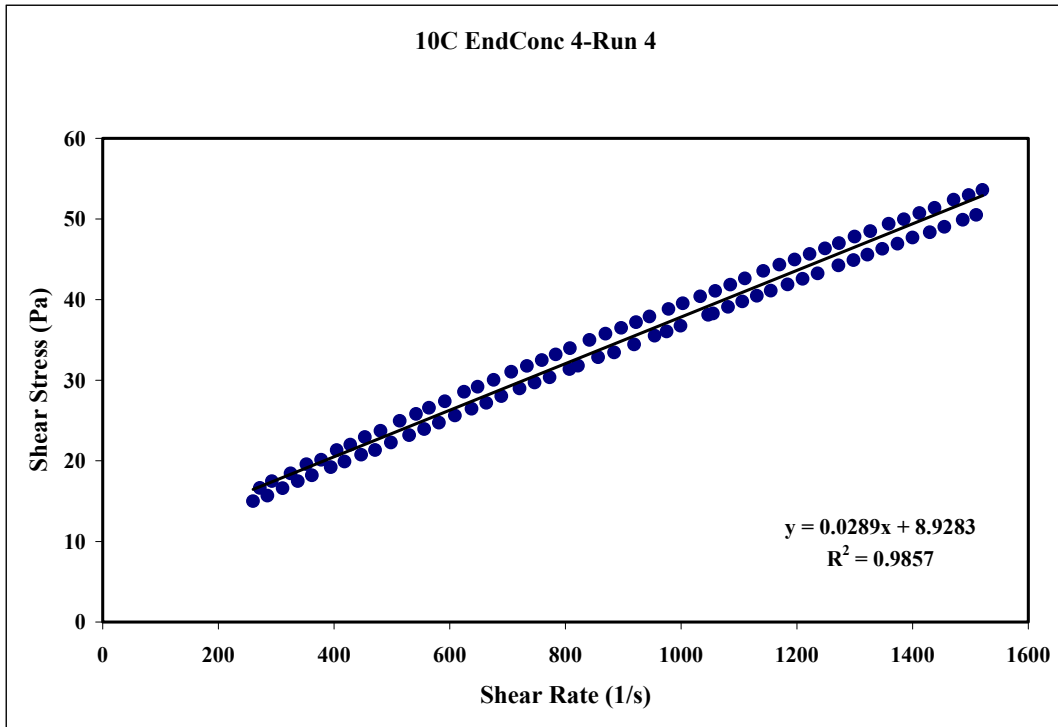


Figure 13. 10 °C at 13 wt% Run 4

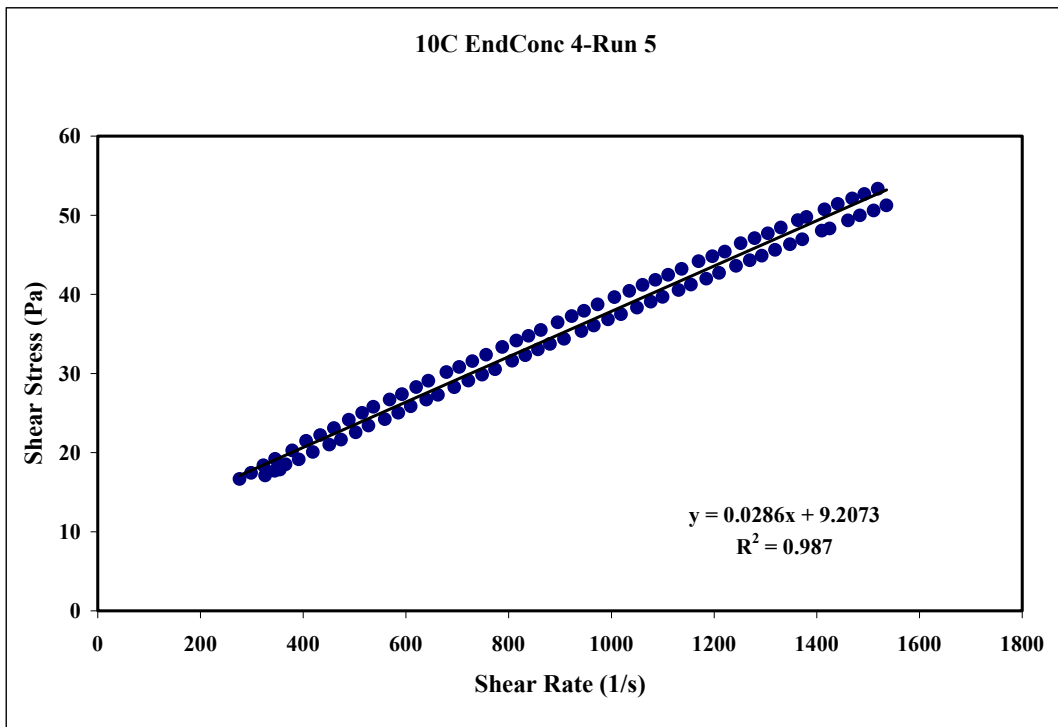


Figure 14. 10 °C at 13 wt% Run 5

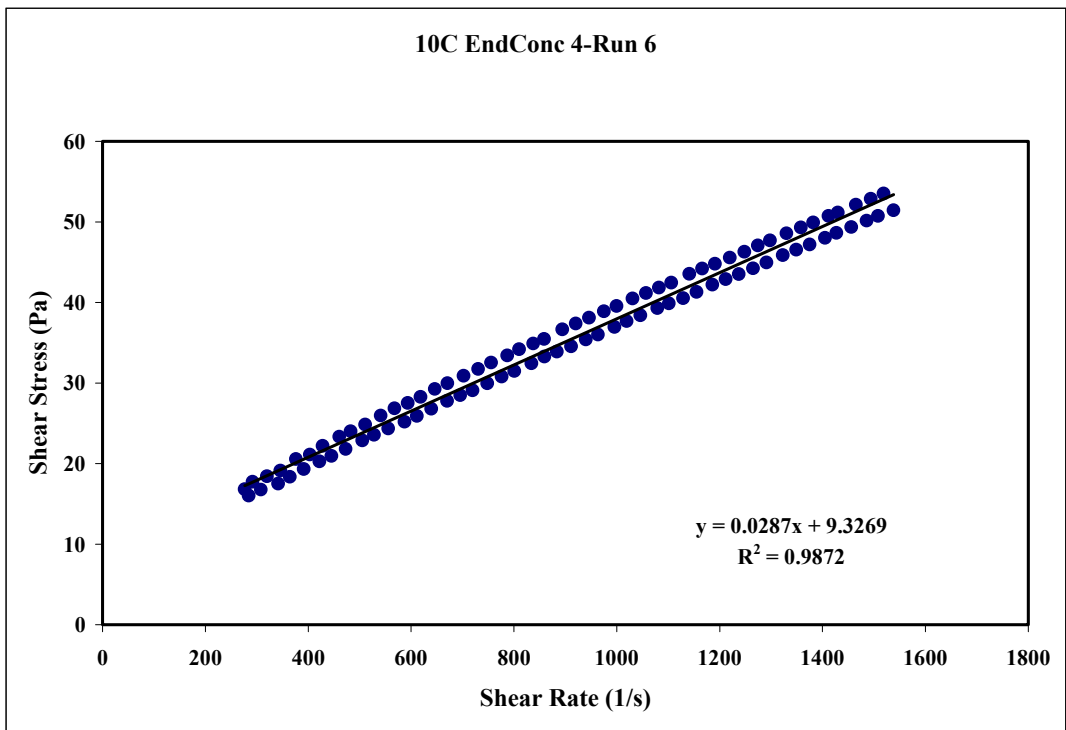


Figure 15. 10 °C at 13 wt% Run 6

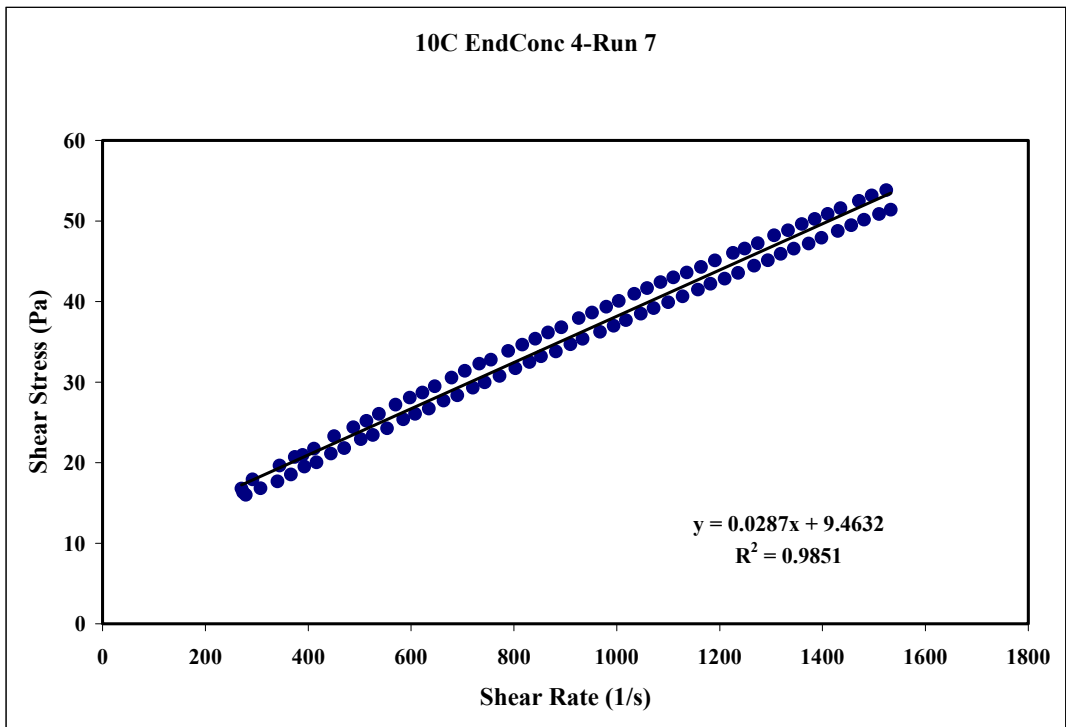


Figure 16. 10 °C at 13 wt% Run 7

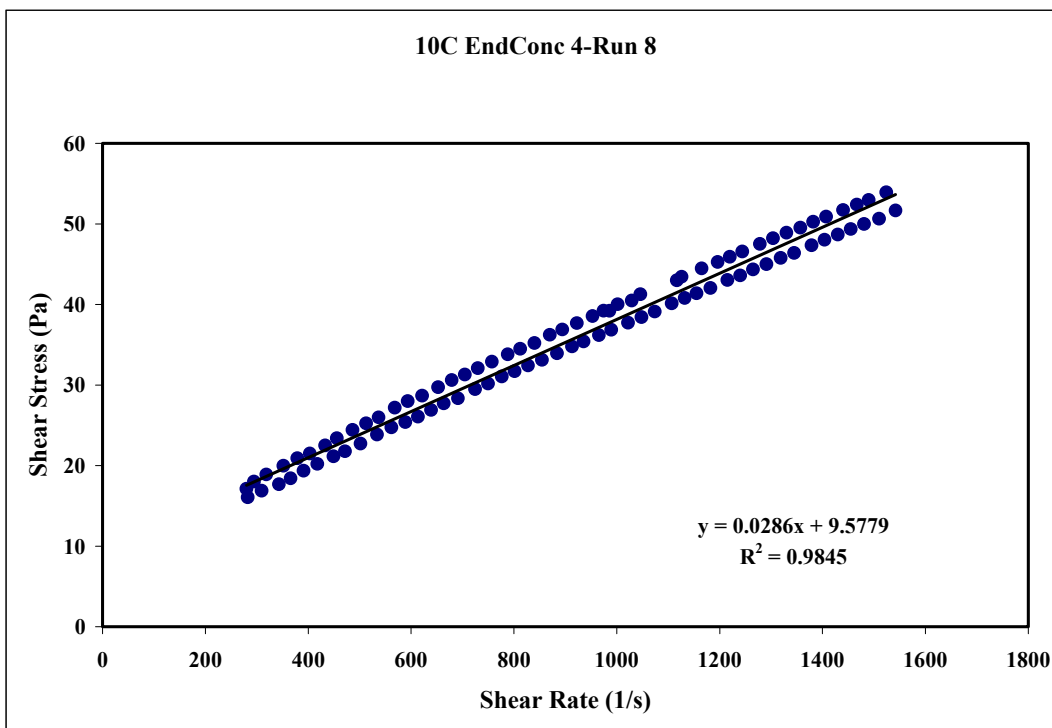


Figure 17. 10 °C at 13 wt% Run 8

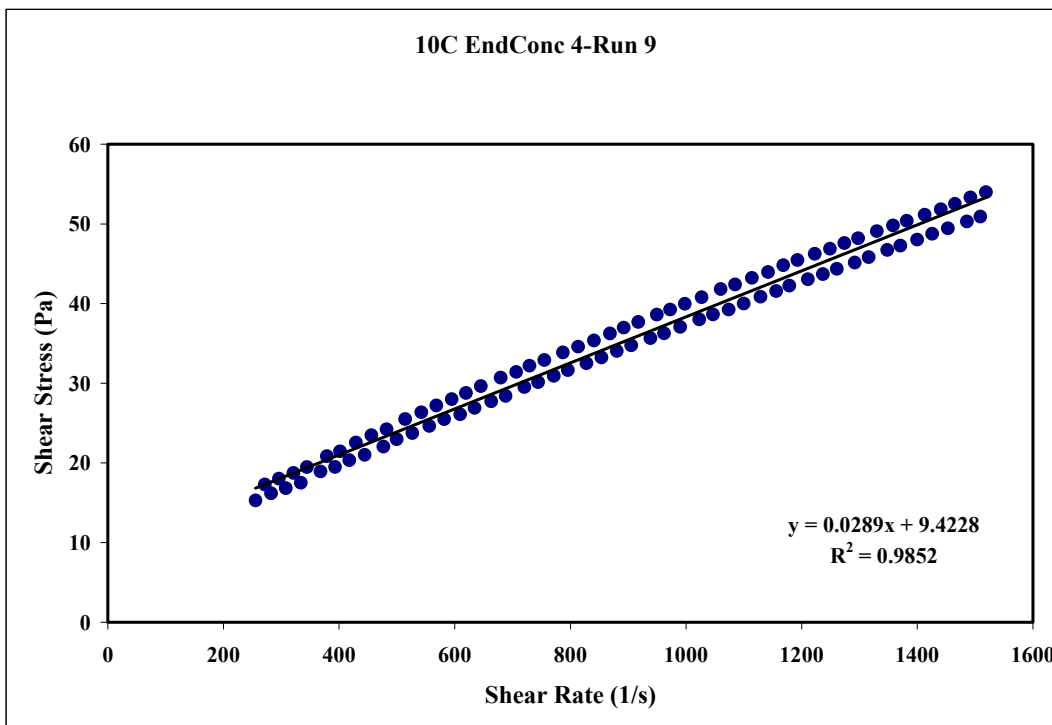


Figure 18. 10 °C at 13 wt% Run 9

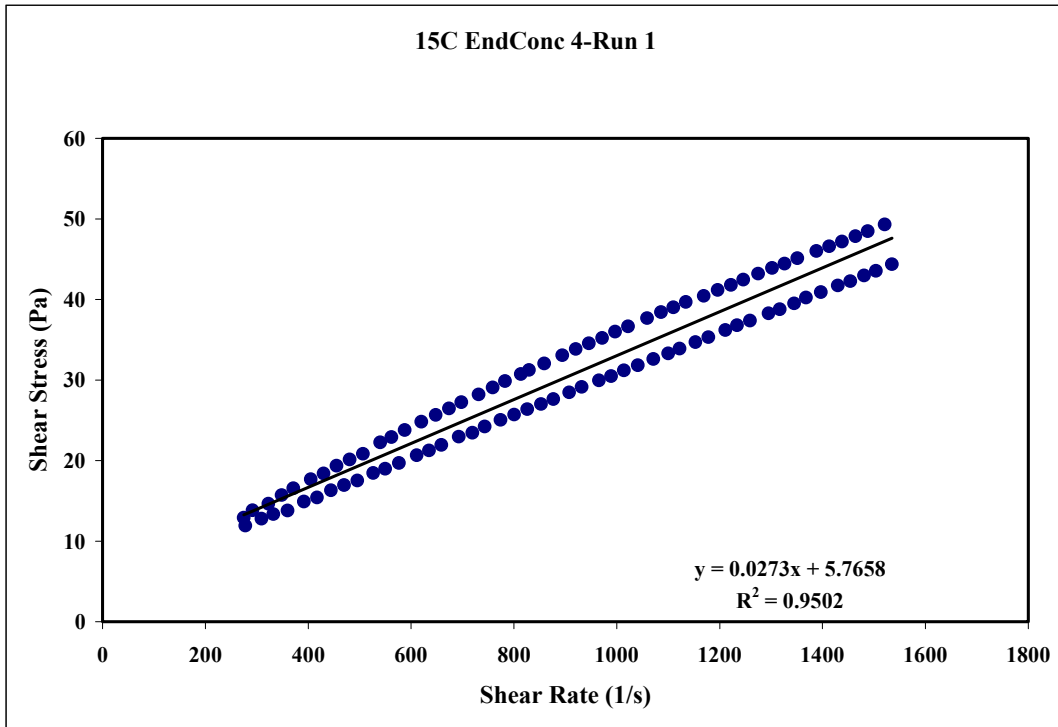


Figure 19. 15 °C at 13 wt% Run 1

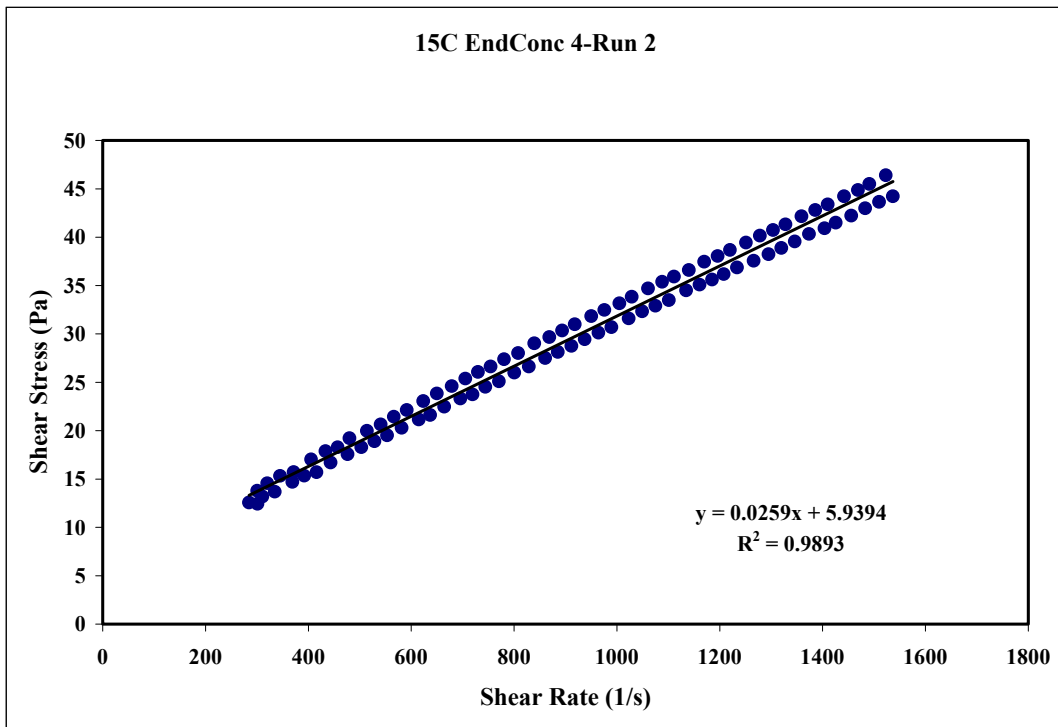


Figure 20. 15 °C at 13 wt% Run 2

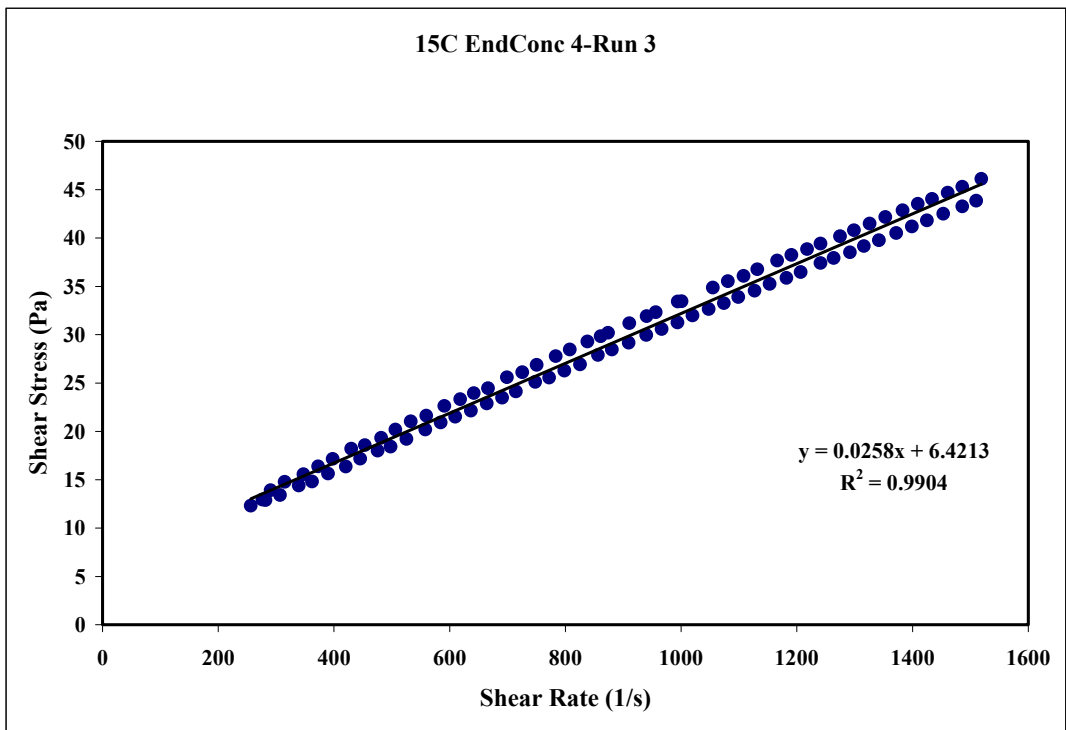


Figure 21. 15 °C at 13 wt% Run 3

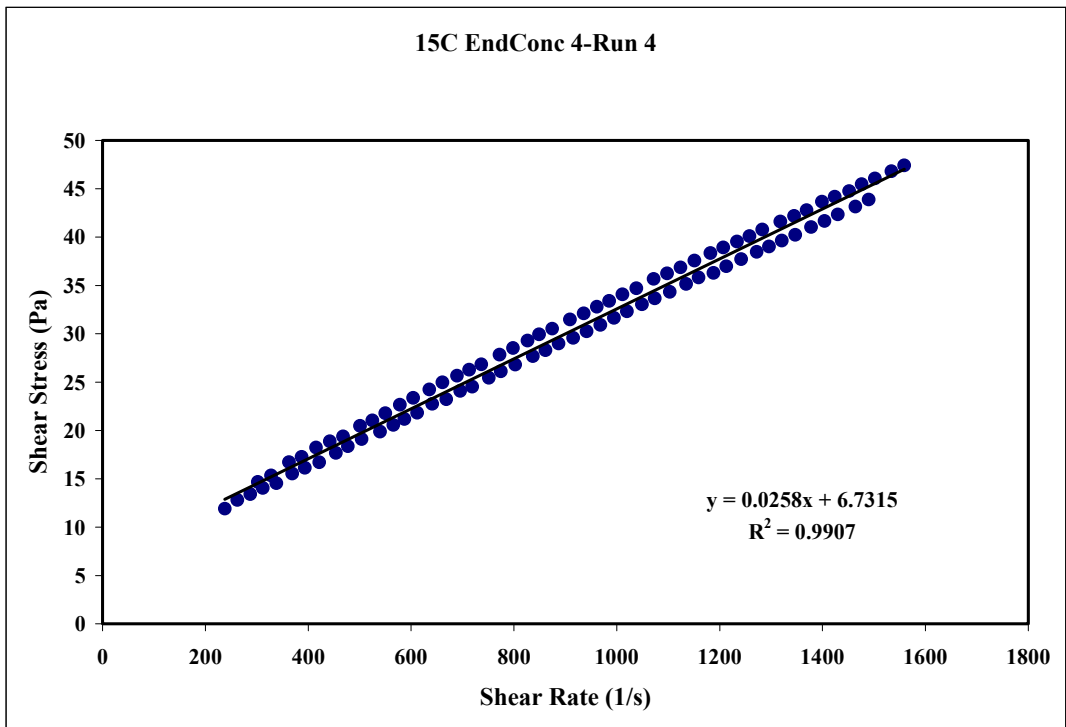


Figure 22. 15 °C at 13 wt% Run 4

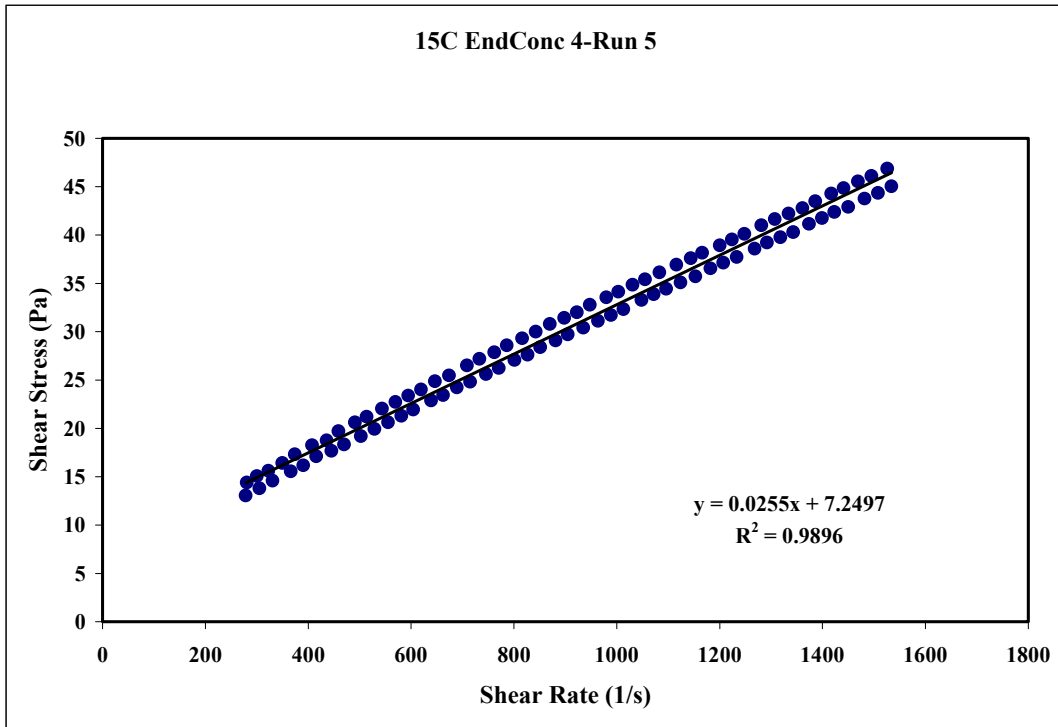


Figure 23. 15 °C at 13 wt% Run 5

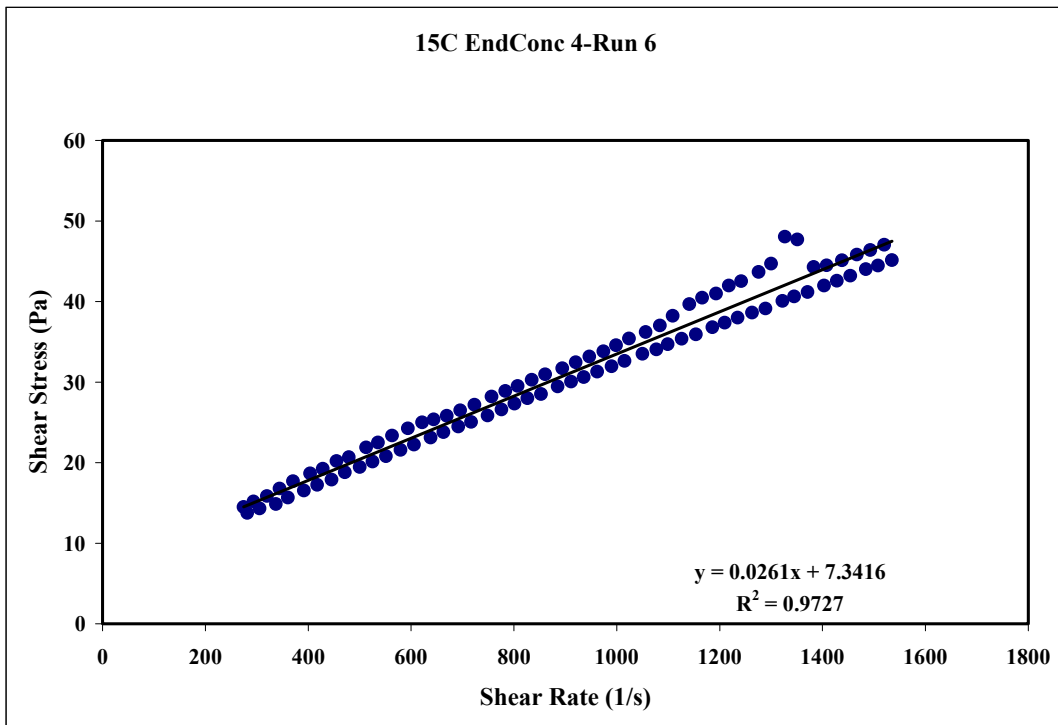


Figure 24. 15 °C at 13 wt% Run 6

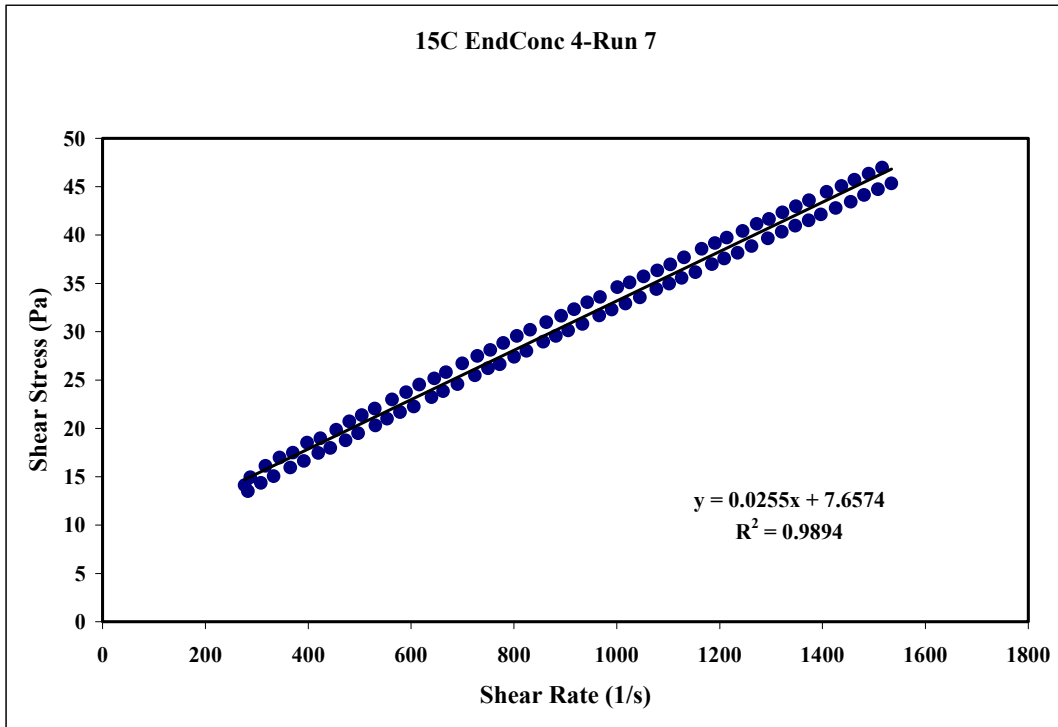


Figure 25. 15 °C at 13 wt% Run 7

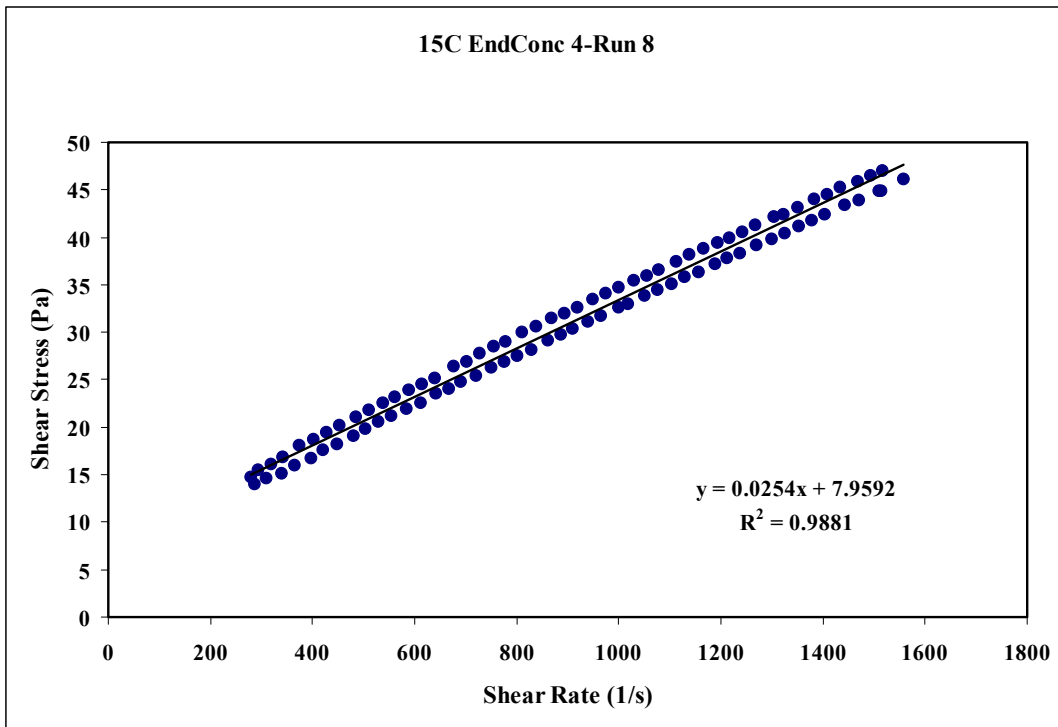


Figure 26. 15 °C at 13 wt% Run 8

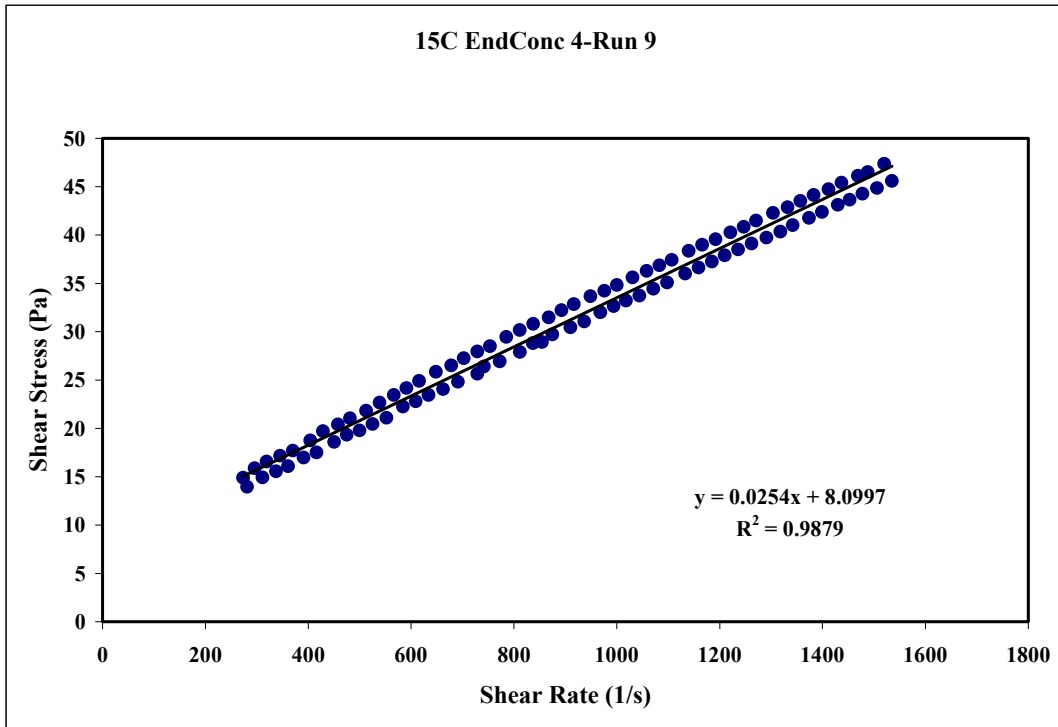


Figure 27. 15 °C at 13 wt% Run 9

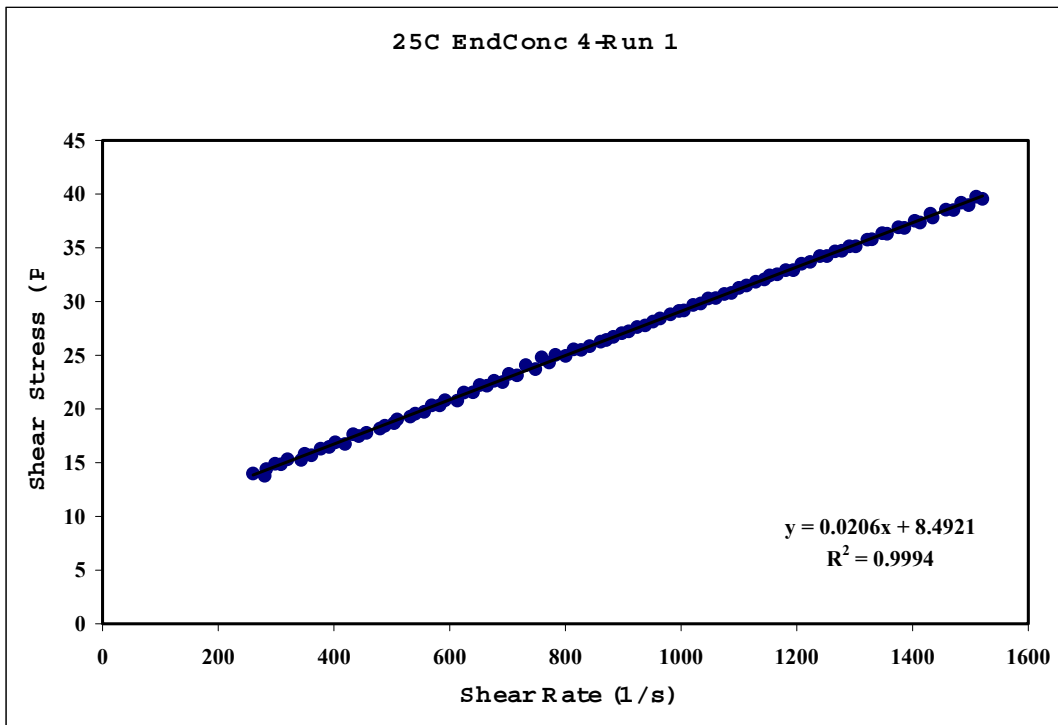


Figure 28. 25 °C at 13 wt% Run 1

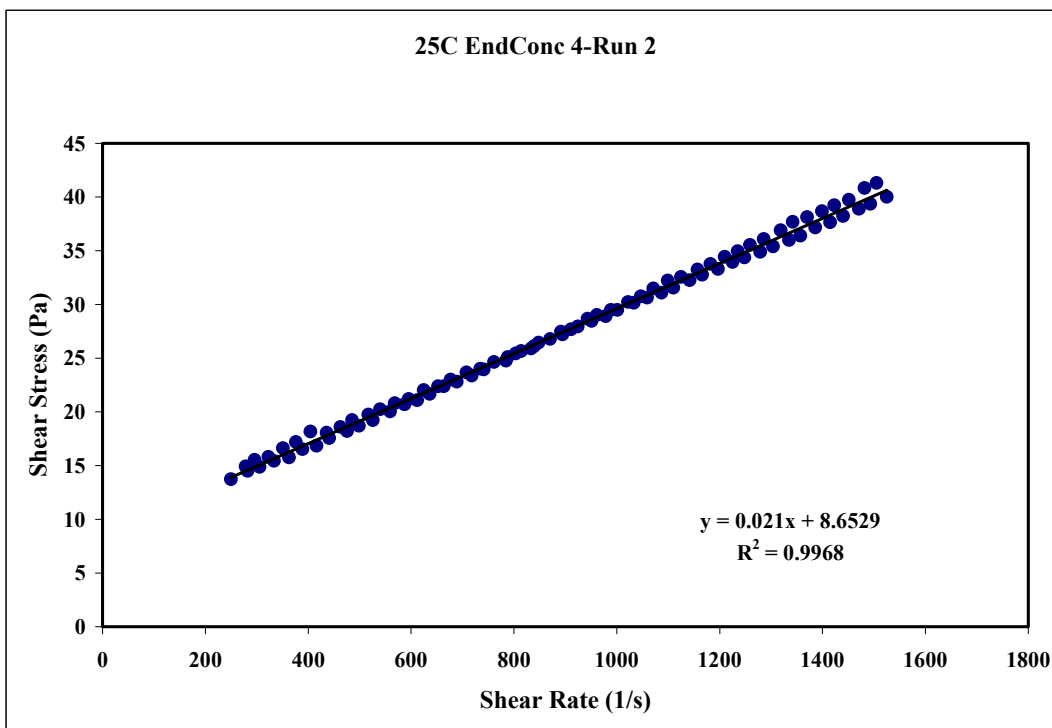


Figure 29. 25 °C at 13 wt% Run 2

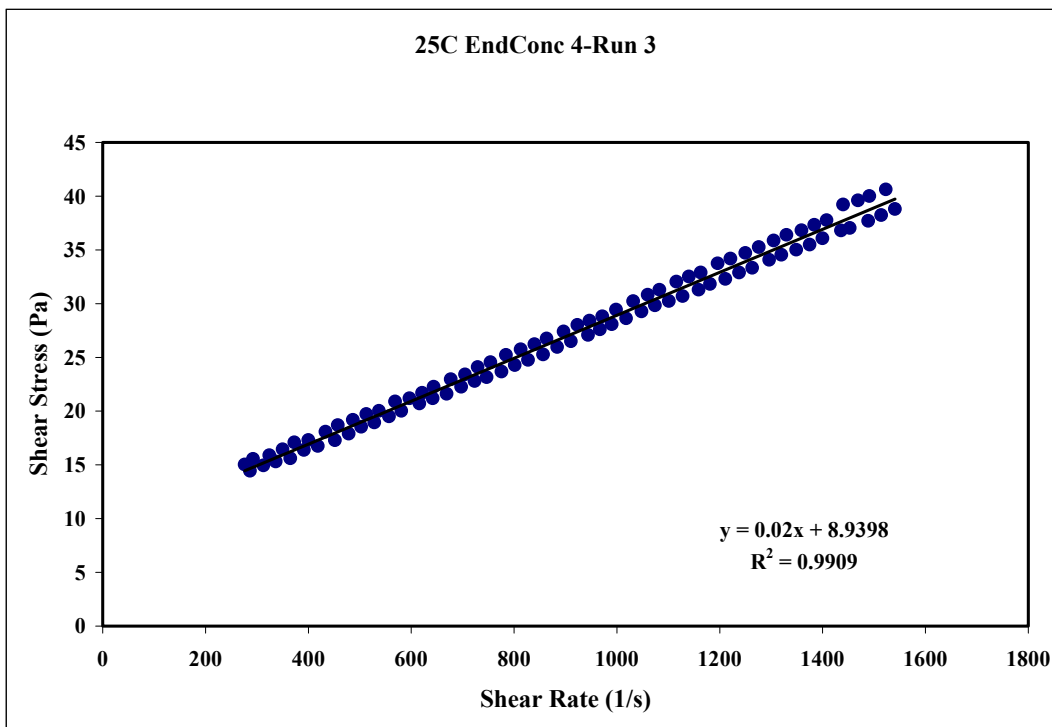


Figure 30. 25 °C at 13 wt% Run 3

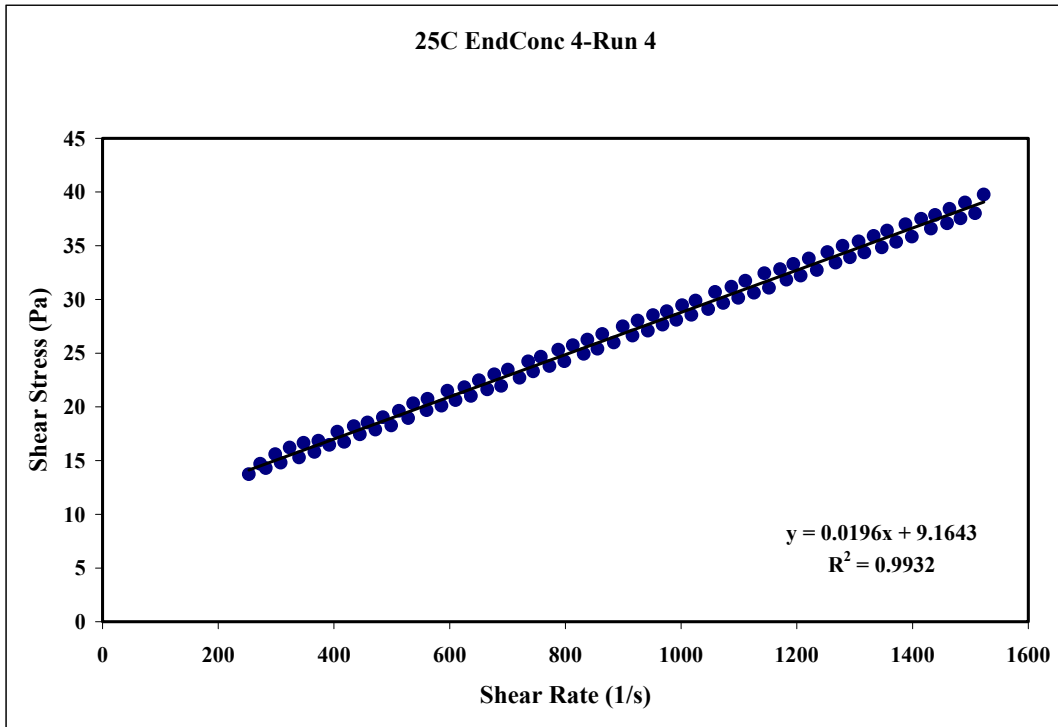


Figure 31. 25 °C at 13 wt% Run 4

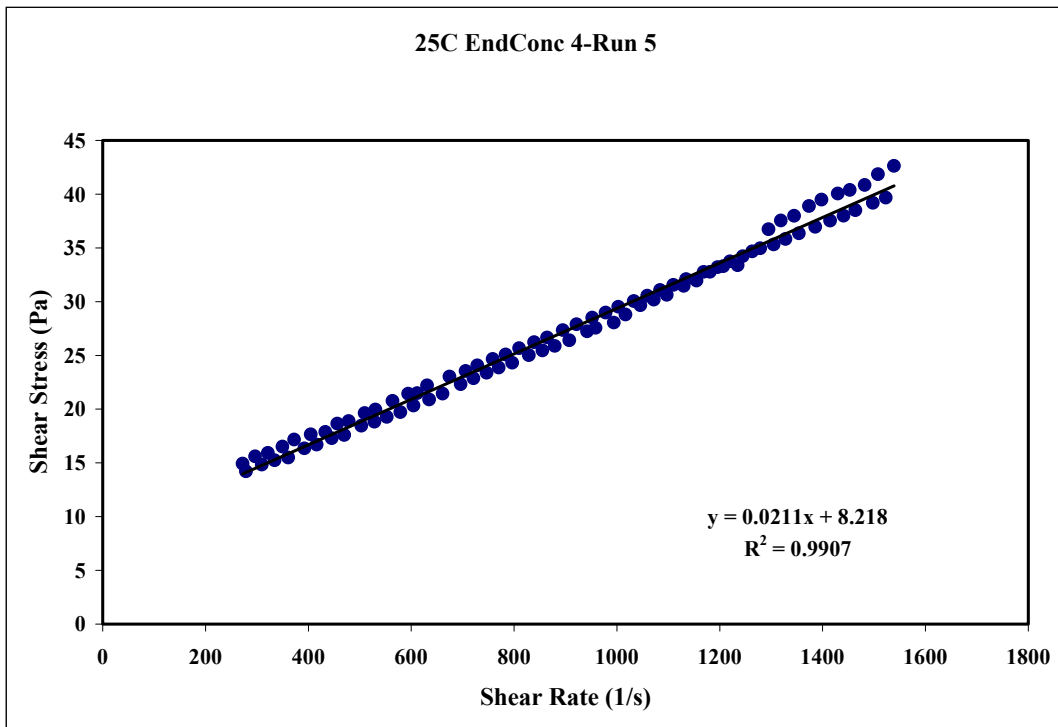


Figure 32. 25 °C at 13 wt% Run 5

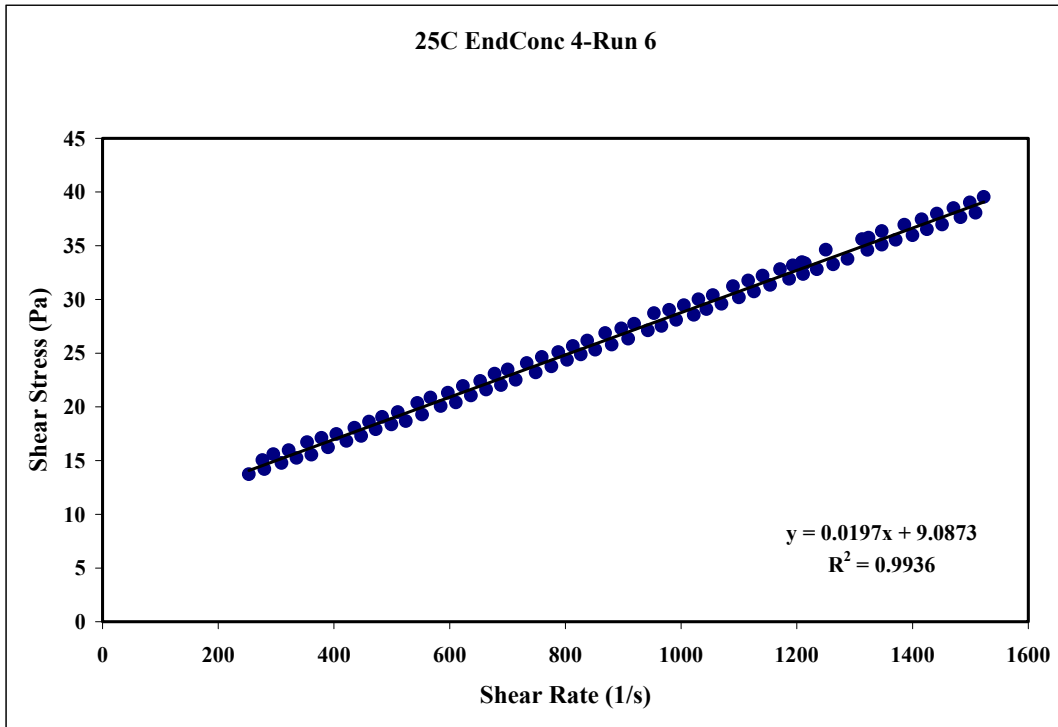


Figure 33. 25 °C at 13 wt% Run 6

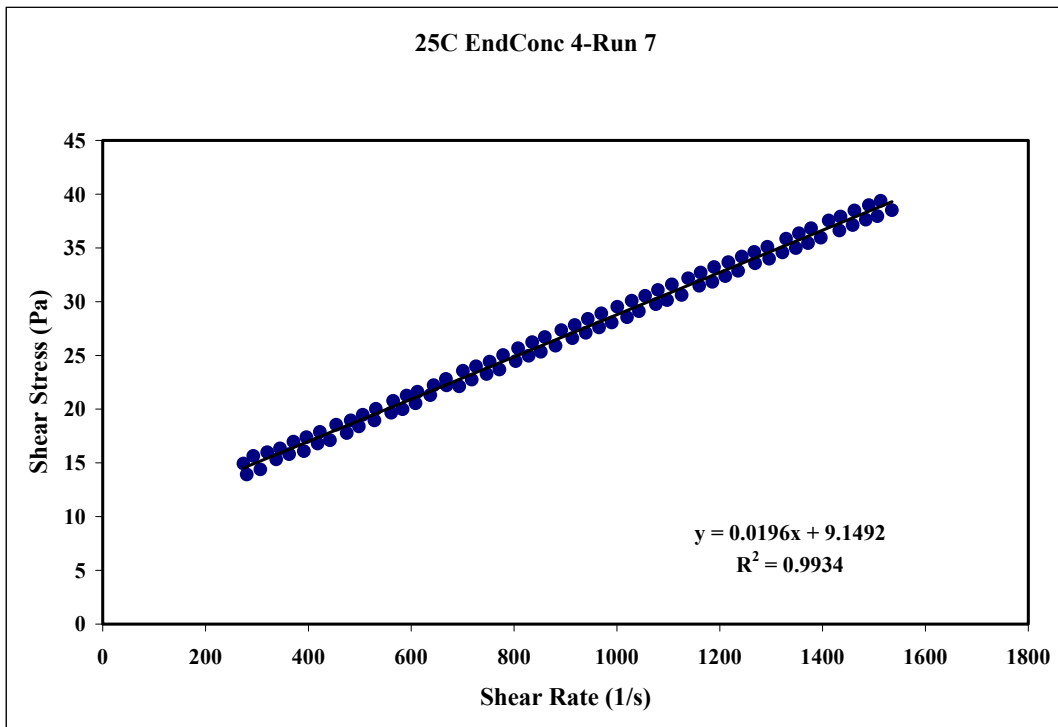


Figure 34. 25 °C at 13 wt% Run 7

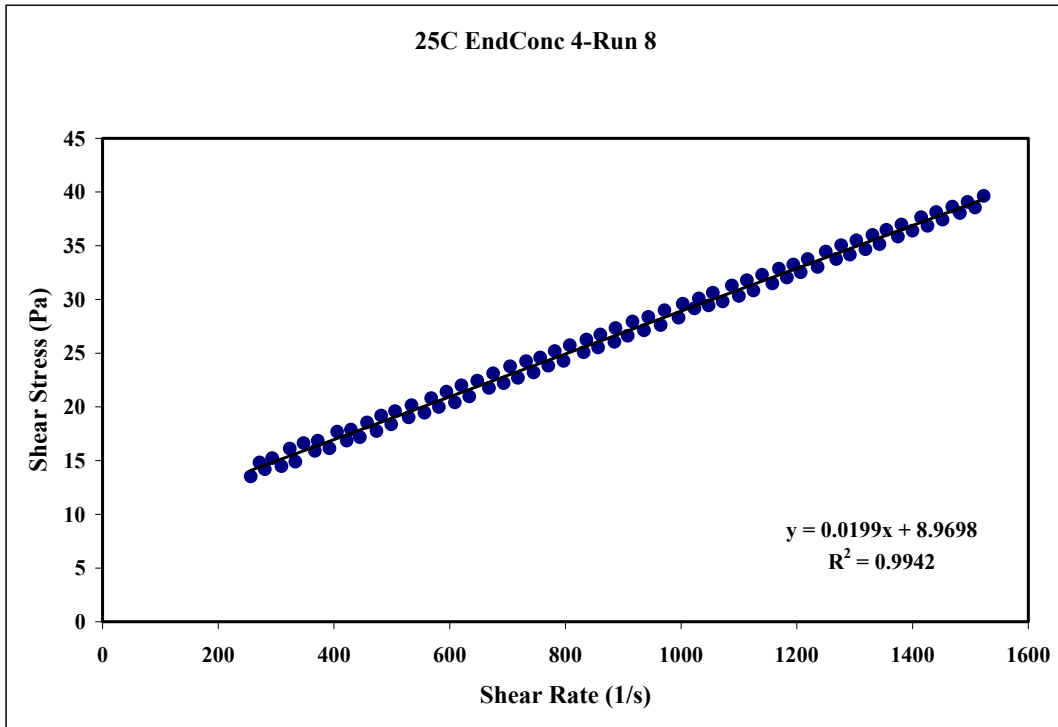


Figure 35. 25 °C at 13 wt% Run 8

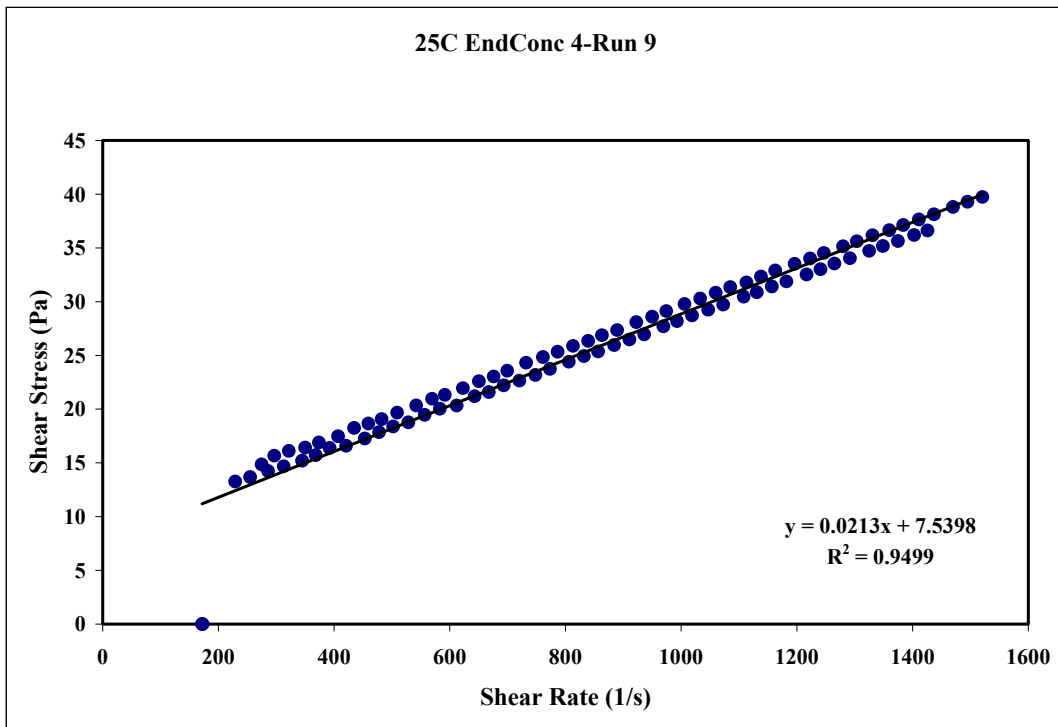


Figure 36. 25 °C at 13 wt% Run 9

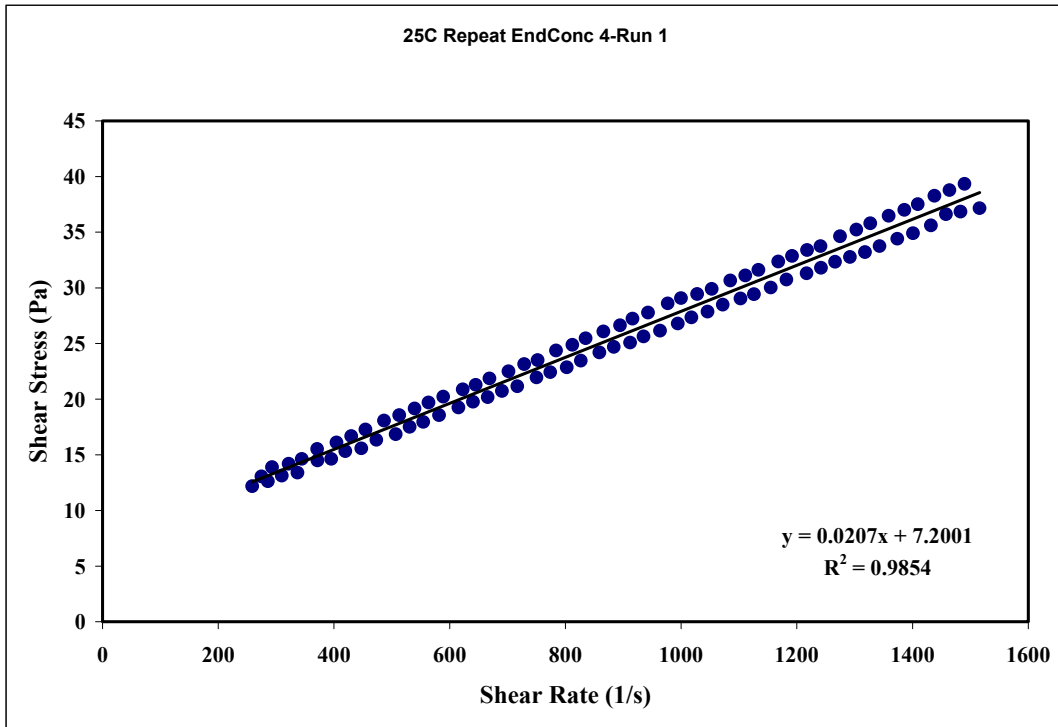


Figure 37. 25 °C Repeat at 13 wt% Run 1

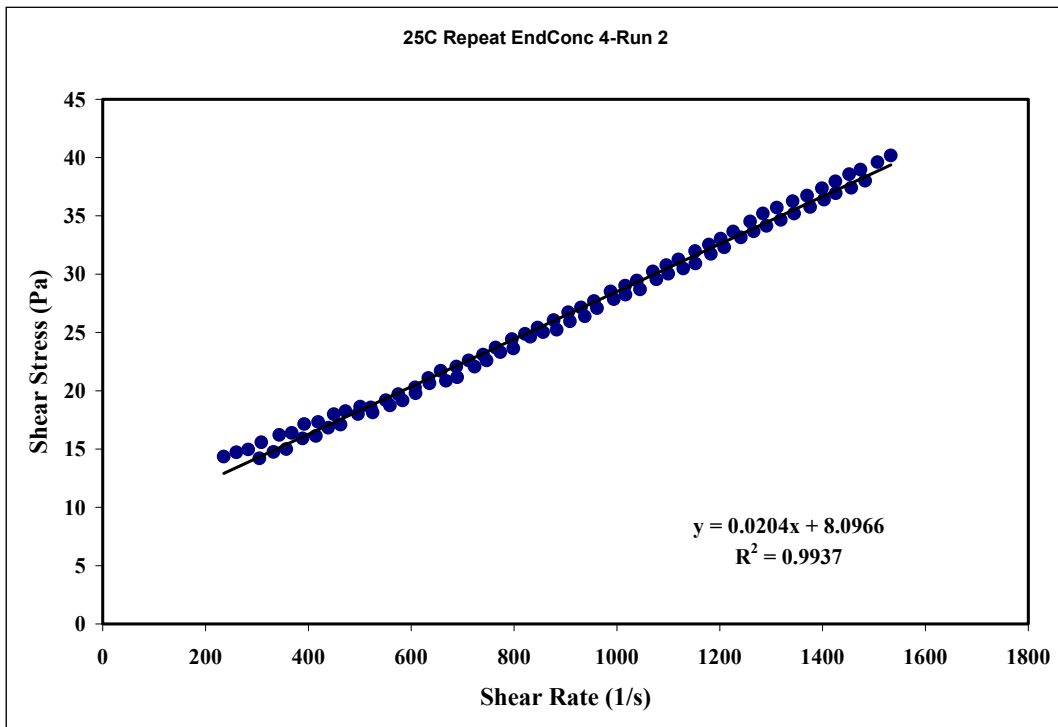


Figure 38. 25 °C Repeat at 13 wt% Run 1

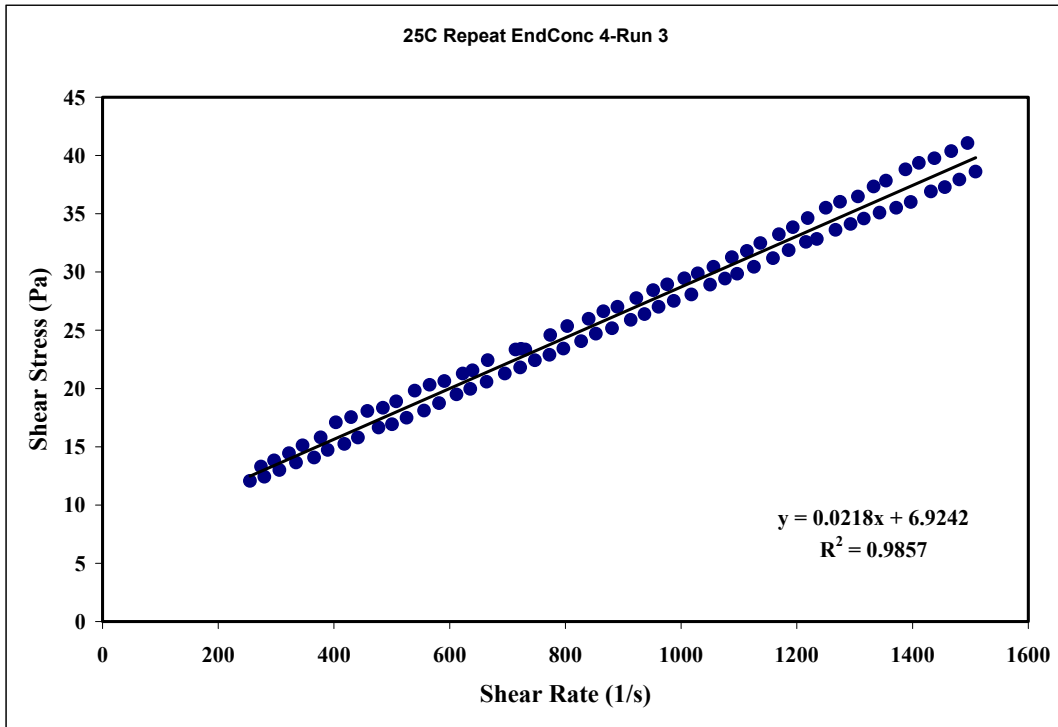


Figure 39. 25 °C Repeat at 13 wt% Run 3

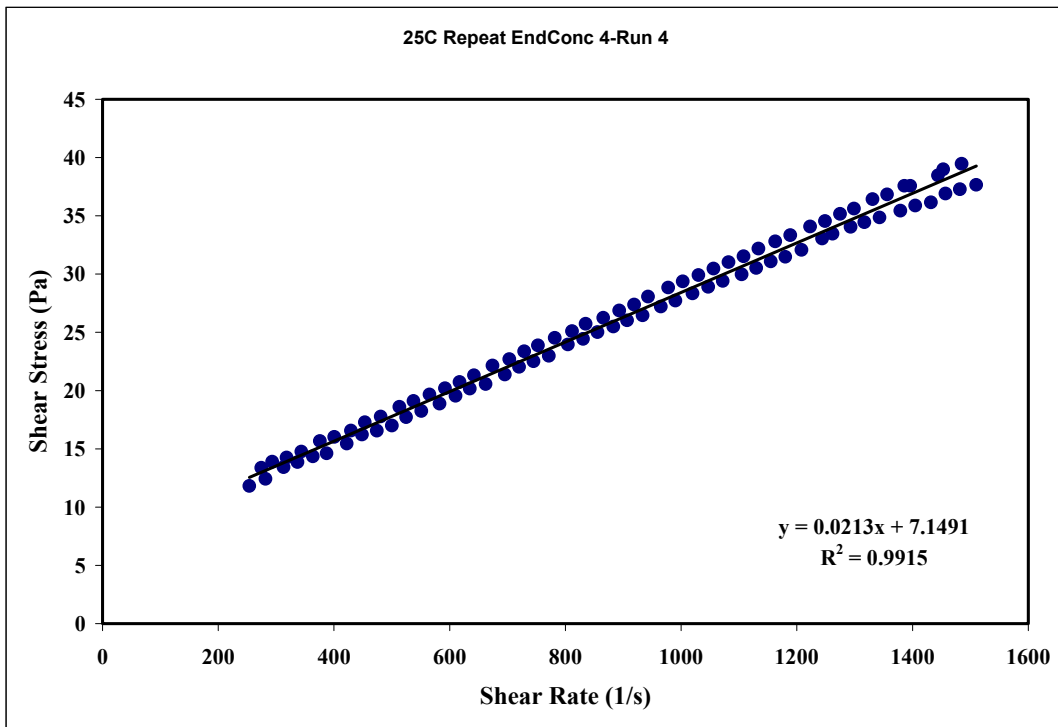


Figure 40. 25 °C Repeat at 13 wt% Run 4

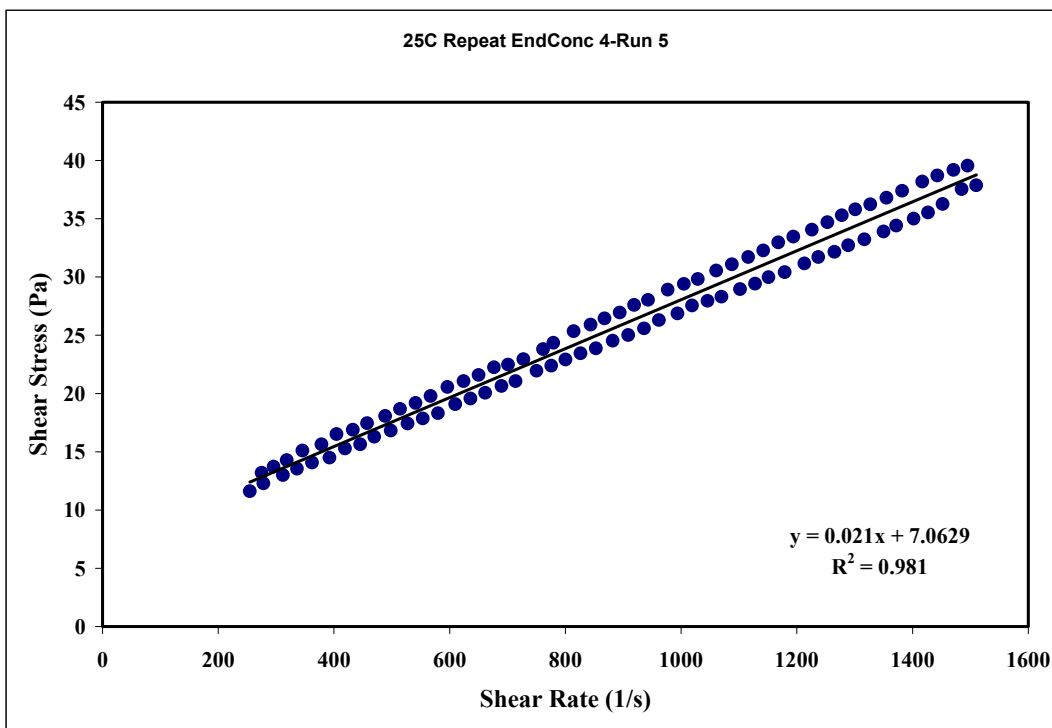


Figure 41. 25 °C Repeat at 13 wt% Run 5

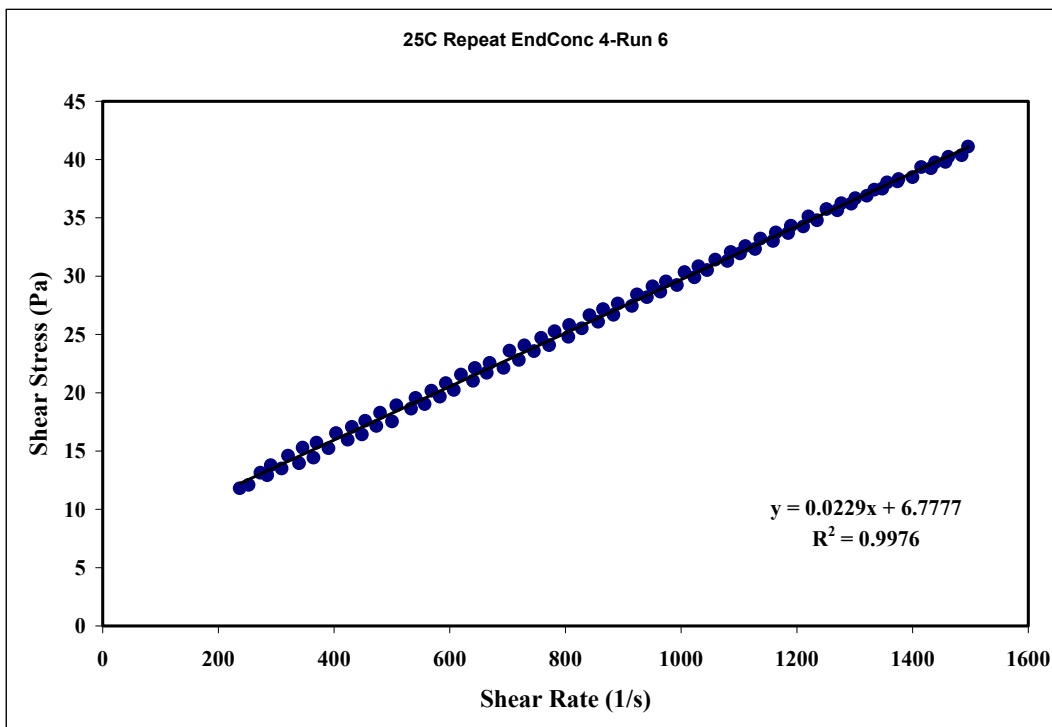


Figure 42. 25 °C Repeat at 13 wt% Run 6

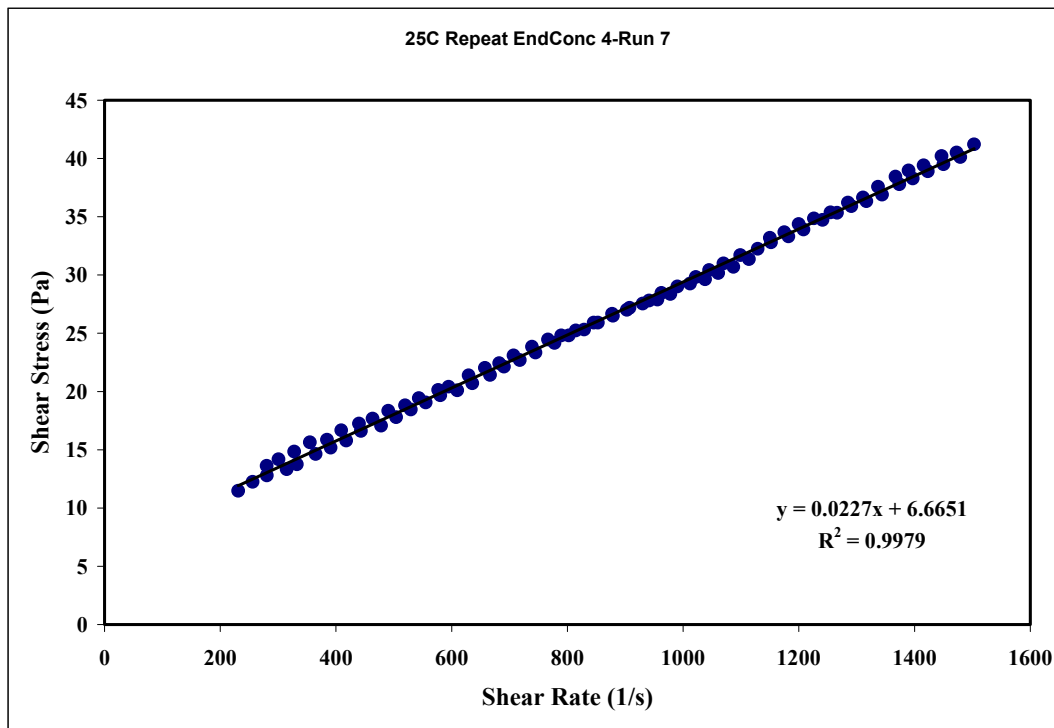


Figure 43. 25 °C Repeat at 13 wt% Run 7

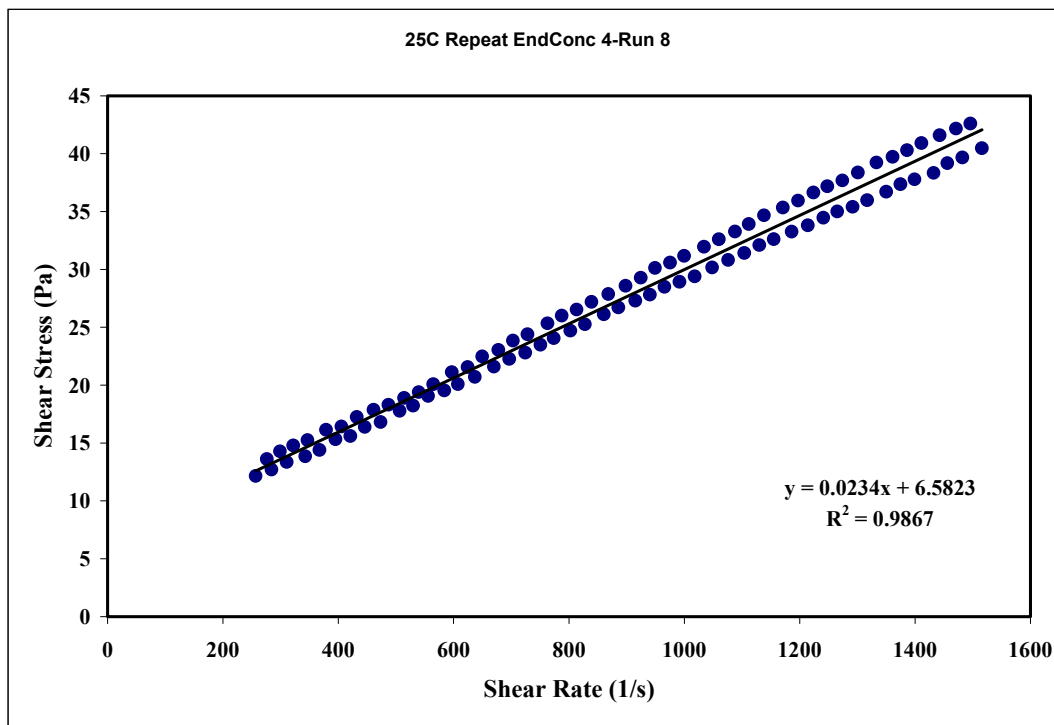


Figure 44. 25 °C Repeat at 13 wt% Run 8

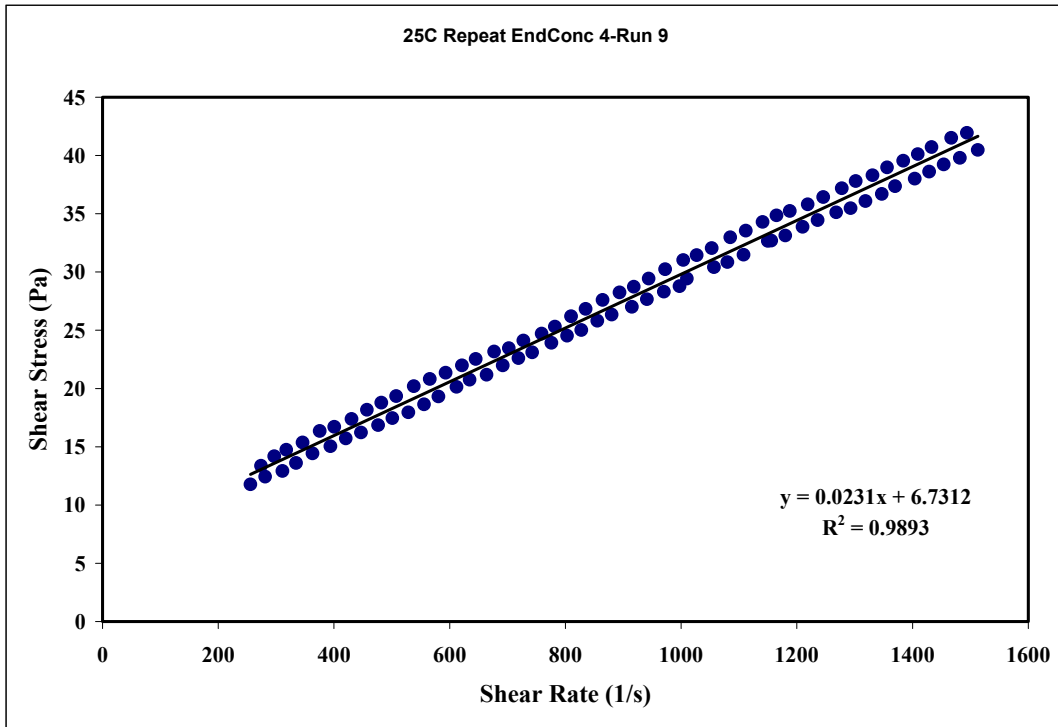


Figure 45. 25 °C Repeat at 13 wt% Run 9

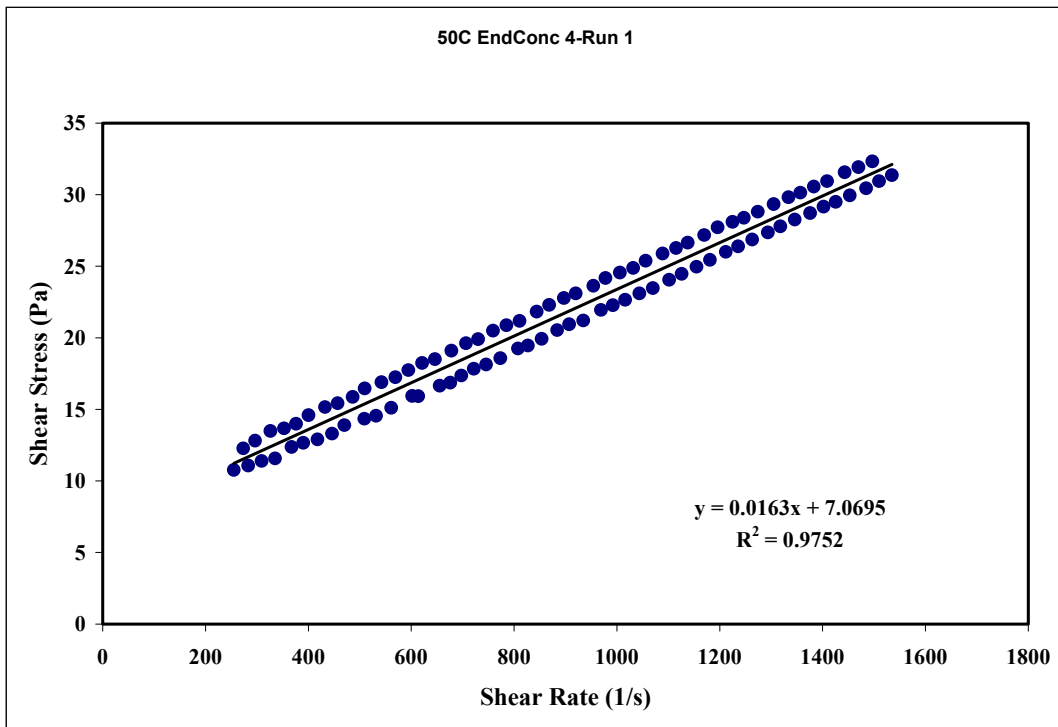


Figure 46. 50 °C at 13 wt% Run 1

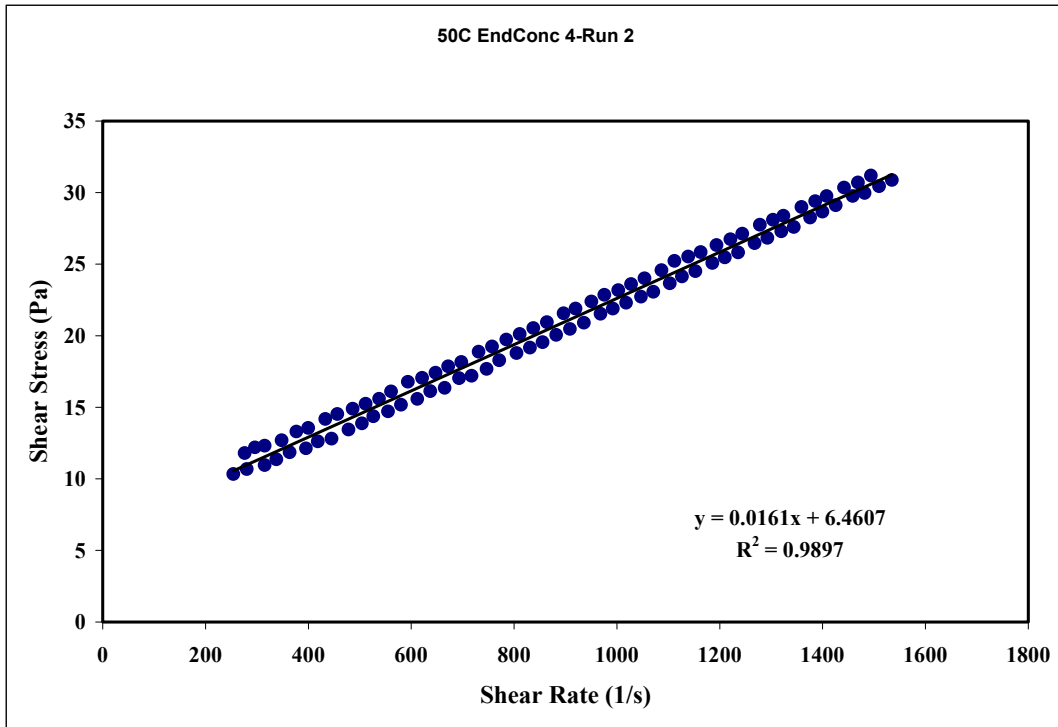


Figure 47. 50 °C at 13 wt% Run 2

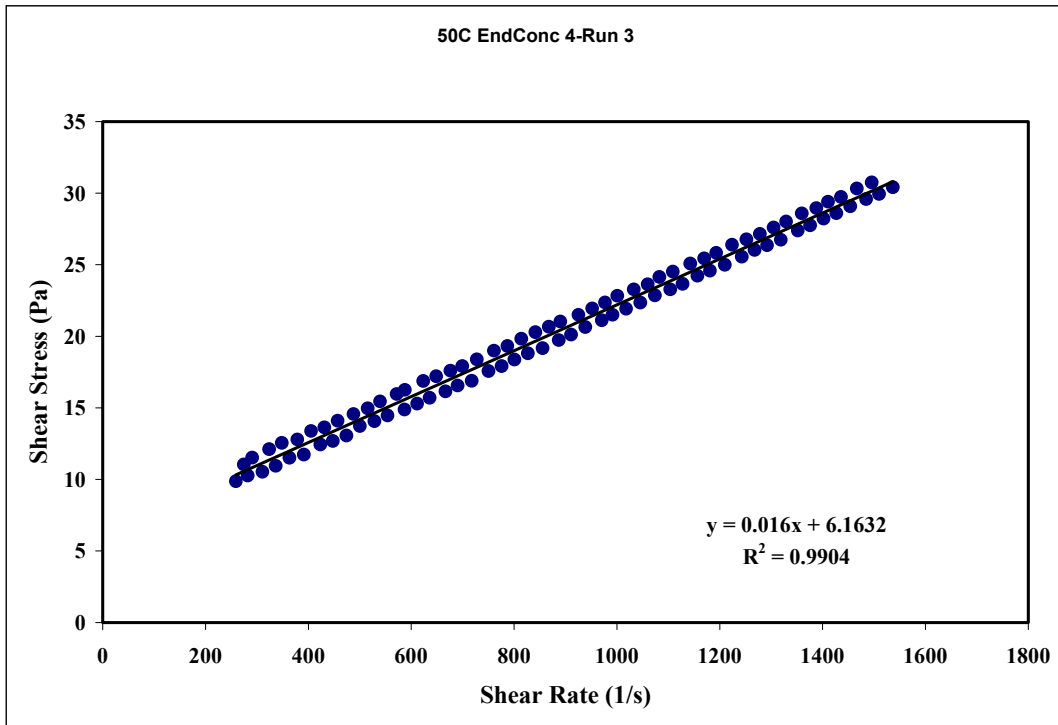


Figure 48. 50 °C at 13 wt% Run 3

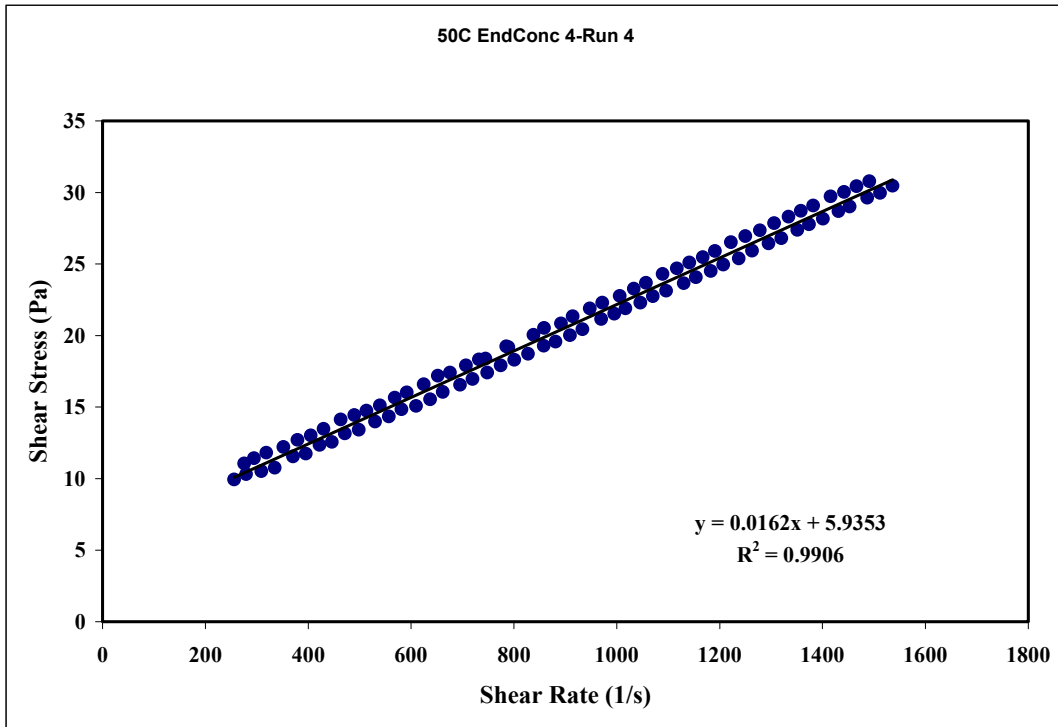


Figure 49. 50 °C at 13 wt% Run 4

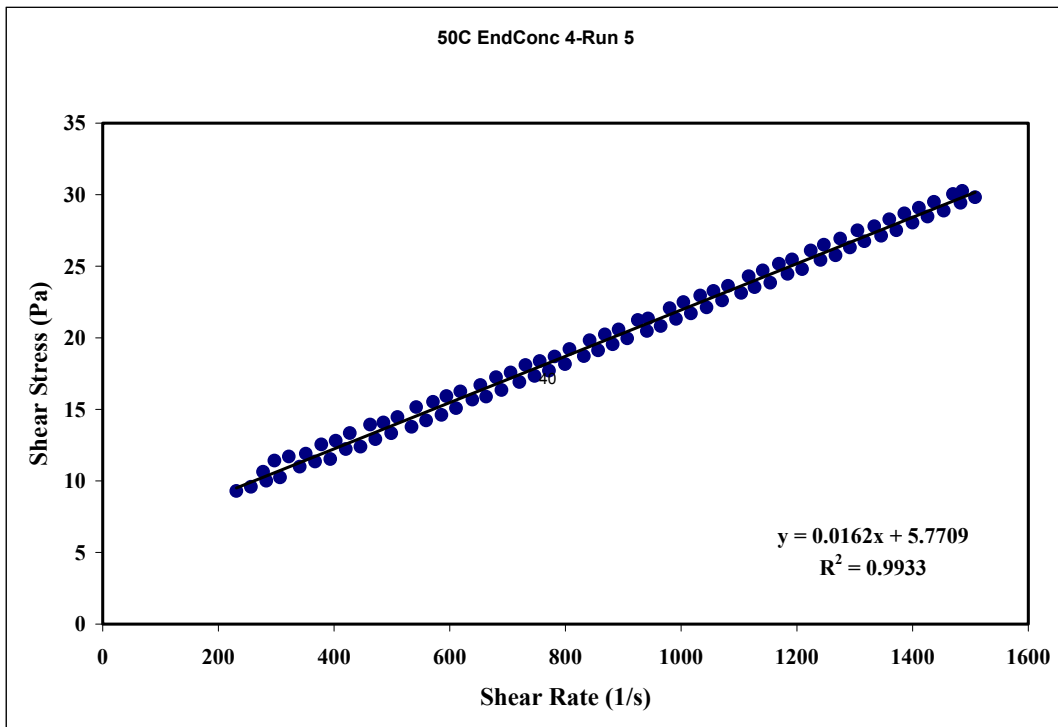


Figure 50. 50 °C at 13 wt% Run 5

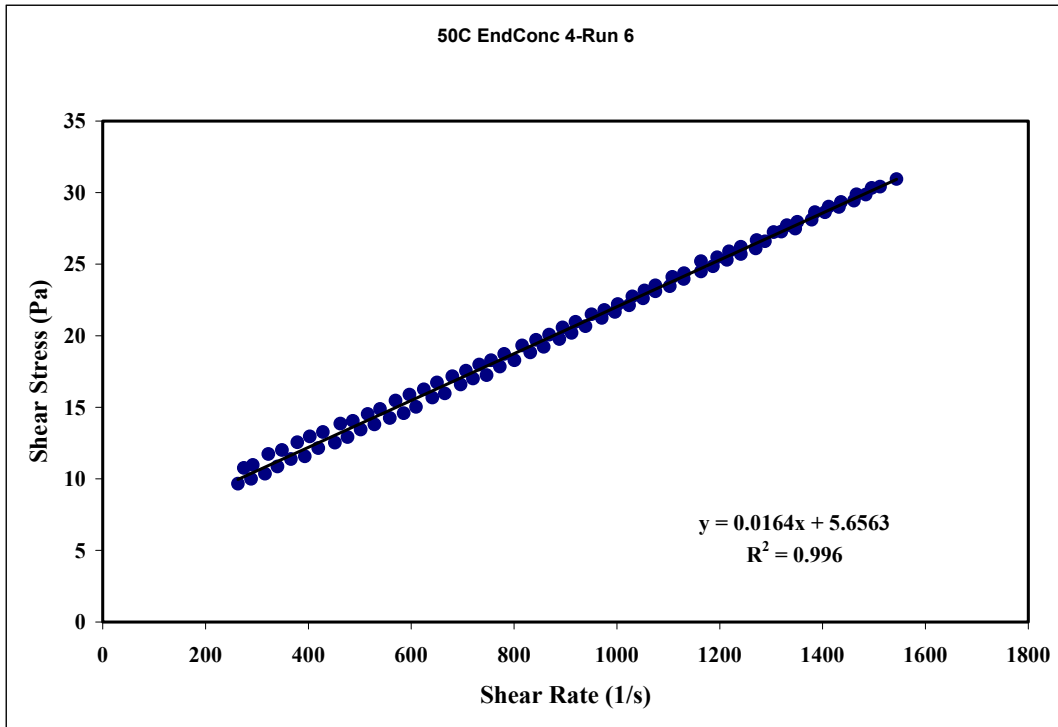


Figure 51. 50 °C at 13 wt% Run 6

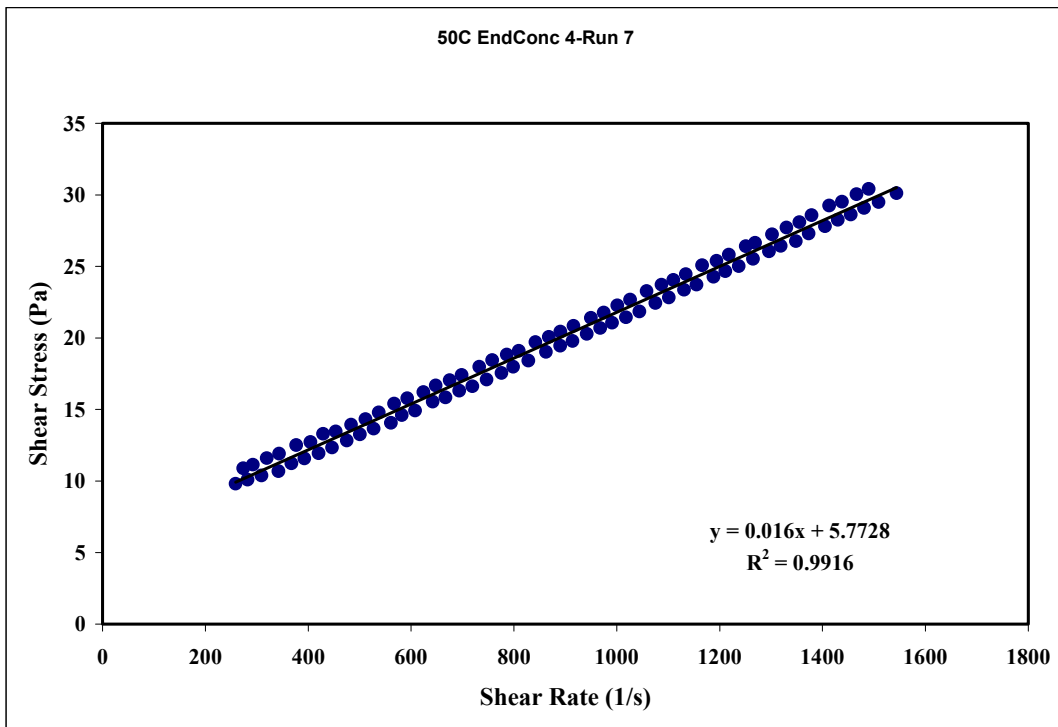


Figure 52. 50 °C at 13 wt% Run 7

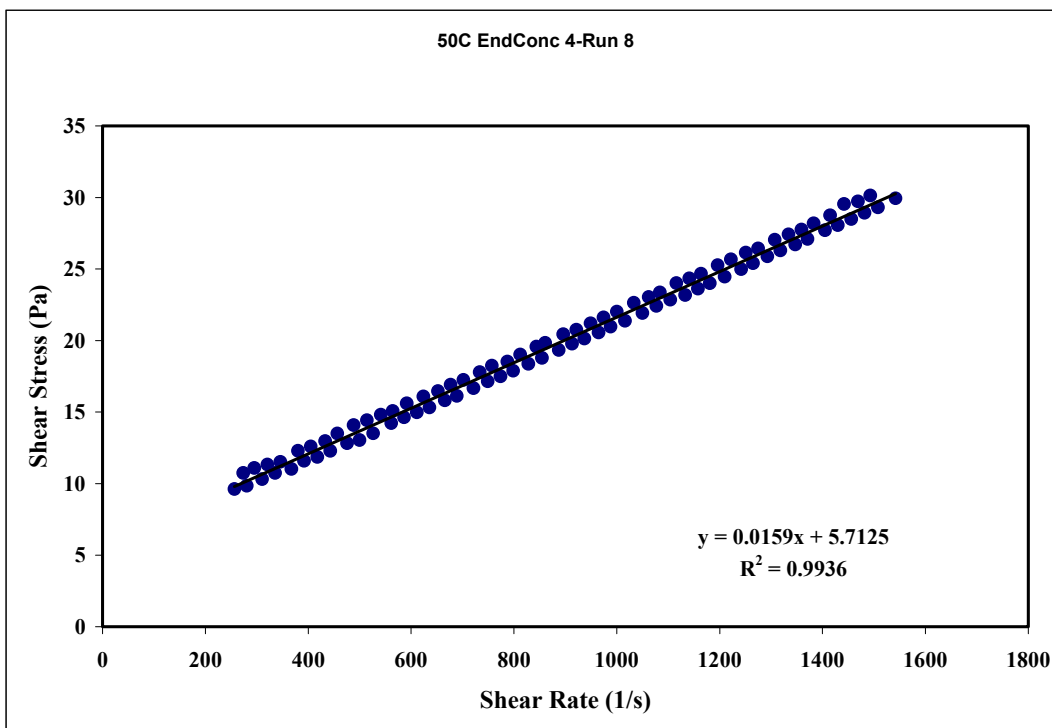


Figure 53. 50 °C at 13 wt% Run 8

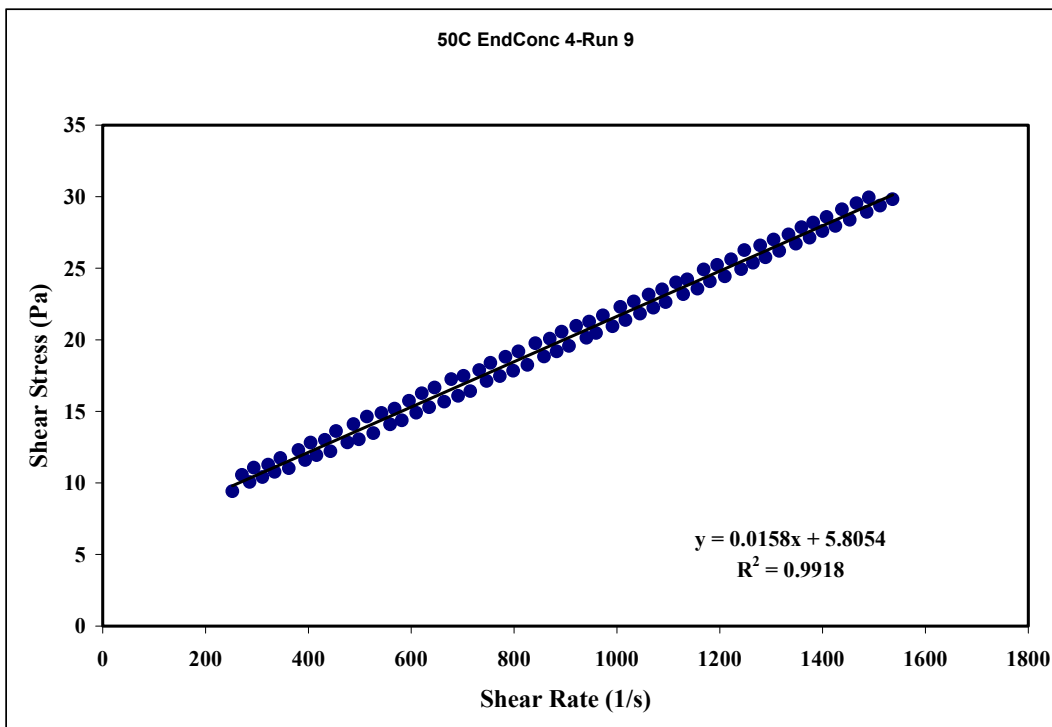


Figure 54. 50 °C at 13 wt% Run 9

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APPENDIX I – PART 4

SR/TRU PRECIPITATE SLURRY RHEOGRAMS
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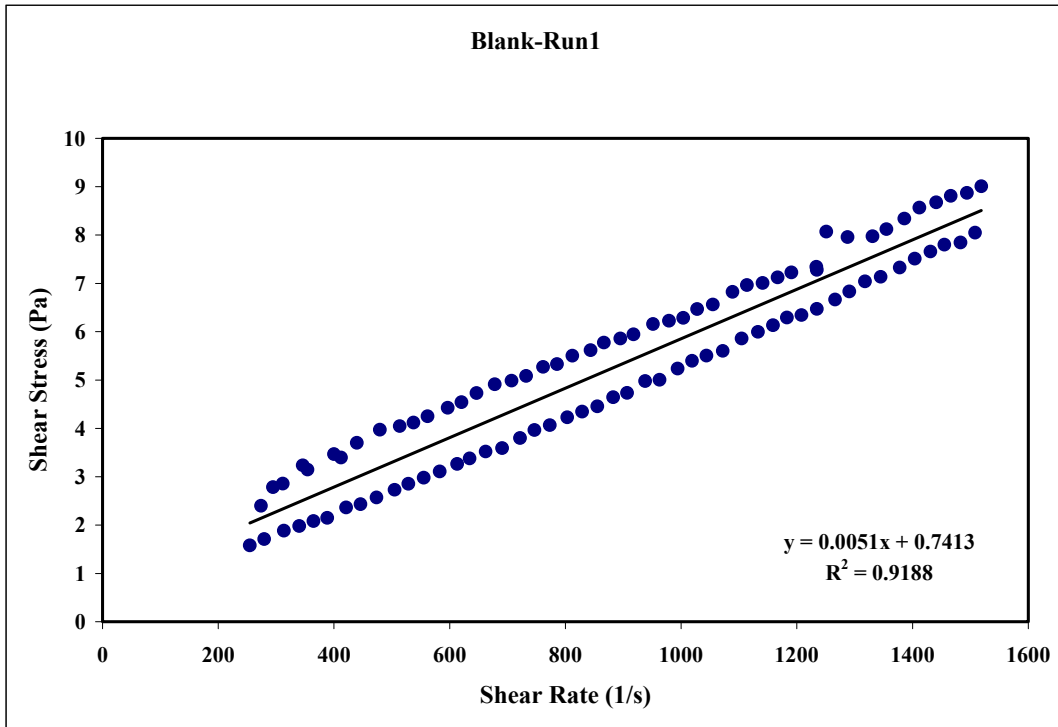


Figure 1. Blank at 16 wt % Run 1

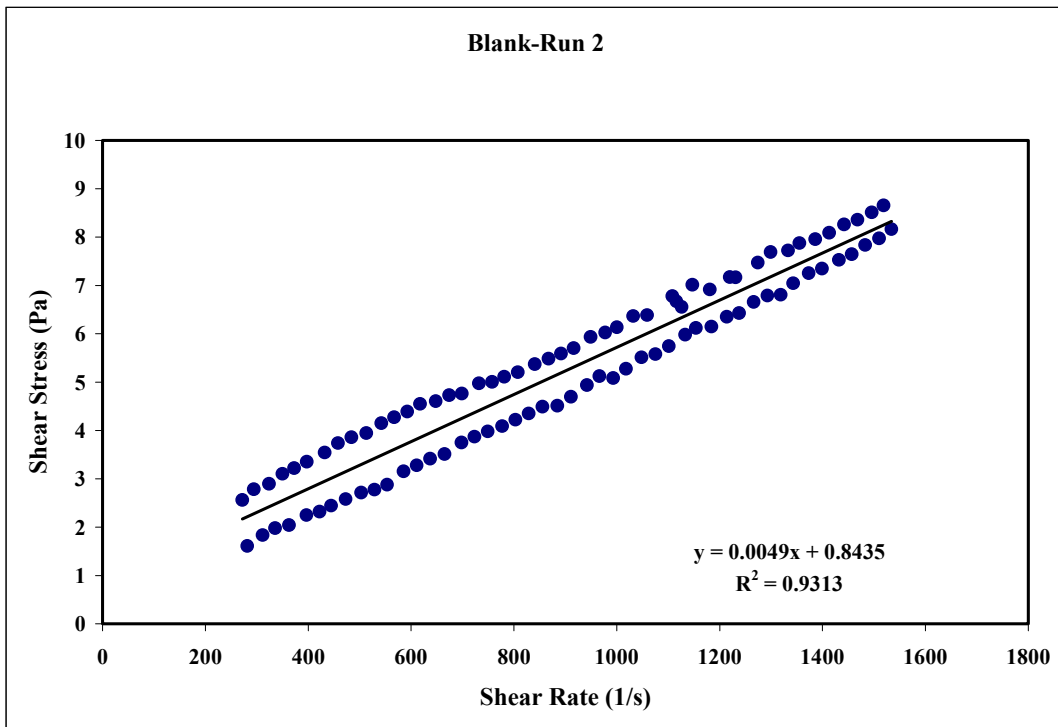


Figure 2. Blank at 16 wt % Run 2

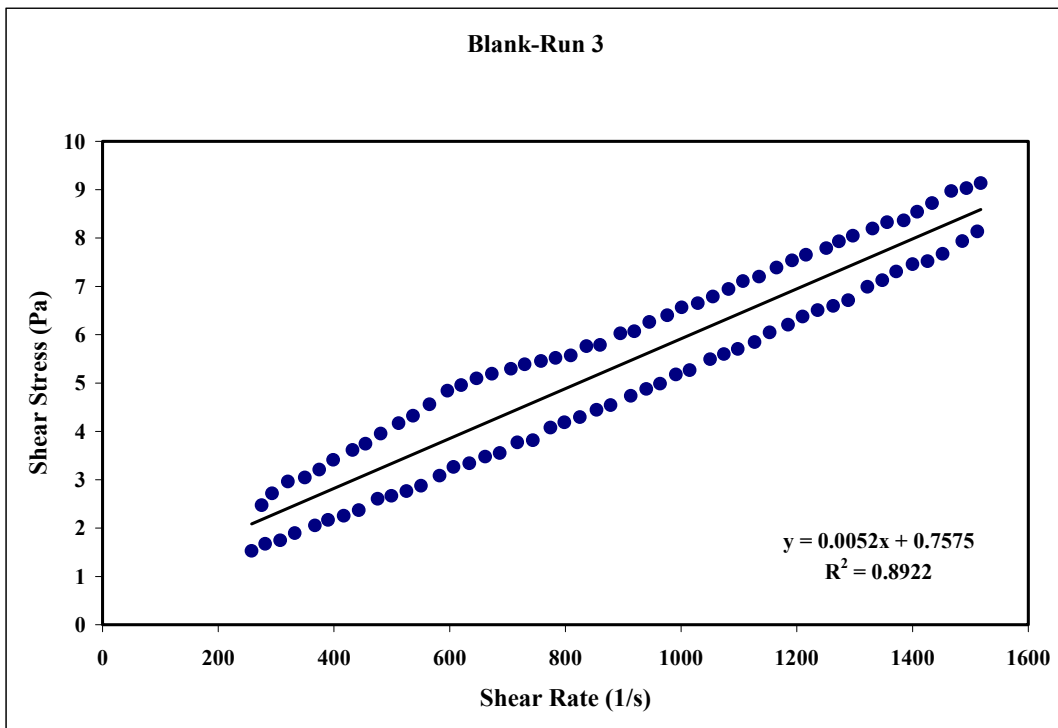


Figure 3. Blank at 16 wt % Run 3

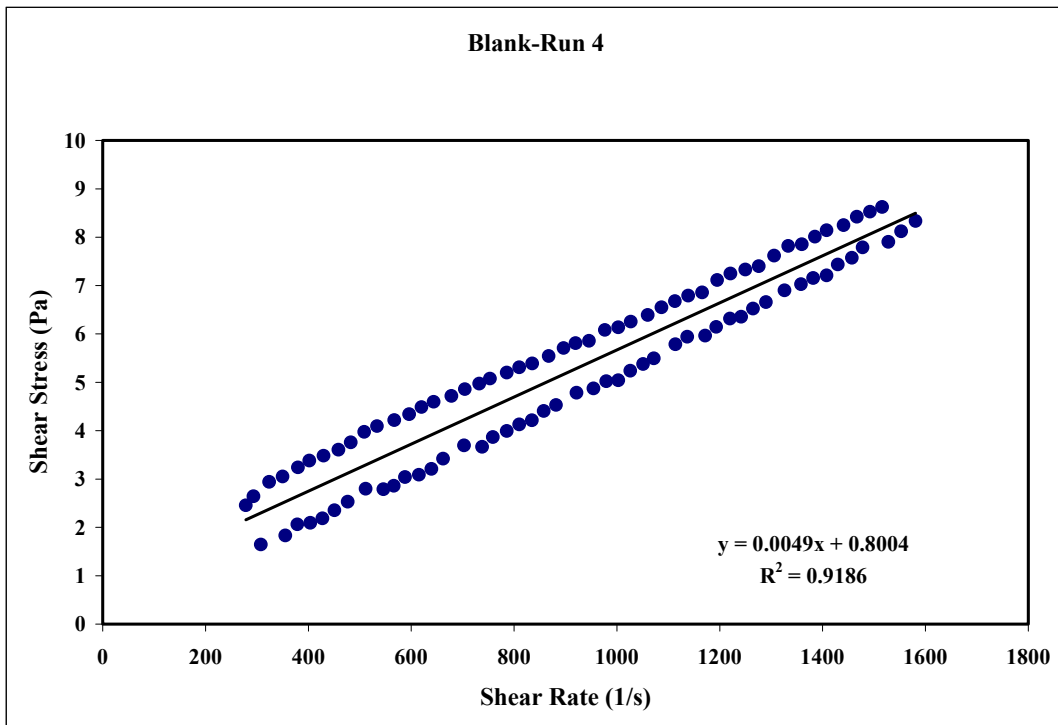


Figure 4. Blank at 16 wt % Run 4

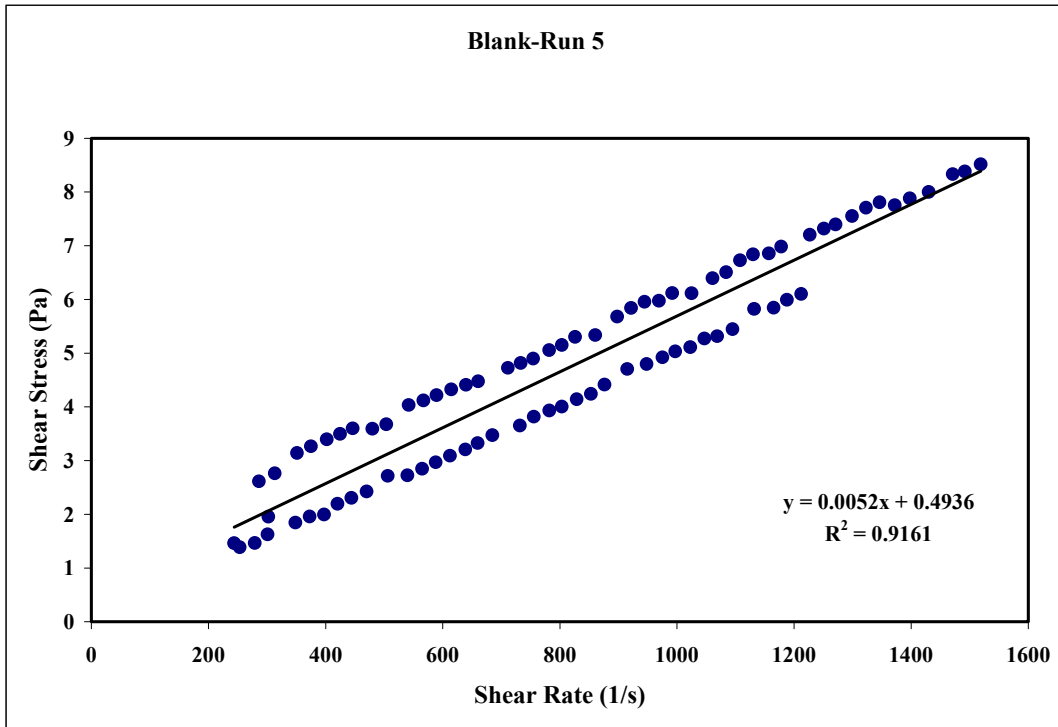


Figure 5. Blank at 16 wt % Run 5

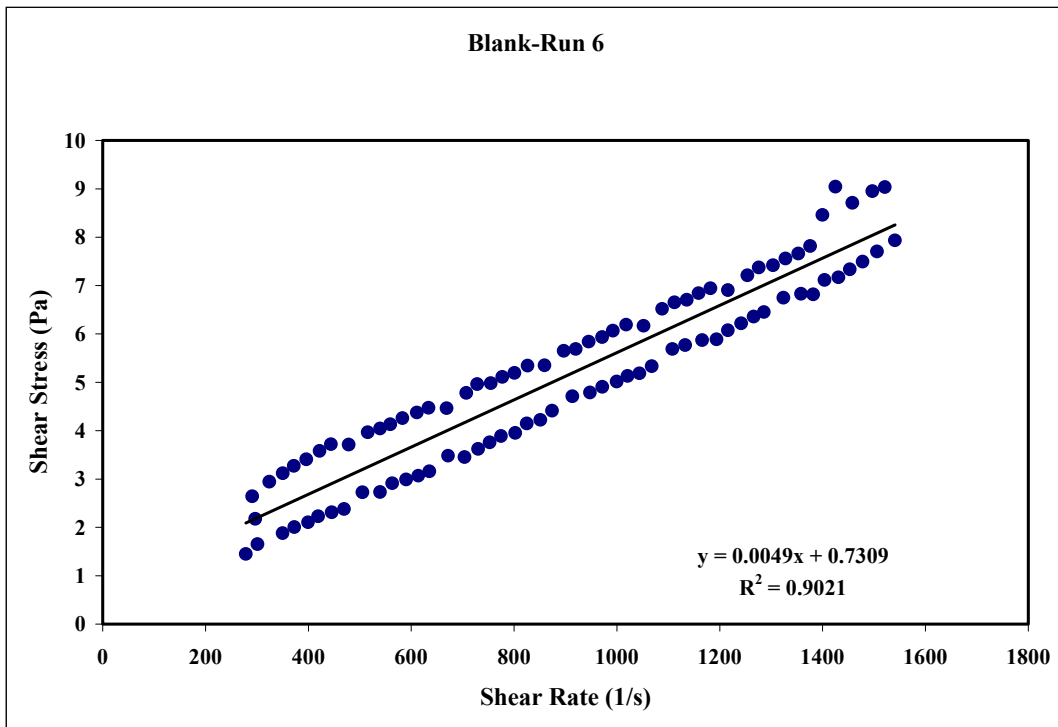


Figure 6. Blank at 16 wt % Run 6

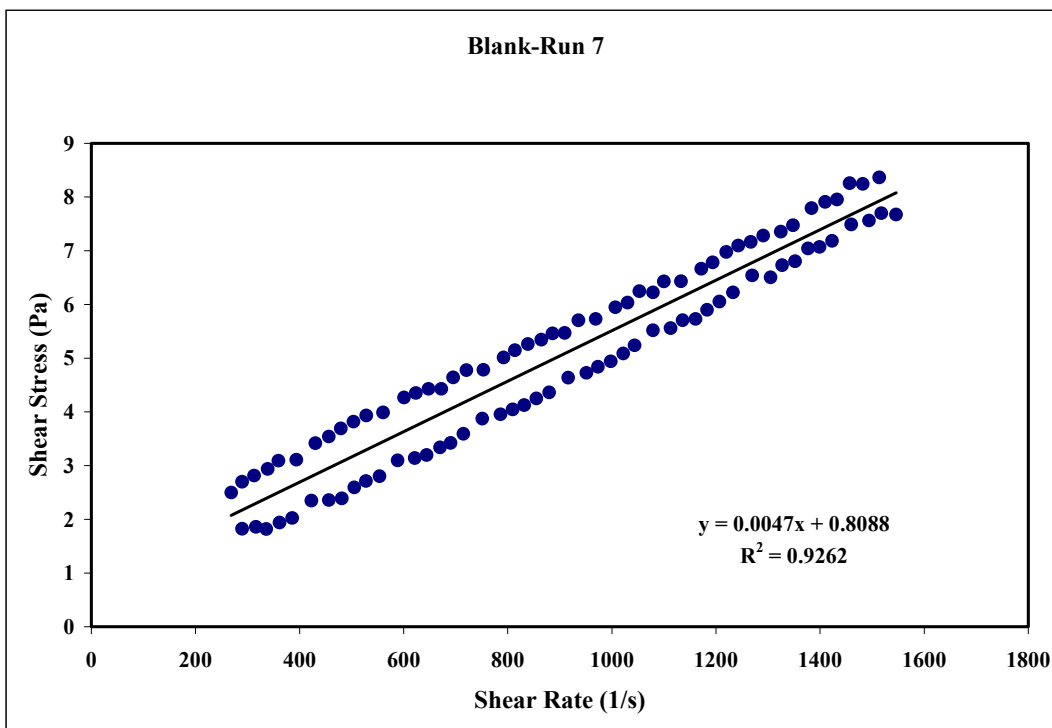


Figure 7. Blank at 16 wt % Run 7

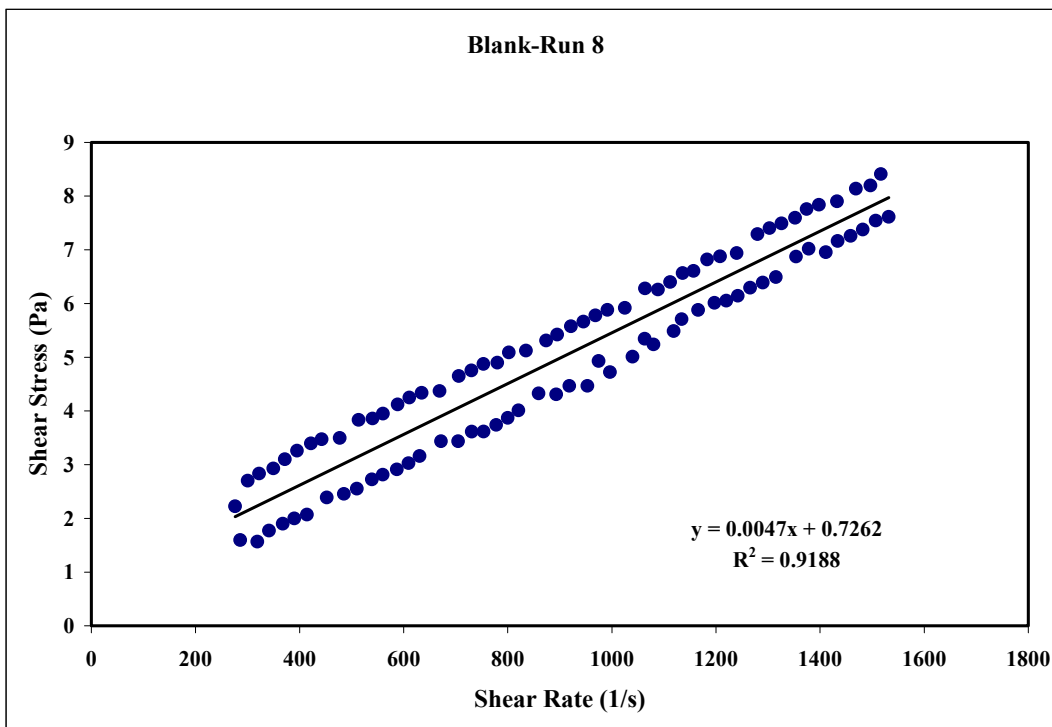


Figure 8. Blank at 16 wt % Run 8

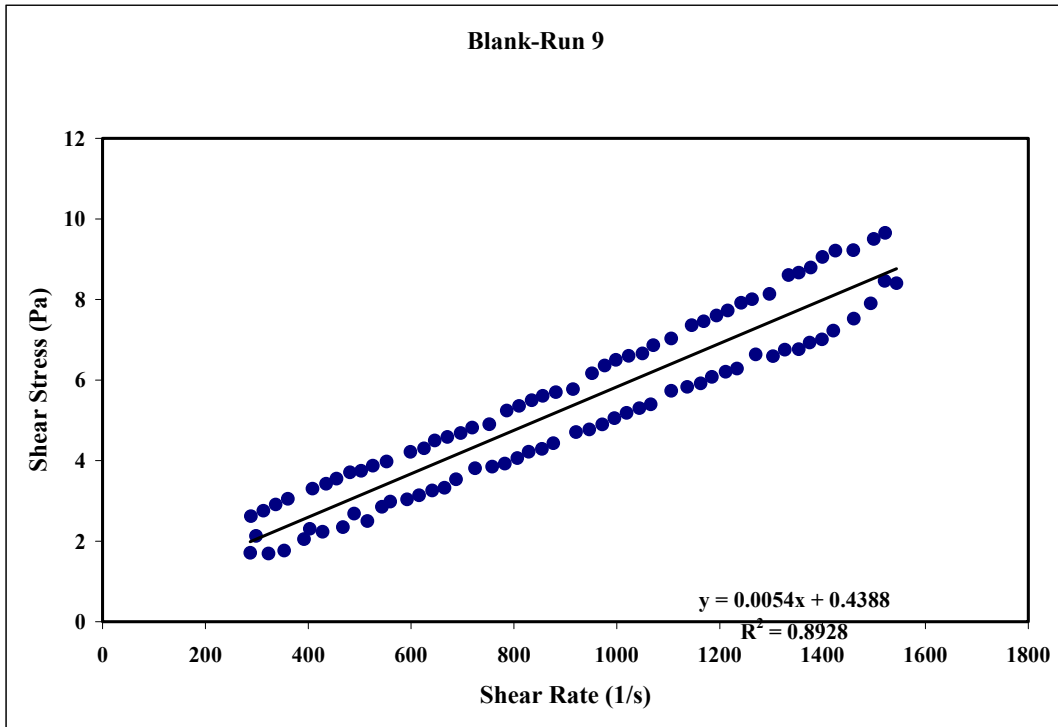


Figure 9. Blank at 16 wt % Run 9

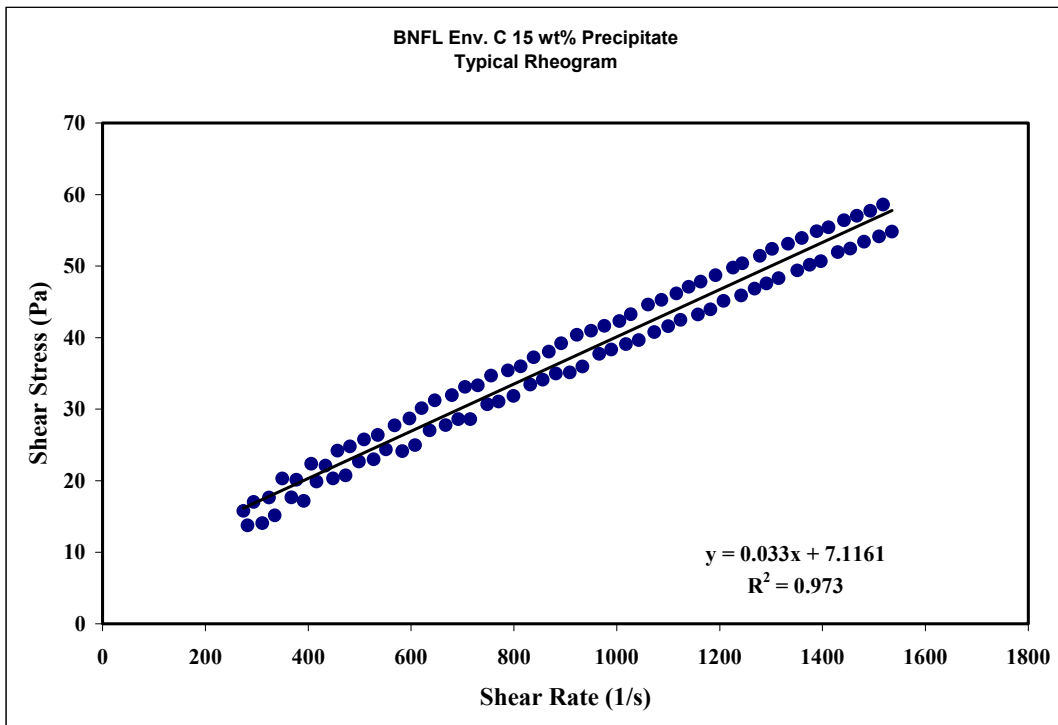


Figure 10. 10 °C at 16 wt % Run 1

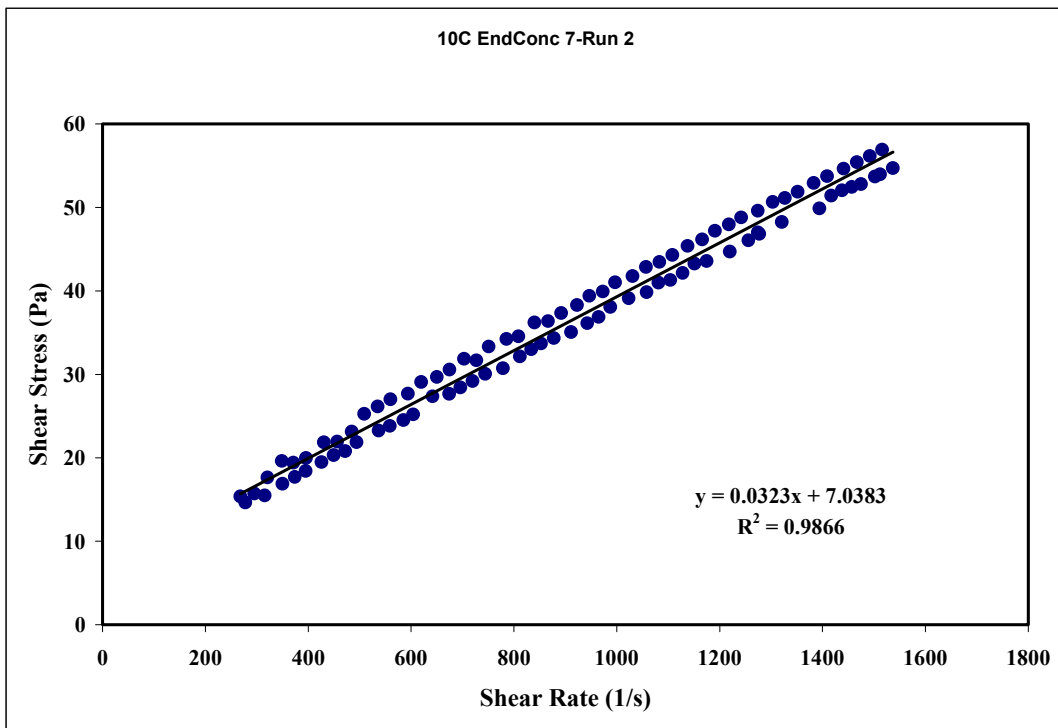


Figure 11. 10 °C at 16 wt % Run 2

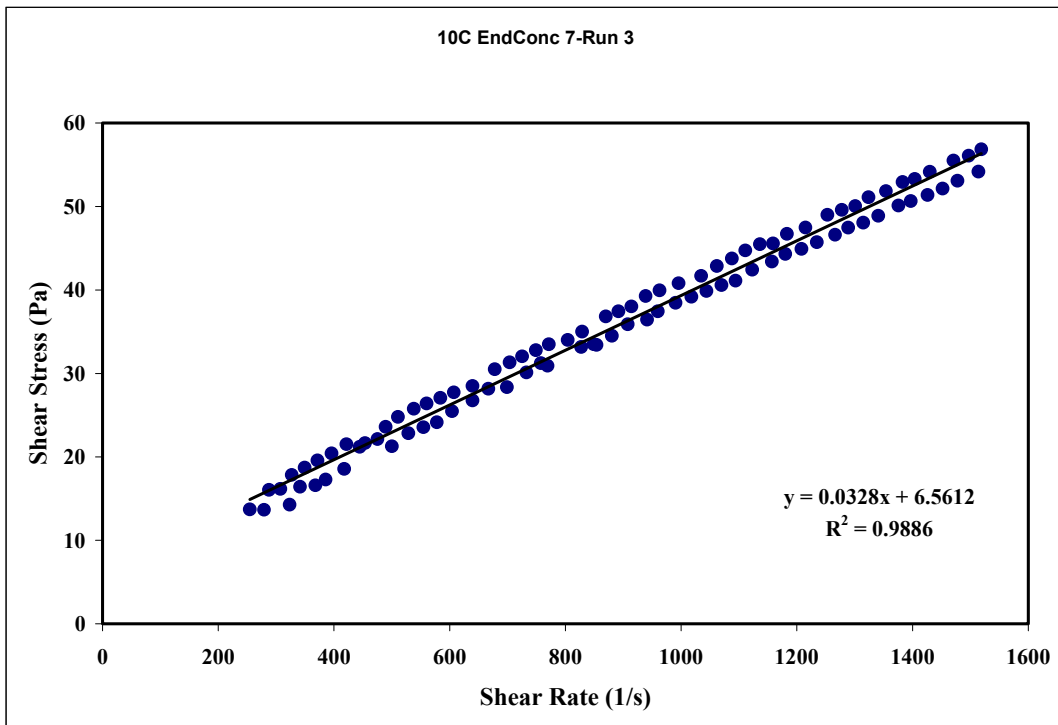


Figure 12. 10 °C at 16 wt % Run 3

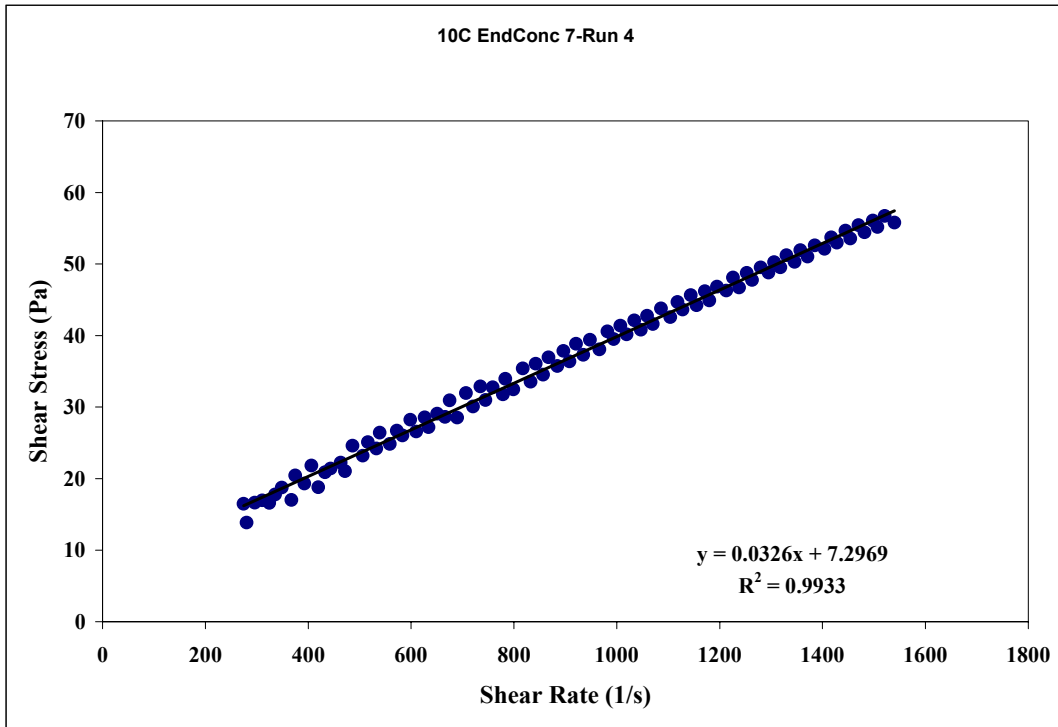


Figure 13. 10 °C at 16 wt % Run 4

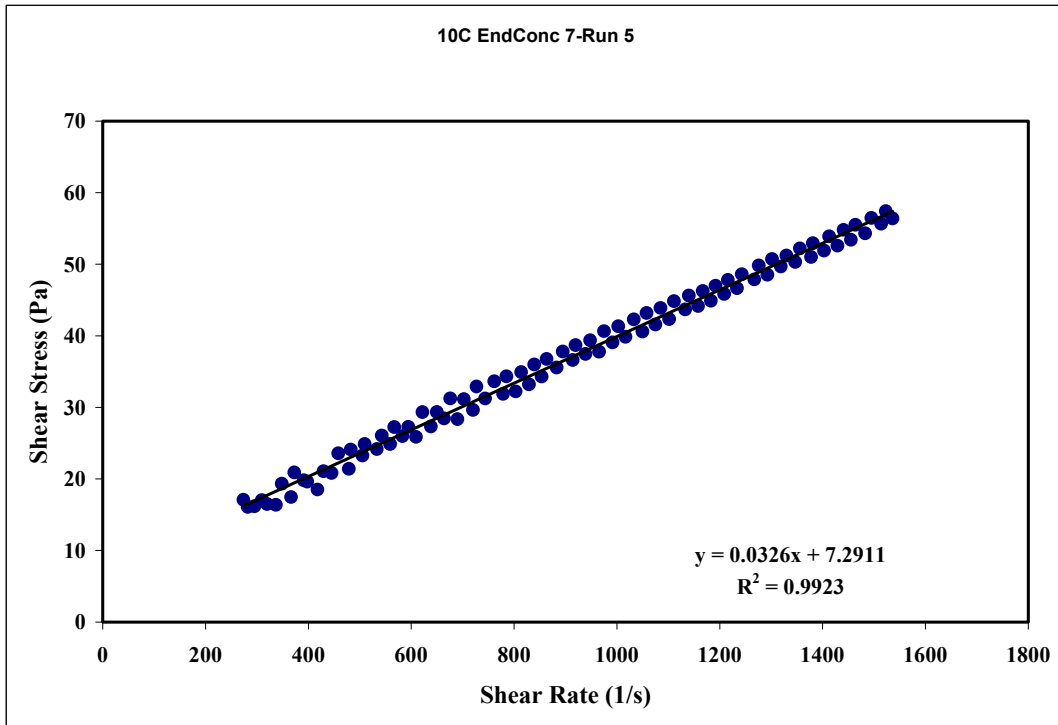


Figure 14. 10 °C at 16 wt % Run 5

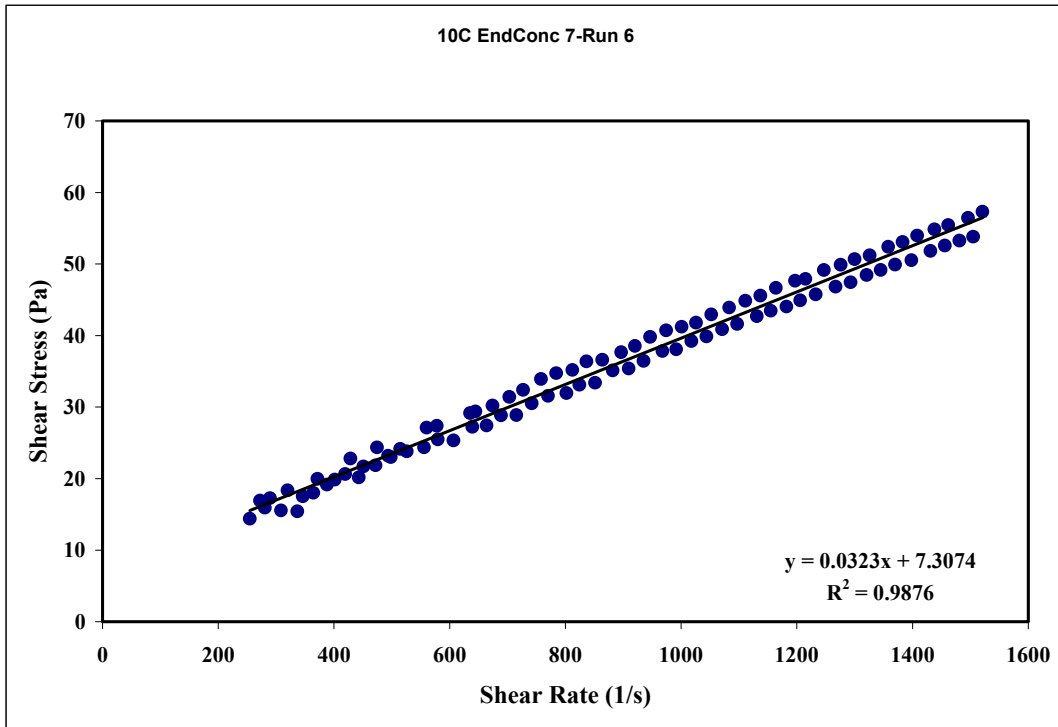


Figure 15. 10 °C at 16 wt % Run 6

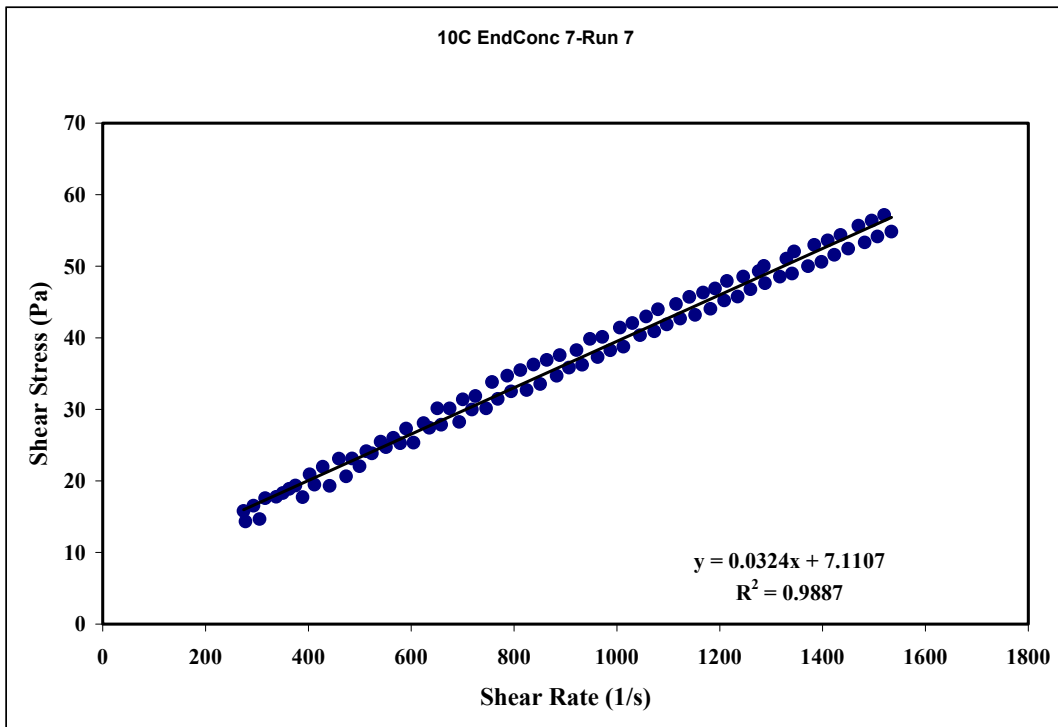


Figure 16. 10 °C at 16 wt % Run 7

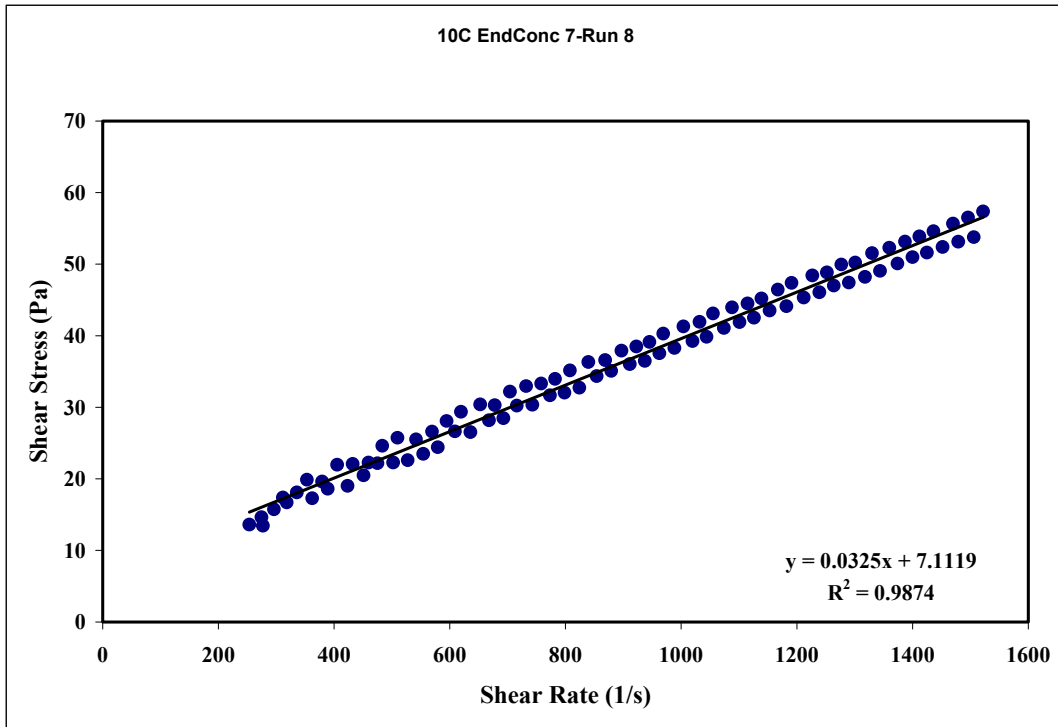


Figure 17. 10 °C at 16 wt % Run 8

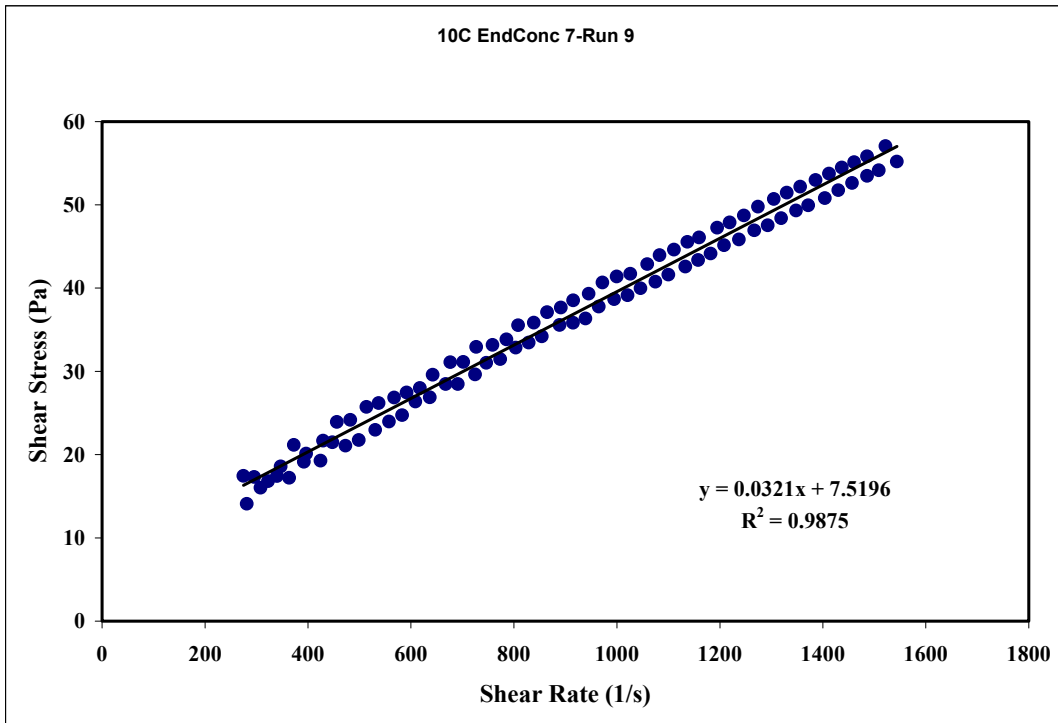


Figure 18. 10 °C at 16 wt % Run 9

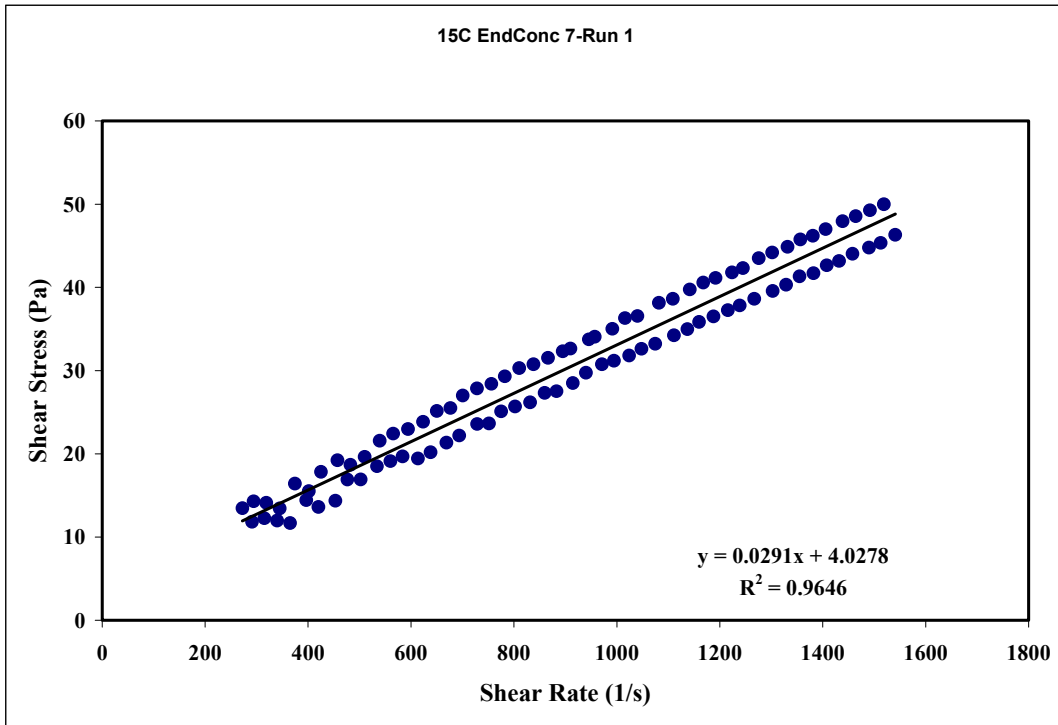


Figure 19. 15 °C at 16 wt % Run 1

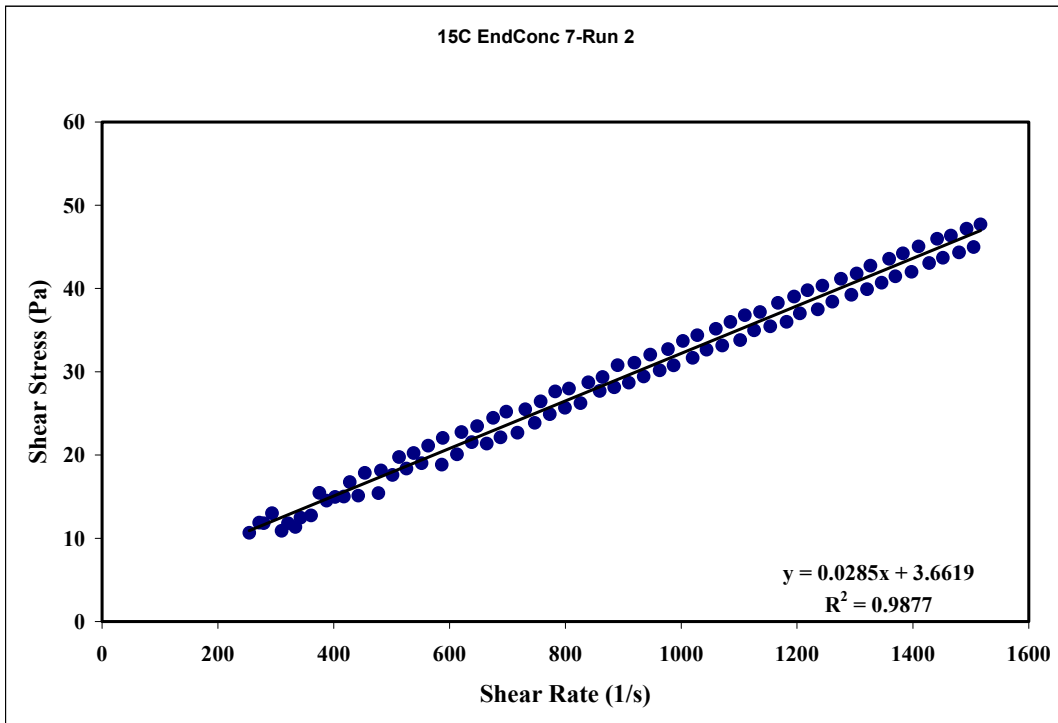


Figure 20. 15 °C at 16 wt % Run 2

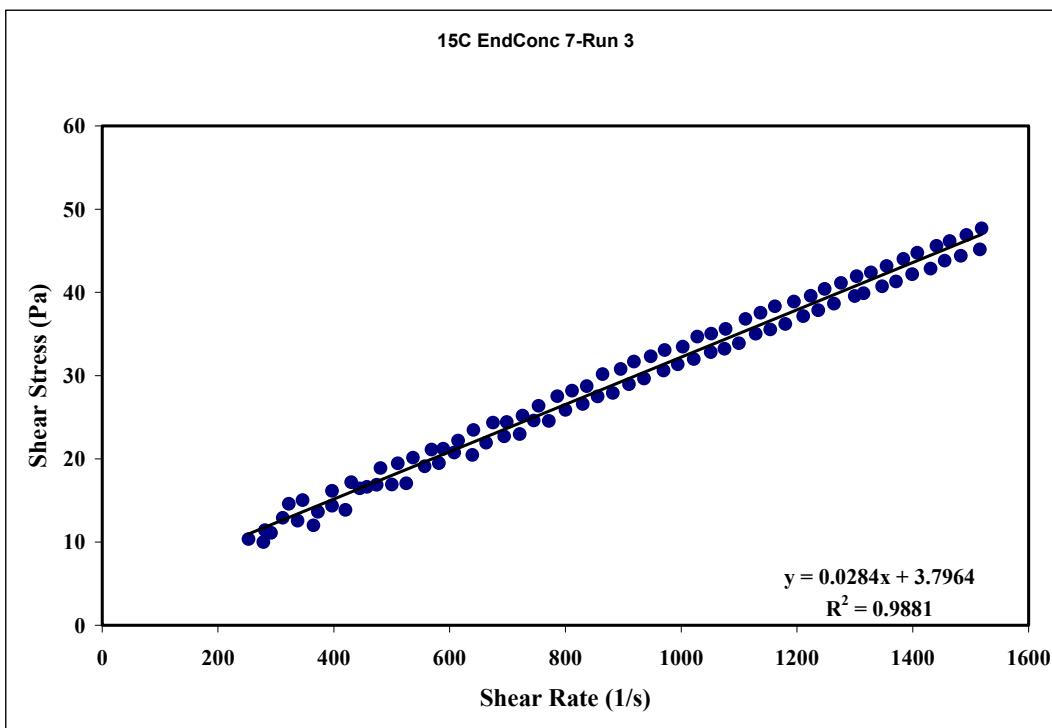


Figure 21. 15 °C at 16 wt % Run 3

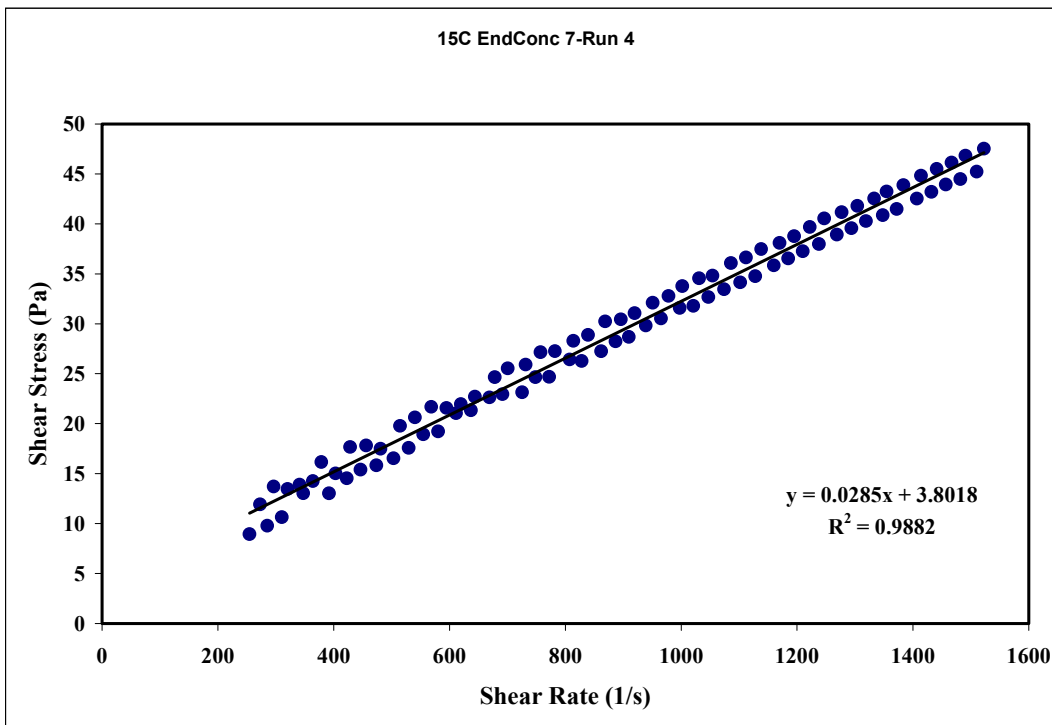


Figure 22. 15 °C at 16 wt % Run 4

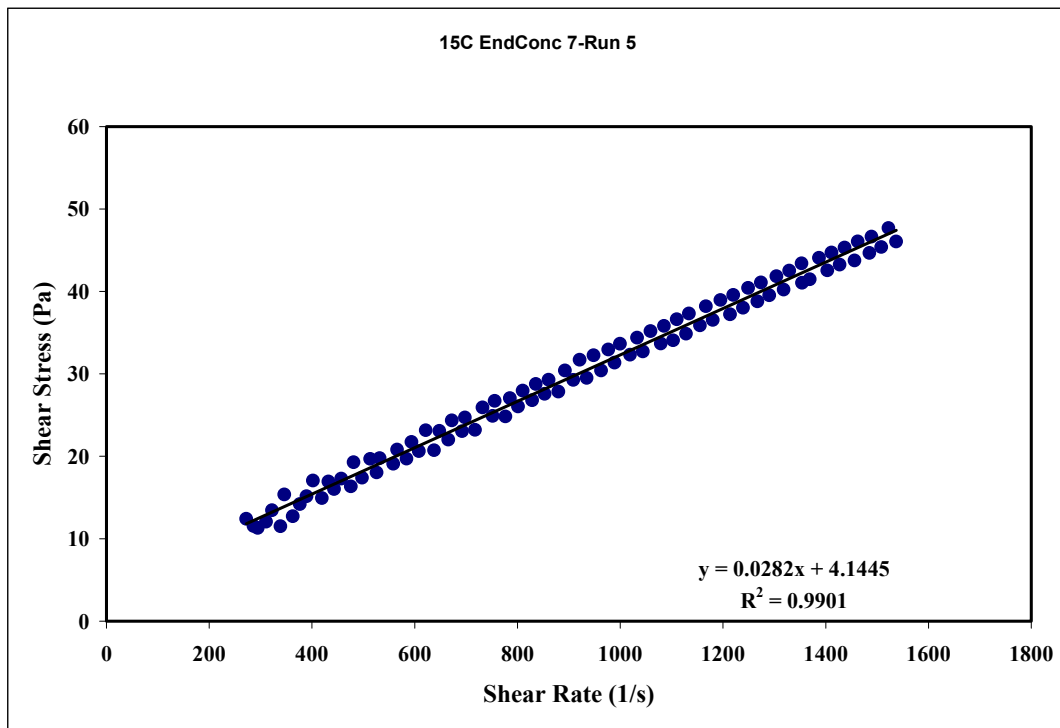


Figure 23. 15 °C at 16 wt % Run 5

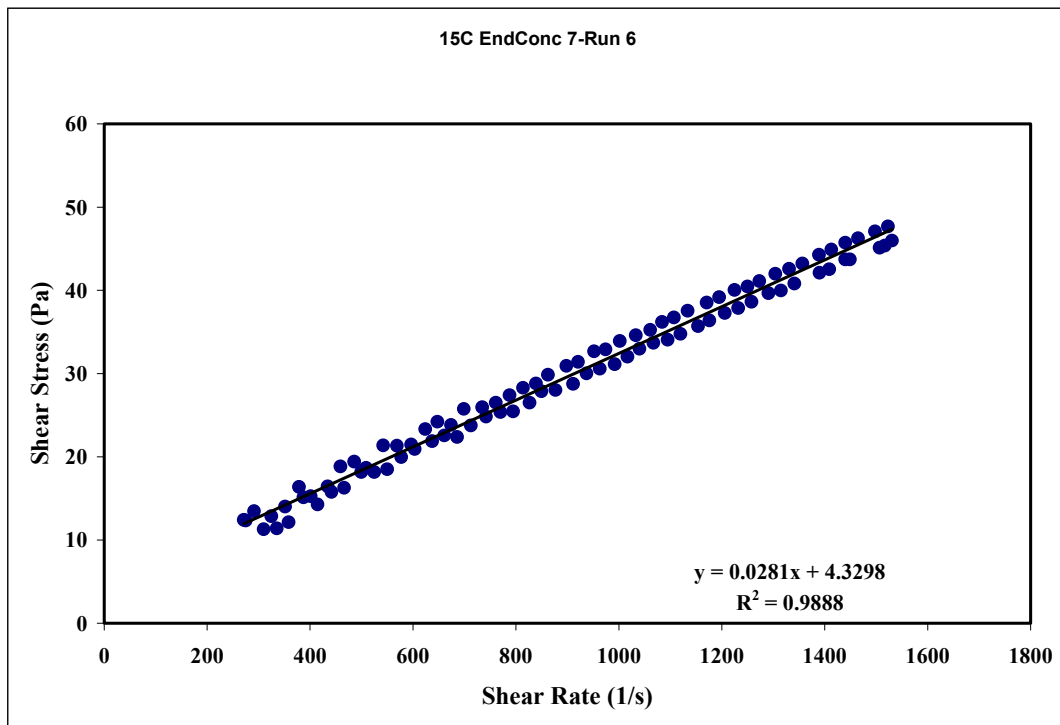


Figure 24. 15 °C at 16 wt % Run 6

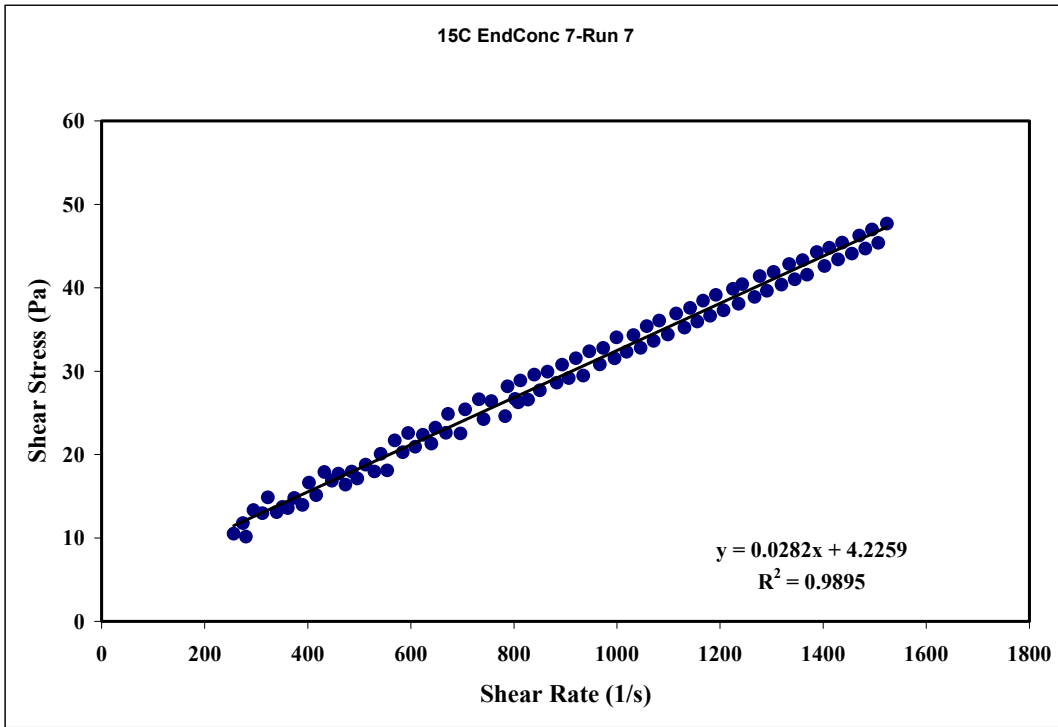


Figure 25. 15 °C at 16 wt % Run 7

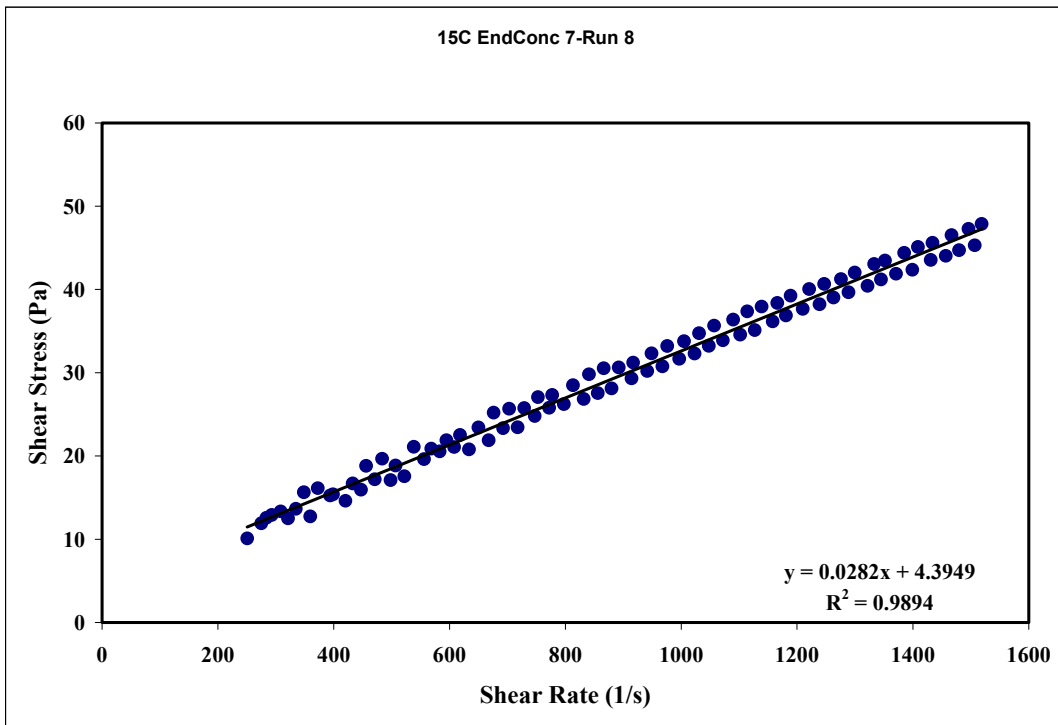


Figure 26. 15 °C at 16 wt % Run 8

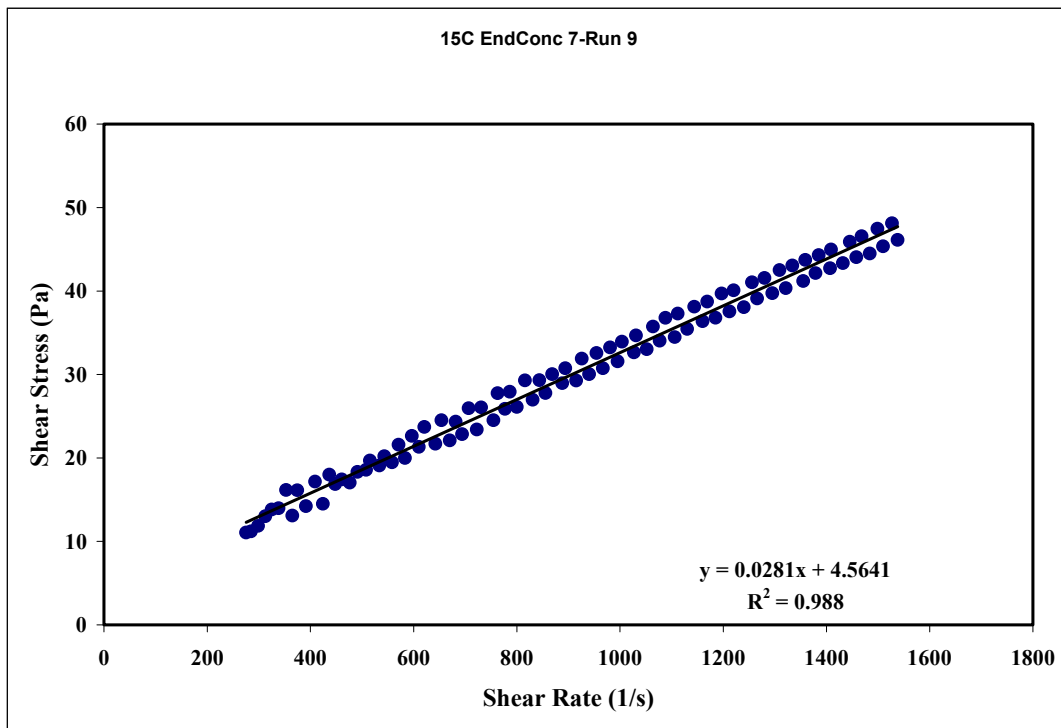


Figure 27. 15 °C at 16 wt % Run 9

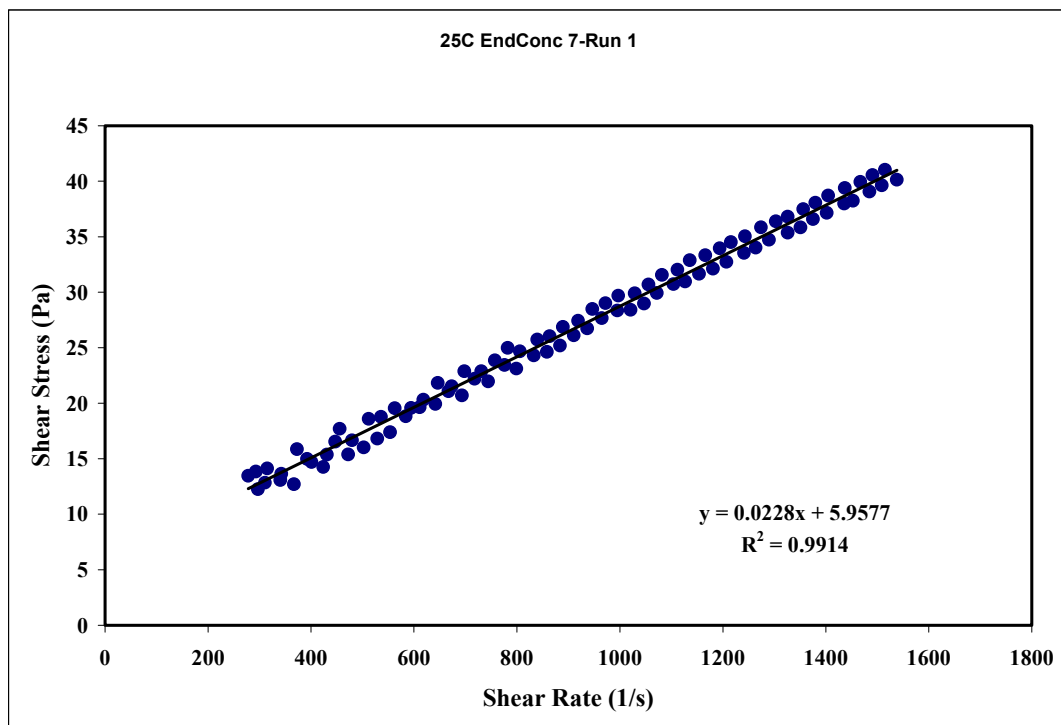


Figure 28. 25 °C at 16 wt % Run 1

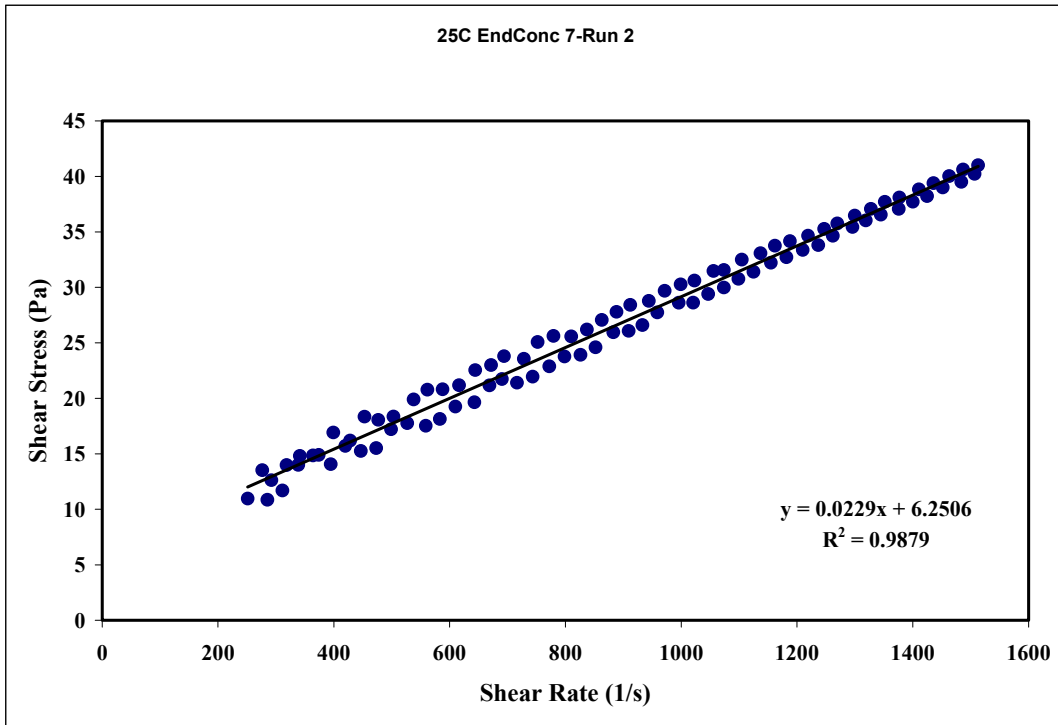


Figure 29. 25 °C at 16 wt % Run 2

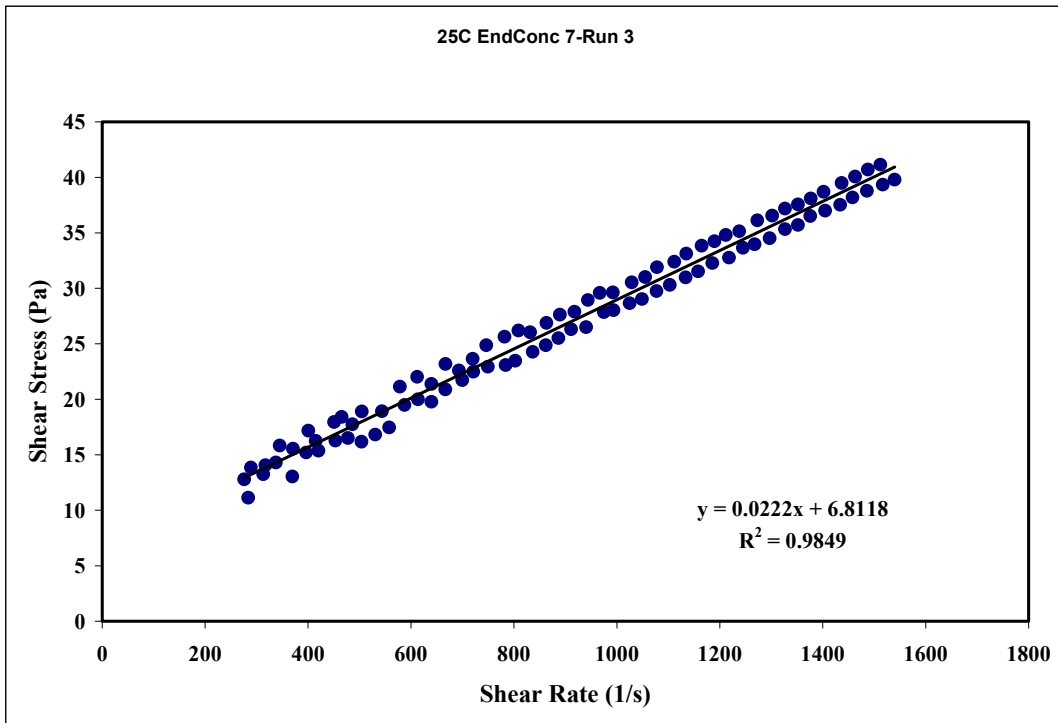


Figure 30. 25 °C at 16 wt % Run 3

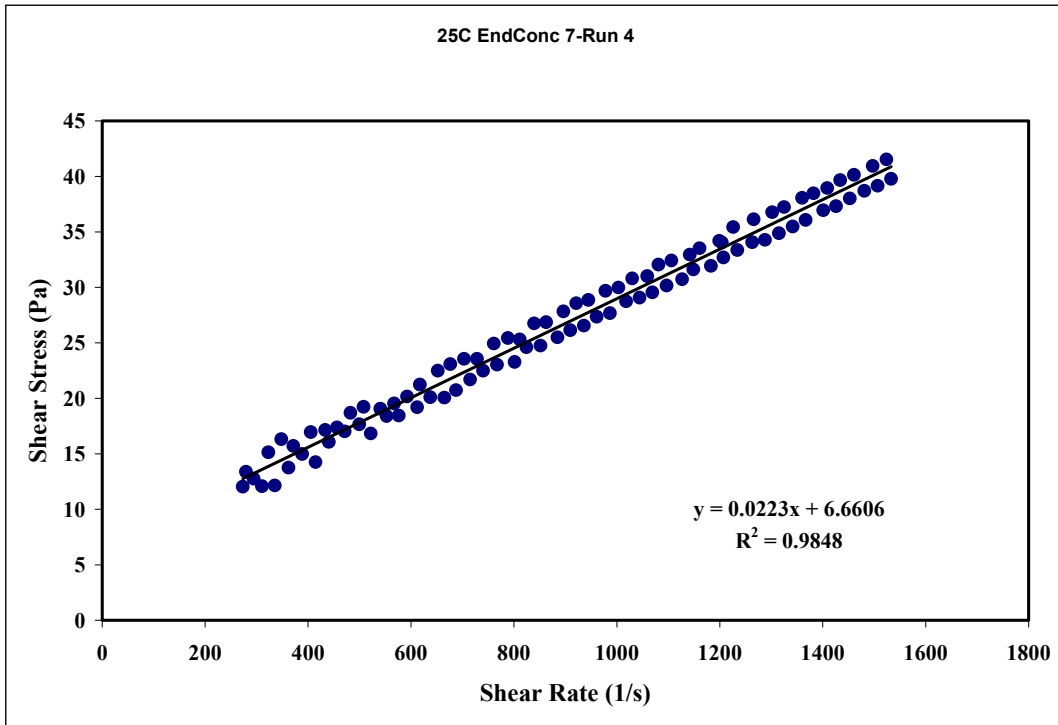


Figure 31. 25 °C at 16 wt % Run 4

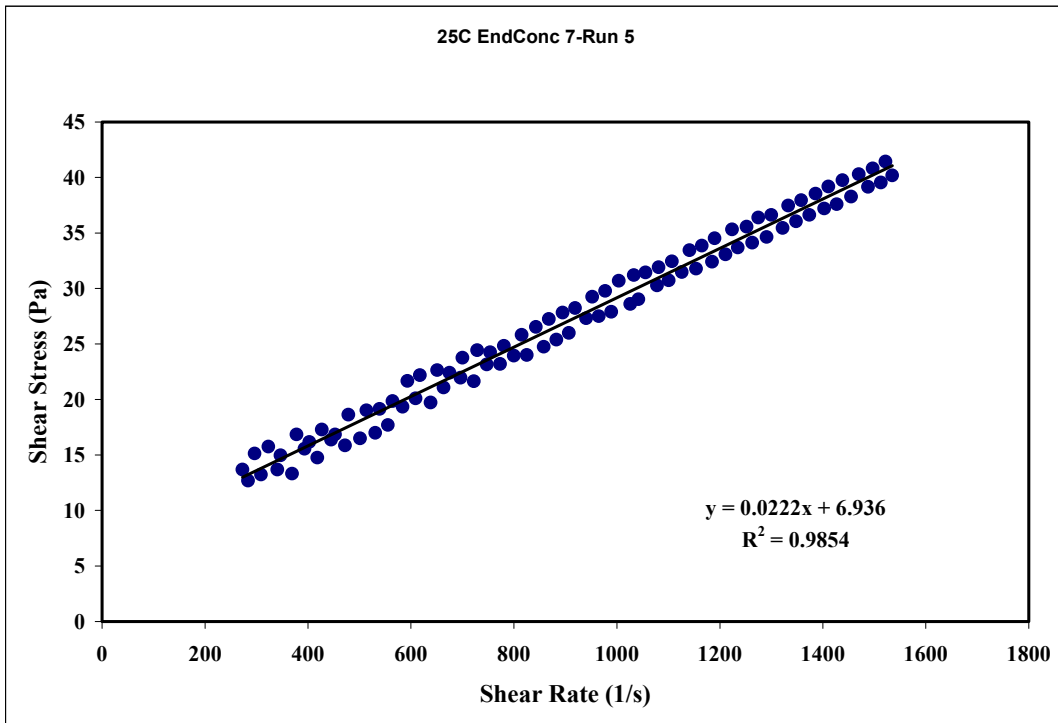


Figure 32. 25 °C at 16 wt % Run 5

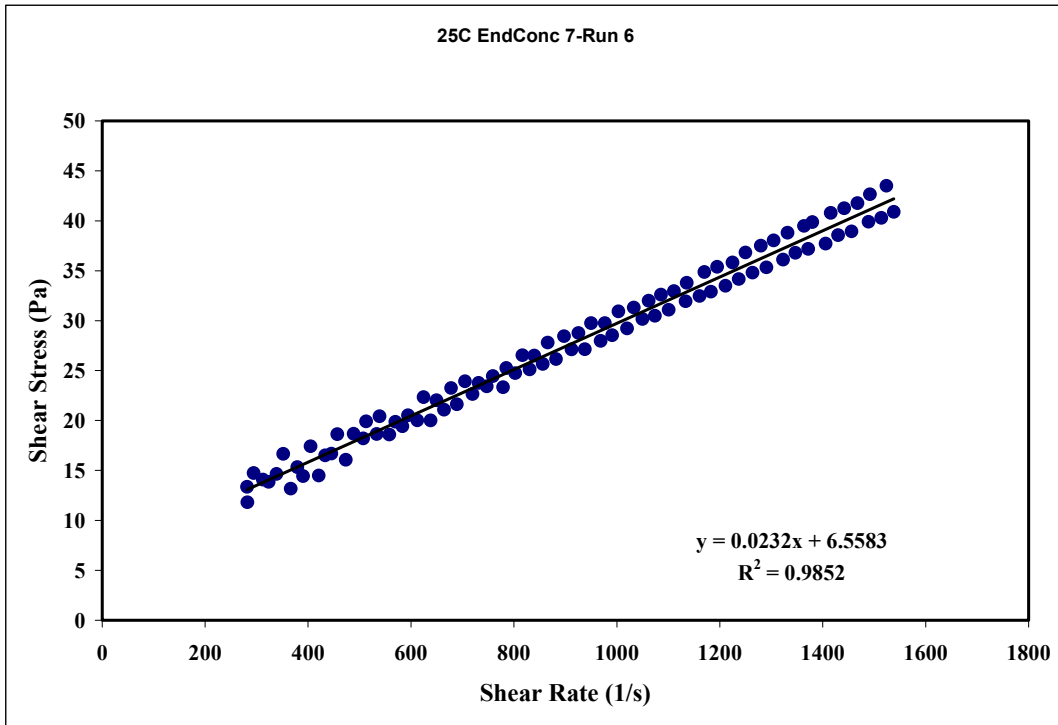


Figure 33. 25 °C at 16 wt % Run 6

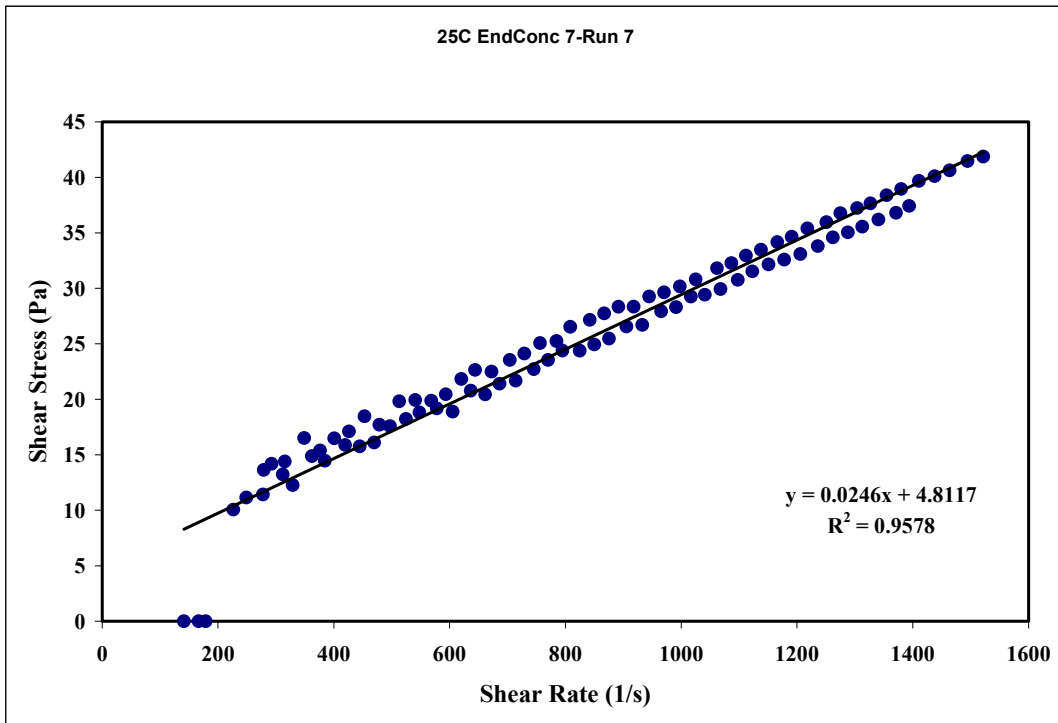


Figure 34. 25 °C at 16 wt % Run 7

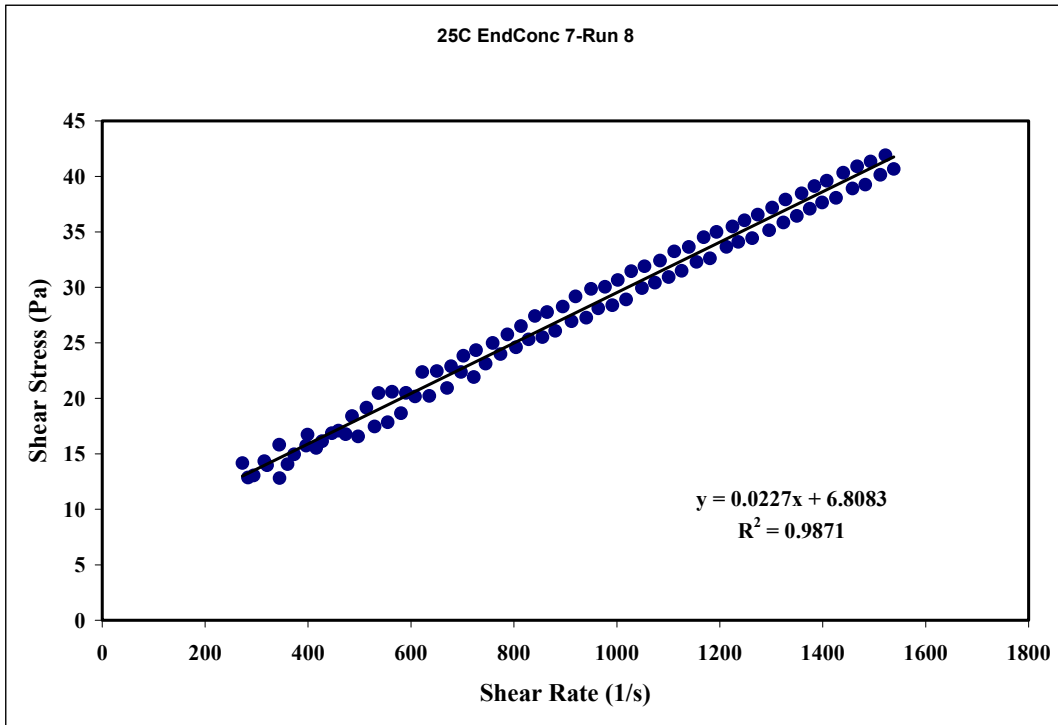


Figure 35. 25 °C at 16 wt % Run 8

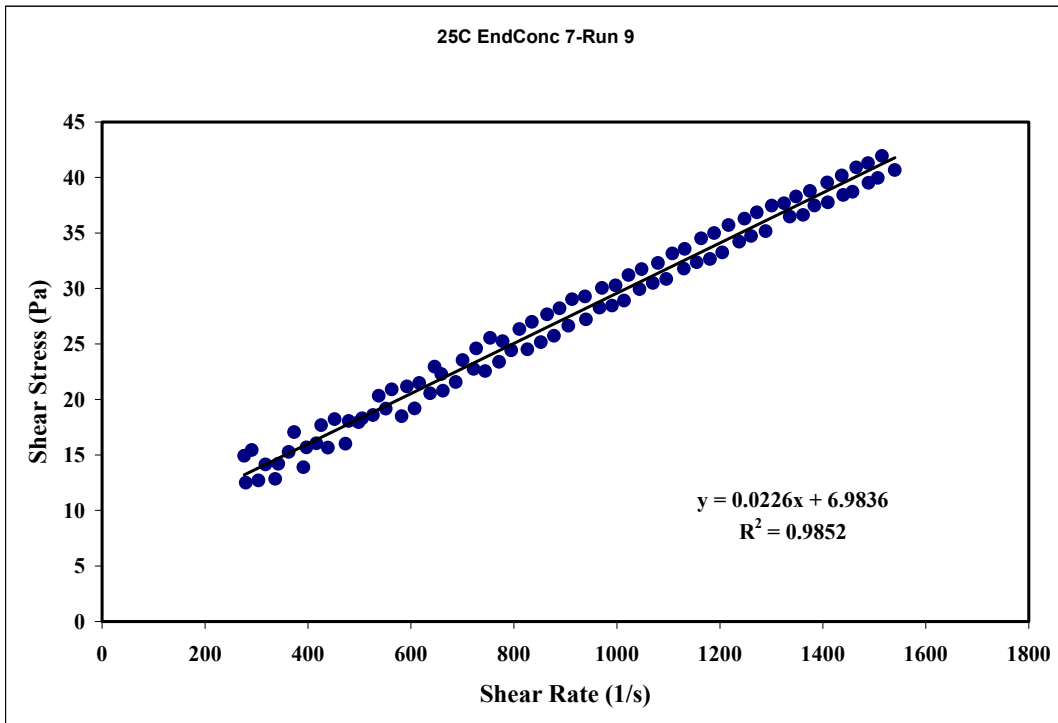


Figure 36. 25 °C at 16 wt % Run 9

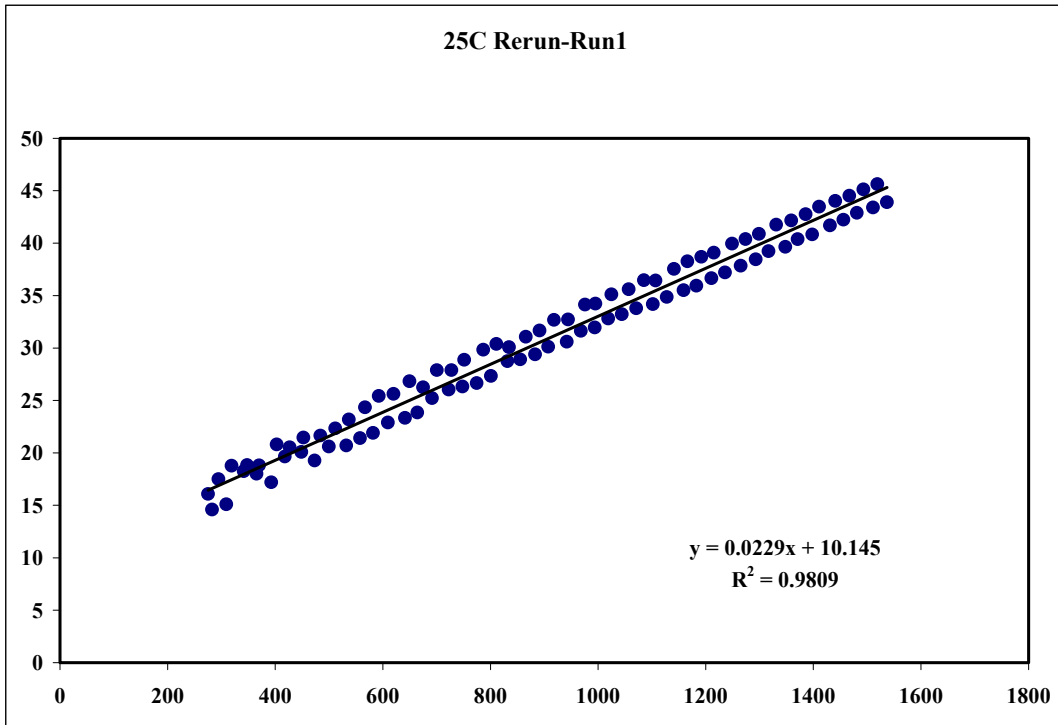


Figure 37. 25 °C Repeat at 16 wt % Run 1

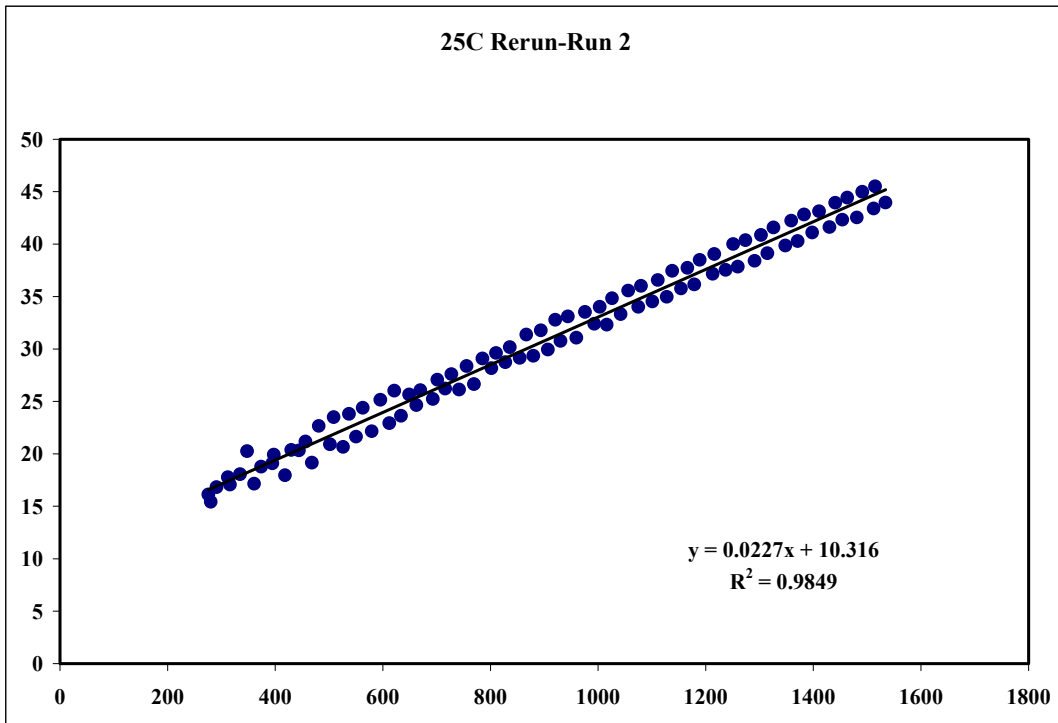


Figure 38. 25 °C Repeat at 16 wt % Run 2

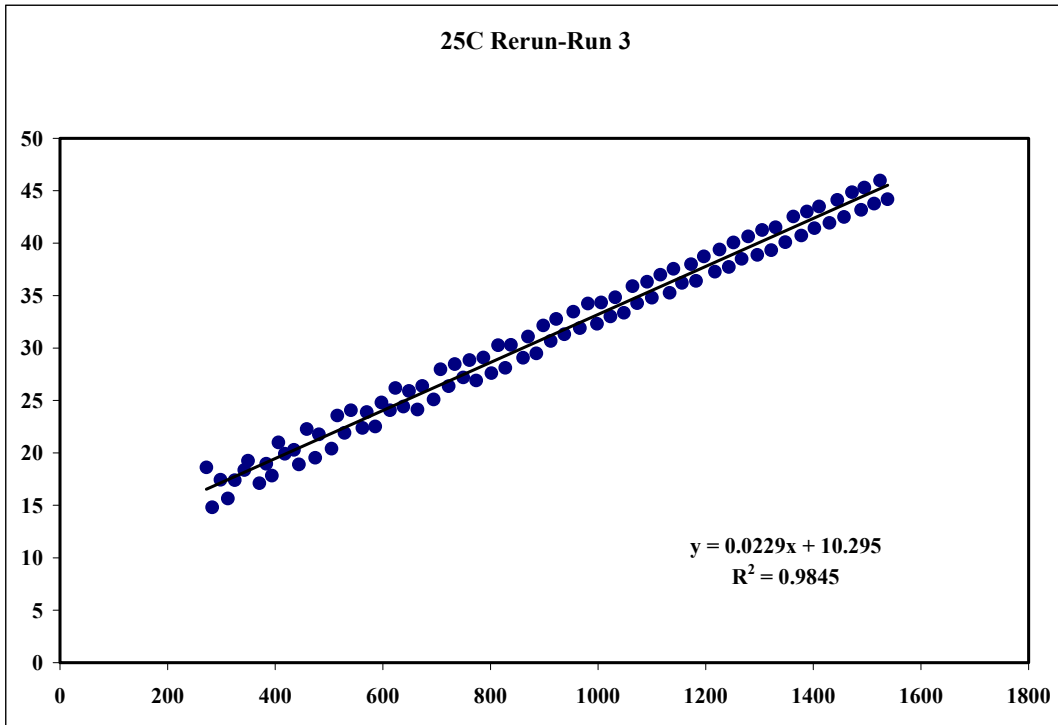


Figure 39. 25 °C Repeat at 16 wt % Run 3

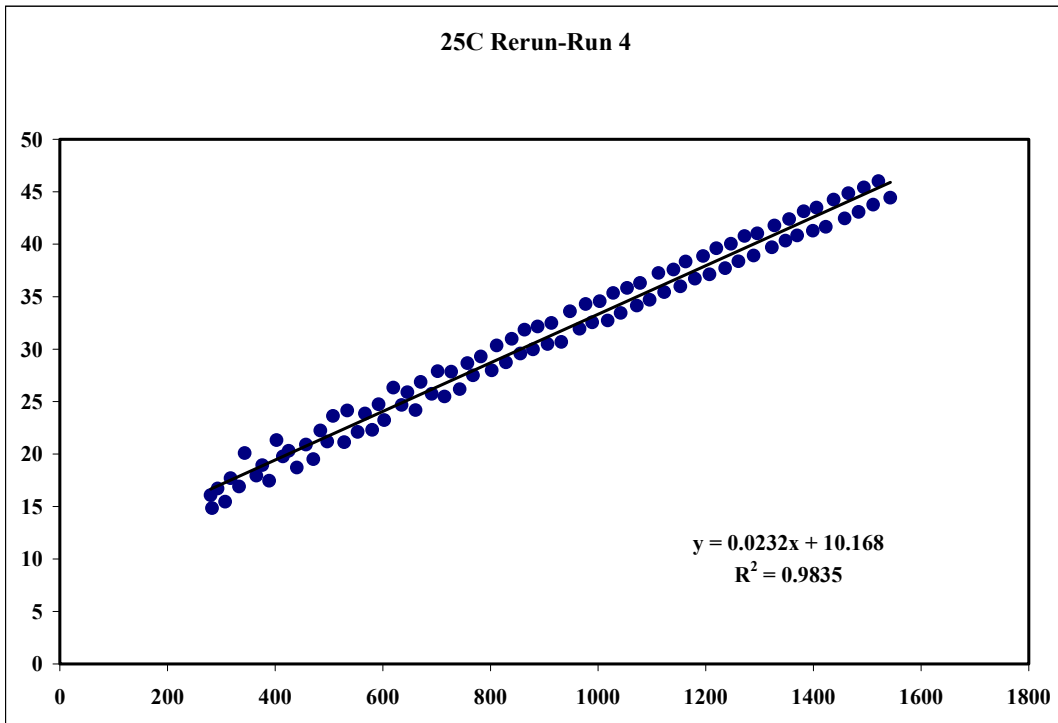


Figure 40. 25 °C Repeat at 16 wt % Run 4

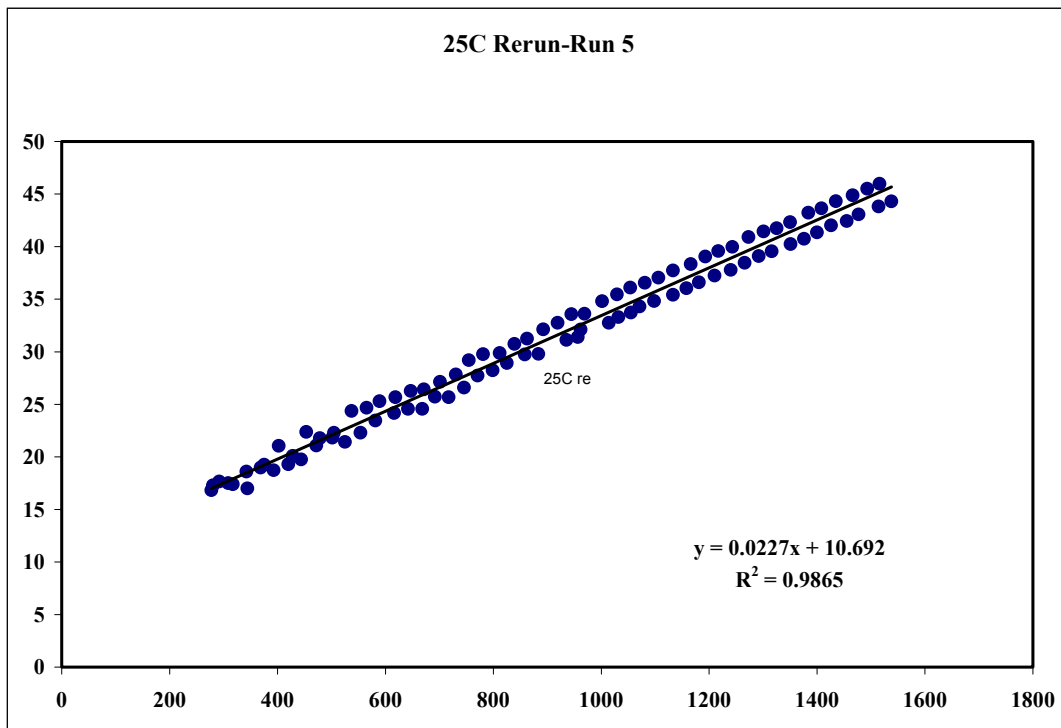


Figure 41. 25 °C Repeat at 16 wt % Run 5

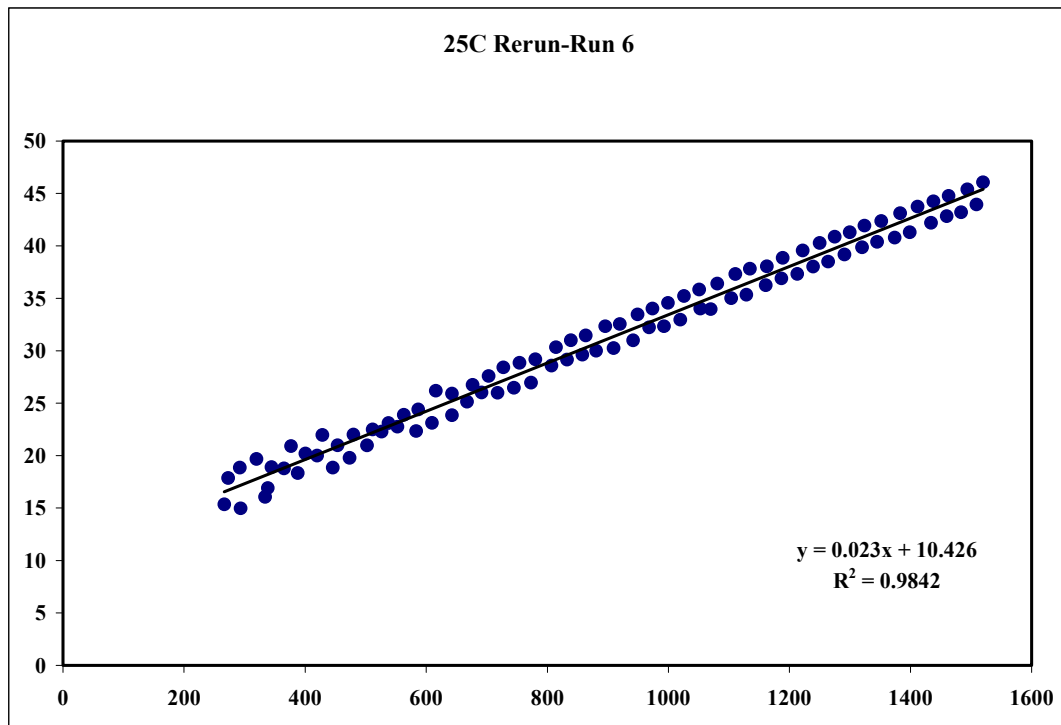


Figure 42. 25 °C Repeat at 16 wt % Run 6

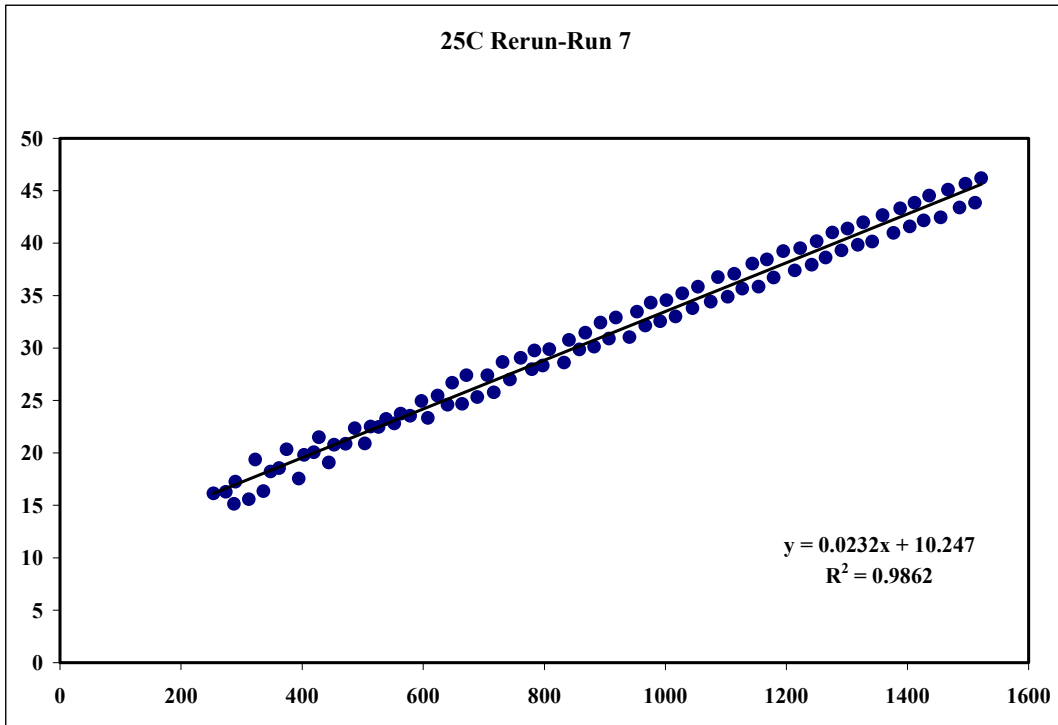


Figure 43. 25 °C Repeat at 16 wt % Run 7

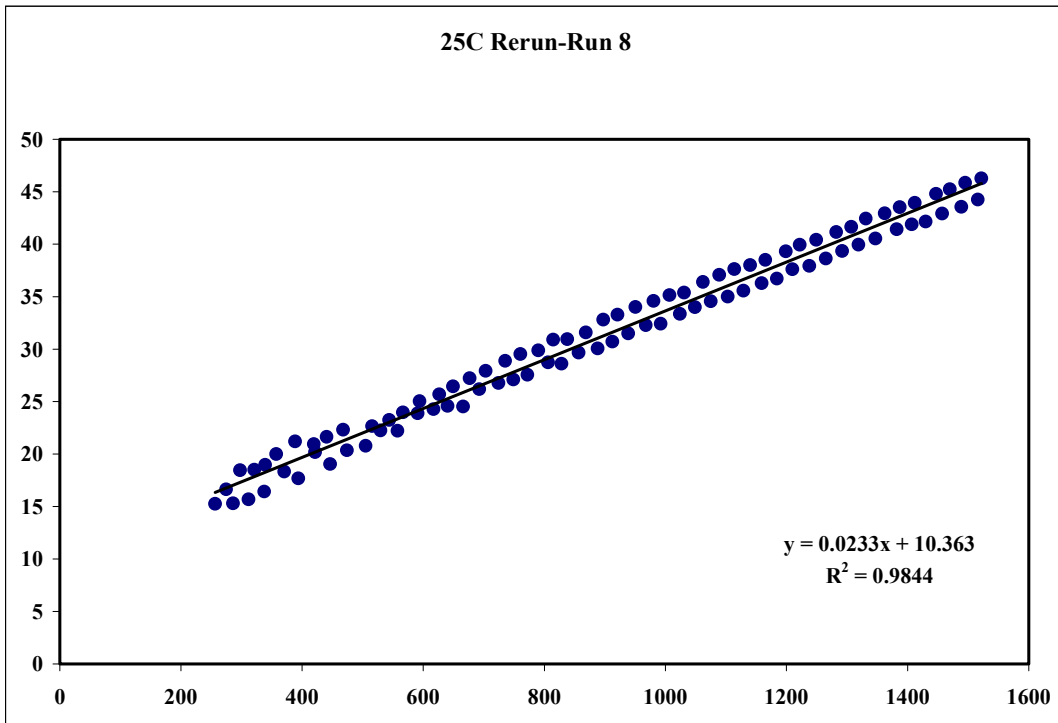


Figure 44. 25 °C Repeat at 16 wt % Run 8

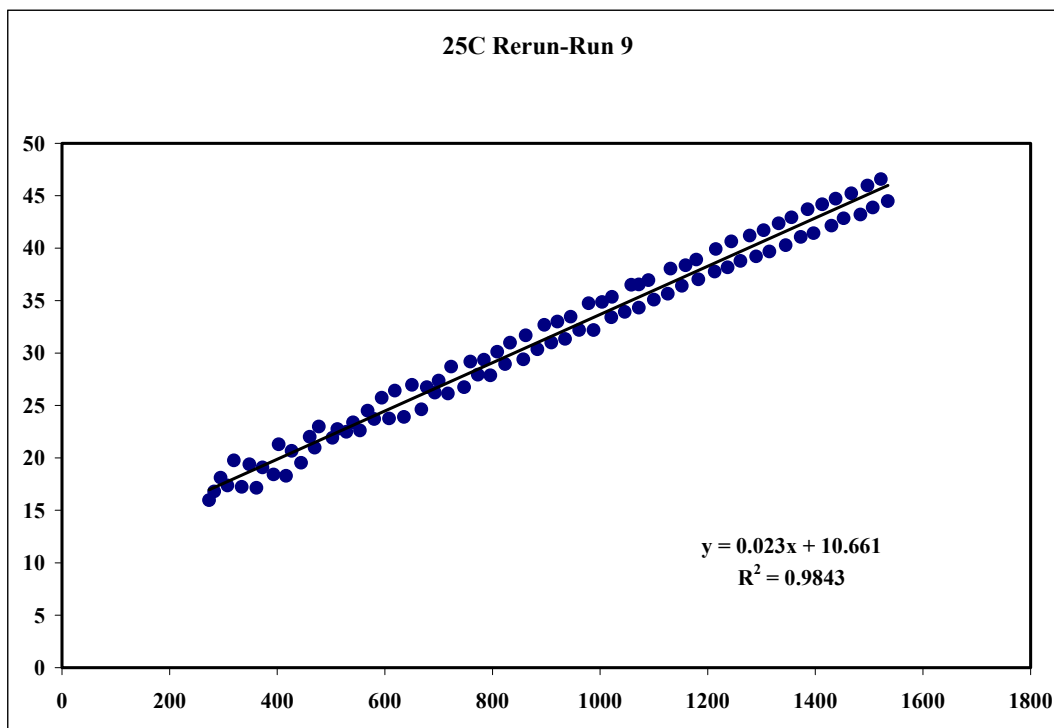


Figure 45. 25 °C Repeat at 16 wt % Run 9

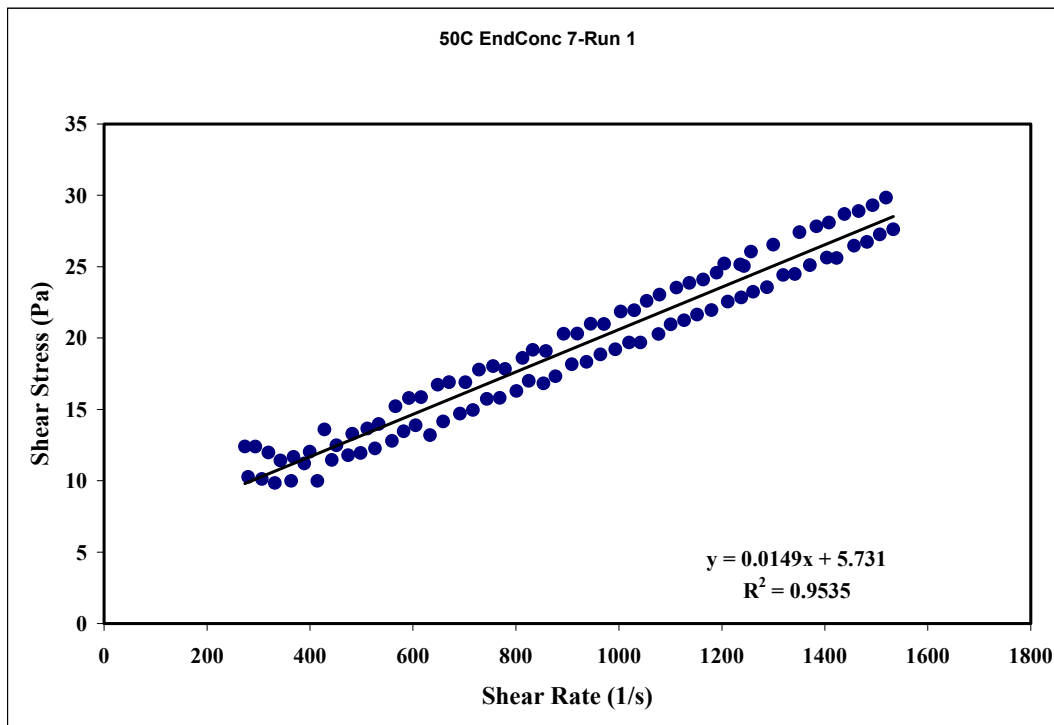


Figure 46. 50 °C at 16 wt % Run 1

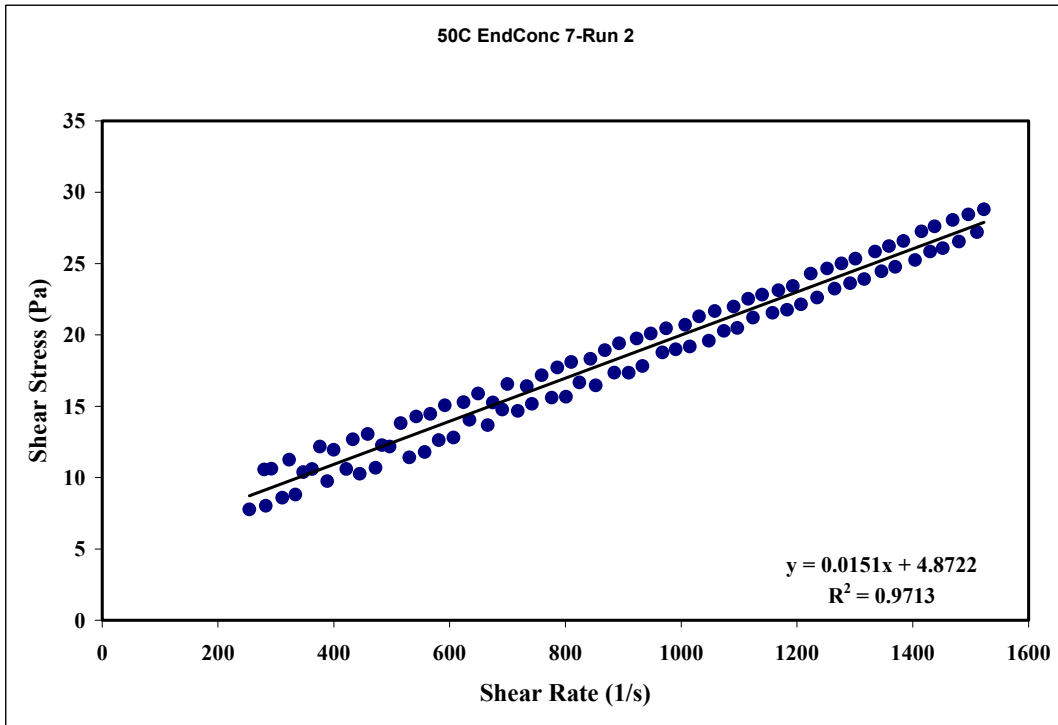


Figure 47. 50 °C at 16 wt % Run 2

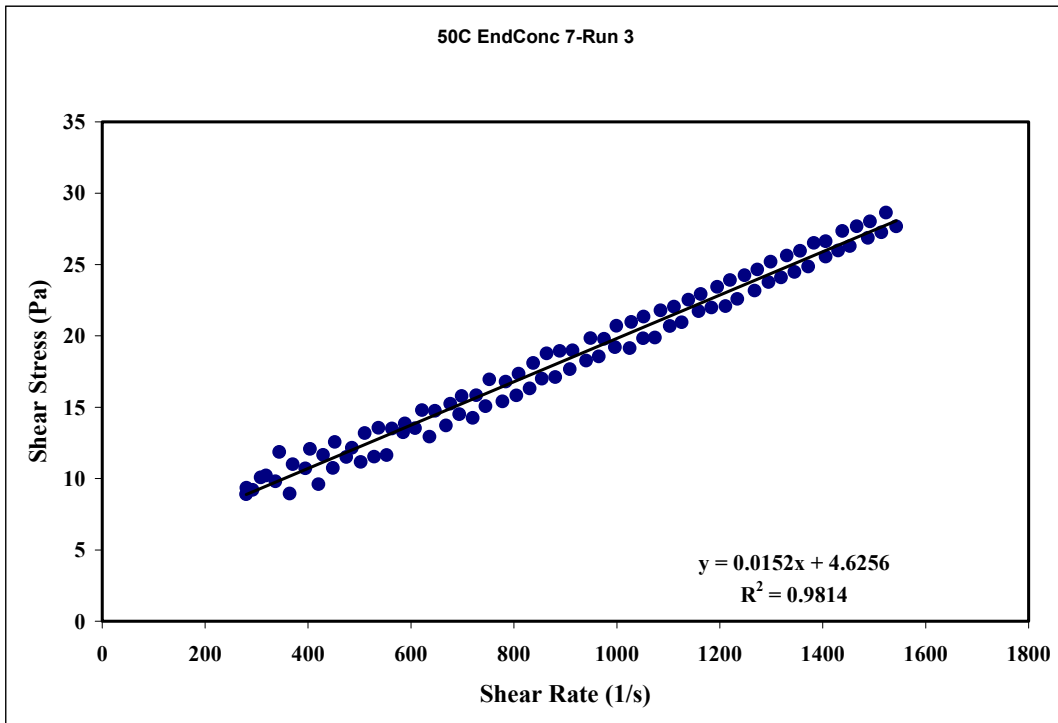


Figure 48. 50 °C at 16 wt % Run 3

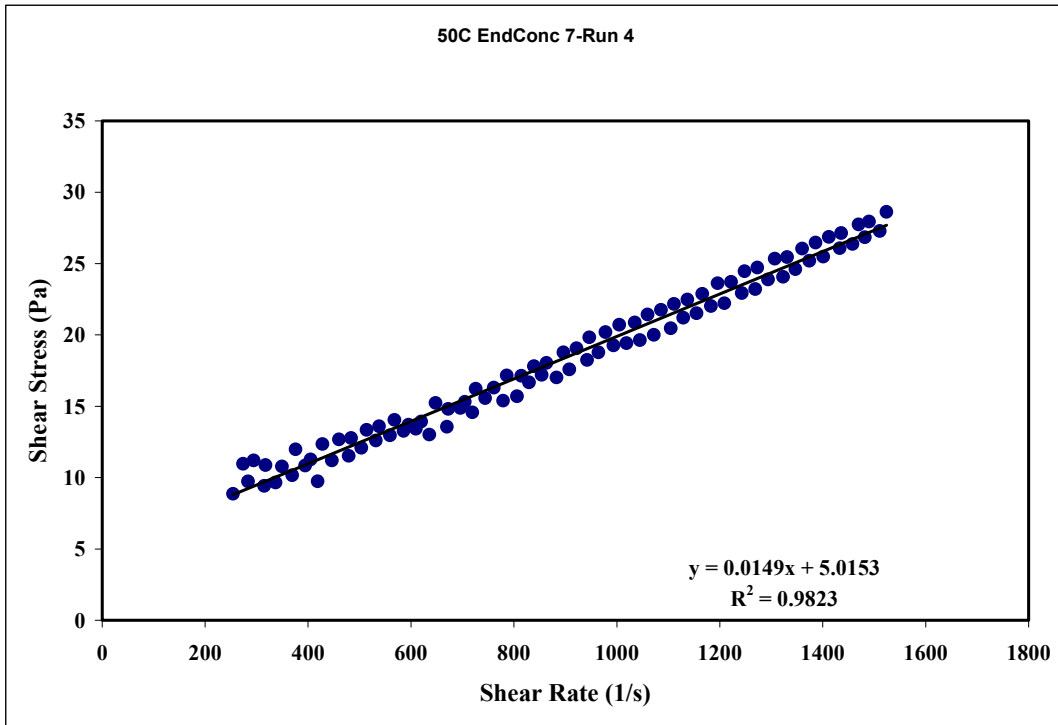


Figure 49. 50 °C at 16 wt % Run 4

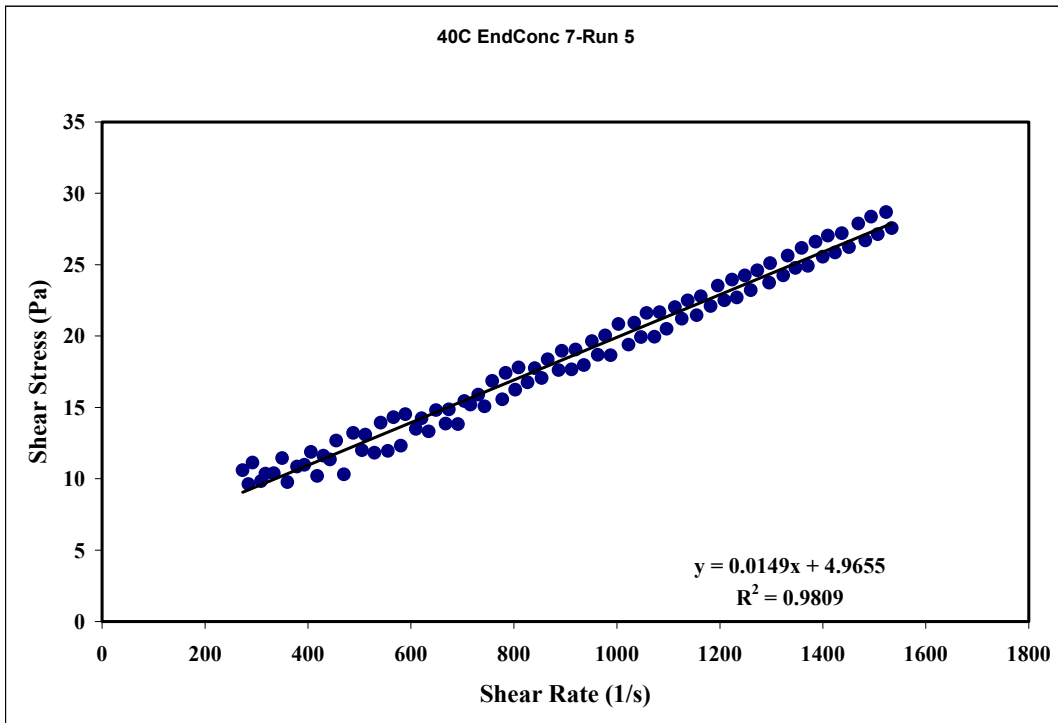


Figure 50. 50 °C at 16 wt % Run 5

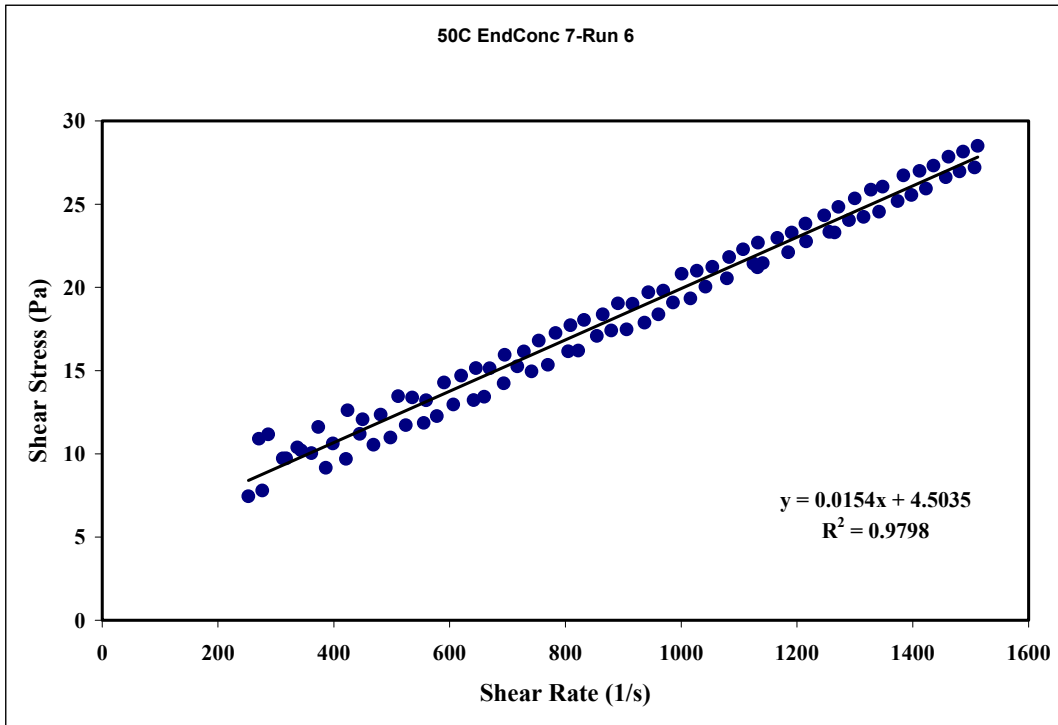


Figure 51. 50 °C at 16 wt % Run 6

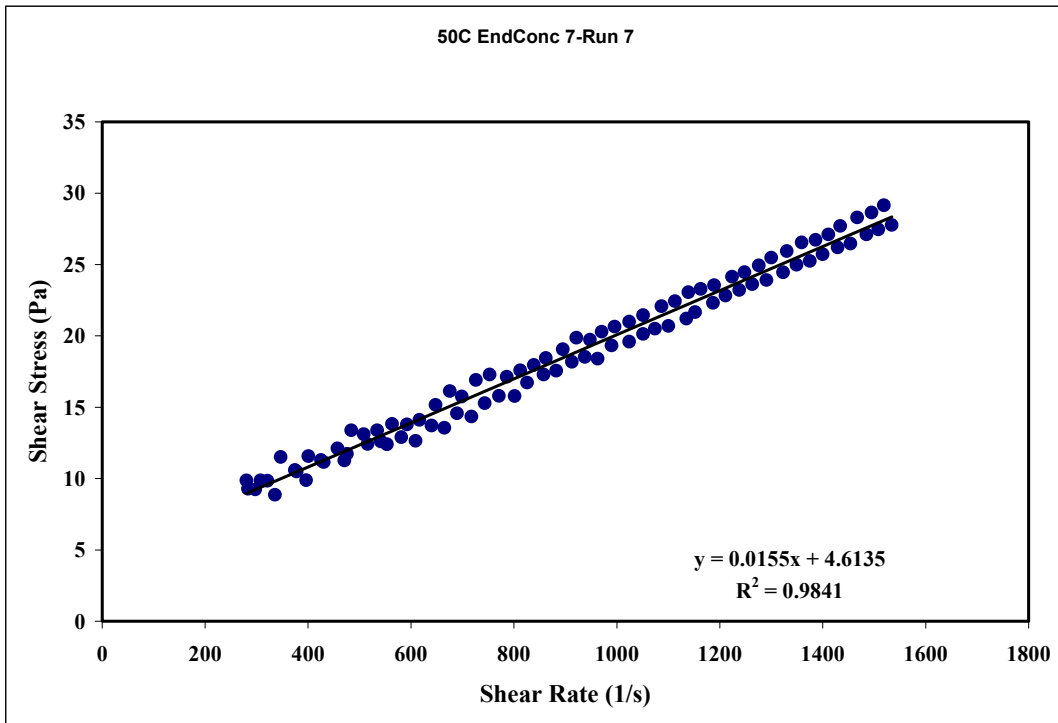


Figure 52. 50 °C at 16 wt % Run 7

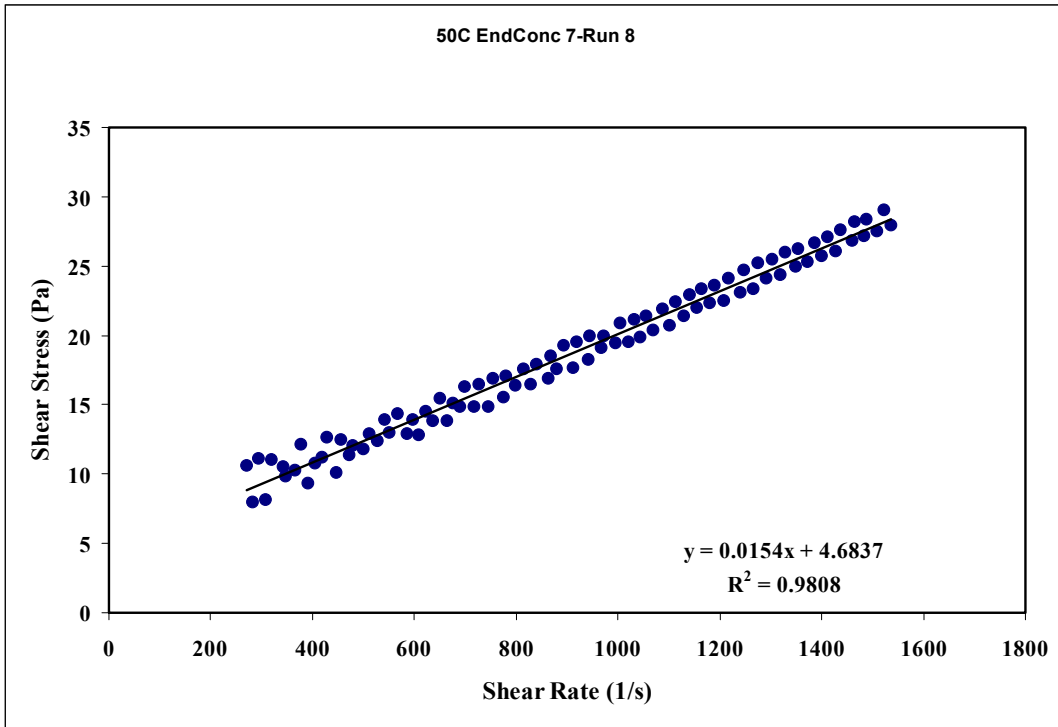


Figure 53. 50 °C at 16 wt % Run 8

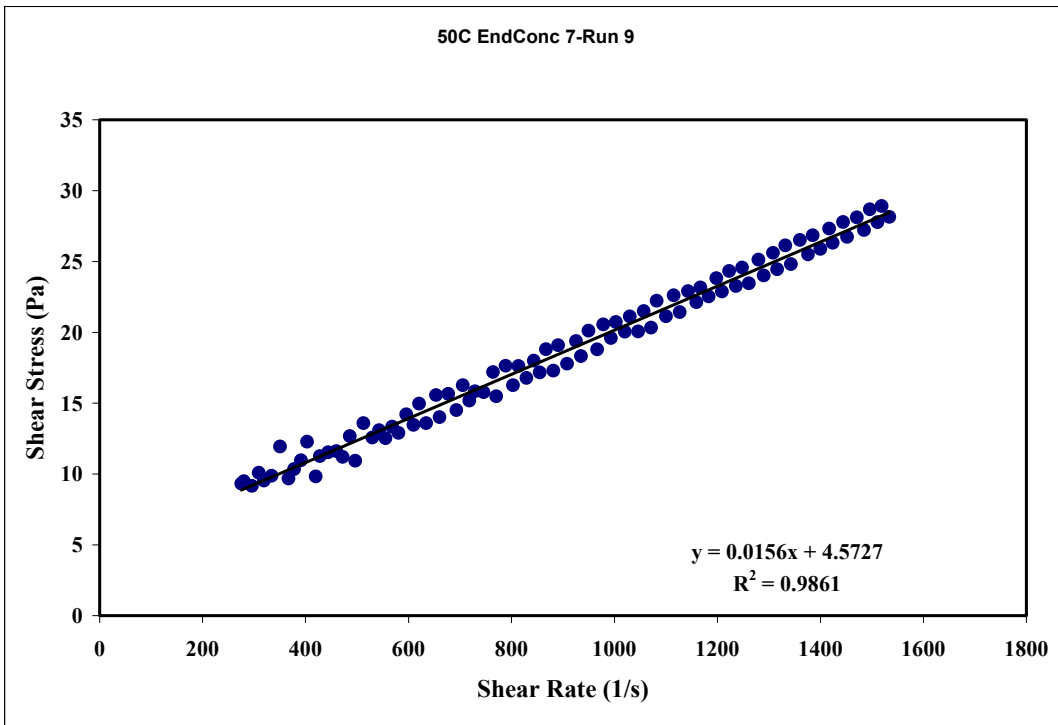


Figure 54. 50 °C at 16 wt % Run 9

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APPENDIX J

ENVELOPE A RHEOLOGY SUMMARIES

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Table 1. Rheometer Response for Blank – As Received

Run #	M*1000 (Pa-s)	B (Pa)	R ²
1	7.3	-0.0499	0.8353
2	7.1	-0.4077	0.8807
3	6.6	-0.1097	0.9012
4	6.9	-0.4566	0.9316
5	6.6	-0.2415	0.9139
6	6.7	-0.4058	0.9258
7	6.5	-0.2474	0.9233
8	6.5	-0.1745	0.9382
9	6.5	-0.0789	0.9248
	DF = 8	N = 9	
Statistics for M	Mean = 6.7	Sigma = 0.3	95% CL = ± 0.2
Statistics for B	Mean = 0.2413	Sigma = 0.1524	95% CL = ± 0.1171

M, B, and R² are the slope, intercept, and residual explanation, respectively, derived from the least squares fit of the stress/strain curve. DF and N correspond to the degrees of freedom and number of observations (replicates), respectively, used in the calculation of the 95% confidence limit (CL).

Table 2. 25 °C As Received

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	31.0	-2.5636	0.9099	24.3
2	30.0	-2.5118	0.9936	23.3
3	29.8	-2.6132	0.9971	23.1
4	29.8	-2.5783	0.9973	23.1
5	29.6	-2.4162	0.9969	22.9
6	29.7	-2.4736	0.9968	23.0
7	29.5	-2.3872	0.9864	22.8
8	29.4	-2.4243	0.9965	22.7
9	29.3	-2.4926	0.9968	22.6
	DF = 8	N = 9		
Statistics for M	Mean = 29.8	Sigma = 0.5	95% CL = ± 0.4	Avg = 23.1 ± 0.6
Statistics for B	Mean = 2.4956	Sigma = 0.0784	95% CL = ± 0.0603	

NOTE: The instrument was not properly zeroed for the above experiment.

Table 3. 50 °C As Received

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	13.4	-0.7783	0.9754	6.7
2	13.1	-0.7119	0.9844	6.4
3	13.1	-0.8085	0.9819	6.4
4	12.9	-0.7185	0.9806	6.2
5	12.8	-0.8017	0.9841	6.1
6	12.8	-0.7750	0.9854	6.1
7	12.7	-0.8496	0.9851	6.0
8	12.7	-0.9759	0.9839	6.0
9	12.6	-0.8889	0.9813	5.9
	DF = 8	N = 9		
Statistics for M	Mean = 12.9	Sigma = 0.3	95% CL = ± 0.2	Avg = 6.2 ± 0.4
Statistics for B	Mean = 0.8120	Sigma = 0.0833	95% CL = ± 0.0641	

Table 4. Rheometer Response for Blank – Diluted

Run #	M*1000 (Pa-s)	B (Pa)	R²
1	3.9	0.3501	0.6731
2	3.5	0.4374	0.7340
3	3.2	0.6725	0.6725
4	3.1	0.6169	0.6169
5	3.4	0.3385	0.6923
6	3.3	0.4129	0.6953
7	2.9	0.6778	0.6582
8	2.7	0.8153	0.6241
9	2.7	0.7568	0.6573
	DF = 8	N = 9	
Statistics for M	Mean = 3.2	Sigma = 0.4	95% CL = ± 0.3
Statistics for B	Mean = 0.5642	Sigma = 0.1814	95% CL = ± 0.1394

Table 5. 25 °C Diluted

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	7.0	0.8073	0.9231	3.8
2	6.5	1.0328	0.9030	3.3
3	6.4	1.2279	0.9159	3.2
4	6.2	1.1533	0.9226	3.0
5	6.5	0.9696	0.9313	3.3
6	6.4	1.0246	0.9200	3.2
7	6.1	1.3167	0.9131	2.9
8	6.1	1.2704	0.9197	2.9
9	6.0	1.2604	0.9331	2.8
	DF = 8	N = 9		
Statistics for M	Mean = 6.4	Sigma = 0.3	95% CL = ±0.4	Avg = 3.2 ±0.5
Statistics for B	Mean = 1.118	Sigma = 0.1696	95% CL = ±0.1304	

Table 6. 50 °C Diluted

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	5.9	0.5424	0.8894	2.7
2	6.1	0.3905	0.8850	2.9
3	5.9	0.4042	0.8856	2.7
4	5.8	0.4541	0.8797	2.6
5	5.7	0.4080	0.8960	2.5
6	5.5	0.4523	0.9177	2.3
7	5.5	0.6326	0.8633	2.3
8	5.8	0.2338	0.8930	2.6
9	5.4	0.6096	0.9015	2.2
	DF = 8	N = 9		
Statistics for M	Mean = 5.7	Sigma = 0.3	95% CL = ± 0.2	Avg = 2.5 \pm 0.5
Statistics for B	Mean = 0.4586	Sigma = 0.1229	95% CL = ± 0.0945	

APPENDIX K

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Table 1. Rheometer Response for Blank – As Received

Run #	M*1000 (Pa-s)	B (Pa)	R²
1	6.7	0.3030	0.9318
2	6.0	0.1452	0.8745
3	5.8	0.3504	0.7860
4	5.5	0.2068	0.9045
5	6.1	-0.4718	0.8468
6	5.5	-0.2120	0.8502
7	5.7	-0.1691	0.9586
8	5.6	-0.1516	0.9612
9	4.8	-0.4770	0.8541
	DF = 8	N = 9	
Statistics for M	Mean = 5.7	Sigma = 0.5	95% CL = ± 0.4
Statistics for B	Mean = 0.0529	Sigma = 0.3162	95% CL = ± 0.2431

Table 2. 25 °C As Received

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	9.9	1.0889	0.9358	4.2
2	9.9	0.9688	0.9631	4.2
3	9.7	1.0792	0.9540	4.0
4	9.7	1.0694	0.9640	4.0
5	9.3	1.0138	0.9489	3.6
6	9.3	1.0207	0.9448	3.6
7	9.0	1.2081	0.9418	3.3
8	9.0	1.0144	0.9646	3.3
9	8.6	1.1178	0.9094	2.9
	DF = 8	N = 9		
Statistics for M	Mean = 9.4	Sigma = 0.5	95% CL = ± 0.3	Avg = 3.7 ± 0.7
Statistics for B	Mean = 1.0670	Sigma = 0.0732	95% CL = ± 0.0562	

Table 3. 50 °C As Received

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	8.4	0.9233	0.9396	2.7
2	8.4	0.7050	0.9349	2.7
3	8.3	0.7669	0.9373	2.6
4	8.1	0.8321	0.9312	2.4
5	8.2	0.7187	0.9435	2.5
6	8.1	0.8240	0.9264	2.4
7	7.9	0.8460	0.9308	2.2
8	7.6	1.0909	0.9300	1.9
9	7.6	1.0240	0.9352	1.9
	DF = 8	N = 9		
Statistics for M	Mean = 8.1	Sigma = 0.3	95% CL = ± 0.2	Avg = 2.4 ± 0.6
Statistics for B	Mean = 0.8589	Sigma = 0.1319	95% CL = ± 0.1014	

Table 4. Rheometer Response for Blank – Pretreated

Run #	M*1000 (Pa-s)	B (Pa)	R²
1	6.4	-0.0443	0.9621
2	6.5	-0.2189	0.9699
3	6.7	-0.4036	0.9627
4	7.0	-0.8120	0.9462
5	6.8	-1.2929	0.9242
	DF = 4	N = 5	
Statistics for M	Mean = 6.7	Sigma = 0.3	95% CL = ± 0.2
Statistics for B	Mean = 0.5543	Sigma = 0.5018	95% CL = ± 0.4643

Table 5. 25 °C Pretreated

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	8.7	-0.0464	0.9723	2.0
2	8.8	-0.2100	0.9722	2.1
3	8.6	-0.1743	0.9786	1.9
4	8.8	-0.2855	0.9730	2.1
5	8.8	-0.2805	0.9803	2.1
6	8.9	-0.3975	0.9465	2.2
7	8.9	-0.7086	0.9741	2.2
8	8.9	-0.7048	0.9666	2.2
9	8.9	-0.6590	0.9737	2.2
	DF = 8	N = 9		
Statistics for M	Mean = 8.8	Sigma = 0.1	95% CL = ± 0.1	Avg = 2.1 ± 0.3
Statistics for B	Mean = 0.3852	Sigma = 0.2482	95% CL = ± 0.1908	

Table 6. 50 °C Pretreated

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	8.0	0.2045	0.9678	1.3
2	7.7	0.4721	0.9486	1.0
3	7.7	0.3353	0.9124	1.0
4	7.1	0.5021	0.9243	0.4
5	7.1	0.4384	0.9284	0.4
6	7.2	0.2370	0.9470	0.5
7	7.1	0.3488	0.9317	0.4
8	7.4	0.0981	0.9381	0.7
9	7.2	0.3180	0.9494	0.5
	DF = 8	N = 9		
Statistics for M	Mean = 7.4	Sigma = 0.3	95% CL = ± 0.2	Avg = 0.7 ± 0.4
Statistics for B	Mean = 0.3283	Sigma = 0.1324	95% CL = ± 0.1018	

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Table 6. 50 °C As Received..... 470

Table 7. Rheometer Response for Blank – Pretreated 471

Table 8. 25 °C Pretreated..... 472

Table 9. 50 °C Pretreated..... 473

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Table 1. Rheometer Response for Blank – As Received

Run #	M*1000 (Pa-s)	B (Pa)	R²
1	6.2	0.4124	0.9625
2	6.6	0.3122	0.8999
3	6.3	0.5484	0.8818
4	5.7	0.7628	0.9375
5	6.0	0.7354	0.8935
6	6.0	0.6518	0.8887
7	5.7	0.9482	0.8843
8	5.5	0.9709	0.8654
9	5.4	0.9865	0.8632
	DF = 8	N = 9	
Statistics for M	Mean = 5.9	Sigma = 0.4	95% CL = ± 0.3
Statistics for B	Mean = 0.7032	Sigma = 0.2451	95% CL = ± 0.1884

Table 2. 25 °C As Received

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	13.2	-0.1825	0.9836	7.3
2	13.1	-0.3579	0.9874	7.2
3	13.0	-0.2607	0.9887	7.1
4	12.7	-0.2784	0.9750	6.8
5	12.7	-0.3844	0.9831	6.8
6	12.3	-0.0898	0.9847	6.4
7	12.4	-0.1465	0.9864	6.5
8	12.1	0.0824	0.9870	6.2
9	12.2	0.0840	0.9892	6.3
	DF = 8	N = 9		
Statistics for M	Mean = 12.6	Sigma = 0.4	95% CL = ± 0.3	Avg = 6.7 ± 0.6
Statistics for B	Mean = 1.1704	Sigma = 0.1720	95% CL = ± 0.1322	

Table 3. 50 °C As Received

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	7.1	0.7650	0.9464	1.2
2	7.1	0.7728	0.9062	1.2
3	6.7	0.8619	0.8941	0.8
4	6.8	0.7839	0.9195	0.9
5	6.6	0.8300	0.8947	0.7
6	6.6	0.9703	0.9066	0.7
7	6.5	0.9186	0.9027	0.6
8	6.5	0.9841	0.9108	0.6
9	6.3	1.0034	0.8878	0.4
	DF = 8	N = 9		
Statistics for M	Mean = 6.7	Sigma = 0.3	95% CL = ±0.2	Avg = 0.8±0.5
Statistics for B	Mean = 0.8767	Sigma = 0.0951	95% CL = ±0.0731	

Table 4. Rheometer Response for Blank – Diluted

Run #	M*1000 (Pa-s)	B (Pa)	R²
1	6.2	0.1133	0.8887
2	6.2	-0.1714	0.9289
3	5.9	-0.1188	0.9235
4	5.9	-0.1818	0.9046
5	5.8	-0.2633	0.8946
6	5.8	-0.3555	0.8987
7	5.5	-0.2247	0.8981
8	5.3	-0.1636	0.8791
9	5.2	-0.0930	0.8869
	DF = 8	N = 9	
Statistics for M	Mean = 5.8	Sigma = 0.4	95% CL = ± 0.3
Statistics for B	Mean = 0.1620	Sigma = 0.1297	95% CL = ± 0.0997

Table 5. 25 °C As Received

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	8.8	2.5166	0.9533	3.0
2	9.0	2.2253	0.9673	3.2
3	8.4	2.7055	0.9441	2.6
4	8.3	2.6255	0.9697	2.5
5	8.5	2.5744	0.9452	2.7
6	8.5	2.4945	0.9490	2.7
7	8.4	2.5836	0.9389	2.6
8	8.4	2.5087	0.9476	2.6
9	8.5	2.2429	0.9483	2.7
	DF = 8	N = 9		
Statistics for M	Mean = 8.5	Sigma = 0.3	95% CL = ± 0.2	Avg = 2.7 ± 0.5
Statistics for B	Mean = 2.4974	Sigma = 0.1629	95% CL = ± 0.1252	

NOTE: The instrument was not properly zeroed for these experiments.

Table 6. 50 °C As Received

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	8.3	1.5352	0.9256	2.5
2	8.2	1.2949	0.9488	2.4
3	7.9	1.5946	0.9189	2.1
4	7.8	1.5969	0.9286	2.0
5	7.9	1.4198	0.9261	2.1
6	8.1	1.1546	0.9171	2.3
7	7.4	1.6668	0.9242	1.6
8	7.2	1.8475	0.8965	1.4
9	7.1	1.8152	0.9115	1.3
	DF = 8	N = 9		
Statistics for M	Mean = 7.8	Sigma = 0.5	95% CL = ± 0.3	Avg = 2.0 ± 0.6
Statistics for B	Mean = 1.5473	Sigma = 0.2278	95% CL = ± 0.1751	

Table 7. Rheometer Response for Blank – Pretreated

Run #	M*1000 (Pa-s)	B (Pa)	R²
1	7.8	0.5181	0.8700
2	7.2	0.5334	0.9034
3	6.9	0.5899	0.9165
4	7.0	0.2766	0.8663
5	7.0	0.5296	0.9331
6	7.2	0.4925	0.9256
7	7.1	0.3541	0.9162
8	7.0	0.4138	0.9188
9	6.9	0.4639	0.9107
	DF = 8	N = 9	
Statistics for M	Mean = 7.1	Sigma = 0.3	95% CL = ± 0.2
Statistics for B	Mean = 0.4635	Sigma = 0.0990	95% CL = ± 0.0761

Table 8. 25 °C Pretreated

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	12.0	-0.1746	0.9876	4.9
2	12.2	-0.3109	0.9923	5.1
3	12.1	-0.1453	0.9889	5.0
4	12.1	0.1628	0.9967	5.0
5	11.2	-0.0571	0.9752	4.1
6	10.8	0.0054	0.9754	3.7
7	10.4	0.2201	0.9701	3.3
8	10.3	0.2063	0.9738	3.2
9	10.3	0.0945	0.9742	3.2
	DF = 8	N = 9		
Statistics for M	Mean = 11.3	Sigma = 0.9	95% CL = ± 0.6	Avg = 4.2 ± 0.8
Statistics for B	Mean = 0.0364	Sigma = 0.1824	95% CL = ± 0.1402	

Table 9. 50 °C Pretreated

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	11.2	-0.4514	0.9578	4.1
2	10.5	-0.4766	0.9754	3.4
3	10.4	-0.4500	0.9797	3.3
4	10.1	-0.3992	0.9649	3.0
5	10.1	-0.5552	0.9715	3.0
6	9.8	-0.6005	0.9679	2.7
7	9.6	-0.4273	0.9738	2.5
8	9.1	-0.2481	0.9465	2.0
9	8.6	-0.1838	0.9594	1.5
	DF = 8	N = 9		
Statistics for M	Mean = 9.9	Sigma = 0.8	95% CL = ± 0.5	Avg = 2.8 \pm 0.7
Statistics for B	Mean = 0.4213	Sigma = 0.1331	95% CL = ± 0.1023	

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APPENDIX M

SR/TRU PRECIPITATE SLURRY RHEOLOGY SUMMARIES

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Table 1. Rheometer Response for Blank – 2 wt %

Run #	M*1000 (Pa-s)	B (Pa)	R²
1	6.8	0.3592	0.9793
2	6.8	0.2678	0.9894
3	6.7	0.3164	0.9879
4	6.7	0.3541	0.9874
5	6.8	0.2088	0.9857
6	6.9	0.1769	0.9853
7	6.9	0.1549	0.9734
8	6.5	0.3726	0.9871
9	6.5	0.3582	0.9836
	DF = 8	N = 9	
Statistics for M	Mean = 6.7	Sigma = 0.15	95% CL = ± 0.1
Statistics for B	Mean = 0.2854	Sigma = 0.0859	95% CL = ± 0.0660

Table 2. 10 °C at 2 wt %

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	11.7	-1.0627	0.9786	5.0
2	11.1	-0.9425	0.9907	4.4
3	11.1	-0.9510	0.9916	4.4
4	11.0	-0.9556	0.9925	4.3
5	11.0	-0.9615	0.9925	4.3
6	11.0	-0.9082	0.9934	4.3
7	11.1	-1.0250	0.9928	4.4
	DF = 6	N = 7		
Statistics for M	Mean = 11.1	Sigma = 0.3	95% CL = ± 0.2	Avg = 4.4 ± 0.3
Statistics for B	Mean = 0.9723	Sigma = 0.0529	95% CL = ± 0.0407	

Table 3. 15 °C at 2 wt %

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	11.3	-0.5511	0.9720	4.6
2	10.8	-0.5824	0.9895	4.1
3	10.7	-0.7152	0.9909	4.0
4	10.6	-0.6352	0.9908	3.9
5	10.6	-0.6780	0.9911	3.9
6	10.6	-0.6964	0.9910	3.9
7	10.6	-0.7118	0.9933	3.9
8	10.4	-0.6932	0.9914	3.7
9	10.4	-0.6987	0.9930	3.7
	DF = 8	N = 9		
Statistics for M	Mean = 10.7	Sigma = 0.3	95% CL = ± 0.2	Avg = 4.0 ± 0.3
Statistics for B	Mean = 0.6624	Sigma = 0.0596	95% CL = ± 0.0458	

Table 4. 25 °C at 2 wt %

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	11.4	-0.8717	0.9808	4.7
2	10.6	-0.6962	0.9885	3.9
3	10.5	-0.7498	0.9893	3.8
4	10.3	-0.8060	0.9902	3.6
5	10.1	-0.7848	0.9894	3.4
6	10.0	-0.8619	0.9911	3.3
7	9.8	-0.8824	0.9878	3.1
8	9.7	-0.9640	0.9918	3.0
9	9.6	-0.9304	0.9929	2.9
	DF = 8	N = 9		
Statistics for M	Mean = 10.7	Sigma = 0.6	95% CL = ± 0.4	Avg = 4.0 ± 0.5
Statistics for B	Mean = 0.2352	Sigma = 0.2256	95% CL = ± 0.1734	

Table 5. 50 °C at 2 wt %

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	11.8	-0.0914	0.9809	5.1
2	11.2	-0.0969	0.9864	4.5
3	11.0	-0.0386	0.9944	4.3
4	10.8	-0.0322	0.9914	4.1
5	10.5	-0.0285	0.9926	3.8
6	10.3	-0.3344	0.9941	3.6
7	10.1	-0.4005	0.9947	3.4
8	10.1	-0.4662	0.9956	3.4
9	10.3	-0.6280	0.9923	3.6
	DF = 8	N = 9		
Statistics for M	Mean = 10.7	Sigma = 0.6	95% CL = ±0.4	Avg = 4.0±0.5
Statistics for B	Mean = 0.2352	Sigma = 0.2256	95% CL = ±0.1734	

Table 6. Rheometer Response for Blank – 10 wt %

Run #	M*1000 (Pa-s)	B (Pa)	R²
1	8.0	-0.0314	0.9186
2	8.0	0.2214	0.9132
3	7.6	0.1818	0.9113
4	7.3	0.4004	0.8865
5	7.1	0.2717	0.9334
6	7.0	0.3279	0.9444
7	7.1	0.3147	0.9388
8	7.1	0.2610	0.9478
9	6.9	0.4141	0.9331
	DF = 8	N = 9	
Statistics for M	Mean = 7.3	Sigma = 0.4	95% CL = ± 0.3
Statistics for B	Mean = 0.2624	Sigma = 0.1340	95% CL = ± 0.1030

Table 7. 25 °C at 10 wt %

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	20.7	-0.8066	0.9894	13.4
2	20.2	-0.6873	0.9911	12.9
3	19.7	-0.3939	0.9900	12.4
4	19.1	-0.1123	0.9887	11.8
5	18.8	0.0967	0.9872	11.5
6	18.5	0.4967	0.9867	11.2
7	18.3	0.4946	0.9844	11.0
8	18.3	0.5132	0.9854	11.0
9	18.0	0.9074	0.9851	10.7
	DF = 8	N = 9		
Statistics for M	Mean = 19.1	Sigma = 0.3	95% CL = ± 0.2	Avg = 11.8 ± 0.5
Statistics for B	Mean = 0.0565	Sigma = 0.5968	95% CL = ± 0.4587	

Table 8. 50 °C at 10 wt %

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	13.1	2.2031	0.9669	5.8
2	13.0	2.0277	0.9702	5.7
3	12.8	2.0516	0.9677	5.5
4	12.9	1.9884	0.9687	5.6
5	13.1	1.6803	0.9629	5.8
6	12.6	2.0910	0.9649	5.3
7	12.4	2.0823	0.9684	5.1
8	12.6	1.7542	0.9587	5.3
9	13.0	1.3304	0.9627	5.7
	DF = 8	N = 9		
Statistics for M	Mean = 12.8	Sigma = 0.3	95% CL = ±0.2	Avg = 5.5±0.5
Statistics for B	Mean = 1.9121	Sigma = 0.2742	95% CL = ±0.2107	

NOTE: The instrument was not properly zeroed for these experiments.

Table 9. Rheometer Response for Blank – 13 wt %

Run #	M*1000 (Pa-s)	B (Pa)	R²
1	7.6	-0.1387	0.9581
2	6.8	0.4529	0.9712
3	9.4	-0.6141	0.9439
4	7.6	0.1357	0.9754
5	7.6	0.0441	0.9913
6	7.0	0.1484	0.9908
7	6.6	0.2326	0.9635
8	6.6	0.0450	0.988
9	6.6	-0.0870	0.9761
	DF = 8	N = 9	
Statistics for M	Mean = 7.3	Sigma = 0.9	95% CL = ± 0.6
Statistics for B	Mean = 0.0243	Sigma = 0.2962	95% CL = ± 0.2277

Table 10. 10 °C at 13 wt %

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	29.4	8.8384	0.9679	22.1
2	29.1	8.6589	0.9832	21.8
3	28.9	8.7932	0.9864	21.6
4	28.9	8.9283	0.9857	21.6
5	28.6	9.2073	0.9870	21.3
6	28.7	9.3269	0.9872	21.4
7	28.7	9.4632	0.9851	21.4
8	28.6	9.5779	0.9845	21.3
9	28.9	9.4228	0.9852	21.6
	DF = 8	N = 9		
Statistics for M	Mean = 28.9	Sigma = 0.3	95% CL = ± 0.2	Avg = 21.6 ± 0.8
Statistics for B	Mean = 9.1353	Sigma = 0.3359	95% CL = ± 0.2582	

Table 11. 15 °C at 13 wt %

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	27.3	5.7658	0.9502	20.0
2	25.9	5.9394	0.9893	18.6
3	25.8	6.4213	0.9904	18.5
4	25.8	6.7315	0.9907	18.5
5	25.5	7.2497	0.9896	18.2
6	26.1	7.3416	0.9727	18.8
7	25.5	7.6574	0.9894	18.2
8	25.4	7.9592	0.9881	18.1
9	25.4	8.0997	0.9879	18.1
	DF = 8	N = 9		
Statistics for M	Mean = 25.9	Sigma = 0.6	95% CL = ± 0.4	Avg = 18.6 ± 1.0
Statistics for B	Mean = 7.0184	Sigma = 0.8509	95% CL = ± 0.6541	

Table 12. 25 °C at 13 wt %

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	20.6	8.4921	0.9994	13.3
2	21.0	8.6529	0.9968	13.7
3	20.0	8.9398	0.9909	12.7
4	19.6	9.1643	0.9932	12.3
5	21.1	8.2180	0.9907	12.8
6	19.7	9.0873	0.9936	12.4
7	19.6	9.1492	0.9934	12.3
8	19.9	8.9698	0.9942	12.6
9	21.3	7.5398	0.9499	14.0
	DF = 8	N = 9		
Statistics for M	Mean = 21.9	Sigma = 1.1	95% CL = ± 0.7	Avg = 14.6 ± 1.2
Statistics for B	Mean = 7.0210	Sigma = 0.4581	95% CL = ± 0.3521	

Table 13. 25 °C Repeat at 13 wt %

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	20.7	7.2001	0.9854	13.4
2	20.4	8.0966	0.9937	13.1
3	21.8	6.9242	0.9857	14.5
4	21.3	7.1491	0.9915	14.0
5	21.0	7.0629	0.9810	13.7
6	22.9	6.7777	0.9976	15.6
7	22.7	6.6651	0.9979	15.4
8	23.3	6.5823	0.9867	16.0
9	23.1	6.7312	0.9893	15.8
	DF = 8	N = 9		
Statistics for M	Mean = 21.9	Sigma = 1.1	95% CL = ±0.7	Avg. = 14.6±1.2
Statistics for B	Mean = 7.0210	Sigma = 0.4581	95% CL = ± 0.2993	(8%)

Table 14. 50 °C at 13 wt %

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	16.3	7.0695	0.9752	9.0
2	16.1	6.4607	0.9897	8.8
3	16.0	6.1632	0.9904	8.7
4	16.2	5.9353	0.9906	8.9
5	16.2	5.7709	0.9933	8.9
6	16.4	5.6563	0.9960	9.1
7	16.0	5.7728	0.9916	8.7
8	15.9	5.7125	0.9936	8.6
9	15.8	5.8054	0.9918	8.5
	DF = 8	N = 9		
Statistics for M	Mean = 16.1	Sigma = 0.2	95% CL = ±0.1	Avg = 8.8±0.7
Statistics for B	Mean = 6.0385	Sigma = 0.4632	95% CL = ±0.3560	

Table 15. Rheometer Response for Blank – 16 wt %

Run #	M*1000 (Pa-s)	B (Pa)	R²
1	5.1	0.7413	0.9188
2	4.9	0.8435	0.9313
3	5.2	0.7575	0.8922
4	4.9	0.8004	0.9186
5	5.2	0.4936	0.9161
6	4.9	0.7309	0.9021
7	4.7	0.8088	0.9262
8	4.7	0.7262	0.9188
9	5.4	0.4388	0.8928
	DF = 8	N = 9	
Statistics for M	Mean = 5.0	Sigma = 0.3	95% CL = ± 0.2
Statistics for B	Mean = 0.7045	Sigma = 0.1413	95% CL = ± 0.1086

Table 16. 10 °C at 16 wt %

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	33.0	7.1161	0.9730	28.0
2	32.3	7.0383	0.9866	27.3
3	32.8	6.5612	0.9886	27.8
4	32.6	7.2969	0.9933	27.6
5	32.6	7.2911	0.9923	27.6
6	32.3	7.3074	0.9876	27.3
7	32.4	7.1107	0.9887	27.4
8	32.5	7.1119	0.9874	27.5
9	32.1	7.5196	0.9875	27.1
	DF = 8	N = 9		
Statistics for M	Mean = 32.5	Sigma = 0.3	95% CL = ± 0.2	Avg = 27.5 ± 0.4
Statistics for B	Mean = 7.1504	Sigma = 0.2660	95% CL = ± 0.2045	

Table 17. 15 °C at 16 wt %

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	29.1	4.0278	0.9646	24.1
2	28.5	3.6619	0.9877	23.5
3	28.4	3.7964	0.9881	23.4
4	28.5	3.8018	0.9882	23.5
5	28.2	4.1445	0.9901	23.2
6	28.1	4.3298	0.9888	23.1
7	28.2	4.2259	0.9895	23.2
8	28.2	4.3949	0.9894	23.2
9	28.1	4.5641	0.9880	23.1
	DF = 8	N = 9		
Statistics for M	Mean = 28.4	Sigma = 0.3	95% CL = ± 0.2	Avg = 23.4 ± 0.4
Statistics for B	Mean = 4.1052	Sigma = 0.3064	95% CL = ± 0.2355	

Table 18. 25 °C at 16 wt %

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	22.8	5.9577	0.9914	17.8
2	22.9	6.2506	0.9879	17.9
3	22.2	6.8118	0.9849	17.2
4	22.3	6.6606	0.9848	17.3
5	22.2	6.9360	0.9854	17.2
6	23.2	6.5583	0.9852	18.2
7	24.6	4.8117	0.9578	19.6
8	22.7	6.8083	0.9871	17.7
9	22.6	6.9836	0.9852	17.6
	DF = 8	N = 9		
Statistics for M	Mean = 23.0	Sigma = 0.2	95% CL = ± 0.2	Avg = 18.0 ± 0.4
Statistics for B	Mean = 10.3681	Sigma = 0.1958	95% CL = ± 0.1507	

Table 19. 25 °C Repeat at 16 wt %

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	22.9	10.145	0.9809	17.9
2	22.7	10.316	0.9849	17.7
3	22.9	10.295	0.9845	17.9
4	23.2	10.168	0.9835	18.2
5	22.7	10.692	0.9865	17.7
6	23.0	10.426	0.9842	18.0
7	23.2	10.247	0.9862	18.2
8	23.3	10.363	0.9844	18.3
9	23.0	10.661	0.9843	18.0
	DF = 8	N = 9		
Statistics for M	Mean = 23.0	Sigma = 0.2	95% CL = ±0.2	Avg. = 18.0±0.4
Statistics for B	Mean = 10.368	Sigma = 0.196	95% CL = ±0.128	(3%)

Table 20. 50 °C at 16 wt %

Run #	M*1000 (Pa-s)	B (Pa)	R ²	Viscosity (cP)
1	14.9	5.7310	0.9535	9.9
2	15.1	4.8722	0.9713	10.1
3	15.2	4.6256	0.9813	10.2
4	14.9	5.0153	0.9823	9.9
5	14.9	4.9655	0.9809	9.9
6	15.4	4.5035	0.9798	10.4
7	15.5	4.6135	0.9841	10.5
8	15.4	4.6837	0.9808	10.4
9	15.6	4.5727	0.9861	10.6
	DF = 8	N = 9		
Statistics for M	Mean = 15.2	Sigma = 0.3	95% CL = ±0.2	Avg = 10.2±0.4
Statistics for B	Mean = 4.8426	Sigma = 0.3788	95% CL = ±0.2912	

APPENDIX N

ENVELOPE C AS-RECEIVED CALORIMETRY DATA

Table 1. 5M.....	503
Table 2. 7M.....	505
Table 3. 9M.....	506

ENVELOPE C AS-RECEIVED CALORIMETRY DATA

Table 1. 5M

	Standard	Empty	Sample	Sample - Empty	Sample Mass-Corrected	Standard - Empty	Sapphire HC	Sample HC
5M1								
40	-13.044597	-1.701997	-32.09271	-30.39071	-44.52592908	-11.34260017	0.1899	0.745461694
50	-13.209693	-2.032199	-32.17041	-30.13821	-44.15598429	-11.17749483	0.1939	0.76598965
60	-13.478388	-2.342977	-32.00045	-29.65747	-43.45164649	-11.13541133	0.1979	0.772228397
70	-13.468677	-2.602768	-31.82563	-29.22286	-42.81489084	-10.86590867	0.2019	0.795545658
80	-13.612737	-2.877127	-31.53914	-28.66201	-41.99318184	-10.73560967	0.2059	0.805394049
90	-13.7487	-3.100499	-31.19922	-28.09872	-41.16789429	-10.6482015	0.2099	0.811511785
5M2								
40	-13.044597	-1.701997	-30.79133	-29.08933	-42.61925606	-11.34260017	0.1899	0.713539806
50	-13.209693	-2.032199	-30.61652	-28.58432	-41.87935476	-11.17749483	0.1939	0.726496143
60	-13.478388	-2.342977	-30.36886	-28.02588	-41.06117742	-11.13541133	0.1979	0.729744665
70	-13.468677	-2.602768	-30.1115	-27.50873	-40.30349107	-10.86590867	0.2019	0.748881212
80	-13.612737	-2.877127	-29.7473	-26.87017	-39.36792788	-10.73560967	0.2059	0.755043878
90	-13.7487	-3.100499	-29.21316	-26.11266	-38.25808545	-10.6482015	0.2099	0.754152909
5M3								
40	-13.044597	-1.701997	-29.15974	-27.45774	-40.22878699	-11.34260017	0.1899	0.673518112
50	-13.209693	-2.032199	-28.83925	-26.80705	-39.27544755	-11.17749483	0.1939	0.681325234
60	-13.478388	-2.342977	-28.53819	-26.19521	-38.379033	-11.13541133	0.1979	0.68207724
70	-13.468677	-2.602768	-28.36337	-25.7606	-37.74227735	-10.86590867	0.2019	0.70129117
80	-13.612737	-2.877127	-28.18856	-25.31143	-37.08419253	-10.73560967	0.2059	0.711243747
90	-13.7487	-3.100499	-27.96033	-24.85983	-36.42254383	-10.6482015	0.2099	0.717970255

ENVELOPE C AS-RECEIVED CALORIMETRY DATA

Table 2. 7M

	Standard	Empty	Sample	Sample - Empty	Sample Mass-Corrected	Standard - Empty	Sapphire HC	Sample HC
7M 1								
40	-13.0446	-1.701997	-39.34258	-37.6405835	-39.52261268	-11.34260017	0.1899	0.661695205
50	-13.20969	-2.032199	-38.74531	-36.7131115	-38.54876708	-11.17749483	0.1939	0.668719248
60	-13.47839	-2.342977	-38.4151	-36.072123	-37.87572915	-11.13541133	0.1979	0.673132458
70	-13.46868	-2.602768	-38.17231	-35.569542	-37.3480191	-10.86590867	0.2019	0.693965437
80	-13.61274	-2.877127	-37.62359	-34.746463	-36.48378615	-10.73560967	0.2059	0.699728455
90	-13.7487	-3.100499	-36.90977	-33.8092715	-35.49973508	-10.6482015	0.2099	0.699779619
7M 2								
40	-13.0446	-1.701997	-37.94408	-36.2420835	-38.05418768	-11.34260017	0.1899	0.637110551
50	-13.20969	-2.032199	-37.34195	-35.3097515	-37.07523908	-11.17749483	0.1939	0.643157431
60	-13.47839	-2.342977	-36.61356	-34.270583	-35.98411215	-11.13541133	0.1979	0.639514391
70	-13.46868	-2.602768	-36.0697	-33.466932	-35.1402786	-10.86590867	0.2019	0.652943299
80	-13.61274	-2.877127	-35.54526	-32.668133	-34.30153965	-10.73560967	0.2059	0.657874795
90	-13.7487	-3.100499	-35.18107	-32.0805715	-33.68460008	-10.6482015	0.2099	0.663999226
7M 3								
40	-13.0446	-1.701997	-38.06548	-36.3634835	-38.18165768	-11.34260017	0.1899	0.639244678
50	-13.20969	-2.032199	-37.43906	-35.4068615	-37.17720458	-11.17749483	0.1939	0.644926263
60	-13.47839	-2.342977	-36.93891	-34.595933	-36.32572965	-11.13541133	0.1979	0.645585662
70	-13.46868	-2.602768	-36.42418	-33.821412	-35.5124826	-10.86590867	0.2019	0.65985924
80	-13.61274	-2.877127	-35.81234	-32.935213	-34.58197365	-10.73560967	0.2059	0.663253285
90	-13.7487	-3.100499	-35.32675	-32.2262515	-33.83756408	-10.6482015	0.2099	0.667014491

Table 3. 9M

	Standard	Empty	Sample	Sample - Empty	Sample Mass-Corrected	Standard - Empty	Sapphire HC	Sample HC
9M 1								
40	-13.0446	-1.701997	-37.26911	-35.5671135	-40.74051183	-11.34260017	0.1899	0.682085508
50	-13.20969	-2.032199	-36.16196	-34.1297615	-39.09409045	-11.17749483	0.1939	0.678179167
60	-13.47839	-2.342977	-34.92371	-32.580733	-37.31974871	-11.13541133	0.1979	0.6632515
70	-13.46868	-2.602768	-33.95738	-31.354612	-35.91528284	-10.86590867	0.2019	0.667343692
80	-13.61274	-2.877127	-33.08332	-30.206193	-34.59982107	-10.73560967	0.2059	0.663595583
90	-13.7487	-3.100499	-31.99317	-28.8926665	-33.09523617	-10.6482015	0.2099	0.652381538
9M 2								
40	-13.0446	-1.701997	-37.35166	-35.6496635	-40.8350691	-11.34260017	0.1899	0.683668604
50	-13.20969	-2.032199	-36.83208	-34.7998815	-39.86168245	-11.17749483	0.1939	0.69149486
60	-13.47839	-2.342977	-36.07456	-33.731583	-38.63799507	-11.13541133	0.1979	0.686679548
70	-13.46868	-2.602768	-35.25633	-32.653562	-37.40317102	-10.86590867	0.2019	0.694990218
80	-13.61274	-2.877127	-34.53038	-31.653253	-36.25736253	-10.73560967	0.2059	0.69538584
90	-13.7487	-3.100499	-33.92825	-30.8277515	-35.31178808	-10.6482015	0.2099	0.696074761
9M 3								
40	-13.0446	-1.701997	-37.04088	-35.3388835	-40.47908474	-11.34260017	0.1899	0.677708645
50	-13.20969	-2.032199	-36.48245	-34.4502515	-39.46119717	-11.17749483	0.1939	0.684547499
60	-13.47839	-2.342977	-35.54041	-33.197433	-38.02615053	-11.13541133	0.1979	0.675805766
70	-13.46868	-2.602768	-34.65663	-32.053862	-36.71624193	-10.86590867	0.2019	0.682226353
80	-13.61274	-2.877127	-33.95738	-31.080253	-35.60101707	-10.73560967	0.2059	0.682797684
90	-13.7487	-3.100499	-33.195	-30.0945015	-34.47188354	-10.6482015	0.2099	0.679518354

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APPENDIX O

SR/TRU PRECIPITATE SLURRY CALORIMETRY DATA

Table 1. 13 wt % 511
Table 2. 15 wt % 513

SR/TRU PRECIPITATE SLURRY CALORIMETRY DATA

Table 1. 13 wt %

	Standard	Empty	Sample	Sample - Empty	Sample Mass-Corrected	Standard - Empty	Sapphire HC	Sample HC
Run 1								
35	-28.66608	7.27966	-27.99695	-35.27660967	-96.62723517	-35.94573967	0.1899	0.510478074
45	-29.02247	7.703121	-27.25023	-34.95335067	-95.74178661	-36.72558817	0.1939	0.505487682
55	-29.44431	8.094257	-26.47443	-34.568687	-94.68814265	-37.5385695	0.1979	0.499187467
65	-29.72797	8.401347	-26.05743	-34.45877733	-94.38708574	-38.12931733	0.2019	0.499792652
75	-29.79828	8.572672	-26.00894	-34.58161233	-94.72354683	-38.37094983	0.2059	0.508290214
85	-30.06739	8.701973	-25.86348	-34.56545333	-94.67928522	-38.76936083	0.2099	0.512600196
Run 2								
35	-28.66608	7.27966	-28.03574	-35.31539967	-96.73348604	-35.94573967	0.1899	0.511039394
45	-29.02247	7.703121	-27.44419	-35.14731067	-96.27306835	-36.72558817	0.1939	0.508292689
55	-29.44431	8.094257	-26.77505	-34.869307	-95.51158004	-37.5385695	0.1979	0.503528556
65	-29.72797	8.401347	-26.41624	-34.81758733	-95.36991313	-38.12931733	0.2019	0.504996858
75	-29.79828	8.572672	-26.29987	-34.87254233	-95.52044204	-38.37094983	0.2059	0.512566384
85	-30.06739	8.701973	-26.29987	-35.00184333	-95.87461435	-38.76936083	0.2099	0.519071791
Run 3								
35	-28.66608	7.27966	-26.67807	-33.95772967	-93.01465083	-35.94573967	0.1899	0.491392926
45	-29.02247	7.703121	-27.01749	-34.72061067	-95.10428139	-36.72558817	0.1939	0.502121847
55	-29.44431	8.094257	-26.88173	-34.975987	-95.80379048	-37.5385695	0.1979	0.505069063
65	-29.72797	8.401347	-26.70717	-35.10851733	-96.16680835	-38.12931733	0.2019	0.509216528
75	-29.79828	8.572672	-26.50352	-35.07619233	-96.07826596	-38.37094983	0.2059	0.515559689
85	-30.06739	8.701973	-26.46473	-35.16670333	-96.32618739	-38.76936083	0.2099	0.521516638

SR/TRU PRECIPITATE SLURRY CALORIMETRY DATA

Table 2. 15 wt %

	Standard	Empty	Sample	Sample - Empty	Sample Mass-Corrected	Standard - Empty	Sapphire HC	Sample HC
Run 1								
35	-28.66608	7.279659667	-71.19003	-78.46968967	-126.7587295	-35.94573967	0.1899	0.669661633
45	-29.0224675	7.703120667	-70.80212	-78.50524067	-126.816158	-36.72558817	0.1939	0.669550966
55	-29.4443125	8.094257	-69.97783	-78.072087	-126.1164482	-37.5385695	0.1979	0.664874699
65	-29.72797	8.401347333	-69.58992	-77.99126733	-125.9858934	-38.12931733	0.2019	0.667112701
75	-29.7982775	8.572672333	-69.299	-77.87167233	-125.7927015	-38.37094983	0.2059	0.675008498
85	-30.0673875	8.701973333	-69.44446	-78.14643333	-126.2365462	-38.76936083	0.2099	0.683453389
Run 2								
35	-28.66608	7.279659667	-73.61443	-80.89408967	-130.6750679	-35.94573967	0.1899	0.690351503
45	-29.0224675	7.703120667	-73.63382	-81.33694067	-131.3904426	-36.72558817	0.1939	0.693701806
55	-29.4443125	8.094257	-74.01202	-82.106277	-132.6332167	-37.5385695	0.1979	0.699230523
65	-29.72797	8.401347333	-73.75019	-82.15153733	-132.7063295	-38.12931733	0.2019	0.702698338
75	-29.7982775	8.572672333	-73.07136	-81.64403233	-131.8865138	-38.37094983	0.2059	0.707708131
85	-30.0673875	8.701973333	-74.08961	-82.79158333	-133.74025	-38.76936083	0.2099	0.72407896
Run 3								
35	-28.66608	7.279659667	-76.07761	-83.35726967	-134.654051	-35.94573967	0.1899	0.711372322
45	-29.0224675	7.703120667	-75.6897	-83.39282067	-134.7114795	-36.72558817	0.1939	0.711235876
55	-29.4443125	8.094257	-74.76844	-82.862697	-133.8551259	-37.5385695	0.1979	0.70567232
65	-29.72797	8.401347333	-73.75019	-82.15153733	-132.7063295	-38.12931733	0.2019	0.702698338
75	-29.7982775	8.572672333	-73.32349	-81.89616233	-132.2938007	-38.37094983	0.2059	0.709893648
85	-30.0673875	8.701973333	-73.7114	-82.41337333	-133.1292954	-38.76936083	0.2099	0.72077121

