Results of Proficiency Test
Gasoil - EN (summer)
February 2021

Organized by: Institute for Interlaboratory Studies
Spijkenisse, the Netherlands

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Report: iis21G01EN

April 2021

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1 INTRODUCTION

Since 1994 the Institute for Interlaboratory Studies (iis) organizes a proficiency scheme for the analysis of Gasoil twice a year. One round in accordance with the latest version of EN590 and one round in accordance with ASTM D975 (amongst others). During the annual proficiency testing program 2020/2021 it was decided to continue the round robin for the analysis of Gasoil summer quality in accordance with the latest version of EN590.

In this interlaboratory study registered for participation:

- 180 laboratories in 60 countries on Gasoil - EN (summer)	iis21G01EN
- 54 laboratories in 28 countries on Gasoil - EN Cetane Number and DCN	iis21G01CN
- 90 laboratories in 38 countries on Gasoil - EN Total Contamination	iis21G01TC
- 65 participants in 31 countries on Gasoil - EN Oxidation Stability	iis21G01OX

In total 184 laboratories in 60 different countries registered for participation. See appendix 2 for the number of participants per country. In this report the results of the four Gasoil-EN (summer) proficiency tests are presented and discussed. This report is also electronically available through the iis website www.iisnl.com.

2 SET UP

The Institute for Interlaboratory Studies (iis) in Spijkenisse, the Netherlands, was the organizer of this proficiency test (PT). Sample analyzes for fit-for-use and homogeneity testing were subcontracted to an ISO/IEC17025 accredited laboratory.
In this proficiency test, the participants received, depending on the registration, from one up to four different samples of Gasoil, see table below.

Samples	Purpose
#21005: 1x 1L + 1x 0.5L	Regular analyzes
#21006: 4x 1L	Cetane Number and DCN
#21007: 1x 1L	Total Contamination
#21008: 1x 1L	Oxidation Stability

Table 1: Gasoil samples used in PT iis21G01

Participants were requested to report rounded and unrounded test results. The unrounded test results were preferably used for statistical evaluation.

2.1 ACCREDITATION

The Institute for Interlaboratory Studies in Spijkenisse, the Netherlands, is accredited in agreement with ISO/IEC17043:2010 (R007), since January 2000, by the Dutch Accreditation Council (Raad voor Accreditatie). This PT falls under the accredited scope. This ensures strict adherence to protocols for sample preparation and statistical evaluation and 100% confidentiality of participant's data. Feedback from the participants on the reported data is encouraged and customer's satisfaction is measured on regular basis by sending out questionnaires.

2.2 PROTOCOL

The protocol followed in the organization of this proficiency test was the one as described for proficiency testing in the report 'iis Interlaboratory Studies: Protocol for the Organisation, Statistics and Evaluation' of June 2018 (iis-protocol, version 3.5). This protocol is electronically available through the iis website www.iisnl.com, from the FAQ page.

2.3 CONFIDENTIALITY STATEMENT

All data presented in this report must be regarded as confidential and for use by the participating companies only. Disclosure of the information in this report is only allowed by means of the entire report. Use of the contents of this report for third parties is only allowed by written permission of the Institute for Interlaboratory Studies. Disclosure of the identity of one or more of the participating companies will be done only after receipt of a written agreement of the companies involved.

2.4 SAMPLES

For the preparation of the sample for the regular PT Gasoil - EN (summer) a batch of approximately 400 liters of Gasoil was obtained from the local market and spiked with Manganese. After homogenization 205 amber glass bottles of 1L and 205 amber glass bottles of 0.5L were filled and labelled #21005.
The homogeneity of the subsamples was checked by the determination of Density at 15°C in accordance with ISO12185 on 10 stratified randomly selected subsamples.

	Density at 15°C in kg/m^3
sample #21005-1	841.94
sample #21005-2	841.94
sample #21005-3	841.93
sample #21005-4	841.94
sample #21005-5	841.94
sample #21005-6	841.94
sample #21005-7	841.94
sample #21005-8	841.94
sample #21005-9	841.94
sample #21005-10	841.94

Table 2: homogeneity test results of subsamples #21005

From the above test results the repeatability was calculated and compared with 0.3 times the reproducibility of the reference test method in agreement with the procedure of ISO13528, Annex B2 in the next table.

	Density at 15°C in kg/m^3
r (observed)	0.01
reference test method	ISO12185:96
0.3 x R (reference test method)	0.15

Table 3: evaluation of the repeatability of subsamples #21005

The calculated repeatability is in agreement with 0.3 times the reproducibility of the reference test method. Therefore, homogeneity of the subsamples was assumed.

For the preparation of the sample for the PT Gasoil - EN Cetane Number and DCN a batch of approximately 300 liters of Gasoil was obtained from the local market. After homogenization 290 amber glass bottles of 1L were filled and labelled #21006.
The homogeneity of the subsamples was checked by the determination of Density at 15°C in accordance with ISO12185 on 10 stratified randomly selected subsamples.

	Density at 15°C in kg/m^3
sample #21006-1	841.94
sample #21006-2	841.94
sample #21006-3	841.94
sample #21006-4	841.94
sample #21006-5	841.94
sample #21006-6	841.94
sample #21006-7	841.94
sample #21006-8	841.94
sample #21006-9	841.94
sample #21006-10	841.94

Table 4: homogeneity test results of subsamples #21006

From the above test results the repeatability was calculated and compared with 0.3 times the reproducibility of the reference test method in agreement with the procedure of ISO13528, Annex B2 in the next table.

	Density at 15°C in kg/m^3
r (observed)	0.00
reference test method	ISO12185:96
0.3 x R (reference test method)	0.15

Table 5: evaluation of the repeatability of subsamples #21006

The calculated repeatability is in agreement with 0.3 times the reproducibility of the reference test method. Therefore, homogeneity of the subsamples was assumed.

For the preparation of the sample for the PT Gasoil - EN Total Contamination a batch of approximately 190 liters of Gasoil was used. A defined volume of fresh prepared and well shaken dust suspension of Arizona Dust material in oil was added to a 1L empty amber glass bottle by means of a calibrated pipette. The addition was checked by weighing the bottle before and after the addition. In total 132 bottles were prepared and subsequently filled up to 1L with Gasoil. After homogenization the bottles were labelled #21007.

For the preparation of the sample for the PT Gasoil - EN Oxidation Stability a batch of approximately 120 liters of mixed oxidated Gasoil was made. After homogenization 116 amber glass bottles of 1L were filled and labelled #21008.
The homogeneity of the subsamples was checked by the determination of Density at 15°C in accordance with ISO12185 on 8 stratified randomly selected subsamples.

	Density at 15°C in kg/m^3
sample #21008-1	839.33
sample #21008-2	839.33
sample #21008-3	839.34
sample #21008-4	839.33
sample #21008-5	839.32
sample #21006-6	839.33
sample #21008-7	839.32
sample #21008-8	839.33

Table 6: homogeneity test results of subsamples #21008

From the above test results the repeatability was calculated and compared with 0.3 times the reproducibility of the reference test method in agreement with the procedure of ISO13528, Annex B2 in the next table.

	Density at 15°C in kg/m^3
r (observed)	0.02
reference test method	ISO12185:96
0.3 x R (reference test method)	0.15

Table 7: evaluation of the repeatability of subsamples #21008

The calculated repeatability is in agreement with 0.3 times the reproducibility of the reference test method. Therefore, homogeneity of the subsamples was assumed.

Depending on the registration of the participant the appropriate set of PT samples was sent on January 20, 2021. An SDS was added to the sample package.

2.5 STABILITY OF THE SAMPLES

The stability of Gasoil packed in amber glass bottles was checked. The material was found sufficiently stable for the period of the proficiency test.

2.6 ANALYZES

The participants were requested to determine on sample #21005: Total Acid Number, Ash content, Calculated Cetane Index (four variables), Cloud Point, Cold Filter Plugging Point (CFPP), Carbon Residue (Micro method) on 10% residue, Copper Corrosion 3hrs at 50°C, Density at 15°C, Distillation at 760 mmHg (IBP, 10%, 50%, 90%, 95% recovered, FBP and Volume at 250°C and 350°C), FAME, Flash Point PMcc, Kinematic Viscosity at 40°C, Lubricity by HFRR at 60°C, Manganese as Mn, Nitrogen, Aromatic Hydrocarbons (Polycyclic, Mono, Di, Tri+ and Total), Pour Point (Manual and Automated), Sulfur and Water.
It was also requested to report an analytical detail for the determination of Nitrogen.
On sample #21006 it was requested to determine: Cetane Number and Derived Cetane Number (EN15195 and EN16715).
On sample #21007 it was requested to determine: Total Contamination.
On sample #21008 it was requested to determine: Oxidation Stability Induction period and Oxidation Stability Filterable Insolubles, Adherent Insolubles and Total Insolubles.

It was explicitly requested to treat the samples as if they were routine samples and to report the test results using the indicated units on the report form and not to round the test results, but report as much significant figures as possible. It was also requested not to report ‘less than’ test results, which are above the detection limit, because such test results cannot be used for meaningful statistical evaluations.

To get comparable test results a detailed report form and a letter of instructions are prepared. On the report form the reporting units are given as well as the reference test methods (when applicable) that will be used during the evaluation. The detailed report form and the letter of instructions are both made available on the data entry portal www.kpmd.co.uk/sgs-iis/. The participating laboratories are also requested to confirm the sample receipt on this data entry portal. The letter of instructions can also be downloaded from the iis website www.iisnl.com.

3 RESULTS

During five weeks after sample dispatch, the test results of the individual laboratories were gathered via the data entry portal www.kpmd.co.uk/sgs-iis/. The reported test results are tabulated per determination in appendix 1 of this report. The laboratories are presented by their code numbers.

Directly after the deadline, a reminder was sent to those laboratories that had not reported test results at that moment. Shortly after the deadline, the available test results were screened for suspect data. A test result was called suspect in case the Huber Elimination Rule (a robust outlier test) found it to be an outlier. The laboratories that produced these suspect data were asked to check the reported test results (no reanalyzes). Additional or corrected test results are used for data analysis and the original test results are placed under 'Remarks' in the result tables in appendix 1. Test results that came in after the deadline were not taken into account in this screening for suspect data and thus these participants were not requested for checks.

3.1 STATISTICS

The protocol followed in the organization of this proficiency test was the one as described for proficiency testing in the report 'iis Interlaboratory Studies: Protocol for the Organisation, Statistics and Evaluation' of June 2018 (iis-protocol, version 3.5). For the statistical evaluation the *unrounded* (when available) figures were used instead of the rounded test results. Test results reported as '<…' or '>…' were not used in the statistical evaluation.

First, the normality of the distribution of the various data sets per determination was checked by means of the Lilliefors-test, a variant of the Kolmogorov-Smirnov test and by the calculation of skewness and kurtosis. Evaluation of the three normality indicators in combination with the visual evaluation of the graphic Kernel density plot, lead to judgement of the normality being either 'unknown', 'OK', 'suspect' or 'not OK'. After removal of outliers, this check was repeated. If a data set does not have a normal distribution, the (results of the) statistical evaluation should be used with due care.

The assigned value is determined by consensus based on the test results of the group of participants after rejection of the statistical outliers and/or suspect data.

According to ISO13528 all (original received or corrected) results per determination were submitted to outlier tests. In the iis procedure for proficiency tests, outliers are detected prior to calculation of the mean, standard deviation and reproducibility. For small data sets, Dixon (up to 20 test results) or Grubbs (up to 40 test results) outlier tests can be used. For larger data sets (above 20 test results) Rosner's outlier test can be used. Outliers are marked by D(0.01) for the Dixon's test, by G(0.01) or DG(0.01) for the Grubbs' test and by R(0.01) for the Rosner's test. Stragglers are marked by D(0.05) for the Dixon's test, by G(0.05) or DG(0.05) for the Grubbs' test and by R(0.05) for the Rosner's test. Both outliers and stragglers were not included in the calculations of averages and standard deviations.

For each assigned value the uncertainty was determined in accordance with ISO13528. Subsequently the calculated uncertainty was evaluated against the respective requirement based on the target reproducibility in accordance with ISO13528. In this PT, the criterion of ISO13528, paragraph 9.2.1. was met for all evaluated tests, therefore, the uncertainty of all assigned values may be negligible and need not be included in the PT report.

Finally, the reproducibilities were calculated from the standard deviations by multiplying them with a factor of 2.8.

3.2 GRAPHICS

In order to visualize the data against the reproducibilities from literature, Gauss plots were made, using the sorted data for one determination (see appendix 1). On the Y-axis the reported test results are plotted. The corresponding laboratory numbers are on the X-axis. The straight horizontal line presents the consensus value (a trimmed mean). The four striped lines, parallel to the consensus value line, are the +3s, +2s, -2s and -3s target reproducibility limits of the selected reference test method. Outliers and other data, which were excluded from the calculations, are represented as a cross. Accepted data are represented as a triangle.

Furthermore, Kernel Density Graphs were made. This is a method for producing a smooth density approximation to a set of data that avoids some problems associated with histograms. Also, a normal Gauss curve (dotted line) was projected over the Kernel Density Graph (smooth line) for reference. The Gauss curve is calculated from the consensus value and the corresponding standard deviation.

3.3 z-scores

To evaluate the performance of the participating laboratories the z-scores were calculated. As it was decided to evaluate the performance of the participants in this proficiency test (PT) against the literature requirements, e.g. ISO reproducibilities, the z-scores were calculated using a target standard deviation. This results in an evaluation independent of the variation in this interlaboratory study.

The target standard deviation was calculated from the literature reproducibility by division with 2.8. In case no literature reproducibility was available, other target values were used, like Horwitz or an estimated reproducibility based on former iis proficiency tests.

When a laboratory did use a test method with a reproducibility that is significantly different from the reproducibility of the reference test method used in this report, it is strongly advised to recalculate the z-score, while using the reproducibility of the actual test method used, this in order to evaluate whether the reported test result is fit-for-use.
The z-scores were calculated according to:

$z_{(target)}$ = (test result - average of PT) / target standard deviation

The $z_{(target)}$ scores are listed in the test result tables in appendix 1.

Absolute values for z<2 are very common and absolute values for z>3 are very rare.
Therefore, the usual interpretation of z-scores is as follows:

	|z|	< 1	good
1 <	|z|	< 2	satisfactory
2 <	|z|	< 3	questionable
3 <	|z|		unsatisfactory

4 Evaluation

In this proficiency test some problems were encountered with the dispatch of the samples.
For the regular Gasoil PT seventeen participants reported test results after the final reporting date and five other participants did not report any test results.
For the Cetane Number PT five participants reported test results after the final reporting date and five other participants did not report any test results.
For the Total Contamination PT eight participants reported test results after the final reporting date and six other participants did not report any test results.

For the Oxidation Stability PT seven participants reported test results after the final reporting date and four other participants did not report any test results.
Not all participants were able to report all tests requested.
In total 179 participants reported 3637 numerical test results. Observed were 90 outlying test results, which is 2.5%. In proficiency tests outlier percentages of 3% - 7.5% are quite normal.

Not all data sets proved to have a normal Gaussian distribution. These are referred to as “not OK” or “suspect”. The statistical evaluation of these data sets should be used with due care, see also paragraph 3.1.

4.1 EVALUATION PER SAMPLE AND PER TEST

In this section the reported test results are discussed per sample and per test. The test methods which were used by the various laboratories were taken into account for explaining the observed differences when possible and applicable. These test methods are also in the tables together with the original data. The abbreviations, used in these tables, are explained in appendix 3.

In the iis PT reports ASTM test methods are referred to with a number (e.g. D5950) and an added designation for the year that the test method was adopted or revised (e.g. D5950:14). If applicable, a designation in parentheses is added to designate the year of reapproval (e.g. D5950:14(2020)). In the test results tables of appendix 1 only the test method number and year of adoption or revision (e.g. D5950:14) will be used.

Sample #21005

Total Acid Number: This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D974:14e2.

Ash content: This determination was not problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO6245:01.

Calculated Cetane Index, four variables: Regretfully, no reproducibility is mentioned in procedure A of ASTM D4737:10(2016) nor in the equivalent test methods ISO4262:2007(E) and IP380. Therefore, iis has estimated a reproducibility for Calculated Cetane Index by Four Variable Equation based from previous iis PTs (see iis memo 1904 lit. 16).
This determination was not problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in full agreement with the estimated target reproducibility over previous iis PTs, see iis memo 1904.

Cloud Point: This determination was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ISO3015:19.
Please note: test method EN23015 is withdrawn per 2019.

CFPP: This determination was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in full agreement with the requirements of EN116:15.

Carbon Residue (Micro method) on 10% residue: This determination was problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not in agreement with ISO10370:14.

Copper Corrosion: This determination was not problematic. All reporting laboratories agreed on a result of 1 (1a).

Density at 15°C: This determination was not problematic. Eight statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with ISO12185:96.

Distillation at 760 mmHg: This determination was not problematic. In total twenty seven statistical outliers were observed and five other test results were excluded over eight parameters. All calculated reproducibilities after rejection of the suspect data are in agreement with the requirements of ISO3405:19 automated mode. When evaluated against the requirements of ISO3405:19 manual mode the calculated reproducibilities after rejection of the suspect data for IBP, 95% rec. and FBP are not in agreement.

FAME: This determination was problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not in agreement with either mode B nor with mode A of EN14078:14. When the test results are evaluated separately over the modes of A and B of test method EN14078, the calculated reproducibilities are also not in agreement with the respective requirements of test method EN14078:14.

Flash Point PMcc: This determination was not problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO2719-A:16.

Kinematic Viscosity at 40°C: This determination was problematic for a number of laboratories. Eight statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with ISO3104:20.

Lubricity by HFRR at 60°C: This determination was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of modes A and B of ISO12156-1:18.

Manganese: This determination was problematic. Two statistical outliers were observed and four other test results were excluded. The batch was spiked with 3 mg/L Manganese. The laboratories should be able to find at least 2.6 mg/L (3 mg/L - 0.4 mg/L $_{(R\ EN16576)}$). Four laboratories reported a test result lower than 2.6 mg/L. Therefore, these test results were excluded from the statistical evaluation. The calculated reproducibility after rejection of the suspect data is not in agreement with the very strict requirements of EN16576:14.

Nitrogen: This determination was problematic. No statistical outliers were observed. The calculated reproducibility is not in agreement with ASTM D4629:17.

Polycyclic Aromatics: This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in full agreement with the requirements EN12916:19.

Mono Aromatics: This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements EN12916:19.

Di Aromatics: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in full agreement with the requirements EN12916:19.

Tri+ Aromatics: This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements EN12916:19.

Total Aromatics: This determination was not problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements EN12916:19.

Pour Point Manual: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with ISO3016:19.

Pour Point Automated: This determination was not problematic. No statistical outliers were observed but one test result was excluded. The calculated reproducibility after rejection of the suspect data is in agreement with ASTM D5950:14(2020) 3°C interval.

Sulfur: This determination was not problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in full agreement with the requirements of ISO20846:19.

Water: This determination was not problematic. Six statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO12937:00.

Sample #21006

Cetane Number: This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ISO5165:20.

DCN - EN15195: This determination was problematic. One statistical outlier was observed over two parameters (Derived Cetane Number and Ignition Delay). Both calculated reproducibilities after rejection of the statistical outlier are not in agreement with the respective requirements of EN15195:14.

DCN - EN16715: This determination was problematic for Derived Cetane Number and Ignition Delay. One statistical outlier was observed over three parameters (Derived Cetane Number, Ignition Delay and Combustion Delay). The calculated reproducibility after rejection of the statistical outlier is for Combustion Delay in agreement with the requirements of EN16715:15 but not in agreement for Derived Cetane Number and Ignition Delay.

Sample #21007

Total Contamination: This determination may be problematic for a number of laboratories. Two statistical outliers were observed and three other test results were excluded. The subsamples were spiked with Arizone Dust and therefore the minimal concentration was known (20 mg/kg). The laboratories should be able to find at least 12.6 mg/kg (20 mg/kg - 7.4 mg/kg $_{(R\ EN12662)}$). Three laboratories reported a lower numerical test result than 12.6 mg/kg. Therefore, these test results were excluded from the statistical evaluation. The calculated reproducibility after rejection of the suspect data is in full agreement with the requirements of EN12662:14.

Sample #21008

Oxidation Stability Induction period: This determination was problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not in agreement with EN15751:14.

Oxidation Stability Insolubles: This determination was not problematic. In total four outliers were observed over three parameters and one other test result was excluded. All calculated reproducibilities after rejection of the suspect data are in agreement with ISO12205:95.

4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES

A comparison has been made between the reproducibility as declared by the reference test method and the reproducibility as found for the group of participating laboratories. The number of significant test results, the average, the calculated reproducibility (2.8 * standard deviation) and the target reproducibility derived from literature reference test methods (in casu ASTM, EN, ISO test methods) or previous proficiency tests are presented in the next tables.

Parameter	unit	n	average	2.8 * sd	R(lit)
Total Acid Number	mgKOH/g	79	0.031	0.031	0.04
Ash content	%M/M	63	0.0007	0.0013	0.005
Calc. Cetane Index, 4 variables		125	54.89	0.83	0.91
Cloud Point	°C	140	-2.4	2.2	4
Cold Filter Plugging Point	°C	135	-13.6	3.6	3.8
Carbon Residue on 10% residue	%M/M	69	0.016	0.024	0.016
Copper Corrosion 3 hrs at 50°C		120	1 (1a)	n.a.	n.a.
Density at 15°C	kg/m^3	159	842.0	0.2	0.5
Initial Boiling Point	°C	149	184.7	9.7	10.2
Temp at 10% recovery	°C	148	231.9	4.6	5.1
Temp at 50% recovery	°C	152	286.7	2.9	3.0
Temp at 90% recovery	°C	151	340.5	3.8	5.1
Temp at 95% recovery	°C	151	356.1	6.1	8.9
Final Boiling Point	°C	141	366.1	4.6	7.1
Volume at 250°C	%V/V	146	20.0	2.2	2.7
Volume at 350°C	%V/V	144	93.5	1.7	2.7
FAME	%V/V	90	7.13	0.66	0.52
Flash Point PMcc	°C	160	73.1	3.6	5.2
Kinematic Viscosity at 40°C	mm^2/s	136	3.398	0.029	0.036
Lubricity by HFRR at 60°C	µm	80	203	68	80
Manganese as Mn	mg/L	31	3.09	0.56	0.45
Nitrogen	mg/kg	52	5.7	2.5	2.0
Polycyclic Aromatics	%M/M	62	2.67	0.96	0.96
Mono Aromatics	%M/M	57	18.9	2.1	2.4
Di Aromatics	%M/M	59	2.40	0.71	0.79
Tri$^+$ Aromatics	%M/M	53	0.29	0.38	0.60
Total Aromatics	%M/M	54	21.7	2.0	2.6
Pour Point Manual	°C	94	-14.0	4.7	9
Pour Point Automated Δ3°C	°C	48	-13.6	5.4	6.1
Sulfur	mg/kg	144	8.0	2.0	2.0
Water	mg/kg	142	55.7	23.3	51.3

Table 8: reproducibilities of tests on sample #21005

Parameter	unit	n	average	2.8 * sd	R(lit)
Cetane Number		30	54.0	2.8	4.5
DCN (EN15195)		8	54.9	3.4	2.6
Ignition Delay (EN15195)	ms	3	3.71	0.26	0.19
DCN (EN16715)		16	54.6	2.0	1.6
Ignition Delay (EN16715)	ms	12	2.99	0.21	0.15
Combustion Delay (EN16715)	ms	11	4.36	0.09	0.12
Total Contamination	mg/kg	77	28.6	9.3	8.8
Ox. Stab. Induction period	hours	34	18.2	5.8	3.8

Parameter	unit	n	average	2.8 * sd	R(lit)
Ox. Stab. Filt. Insolubles (A)	g/m^3	42	1.74	3.45	5.64
Ox. Stab. Adh. Insolubles (B)	g/m^3	40	1.49	3.24	5.64
Ox. Stab. Total Insolubles (A + B)	g/m^3	46	3.21	5.23	7.98

Table 9: reproducibilities of tests on samples #21006, #21007 and #21008

Without further statistical calculations, it can be concluded that for many tests there is a good compliance of the group of participants with the reference test methods. The problematic tests have been discussed in paragraph 4.1.

4.3 COMPARISON OF THE PROFICIENCY TEST OF FEBRUARY 2021 WITH PREVIOUS PTS

	February 2021	February 2020	March 2019	March 2018	March 2017
Number of reporting laboratories	179	170	173	180	174
Number of test results	3637	3624	3565	3748	3737
Number of statistical outliers	90	93	108	77	101
Percentage of statistical outliers	2.5%	2.6%	3.0%	2.1%	2.7%

Table 10: comparison with previous proficiency tests

In proficiency tests, outlier percentages of 3% - 7.5% are quite normal.

The performance of the determinations of the proficiency tests was compared to the requirements of the reference test methods. The conclusions are given in the following table.

Parameter	February 2021	February 2020	March 2019	March 2018	March 2017
Total Acid Number	+	+	+	+	+
Ash content	++	++	++	++	++
Calc. Cetane Index, 4 variables	+/-	+	-	n.e.	n.e.
Cloud Point	+	+	+	+	+
Cold Filter Plugging Point	+/-	+	-	+	+
Carbon Residue on 10% residue	-	-	--	+/-	-
Density at 15°C	++	++	+	+	+
Distillation at 760 mmHg	+	+	+	+	+
FAME	-	-	--	--	-
Flash Point PMcc	+	+	+/-	+	+
Kinematic Viscosity at 40°C	+	+	+	+/-	+/-
Lubricity by HFRR at 60°C	+	+	+	-	-
Manganese as Mn	-	--	--	n.e.	n.e.
Nitrogen	-	--	-	--	--
Polycyclic Aromatics	+/-	--	+/-	+/-	+
Mono-, Di-, Tri$^+$-Aromatics	+	+	+/-	+	+
Total Aromatics	+	+	+	+	+
Pour Point	+	+	+	+	+

Parameter	February 2021	February 2020	March 2019	March 2018	March 2017
Sulfur	+/-	+/-	+	+/-	+/-
Water	++	++	++	++	++
Cetane Number	+	+	+	+	+
DCN (EN15195)	-	+	-	-	+
DCN (EN16715)	-	-	-	+	+/-
Total Contamination	+/-	-	-	-	-
Ox. Stability Induction period	-	-	--	--	-
Ox. Stability Insolubles	+	(--)	+	+	+

Table 11: comparison determinations against the reference test methods

The result between brackets should be read with care

The following performance categories were used:

- ++ : group performed much better than the reference test method
- + : group performed better than the reference test method
- +/- : group performance equals the reference test method
- - : group performed worse than the reference test method
- -- : group performed much worse than the reference test method
- n.e. : not evaluated

APPENDIX 1

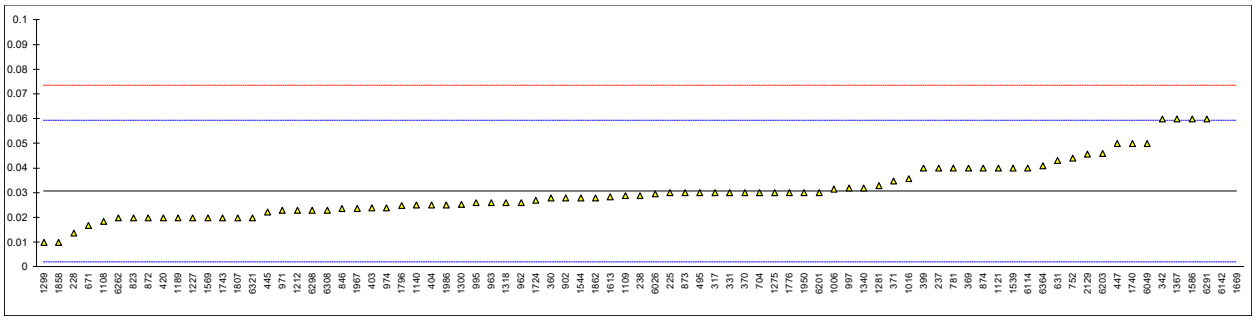
Determination of Total Acid Number on sample #21005; result in mg KOH/g

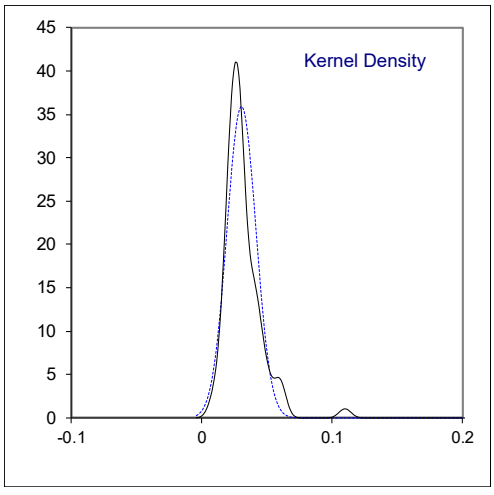
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D664-A	<0.1		-----	962	D974	0.0261		-0.32
140	D974	<0.02		-----	963	D974	0.026		-0.33
171	D974	<0.02		-----	971	D974	0.023		-0.54
206		-----		-----	974	D974	0.024		-0.47
207		-----		-----	995	D974	0.026		-0.33
208		-----		-----	997	D974	0.032		0.09
209		-----		-----	998		-----		-----
225	D974	0.03		-0.05	1006		0.0314		0.05
228	D974	0.01385		-1.18	1016	ISO6618	0.03581		0.36
237	D974	0.04		0.65	1059		-----		-----
238	D974	0.029		-0.12	1097		-----		-----
273		-----		-----	1108	D974	0.0184		-0.86
311	D664-A	<0.10		-----	1109	D974	0.029		-0.12
312		-----		-----	1121	D664-A	0.04		0.65
317	D974	0.03		-0.05	1126		-----		-----
323	D664-A	<0.1		-----	1140	D974	0.025		-0.40
328		-----		-----	1146		-----		-----
331	D664Mod.	0.03		-0.05	1150		-----		-----
333		-----		-----	1189	D974	0.02		-0.75
334	D974	<0.02		-----	1191		-----		-----
335		-----		-----	1199		-----		-----
337		-----		-----	1205		-----		-----
338		-----		-----	1212	D974	0.023		-0.54
342	D664-A	0.06		2.05	1227	D664-A	0.02		-0.75
343		-----		-----	1266		-----		-----
345		-----		-----	1275	IP177	0.030		-0.05
351		-----		-----	1281	ISO6618	0.033		0.16
357	D664-A	<0,1		-----	1286		-----		-----
360	D974	0.028		-0.19	1299	D664-A	0.01		-1.45
365		-----		-----	1300	D974	0.0253		-0.37
369	D974	0.040		0.65	1318	D664-A	0.026		-0.33
370	D974	0.030		-0.05	1340	D664-A	0.032		0.09
371	D974	0.0347		0.28	1356	D664-A	<0.05		-----
381		-----		-----	1367	IP139	0.06		2.05
391		-----		-----	1397		-----		-----
398		-----		-----	1399		-----		-----
399	D974	0.04		0.65	1438		-----		-----
403	D664-A	0.024		-0.47	1443		-----		-----
404	D664-A	0.025		-0.40	1459		-----		-----
420	ISO6618	0.02		-0.75	1498		-----		-----
431		-----		-----	1510	D974	<0.1		-----
432		-----		-----	1538		-----		-----
440		-----		-----	1539	D664	0.04		0.65
444		-----		-----	1544	D974	0.028		-0.19
445	D974	0.0222		-0.59	1557		-----		-----
447	IP139	0.05		1.35	1569	D664-A	0.02		-0.75
480		-----		-----	1586	D974	0.06		2.05
495	D664-A	0.03		-0.05	1588		-----		-----
498		-----		-----	1602		-----		-----
541	D974	<0.05		-----	1613	D664-A	0.0284		-0.16
631	D974	0.043		0.86	1636		-----		-----
663		-----		-----	1656		-----		-----
671	D974	0.0168		-0.97	1669		0.345	C,R(0.01)	22.00
704	D974	0.030		-0.05	1681		-----		-----
734		-----		-----	1724	D664-A	0.027		-0.26
751		-----		-----	1730		-----		-----
752		0.044		0.93	1740	D974	0.05		1.35
759		-----		-----	1742		-----		-----
778		-----		-----	1743	D664-A	0.02		-0.75
779		-----		-----	1776	D664-A	0.03		-0.05
781	D974	0.04		0.65	1796	D664	0.0249		-0.40
782		-----		-----	1807	D664-A	0.02		-0.75
785		-----		-----	1810		-----		-----
798		-----		-----	1833		-----	W	-----
823	D974	0.02		-0.75	1849		-----		-----
846	GB/T258	0.0236		-0.49	1858	D664	0.01		-1.45
872	D664-A	0.02		-0.75	1862	D974	0.028		-0.19
873	D974	0.03		-0.05	1936		-----		-----
874	D974	0.040		0.65	1937		-----		-----
875		-----		-----	1938		-----		-----
902	D664-A	0.028		-0.19	1950	D974	0.03		-0.05
913		-----		-----	1953		-----		-----
914		-----		-----	1961		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967	D664	0.0237		-0.49	6163		-----		-----
1971		-----		-----	6192		-----		-----
1976		-----		-----	6201	D664-A	0.03		-0.05
1984		-----		-----	6203	D974	0.046		1.07
1986	D664-A	0.025		-0.40	6242		-----		-----
2129	IP139	0.0458		1.06	6262	D664-A	0.0199		-0.75
2130		-----		-----	6291	D664-A	0.06		2.05
2146		-----		-----	6298	D664-A	0.023		-0.54
6012		-----		-----	6299		-----		-----
6026	D664	0.0295		-0.08	6308	D974	0.023		-0.54
6035		-----		-----	6321	D664-A	0.02		-0.75
6049	D664-A	0.05		1.35	6363		-----		-----
6057	D974	<0.05	C	-----	6364	D974	0.041		0.72
6075		-----		-----	6373		-----		-----
6114	D664-A	0.04		0.65	6379		-----		-----
6142	ISO6618	0.11	R(0.01)	5.55	7009		-----		-----
6143		-----		-----	9057		-----		-----

normality	OK
n	79
outliers	2
mean (n)	0.03065
st.dev. (n)	0.011111
R(calc.)	0.03111
st.dev.(D974:14e2)	0.014286
R(D974:14e2)	0.04

Lab 1669 first reported 0.219
Lab 1833 first reported 0.0862
Lab 6057 first reported 0.09





Determination of Ash content on sample #21005; result in %M/M

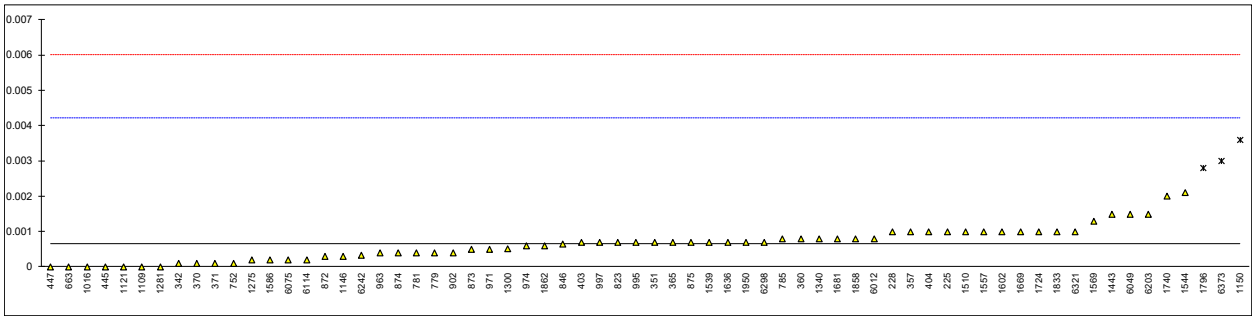
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D482	<0.010		-----	962	ISO6245	<0.01		-----
140	D482	<0.001		-----	963	ISO6245	0.0004		-0.14
171	D482	<0.010		-----	971	ISO6245	0.0005		-0.08
206		-----		-----	974	D482	0.0006		-0.03
207		-----		-----	995	ISO6245	0.0007		0.03
208		-----		-----	997	ISO6245	0.0007		0.03
209		-----		-----	998		-----		-----
225	D482	0.001		0.20	1006		-----		-----
228	D482	0.00099		0.19	1016	D482	0.000		-0.36
237	D482	<0.01		-----	1059	ISO6245	<0,001		-----
238	D482	<0.01		-----	1097		-----		-----
273		-----		-----	1108		-----		-----
311	ISO6245	<0.001		-----	1109	D482	0.000		-0.36
312		-----		-----	1121	ISO6245	0.000		-0.36
317	ISO6245	<0.001		-----	1126		-----		-----
323	ISO6245	<0.001		-----	1140	IP4	<0.001		-----
328		-----		-----	1146	D482	0.0003		-0.20
331	ISO6245	<0.001		-----	1150	ISO6245	0.0036	R(0.01)	1.65
333		-----		-----	1189	ISO6245	<0.001		-----
334	ISO6245	<0.001		-----	1191	ISO6245	<0,001		-----
335		-----		-----	1199		-----		-----
337		-----		-----	1205		-----		-----
338		-----		-----	1212	ISO6245	<0,001		-----
342	ISO6245	0.0001		-0.31	1227		-----		-----
343	ISO6245	<0.001		-----	1266		-----		-----
345	ISO6245	<0.001		-----	1275	IP4	0.0002		-0.25
351	ISO6245	0.0007		0.03	1281	ISO6245	0.00		-0.36
357	ISO6245	0.001		0.20	1286		-----		-----
360	ISO6245	0.0008		0.08	1299	D482	<0.010		-----
365	IP4	0.0007		0.03	1300	ISO6245	0.00051		-0.08
369	ISO6245	<0.001		-----	1318		-----		-----
370	ISO6245	0.0001		-0.31	1340	ISO6245	0.0008		0.08
371	ISO6245	0.0001		-0.31	1356	D482	<0.010		-----
381		-----		-----	1367	IP4	<0.001		-----
391		-----		-----	1397		-----		-----
398		-----		-----	1399		-----		-----
399	ISO6245	<0.001		-----	1438		-----		-----
403	ISO6245	0.0007		0.03	1443	ISO6245	0.0015		0.48
404	D482	0.001		0.20	1459		-----		-----
420	ISO6245	<0,001		-----	1498		-----		-----
431		-----		-----	1510	IP4	0.001		0.20
432		-----		-----	1538		-----		-----
440		-----		-----	1539	ISO6245	0.0007		0.03
444		-----		-----	1544	ISO6245	0.0021		0.81
445	IP4	0.000		-0.36	1557	ISO6245	0.001		0.20
447	IP4	0		-0.36	1569	ISO6245	0.0013		0.36
480		-----		-----	1586	D482	0.0002		-0.25
495		-----		-----	1588		-----		-----
498		-----		-----	1602	ISO6245	0.001		0.20
541	ISO6245	<0.001		-----	1613	D482	<0.01		-----
631	D482	<0.001		-----	1636	ISO6245	0.0007		0.03
663	D482	0.00		-0.36	1656	ISO6245	<0.01		-----
671	D482	<0.001	C	-----	1669		0.001		0.20
704	ISO6245	< 0.001		-----	1681	ISO6245	0.0008		0.08
734		-----		-----	1724	D482	0.001		0.20
751		-----		-----	1730		-----		-----
752		0.0001		-0.31	1740	ISO6245	0.0020		0.76
759	ISO6245	<0.001		-----	1742		-----		-----
778		-----		-----	1743		-----		-----
779	ISO6245	0.0004		-0.14	1776		-----		-----
781	ISO6245	0.0004		-0.14	1796	ISO6245	0.0028	R(0.01)	1.20
782		-----		-----	1807		-----		-----
785	ISO6245	0.0008		0.08	1810		-----		-----
798		-----		-----	1833	ISO6245	0.001		0.20
823	ISO6245	0.0007		0.03	1849	ISO6245	<0,001		-----
846	GB/T508	0.00065		0.00	1858	D482	0.0008		0.08
872	ISO6245	0.0003		-0.20	1862	ISO6245	0.0006		-0.03
873	D482	0.0005		-0.08	1936		-----		-----
874	ISO6245	0.0004		-0.14	1937		-----		-----
875	ISO6245	0.0007		0.03	1938		-----		-----
902	ISO6245	0.0004		-0.14	1950	ISO6245	0.0007		0.03
913		-----		-----	1953		-----		-----
914		-----		-----	1961		-----		-----

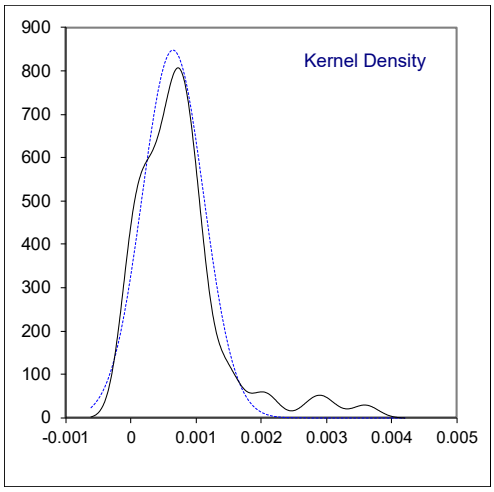
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967	D482	<0.010		-----	6163		-----		-----
1971		-----		-----	6192		-----		-----
1976		-----		-----	6201	ISO6245	<0,001		-----
1984		-----		-----	6203	ISO6245	0.0015		0.48
1986	ISO6245	<0.001		-----	6242	ISO6245	0.00033		-0.18
2129	IP4	<0.001		-----	6262	D482	<0.010		-----
2130		-----		-----	6291		-----		-----
2146		-----		-----	6298	D482	0.0007		0.03
6012	ISO6245	0.0008		0.08	6299		-----		-----
6026	ISO6245	<0.001		-----	6308	ISO6245	<0.001		-----
6035		-----		-----	6321	IP4	0.001		0.20
6049	ISO6245	0.0015		0.48	6363		-----		-----
6057	ISO6245	<0,001		-----	6364		-----		-----
6075	ISO6245	0.0002		-0.25	6373	ISO6245	0.003	R(0.01)	1.32
6114	ISO6245	0.0002		-0.25	6379		-----		-----
6142		-----		-----	7009		-----		-----
6143		-----		-----	9057		-----		-----

normality	suspect
n	63
outliers	3
mean (n)	0.00065
st.dev. (n)	0.000471
R(calc.)	0.00132
st.dev.(ISO6245:01)	0.001786
R(ISO6245:01)	0.005

application range: 0.001 – 0.079 %M/M

Lab 671 first reported 0.78





Determination of Calculated Cetane Index, four variables on sample #21005

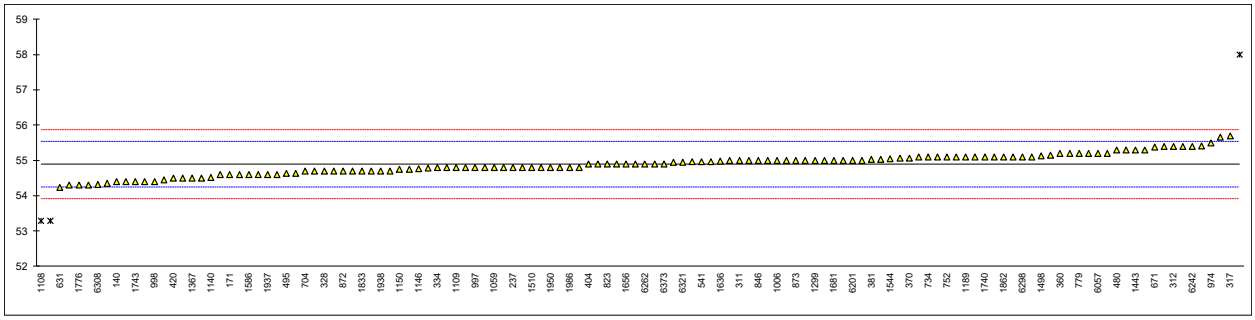
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D4737-A	55.41		1.60	962		-----		-----
140	ISO4264	54.4		-1.52	963	ISO4264	55.4		1.57
171	D4737-A	54.6		-0.90	971	ISO4264	55.3		1.26
206		-----		-----	974	D4737-A	55.5		1.88
207		-----		-----	995	ISO4264	55.0		0.33
208		-----		-----	997	ISO4264	54.8		-0.28
209		-----		-----	998	D4737-A	54.41		-1.49
225	D4737-A	55.4		1.57	1006	D4737-A	55.0		0.33
228	D4737-A	54.7		-0.59	1016		-----		-----
237	D4737-A	54.8		-0.28	1059	ISO4264	54.8		-0.28
238		-----		-----	1097	ISO4264	55.2		0.95
273		-----		-----	1108	ISO4264	53.3	E,R(0.01)	-4.92
311	D4737-A	55.0		0.33	1109	D4737-A	54.8		-0.28
312	ISO4264	55.4		1.57	1121	ISO4264	55.06		0.52
317	ISO4264	55.7		2.49	1126		-----		-----
323	ISO4264	54.8		-0.28	1140	IP380	54.5247		-1.13
328	ISO4264	54.7		-0.59	1146	ISO4264	54.77		-0.38
331		-----		-----	1150	ISO4264	54.75		-0.44
333		-----		-----	1189	ISO4264	55.1		0.64
334	ISO4264	54.8		-0.28	1191		-----		-----
335		-----		-----	1199		-----		-----
337		-----		-----	1205	ISO4264	55.04		0.46
338	ISO4264	54.9		0.02	1212	ISO4264	55.0		0.33
342	ISO4264	54.8		-0.28	1227	D976	53.3	E,R(0.01)	-4.92
343		-----		-----	1266	ISO4264	55.1		0.64
345		-----		-----	1275	IP380	54.4		-1.52
351		-----		-----	1281	ISO4264	55.66		2.37
357	ISO4264	54.75		-0.44	1286		-----		-----
360	ISO4264	55.2		0.95	1299	D4737-A	55		0.33
365	IP380	54.46		-1.33	1300	ISO4264	55.14634		0.78
369	ISO4264	55.0		0.33	1318	D4737-A	54.6		-0.90
370	ISO4264	55.07		0.55	1340	ISO4264	54.35	C	-1.67
371	ISO4264	55.1		0.64	1356	ISO4264	58	R(0.01)	9.59
381	ISO4264	55.03		0.43	1367	IP380	54.5		-1.21
391	ISO4264	55.1		0.64	1397		-----		-----
398		-----		-----	1399		-----		-----
399		-----		-----	1438		-----		-----
403	ISO4264	55		0.33	1443	ISO4264	55.3		1.26
404	ISO4264	54.9		0.02	1459	ISO4264	54.8	C	-0.28
420	ISO4264	54.5		-1.21	1498	D4737-A	55.13		0.73
431		-----		-----	1510	D4737-A	54.8		-0.28
432		-----		-----	1538		-----		-----
440		-----		-----	1539	ISO4264	55.0		0.33
444		-----		-----	1544	ISO4264	55.05		0.49
445	IP380	54.3		-1.83	1557	ISO4264	54.9		0.02
447	ISO4264	54.5		-1.21	1569	ISO4264	54.7		-0.59
480	ISO4264	55.3		1.26	1586	D4737-A	54.6		-0.90
495	D4737-B	54.63		-0.81	1588		-----		-----
498		-----		-----	1602	ISO4264	55.3	C	1.26
541	D4737-A	54.97		0.24	1613	D4737-A	54.97		0.24
631	D4737-A	54.24		-2.01	1636	ISO4264	54.99		0.30
663	D4737-A	54.96		0.21	1656	ISO4264	54.9		0.02
671	D4737-A	55.39		1.54	1669		54.5		-1.21
704	D4737-A	54.7		-0.59	1681	ISO4264	55.0		0.33
734	ISO4264	55.1		0.64	1724		55.0		0.33
751	ISO4264	55.0		0.33	1730		-----		-----
752		55.1		0.64	1740	ISO4264	55.1		0.64
759	ISO4264	54.6		-0.90	1742		-----		-----
778		-----		-----	1743	ISO4264	54.4		-1.52
779	ISO4264	55.2		0.95	1776	ISO4264	54.3		-1.83
781	ISO4264	54.8		-0.28	1796	D4737	54.8		-0.28
782	D4737-A	54.64		-0.78	1807	ISO4264	54.6		-0.90
785	ISO4264	54.7		-0.59	1810		-----		-----
798		-----		-----	1833	ISO4264	54.7		-0.59
823	ISO4264	54.9		0.02	1849	ISO4264	55.1		0.64
846	SH/T0694	55.0		0.33	1858	D4737	54.7		-0.59
872	ISO4264	54.7		-0.59	1862	ISO4264	55.1		0.64
873	D4737-A	55		0.33	1936	ISO4264	54.9		0.02
874	ISO4264	55.1		0.64	1937	ISO4264	54.6	E	-0.90
875	ISO4264	54.8		-0.28	1938	ISO4264	54.7		-0.59
902	ISO4264	54.79		-0.32	1950	ISO4264	54.8		-0.28
913		-----		-----	1953		-----		-----
914		-----		-----	1961		-----		-----

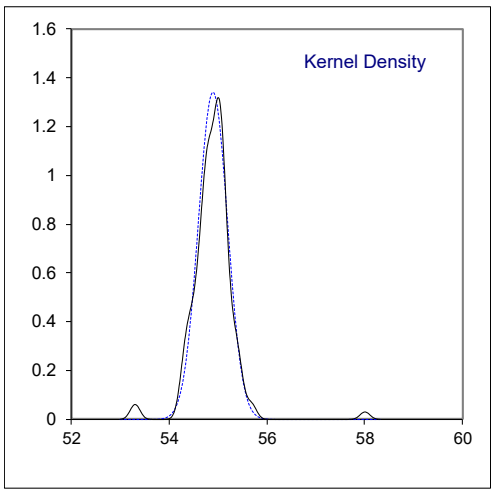
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967	D4737-A	54.8		-0.28	6163		-----		-----
1971		-----		-----	6192		-----		-----
1976	D4737-A	55.2		0.95	6201	ISO4264	55.0		0.33
1984	ISO4264	54.95		0.18	6203	ISO4264	54.6		-0.90
1986	ISO4264	54.8		-0.28	6242	D4737-A	55.4		1.57
2129	IP380	54.3		-1.83	6262	ISO4264	54.9		0.02
2130		-----		-----	6291	ISO4264	54.9		0.02
2146		-----		-----	6298	D4737-A	55.1		0.64
6012	ISO4264	54.4		-1.52	6299	ISO4264	55.1		0.64
6026	ISO4264	54.8		-0.28	6308	ISO4264	54.32		-1.77
6035	ISO4264	55.1		0.64	6321	IP380	54.9532		0.19
6049	ISO4264	54.7		-0.59	6363		-----		-----
6057	ISO4264	55.2		0.95	6364		-----		-----
6075		-----		-----	6373	ISO4264	54.9		0.02
6114	ISO4264	55.2		0.95	6379		-----		-----
6142		-----		-----	7009	In house	55	C	0.33
6143		-----		-----	9057		-----		-----

normality	OK
n	125
outliers	3
mean (n)	54.892
st.dev. (n)	0.2971
R(calc.)	0.832
st.dev.(iis memo 1904)	0.3239
R(iis memo 1904)	0.907

Lab 1340 first reported 53.84
Lab 1459 first reported 58.7
Lab 1602 first reported 57.0
Lab 7009 first reported 52.6

For labs marked with an E iis calculated a difference in CCI:
Lab 1108: 54.9
Lab 1227: 53.7
Lab 1937: 54.8



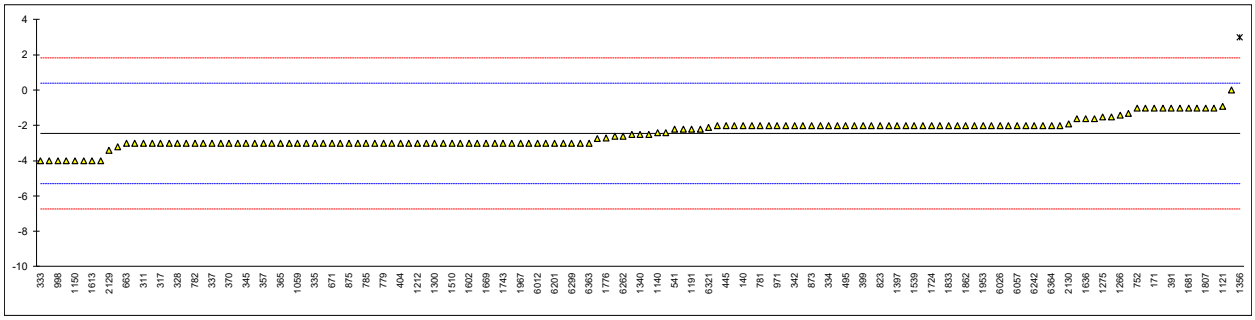


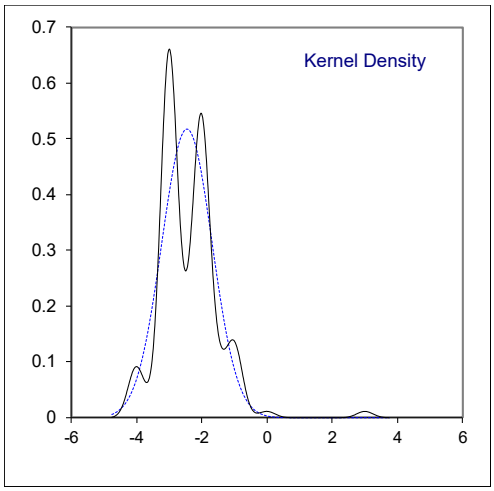
Determination of Cloud Point on sample #21005; result in °C

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D5773	-2.5		-0.04	962	EN23015	-3		-0.39
140	EN23015	-2		0.31	963	ISO3015	-3		-0.39
171	D2500	-1		1.01	971	D2500	-2		0.31
206		-----		-----	974	D2500	-2		0.31
207		-----		-----	995	D2500	-2.0		0.31
208		-----		-----	997	D2500	-3		-0.39
209		-----		-----	998	D2500	-4.0		-1.09
225	D2500	-2		0.31	1006		-----		-----
228	D2500	-3		-0.39	1016	ISO3015	-2.6		-0.11
237	D2500	-4		-1.09	1059	ISO3015	-3		-0.39
238	D2500	-3		-0.39	1097	ISO3015	-2		0.31
273		-----		-----	1108	D5771	-3.2		-0.53
311	EN23015	-3		-0.39	1109	D5773	-2.2		0.17
312	EN23015	-3		-0.39	1121	IP219	-0.9		1.08
317	D5771	-3		-0.39	1126		-----		-----
323	EN23015	-2		0.31	1140	D5773	-2.4		0.03
328	EN23015	-3		-0.39	1146	D2500	-3		-0.39
331		-----		-----	1150	ISO3015	-4		-1.09
333	D2500	-4		-1.09	1189	EN23015	-3		-0.39
334	ISO3015	-2		0.31	1191	D7689	-2.2		0.17
335	ISO3015	-3		-0.39	1199		-----		-----
337	EN23015	-3		-0.39	1205		-----		-----
338	EN23015	-4		-1.09	1212	D7689	-3		-0.39
342	ISO3015	-2		0.31	1227	D2500	-3		-0.39
343	EN23015	-3		-0.39	1266	EN23015	-1.4		0.73
345	D5771	-3		-0.39	1275	IP219	-1.5		0.66
351	D7683	-3.00		-0.39	1281		-----		-----
357	D5771	-3		-0.39	1286		-----		-----
360	D2500	-2		0.31	1299	D2500	-2		0.31
365	IP219	-3		-0.39	1300	EN23015	-3		-0.39
369	EN23015	-2		0.31	1318	D7689	-3.0		-0.39
370	ISO3015	-3		-0.39	1340	D2500	-2.5		-0.04
371	ISO3015	-3		-0.39	1356	EN23015	3	R(0.01)	3.81
381		-----		-----	1367	IP219	0.0		1.71
391	EN23015	-1		1.01	1397	EN23015	-2		0.31
398	EN23015	-1		1.01	1399		-----		-----
399	ISO3015	-2		0.31	1438		-----		-----
403	ISO3015	-3		-0.39	1443		-----		-----
404	ISO3015	-3		-0.39	1459	EN23015	-2.0		0.31
420	ISO3015	-3		-0.39	1498	D2500	-4		-1.09
431		-----		-----	1510	IP219	-3		-0.39
432		-----		-----	1538		-----		-----
440		-----		-----	1539	ISO3015	-2		0.31
444		-----		-----	1544	ISO3015	-3.0		-0.39
445	IP219	-2		0.31	1557	ISO3015	-1.5		0.66
447	IP219	-1		1.01	1569	EN23015	-2		0.31
480		-----		-----	1586	D5771	-2.2		0.17
495	EN23015	-2.0		0.31	1588		-----		-----
498		-----		-----	1602	ISO3015	-3		-0.39
541	D5771	-2.2		0.17	1613	D2500	-4		-1.09
631	D5773	-3		-0.39	1636	D5771	-1.6		0.59
663	D2500	-3		-0.39	1656	D2500	-3		-0.39
671	D2500	-3		-0.39	1669		-3		-0.39
704	D2500	-2		0.31	1681	ISO3015	-1		1.01
734	D7683	-1.6		0.59	1724	D2500	-2		0.31
751	EN23015	-2		0.31	1730		-----		-----
752		-1		1.01	1740	ISO3015	-2		0.31
759	ISO3015	-2		0.31	1742	ISO3015	-3		-0.39
778	D2500	-1		1.01	1743	ISO3015	-3		-0.39
779	EN23015	-3		-0.39	1776	ISO3015	-2.7		-0.18
781	EN23015	-2		0.31	1796	D2500	-1		1.01
782	EN23015	-3		-0.39	1807	D2500	-1		1.01
785	EN23015	-3		-0.39	1810	D2500	-3		-0.39
798		-----		-----	1833	D5771	-2		0.31
823	EN23015	-2		0.31	1849		-----		-----
846		-----		-----	1858	D2500	-2		0.31
872	EN23015	-3		-0.39	1862	EN23015	-2		0.31
873	D2500	-2		0.31	1936		-----		-----
874	EN23015	-3		-0.39	1937		-----		-----
875	EN23015	-3		-0.39	1938		-----		-----
902	D2500	-3		-0.39	1950	EN23015	-2		0.31
913		-----		-----	1953	D7683	-2		0.31
914		-----		-----	1961		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967	D2500	-3		-0.39	6163	ISO3015	-2.75		-0.21
1971	ISO3015	-4		-1.09	6192		-----		-----
1976	ISO3015	-3		-0.39	6201	ISO3015	-3		-0.39
1984	ISO3015	-2.5		-0.04	6203	EN23015	-2		0.31
1986	ISO3015	-2		0.31	6242	EN23015	-2		0.31
2129	D2500	-3.4		-0.67	6262	EN23015	-2.6		-0.11
2130	IP444	-1.9		0.38	6291	EN23015	-3		-0.39
2146		-----		-----	6298	D2500	-2		0.31
6012	D2500	-3		-0.39	6299	ISO3015	-3		-0.39
6026	EN23015	-2		0.31	6308	EN23015	-3		-0.39
6035	ISO3015	-2.4		0.03	6321	D5773	-2.1		0.24
6049	D2500	-2.0		0.31	6363	D2500	-3		-0.39
6057	EN23015	-2		0.31	6364	D5771	-2.0		0.31
6075	EN23015	-1		1.01	6373	EN23015	-2		0.31
6114	ISO3015	-1.3		0.80	6379		-----		-----
6142	ISO3015	-1.6		0.59	7009		-----		-----
6143	D2500	-3		-0.39	9057		-----		-----

	normality	OK	
	n	140	
	outliers	1	
	mean (n)	-2.45	
	st.dev. (n)	0.770	
	R(calc.)	2.16	
	st.dev.(ISO3015:19)	1.429	
	R(ISO3015:19)	4	
Compare			
	R(EN23015:94)	4	EN23015:94 is withdrawn





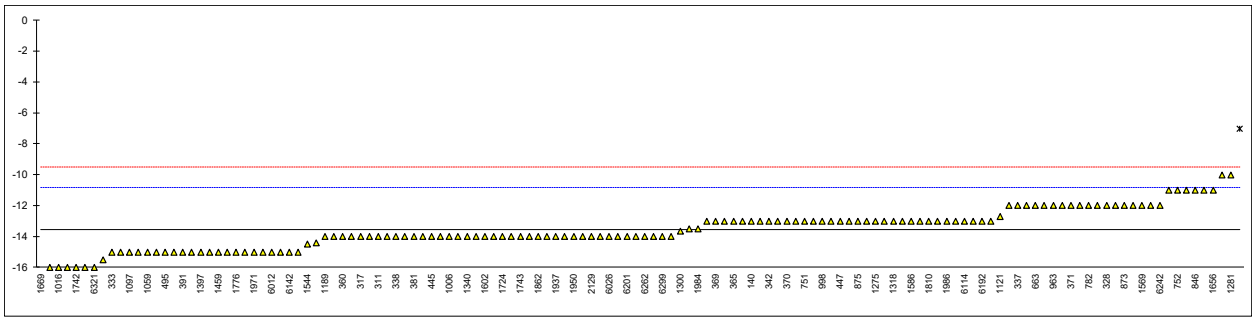
Determination of Cold Filter Plugging Point (CFPP) on sample #21005; result in °C

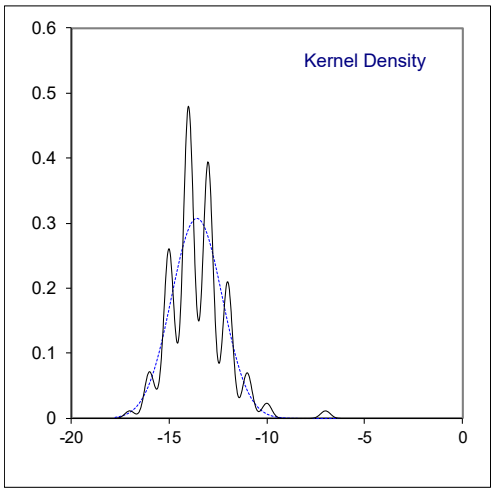
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	962	EN116	-12		1.15
140	EN116	-13		0.42	963	EN116	-12		1.15
171	D6371	-12		1.15	971	IP309	-13		0.42
206		-----		-----	974	IP309	-13		0.42
207		-----		-----	995		-----		-----
208		-----		-----	997	EN116	-11	C	1.89
209		-----		-----	998	D6371	-13.0		0.42
225		-----		-----	1006	D6371	-14		-0.32
228		-----		-----	1016	EN116	-16		-1.78
237	D6371	-11		1.89	1059	EN116	-15		-1.05
238		-----		-----	1097	EN116	-15		-1.05
273		-----		-----	1108	EN116	-15		-1.05
311	EN116	-14		-0.32	1109		-----		-----
312	EN116	-14		-0.32	1121	IP309	-12.7		0.64
317	EN116	-14	C	-0.32	1126		-----		-----
323	EN116	-16		-1.78	1140	IP309	-14.4		-0.61
328	EN116	-12		1.15	1146		-----		-----
331		-----		-----	1150	EN116	-15.5		-1.42
333	D6371	-15		-1.05	1189	EN116	-14		-0.32
334	EN116	-14		-0.32	1191	EN116	-13.5		0.05
335	EN116	-14		-0.32	1199		-----		-----
337	EN116	-12		1.15	1205		-----		-----
338	EN116	-14		-0.32	1212	EN116	-13		0.42
342	IP309	-13		0.42	1227	EN116	-10		2.62
343	EN116	-12		1.15	1266	EN116	-14		-0.32
345	EN116	-13		0.42	1275	IP309	-13		0.42
351	EN116	-15		-1.05	1281	EN116	-10		2.62
357	EN116	-12		1.15	1286		-----		-----
360	EN116	-14		-0.32	1299	EN116	-13		0.42
365	IP309	-13		0.42	1300	EN116	-13.666		-0.07
369	EN116	-13		0.42	1318	D6371	-13.0		0.42
370	EN116	-13		0.42	1340	EN116	-14		-0.32
371	EN116	-12		1.15	1356	EN116	-12		1.15
381	EN116	-14		-0.32	1367	D6371	-15.0		-1.05
391	EN116	-15		-1.05	1397	EN116	-15		-1.05
398	EN116	-13		0.42	1399		-----		-----
399		-----		-----	1438		-----		-----
403	EN116	-13		0.42	1443	EN116	-15		-1.05
404	D6371	-14		-0.32	1459	EN116	-15.0		-1.05
420	EN116	-13		0.42	1498	D6371	-13		0.42
431	EN116	-15		-1.05	1510	EN116	-11		1.89
432		-----		-----	1538		-----		-----
440		-----		-----	1539	EN116	-14		-0.32
444		-----		-----	1544	EN116	-14.5		-0.68
445	IP309	-14		-0.32	1557	EN116	-16		-1.78
447	IP309	-13		0.42	1569	EN116	-12		1.15
480		-----		-----	1586	D6371	-13		0.42
495	EN116	-15.0		-1.05	1588		-----		-----
498		-----		-----	1602	EN116	-14		-0.32
541	EN116	-13		0.42	1613	D6371	-15		-1.05
631		-----		-----	1636	EN116	-14		-0.32
663	EN116	-12		1.15	1656	IP309	-11		1.89
671		-----		-----	1669		-17		-2.52
704	EN116	-12		1.15	1681	EN116	-13.0		0.42
734	EN116	-12		1.15	1724	IP309	-14		-0.32
751	GOST22254	-13		0.42	1730		-----		-----
752		-11		1.89	1740	IP309	-14		-0.32
759	D6371	-14		-0.32	1742	EN116	-16		-1.78
778	EN116	-14		-0.32	1743	EN116	-14		-0.32
779	EN116	-15		-1.05	1776	EN116	-15		-1.05
781	EN116	-14		-0.32	1796	D6371	-15		-1.05
782	EN116	-12		1.15	1807		-----		-----
785	EN116	-12		1.15	1810	EN116	-13		0.42
798		-----		-----	1833	D6371	-14		-0.32
823	D6371	-7	R(0.01)	4.82	1849	EN116	-13		0.42
846	NB/SH/T0248	-11		1.89	1858	IP309	-16		-1.78
872		-----		-----	1862	EN116	-14		-0.32
873	EN116	-12		1.15	1936	EN116	-14.0		-0.32
874	EN116	-13		0.42	1937	EN116	-14		-0.32
875	EN116	-13		0.42	1938	EN116	-14		-0.32
902	EN116	-13		0.42	1950	EN116	-14		-0.32
913		-----		-----	1953	EN116	-12		1.15
914		-----		-----	1961		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967	EN116	-14		-0.32	6163	EN116	-13		0.42
1971	EN116	-15		-1.05	6192	EN116	-13		0.42
1976	EN116	-15		-1.05	6201	EN116	-14		-0.32
1984	EN116	-13.5		0.05	6203	EN116	-14		-0.32
1986	EN116	-13		0.42	6242	EN116	-12		1.15
2129	EN116	-14.0		-0.32	6262	EN116	-14		-0.32
2130	EN116	-14.0		-0.32	6291	EN116	-14		-0.32
2146		-----		-----	6298		-----		-----
6012	EN116	-15		-1.05	6299	EN116	-14		-0.32
6026	EN116	-14		-0.32	6308	EN116	-13		0.42
6035	EN116	-14.0		-0.32	6321	IP309	-16		-1.78
6049	EN116	-15.0		-1.05	6363	EN116	-15		-1.05
6057	EN116	-13		0.42	6364		-----		-----
6075		-----		-----	6373	EN116	-14		-0.32
6114	EN116	-13		0.42	6379		-----		-----
6142	EN16329	-15		-1.05	7009		-----		-----
6143		-----		-----	9057		-----		-----

normality	OK
n	135
outliers	1
mean (n)	-13.57
st.dev. (n)	1.298
R(calc.)	3.64
st.dev.(EN116:15)	1.362
R(EN116:15)	3.81

Lab 317 first reported -9
Lab 997 first reported -9





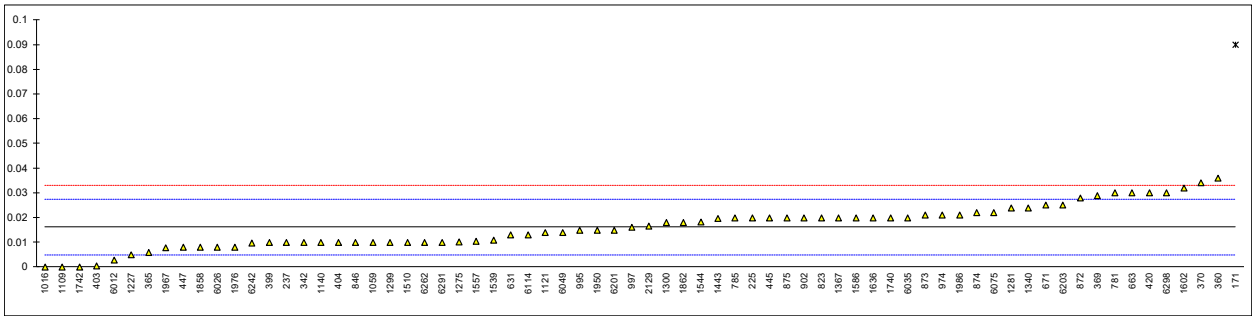
Determination of Carbon Residue (Micro method) on 10% residue on sample #21005; result in %M/M

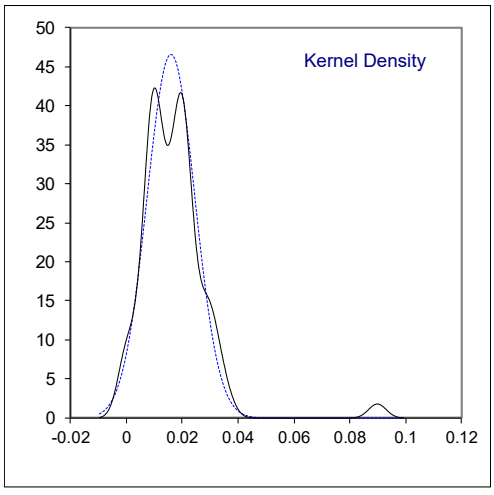
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D4530	<0.10		-----	962		-----		-----
140	ISO10370	<0.10		-----	963		-----		-----
171	D542	0.09	R(0.01)	13.20	971	ISO10370	<0.1		-----
206		-----		-----	974	D4530	0.021		0.87
207		-----		-----	995	D189	0.015		-0.21
208		-----		-----	997	D189	0.016		-0.03
209		-----		-----	998		-----		-----
225	D4530	0.02		0.69	1006		-----		-----
228		-----		-----	1016	ISO10370	0.000		-2.89
237	D4530	0.01		-1.10	1059	ISO10370	0.01		-1.10
238		-----		-----	1097		-----		-----
273		-----		-----	1108		-----		-----
311	ISO10370	<0.10		-----	1109	D4530	0.00		-2.89
312		-----		-----	1121	ISO10370	0.014		-0.39
317	ISO10370	<0.10		-----	1126		-----		-----
323	ISO10370	<0.10		-----	1140	IP398	0.01		-1.10
328		-----		-----	1146		-----		-----
331		-----		-----	1150		-----		-----
333		-----		-----	1189	ISO10370	<0.10		-----
334	ISO10370	<0.10		-----	1191		-----		-----
335		-----		-----	1199		-----		-----
337		-----		-----	1205		-----		-----
338		-----		-----	1212	ISO10370	<0,10		-----
342	ISO10370	0.01		-1.10	1227	D4530	0.005		-1.99
343	ISO10370	<0.10		-----	1266		-----		-----
345		-----		-----	1275	IP398	0.0101		-1.08
351	ISO10370	<0,05		-----	1281	ISO10370	0.024		1.40
357		-----		-----	1286		-----		-----
360	D4530	0.036		3.55	1299	D4530	0.01		-1.10
365	IP13	0.006		-1.82	1300	ISO10370	0.01797		0.32
369	ISO10370	0.029		2.30	1318		-----		-----
370	ISO10370	0.034	C	3.19	1340	ISO10370	0.024		1.40
371		-----		-----	1356	ISO10370	<0.01		-----
381		-----		-----	1367	IP398	0.02		0.69
391		-----		-----	1397		-----		-----
398		-----		-----	1399		-----		-----
399	ISO10370	0.01		-1.10	1438		-----		-----
403	ISO10370	0.0005		-2.80	1443	ISO10370	0.0196		0.62
404	D4530	0.01		-1.10	1459		-----		-----
420	ISO6615	0.03		2.47	1498		-----		-----
431		-----		-----	1510	IP398	0.01		-1.10
432		-----		-----	1538		-----		-----
440		-----		-----	1539	ISO10370	0.011		-0.92
444		-----		-----	1544	ISO10370	0.0183	C	0.38
445	IP398	0.02		0.69	1557	ISO10370	0.0104		-1.03
447	IP398	0.008		-1.46	1569	ISO10370	<0,10		-----
480		-----		-----	1586	D4530	0.02		0.69
495		-----		-----	1588		-----		-----
498		-----		-----	1602	ISO10370	0.032		2.83
541	ISO10370	<0.10		-----	1613	D189	<0.1		-----
631	D4530	0.013		-0.56	1636	ISO10370	0.020		0.69
663	D4530	0.03		2.47	1656	ISO10370	<0.1		-----
671	D4530	0.025	C	1.58	1669		<0.01	C	-----
704	ISO10370	< 0.10		-----	1681		-----		-----
734		-----		-----	1724	D4530	<0,1		-----
751		-----		-----	1730		-----		-----
752		-----		-----	1740	ISO10370	0.02		0.69
759		-----		-----	1742	ISO10370	0.00		-2.89
778		-----		-----	1743		-----		-----
779		-----		-----	1776		-----		-----
781	ISO10370	0.03		2.47	1796		-----		-----
782		-----		-----	1807		-----		-----
785	ISO10370	0.02		0.69	1810		-----		-----
798		-----		-----	1833	D4530	<0.1		-----
823	ISO10370	0.02		0.69	1849		-----		-----
846	GB/T17144	0.01		-1.10	1858	D4530	0.008		-1.46
872	ISO10370	0.028		2.12	1862	ISO10370	0.018		0.33
873	D4530	0.021		0.87	1936		-----		-----
874	ISO10370	0.022		1.04	1937		-----		-----
875	ISO10370	0.02		0.69	1938		-----		-----
902	ISO10370	0.02		0.69	1950	ISO10370	0.015		-0.21
913		-----		-----	1953		-----		-----
914		-----		-----	1961		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967	D4530	0.0078		-1.49	6163		-----		-----
1971	ISO10370	<0,10		-----	6192		-----		-----
1976	ISO10370	0.0081		-1.44	6201	ISO10370	0.015		-0.21
1984		-----		-----	6203	ISO10370	0.025		1.58
1986	ISO10370	0.021		0.87	6242	ISO10370	0.0096		-1.17
2129	IP398	0.0166		0.08	6262	D4530	0.01		-1.10
2130	IP398	<0.01		-----	6291	ISO10370	0.01		-1.10
2146		-----		-----	6298	D4530	0.03		2.47
6012	D189	0.0028		-2.39	6299		-----		-----
6026	ISO6615	0.008		-1.46	6308	ISO10370	<0.1		-----
6035	ISO10370	0.02		0.69	6321	IP398	<0.10	C	-----
6049	ISO10370	0.014		-0.39	6363		-----		-----
6057	ISO10370	<0,01		-----	6364		-----		-----
6075	ISO10370	0.022		1.04	6373	ISO10370	<0.10		-----
6114	ISO10370	0.013		-0.56	6379		-----		-----
6142		-----		-----	7009		-----		-----
6143		-----		-----	9057		-----		-----

normality	OK
n	69
outliers	1
mean (n)	0.01616
st.dev. (n)	0.008572
R(calc.)	0.02400
st.dev.(ISO10370:14)	0.005594
R(ISO10370:14)	0.01566

Lab 370 first reported 0.044
Lab 671 first reported 0.05
Lab 1544 first reported 0.083
Lab 1669 first reported 0.09
Lab 6321 first reported 0.10





Determination of Copper Corrosion 3 hrs at 50°C on sample #21005

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D130	1A		-----	962	D130	1A		-----
140	ISO2160	1a		-----	963	D130	1a		-----
171	D130	1a		-----	971	D130	1a		-----
206		-----		-----	974	D130	1a		-----
207		-----		-----	995	D130	1a		-----
208		-----		-----	997		-----		-----
209		-----		-----	998	D130	1A		-----
225	D130	1a [1a]		-----	1006	D130	1a		-----
228	D130	1A		-----	1016	ISO2160	1A		-----
237	D130	1A		-----	1059	ISO2160	1a		-----
238	D130	1A		-----	1097	ISO2160	1a		-----
273		-----		-----	1108	ISO2160	1		-----
311	D130	1A		-----	1109	D130	1a		-----
312		-----		-----	1121	IP154	1a		-----
317	D130	1a		-----	1126		-----		-----
323	D130	1A		-----	1140	IP154	1a		-----
328	D130	1a		-----	1146		-----		-----
331		-----		-----	1150	ISO2160	1a		-----
333		-----		-----	1189	ISO2160	1A		-----
334	ISO2160	1A		-----	1191	ISO2160	1a		-----
335		-----		-----	1199		-----		-----
337		-----		-----	1205		-----		-----
338		-----		-----	1212	ISO2160	1A		-----
342	D130	1a		-----	1227	D130	1A		-----
343	ISO2160	1a		-----	1266	ISO2160	1a		-----
345	ISO2160	1a		-----	1275	IP154	1A		-----
351	ISO2160	1a		-----	1281	ISO2160	1a		-----
357	ISO2160	1a		-----	1286		-----		-----
360	ISO2160	1A		-----	1299	D130	1A		-----
365	IP154	1a		-----	1300	ISO2160	1		-----
369	ISO2160	1A		-----	1318	D130	1a		-----
370	ISO2160	1A		-----	1340	ISO2160	klasa 1		-----
371	ISO2160	1A		-----	1356		-----		-----
381		-----		-----	1367	D130	1A		-----
391		-----		-----	1397		-----		-----
398		-----		-----	1399		-----		-----
399	D130	1A		-----	1438		-----		-----
403	D130	cls 1A		-----	1443	ISO2160	1A		-----
404	D130	clasa 1		-----	1459		-----		-----
420	ISO2160	1a		-----	1498		-----		-----
431		-----		-----	1510	IP154	1A		-----
432		-----		-----	1538	ISO2160	1a		-----
440	IP154	1a		-----	1539	ISO2160	1a		-----
444		-----		-----	1544	ISO2160	1A		-----
445	IP154	1a		-----	1557	ISO2160	1a		-----
447	IP154	1a		-----	1569	ISO2160	1a		-----
480	ISO2160	1		-----	1586	D130	1a		-----
495		-----		-----	1588		-----		-----
498		-----		-----	1602	ISO2160	1A		-----
541	D130	1a		-----	1613	D130	1a		-----
631	D130	1A		-----	1636	ISO2160	1a		-----
663	D130	1a		-----	1656	IP154	1a		-----
671	D130	1A		-----	1669	ISO2160	1a		-----
704	ISO2160	1a		-----	1681	ISO2160	1a		-----
734		-----		-----	1724	D130	1a		-----
751	D130	1a		-----	1730		-----		-----
752		-----		-----	1740	ISO2160	1A		-----
759		-----		-----	1742		-----		-----
778		-----		-----	1743		-----		-----
779	ISO2160	1a		-----	1776		-----		-----
781	D130	1a		-----	1796	D130	1a		-----
782		-----		-----	1807	D130	1a		-----
785	D130	1a		-----	1810		-----		-----
798		-----		-----	1833	D130	No.1		-----
823	D130	1a		-----	1849	ISO2160	1a		-----
846	GB/T5096	1a		-----	1858	D130	1a		-----
872		-----		-----	1862		1A		-----
873	D130	1a		-----	1936		-----		-----
874	D130	1a		-----	1937		-----		-----
875	D130	1a		-----	1938		-----		-----
902	ISO2160	1a		-----	1950	D130	1a		-----
913		-----		-----	1953	ISO2160	1A		-----
914		-----		-----	1961	ISO2160	1a		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967	D130	1A		-----	6163		-----		-----
1971	ISO2160	1a		-----	6192		-----		-----
1976	ISO2160	1a		-----	6201	D130	1a		-----
1984		-----		-----	6203	ISO2160	1a		-----
1986	ISO2160	1A		-----	6242	ISO2160	1a		-----
2129	IP154	1A		-----	6262	D130	1A		-----
2130	D130	1a		-----	6291	D130	1a		-----
2146		-----		-----	6298	D130	1a		-----
6012	D130	1A		-----	6299	ISO2160	1a		-----
6026	ISO2160	1a		-----	6308	ISO2160	1a		-----
6035		-----		-----	6321	IP154	1A		-----
6049	ISO2160	1a		-----	6363		-----		-----
6057	ISO2160	1A		-----	6364	D130	1A		-----
6075	ISO2160	1a		-----	6373	ISO2160	1A		-----
6114	D130	1a		-----	6379		-----		-----
6142		-----		-----	7009		-----		-----
6143		-----		-----	9057		-----		-----

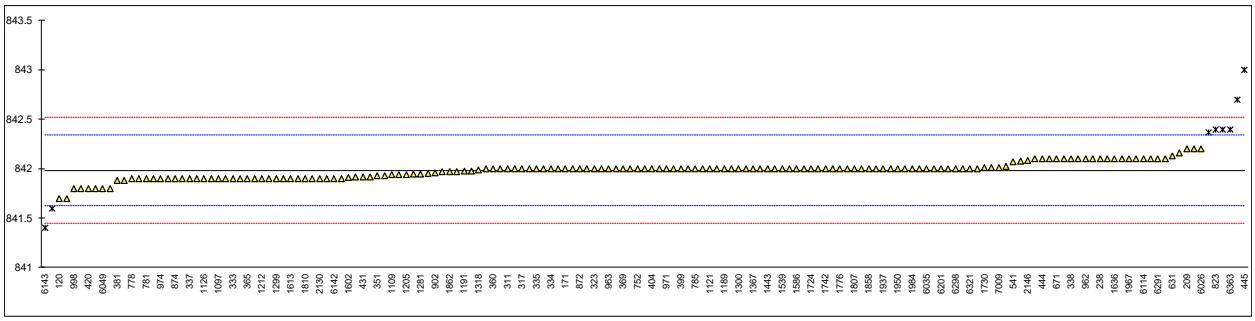
n	120
mean (n)	1(1a)

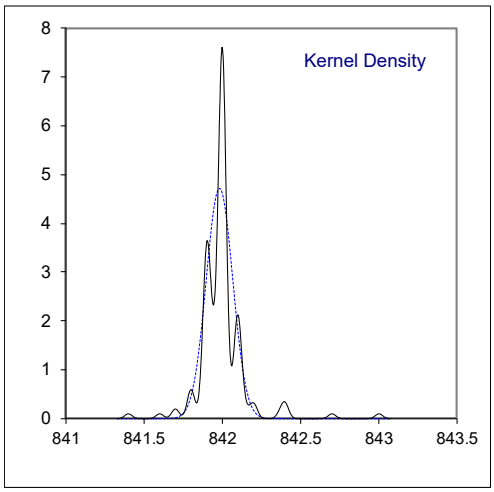
Determination of Density at 15°C on sample #21005; result in kg/m^3

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D4052	841.7		-1.58	962	ISO12185	842.1		0.66
140	D4052	842.0		0.10	963	ISO12185	842.0		0.10
171	D4052	842.0		0.10	971	ISO12185	842.0		0.10
206	D7777	842.1		0.66	974	D1298	841.9		-0.46
207	D7777	842.2		1.22	995	ISO12185	842.1		0.66
208	D7777	842.1		0.66	997	ISO12185	842.08		0.55
209	D7777	842.2		1.22	998	D4052	841.8		-1.02
225	D4052	842.0		0.10	1006	D4052	842.0		0.10
228	D4052	842.1		0.66	1016		-----		-----
237	D4052	842.0		0.10	1059	ISO12185	841.9		-0.46
238	D4052	842.1		0.66	1097	ISO12185	841.9		-0.46
273		-----		-----	1108	ISO12185	841.94		-0.23
311	ISO12185	842.0		0.10	1109	D4052	841.94		-0.23
312	ISO12185	842.0		0.10	1121	D4052	842.0		0.10
317	ISO12185	842.0		0.10	1126	ISO12185	841.9		-0.46
323	ISO12185	842.0		0.10	1140	IP365	842.1		0.66
328	ISO12185	841.9		-0.46	1146	D4052	842.0		0.10
331	ISO12185	842.7	R(0.01)	4.02	1150	ISO12185	841.93		-0.29
333	D4052	841.9		-0.46	1189	ISO12185	842.0		0.10
334	ISO12185	842.0		0.10	1191	ISO12185	841.98		-0.01
335	ISO12185	842.0		0.10	1199		-----		-----
337	ISO12185	841.9		-0.46	1205	ISO12185	841.94		-0.23
338	ISO12185	842.1		0.66	1212	ISO12185	841.9		-0.46
342	D4052	842.0		0.10	1227	D4052	842.0		0.10
343	ISO12185	842.0		0.10	1266	ISO3675	842.4	R(0.01)	2.34
345	ISO12185	841.9		-0.46	1275	IP365	841.9		-0.46
351	ISO12185	841.93		-0.29	1281	ISO12185	841.95		-0.18
357	D4052	841.95		-0.18	1286	ISO12185	841.953		-0.16
360	ISO12185	842.0		0.10	1299	D4052	841.9		-0.46
365	IP365	841.9		-0.46	1300	ISO12185	842.0		0.10
369	ISO12185	842.0		0.10	1318	D4052	841.99		0.05
370	ISO12185	842.0		0.10	1340	ISO12185	841.88		-0.57
371	ISO12185	842.0		0.10	1356	ISO12185	842.0		0.10
381	ISO12185	841.88		-0.57	1367	IP365	842.0		0.10
391	ISO12185	841.6	R(0.01)	-2.14	1397	ISO12185	842.0		0.10
398	ISO12185	841.9		-0.46	1399		-----		-----
399	ISO12185	842.0		0.10	1438		-----		-----
403	D4052	841.90		-0.46	1443	ISO12185	842.0		0.10
404	D4052	842.0		0.10	1459	ISO12185	841.98		-0.01
420	ISO12185	841.8		-1.02	1498		-----		-----
431	ISO12185	841.92		-0.35	1510	IP365	842.1		0.66
432	ISO12185	842.16		1.00	1538	ISO3675	842.0		0.10
440	D4052	841.8		-1.02	1539	ISO12185	842.0		0.10
444	D4052	842.1		0.66	1544	ISO12185	842.0		0.10
445	IP365	843.0	R(0.01)	5.70	1557	ISO3675	841.9		-0.46
447	IP365	842.0		0.10	1569	ISO12185	841.92		-0.35
480	ISO12185	841.9		-0.46	1586	D4052	842.0		0.10
495	ISO12185	841.92		-0.35	1588	ISO12185	842.37	R(0.01)	2.17
498		-----		-----	1602	ISO12185	841.91		-0.40
541	ISO12185	842.07		0.49	1613	D4052	841.9		-0.46
631	D4052	842.13		0.83	1636	ISO12185	842.1		0.66
663	D4052	841.97		-0.07	1656	D4052	841.8		-1.02
671	D4052	842.1		0.66	1669		842.0		0.10
704	ISO12185	842.0		0.10	1681	ISO12185	841.9		-0.46
734	D4052	842.0		0.10	1724	D4052	842.0		0.10
751	D4052	842.0		0.10	1730	ISO12185	842.01		0.16
752		842.0		0.10	1740	ISO12185	842.0		0.10
759	ISO12185	842.0		0.10	1742	ISO12185	842.0		0.10
778	ISO12185	841.9		-0.46	1743		842.0		0.10
779	ISO12185	841.9		-0.46	1776	ISO12185	842.0		0.10
781	ISO12185	841.9		-0.46	1796	D4052	842.0		0.10
782	D4052	841.9		-0.46	1807	ISO12185	842.0		0.10
785	ISO12185	842.0		0.10	1810	D4052	841.9		-0.46
798		-----		-----	1833	ISO12185	842.1		0.66
823	ISO	842.4	R(0.01)	2.34	1849	ISO12185	842.0		0.10
846	SH/T0604	842.0		0.10	1858	D4052	842.0		0.10
872	ISO12185	842.0		0.10	1862	ISO12185	841.97		-0.07
873	D4052	841.9		-0.46	1936	ISO12185	842.0		0.10
874	ISO12185	841.9		-0.46	1937	ISO12185	842.0		0.10
875	D4052	842.0		0.10	1938	ISO12185	842.0		0.10
902	ISO12185	841.96		-0.12	1950	ISO12185	842.0		0.10
913		-----		-----	1953		-----		-----
914		-----		-----	1961		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967	D1298	842.1		0.66	6163	ISO12185	842.026		0.25
1971	ISO12185	842.0		0.10	6192	D1298	842.1		0.66
1976	ISO12185	841.7		-1.58	6201	D4052	842.0		0.10
1984	ISO12185	842.0		0.10	6203	ISO12185	842.0		0.10
1986	ISO12185	842.0		0.10	6242	ISO12185	841.97		-0.07
2129	D4052	841.9		-0.46	6262	ISO12185	841.9		-0.46
2130	D4052	841.9		-0.46	6291	ISO12185	842.1		0.66
2146	ISO12185	842.085		0.58	6298	D4052	842.0		0.10
6012	ISO3675	841.9		-0.46	6299	ISO12185	842.01		0.16
6026	ISO12185	842.2		1.22	6308	ISO12185	842.0		0.10
6035	ISO12185	842.0		0.10	6321	IP365	842.0		0.10
6049	D4052	841.8		-1.02	6363	ISO12185	842.4	R(0.01)	2.34
6057	ISO12185	842.0		0.10	6364	D4052	841.8		-1.02
6075	ISO12185	842.10		0.66	6373	ISO12185	842.0		0.10
6114	ISO12185	842.1		0.66	6379		-----		-----
6142	ISO12185	841.9		-0.46	7009	D4052	842.01		0.16
6143	D4052	841.4	R(0.01)	-3.26	9057	D5002	842.1		0.66

normality	suspect
n	159
outliers	8
mean (n)	841.98
st.dev. (n)	0.084
R(calc.)	0.24
st.dev.(ISO12185:96)	0.179
R(ISO12185:96)	0.5





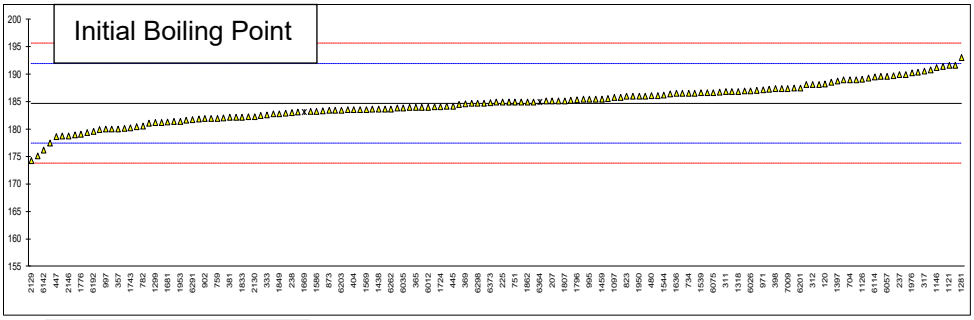
Determination of Distillation at 760 mmHg on sample #21005; result in °C

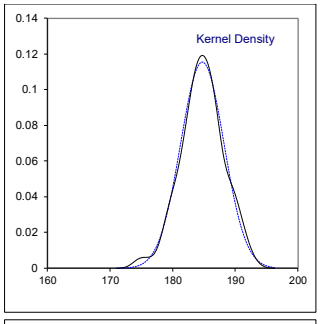
lab	method	IBP	10%rec	50%rec	90%rec	95%rec	FBP
120	D86-automated	188.3	233.5	287.9	343.4	-----	368.1
140	D86-automated	179.0	229.3	285.6	340.0	356.3	363.2
171	D86-automated	175.1	231.2	285.6	339.1	353.5	358.6 R5
206	D7345	185.6	225.3 R5	288.7	340.4	356.6	364.2
207	D7345	185.2	225.5 R5	288.9	340.5	356.8	364.2
208	D7345	185.2	225.4 R5	288.4	340.5	356.4	364.1
209	D7345	185.5	225.7 R5	288.6	340.8	356.3	364.3
225	D86-manual	185.0	231.0	290.0	347.0 R1	361.0	369.0
228	D86-manual	189.0	233.0	286.0	337.0	350.0	366.0
237	D86-manual	190.0	232.0	286.0	336.0	350.0	367.0
238	D86-manual	183.0	234.0	288.0	343.0	360.5	367.5
273		-----	-----	-----	-----	-----	-----
311	D86-automated	186.9	232.7	286.9	341.0	357.2	367.0
312	ISO3405-automated	188.2	234.8	287.8	340.5	356.9	364.2
317	ISO3405-automated	190.6	234.8	289.6	343.6	357.7	369.3
323	ISO3405-automated	185.8	231.5	286.4	339.5	354.2	363.8
328	ISO3405-automated	180.5	230.8	285.9	339.8	355.9	365.5
331		-----	-----	-----	-----	-----	-----
333	ISO3405	182.6	233.8	287.2	341.0	356.2	362.8
334	ISO3405-automated	186.6	232.2	286.3	339.3	354.2	365.1
335	D86-automated	181.1	229.2	287.0	342.1	358.5	367.8
337		-----	-----	-----	-----	-----	-----
338	ISO3405-automated	185.2	232.8	286.6	338.9	352.1	367.7
342	D86-automated	189.6	232.0	286.1	339.7	354.4	358.9 R5
343	ISO3405-automated	183.6	229.8	286.2	341.8	358.8	368.7
345	ISO3405-automated	182.95	231.22	285.20	339.42	353.62	365.04
351	ISO3405	187.1	230.0	286.95	342.15	359.35	367.95
357	D86-automated	180.1	231.1	286.4	339.7	354.6	363.9
360	ISO3405-automated	184.0	233.6	287.1	340.0	355.9	365.0
365	IP123-automated	184.0	230.4	284.9	337.7	351.7	362.7
369	ISO3405-automated	184.6	231.2	287.7	343.3	358.3	366.9
370	ISO3405-automated	185.3	231.6	288.0	341.2	357.9	366.8
371	ISO3405-automated	186.4	231.4	288.4	342.6	360.3	367.5
381	ISO3405-automated	182.2	232.3	287.0	340.9	356.2	365.5
391	D86-automated	184.1	232.3	286.7	339.7	353.8	358.4 R5
398	ISO3405-automated	187.4	235.5	287.9	341.6	355.9	367.0
399		-----	-----	-----	-----	-----	-----
403	D86-automated	183.9	232.3	287.0	341.9	359.2	367.2
404	ISO3405-automated	183.6	232.6	286.6	340.1	356.0	365.4
420	ISO3405-automated	182.3	230.2	285.0	338.5	353.2	365.2
431		-----	-----	-----	-----	-----	-----
432		-----	-----	-----	-----	-----	-----
440		-----	-----	-----	-----	-----	-----
444	D86-automated	182.1	232.2	286.2	340.2	356.2	366.3
445	IP123-automated	184.2	231.5	286.0	339.6	354.6	362.2
447	IP123-automated	178.7	229.3	286.0	339.9	356.3	366.5
480	ISO3405-automated	186.10	233.65	287.65	341.30	357.40	364.40
495	D86-automated	180.2	232.1	286.8	341.0	356.9	367.7
498		-----	-----	-----	-----	-----	-----
541	ISO3405-automated	188.11	232.38	287.03	340.84	356.33	367.15
631	D86-manual	189.0	229.0	285.0	338.0	352.5	359.0 R5
663	D86-manual	185.45	232.80	286.65	339.80	354.70	365.70
671	D86-automated	191.7	234.8	288.1	340.7	358.0	365.9
704	ISO3405-manual	189.0	231.0	286.0	338.5	352.5	365.0
734	D86-automated	186.51	232.94	287.37	340.81	355.65	365.14
751	ISO3405-manual	185.0	231.0	288.0	341.0	358.0	368.0
752		185.0	232.0	288.0	343.5	359.5	372.0 R5
759	ISO3405-manual	182.0	230.5	286.0	340.0	356.5	367.0
778		-----	-----	-----	-----	-----	-----
779	ISO3405-manual	184.0	232.0	288.0	343.5	359.0	367.0
781	ISO3405-automated	181.4	231.2	286.0	340.8	357.6	366.5
782	D86-automated	180.6	231.3	285.2	341.0	358.2	366.8
785	ISO3405-manual	182.0	230.5	286.5	340.5	356.5	367.5
798		-----	-----	-----	-----	-----	-----
823	ISO3405-automated	186.0	233.3	286.7	340.4	355.4	368.5
846	GB/T6536-automatic	183.7	231.9	287.15	340.9	355.9	368.6
872	ISO3405	181.6	230.5	286.5	343.4	356.4	366.4
873	D86-manual	183.5	231.0	287.5	340.5	356.5	366.5
874	ISO3405-manual	182.5	231.0	288.0	341.5	358.0	367.0
875	D86-manual	180.0	232.5	286.0	339.0	356.0	367.0
902	ISO3405-automated	182.0	232.1	286.0	339.4	354.6	366.0
913		-----	-----	-----	-----	-----	-----
914		-----	-----	-----	-----	-----	-----

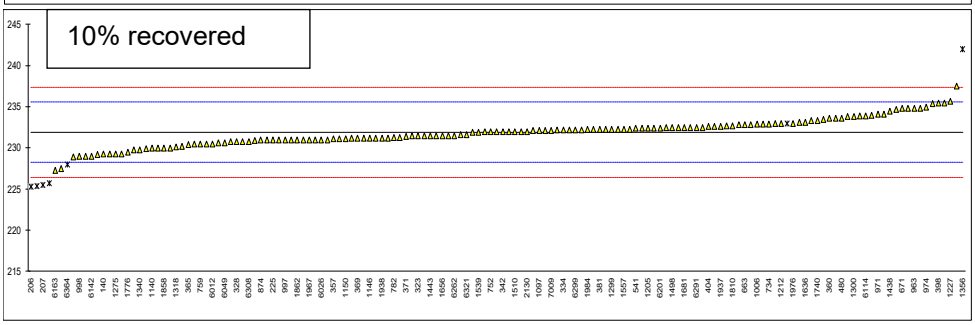
lab	method	IBP	10%rec	50%rec	90%rec	95%rec	FBP
962		-----	-----	-----	-----	-----	-----
963	ISO3405-automated	190.4	234.8	287.6	342.0	359.5	367.8
971	ISO3405-automated	187.2	234.1	287.5	341.9	359.3	367.1
974		187.4	235.0	287.9	341.8	358.6	366.3
995	D86-manual	185.5	232.0	287.5	340.5	356.0	366.0
997	D86-manual	180.0	231.0	287.0	340.0	356.0	366.0
998	D86-manual	183.5	229.0	285.0	341.0	357.0	368.0
1006	D86-automated	183.3	232.9	286.8	340.1	355.4	365.9
1016		-----	-----	-----	-----	-----	-----
1059	ISO3405-automated	184.2	230.8	286.7	341.2	357.6	368.0
1097	ISO3405-automated	185.8	232.1	287.7	342.2	358.2	368.0
1108	D86-automated	181.9	232.4	286.4	340.4	356.9	366.4
1109	D86-automated	182.8	231.5	286.3	340.9	356.9	366.8
1121	ISO3405-automated	191.7	233.1	286.9	341.1	357.4	368.5
1126	ISO3405-automated	189.1	235.4	286.6	340.8	356.0	368.1
1140	IP123-automated	182.2	230.0	286.0	339.3	354.3	363.5
1146	D86-automated	191.2	231.2	286.4	341.0	356.2	368.5
1150	ISO3405-automated	183.55	231.15	286.2	339.75	353.8	365.5
1189		187.0	232.2	287.8	340.8	356.4	367.4
1191	ISO3405-automated	189.8	232.6	287.1	341.1	357.2	365.8
1199		-----	-----	-----	-----	-----	-----
1205	D86-automated	186.8	232.4	287.1	341.1	356.8	367.1
1212	ISO3405-automated	183.1	233.0	286.3	340.0	356.7	365.5
1227		189.3	235.7	286.5	340.0	355.5	368.6
1266	ISO3405-automated	186.9	234.1	287.6	343.3	360.2	363.4
1275	IP123-automated	178.8	229.3	285.0	339.3	355.3	364.0
1281		193.0	237.5	287.5	344.5	360.0	360.0 R5
1286		-----	-----	-----	-----	-----	-----
1299	D86-automated	181.2	232.3	286.6	340.9	357.1	367.3
1300	ISO3405-automated	191.5	233.8	287.0	341.1	356.7	367.6
1318	D86-automated	186.9	230.1	286.3	340.8	353.7	364.4
1340	ISO3405-automated	183.2	229.8	284.45	338.75	350.83	360.6
1356		-----	242 R1	297 R1	350 R1	-----	-----
1367	ISO3405-automated	188.2	230.6	284.8	340.3	357.7	367.0
1397	ISO3405-automated	188.8	232.3	286.3	339.9	354.7	366.0
1399		-----	-----	-----	-----	-----	-----
1438		183.7	234.5	285.6	338.9	354.3	361.1
1443		186.0	231.5	288.5	342.5	357.0	367.0
1459	ISO3405-automated	185.5	231.5	286.3	339.8	355.5	367.2
1498	D86-automated	187.5	232.5	287.7	343.2	361.0	368.7
1510	IP123-automated	184.9	232.0	286.4	340.2	355.6	366.3
1538		-----	-----	-----	-----	-----	-----
1539	ISO3405-automated	186.7	231.9	286.9	342.0	359.4	366.3
1544	ISO3405-automated	186.20	232.50	287.35	342.00	359.20	366.10
1557	ISO3405-automated	184.7	232.3	286.4	339.8	355.1	364.6
1569	ISO3405-automated	183.6	229.3	287.1	342.3	355.4	362.4
1586	D86-automated	183.2	230.9	285.7	338.6	354.7	364.6
1588		-----	-----	-----	-----	-----	-----
1602	ISO3405-automated	186.7	234.7	287.1	339.0	352.9	367.4
1613	D86-automated	179.9	232.4	287.6	340.8	355.1	367.0
1636	ISO3405-automated	186.5	233.1	286.8	340.4	355.2	365.2
1656	IP123-automated	177.5	231.5	286.2	340.9	358.3	367.5
1669		183.1 ex	233.0 ex	283.8 ex	333.6 R1	347.6 R5	358.6 R5
1681	ISO3405-automated	181.3	232.5	287.0	339.8	354.4	365.5
1724		184.1	232.8	286.9	340.3	356.3	366.5
1730		-----	-----	-----	-----	-----	-----
1740	ISO3405-automated	186.1	233.3	287	340.4	355.6	365.5
1742	ISO3405-automated	185.0	232.0	286.7	340.3	355.5	367.1
1743	ISO3405-automated	180.3	228.9	285.6	340.2	356.3	366.6
1776	ISO3405-automated	179.1	229.5	284.8	338.7	353.9	362.7
1796	D86-manual	185.4	232.3	285.9	340.2	356.7	365.6
1807	ISO3405-automated	185.2	231.2	285.3	339.3	353.2	366.3
1810	D86-automated	187.3	232.7	286.1	339.5	354.6	365
1833		182.2	231.3	286.2	340	355.7	365.7
1849	ISO3405-automated	182.8	233.9	286.5	339.6	354.0	366.8
1858	D86	184.5	230.0	287.0	340.5	355.0	364.5
1862	ISO3405-manual	185.0	231.0	288.0	341.0	356.0	366.0
1936		-----	232.5	286.3	340.9	354.2	-----
1937		-----	232.6	285.7	340.0	355.5	-----
1938		-----	231.2	285.6	340.0	353.9	-----
1950	ISO3405	186.0	231.0	286.5	340.0	356.0	366.5
1953	ISO3405-automated	181.4	227.5	284.9	339.5	354	359 R5
1961		-----	-----	-----	-----	-----	-----

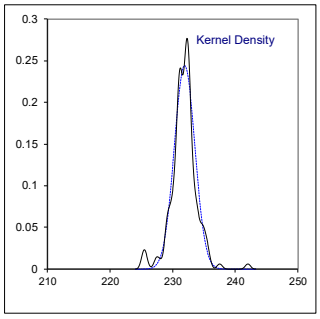
lab	method	IBP	10%rec	50%rec	90%rec	95%rec	FBP
1967	ISO3405-manual	185.0	231.0	287.0	341.0	357.0	366.0
1971	ISO3405-automated	181.2	231.5	286.2	340.8	356.0	360.0 R5
1976	ISO3405-automated	190.3	233.0	286.9	340.2	355.2	367.7
1984		184.75	232.25	287.05	341.05	357.2	366.1
1986	ISO3405-manual	186.0	231.0	287.0	339.5	354.0	365.0
2129	IP123-automated	174.3	229.9	284.6	338.4	354.2	362.9
2130	D86-automated	182.3	232.0	286.7	340.3	355.9	366.4
2146		178.8	231.1	284.8	339.4	356.6	365.1
6012	D86-manual	184.0	230.5	284.5	340.5	355.5	365.0
6026	ISO3405-manual	187.0	231.0	287.0	339.0	354.0	367.0
6035	ISO3405-automated	183.9	232.9	287.5	342.8	360.6	366.4
6049	D86-automated	183.7	230.6	286.0	340.0	356.7	365.7
6057	ISO3405-automated	189.6	233.6	287.4	342.0	358.2	368.5
6075	ISO3405-automated	186.7	231.0	287.0	341.8	358.8	367.7
6114	ISO3405-automated	189.5	233.9	287.5	341.5	357.6	367.4
6142	ISO3405-automated	176.2	229.0	284.5	338.1	352.3	366.35
6143		-----	-----	-----	-----	-----	-----
6163	ISO3405-automated	179.4	227.3	285.1	337.4	350.7	366.6
6192	D86-automated	179.6	230.8	285.8	338.3	351.5	366.5
6201	D86-automated	187.5	232.4	286.9	340.2	355.4	366.5
6203	ISO3405-automated	183.5	230.0	285.9	340.0	354.4	364.2
6242	ISO3405-automated	186.5	235.5 C	287.4	341.1	355.5	367.1
6262	D86-automated	183.7	231.5	286.5	340.4	356.1	366.0
6291	D86-automated	181.8	232.5	286.7	341.4	357.8	367.8
6298	D86-automated	184.7	232.5	287.6	342.5	359.2	367.0
6299	ISO3405-automated	188.6	232.2	287.5	342.1	359.1	367.6
6308	ISO3405-automated	190.8	230.8	283.9	338.7	354.6	364.4
6321	IP123-automated	190.0	231.6	286.7	340.8	357.3	366.4
6363		-----	-----	-----	-----	-----	-----
6364		185.0 ex	228.0 ex	295.0 C,R1	352.0 C,R1	372.0 C,R1	380.0 C,R1
6373		184.8	232.2	286.7	340.2	355.4	364.5
6379		-----	-----	-----	-----	-----	-----
7009	D86-automated	187.4 C	232.1 C	286.6 C	341.4 C	357.8 C	366.8 C
9057		-----	-----	-----	-----	-----	-----
	normality	OK	OK	OK	OK	OK	OK
	n	149	148	152	151	151	141
	outliers	0 +2ex	5 +2ex	2 +1ex	4	2	10
	mean (n)	184.72	231.90	286.67	340.53	356.10	366.14
	st.dev. (n)	3.460	1.633	1.038	1.373	2.172	1.635
	R(calc.)	9.69	4.57	2.91	3.85	6.08	4.58
	st.dev.(ISO3405-A:19)	3.629	1.822	1.071	1.824	3.168	2.536
	R(ISO3405-A:19)	10.16	5.10	3.00	5.11	8.87	7.10
Compare							
	R(ISO3405-M:19)	7.19	4.51	3.61	3.85	5.21	3.94

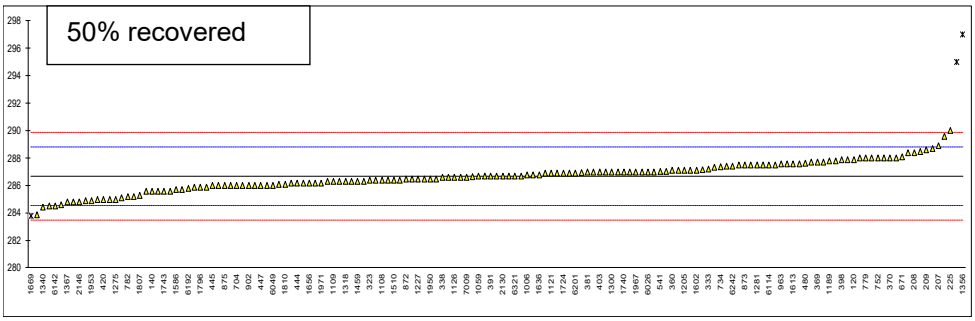
Lab 1669 three test results excluded because of statistical outliers in other related parameters
Lab 6242 first reported 221.6 10%rec
Lab 6364 first reported 293.0 50%rec, 350.0 90%rec, 368.0 95%rec, 375.0 FBP and two test results excluded because of statistical outliers in other related parameters
Lab 7009 first reported 161.0 IBP, 223.4 10%rec, 283.4 50%rec, 338.3 90%rec, 351.7 95%rec, 352.3 FBP

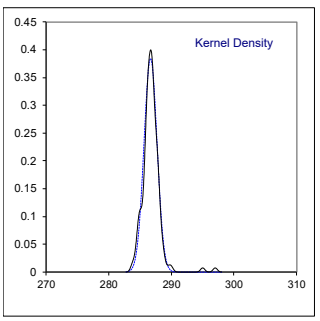

Initial Boiling Point

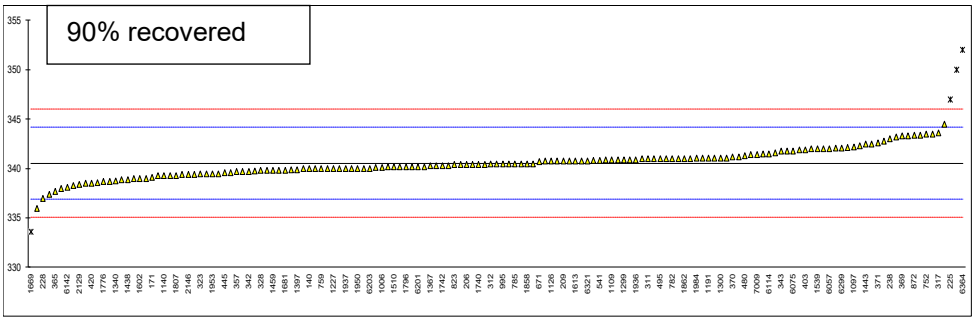

Kernel Density

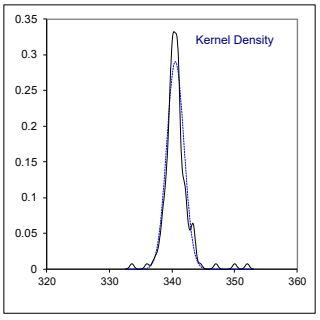

10% recovered

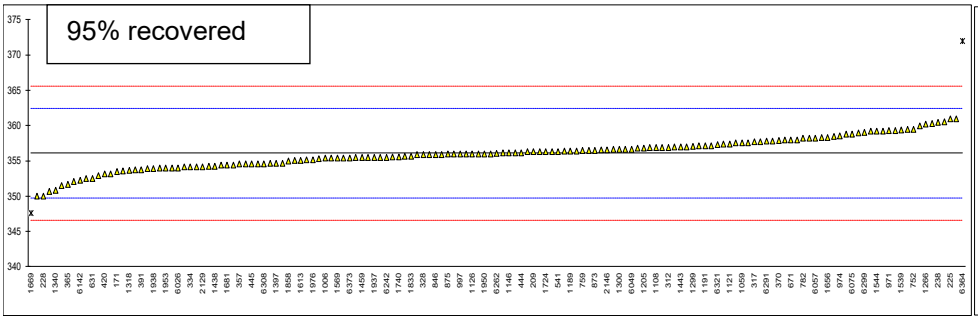

Kernel Density

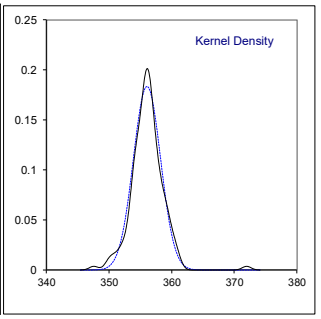

50% recovered

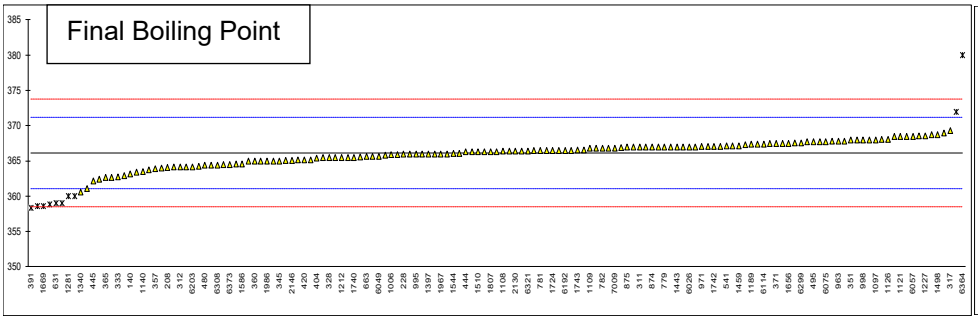

Kernel Density

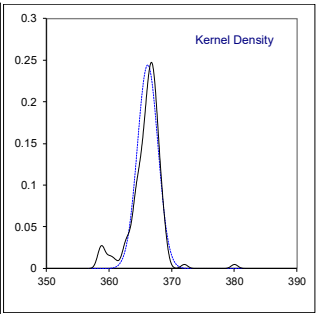

90% recovered


Kernel Density


95% recovered


Kernel Density


Final Boiling Point


Kernel Density

z-scores Distillation at 760 mmHg on sample #21005

lab	IBP	10%rec	50%rec	90%rec	95%rec	FBP
120	0.99	0.88	1.14	1.57	-----	0.77
140	-1.58	-1.43	-1.00	-0.29	0.06	-1.16
171	-2.65	-0.38	-1.00	-0.78	-0.82	-2.97
206	0.24	-3.62	1.89	-0.07	0.16	-0.77
207	0.13	-3.51	2.08	-0.02	0.22	-0.77
208	0.13	-3.57	1.61	-0.02	0.10	-0.80
209	0.21	-3.40	1.80	0.15	0.06	-0.73
225	0.08	-0.49	3.10	3.55	1.55	1.13
228	1.18	0.60	-0.63	-1.93	-1.92	-0.06
237	1.45	0.05	-0.63	-2.48	-1.92	0.34
238	-0.48	1.15	1.24	1.35	1.39	0.54
273	-----	-----	-----	-----	-----	-----
311	0.60	0.44	0.21	0.26	0.35	0.34
312	0.96	1.59	1.05	-0.02	0.25	-0.77
317	1.62	1.59	2.73	1.68	0.51	1.25
323	0.30	-0.22	-0.26	-0.56	-0.60	-0.92
328	-1.16	-0.60	-0.72	-0.40	-0.06	-0.25
331	-----	-----	-----	-----	-----	-----
333	-0.59	1.04	0.49	0.26	0.03	-1.32
334	0.52	0.16	-0.35	-0.67	-0.60	-0.41
335	-1.00	-1.48	0.30	0.86	0.76	0.65
337	-----	-----	-----	-----	-----	-----
338	0.13	0.49	-0.07	-0.89	-1.26	0.61
342	1.34	0.05	-0.54	-0.45	-0.54	-2.86
343	-0.31	-1.15	-0.44	0.70	0.85	1.01
345	-0.49	-0.37	-1.38	-0.61	-0.78	-0.43
351	0.65	-1.04	0.26	0.89	1.03	0.71
357	-1.27	-0.44	-0.26	-0.45	-0.47	-0.88
360	-0.20	0.93	0.40	-0.29	-0.06	-0.45
365	-0.20	-0.82	-1.66	-1.55	-1.39	-1.36
369	-0.03	-0.38	0.96	1.52	0.70	0.30
370	0.16	-0.16	1.24	0.37	0.57	0.26
371	0.46	-0.27	1.61	1.13	1.33	0.54
381	-0.70	0.22	0.30	0.20	0.03	-0.25
391	-0.17	0.22	0.02	-0.45	-0.73	-3.05
398	0.74	1.98	1.14	0.59	-0.06	0.34
399	-----	-----	-----	-----	-----	-----
403	-0.23	0.22	0.30	0.75	0.98	0.42
404	-0.31	0.38	-0.07	-0.24	-0.03	-0.29
420	-0.67	-0.93	-1.56	-1.11	-0.91	-0.37
431	-----	-----	-----	-----	-----	-----
432	-----	-----	-----	-----	-----	-----
440	-----	-----	-----	-----	-----	-----
444	-0.72	0.16	-0.44	-0.18	0.03	0.06
445	-0.14	-0.22	-0.63	-0.51	-0.47	-1.55
447	-1.66	-1.43	-0.63	-0.35	0.06	0.14
480	0.38	0.96	0.91	0.42	0.41	-0.69
495	-1.25	0.11	0.12	0.26	0.25	0.61
498	-----	-----	-----	-----	-----	-----
541	0.93	0.26	0.33	0.17	0.07	0.40
631	1.18	-1.59	-1.56	-1.39	-1.14	-2.82
663	0.20	0.49	-0.02	-0.40	-0.44	-0.17
671	1.92	1.59	1.33	0.09	0.60	-0.09
704	1.18	-0.49	-0.63	-1.11	-1.14	-0.45
734	0.49	0.57	0.65	0.15	-0.14	-0.39
751	0.08	-0.49	1.24	0.26	0.60	0.73
752	0.08	0.05	1.24	1.63	1.07	2.31
759	-0.75	-0.77	-0.63	-0.29	0.13	0.34
778	-----	-----	-----	-----	-----	-----
779	-0.20	0.05	1.24	1.63	0.92	0.34
781	-0.92	-0.38	-0.63	0.15	0.47	0.14
782	-1.14	-0.33	-1.38	0.26	0.66	0.26
785	-0.75	-0.77	-0.16	-0.02	0.13	0.54
798	-----	-----	-----	-----	-----	-----
823	0.35	0.77	0.02	-0.07	-0.22	0.93
846	-0.28	0.00	0.44	0.20	-0.06	0.97
872	-0.86	-0.77	-0.16	1.57	0.10	0.10
873	-0.34	-0.49	0.77	-0.02	0.13	0.14
874	-0.61	-0.49	1.24	0.53	0.60	0.34
875	-1.30	0.33	-0.63	-0.84	-0.03	0.34
902	-0.75	0.11	-0.63	-0.62	-0.47	-0.06
913	-----	-----	-----	-----	-----	-----
914	-----	-----	-----	-----	-----	-----

lab	IBP	10%rec	50%rec	90%rec	95%rec	FBP
962	-----	-----	-----	-----	-----	-----
963	1.56	1.59	0.86	0.81	1.07	0.65
971	0.68	1.21	0.77	0.75	1.01	0.38
974	0.74	1.70	1.14	0.70	0.79	0.06
995	0.21	0.05	0.77	-0.02	-0.03	-0.06
997	-1.30	-0.49	0.30	-0.29	-0.03	-0.06
998	-0.34	-1.59	-1.56	0.26	0.28	0.73
1006	-0.39	0.55	0.12	-0.24	-0.22	-0.09
1016	-----	-----	-----	-----	-----	-----
1059	-0.14	-0.60	0.02	0.37	0.47	0.73
1097	0.30	0.11	0.96	0.92	0.66	0.73
1108	-0.78	0.27	-0.26	-0.07	0.25	0.10
1109	-0.53	-0.22	-0.35	0.20	0.25	0.26
1121	1.92	0.66	0.21	0.31	0.41	0.93
1126	1.21	1.92	-0.07	0.15	-0.03	0.77
1140	-0.70	-1.04	-0.63	-0.67	-0.57	-1.04
1146	1.78	-0.38	-0.26	0.26	0.03	0.93
1150	-0.32	-0.41	-0.44	-0.43	-0.73	-0.25
1189	0.63	0.16	1.05	0.15	0.10	0.50
1191	1.40	0.38	0.40	0.31	0.35	-0.13
1199	-----	-----	-----	-----	-----	-----
1205	0.57	0.27	0.40	0.31	0.22	0.38
1212	-0.45	0.60	-0.35	-0.29	0.19	-0.25
1227	1.26	2.09	-0.16	-0.29	-0.19	0.97
1266	0.60	1.21	0.86	1.52	1.30	-1.08
1275	-1.63	-1.43	-1.56	-0.67	-0.25	-0.84
1281	2.28	3.07	0.77	2.18	1.23	-2.42
1286	-----	-----	-----	-----	-----	-----
1299	-0.97	0.22	-0.07	0.20	0.32	0.46
1300	1.87	1.04	0.30	0.31	0.19	0.58
1318	0.60	-0.99	-0.35	0.15	-0.76	-0.69
1340	-0.42	-1.15	-2.08	-0.98	-1.66	-2.19
1356	-----	5.54	9.64	5.19	-----	-----
1367	0.96	-0.71	-1.75	-0.13	0.51	0.34
1397	1.12	0.22	-0.35	-0.35	-0.44	-0.06
1399	-----	-----	-----	-----	-----	-----
1438	-0.28	1.43	-1.00	-0.89	-0.57	-1.99
1443	0.35	-0.22	1.70	1.08	0.28	0.34
1459	0.21	-0.22	-0.35	-0.40	-0.19	0.42
1498	0.76	0.33	0.96	1.46	1.55	1.01
1510	0.05	0.05	-0.26	-0.18	-0.16	0.06
1538	-----	-----	-----	-----	-----	-----
1539	0.54	0.00	0.21	0.81	1.04	0.06
1544	0.41	0.33	0.63	0.81	0.98	-0.02
1557	-0.01	0.22	-0.26	-0.40	-0.31	-0.61
1569	-0.31	-1.43	0.40	0.97	-0.22	-1.48
1586	-0.42	-0.55	-0.91	-1.06	-0.44	-0.61
1588	-----	-----	-----	-----	-----	-----
1602	0.54	1.54	0.40	-0.84	-1.01	0.50
1613	-1.33	0.27	0.86	0.15	-0.31	0.34
1636	0.49	0.66	0.12	-0.07	-0.28	-0.37
1656	-1.99	-0.22	-0.44	0.20	0.70	0.54
1669	-0.45	0.60	-2.68	-3.80	-2.68	-2.97
1681	-0.94	0.33	0.30	-0.40	-0.54	-0.25
1724	-0.17	0.49	0.21	-0.13	0.06	0.14
1730	-----	-----	-----	-----	-----	-----
1740	0.38	0.77	0.30	-0.07	-0.16	-0.25
1742	0.08	0.05	0.02	-0.13	-0.19	0.38
1743	-1.22	-1.65	-1.00	-0.18	0.06	0.18
1776	-1.55	-1.32	-1.75	-1.00	-0.69	-1.36
1796	0.19	0.22	-0.72	-0.18	0.19	-0.21
1807	0.13	-0.38	-1.28	-0.67	-0.91	0.06
1810	0.71	0.44	-0.54	-0.56	-0.47	-0.45
1833	-0.70	-0.33	-0.44	-0.29	-0.13	-0.17
1849	-0.53	1.10	-0.16	-0.51	-0.66	0.26
1858	-0.06	-1.04	0.30	-0.02	-0.35	-0.65
1862	0.08	-0.49	1.24	0.26	-0.03	-0.06
1936	-----	0.33	-0.35	0.20	-0.60	-----
1937	-----	0.38	-0.91	-0.29	-0.19	-----
1938	-----	-0.38	-1.00	-0.29	-0.69	-----
1950	0.35	-0.49	-0.16	-0.29	-0.03	0.14
1953	-0.92	-2.41	-1.66	-0.56	-0.66	-2.82
1961	-----	-----	-----	-----	-----	-----

lab	IBP	10%rec	50%rec	90%rec	95%rec	FBP
1967	0.08	-0.49	0.30	0.26	0.28	-0.06
1971	-0.97	-0.22	-0.44	0.15	-0.03	-2.42
1976	1.54	0.60	0.21	-0.18	-0.28	0.61
1984	0.01	0.19	0.35	0.29	0.35	-0.02
1986	0.35	-0.49	0.30	-0.56	-0.66	-0.45
2129	-2.87	-1.10	-1.94	-1.17	-0.60	-1.28
2130	-0.67	0.05	0.02	-0.13	-0.06	0.10
2146	-1.63	-0.44	-1.75	-0.62	0.16	-0.41
6012	-0.20	-0.77	-2.03	-0.02	-0.19	-0.45
6026	0.63	-0.49	0.30	-0.84	-0.66	0.34
6035	-0.23	0.55	0.77	1.24	1.42	0.10
6049	-0.28	-0.71	-0.63	-0.29	0.19	-0.17
6057	1.34	0.93	0.68	0.81	0.66	0.93
6075	0.54	-0.49	0.30	0.70	0.85	0.61
6114	1.32	1.10	0.77	0.53	0.47	0.50
6142	-2.35	-1.59	-2.03	-1.33	-1.20	0.08
6143	-----	-----	-----	-----	-----	-----
6163	-1.47	-2.52	-1.47	-1.72	-1.70	0.18
6192	-1.41	-0.60	-0.82	-1.22	-1.45	0.14
6201	0.76	0.27	0.21	-0.18	-0.22	0.14
6203	-0.34	-1.04	-0.72	-0.29	-0.54	-0.77
6242	0.49	1.98	0.68	0.31	-0.19	0.38
6262	-0.28	-0.22	-0.16	-0.07	0.00	-0.06
6291	-0.81	0.33	0.02	0.48	0.54	0.65
6298	-0.01	0.33	0.86	1.08	0.98	0.34
6299	1.07	0.16	0.77	0.86	0.95	0.58
6308	1.67	-0.60	-2.59	-1.00	-0.47	-0.69
6321	1.45	-0.16	0.02	0.15	0.38	0.10
6363	-----	-----	-----	-----	-----	-----
6364	0.08	-2.14	7.77	6.29	5.02	5.47
6373	0.02	0.16	0.02	-0.18	-0.22	-0.65
6379	-----	-----	-----	-----	-----	-----
7009	0.74	0.11	-0.07	0.48	0.54	0.26
9057	-----	-----	-----	-----	-----	-----

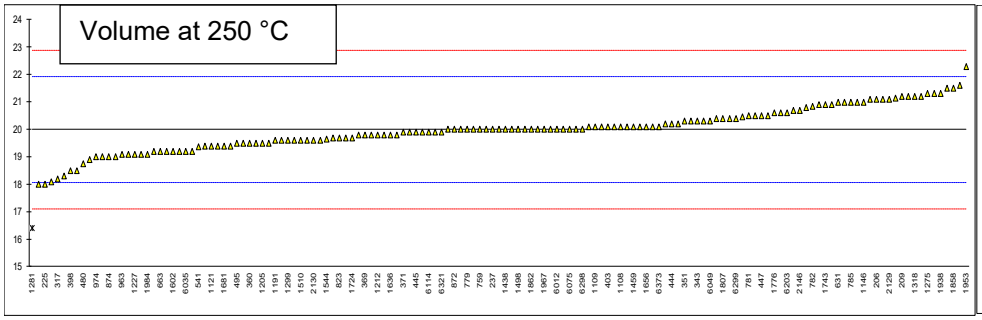
Determination of Distillation at 760 mmHg on sample #21005; result in %V/V

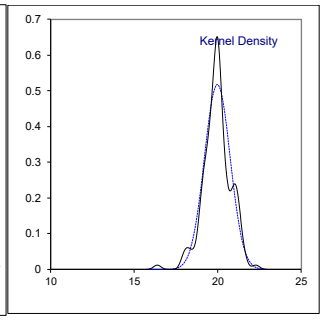
lab	method	Vol.250°C	mark	z(targ)	Vol.350°C	mark	z(targ)
120		-----		-----	-----		-----
140		-----		-----	-----		-----
171	D86-automated	20.5		0.53	93.9		0.44
206	D7345	21.1		1.15	94.6		1.16
207	D7345	21.1		1.15	94.6		1.16
208	D7345	21.2		1.25	94.5		1.06
209	D7345	21.2		1.25	94.5		1.06
225	D86-manual	18.0		-2.07	91.0	R(0.01)	-2.57
228	D86-manual	20.0		0.01	95.0		1.58
237	D86-manual	20.0		0.01	95.0		1.58
238	D86-manual	18.0		-2.07	92.5		-1.01
273		-----		-----	-----		-----
311	D86-automated	19.7		-0.30	93.3		-0.18
312	ISO3405-automated	19.2		-0.82	93.3		-0.18
317	ISO3405-automated	18.2		-1.86	92.4		-1.12
323	ISO3405-automated	20.1		0.11	93.8		0.33
328	ISO3405-automated	20.1		0.11	93.6		0.13
331		-----		-----	-----		-----
333		-----		-----	-----		-----
334	ISO3405-automated	20.1		0.11	93.9		0.44
335	D86-automated	19.4		-0.61	92.9		-0.60
337		-----		-----	-----		-----
338	ISO3405-automated	19.5		-0.51	94.3		0.85
342	D86-automated	19.9		-0.09	93.7		0.23
343	ISO3405-automated	20.3		0.32	93.2		-0.29
345	ISO3405-automated	21		1.05	94		0.54
351	ISO3405	20.3		0.32	92.9		-0.60
357	D86-automated	19.8		-0.20	93.8		0.33
360	ISO3405-automated	19.5		-0.51	93.5		0.02
365	IP123-automated	20.7		0.73	94.5		1.06
369	ISO3405-automated	19.8		-0.20	93.2		-0.29
370	ISO3405-automated	19.7		-0.30	92.4		-1.12
371	ISO3405-automated	19.9		-0.09	92.6		-0.91
381	ISO3405-automated	19.6		-0.41	93.4		-0.08
391	D86-automated	18.9		-1.13	94.0		0.54
398	ISO3405-automated	18.5		-1.55	93.1		-0.39
399		-----		-----	-----		-----
403	D86-automated	20.1		0.11	92.8		-0.70
404	ISO3405-automated	20.2		0.22	93.4		-0.08
420	ISO3405-automated	20.9		0.94	94.2		0.75
431		-----		-----	-----		-----
432		-----		-----	-----		-----
440		-----		-----	-----		-----
444	D86-automated	20.2		0.22	93.5		0.02
445	IP123-automated	19.9		-0.09	93.8		0.33
447	IP123-automated	20.5		0.53	93.4		-0.08
480	ISO3405-automated	18.75		-1.29	93.15		-0.34
495	D86-automated	19.5		-0.51	93.3		-0.18
498		-----		-----	-----		-----
541	ISO3405-automated	19.38		-0.63	92.96		-0.54
631	D86-manual	21.0		1.05	94.0		0.54
663	D86-manual	19.20		-0.82	93.65		0.18
671		-----		-----	-----		-----
704	ISO3405-manual	20.0		0.01	94.0		0.54
734	D86-automated	19.4		-0.61	93.4		-0.08
751	ISO3405-manual	20.0		0.01	93.5		0.02
752	Other (mention below)	19.0		-1.03	92.5		-1.01
759	ISO3405-manual	20.0		0.01	93.0		-0.50
778		-----		-----	-----		-----
779	ISO3405-manual	20.0		0.01	93.0		-0.50
781	ISO3405-automated	20.5		0.53	93.1		-0.39
782	D86-automated	20.85		0.89	92.85		-0.65
785	ISO3405-manual	21.0		1.05	93.5		0.02
798		-----		-----	-----		-----
823	ISO3405-automated	19.7		-0.30	93.2		-0.29
846		-----		-----	-----		-----
872	ISO3405	20.0		0.01	92.0		-1.53
873	D86-manual	20.5		0.53	93.5		0.02
874	ISO3405-manual	19.0		-1.03	92.5		-1.01
875	D86-manual	20.0		0.01	94.0		0.54
902	ISO3405-automated	19.8		-0.20	93.7		0.23
913		-----		-----	-----		-----
914		-----		-----	-----		-----

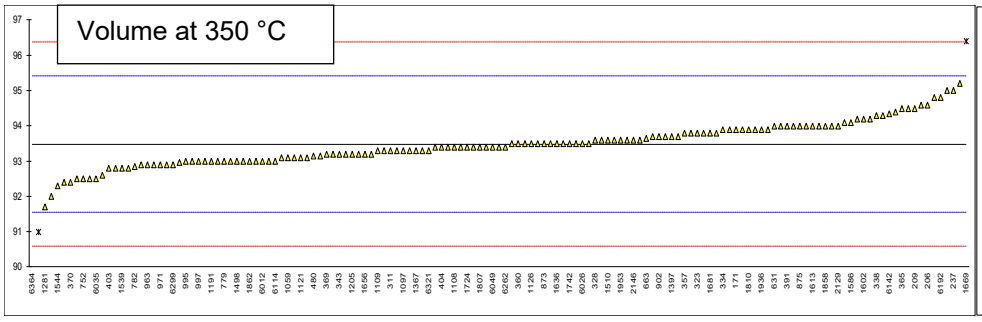
lab	method	Vol.250°C	mark	z(targ)	Vol.350°C	mark	z(targ)
962		-----		-----	-----		-----
963	ISO3405-automated	19.1		-0.92	92.9		-0.60
971	ISO3405-automated	19.1		-0.92	92.9		-0.60
974		19.0		-1.03	93.0		-0.50
995	D86-manual	19.5		-0.51	93.0		-0.50
997	D86-manual	20.0		0.01	93.0		-0.50
998	D86-manual	21.0		1.05	93.5		0.02
1006		-----		-----	-----		-----
1016		-----		-----	-----		-----
1059	ISO3405-automated	20.1		0.11	93.1		-0.39
1097	ISO3405-automated	20.3		0.32	93.3		-0.18
1108	D86-automated	20.1		0.11	93.4		-0.08
1109	D86-automated	20.1		0.11	93.3		-0.18
1121	ISO3405-automated	19.4		-0.61	93.1		-0.39
1126	ISO3405-automated	18.3		-1.75	93.5		0.02
1140	IP123-automated	20.8		0.84	94.4		0.96
1146	D86-automated	21		1.05	93		-0.50
1150	ISO3405-automated	20.45		0.48	93.9		0.44
1189		19.2		-0.82	93.2		-0.29
1191	ISO3405-automated	19.6		-0.41	93.0		-0.50
1199		-----		-----	-----		-----
1205	D86-automated	19.5		-0.51	93.2		-0.29
1212	ISO3405-automated	19.8		-0.20	94.0		0.54
1227		19.1		-0.92	93.7		0.23
1266	ISO3405-automated	18.5		-1.55	92.8		-0.70
1275	IP123-automated	21.3		1.36	93.8		0.33
1281		16.4	R(0.01)	-3.72	91.7		-1.84
1286		-----		-----	-----		-----
1299	D86-automated	19.6		-0.41	93.2		-0.29
1300	ISO3405-automated	19.1		-0.92	93.3		-0.18
1318	D86-automated	21.2		1.25	94.1		0.65
1340	ISO3405-automated	21.5		1.56	94.8		1.37
1356		-----		-----	-----		-----
1367	ISO3405-automated	21.6		1.67	93.3		-0.18
1397	ISO3405-automated	19.6		-0.41	93.7		0.23
1399		-----		-----	-----		-----
1438		20.0		0.01	93.9		0.44
1443		20.0		0.01	93.0		-0.50
1459	ISO3405-automated	20.1		0.11	93.6		0.13
1498	D86-automated	20		0.01	93		-0.50
1510	IP123-automated	19.6		-0.41	93.6		0.13
1538		-----		-----	-----		-----
1539	ISO3405-automated	20.2		0.22	92.8		-0.70
1544	ISO3405-automated	19.65		-0.35	92.30		-1.22
1557	ISO3405-automated	19.8		-0.20	93.7		0.23
1569	ISO3405-automated	20.4		0.42	93.1		-0.39
1586	D86-automated	20.1		0.11	94.1		0.65
1588		-----		-----	-----		-----
1602	ISO3405-automated	19.2		-0.82	94.2		0.75
1613	D86-automated	19		-1.03	94		0.54
1636	ISO3405-automated	19.8		-0.20	93.5		0.02
1656	IP123-automated	20.1		0.11	93.2		-0.29
1669		20.0		0.01	96.4	R(0.01)	3.03
1681	ISO3405-automated	19.4		-0.61	93.8		0.33
1724		19.7		-0.30	93.4		-0.08
1730		-----		-----	-----		-----
1740	ISO3405-automated	19.2		-0.82	93.5		0.02
1742	ISO3405-automated	19.9		-0.09	93.5		0.02
1743	ISO3405-automated	20.9		0.94	93.4		-0.08
1776	ISO3405-automated	20.6		0.63	94.0		0.54
1796	D86-manual	20.3		0.32	93.0		-0.50
1807	ISO3405-automated	20.4		0.42	93.4		-0.08
1810	D86-automated	19.8		-0.20	93.9		0.44
1833		20.4		0.42	93.6		0.13
1849	ISO3405-automated	19.6		-0.41	93.9		0.44
1858	D86	21.5		1.56	94.0		0.54
1862	ISO3405-manual	20.0		0.01	93.0		-0.50
1936	ISO3405-automated	20.6		0.63	93.9		0.44
1937	ISO3405-automated	21.3		1.36	94.2		0.75
1938	ISO3405-automated	21.3		1.36	94.3		0.85
1950	ISO3405	20.0		0.01	93.5		0.02
1953	ISO3405-automated	22.3		2.39	93.6		0.13
1961		-----		-----	-----		-----

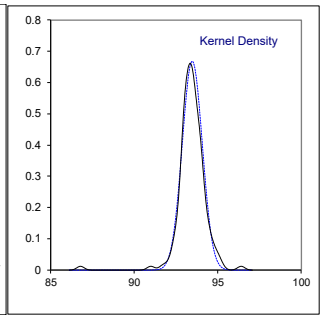
lab	method	Vol.250°C	mark	z(targ)	Vol.350°C	mark	z(targ)
1967	ISO3405-manual	20.0		0.01	93.0		-0.50
1971	ISO3405-automated	21.1		1.15	93.3		-0.18
1976	ISO3405-automated	19.4		-0.61	93.6		0.13
1984		19.1		-0.92	93.15		-0.34
1986	ISO3405-manual	20.0		0.01	94.0		0.54
2129	IP123-automated	21.1		1.15	94.0		0.54
2130	D86-automated	19.6		-0.41	93.4		-0.08
2146		20.7		0.73	93.6		0.13
6012	D86-manual	20		0.01	93		-0.50
6026	ISO3405-manual	20.0		0.01	93.5		0.02
6035	ISO3405-automated	19.2		-0.82	92.5		-1.01
6049	D86-automated	20.3		0.32	93.4		-0.08
6057	ISO3405-automated	19.5		-0.51	92.9		-0.60
6075	ISO3405-automated	20.0		0.01	93.0		-0.50
6114	ISO3405-automated	19.9		-0.09	93.0		-0.50
6142	ISO3405-automated	21.15		1.20	94.35		0.90
6143		-----		-----	-----		-----
6163	ISO3405-automated	21.2		1.25	95.2		1.79
6192	D86-automated	20		0.01	94.8		1.37
6201	D86-automated	19.9		-0.09	93.5		0.02
6203	ISO3405-automated	20.6		0.63	93.8		0.33
6242	ISO3405-automated	18.1		-1.96	93.4		-0.08
6262	D86-automated	19.6		-0.41	93.4		-0.08
6291	D86-automated	20.1		0.11	93.2		-0.29
6298	D86-automated	20.0		0.01	92.8		-0.70
6299	ISO3405-automated	20.4		0.42	92.9		-0.60
6308	ISO3405-automated	20.9		0.94	93.9		0.44
6321	IP123-automated	19.9		-0.09	93.3		-0.18
6363		-----		-----	-----		-----
6364		19.2		-0.82	86.8	C,R(0.01)	-6.93
6373		20.1		0.11	93.6		0.13
6379		-----		-----	-----		-----
7009		-----		-----	-----		-----
9057		-----		-----	-----		-----
	normality	OK			OK		
	n	146			144		
	outliers	1			3		
	mean (n)	19.99			93.48		
	st.dev. (n)	0.770			0.597		
	R(calc.)	2.16			1.67		
	st.dev.(ISO3405-A:19)	0.964			0.964		
	R(ISO3405-A:19)	2.70			2.70		
Compare							
	R(ISO3405-M:19)	2.80			2.07		

Lab 6364 first reported 90.0









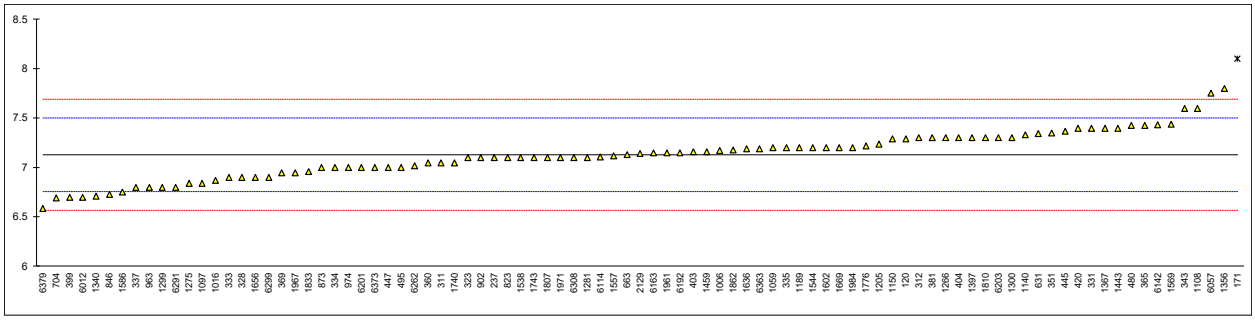
Determination of FAME on sample #21005; result in %V/V

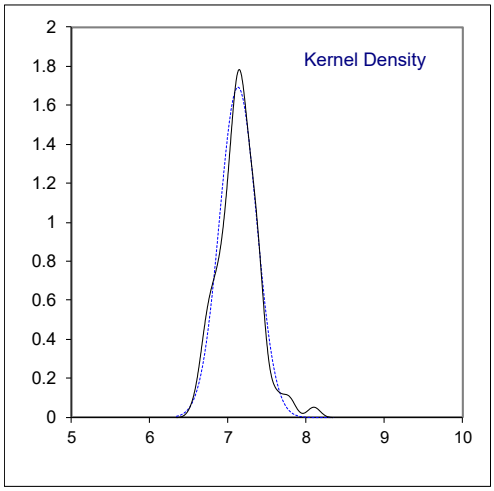
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D7371	7.29		0.86	962		-----		-----
140		-----		-----	963	EN14078-A	6.80		-1.76
171	D7371	8.10	R(0.01)	5.19	971		-----		-----
206		-----		-----	974	EN14078-B	7.00		-0.69
207		-----		-----	995		-----		-----
208		-----		-----	997		-----		-----
209		-----		-----	998		-----		-----
225		-----		-----	1006	EN14078-A	7.17		0.22
228		-----		-----	1016	EN14078-A	6.868		-1.39
237	D7371	7.10		-0.15	1059	EN14078-B	7.2		0.38
238		-----		-----	1097	EN14078-B	6.84		-1.54
273		-----		-----	1108	EN14078-B	7.6		2.52
311	EN14078-B	7.05		-0.42	1109		-----		-----
312	EN14078-B	7.30		0.92	1121		-----		-----
317		-----		-----	1126		-----		-----
323	EN14078-A	7.1		-0.15	1140	EN14078-B	7.33		1.08
328	EN14078-B	6.9		-1.22	1146		-----		-----
331	EN14078-B	7.40		1.45	1150	EN14078-B	7.2882		0.85
333	EN14078-B	6.9		-1.22	1189	EN14078-B	7.2		0.38
334	EN14078-B	7.0		-0.69	1191		-----		-----
335	EN14078-B	7.2		0.38	1199		-----		-----
337	EN14078-B	6.8		-1.76	1205		7.236		0.57
338		-----		-----	1212		-----		-----
342		-----		-----	1227		-----		-----
343	EN14078	7.6		2.52	1266	EN14078-B	7.3		0.92
345		-----		-----	1275	EN14078-B	6.84		-1.54
351	EN14078-B	7.349		1.18	1281	EN14078-B	7.101		-0.15
357		-----		-----	1286		-----		-----
360	EN14078-B	7.05		-0.42	1299	EN14078-B	6.8		-1.76
365	EN14078-B	7.43		1.61	1300	EN14078-B	7.305		0.94
369	EN14078-B	6.95		-0.95	1318		-----		-----
370		-----		-----	1340	EN14078-B	6.71		-2.24
371		-----		-----	1356	D7371	7.8		3.59
381	EN14078-B	7.3		0.92	1367	EN14078-B	7.4		1.45
391		-----		-----	1397	EN14078-A	7.3		0.92
398		-----		-----	1399		-----		-----
399	EN14078-A	6.7		-2.29	1438		-----		-----
403	EN14078-B	7.16		0.17	1443	EN14078-B	7.4		1.45
404	EN14078-B	7.3		0.92	1459	EN14078-B	7.16		0.17
420	EN14078-A	7.4		1.45	1498		-----		-----
431		-----		-----	1510		-----		-----
432		-----		-----	1538	EN14078	7.1		-0.15
440		-----		-----	1539		-----		-----
444		-----		-----	1544	EN14078-B	7.20		0.38
445	EN14078-B	7.37		1.29	1557	EN14078-B	7.12		-0.05
447	EN14078-B	7.001		-0.68	1569	EN14078-B	7.44		1.66
480	EN14078-A	7.43		1.61	1586	EN14078-A	6.75		-2.02
495	EN14078-B	7.003		-0.67	1588		-----		-----
498		-----		-----	1602	EN14078-B	7.20		0.38
541		-----		-----	1613		-----		-----
631	EN14078-B	7.346	C	1.16	1636	EN14078-B	7.19		0.33
663	EN14078	7.13		0.01	1656	EN14078-A	6.9	C	-1.22
671		-----		-----	1669		7.2		0.38
704	EN14078-B	6.69		-2.34	1681		-----		-----
734		-----		-----	1724		-----		-----
751		-----		-----	1730		-----		-----
752		-----		-----	1740	EN14078-B	7.05		-0.42
759		-----		-----	1742		-----		-----
778		-----		-----	1743	EN14078-B	7.1		-0.15
779		-----		-----	1776	EN14078-A	7.22		0.49
781		-----		-----	1796		-----		-----
782		-----		-----	1807	EN14078-B	7.1		-0.15
785		-----		-----	1810	EN14078-B	7.3		0.92
798		-----		-----	1833	EN14078-B	6.96		-0.90
823	EN14078-B	7.1		-0.15	1849		-----		-----
846	GB/T23801	6.73		-2.13	1858		-----		-----
872		-----		-----	1862	EN14078	7.18		0.28
873	EN14078-A	7.0		-0.69	1936		-----		-----
874		-----		-----	1937		-----		-----
875		-----		-----	1938		-----		-----
902	EN14078-B	7.1		-0.15	1950		-----		-----
913		-----		-----	1953		-----		-----
914		-----		-----	1961	EN14078-B	7.15		0.11

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967	EN14078	6.95		-0.95	6163	EN14078-B	7.14975		0.11
1971	EN14078-B	7.1	C	-0.15	6192		7.15		0.11
1976		-----		-----	6201	EN14078-B	7.0		-0.69
1984	EN14078-B	7.2		0.38	6203	EN14078-B	7.3		0.92
1986		-----		-----	6242		-----		-----
2129	EN14078-B	7.14		0.06	6262	EN14078-B	7.02		-0.58
2130		-----		-----	6291	EN14078-B	6.8		-1.76
2146		-----		-----	6298		-----		-----
6012	EN14078-B	6.7		-2.29	6299	EN14078-B	6.9		-1.22
6026		-----		-----	6308	EN14078-B	7.1		-0.15
6035		-----		-----	6321		-----		-----
6049		-----		-----	6363	EN14078-B	7.19		0.33
6057	EN14078-B	7.75		3.32	6364		-----		-----
6075		-----		-----	6373	EN14078-B	7.0		-0.69
6114	EN14078-A	7.11		-0.10	6379	EN14078-B	6.585		-2.90
6142	EN14078-A	7.4318		1.62	7009		-----		-----
6143		-----		-----	9057		-----		-----

				EN14078-B only	EN14078-A only
	normality	OK		OK	OK
	n	90		64	14
	outliers	1		0	0
	mean (n)	7.128		7.124	7.084
	st.dev. (n)	0.2359		0.2244	0.2544
	R(calc.)	0.661		0.628	0.712
	st.dev.(EN14078-B:14)	0.1871		0.1870	-----
	R(EN14078-B:14)	0.524	range: 3-20% V/V	0.524	-----
Compare					
	R(EN14078-A:14)	0.379	range: 0.05-3% V/V	-----	0.377

Lab 631 first reported 6.346
Lab 1656 first reported 6.4
Lab 1971 first reported 8.1





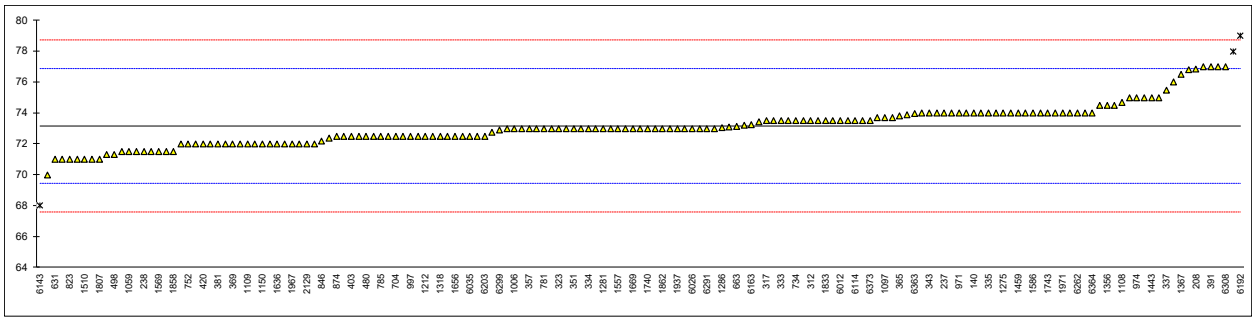
Determination of Flash Point PMcc on sample #21005; result in °C

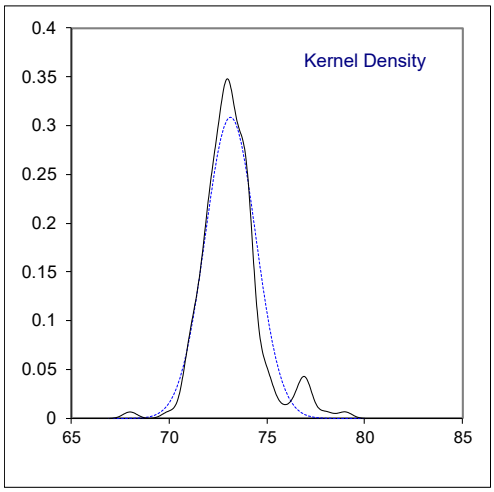
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D93-A	73.9		0.41	962	ISO2719-A	74.0		0.46
140	D93-A	74.0		0.46	963	D93-A	74.0		0.46
171		-----		-----	971	ISO2719-A	74.0		0.46
206	D93-A	77.0		2.08	974	D93-A	75.0		1.00
207	D93-A	76.8		1.97	995	ISO2719-A	72.0		-0.62
208	D7236	76.85		2.00	997	ISO2719-A	72.5		-0.35
209	D7236	77.0		2.08	998	D93-A	73.0		-0.08
225	D93-A	71.0		-1.15	1006	D93-A	73.0		-0.08
228	D93-A	73.0		-0.08	1016		-----		-----
237	D93-A	74.0		0.46	1059	ISO2719-A	71.5		-0.89
238	D93-A	71.5		-0.89	1097	ISO2719-A	73.7		0.30
273		-----		-----	1108	D93-A	74.7		0.84
311	D93-A	72.0		-0.62	1109	D93-A	72.0		-0.62
312	ISO2719-A	73.5		0.19	1121	ISO2719-A	71.3		-0.99
317	D93-A	73.5		0.19	1126		-----		-----
323	ISO2719-A	73.0		-0.08	1140	D93-A	73.5		0.19
328	ISO2719-A	74.0		0.46	1146	D93-A	72.0		-0.62
331	D93-A	73		-0.08	1150	ISO2719-A	72.0		-0.62
333	D93-A	73.5		0.19	1189	ISO2719-A	72.0		-0.62
334	ISO2719-A	73.0		-0.08	1191	ISO2719-A	74.0		0.46
335	ISO2719-A	74.0		0.46	1199		-----		-----
337	ISO2719-A	75.5		1.27	1205	D93-A	73.0		-0.08
338	ISO2719-A	75.0		1.00	1212	ISO2719-A	72.5		-0.35
342	ISO2719-A	73.1		-0.02	1227	D93-A	74.5		0.73
343	ISO2719-A	74		0.46	1266	ISO2719-A	73.7		0.30
345	ISO2719-B	73.7		0.30	1275	IP34-A	74.0		0.46
351	ISO2719-A	73.00		-0.08	1281	ISO2719-A	73.0		-0.08
357	D93-A	73.0		-0.08	1286	ISO2719-A	73.06		-0.04
360	ISO2719-A	71.5		-0.89	1299	D93-A	72.5		-0.35
365	IP34-A	73.825		0.37	1300	ISO2719-A	74.0		0.46
369	ISO2719-A	72.0		-0.62	1318	D93-A	72.5		-0.35
370	ISO2719-A	72.5		-0.35	1340	ISO2719-A	73.5		0.19
371	ISO2719-A	71.5		-0.89	1356	ISO2719-A	74.5		0.73
381	ISO2719-A	72.0		-0.62	1367	D93-B	76.5		1.81
391	ISO2719-A	77		2.08	1397	ISO2719-A	71		-1.15
398	ISO2719-A	76		1.54	1399		-----		-----
399	ISO2719-A	75		1.00	1438		-----		-----
403	D93-A	72.5		-0.35	1443	ISO2719-A	75.0		1.00
404	D93-A	72.5		-0.35	1459	ISO2719-A	74.0		0.46
420	ISO2719-A	72.0		-0.62	1498	D93-A	72.5		-0.35
431	ISO2719-A	72.37		-0.42	1510	IP34-A	71.0		-1.15
432	ISO2719-A	71.5		-0.89	1538	ISO2719	73		-0.08
440		-----		-----	1539	ISO2719	74.0		0.46
444	D93-A	72.0		-0.62	1544	ISO2719-A	72.75		-0.21
445	D93-A	73.0		-0.08	1557	ISO2719-A	73		-0.08
447	IP34-A	73.45		0.17	1569	ISO2719-A	71.5		-0.89
480	ISO2719-A	72.5		-0.35	1586	D93-A	74.0		0.46
495	D93-A	74.0		0.46	1588		-----		-----
498	ISO2719-B	71.3		-0.99	1602	ISO2719-A	71.5		-0.89
541	ISO2719-A	72.5		-0.35	1613	D93-A	73.0		-0.08
631	D93-A	71.0	C	-1.15	1636	ISO2719-A	72.0		-0.62
663	D93-A	73.15		0.00	1656	ISO2719-A	72.5		-0.35
671	D93-A	72.0		-0.62	1669		73.0		-0.08
704	ISO2719-A	72.5		-0.35	1681	ISO2719-A	73.0		-0.08
734	ISO2719-A	73.5		0.19	1724	D93-A	74		0.46
751	D93-A	73.0		-0.08	1730	ISO2719-A	72.0		-0.62
752		72.0		-0.62	1740	ISO2719-A	73.0		-0.08
759	ISO2719-A	72.5		-0.35	1742	ISO2719-A	71		-1.15
778	ISO2719-A	73.5		0.19	1743	ISO2719-A	74.0		0.46
779	ISO2719-A	73.5		0.19	1776	ISO2719-A	74.5		0.73
781	ISO2719-A	73.0		-0.08	1796	D93	70.0		-1.69
782	GOST6356	72.5		-0.35	1807	ISO2719-A	71.0		-1.15
785	ISO2719-A	72.5		-0.35	1810	D93-A	74		0.46
798		-----		-----	1833	ISO2719-A	73.5		0.19
823	ISO2719-A	71.0		-1.15	1849	ISO2719-A	73.0		-0.08
846	GB/T261	72.2		-0.51	1858	D93	71.5		-0.89
872	ISO2719-A	72		-0.62	1862	ISO2719-A	73.0		-0.08
873	D93-A	73.0		-0.08	1936	ISO2719-A	73.0		-0.08
874	ISO2719-A	72.5		-0.35	1937	ISO2719-A	73		-0.08
875	ISO2719-A	72.5		-0.35	1938	ISO2719-A	73		-0.08
902	ISO2719-A	74.0		0.46	1950		-----		-----
913		-----		-----	1953	ISO2719-A	73.5		0.19
914		-----		-----	1961		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967	ISO2719-A	72.0		-0.62	6163	ISO2719-A	73.25		0.06
1971	ISO2719-A	74.0		0.46	6192	D93-A	79	R(0.01)	3.16
1976	ISO2719-A	74.0		0.46	6201	ISO2719-A	73.5		0.19
1984	ISO2719-A	72.0		-0.62	6203	ISO2719-A	72.5		-0.35
1986	ISO2719-A	72.5		-0.35	6242	ISO2719-A	73.0		-0.08
2129	IP34-A	72.0		-0.62	6262	D93-A	74.0		0.46
2130	D93-A	72		-0.62	6291	D93-A	73		-0.08
2146		-----		-----	6298	D93-B	74.0		0.46
6012	D93-A	73.5		0.19	6299	ISO2719-A	72.9		-0.13
6026	ISO2719-A	73		-0.08	6308	ISO2719-A	77.0		2.08
6035	ISO2719-A	72.5		-0.35	6321	IP34-A	73.0		-0.08
6049	ISO2719-A	73.5		0.19	6363	ISO2719-A	73.96		0.44
6057	ISO2719-A	78.0	C,R(0.05)	2.62	6364	D93-A	74.0		0.46
6075	ISO2719-A	75.0		1.00	6373	ISO2719-A	73.5		0.19
6114	ISO2719-A	73.5		0.19	6379		-----		-----
6142	ISO2719-A	72.5		-0.35	7009	D93-A	73.2		0.03
6143	D93-B	68	R(0.05)	-2.77	9057		-----		-----

normality	suspect
n	160
outliers	3
mean (n)	73.142
st.dev. (n)	1.2917
R(calc.)	3.617
st.dev.(ISO2719-A:16)	1.8547
R(ISO2719-A:16)	5.193

Lab 631 first reported 68.5
Lab 6057 first reported 79.0





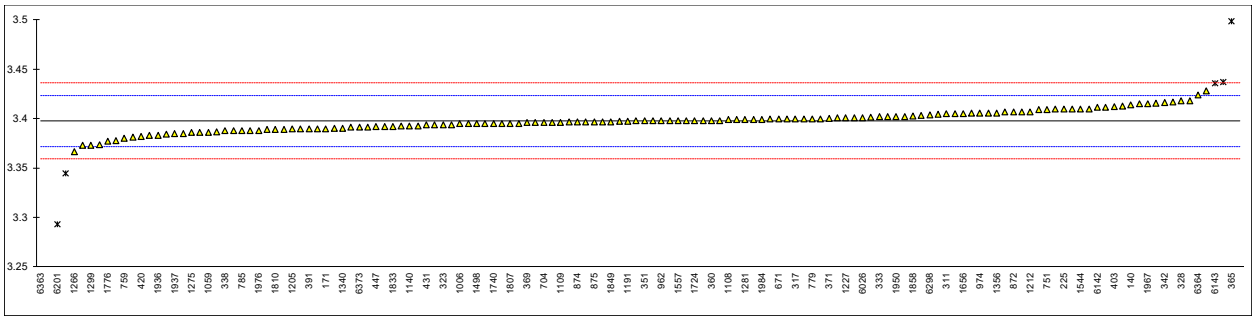
Determination of Kinematic Viscosity at 40°C on sample #21005; result in mm²/s

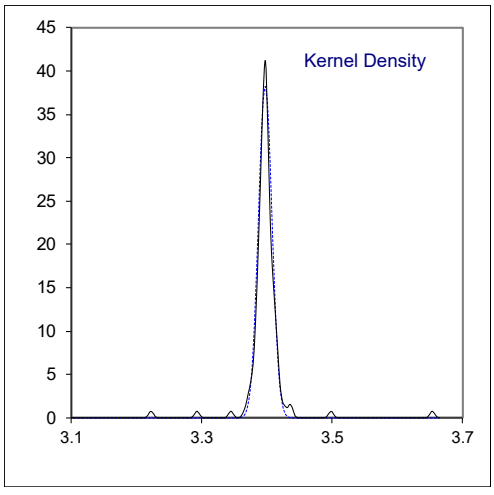
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D445	3.397		-0.05	962	ISO3104	3.398		0.03
140	D445	3.414		1.27	963	ISO3104	3.406		0.65
171	D445	3.390		-0.59	971	ISO3104	3.401		0.26
206		-----		-----	974	D445	3.406		0.65
207		-----		-----	995	ISO3104	3.400		0.18
208		-----		-----	997	ISO3104	3.397		-0.05
209		-----		-----	998	D445	3.383		-1.14
225	D445	3.410		0.96	1006	D445	3.395		-0.20
228	D445	3.654	R(0.01)	19.91	1016		-----		-----
237	D445	3.409		0.88	1059	ISO3104	3.386		-0.90
238		-----		-----	1097	ISO3104	3.394		-0.28
273		-----		-----	1108	D7042	3.399		0.11
311	D445	3.405		0.57	1109	D445	3.3964		-0.10
312	ISO3104	3.399		0.11	1121	ISO3104	3.428		2.36
317	ISO3104	3.400		0.18	1126		-----		-----
323	ISO3104	3.394		-0.28	1140	D445	3.393		-0.36
328	ISO3104	3.418		1.58	1146		-----		-----
331		-----		-----	1150	ISO3104	3.4118		1.10
333	D445	3.402		0.34	1189	ISO3104	3.407		0.73
334	ISO3104	3.400		0.18	1191	ISO3104	3.3977		0.01
335	D445	3.415		1.35	1199		-----		-----
337	ISO3104	3.373		-1.91	1205	D7042	3.3896		-0.62
338	ISO3104	3.388		-0.75	1212	ISO3104	3.407		0.73
342	ISO3104	3.4161		1.43	1227	D445	3.401		0.26
343	ISO3104	3.390		-0.59	1266	ISO3104	3.3665		-2.42
345	ISO3104	3.3920		-0.44	1275	IP71	3.3859		-0.91
351	ISO3104	3.398		0.03	1281	ISO3104	3.399		0.11
357	D445	3.386		-0.90	1286		-----		-----
360	ISO3104	3.3981		0.04	1299		3.373		-1.91
365	IP71	3.4986	R(0.01)	7.84	1300	ISO3104	3.3852		-0.97
369	ISO3104	3.396		-0.13	1318	D7042	3.3917		-0.46
370	ISO3104	3.396		-0.13	1340	ISO3104	3.3905		-0.55
371	ISO3104	3.4005		0.22	1356	ISO3104	3.406		0.65
381	D445	3.406		0.65	1367	IP71	3.389		-0.67
391	ISO3104	3.390		-0.59	1397	D7042	3.405		0.57
398		-----		-----	1399		-----		-----
399		-----		-----	1438	D445	3.410		0.96
403	D445	3.412		1.12	1443	ISO3104	3.4180		1.58
404	D445	3.416		1.43	1459	D7042	3.3969		-0.06
420	ISO3104	3.382		-1.21	1498	D445	3.395		-0.20
431	ISO3104	3.3937		-0.31	1510	IP71	3.398		0.03
432	D445	3.400		0.18	1538		-----		-----
440		-----		-----	1539	ISO3104	3.402		0.34
444		-----		-----	1544	ISO3104	3.4100		0.96
445	D445	3.3929		-0.37	1557	ISO3104	3.398		0.03
447	IP71	3.392		-0.44	1569	ISO3104	3.4015		0.30
480		-----		-----	1586	D445	3.395		-0.20
495	ISO3104	3.345	R(0.01)	-4.09	1588		-----		-----
498		-----		-----	1602	ISO3104	3.398		0.03
541	ISO3104	3.3899		-0.60	1613	D445	3.413		1.19
631	D445	3.3816		-1.25	1636		-----		-----
663	D445	3.3894		-0.64	1656	D445	3.405		0.57
671	D445	3.4	C	0.18	1669		3.437	C,R(0.05)	3.06
704	ISO3104	3.396		-0.13	1681	ISO3104	3.4096		0.93
734		-----		-----	1724	D445	3.398		0.03
751	ISO3104	3.409		0.88	1730		-----		-----
752		3.407		0.73	1740	ISO3104	3.395		-0.20
759	ISO3104	3.380		-1.37	1742	ISO3104	3.401		0.26
778	ISO3104	3.3975		-0.01	1743	D7279	3.410		0.96
779	ISO3104	3.400		0.18	1776	D7042	3.3772		-1.59
781	ISO3104	3.395		-0.20	1796	D445	3.395		-0.20
782		-----		-----	1807	ISO3104	3.395		-0.20
785	ISO3104	3.388		-0.75	1810	D445	3.389		-0.67
798		-----		-----	1833	ISO3104	3.392		-0.44
823	ISO3104	3.387		-0.83	1849	ISO3104	3.397		-0.05
846	GB/T265	3.2225	R(0.01)	-13.60	1858	D445	3.403		0.42
872	ISO3104	3.407		0.73	1862	ISO3104	3.4035		0.46
873	D445	3.398		0.03	1936	ISO3104	3.383		-1.14
874	ISO3104	3.397		-0.05	1937	ISO3104	3.385		-0.98
875	ISO3104	3.397		-0.05	1938	ISO3104	3.3904		-0.56
902	ISO3104	3.388		-0.75	1950	ISO3104	3.402		0.34
913		-----		-----	1953		-----		-----
914		-----		-----	1961		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967	ISO3104	3.415		1.35	6163	ISO3104	3.4021		0.35
1971	ISO3104	3.3981		0.04	6192	D7042	3.400		0.18
1976	ISO3104	3.3882		-0.73	6201	ISO3104	3.293	R(0.01)	-8.12
1984	ISO3104	3.3995		0.14	6203	ISO3104	3.417		1.50
1986	ISO3104	3.396		-0.13	6242	ISO3104	3.3843		-1.04
2129	IP71	3.393		-0.36	6262	ISO3104	3.3978		0.01
2130		-----		-----	6291		-----		-----
2146		-----		-----	6298	D445	3.404		0.49
6012	ISO3104	3.378		-1.52	6299	ISO3104	3.399		0.11
6026	ISO3104	3.401		0.26	6308	ISO3104	3.388		-0.75
6035	ISO3104	3.3913		-0.49	6321	IP71	3.398		0.03
6049	ISO3104	3.394		-0.28	6363	ISO3104	2.717	R(0.01)	-52.85
6057	ISO3104	3.374	C	-1.84	6364	D445	3.4243		2.07
6075	ISO3104	3.395		-0.20	6373	ISO3104	3.3914		-0.48
6114	ISO3104	3.4047		0.55	6379		-----		-----
6142	ISO3104	3.4115		1.08	7009		-----		-----
6143	D445	3.436	R(0.05)	2.98	9057		-----		-----

normality	OK
n	136
outliers	8
mean (n)	3.3976
st.dev. (n)	0.01042
R(calc.)	0.0292
st.dev.(ISO3104:20)	0.01288
R(ISO3104:20)	0.0361

Lab 671 first reported 3.35
Lab 1669 first reported 3.267
Lab 6057 first reported 2.647





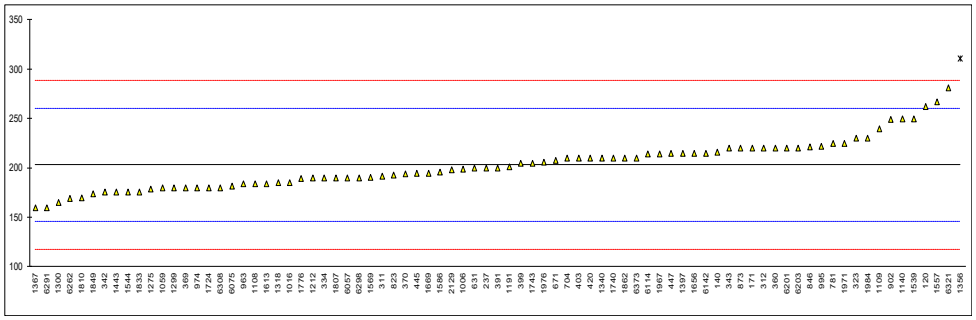
Determination of Lubricity by HFRR at 60°C on sample #21005; result in µm

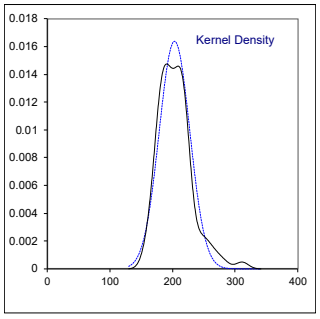
lab	method	value	mark	z(targ)	corrected	remarks
120	D6079	262.5		2.08	No	
140		216		0.45	-----	
171	D6079	220		0.59	No	
206		-----		-----	-----	
207		-----		-----	-----	
208		-----		-----	-----	
209		-----		-----	-----	
225		-----		-----	-----	
228		-----		-----	-----	
237	D6079	200		-0.11	No	
238		-----		-----	-----	
273		-----		-----	-----	
311	ISO12156-1 method A	192		-0.39	No	
312	ISO12156-1 method A	220		0.59	No	
317		-----		-----	-----	
323	ISO12156-1 method B	230		0.94	Yes	
328		-----		-----	-----	
331		-----		-----	-----	
333		-----		-----	-----	
334	ISO12156-1 method B	190		-0.46	No	
335		-----		-----	-----	
337		-----		-----	-----	
338		-----		-----	-----	
342	ISO12156-1 method B	176		-0.95	-----	
343	ISO12156	220		0.59	-----	
345		-----		-----	-----	
351		-----		-----	-----	
357		-----		-----	-----	
360	ISO12156-1 method B	220		0.59	No	
365		-----		-----	-----	
369	ISO12156-1 method B	180		-0.81	No	
370	ISO12156-1 method B	194		-0.32	No	
371		-----		-----	-----	
381		-----		-----	-----	
391	ISO12156-1 method A	200		-0.11	No	
398		-----		-----	-----	
399	ISO12156-1 method B	205		0.07	-----	
403	D6079	210		0.24	No	
404		-----		-----	-----	
420	ISO12156-1 (2006)	210		0.24	-----	
431		-----		-----	-----	
432		-----		-----	-----	
440		-----		-----	-----	
444		-----		-----	-----	
445	ISO12156-1 method B	195		-0.28	No	
447	ISO12156-1 method B	215		0.42	No	
480		-----		-----	-----	
495		-----		-----	-----	
498		-----		-----	-----	
541		-----		-----	-----	
631	D7688	200		-0.11	-----	
663		-----		-----	-----	
671	D6079	208.0		0.17	No	
704	ISO12156-1 method A	210		0.24	No	
734		-----		-----	-----	
751		-----		-----	-----	
752		-----		-----	Yes	
759		-----		-----	-----	
778		-----		-----	-----	
779		-----		-----	-----	
781	ISO12156-1 (2006)	225		0.77	Yes	
782		-----		-----	-----	
785		-----		-----	-----	
798		-----		-----	-----	
823	ISO12156-1 method A	193		-0.35	Yes	
846	SH/T0657	221.5		0.64	Yes	
872		-----		-----	-----	
873	ISO12156-1 method A	220		0.59	No	
874		-----		-----	-----	
875		-----		-----	-----	
902	ISO12156-1 (2006)	249		1.61	Yes	
913		-----		-----	-----	
914		-----		-----	-----	

lab	method	value	mark	z(targ)	corrected	remarks
962		-----		-----	-----	
963	ISO12156-1 (2006)	184		-0.67	Yes	
971		-----		-----	-----	
974	IP450	180		-0.81	Yes	
995	ISO12156-1 method A	222		0.66	-----	
997		-----		-----	-----	
998		-----		-----	-----	
1006	D6079	199		-0.14	-----	
1016	ISO12156-1 method A	185.5		-0.62	-----	
1059	ISO12156-1 method A	180		-0.81	-----	
1097		-----		-----	-----	
1108	ISO12156-1 method B	184		-0.67	No	
1109	IP450	240		1.29	Yes	
1121		-----		-----	-----	
1126		-----		-----	-----	
1140	D6079	250		1.64	Yes	
1146		-----		-----	-----	
1150		-----		-----	-----	
1189		-----		-----	-----	
1191	ISO12156-1 method A	201.5		-0.06	-----	
1199		-----		-----	-----	
1205		-----		-----	-----	
1212	ISO12156-1 method A	190		-0.46	No	
1227		-----		-----	-----	
1266		-----		-----	-----	
1275	IP450	179		-0.84	Yes	
1281		-----		-----	-----	
1286		-----		-----	-----	
1299	ISO12156-1 (2006)	180		-0.81	-----	
1300	ISO12156-1 method A	165		-1.33	No	
1318	ISO12156-1 method A	185		-0.63	No	
1340	ISO12156-1 method A	210		0.24	No	
1356	ISO12156-1 method A	311	R(0.01)	3.78	No	
1367	IP450	160.00		-1.51	No	
1397	ISO12156-1 method B	215		0.42	No	
1399		-----		-----	-----	
1438		-----		-----	-----	
1443	ISO12156-1 method A	176		-0.95	-----	
1459		-----		-----	-----	
1498		-----		-----	-----	
1510		-----		-----	-----	
1538		-----		-----	-----	
1539	ISO12156-1	250		1.64	No	
1544	ISO12156-1 method A	176		-0.95	No	
1557	ISO12156-1 method A	267		2.24	-----	
1569	ISO12156-1 method B	190.5		-0.44	No	
1586	ISO12156-1 (2006)	196		-0.25	No	
1588		-----		-----	-----	
1602		-----		-----	-----	
1613	ISO12156-1 (2006)	184		-0.67	Yes	
1636		-----		-----	-----	
1656	ISO12156-1 method A	215	C	0.42	-----	first reported 283
1669		195		-0.28	Yes	
1681		-----		-----	-----	
1724	IP450	180		-0.81	No	
1730		-----		-----	-----	
1740	ISO12156-1 method B	210		0.24	-----	
1742		-----		-----	-----	
1743	ISO12156-1 method B	205		0.07	Yes	
1776	ISO12156-1 method A	189.5		-0.48	No	
1796		-----		-----	-----	
1807	ISO12156-1 (2006)	190		-0.46	Yes	
1810	ISO12156-1 method A	170		-1.16	No	
1833	ISO12156-1 method A	176		-0.95	-----	
1849	ISO12156-1 method B	174		-1.02	No	
1858		-----		-----	-----	
1862	ISO12156-1	210		0.24	-----	
1936		-----		-----	-----	
1937		-----		-----	-----	
1938		-----		-----	-----	
1950		-----		-----	-----	
1953		-----		-----	-----	
1961		-----		-----	-----	

lab	method	value	mark	z(targ)	corrected	remarks
1967	ISO12156-1 method A	214.25		0.39	No	
1971	ISO12156-1 method B	225		0.77	No	
1976	ISO12156-1 method A	205.8		0.09	-----	
1984	ISO12156-1 method A	230		0.94	No	
1986		-----		-----	-----	
2129	ISO12156-1 (2006)	198.5		-0.16	No	
2130		-----		-----	-----	
2146		-----		-----	-----	
6012		-----		-----	-----	
6026		-----		-----	-----	
6035		-----		-----	-----	
6049		-----		-----	-----	
6057	ISO12156-1 (2006)	190		-0.46	-----	
6075	ISO12156-1 method A	182		-0.74	-----	
6114	ISO12156-1 method A	214		0.38	Yes	
6142	ISO12156-1 (2006)	215		0.42	-----	
6143		-----		-----	-----	
6163		-----		-----	-----	
6192		-----		-----	-----	
6201	ISO12156-1 method A	220		0.59	No	
6203	ISO12156-1 method A	220		0.59	Yes	
6242		-----		-----	-----	
6262	ISO12156-1 method B	169		-1.19	No	
6291	ISO12156-1 method A	160		-1.51	-----	
6298	D6079	190		-0.46	No	
6299		-----		-----	-----	
6308	ISO12156-1 method A	180		-0.81	Yes	
6321	ISO12156-1 method A	281		2.73	No	
6363		-----		-----	-----	
6364		-----		-----	-----	
6373	ISO12156-1 method A	210		0.24	No	
6379		-----		-----	-----	
7009		-----		-----	-----	
9057		-----		-----	-----	

				"No" only	"Yes" only
	normality	OK		suspect	OK
	n	80		40	17
	outliers	1		1	0
	mean (n)	203.132		202.731	208.206
	st.dev. (n)	24.3723		25.4063	24.8640
	R(calc.)	68.242		71.138	69.619
	st.dev.(ISO12156-1-A:18)	28.5714		28.5714	28.5714
	R(ISO12156-1-A:18)	80	(digital camera)	80	80
Compare					
	R(ISO12156-1-B:18)	90	(visual)		
	R(D6079:18)	80			





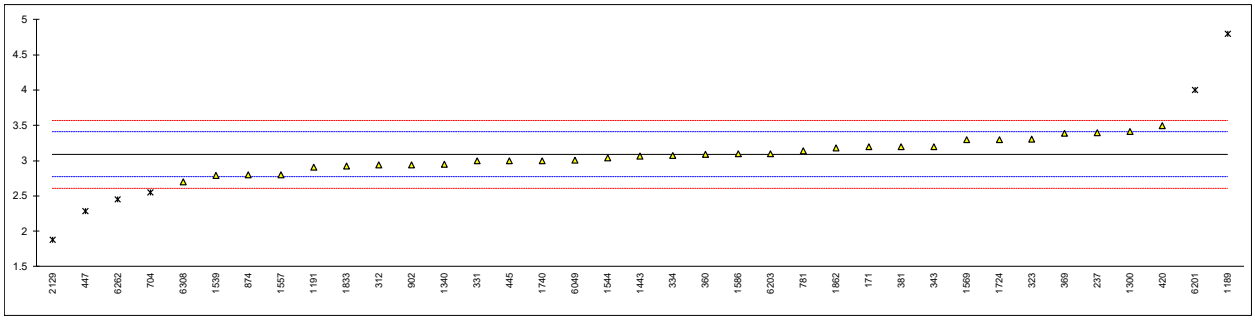
Determination of Manganese as Mn on sample #21005; result in mg/L

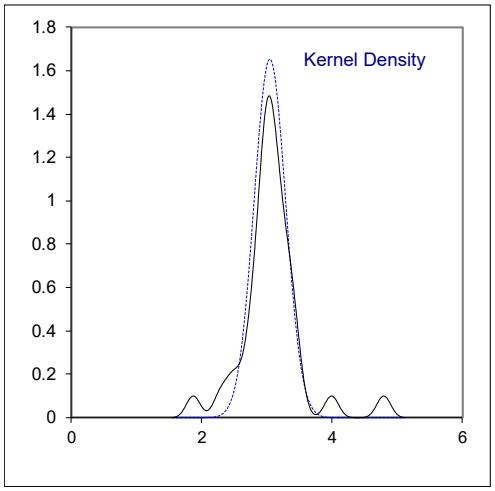
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	962		-----		-----
140		-----		-----	963		-----		-----
171	D3831	3.2		0.69	971		-----		-----
206		-----		-----	974		-----		-----
207		-----		-----	995		-----		-----
208		-----		-----	997		-----		-----
209		-----		-----	998		-----		-----
225		-----		-----	1006		-----		-----
228		-----		-----	1016		-----		-----
237	EN16576	3.4	C	1.94	1059		-----		-----
238		-----		-----	1097		-----		-----
273		-----		-----	1108		-----		-----
311		-----		-----	1109		-----		-----
312	EN16576	2.94		-0.93	1121		-----		-----
317		-----		-----	1126		-----		-----
323	EN16576	3.31		1.37	1140		-----		-----
328		-----		-----	1146		-----		-----
331	In house	3		-0.56	1150		-----		-----
333		-----		-----	1189	EN16576	4.8	R(0.01)	10.67
334	EN16576	3.074		-0.10	1191	D5185	2.91		-1.12
335		-----		-----	1199		-----		-----
337		-----		-----	1205		-----		-----
338		-----		-----	1212		-----		-----
342		-----		-----	1227		-----		-----
343	EN16576	3.2		0.69	1266		-----		-----
345		-----		-----	1275		-----		-----
351		-----		-----	1281		-----		-----
357		-----		-----	1286		-----		-----
360	EN16576	3.093		0.02	1299		-----		-----
365		-----		-----	1300	EN16576	3.4185		2.05
369	EN16576	3.39		1.87	1318		-----		-----
370		-----		-----	1340	EN16576	2.9478		-0.89
371		-----		-----	1356		-----		-----
381	EN16576	3.2	C	0.69	1367		-----		-----
391		-----		-----	1397		-----		-----
398		-----		-----	1399		-----		-----
399		-----		-----	1438		-----		-----
403		-----		-----	1443	EN16576	3.07		-0.12
404		-----		-----	1459		-----		-----
420	EN16576	3.5		2.56	1498		-----		-----
431		-----		-----	1510		-----		-----
432		-----		-----	1538		-----		-----
440		-----		-----	1539	EN16576	2.79		-1.87
444		-----		-----	1544	EN16576	3.04		-0.31
445	EN16576	3.0		-0.56	1557	In house	2.8		-1.81
447	EN16576	2.29	ex	-4.99	1569	EN16576	3.3	C	1.31
480		-----		-----	1586	EN16576	3.1		0.06
495		-----		-----	1588		-----		-----
498		-----		-----	1602		-----		-----
541		-----		-----	1613		-----	W	-----
631		-----		-----	1636		-----		-----
663		-----		-----	1656		-----		-----
671		-----		-----	1669		-----		-----
704	EN16576	2.55	ex	-3.37	1681		-----		-----
734		-----		-----	1724	EN16576	3.3		1.31
751		-----		-----	1730		-----		-----
752		-----		-----	1740	EN16576	3.0		-0.56
759		-----		-----	1742		-----		-----
778		-----		-----	1743		-----		-----
779		-----		-----	1776		-----		-----
781	EN16576	3.14		0.31	1796		-----		-----
782		-----		-----	1807		-----		-----
785		-----		-----	1810		-----		-----
798		-----		-----	1833	EN16576	2.93		-1.00
823		-----		-----	1849		-----		-----
846		-----		-----	1858		-----		-----
872		-----		-----	1862	EN16576	3.18		0.56
873		-----		-----	1936		-----		-----
874	EN16576	2.8		-1.81	1937		-----		-----
875		-----		-----	1938		-----		-----
902	EN16576	2.94		-0.93	1950		-----		-----
913		-----		-----	1953		-----		-----
914		-----		-----	1961		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967		-----		-----	6163		-----		-----
1971		-----		-----	6192		-----		-----
1976		-----		-----	6201	EN16576	4	R(0.01)	5.68
1984		-----		-----	6203	EN16576	3.1		0.06
1986		-----		-----	6242		-----		-----
2129	D7111	1.88	ex	-7.55	6262	EN16576	2.4555	ex	-3.96
2130		-----		-----	6291		-----		-----
2146		-----		-----	6298		-----		-----
6012		-----		-----	6299		-----		-----
6026		-----		-----	6308	EN16576	2.7		-2.43
6035		-----		-----	6321		-----		-----
6049	EN16576	3.01		-0.50	6363		-----		-----
6057		-----		-----	6364		-----		-----
6075		-----		-----	6373		-----		-----
6114		-----		-----	6379		-----		-----
6142		-----		-----	7009		-----		-----
6143		-----		-----	9057		-----		-----

normality	OK
n	31
outliers	2 +4ex
mean (n)	3.090
st.dev. (n)	0.2011
R(calc.)	0.563
st.dev.(EN16576:14)	0.1603
R(EN16576:14)	0.449

Lab 237 first reported 3.74
Lab 381 first reported 2.43
Lab 447 test result excluded, see § 4.1
Lab 704 test result excluded, see § 4.1
Lab 1569 first reported 3.9
Lab 1613 first reported 1.67
Lab 2129 test result excluded, see § 4.1
Lab 6262 test result excluded, see § 4.1





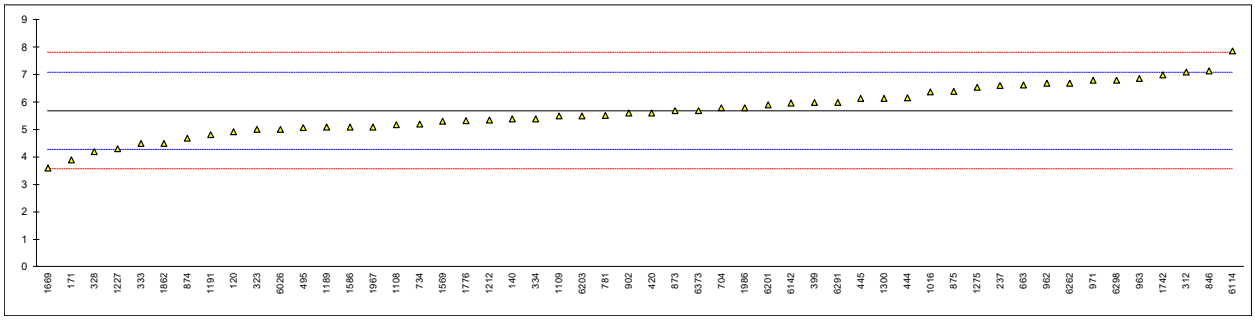
Determination of Nitrogen on sample #21005; result in mg/kg

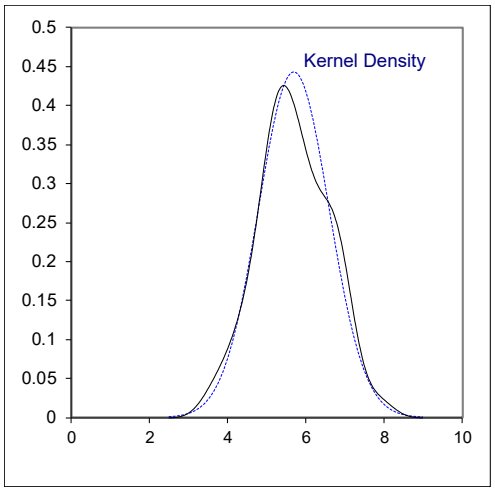
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D4629	4.914		-1.09	962	D4629	6.7		1.44
140	D4629	5.4		-0.40	963	D4629	6.87		1.68
171	D4629	3.9		-2.52	971	D4629	6.8		1.58
206		-----		-----	974		-----		-----
207		-----		-----	995		-----		-----
208		-----		-----	997		-----		-----
209		-----		-----	998		-----		-----
225		-----		-----	1006		-----		-----
228		-----		-----	1016	D4629	6.38		0.98
237	D4629	6.6		1.30	1059		-----		-----
238		-----		-----	1097		-----		-----
273		-----		-----	1108	D5762	5.19		-0.70
311		-----		-----	1109	D4629	5.5		-0.26
312	D4629	7.1		2.00	1121		-----		-----
317		-----		-----	1126		-----		-----
323	D4629	5.0		-0.97	1140		-----		-----
328	D4629	4.2		-2.10	1146		-----		-----
331		-----		-----	1150		-----		-----
333	D4629	4.5		-1.67	1189	D4629	5.1		-0.83
334	D4629	5.4		-0.40	1191	D4629	4.81		-1.24
335		-----		-----	1199		-----		-----
337		-----		-----	1205		-----		-----
338		-----		-----	1212	D4629	5.34		-0.49
342		-----		-----	1227	D4629	4.3		-1.96
343		-----		-----	1266		-----		-----
345		-----		-----	1275	IP379	6.55		1.22
351		-----		-----	1281		-----		-----
357		-----		-----	1286		-----		-----
360		-----		-----	1299		-----		-----
365		-----		-----	1300	D4629	6.139		0.64
369		-----		-----	1318		-----		-----
370		-----		-----	1340		-----		-----
371		-----		-----	1356		-----		-----
381		-----		-----	1367		-----		-----
391		-----		-----	1397		-----		-----
398		-----		-----	1399		-----		-----
399	D4629	6		0.45	1438		-----		-----
403		-----		-----	1443		-----		-----
404		-----		-----	1459		-----		-----
420	D4629	5.61		-0.10	1498		-----		-----
431		-----		-----	1510		-----		-----
432		-----		-----	1538		-----		-----
440		-----		-----	1539		-----		-----
444	D4629	6.17		0.69	1544		-----		-----
445	D4629	6.13		0.63	1557		-----		-----
447		-----		-----	1569	D4629	5.3		-0.54
480		-----		-----	1586	D4629	5.1		-0.83
495	D4629	5.08		-0.85	1588		-----		-----
498		-----		-----	1602		-----		-----
541		-----		-----	1613		-----		-----
631		-----		-----	1636		-----		-----
663	D4629	6.62		1.32	1656		-----		-----
671		-----		-----	1669		3.6		-2.95
704	D4629	5.8		0.16	1681		-----		-----
734	D4629	5.21		-0.67	1724		-----		-----
751		-----		-----	1730		-----		-----
752		-----		-----	1740		-----		-----
759		-----		-----	1742	D4629	7.0		1.86
778		-----		-----	1743		-----		-----
779		-----		-----	1776	D4629	5.33		-0.50
781	D4629	5.53		-0.22	1796		-----		-----
782		-----		-----	1807		-----		-----
785		-----		-----	1810		-----		-----
798		-----		-----	1833		-----		-----
823		-----		-----	1849		-----		-----
846	SH/T0657	7.15		2.07	1858		-----		-----
872		-----		-----	1862	D4629	4.5		-1.67
873	D4629	5.7		0.02	1936		-----		-----
874	D4629	4.7		-1.39	1937		-----		-----
875	D4629	6.4		1.01	1938		-----		-----
902	D5762	5.6		-0.12	1950		-----		-----
913		-----		-----	1953		-----		-----
914		-----		-----	1961		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967	D4629	5.10		-0.83	6163		-----		-----
1971		-----		-----	6192		-----		-----
1976		-----		-----	6201	D4629	5.9		0.31
1984		-----		-----	6203	D4629	5.51		-0.25
1986	D4629	5.8		0.16	6242		-----		-----
2129		-----		-----	6262	D4629	6.7	C	1.44
2130		-----		-----	6291	D4629	6		0.45
2146		-----		-----	6298	D5762	6.80		1.58
6012		-----		-----	6299		-----		-----
6026	D4629	5.0		-0.97	6308		-----		-----
6035		-----		-----	6321		-----		-----
6049		-----		-----	6363		-----		-----
6057		-----		-----	6364		-----		-----
6075		-----		-----	6373	D4629	5.7		0.02
6114	D5762	7.87		3.09	6379		-----		-----
6142	ISO3734	5.965		0.40	7009		-----		-----
6143		-----		-----	9057		-----		-----

normality	OK
n	52
outliers	0
mean (n)	5.68
st.dev. (n)	0.900
R(calc.)	2.52
st.dev.(D4629:17)	0.707
R(D4629:17)	1.98

Lab 6262 first reported 2.531





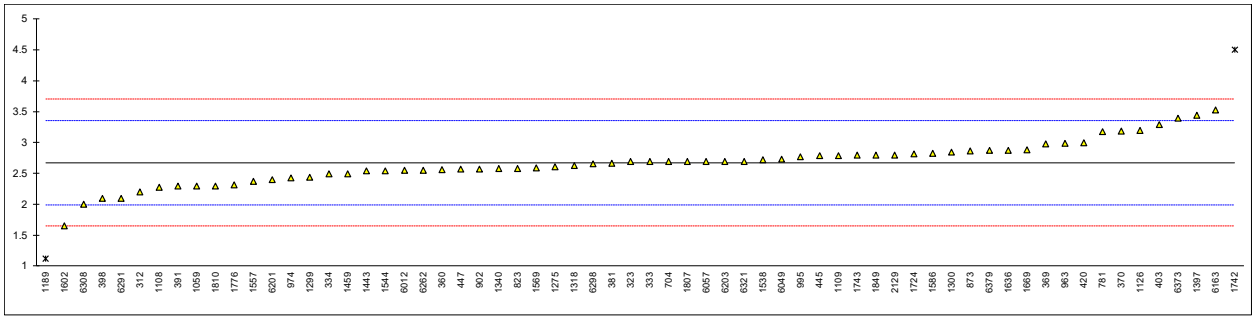
Determination of Polycyclic Aromatic Hydrocarbons [1] on sample #21005; result in %M/M

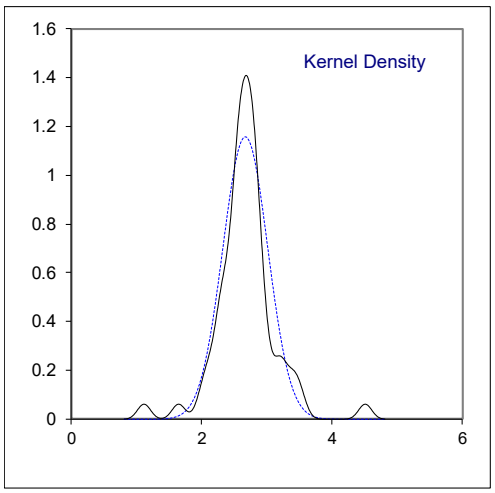
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	962		-----		-----
140		-----		-----	963	EN12916	2.99		0.93
171		-----		-----	971		-----		-----
206		-----		-----	974	IP391	2.43		-0.71
207		-----		-----	995	EN12916	2.775		0.30
208		-----		-----	997		-----		-----
209		-----		-----	998		-----		-----
225		-----		-----	1006		-----		-----
228		-----		-----	1016		-----		-----
237		-----		-----	1059	EN12916	2.3		-1.09
238		-----		-----	1097		-----		-----
273		-----		-----	1108	EN12916	2.279		-1.15
311		-----		-----	1109	IP391	2.79		0.34
312	EN12916	2.2		-1.38	1121		-----		-----
317		-----		-----	1126	EN12916	3.2		1.54
323	EN12916	2.7		0.08	1140		-----		-----
328		-----		-----	1146		-----		-----
331		-----		-----	1150		-----		-----
333	EN12916	2.7		0.08	1189	EN12916	1.12	R(0.01)	-4.53
334	EN12916	2.5		-0.50	1191		-----		-----
335		-----		-----	1199		-----		-----
337		-----		-----	1205		-----		-----
338		-----		-----	1212		-----		-----
342		-----		-----	1227		-----		-----
343		-----		-----	1266		-----		-----
345		-----		-----	1275	IP391	2.6074		-0.19
351		-----		-----	1281		-----		-----
357		-----		-----	1286		-----		-----
360	EN12916	2.56		-0.33	1299	EN12916	2.44		-0.68
365		-----		-----	1300	EN12916	2.851		0.52
369	EN12916	2.98		0.90	1318	EN12916	2.632		-0.12
370	EN12916	3.19		1.51	1340	EN12916	2.58		-0.27
371		-----		-----	1356		-----		-----
381	EN12916	2.67		-0.01	1367		-----		-----
391	EN12916	2.3		-1.09	1397	EN12916	3.44	C	2.24
398	EN12916	2.10		-1.67	1399		-----		-----
399		-----		-----	1438		-----		-----
403	EN12916	3.295		1.82	1443		2.54		-0.39
404		-----		-----	1459	EN12916	2.5		-0.50
420	EN12916	3.0		0.95	1498		-----		-----
431		-----		-----	1510		-----		-----
432		-----		-----	1538	EN12916	2.72		0.14
440		-----		-----	1539		-----		-----
444		-----		-----	1544		2.54		-0.39
445	IP391	2.788		0.34	1557	EN12916	2.37		-0.88
447	IP391	2.56883		-0.30	1569	EN12916	2.59		-0.24
480		-----		-----	1586	IP391	2.83		0.46
495		-----		-----	1588		-----		-----
498		-----		-----	1602		1.65	C	-2.98
541		-----		-----	1613		-----		-----
631		-----		-----	1636	EN12916	2.88		0.60
663		-----		-----	1656		-----		-----
671		-----		-----	1669	EN12916	2.89		0.63
704	EN12916	2.70		0.08	1681		-----		-----
734		-----		-----	1724	IP391	2.82	C	0.43
751		-----		-----	1730		-----		-----
752		-----		-----	1740		-----		-----
759		-----		-----	1742	EN12916	4.51	C,E,R(0.01)	5.36
778		-----		-----	1743	EN12916	2.8		0.37
779		-----		-----	1776	EN12916	2.317		-1.04
781	EN12916	3.18		1.48	1796		-----		-----
782		-----		-----	1807	EN12916	2.7	C	0.08
785		-----		-----	1810	EN12916	2.3		-1.09
798		-----		-----	1833		-----		-----
823	EN12916	2.58		-0.27	1849	EN12916	2.80	C	0.37
846		-----		-----	1858		-----		-----
872		-----		-----	1862		-----		-----
873	EN12916	2.87		0.58	1936		-----		-----
874		-----		-----	1937		-----		-----
875		-----		-----	1938		-----		-----
902	EN12916	2.57		-0.30	1950		-----		-----
913		-----		-----	1953		-----		-----
914		-----		-----	1961		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967		-----		-----	6163	EN12916	3.5274		2.49
1971		-----		-----	6192		-----		-----
1976		-----		-----	6201	EN12916	2.4		-0.80
1984		-----		-----	6203	EN12916	2.7		0.08
1986		-----		-----	6242		-----		-----
2129	IP391	2.8	C	0.37	6262	EN12916	2.555		-0.34
2130		-----		-----	6291		2.1		-1.67
2146		-----		-----	6298	IP391	2.66		-0.04
6012	In house	2.55		-0.36	6299		-----		-----
6026		-----		-----	6308	EN12916	2.0		-1.96
6035		-----		-----	6321	IP391	2.7		0.08
6049		2.73		0.17	6363		-----		-----
6057	EN12916	2.7		0.08	6364		-----		-----
6075		-----		-----	6373		3.4	C	2.12
6114		-----		-----	6379	EN12916	2.8754		0.59
6142		-----		-----	7009		-----		-----
6143		-----		-----	9057		-----		-----

normality	suspect
n	62
outliers	2
mean (n)	2.673
st.dev. (n)	0.3443
R(calc.)	0.964
st.dev.(EN12916:19)	0.3427
R(EN12916:19)	0.959

[1)] Definition from EN12916: %Polycyclic Aromatic Hydrocarbons = sum of %di- and %tri+-Aromatic Hydrocarbons
Lab 1397 first reported 4.04
Lab 1602 first reported as Total PAH
Lab 1724 first reported 4.04
Lab 1742 first reported 4.85 / marked with E iis calculated 3.61
Lab 1807 first reported 20.8
Lab 1849 first reported 3.94
Lab 2129 first reported 28
Lab 6373 first reported 1.0





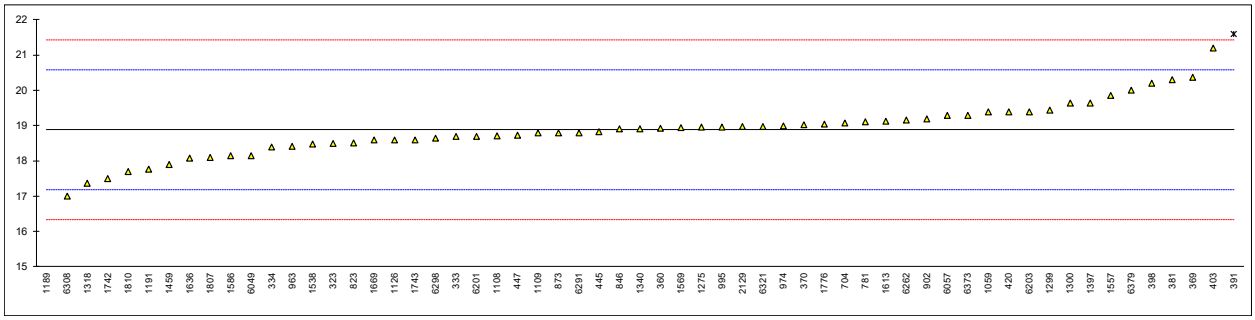
Determination of Mono Aromatic Hydrocarbons on sample #21005; result in %M/M

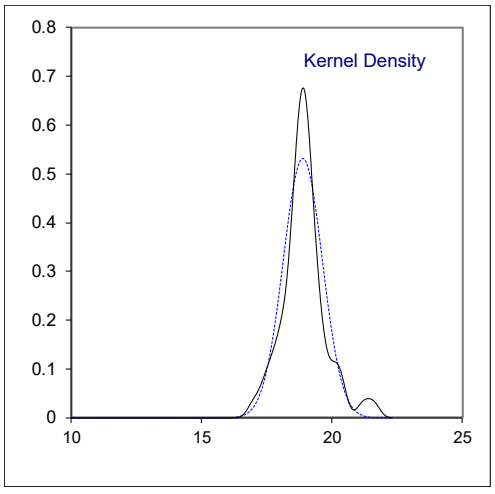
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	962		-----		-----
140		-----		-----	963	EN12916	18.41		-0.56
171		-----		-----	971		-----		-----
206		-----		-----	974	IP391	19.00		0.14
207		-----		-----	995	EN12916	18.97		0.10
208		-----		-----	997		-----		-----
209		-----		-----	998		-----		-----
225		-----		-----	1006		-----		-----
228		-----		-----	1016		-----		-----
237		-----		-----	1059	EN12916	19.4		0.61
238		-----		-----	1097		-----		-----
273		-----		-----	1108	EN12916	18.721		-0.19
311		-----		-----	1109	IP391	18.79		-0.11
312		-----		-----	1121		-----		-----
317		-----		-----	1126	EN12916	18.6		-0.34
323	EN12916	18.5		-0.45	1140		-----		-----
328		-----		-----	1146		-----		-----
331		-----		-----	1150		-----		-----
333	EN12916	18.7		-0.22	1189	EN12916	7.28	R(0.01)	-13.68
334	EN12916	18.4		-0.57	1191	EN12916	17.777		-1.31
335		-----		-----	1199		-----		-----
337		-----		-----	1205		-----		-----
338		-----		-----	1212		-----		-----
342		-----		-----	1227		-----		-----
343		-----		-----	1266		-----		-----
345		-----		-----	1275	IP391	18.9635		0.09
351		-----		-----	1281		-----		-----
357		-----		-----	1286		-----		-----
360	EN12916	18.93		0.05	1299	EN12916	19.45		0.67
365		-----		-----	1300	EN12916	19.64		0.89
369	EN12916	20.37		1.75	1318	EN12916	17.373		-1.78
370	EN12916	19.03		0.17	1340	EN12916	18.92		0.04
371		-----		-----	1356		-----		-----
381	EN12916	20.3		1.67	1367		-----		-----
391	EN12916	21.6	R(0.05)	3.20	1397	EN12916	19.64		0.89
398	EN12916	20.2		1.55	1399		-----		-----
399		-----		-----	1438		-----		-----
403	EN12916	21.196		2.73	1443		-----		-----
404		-----		-----	1459	EN12916	17.9		-1.16
420	EN12916	19.4		0.61	1498		-----		-----
431		-----		-----	1510		-----		-----
432		-----		-----	1538	EN12916	18.48		-0.48
440		-----		-----	1539		-----		-----
444		-----		-----	1544		-----		-----
445	IP391	18.822		-0.07	1557	EN12916	19.86		1.15
447	IP391	18.72868		-0.18	1569	EN12916	18.943		0.07
480		-----		-----	1586	IP391	18.15		-0.87
495		-----		-----	1588		-----		-----
498		-----		-----	1602		-----		-----
541		-----		-----	1613	EN12916	19.13		0.29
631		-----		-----	1636	EN12916	18.09		-0.94
663		-----		-----	1656		-----		-----
671		-----		-----	1669	EN12916	18.59		-0.35
704	EN12916	19.08		0.23	1681		-----		-----
734		-----		-----	1724		-----		-----
751		-----		-----	1730		-----		-----
752		-----		-----	1740		-----		-----
759		-----		-----	1742	EN12916	17.51		-1.62
778		-----		-----	1743	EN12916	18.6		-0.34
779		-----		-----	1776	EN12916	19.04325		0.19
781	EN12916	19.11		0.27	1796		-----		-----
782		-----		-----	1807	EN12916	18.1		-0.92
785		-----		-----	1810	EN12916	17.7		-1.40
798		-----		-----	1833		-----		-----
823	EN12916	18.52		-0.43	1849		-----		-----
846	SH/T0806	18.92		0.04	1858		-----		-----
872		-----		-----	1862		-----		-----
873	EN12916	18.8		-0.10	1936		-----		-----
874		-----		-----	1937		-----		-----
875		-----		-----	1938		-----		-----
902	EN12916	19.2		0.37	1950		-----		-----
913		-----		-----	1953		-----		-----
914		-----		-----	1961		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967		-----		-----	6163		-----		-----
1971		-----		-----	6192		-----		-----
1976		-----		-----	6201	EN12916	18.7		-0.22
1984		-----		-----	6203	EN12916	19.4		0.61
1986		-----		-----	6242		-----		-----
2129	IP391	18.98		0.11	6262	EN12916	19.161		0.33
2130		-----		-----	6291		18.8		-0.10
2146		-----		-----	6298	IP391	18.65		-0.28
6012		-----		-----	6299		-----		-----
6026		-----		-----	6308	EN12916	17.0		-2.22
6035		-----		-----	6321	IP391	18.985		0.12
6049		18.15		-0.87	6363		-----		-----
6057	EN12916	19.3		0.49	6364		-----		-----
6075		-----		-----	6373		19.3	C	0.49
6114		-----		-----	6379	EN12916	20.0155		1.33
6142		-----		-----	7009		-----		-----
6143		-----		-----	9057		-----		-----

normality	suspect
n	57
outliers	2
mean (n)	18.884
st.dev. (n)	0.7506
R(calc.)	2.102
st.dev.(EN12916:19)	0.8483
R(EN12916:19)	2.375

Lab 6373 first reported 26.4





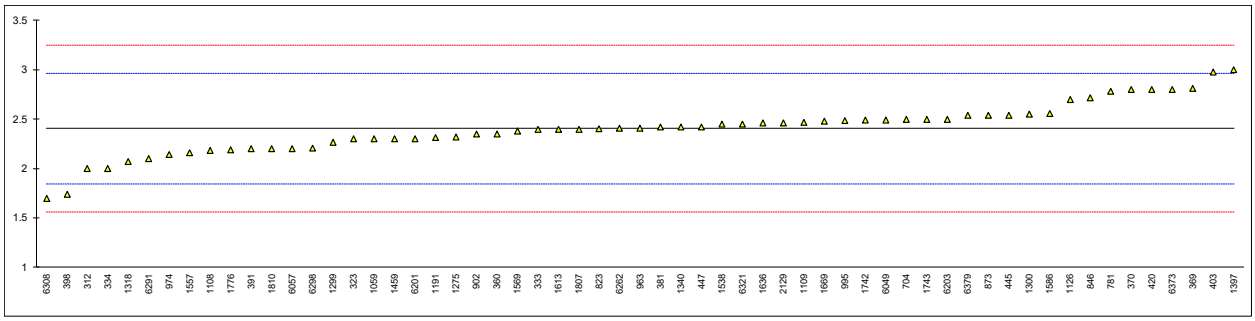
Determination of Di Aromatic Hydrocarbons on sample #21005; result in %M/M

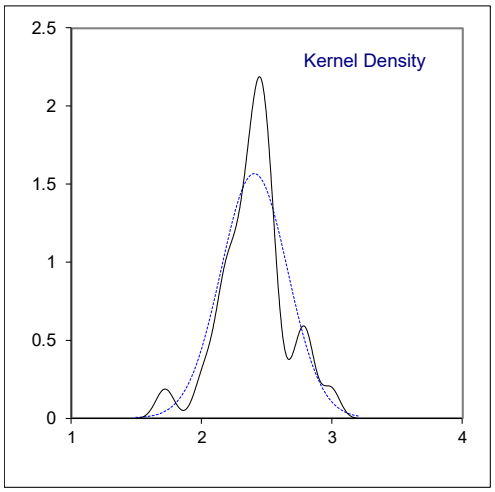
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	962		-----		-----
140		-----		-----	963	EN12916	2.41		0.02
171		-----		-----	971		-----		-----
206		-----		-----	974	IP391	2.14		-0.94
207		-----		-----	995	EN12916	2.485		0.29
208		-----		-----	997		-----		-----
209		-----		-----	998		-----		-----
225		-----		-----	1006		-----		-----
228		-----		-----	1016		-----		-----
237		-----		-----	1059	EN12916	2.3		-0.37
238		-----		-----	1097		-----		-----
273		-----		-----	1108	EN12916	2.186		-0.78
311		-----		-----	1109	IP391	2.47		0.24
312	EN12916	2.0		-1.44	1121		-----		-----
317		-----		-----	1126	EN12916	2.7		1.06
323	EN12916	2.3		-0.37	1140		-----		-----
328		-----		-----	1146		-----		-----
331		-----		-----	1150		-----		-----
333	EN12916	2.4		-0.01	1189		-----		-----
334	EN12916	2.0		-1.44	1191	EN12916	2.317		-0.31
335		-----		-----	1199		-----		-----
337		-----		-----	1205		-----		-----
338		-----		-----	1212		-----		-----
342		-----		-----	1227		-----		-----
343		-----		-----	1266		-----		-----
345		-----		-----	1275	IP391	2.3198		-0.30
351		-----		-----	1281		-----		-----
357		-----		-----	1286		-----		-----
360	EN12916	2.35		-0.19	1299	EN12916	2.27		-0.48
365		-----		-----	1300	EN12916	2.55		0.52
369	EN12916	2.81		1.45	1318	EN12916	2.070		-1.19
370	EN12916	2.80		1.41	1340	EN12916	2.42		0.06
371		-----		-----	1356		-----		-----
381	EN12916	2.42		0.06	1367		-----		-----
391	EN12916	2.2		-0.73	1397	EN12916	3.00	C	2.13
398	EN12916	1.74		-2.37	1399		-----		-----
399		-----		-----	1438		-----		-----
403	EN12916	2.977		2.04	1443		-----		-----
404		-----		-----	1459	EN12916	2.3		-0.37
420	EN12916	2.8		1.41	1498		-----		-----
431		-----		-----	1510		-----		-----
432		-----		-----	1538	EN12916	2.45		0.17
440		-----		-----	1539		-----		-----
444		-----		-----	1544		-----		-----
445	IP391	2.542		0.49	1557	EN12916	2.16		-0.87
447	IP391	2.42159		0.06	1569	EN12916	2.381		-0.08
480		-----		-----	1586	IP391	2.56		0.56
495		-----		-----	1588		-----		-----
498		-----		-----	1602		-----		-----
541		-----		-----	1613	EN12916	2.4		-0.01
631		-----		-----	1636	EN12916	2.46		0.20
663		-----		-----	1656		-----		-----
671		-----		-----	1669	EN12916	2.48		0.27
704	EN12916	2.50		0.34	1681		-----		-----
734		-----		-----	1724		-----		-----
751		-----		-----	1730		-----		-----
752		-----		-----	1740		-----		-----
759		-----		-----	1742	EN12916	2.49		0.31
778		-----		-----	1743	EN12916	2.5		0.34
779		-----		-----	1776	EN12916	2.18738		-0.77
781	EN12916	2.78		1.34	1796		-----		-----
782		-----		-----	1807	EN12916	2.4		-0.01
785		-----		-----	1810	EN12916	2.2		-0.73
798		-----		-----	1833		-----		-----
823	EN12916	2.405		0.00	1849		-----		-----
846	SH/T0806	2.72		1.13	1858		-----		-----
872		-----		-----	1862		-----		-----
873	EN12916	2.54		0.49	1936		-----		-----
874		-----		-----	1937		-----		-----
875		-----		-----	1938		-----		-----
902	EN12916	2.35		-0.19	1950		-----		-----
913		-----		-----	1953		-----		-----
914		-----		-----	1961		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967		-----		-----	6163		-----		-----
1971		-----		-----	6192		-----		-----
1976		-----		-----	6201	EN12916	2.3		-0.37
1984		-----		-----	6203	EN12916	2.5		0.34
1986		-----		-----	6242		-----		-----
2129	IP391	2.46		0.20	6262	EN12916	2.408		0.02
2130		-----		-----	6291		2.1		-1.08
2146		-----		-----	6298	IP391	2.21		-0.69
6012		-----		-----	6299		-----		-----
6026		-----		-----	6308	EN12916	1.7		-2.51
6035		-----		-----	6321	IP391	2.45		0.17
6049		2.49		0.31	6363		-----		-----
6057	EN12916	2.2		-0.73	6364		-----		-----
6075		-----		-----	6373		2.8	C	1.41
6114		-----		-----	6379	EN12916	2.5375		0.48
6142		-----		-----	7009		-----		-----
6143		-----		-----	9057		-----		-----

normality	OK
n	59
outliers	0
mean (n)	2.404
st.dev. (n)	0.2544
R(calc.)	0.712
st.dev.(EN12916:19)	0.2805
R(EN12916:19)	0.786

Lab 1397 first reported 3.48
Lab 6373 first reported 1.0





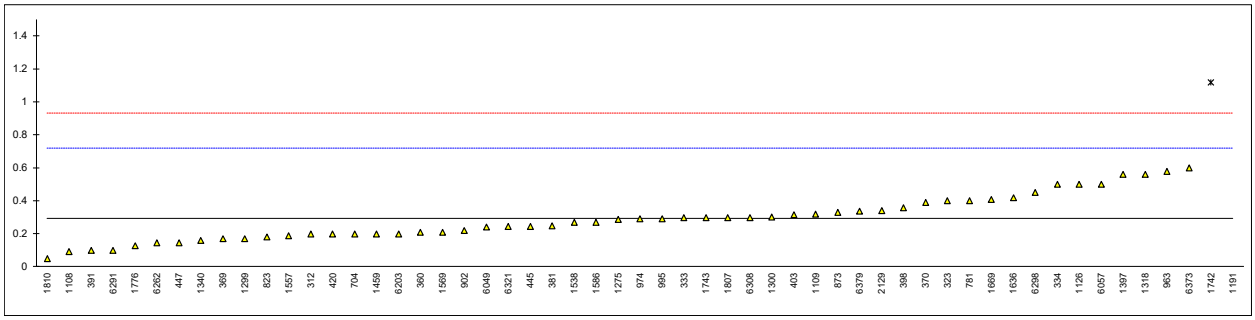
Determination of Tri+ Aromatic Hydrocarbons on sample #21005; result in %M/M

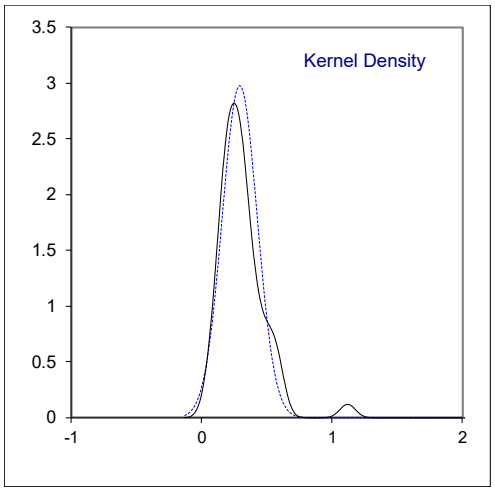
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	962		-----		-----
140		-----		-----	963	EN12916	0.58		1.35
171		-----		-----	971		-----		-----
206		-----		-----	974	IP391	0.29		-0.01
207		-----		-----	995	EN12916	0.29		-0.01
208		-----		-----	997		-----		-----
209		-----		-----	998		-----		-----
225		-----		-----	1006		-----		-----
228		-----		-----	1016		-----		-----
237		-----		-----	1059	EN12916	<0,1		-----
238		-----		-----	1097		-----		-----
273		-----		-----	1108	EN12916	0.093		-0.93
311		-----		-----	1109	IP391	0.32		0.13
312	EN12916	0.2		-0.43	1121		-----		-----
317		-----		-----	1126	EN12916	0.5		0.97
323	EN12916	0.4		0.51	1140		-----		-----
328		-----		-----	1146		-----		-----
331		-----		-----	1150		-----		-----
333	EN12916	0.3		0.04	1189		-----		-----
334	EN12916	0.5		0.97	1191	EN12916	4.516	R(0.01)	19.72
335		-----		-----	1199		-----		-----
337		-----		-----	1205		-----		-----
338		-----		-----	1212		-----		-----
342		-----		-----	1227		-----		-----
343		-----		-----	1266		-----		-----
345		-----		-----	1275	IP391	0.2879		-0.02
351		-----		-----	1281		-----		-----
357		-----		-----	1286		-----		-----
360	EN12916	0.21		-0.38	1299	EN12916	0.17		-0.57
365		-----		-----	1300	EN12916	0.301		0.04
369	EN12916	0.17		-0.57	1318	EN12916	0.562		1.26
370	EN12916	0.39		0.46	1340	EN12916	0.16		-0.61
371		-----		-----	1356		-----		-----
381	EN12916	0.25		-0.19	1367		-----		-----
391	EN12916	0.1		-0.89	1397	EN12916	0.56		1.25
398	EN12916	0.36		0.32	1399		-----		-----
399		-----		-----	1438		-----		-----
403	EN12916	0.317		0.12	1443		-----		-----
404		-----		-----	1459	EN12916	0.2		-0.43
420	EN12916	0.2		-0.43	1498		-----		-----
431		-----		-----	1510		-----		-----
432		-----		-----	1538	EN12916	0.27		-0.10
440		-----		-----	1539		-----		-----
444		-----		-----	1544		-----		-----
445	IP391	0.246		-0.21	1557	EN12916	0.19		-0.47
447	IP391	0.14724		-0.67	1569	EN12916	0.211		-0.38
480		-----		-----	1586	IP391	0.27		-0.10
495		-----		-----	1588		-----		-----
498		-----		-----	1602		-----		-----
541		-----		-----	1613		-----		-----
631		-----		-----	1636	EN12916	0.42		0.60
663		-----		-----	1656		-----		-----
671		-----		-----	1669	EN12916	0.41		0.55
704	EN12916	0.20		-0.43	1681		-----		-----
734		-----		-----	1724		-----		-----
751		-----		-----	1730		-----		-----
752		-----		-----	1740		-----		-----
759		-----		-----	1742	EN12916	1.12	C,R(0.01)	3.87
778		-----		-----	1743	EN12916	0.3		0.04
779		-----		-----	1776	EN12916	0.129508		-0.76
781	EN12916	0.40		0.51	1796		-----		-----
782		-----		-----	1807	EN12916	0.3		0.04
785		-----		-----	1810	EN12916	0.05		-1.13
798		-----		-----	1833		-----		-----
823	EN12916	0.18		-0.52	1849		-----		-----
846		-----		-----	1858		-----		-----
872		-----		-----	1862		-----		-----
873	EN12916	0.33		0.18	1936		-----		-----
874		-----		-----	1937		-----		-----
875		-----		-----	1938		-----		-----
902	EN12916	0.22		-0.33	1950		-----		-----
913		-----		-----	1953		-----		-----
914		-----		-----	1961		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967		-----		-----	6163		-----		-----
1971		-----		-----	6192		-----		-----
1976		-----		-----	6201	EN12916	<0,1		-----
1984		-----		-----	6203	EN12916	0.2		-0.43
1986		-----		-----	6242		-----		-----
2129	IP391	0.34		0.23	6262	EN12916	0.147		-0.67
2130		-----		-----	6291		0.1	C	-0.89
2146		-----		-----	6298	IP391	0.45		0.74
6012		-----		-----	6299		-----		-----
6026		-----		-----	6308	EN12916	0.3		0.04
6035		-----		-----	6321	IP391	0.245		-0.22
6049		0.24		-0.24	6363		-----		-----
6057	EN12916	0.5		0.97	6364		-----		-----
6075		-----		-----	6373		0.6	C	1.44
6114		-----		-----	6379	EN12916	0.3379		0.22
6142		-----		-----	7009		-----		-----
6143		-----		-----	9057		-----		-----

normality	OK
n	53
outliers	2
mean (n)	0.291
st.dev. (n)	0.1340
R(calc.)	0.375
st.dev.(EN12916:19)	0.2142
R(EN12916:19)	0.600

Lab 1742 first reported 2.36
Lab 6291 first reported <0.1
Lab 6373 first reported 0





Determination of Total Aromatic Hydrocarbons on sample #21005; result in %M/M

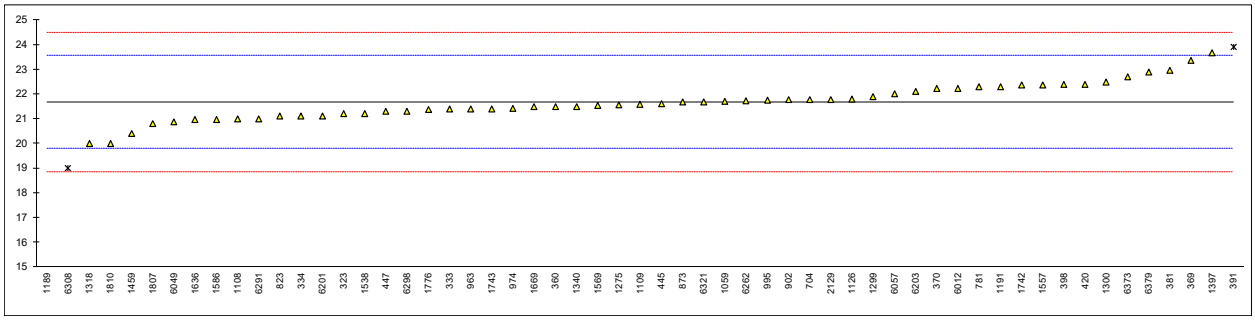
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	962		-----		-----
140		-----		-----	963	EN12916	21.4		-0.29
171		-----		-----	971		-----		-----
206		-----		-----	974	IP391	21.43		-0.26
207		-----		-----	995	EN12916	21.745		0.08
208		-----		-----	997		-----		-----
209		-----		-----	998		-----		-----
225		-----		-----	1006		-----		-----
228		-----		-----	1016		-----		-----
237		-----		-----	1059	EN12916	21.7		0.03
238		-----		-----	1097		-----		-----
273		-----		-----	1108	EN12916	21.00		-0.72
311		-----		-----	1109	IP391	21.58		-0.10
312		-----		-----	1121		-----		-----
317		-----		-----	1126	EN12916	21.8		0.13
323	EN12916	21.2		-0.50	1140		-----		-----
328		-----		-----	1146		-----		-----
331		-----		-----	1150		-----		-----
333	EN12916	21.4		-0.29	1189	EN12916	8.40	R(0.01)	-14.11
334	EN12916	21.1	E	-0.61	1191	EN12916	22.292	E	0.66
335		-----		-----	1199		-----		-----
337		-----		-----	1205		-----		-----
338		-----		-----	1212		-----		-----
342		-----		-----	1227		-----		-----
343		-----		-----	1266		-----		-----
345		-----		-----	1275	IP391	21.5709		-0.11
351		-----		-----	1281		-----		-----
357		-----		-----	1286		-----		-----
360	EN12916	21.49		-0.20	1299	EN12916	21.89		0.23
365		-----		-----	1300	EN12916	22.49		0.87
369	EN12916	23.35		1.78	1318	EN12916	20.00		-1.78
370	EN12916	22.22		0.58	1340	EN12916	21.50		-0.18
371		-----		-----	1356		-----		-----
381	EN12916	22.97		1.38	1367		-----		-----
391	EN12916	23.9	R(0.05)	2.37	1397	EN12916	23.68	E	2.13
398	EN12916	22.4		0.77	1399		-----		-----
399		-----		-----	1438		-----		-----
403		-----		-----	1443		-----		-----
404		-----		-----	1459	EN12916	20.4		-1.35
420	EN12916	22.4		0.77	1498		-----		-----
431		-----		-----	1510		-----		-----
432		-----		-----	1538	EN12916	21.20		-0.50
440		-----		-----	1539		-----		-----
444		-----		-----	1544		-----		-----
445	IP391	21.610		-0.07	1557	EN12916	22.37		0.74
447	IP391	21.29751		-0.40	1569	EN12916	21.54		-0.14
480		-----		-----	1586	IP391	20.98		-0.74
495		-----		-----	1588		-----		-----
498		-----		-----	1602		-----	W	-----
541		-----		-----	1613		-----		-----
631		-----		-----	1636	EN12916	20.97		-0.75
663		-----		-----	1656		-----		-----
671		-----		-----	1669	EN12916	21.48		-0.21
704	EN12916	21.78		0.11	1681		-----		-----
734		-----		-----	1724		-----		-----
751		-----		-----	1730		-----		-----
752		-----		-----	1740		-----		-----
759		-----		-----	1742	EN12916	22.36	E	0.73
778		-----		-----	1743	EN12916	21.4		-0.29
779		-----		-----	1776	EN12916	21.36014		-0.33
781	EN12916	22.29		0.66	1796		-----		-----
782		-----		-----	1807	EN12916	20.8	C	-0.93
785		-----		-----	1810	EN12916	20.0		-1.78
798		-----		-----	1833		-----		-----
823	EN12916	21.10		-0.61	1849		-----		-----
846		-----		-----	1858		-----		-----
872		-----		-----	1862		-----		-----
873	EN12916	21.67		0.00	1936		-----		-----
874		-----		-----	1937		-----		-----
875		-----		-----	1938		-----		-----
902	EN12916	21.77		0.10	1950		-----		-----
913		-----		-----	1953		-----		-----
914		-----		-----	1961		-----		-----

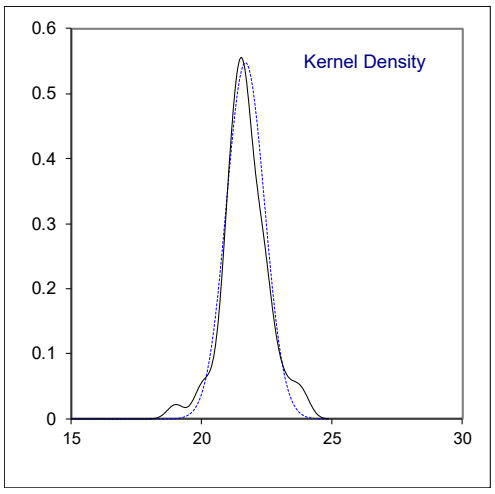
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967		-----		-----	6163		-----		-----
1971		-----		-----	6192		-----		-----
1976		-----		-----	6201	EN12916	21.1		-0.61
1984		-----		-----	6203	EN12916	22.1		0.45
1986		-----		-----	6242		-----		-----
2129	IP391	21.78		0.11	6262	EN12916	21.716		0.05
2130		-----		-----	6291		21.0	C	-0.72
2146		-----		-----	6298	IP391	21.31		-0.39
6012	In house	22.22		0.58	6299		-----		-----
6026		-----		-----	6308	EN12916	19.0	R(0.05)	-2.84
6035		-----		-----	6321	IP391	21.685		0.01
6049		20.88		-0.84	6363		-----		-----
6057	EN12916	22.0		0.35	6364		-----		-----
6075		-----		-----	6373		22.7	C	1.09
6114		-----		-----	6379	EN12916	22.8909		1.29
6142		-----		-----	7009		-----		-----
6143		-----		-----	9057		-----		-----

normality	OK
n	54
outliers	3
mean (n)	21.673
st.dev. (n)	0.7296
R(calc.)	2.043
st.dev.(EN12916:19)	0.9407
R(EN12916:19)	2.634

Lab 1602 test result withdrawn and corrected to Polycyclic Aromatic Hydrocarbons
Lab 1807 first reported 2.7
Lab 6291 first reported 20.9
Lab 6373 first reported 27.3

For labs marked with an E iis calculated a difference in Total Aromatic test result:
Lab 334 20.9
Lab 1191 24.610
Lab 1397 23.20
Lab 1742 21.12 (Tri^+ Aromatic test result was corrected without correction of Total Aromatic test result)



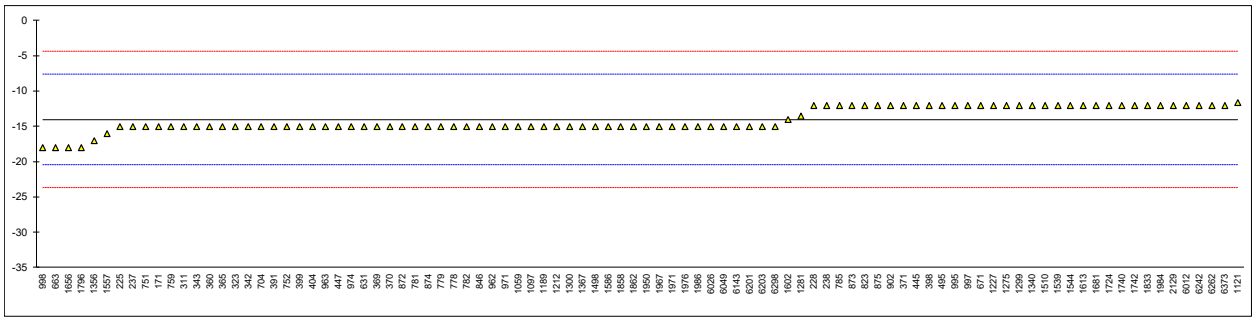


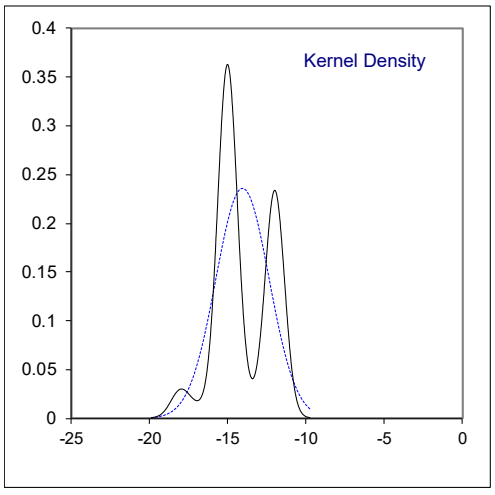
Determination of Pour Point Manual on sample #21005; result in °C

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	962	ISO3016-manual	-15		-0.30
140		-----		-----	963	ISO3016-automated	-15		-0.30
171	D97	-15		-0.30	971	ISO3016-manual	-15		-0.30
206		-----		-----	974	D97	-15		-0.30
207		-----		-----	995	ISO3016-manual	-12		0.64
208		-----		-----	997	ISO3016-manual	-12		0.64
209		-----		-----	998	D97	-18.0		-1.23
225	D97	-15		-0.30	1006		-----		-----
228	D97	-12		0.64	1016		-----		-----
237	D97	-15		-0.30	1059	ISO3016-automated	-15		-0.30
238	D97	-12		0.64	1097	NF T60-105	-15		-0.30
273		-----		-----	1108		-----		-----
311	ISO3016-manual	-15		-0.30	1109		-----		-----
312		-----		-----	1121	ISO3016-manual	-11.6		0.76
317		-----		-----	1126		-----		-----
323	ISO3016-automated	-15		-0.30	1140		-----		-----
328		-----		-----	1146		-----		-----
331		-----		-----	1150		-----		-----
333		-----		-----	1189	ISO3016-automated	-15		-0.30
334		-----		-----	1191		-----		-----
335		-----		-----	1199		-----		-----
337		-----		-----	1205		-----		-----
338		-----		-----	1212	ISO3016-manual	-15		-0.30
342	ISO3016-manual	-15		-0.30	1227	D97	-12		0.64
343	ISO3016	-15		-0.30	1266		-----		-----
345		-----		-----	1275	IP15	-12		0.64
351		-----		-----	1281	ISO3016-manual	-13.5		0.17
357		-----		-----	1286		-----		-----
360	D97	-15		-0.30	1299	D97	-12		0.64
365	IP15	-15		-0.30	1300	ISO3016-manual	-15		-0.30
369	ISO3016-manual	-15		-0.30	1318		-----		-----
370	ISO3016-manual	-15		-0.30	1340	ISO3016-manual	-12		0.64
371	ISO3016-manual	-12		0.64	1356	ISO3016-manual	-17		-0.92
381		-----		-----	1367	IP15	-15.0		-0.30
391	ISO3016-manual	-15		-0.30	1397		-----		-----
398	ISO3016-manual	-12		0.64	1399		-----		-----
399	ISO3016-manual	-15		-0.30	1438		-----		-----
403		-----		-----	1443		-----		-----
404	D97	-15		-0.30	1459		-----		-----
420		-----		-----	1498	D97	-15		-0.30
431		-----		-----	1510	IP15	-12		0.64
432		-----		-----	1538		-----		-----
440		-----		-----	1539	ISO3016	-12		0.64
444		-----		-----	1544	ISO3016-manual	-12		0.64
445	IP15	-12		0.64	1557	ISO3016-manual	-16		-0.61
447	IP15	-15		-0.30	1569		-----		-----
480		-----		-----	1586	D97	-15		-0.30
495	ISO3016-manual	-12.0		0.64	1588		-----		-----
498		-----		-----	1602	ISO3016-manual	-14		0.01
541		-----		-----	1613	D97	-12		0.64
631	D97	-15		-0.30	1636		-----		-----
663	D97	-18		-1.23	1656	IP15	-18		-1.23
671	D97	-12		0.64	1669		-----		-----
704	ISO3016-manual	-15		-0.30	1681	ISO3016-manual	-12		0.64
734		-----		-----	1724	D97	-12		0.64
751	ISO3016	-15		-0.30	1730		-----		-----
752		-15		-0.30	1740	ISO3016-manual	-12		0.64
759	ISO3016-manual	-15		-0.30	1742	ISO3016-automated	-12		0.64
778	ISO3016-manual	-15		-0.30	1743		-----		-----
779	D97	-15		-0.30	1776		-----		-----
781	ISO3016-manual	-15		-0.30	1796	D97	-18		-1.23
782	D97	-15		-0.30	1807		-----		-----
785	ISO3016-manual	-12		0.64	1810		-----		-----
798		-----		-----	1833	ISO3016-automated	-12		0.64
823	ISO316-manual	-12		0.64	1849		-----		-----
846	GB/T3535	-15		-0.30	1858	D97	-15		-0.30
872	ISO3016	-15		-0.30	1862	ISO3016	-15		-0.30
873	D97	-12		0.64	1936		-----		-----
874	ISO3016-manual	-15		-0.30	1937		-----		-----
875	ISO3016-manual	-12		0.64	1938		-----		-----
902	ISO3016-manual	-12		0.64	1950	ISO3016	-15		-0.30
913		-----		-----	1953		-----		-----
914		-----		-----	1961		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967	D97	-15		-0.30	6163		-----		-----
1971	ISO3016-automated	-15		-0.30	6192		-----		-----
1976	ISO3016-automated	-15		-0.30	6201	ISO3016-manual	-15		-0.30
1984	ISO3016-manual	-12		0.64	6203	ISO3016-manual	-15		-0.30
1986	ISO3016-manual	-15		-0.30	6242	ISO3016-manual	-12		0.64
2129	ISO3016-manual	-12		0.64	6262	ISO3016-manual	-12		0.64
2130		-----		-----	6291		-----		-----
2146		-----		-----	6298	D97	-15		-0.30
6012	D97	-12		0.64	6299		-----		-----
6026	ISO3016	-15		-0.30	6308		-----		-----
6035		-----		-----	6321		-----		-----
6049	ISO3016-manual	-15.0		-0.30	6363		-----		-----
6057		-----		-----	6364		-----		-----
6075		-----		-----	6373	ISO3016-manual	-12		0.64
6114		-----		-----	6379		-----		-----
6142		-----		-----	7009		-----		-----
6143	D97	-15		-0.30	9057		-----		-----

normality	OK
n	94
outliers	0
mean (n)	-14.04
st.dev. (n)	1.694
R(calc.)	4.74
st.dev.(ISO3016:19)	3.214
R(ISO3016:19)	9





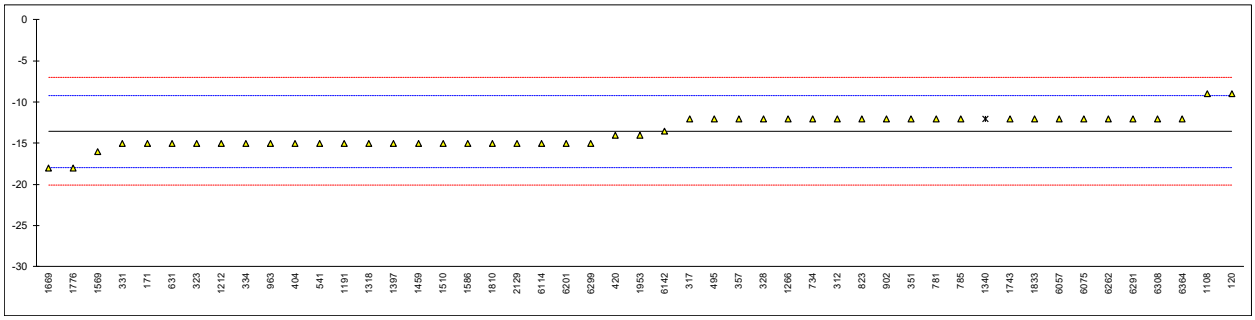
Determination of Pour Point Automated 3°C interval on sample #21005; result in °C

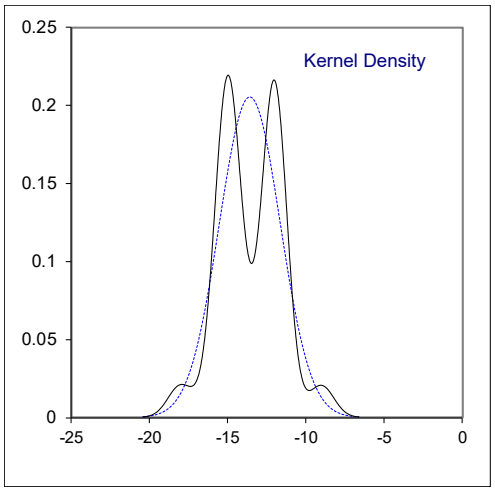
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D5949	-9.0		2.10	962		-----		-----
140		-----		-----	963	D5950	-15		-0.66
171	D5950	-15		-0.66	971		-----		-----
206		-----		-----	974		-----		-----
207		-----		-----	995		-----		-----
208		-----		-----	997		-----		-----
209		-----		-----	998		-----		-----
225		-----		-----	1006		-----		-----
228		-----		-----	1016		-----		-----
237		-----		-----	1059		-----		-----
238		-----		-----	1097		-----		-----
273		-----		-----	1108	D5950	-9		2.10
311		-----		-----	1109		-----		-----
312	D5950	-12		0.72	1121		-----		-----
317	D6749	-12		0.72	1126		-----		-----
323	D5950	-15		-0.66	1140		-----		-----
328	D5950	-12		0.72	1146		-----		-----
331	D5950	-15		-0.66	1150		-----		-----
333		-----		-----	1189		-----		-----
334	NF60105	-15		-0.66	1191	D5950	-15.0		-0.66
335		-----		-----	1199		-----		-----
337		-----		-----	1205		-----		-----
338		-----		-----	1212	D7346	-15		-0.66
342		-----		-----	1227		-----		-----
343		-----		-----	1266	D5950	-12		0.72
345		-----		-----	1275		-----		-----
351	D6749	-12.0		0.72	1281		-----		-----
357	D5950	-12		0.72	1286		-----		-----
360		-----		-----	1299		-----		-----
365		-----		-----	1300		-----		-----
369		-----		-----	1318	D7346	-15.0		-0.66
370		-----		-----	1340	ISO3016	-12	ex	0.72
371		-----		-----	1356		-----		-----
381		-----		-----	1367		-----		-----
391		-----		-----	1397	D5950	-15		-0.66
398		-----		-----	1399		-----		-----
399		-----		-----	1438		-----		-----
403		-----		-----	1443		-----		-----
404	D6892	-15		-0.66	1459	In house	-15.0		-0.66
420	D6749	-14		-0.20	1498		-----		-----
431		-----		-----	1510	D5950	-15		-0.66
432		-----		-----	1538		-----		-----
440		-----		-----	1539		-----		-----
444		-----		-----	1544		-----		-----
445		-----		-----	1557		-----		-----
447		-----		-----	1569	D5950	-16		-1.11
480		-----		-----	1586	D5950	-15		-0.66
495	D6892	-12.0		0.72	1588		-----		-----
498		-----		-----	1602		-----		-----
541	D5950	-15		-0.66	1613		-----		-----
631	D5950	-15		-0.66	1636		-----		-----
663		-----		-----	1656		-----		-----
671		-----		-----	1669		-18		-2.03
704		-----		-----	1681		-----		-----
734	D6749	-12		0.72	1724		-----		-----
751		-----		-----	1730		-----		-----
752		-----		-----	1740		-----		-----
759		-----		-----	1742		-----		-----
778		-----		-----	1743	NF T60-105	-12		0.72
779		-----		-----	1776	D5950	-18		-2.03
781	D5950	-12		0.72	1796		-----		-----
782		-----		-----	1807		-----		-----
785	D6749	-12		0.72	1810	D5950	-15		-0.66
798		-----		-----	1833	D5950	-12		0.72
823	D5950	-12		0.72	1849		-----		-----
846		-----		-----	1858		-----		-----
872		-----		-----	1862		-----		-----
873		-----		-----	1936		-----		-----
874		-----		-----	1937		-----		-----
875		-----		-----	1938		-----		-----
902	D6892	-12		0.72	1950		-----		-----
913		-----		-----	1953	D6749	-14		-0.20
914		-----		-----	1961		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967		-----		-----	6163		-----		-----
1971		-----		-----	6192		-----		-----
1976		-----		-----	6201	D5950	-15		-0.66
1984		-----		-----	6203		-----		-----
1986		-----		-----	6242		-----		-----
2129	D5950	-15.0		-0.66	6262	D5950	-12		0.72
2130		-----		-----	6291	D5950	-12		0.72
2146		-----		-----	6298		-----		-----
6012		-----		-----	6299		-15		-0.66
6026		-----		-----	6308	D5950	-12		0.72
6035		-----		-----	6321		-----		-----
6049		-----		-----	6363		-----		-----
6057	D5950	-12		0.72	6364	D5950	-12.0		0.72
6075	NF t60-105	-12		0.72	6373		-----		-----
6114	D5950	-15		-0.66	6379		-----		-----
6142	D5950	-13.5		0.03	7009		-----		-----
6143		-----		-----	9057		-----		-----

normality	OK	
n	48	
outliers	0 +1ex	
mean (n)	-13.57	
st.dev. (n)	1.943	
R(calc.)	5.44	
st.dev.(D5950:14)	2.179	
R(D5950:14)	6.1	3°C interval

Lab 1340 test result excluded as reported test method is a manual test method





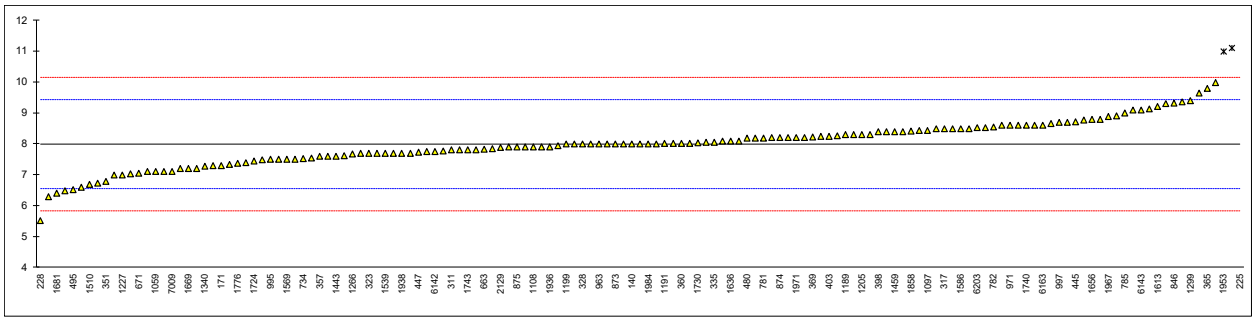
Determination of Sulfur on sample #21005; result in mg/kg

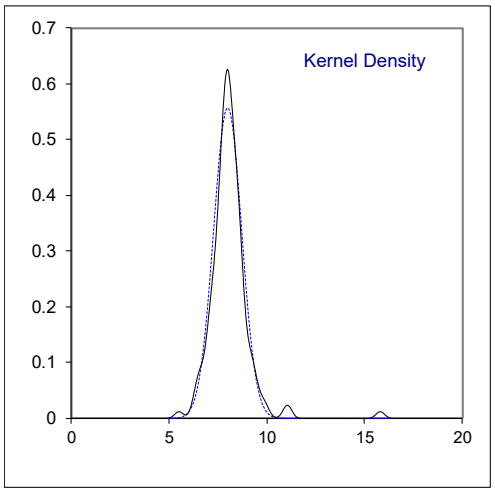
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D5453	8.499		0.70	962		-----		-----
140	D2622	8.0		0.01	963	ISO20846	8.0		0.01
171	D5453	7.3		-0.97	971	D5453	8.6		0.84
206		-----		-----	974	D4294	<17		-----
207		-----		-----	995	ISO20846	7.5		-0.69
208		-----		-----	997	ISO20846	8.7		0.98
209		-----		-----	998		-----		-----
225	D4294	15.8	R(0.01)	10.84	1006	D5453	8.0		0.01
228	D2622	5.51		-3.45	1016	ISO20846	8.43		0.60
237	D5453	8.0		0.01	1059	ISO20846	7.1		-1.24
238		-----		-----	1097	D5453	8.43		0.60
273		-----		-----	1108	D5453	7.9		-0.13
311	ISO20846	7.8		-0.27	1109	D7039	7.03		-1.34
312	ISO20846	7.1		-1.24	1121		-----		-----
317	ISO20846	8.5		0.70	1126	ISO20846	8.3		0.42
323	ISO20846	7.7		-0.41	1140	D5453	7.61		-0.54
328	ISO20846	8.0		0.01	1146		-----		-----
331		-----		-----	1150	ISO20884	7.995		0.00
333	D5453	7.9		-0.13	1189	ISO20846	8.3		0.42
334	ISO20846	7.7		-0.41	1191	ISO20846	8.01		0.02
335	ISO20846	8.06		0.09	1199	ISO20884	7.99		-0.01
337	ISO20846	7.0		-1.38	1205	ISO20846	8.30		0.42
338	ISO20846	9.14		1.59	1212	ISO20846	8.67		0.94
342		-----		-----	1227	D5453	7.0		-1.38
343	ISO20846	7.4		-0.83	1266	ISO20846	7.67		-0.45
345	ISO20846	7.34		-0.91	1275	IP490	8.78		1.09
351	ISO20846	6.78		-1.69	1281	ISO20846	8.01		0.02
357	D5453	7.6		-0.55	1286		-----		-----
360	ISO20846	8.02		0.03	1299	ISO20884	9.4		1.95
365	IP490	9.8		2.51	1300	ISO20846	8.4		0.56
369	ISO20846	8.23		0.33	1318	D5453	8.596		0.83
370	ISO20846	8.24		0.34	1340	ISO20846	7.28		-0.99
371	ISO20846	8.1		0.14	1356	ISO8754	<300		-----
381	ISO20846	7.9		-0.13	1367	D4294	7.50		-0.69
391	ISO20846	7.3		-0.97	1397	ISO20846	7.95		-0.06
398	ISO20846	8.4		0.56	1399		-----		-----
399	ISO20846	8		0.01	1438	D4294	9.3		1.81
403	ISO20846	8.25		0.35	1443	ISO20884	7.6		-0.55
404	D5453	8.2		0.28	1459	ISO20884	8.4		0.56
420	ISO20846	8.19		0.27	1498		7.8		-0.27
431		-----		-----	1510	IP490	6.7		-1.80
432		-----		-----	1538	ISO14596	<10		-----
440	D5453	7.1989		-1.11	1539	ISO20846	7.7		-0.41
444	D5453	9.643		2.29	1544	ISO20846	7.77		-0.31
445	IP490	8.71		0.99	1557	ISO20846	8.6		0.84
447	IP490	7.74		-0.36	1569	ISO20846	7.5		-0.69
480	ISO20846	8.19		0.27	1586	D5453	8.5		0.70
495	ISO20846	6.52		-2.05	1588		-----		-----
498		-----		-----	1602	ISO20846	7.75		-0.34
541	ISO20846	6.60		-1.94	1613	D5453	9.22		1.70
631	D4294	9.37		1.91	1636	ISO20846	8.1		0.14
663	D5453	7.83		-0.23	1656	D5453	8.8		1.12
671	D5453	7.06		-1.30	1669		7.2		-1.11
704	ISO20846	8.5		0.70	1681	ISO13032	6.4		-2.22
734	D5453	7.53		-0.65	1724	D5453	7.44		-0.77
751	ISO20884	7.6		-0.55	1730	ISO20846	8.04		0.06
752		-----		-----	1740	ISO20846	8.6		0.84
759		-----		-----	1742	ISO20846	6.3		-2.36
778	ISO20884	8.53		0.74	1743	ISO20846	7.8		-0.27
779	ISO20846	8.3		0.42	1776	ISO20846	7.38		-0.86
781	ISO20846	8.19		0.27	1796		-----		-----
782	ISO20846	8.55		0.77	1807	ISO20846	7.1		-1.24
785	ISO20846	9.0		1.40	1810	D5453	8.2		0.28
798		-----		-----	1833	ISO20846	7.9		-0.13
823	D5453	7.54		-0.63	1849	ISO20846	8.1		0.14
846	SH/T0689	9.33		1.85	1858	ISO20846	8.42		0.59
872	ISO20846	8.26		0.37	1862	ISO20884	8.02		0.03
873	ISO20846	8.0		0.01	1936	ISO20846	7.9		-0.13
874	D2622	8.2		0.28	1937	ISO20846	7.7		-0.41
875	ISO20846	7.9		-0.13	1938	ISO20846	7.7		-0.41
902	ISO20846	7.7		-0.41	1950	ISO20884	8.0		0.01
913		-----		-----	1953	D4294	11	R(0.01)	4.17
914		-----		-----	1961		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967	ISO20884	8.8975		1.25	6163	ISO20846	8.60		0.84
1971	ISO20846	8.2		0.28	6192	ISO20846	8.05		0.08
1976		-----		-----	6201	D5453	8.2		0.28
1984	ISO20846	8.0		0.01	6203	D5453	8.52		0.73
1986	ISO20846	8.4		0.56	6242		-----		-----
2129	ISO20846	7.89		-0.15	6262	ISO20846	6.484		-2.10
2130	D5453	8.5		0.70	6291	ISO20846	7.2		-1.11
2146	ISO20846	9.1		1.53	6298	D5453	8.7		0.98
6012	ISO20846	7.7		-0.41	6299	ISO20846	8.8		1.12
6026		-----		-----	6308	ISO20846	7.8		-0.27
6035	ISO20846	7.85		-0.20	6321	ISO20846	7.5		-0.69
6049	ISO20846	8.9		1.26	6363	ISO13032	11.1	R(0.01)	4.31
6057	ISO20846	8.6		0.84	6364	D5453	9.98	C	2.76
6075	ISO20846	6.72		-1.77	6373	ISO20846	8.0		0.01
6114	D5453	7.49		-0.70	6379		-----		-----
6142	ISO20846	7.76		-0.33	7009	D5453	7.1	C	-1.24
6143	D7039	9.1		1.53	9057		-----		-----

normality	OK
n	144
outliers	3
mean (n)	7.996
st.dev. (n)	0.7178
R(calc.)	2.010
st.dev.(ISO20846:19)	0.7198
R(ISO20846:19)	2.016

Lab 6364 first reported 12.0
Lab 7009 first reported 5.1





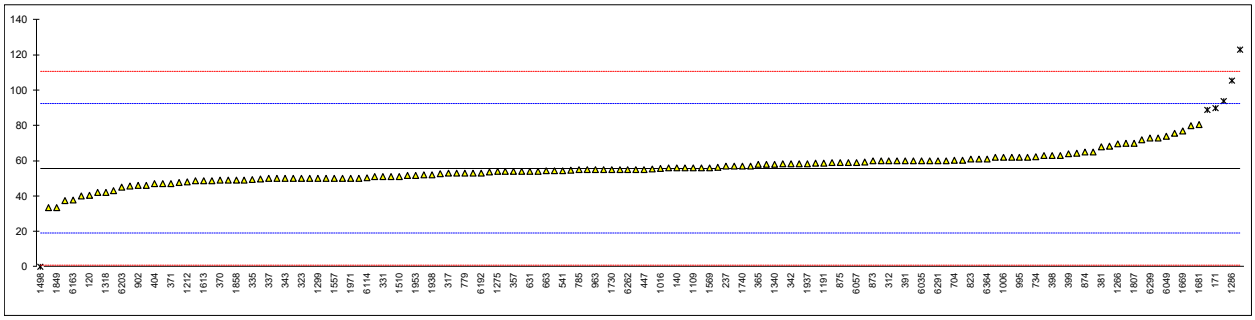
Determination of Water on sample #21005; result in mg/kg

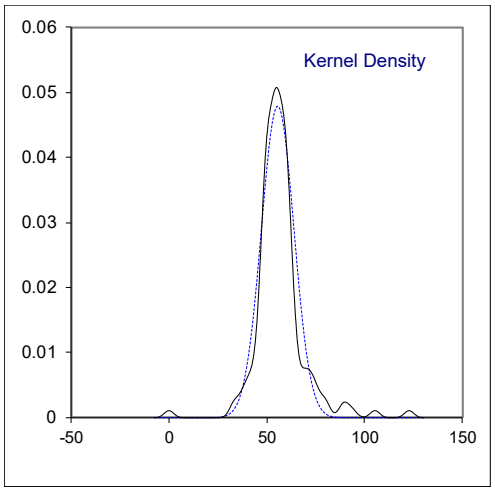
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	E203	40.4	C	-0.83	962	ISO12937	62		0.34
140	ISO12937	56		0.02	963	ISO12937	55		-0.04
171	D6304	90	R(0.05)	1.87	971	D6304-A	63		0.40
206		-----		-----	974	D6304-A	62		0.34
207		-----		-----	995	ISO12937	62		0.34
208		-----		-----	997	ISO12937	62		0.34
209		-----		-----	998		-----		-----
225		-----		-----	1006	D6304-A	62		0.34
228		-----		-----	1016	ISO12937	55.81		0.01
237	D6304-C	57		0.07	1059	ISO12937	50		-0.31
238		-----		-----	1097		-----		-----
273		-----		-----	1108	ISO12937	55		-0.04
311	ISO12937	54		-0.09	1109	D6304-C	56		0.02
312	ISO12937	60		0.24	1121	IP438	53.95		-0.09
317	ISO12937	53		-0.15	1126		-----		-----
323	ISO12937	50		-0.31	1140	IP438	68.2		0.68
328	ISO12937	50		-0.31	1146	D6304-C	<100	C	-----
331	In house	51		-0.26	1150	ISO12937	52.75		-0.16
333	D6304-A	60		0.24	1189	ISO12937	60		0.24
334	ISO12937	50		-0.31	1191	ISO12937	58.8		0.17
335	ISO12937	49.5		-0.34	1199		-----		-----
337	ISO12937	50		-0.31	1205		-----		-----
338	ISO12937	54.3		-0.08	1212	ISO12937	48		-0.42
342	ISO12937	58.4		0.15	1227	D6304-A	55		-0.04
343	ISO12937	50		-0.31	1266	ISO12937	69.57		0.76
345	ISO12937	56		0.02	1275	IP438	53.9		-0.10
351	ISO12937	80.0		1.33	1281	ISO12937	47.6		-0.44
357	E1064	54		-0.09	1286	ISO12937	105.5	R(0.01)	2.72
360	ISO12937	60.5		0.26	1299	ISO12937	50		-0.31
365	IP438	58		0.13	1300	ISO12937	56		0.02
369	ISO12937	45.8		-0.54	1318	D6304-C	42.1		-0.74
370	ISO12937	49		-0.36	1340	ISO12937	58.19		0.14
371	ISO12937	47.07		-0.47	1356	D6304-A	<200		-----
381	ISO12937	68		0.67	1367	D6304-C	33.4		-1.22
391	ISO12937	60		0.24	1397	ISO12937	47		-0.47
398	ISO12937	63		0.40	1399		-----		-----
399	ISO12937	64		0.45	1438		-----		-----
403	ISO12937	43		-0.69	1443	ISO12937	48.9		-0.37
404	ISO12937	47		-0.47	1459	ISO12937	51		-0.26
420	ISO12937	65.03		0.51	1498	D2709	0.005	R(0.01)	-3.04
431		-----		-----	1510	IP438	51		-0.26
432		-----		-----	1538		-----		-----
440	IP438	64.46		0.48	1539	ISO12937	50		-0.31
444	IP438	53		-0.15	1544	ISO12937	55.3		-0.02
445	D6304-A	59		0.18	1557	ISO12937	50		-0.31
447	IP438	55.05		-0.03	1569	In house	56		0.02
480	ISO12937	58.0		0.13	1586	D6304-A	63		0.40
495	ISO12937	58.2		0.14	1588		-----		-----
498	ISO12937	58.6		0.16	1602	ISO12937	53.8		-0.10
541	ISO12937	54.5		-0.06	1613	D6304-A	48.8		-0.38
631	D6304-B	54		-0.09	1636	ISO12937	58.5		0.15
663	ISO12937	54.3		-0.08	1656	E1064	70		0.78
671		-----		-----	1669		77		1.16
704	ISO12937	60.2		0.25	1681	ISO12937	80.5		1.35
734	ISO12937	62.5		0.37	1724	D6304-A	57		0.07
751	ISO12937	49.9		-0.32	1730	ISO12937	55		-0.04
752		-----		-----	1740	D6304-A	57		0.07
759	ISO12937	55.9		0.01	1742	ISO12937	42		-0.75
778	ISO12937	51		-0.26	1743	ISO12937	40		-0.86
779	ISO12937	53		-0.15	1776	ISO12937	49		-0.36
781	ISO12937	48.6		-0.39	1796	IP439	53		-0.15
782		-----		-----	1807	ISO12937	70		0.78
785	ISO12937	55		-0.04	1810	D6304-A	54		-0.09
798		-----		-----	1833	D6304-A	46		-0.53
823	ISO12937	61		0.29	1849	ISO12937	33.5		-1.21
846		-----		-----	1858	IP438	49		-0.36
872	ISO12937	37.43		-1.00	1862	ISO12937	49		-0.36
873	D6304-A	60		0.24	1936	ISO12937	52		-0.20
874	ISO12937	65		0.51	1937	ISO12937	58.5		0.15
875	ISO12937	59		0.18	1938	ISO12937	52		-0.20
902	ISO12937	46		-0.53	1950	IP439	50		-0.31
913		-----		-----	1953	ISO12937	51.69		-0.22
914		-----		-----	1961	ISO12937	59		0.18

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
1967	D6304-A	51.6		-0.22	6163	ISO12937	37.88	C	-0.97
1971	ISO12937	50		-0.31	6192	ISO12937	53		-0.15
1976	ISO12937	55.0		-0.04	6201	ISO12937	50		-0.31
1984	ISO12937	56.5		0.04	6203	ISO12937	45		-0.58
1986	IP439	60		0.24	6242	ISO12937	73.1		0.95
2129	IP439	123	R(0.01)	3.67	6262	ISO12937	55		-0.04
2130		-----		-----	6291	D6304-A	60		0.24
2146		-----		-----	6298	D6304-A	61		0.29
6012	ISO12937	54.55		-0.06	6299	ISO12937	73		0.94
6026		-----		-----	6308	ISO12937	89	R(0.05)	1.82
6035	ISO12937	60		0.24	6321	IP438	55		-0.04
6049	ISO12937	74.0		1.00	6363	ISO12937	59.2		0.19
6057	ISO12937	59		0.18	6364	D6304-A	61.11		0.30
6075	ISO12937	75.6		1.09	6373	ISO12937	60		0.24
6114	D6304-A	50.3		-0.29	6379		-----		-----
6142	ISO12937	93.9	R(0.05)	2.09	7009	D6304-A	57.0		0.07
6143	D6304-A	60		0.24	9057		72		0.89

normality	suspect
n	142
outliers	6
mean (n)	55.685
st.dev. (n)	8.3286
R(calc.)	23.320
st.dev.(ISO12937:00)	18.3278
R(ISO12937:00)	51.318

Lab 120 first reported <10
Lab 1146 first reported <0.01 mg/kg
Lab 6163 first reported 0.003788 mg/kg

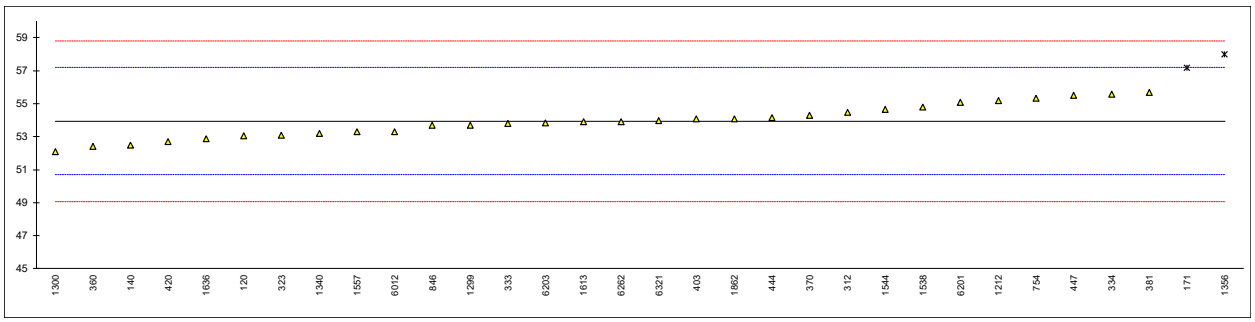


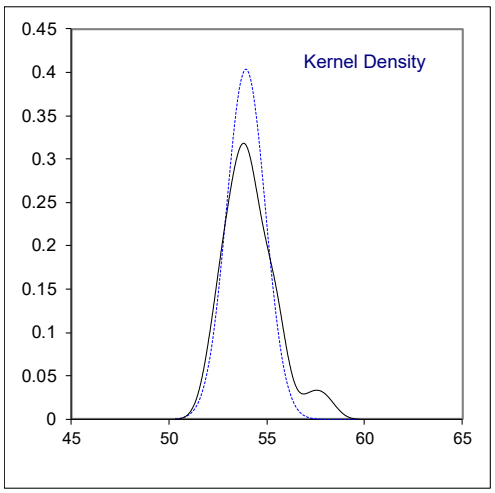


Determination of Cetane Number on sample #21006;

lab	method	value	mark	z(targ)	remarks
120	D613	53.06		-0.55	
140	ISO5165	52.5		-0.89	
171	D613	57.2	DG(0.05)	2.00	
206		-----		-----	
207		-----		-----	
209		-----		-----	
312	ISO5165	54.49		0.33	
323	ISO5165	53.1		-0.52	
328		-----		-----	
333	D613	53.8		-0.09	
334	ISO5165	55.6		1.02	
343		-----		-----	
360	ISO5165	52.42		-0.94	
370	ISO5165	54.3		0.22	
381	D613	55.7		1.08	
403	D613	54.10		0.09	
420	ISO5165	52.7		-0.77	
444	D613	54.16		0.13	
445		-----		-----	
447	D613	55.5		0.95	
754	ISO5165	55.35		0.86	
846	GB/T386	53.7		-0.15	
1059		-----		-----	
1189		-----		-----	
1191		-----		-----	
1212	ISO5165	55.2		0.77	
1275		-----		-----	
1299	D613	53.7		-0.15	
1300	ISO5165	52.12		-1.13	
1340	ISO5165	53.2		-0.46	
1356	ISO5165	58	DG(0.05)	2.50	
1399		-----		-----	
1538	ISO5165	54.8		0.52	
1544	ISO5165	54.67		0.44	
1557	In house	53.3		-0.40	
1586		-----		-----	
1613	D613	53.9		-0.03	
1636	ISO5165	52.88		-0.66	
1776		-----		-----	
1807		-----		-----	
1833		-----		-----	
1862	ISO5165	54.1		0.09	
1976		-----		-----	
6012	D613	53.3		-0.40	
6057		-----		-----	
6075		-----		-----	
6142		-----		-----	
6201	ISO5165	55.1		0.71	
6203	ISO5165	53.86		-0.06	
6262	D613	53.9		-0.03	
6291		-----		-----	
6308		-----		-----	
6321	IP617	54.0		0.03	
6373		-----		-----	

	normality	OK
	n	30
	outliers	2
	mean (n)	53.95
	st.dev. (n)	0.989
	R(calc.)	2.77
	st.dev.(ISO5165:20)	1.623
	R(ISO5165:20)	4.54
Compare		
	R(D613:18ae1)	4.54

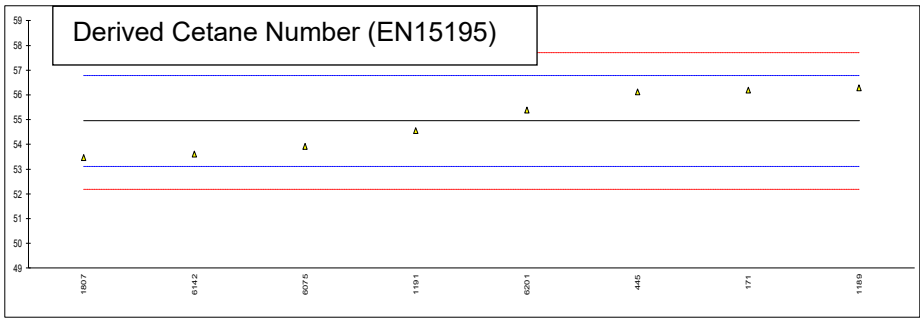

59
57
55
53
51
49
47
45
1300
360
140
420
1636
120
323
1340
1557
6012
846
1299
333
6203
1613
6262
6321
403
1862
444
370
312
1544
1538
6201
1212
754
447
334
381
171
1366

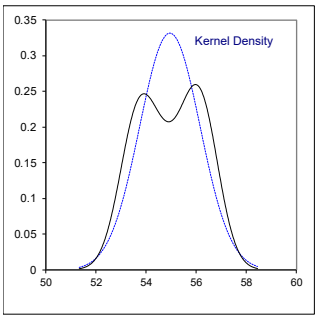

Kernel Density
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
45
50
55
60
65

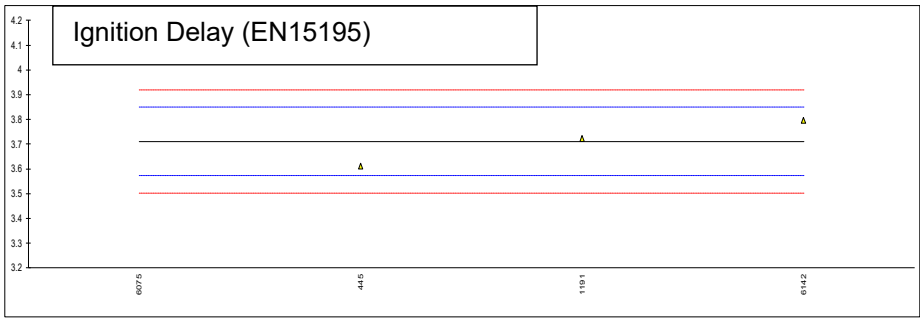
Determination of Derived Cetane Number (EN15195) on sample #21006;

lab	method	DCN	mark	z(targ)	ID (ms)	mark	z(targ)	Air Temp. (°C)	mark
120		-----		-----	-----		-----	-----	
140		-----		-----	-----		-----	-----	
171	D7668	56.2		1.36	-----		-----	-----	
206		-----		-----	-----		-----	-----	
207		-----		-----	-----		-----	-----	
209		-----		-----	-----		-----	-----	
312		-----		-----	-----		-----	-----	
323		-----		-----	-----		-----	-----	
328		-----		-----	-----		-----	-----	
333		-----		-----	-----		-----	-----	
334		-----		-----	-----		-----	-----	
343		-----		-----	-----		-----	-----	
360		-----		-----	-----		-----	-----	
370		-----		-----	-----		-----	-----	
381		-----		-----	-----		-----	-----	
403		-----		-----	-----		-----	-----	
420		-----		-----	-----		-----	-----	
444		-----		-----	-----		-----	-----	
445	IP498	56.12		1.27	3.612		-1.42	584.9	
447		-----		-----	-----		-----	-----	
754		-----		-----	-----		-----	-----	
846		-----		-----	-----		-----	-----	
1059		-----		-----	-----		-----	-----	
1189	EN15195	56.3		1.47	-----		-----	-----	
1191	EN15195	54.5674		-0.42	3.724		0.19	-----	
1212		-----		-----	-----		-----	-----	
1275		-----		-----	-----		-----	-----	
1299		-----		-----	-----		-----	-----	
1300		-----		-----	-----		-----	-----	
1340		-----		-----	-----		-----	-----	
1356		-----		-----	-----		-----	-----	
1399		-----		-----	-----		-----	-----	
1538		-----		-----	-----		-----	-----	
1544		-----		-----	-----		-----	-----	
1557		-----		-----	-----		-----	-----	
1586		-----		-----	-----		-----	-----	
1613		-----		-----	-----		-----	-----	
1636		-----		-----	-----		-----	-----	
1776		-----		-----	-----		-----	-----	
1807	EN17155	53.48		-1.60	-----		-----	-----	
1833		-----		-----	-----		-----	-----	
1862		-----		-----	-----		-----	-----	
1976		-----		-----	-----		-----	-----	
6012		-----		-----	-----		-----	-----	
6057		-----		-----	-----		-----	-----	
6075	EN17155	53.92	E	-1.12	2.0386	D(0.05)	-24.09	579.65	
6142	IP498	53.61		-1.46	3.7965		1.23	557.75	
6201	EN17155	55.4		0.49	-----		-----	-----	
6203		-----		-----	-----		-----	-----	
6262		-----		-----	-----		-----	-----	
6291		-----		-----	-----		-----	-----	
6308		-----		-----	-----		-----	-----	
6321		-----		-----	-----		-----	-----	
6373		-----		-----	-----		-----	-----	
	normality	unknown			unknown				
	n	8			3				
	outliers	0			1				
	mean (n)	54.95			3.71				
	st.dev. (n)	1.202			0.093				
	R(calc.)	3.37			0.26				
	st.dev.(EN15195:14)	0.919			0.069				
	R(EN15195:14)	2.57			0.19				

Lab 6075 marked with an E: iis calculated a DCN test result of 95.99


Derived Cetane Number (EN15195)
59
58
57
56
55
54
53
52
51
50
49
1807
6142
6075
1191
6201
445
171
1189

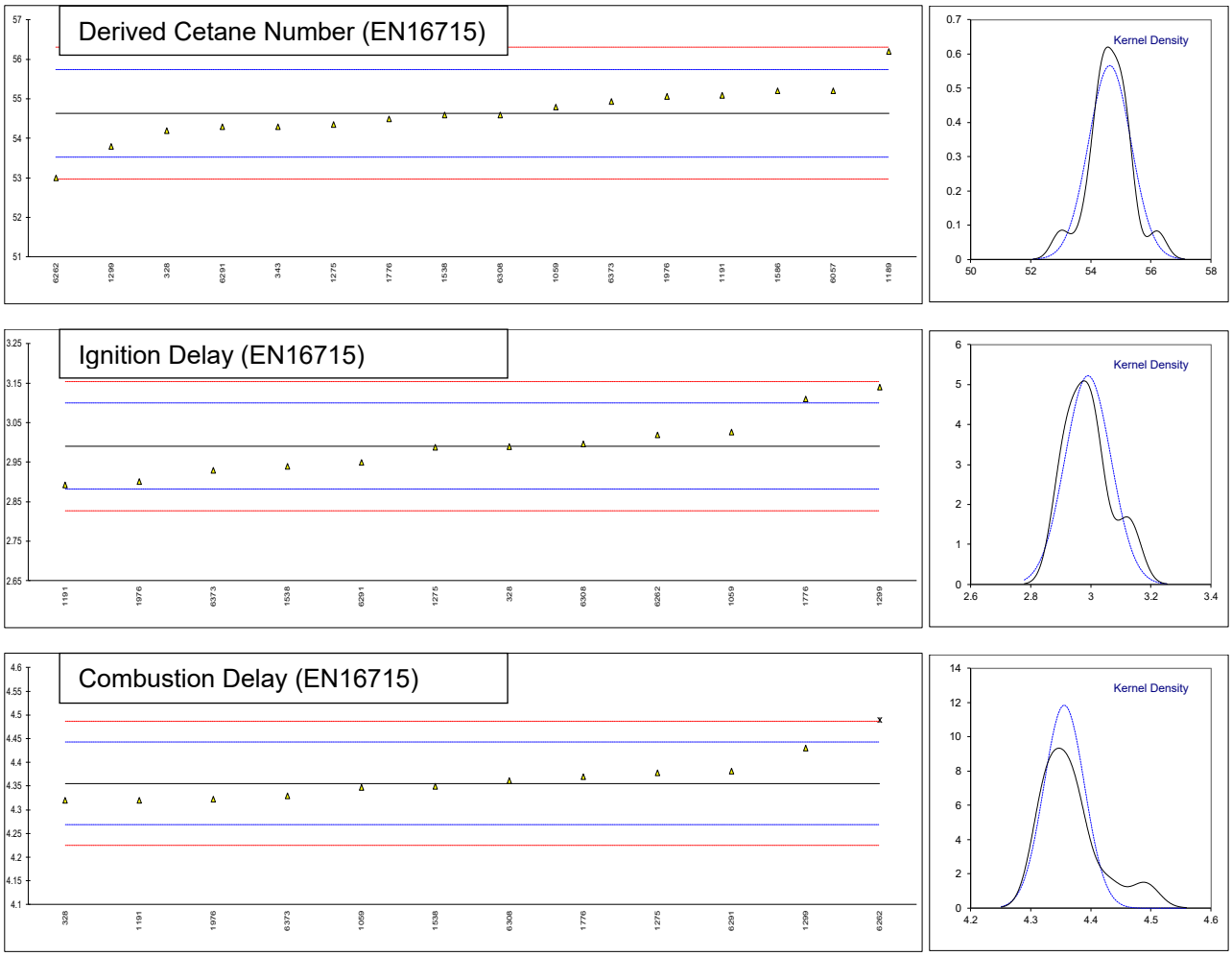

Kernel Density
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
50
52
54
56
58
60


Ignition Delay (EN15195)
4.2
4.1
4
3.9
3.8
3.7
3.6
3.5
3.4
3.3
3.2
6075
445
1191
6142

Determination of Derived Cetane Number (EN16715) on sample #21006;

Lab	method	DCN	mark	z(targ)	ID (ms)	mark	z(targ)	CD (ms)	mark	z(targ)	W. T. (°C)	mark
120		-----		-----	-----		-----	-----		-----	-----	
140		-----		-----	-----		-----	-----		-----	-----	
171		-----		-----	-----		-----	-----		-----	-----	
206		-----		-----	-----		-----	-----		-----	-----	
207		-----		-----	-----		-----	-----		-----	-----	
209		-----		-----	-----		-----	-----		-----	-----	
312		-----		-----	-----		-----	-----		-----	-----	
323		-----		-----	-----		-----	-----		-----	-----	
328	EN16715	54.2	E	-0.78	2.99		-0.01	4.32		-0.82	593.2	
333		-----		-----	-----		-----	-----		-----	-----	
334		-----		-----	-----		-----	-----		-----	-----	
343	D7668	54.3		-0.60	-----		-----	-----		-----	-----	
360		-----		-----	-----		-----	-----		-----	-----	
370		-----		-----	-----		-----	-----		-----	-----	
381		-----		-----	-----		-----	-----		-----	-----	
403		-----		-----	-----		-----	-----		-----	-----	
420		-----		-----	-----		-----	-----		-----	-----	
444		-----		-----	-----		-----	-----		-----	-----	
445		-----		-----	-----		-----	-----		-----	-----	
447		-----		-----	-----		-----	-----		-----	-----	
754		-----		-----	-----		-----	-----		-----	-----	
846		-----		-----	-----		-----	-----		-----	-----	
1059	EN16715	54.8		0.30	3.0271		0.67	4.3480		-0.18	596.5	
1189	EN16715	56.2		2.82	-----		-----	-----		-----	-----	
1191	EN16715	55.09		0.82	2.8933		-1.79	4.3201		-0.82	-----	
1212		-----		-----	-----		-----	-----		-----	-----	
1275	D7668	54.35		-0.51	2.9888		-0.03	4.3786		0.52	581.59	
1299	D7668	53.8		-1.50	3.14		2.74	4.43		1.70	588.4	
1300		-----		-----	-----		-----	-----		-----	-----	
1340		-----		-----	-----		-----	-----		-----	-----	
1356		-----		-----	-----		-----	-----		-----	-----	
1399		-----		-----	-----		-----	-----		-----	-----	
1538	EN16715	54.6		-0.06	2.94		-0.93	4.35		-0.13	-----	
1544		-----		-----	-----		-----	-----		-----	-----	
1557		-----		-----	-----		-----	-----		-----	-----	
1586	D7668	55.2		1.02	-----		-----	-----		-----	-----	
1613		-----		-----	-----		-----	-----		-----	-----	
1636		-----		-----	-----		-----	-----		-----	-----	
1776	EN16715	54.49		-0.26	3.11		2.19	4.37		0.33	589.31	
1807		-----		-----	-----		-----	-----		-----	-----	
1833		-----		-----	-----		-----	-----		-----	-----	
1862		-----		-----	-----		-----	-----		-----	-----	
1976	EN16715	55.06		0.77	2.9015		-1.64	4.3225		-0.76	606.03	
6012		-----		-----	-----		-----	-----		-----	-----	
6057	EN16715	55.2		1.02	-----		-----	-----		-----	-----	
6075		-----		-----	-----		-----	-----		-----	-----	
6142		-----		-----	-----		-----	-----		-----	-----	
6201		-----		-----	-----		-----	-----		-----	-----	
6203		-----		-----	-----		-----	-----		-----	-----	
6262	D7668	53.01		-2.92	3.02		0.54	4.49	G(0.05)	3.08	603.98	
6291	D7668	54.29		-0.62	2.9505		-0.74	4.3813		0.59	598.47	
6308	EN16715	54.6		-0.06	2.9963		0.10	4.3621		0.15	601.77	
6321		-----		-----	-----		-----	-----		-----	-----	
6373	EN16715	54.93		0.53	2.93		-1.11	4.33		-0.59	596.96	
	normality	suspect			OK			OK				
	n	16			12			11				
	outliers	0			0			1				
	mean (n)	54.63			2.99			4.36				
	st.dev. (n)	0.705			0.076			0.034				
	R(calc.)	1.97			0.21			0.09				
	st.dev.(EN16715:15)	0.556			0.054			0.044				
	R(EN16715:15)	1.56			0.15			0.12				
Compare												
	R(D7668:17)	1.56			0.15			0.12				

Lab 328 marked with an E: iis calculated a DCN test result of 55.2

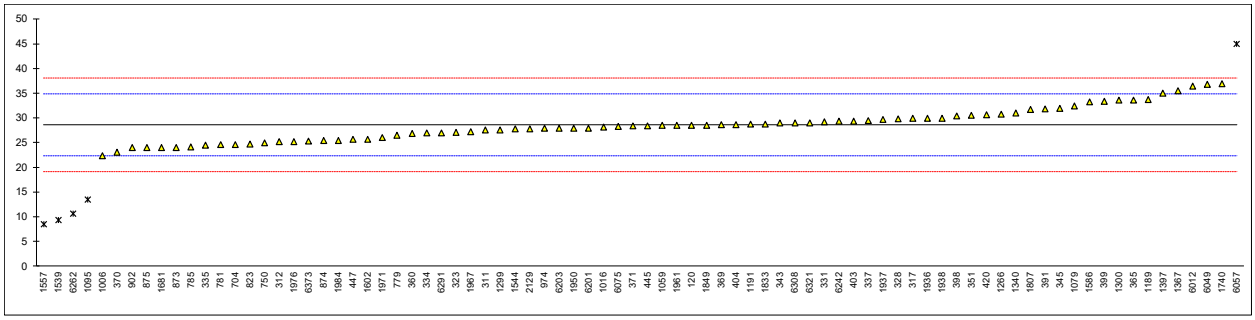

Derived Cetane Number (EN16715)
Kernel Density
Ignition Delay (EN16715)
Kernel Density
Combustion Delay (EN16715)
Kernel Density

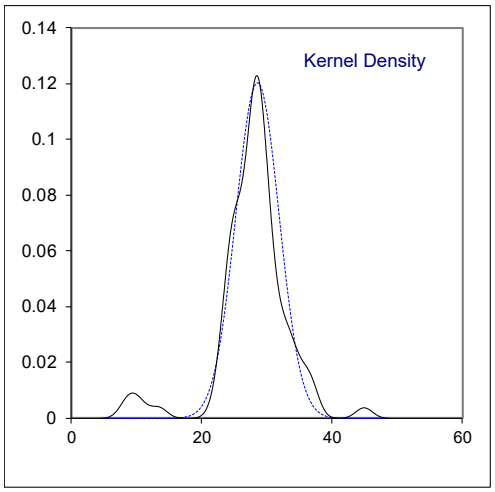
Determination of Total Contamination on sample #21007; result in mg/kg

lab	method	Total C.	mark	z(targ)	complete	vol. filtered (mL)	stopped (min)	remarks
120	EN12662:2014	28.60		-0.01	Yes	-----	-----	
140		-----		-----	-----	-----	-----	
171	EN12662	<12.0	f-?	<-5.28	-----	300	-----	
273		-----		-----	-----	-----	-----	
311	EN12662:2014	27.6		-0.33	Yes	500	-----	
312	EN12662:2014	25.2		-1.09	Yes	300	-----	
317	EN12662:2014	30.0		0.44	Yes	-----	-----	
323	EN12662:2014	27.1		-0.49	Yes	300	-----	
328	EN12662:2014	29.9		0.40	Yes	300	-----	
331	EN12662:2014	29.3		0.21	Yes	-----	-----	
334	EN12662:2014	27.0		-0.52	Yes	300	-----	
335	EN12662:2014	24.5		-1.31	Yes	300	-----	
337	EN12662:2014	29.5		0.28	-----	-----	-----	
343	EN12662	29		0.12	-----	-----	-----	
345	EN12662:2014	32.0		1.07	Yes	-----	-----	
351	EN12662:2014	30.56		0.61	-----	300	-----	
360	EN12662:2014	26.83		-0.57	Yes	300	-----	
365	IP440	33.67		1.60	No	560	-----	
369	EN12662:2014	28.7		0.02	Yes	300	2.5	
370	EN12662:2014	23.1		-1.76	Yes	300	9	
371	EN12662:2014	28.4		-0.07	Yes	-----	-----	
391	EN12662:2014	31.9		1.04	Yes	-----	-----	
398	EN12662:2014	30.4		0.56	Yes	-----	-----	
399	EN12662:2014	33.4		1.51	Yes	-----	-----	
403	EN12662:2014	29.395		0.24	Yes	-----	-----	
404	EN12662:2014	28.7		0.02	Yes	300	5	
420	EN12662:2014	30.63		0.64	-----	-----	-----	
445	IP440	28.41		-0.07	Yes	300	-----	
447	IP440	25.7		-0.93	Yes	291.4	-----	
663		-----		-----	-----	-----	-----	
704	EN12662:2014	24.65		-1.26	Yes	-----	-----	
750	EN12662:2014	25.0		-1.15	Yes	300*2	15	
779	EN12662:2014	26.5		-0.68	-----	-----	-----	
781	EN12662:2014	24.6		-1.28	Yes	-----	-----	
785	EN12662:2014	24.2		-1.41	Yes	-----	-----	
823	EN12662-2014	24.8		-1.22	Yes	300	1	
873	EN12662:2014	24.1		-1.44	Yes	300	-----	
874	EN12662:2014	25.5		-0.99	No	-----	-----	
875	EN12662:2014	24.0		-1.47	-----	275	26	
902	EN12662:2014	24		-1.47	-----	300	30	
963		-----		-----	-----	-----	-----	
974	IP440	27.9		-0.23	Yes	300	4	
1006	EN12662:2014	22.4		-1.98	No	300	-----	
1016	EN12662:2014	28.2		-0.14	Yes	300	-----	
1059	EN12662:2014	28.5		-0.04	Yes	265	-----	
1079	EN12662:2014	32.4	C	1.20	Yes	-----	-----	first reported 8.9
1095	EN12662	13.5	R(0.01)	-4.80	-----	-----	-----	
1189	EN12662:2014	33.8		1.64	-----	-----	-----	
1191	EN12662:2014	28.7399		0.03	Yes	300	-----	
1266	EN12662:2014	30.76		0.68	Yes	-----	-----	
1299	EN12662:2014	27.6		-0.33	Yes	300	-----	
1300	EN12662:2014	33.65		1.59	-----	300	<30	
1340	EN12662:2014	31.0		0.75	Yes	300	15	
1367	IP440	35.50		2.18	Yes	300.0	-----	
1397	EN12662:2014	35.0		2.02	Yes	300	-----	
1510	EN12662:2014	<12	f-?	<-5.28	-----	-----	-----	
1539	EN12662:2014	9.4	ex	-6.11	Yes	-----	-----	ex: see §4.1
1544	EN12662:2014	27.79		-0.27	-----	-----	-----	
1557	EN12662:2014	8.5	ex,C	-6.39	-----	300	0.2	ex: see §4.1, fr. 14.4
1586	EN12662:2014	33.3		1.48	Yes	253.8	-----	
1602	EN12662:2014	25.74		-0.92	Yes	300	3	
1613		-----	W	-----	-----	-----	-----	first reported 40.78
1681	EN12662:2014	24.03		-1.46	Yes	300	8.44	
1740	EN12662:2014	37		2.66	Yes	300	2	
1807	EN12662:2014	31.75		0.99	Yes	-----	-----	
1833	EN12662:2014	28.8		0.05	-----	-----	-----	
1849	EN12662:2014	28.6		-0.01	-----	-----	-----	
1936	EN12662:2014	30.0		0.44	Yes	300	6.49	
1937	EN12662:2014	29.7		0.34	Yes	249.0	3.30	
1938	EN12662:2014	30.0		0.44	Yes	300	5	

lab	method	Total C.	mark	z(targ)	complete	vol. filtered (mL)	stopped (min)	remarks
1950	EN12662	28.0		-0.20	Yes	-----	-----	
1961	EN12662:2014	28.5		-0.04	Yes	270	-----	
1967	EN12662	27.26		-0.43	-----	-----	-----	
1971	EN12662:2014	26.0		-0.84	Yes	-----	-----	
1976	EN12662:1998	25.23		-1.08	-----	300	-----	
1984	EN12662:2014	25.5		-0.99	Yes	300	-----	
2129	EN12662:2014	27.85		-0.25	Yes	299	-----	
2130		-----		-----	-----	-----	-----	
6012	EN12662:2014	36.5		2.50	Yes	300	-----	
6049	EN12662:2014	36.8		2.59	Yes	300	-----	
6057	EN12662:2014	45	C,R(0.01)	5.20	Yes	300	-----	first reported 1
6075	EN12662:2014	28.3		-0.10	Yes	-----	-----	
6201	EN12662:2014	28.0		-0.20	Yes	-----	-----	
6203	EN12662:2014	27.9		-0.23	Yes	300	-----	
6242	EN12662:2014	29.35		0.23	Yes	300	-----	
6262	EN12662:2014	10.69	ex	-5.70	Yes	-----	-----	ex: see §4.1
6291	EN12662:2014	27		-0.52	-----	-----	-----	
6308	EN12662:2014	29.0		0.12	Yes	300	-----	
6321	IP440	29		0.12	Yes	-----	-----	
6373	EN12662:2014	25.3067		-1.06	Yes	300	-----	

normality	OK
n	77
outliers	2 +3ex
mean (n)	28.630
st.dev. (n)	3.3206
R(calc.)	9.298
st.dev.(EN12662:14)	3.1492
R(EN12662:14)	8.818

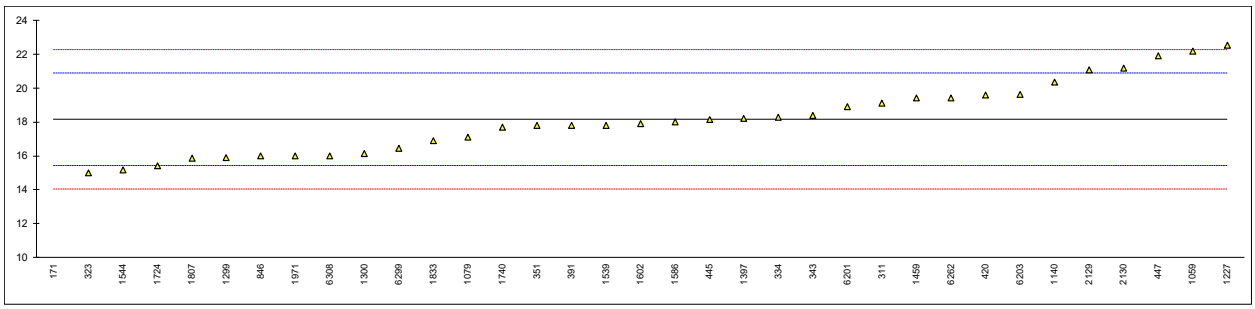


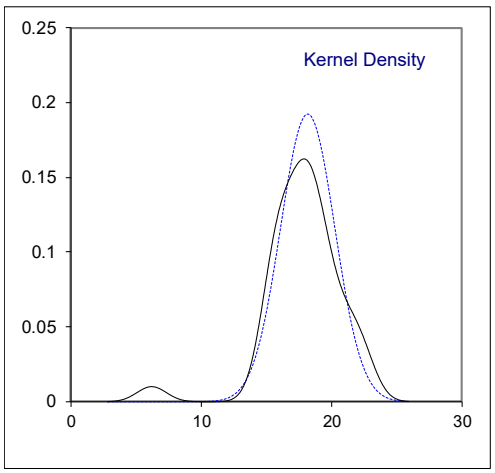


Determination of Oxidation Stability Induction period on sample #21008; results in hours

lab	method	value	mark	z(targ)	remarks
120		-----		-----	
140		-----		-----	
171	EN15751	6.2	R(0.01)	-8.74	
311	EN15751	19.1		0.69	
323	EN15751	15.0		-2.31	
334	EN15751	18.3		0.10	
342		-----		-----	
343	EN15751	18.4		0.18	
351	EN15751	17.80		-0.26	
360		-----		-----	
370		-----		-----	
391	EN15751	17.8		-0.26	
403		-----		-----	
420	EN15751	19.6		1.05	
445	EN15751	18.145		-0.01	
447	EN15751	21.92		2.75	
750		-----		-----	
823		-----		-----	
846	SH/T0175	16		-1.58	
873		-----		-----	
874		-----		-----	
902		-----		-----	
963		-----		-----	
974		-----		-----	
1006		-----		-----	
1016		-----		-----	
1059	EN15751	22.2		2.96	
1079	EN15751	17.1		-0.77	
1095		-----		-----	
1109		-----		-----	
1140	EN15751	20.37		1.62	
1189		-----		-----	
1227	EN15751	22.53		3.20	
1299	EN15751	15.9		-1.65	
1300	EN15751	16.15		-1.47	
1340		-----		-----	
1397	EN15751	18.2		0.03	
1459	EN15751	19.42		0.92	
1510		-----		-----	
1539	EN15751	17.8		-0.26	
1544	EN15751	15.19		-2.17	
1557		-----		-----	
1586	EN15751	18.0		-0.12	
1602	EN15751	17.92		-0.17	
1613		-----		-----	
1681		-----		-----	
1724	EN15751	15.4		-2.02	
1740	EN15751	17.7		-0.33	
1807	EN15751	15.85		-1.69	
1833	EN15751	16.9		-0.92	
1849		-----		-----	
1971	EN15751	16.0		-1.58	
1984		-----		-----	
2129	EN15751	21.07		2.13	
2130	EN15751	21.2		2.22	
6057		-----		-----	
6075		-----		-----	
6201	EN15751	18.9		0.54	
6203	EN15751	19.62		1.07	
6262	EN15751	19.42		0.92	
6291		-----		-----	
6299	EN15751	16.45		-1.25	
6308	EN15751	16		-1.58	
6321		-----		-----	
6373		-----	W	-----	first reported 11.2

normality	OK
n	34
outliers	1
mean (n)	18.16
st.dev. (n)	2.076
R(calc.)	5.81
st.dev.(EN15751:14)	1.368
R(EN15751:14)	3.83


24
22
20
18
16
14
12
10
171
323
1544
1724
1807
1299
846
1971
6308
1300
6299
1833
1079
1740
351
391
1539
1602
1586
445
1397
334
343
6201
311
1459
6262
420
6203
1140
2129
2130
447
1059
1227

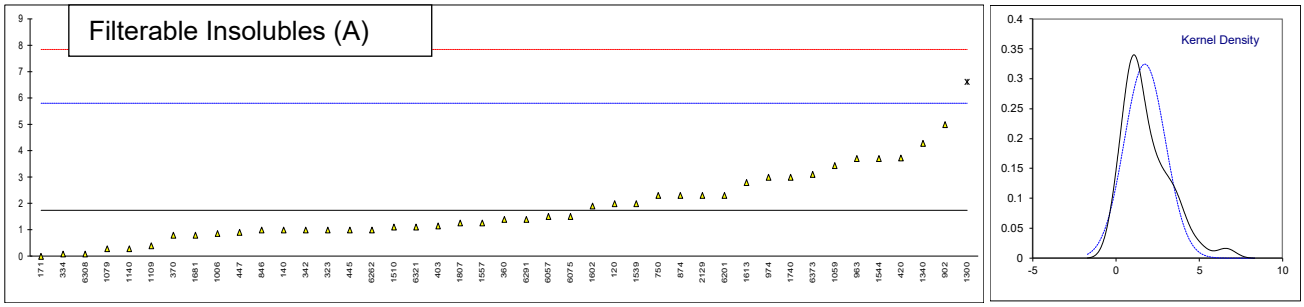

Kernel Density
0.25
0.2
0.15
0.1
0.05
0
0
10
20
30

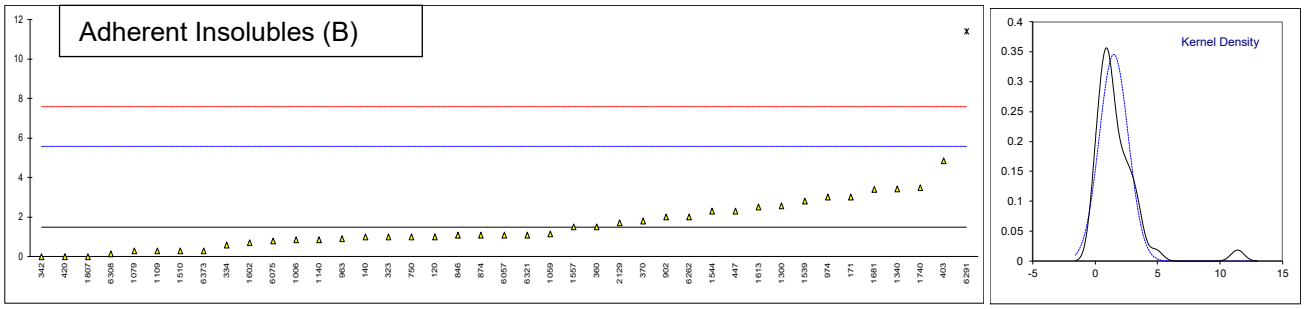
Determination of Oxidation Stability Insolubles on sample #21008; results in g/m^3

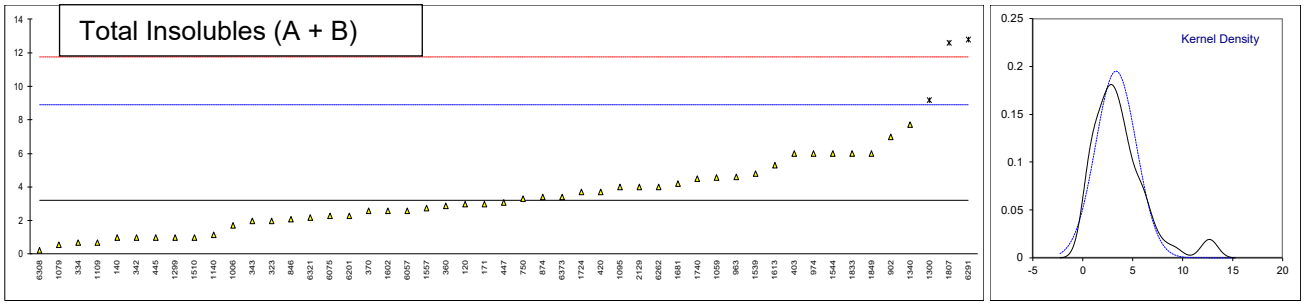
lab	method	Filterable (A)	mark	z(targ)	Adherent (B)	mark	z(targ)	Total (A+B)	mark	z(targ)
120	D2274	2		0.13	1		-0.24	3		-0.07
140	ISO12205	1		-0.37	1		-0.24	1	E	-0.78
171	ISO12205	0		-0.86	3		0.75	3		-0.07
311		-----		-----	-----		-----	-----		-----
323	ISO12205	1		-0.37	1		-0.24	2		-0.43
334	ISO12205	0.08		-0.82	0.6		-0.44	0.68		-0.89
342	ISO12205	1		-0.37	0		-0.74	1		-0.78
343		-----		-----	-----		-----	2		-0.43
351		-----		-----	-----		-----	-----		-----
360	ISO12205	1.4		-0.17	1.5		0.00	2.9		-0.11
370	ISO12205	0.8		-0.47	1.8		0.15	2.6		-0.21
391		-----		-----	-----		-----	-----		-----
403	ISO12205	1.14		-0.30	4.86		1.67	6.0		0.98
420	ISO12205	3.72		0.98	0		-0.74	3.72		0.18
445	ISO12205	1		-0.37	<1		-----	1		-0.78
447	IP398	0.9		-0.42	2.3		0.40	3.1		-0.04
750	D2274	2.3		0.28	1.0		-0.24	3.3		0.03
823		-----		-----	-----		-----	-----		-----
846	SH/T0175	1.0		-0.37	1.1		-0.20	2.1		-0.39
873		-----		-----	-----		-----	-----		-----
874	ISO12205	2.3		0.28	1.1		-0.20	3.4		0.07
902	ISO12205	5		1.62	2	C	0.25	7	C	1.33
963	ISO12205	3.7		0.97	0.9		-0.29	4.6		0.49
974	D2274	3		0.63	3		0.75	6		0.98
1006	D2274	0.86		-0.44	0.86		-0.31	1.71		-0.53
1016	ISO12205	<1		-----	<1		-----	<2		-----
1059	ISO12205	3.429	C	0.84	1.143	C	-0.17	4.572	C	0.48
1079	ISO12205	0.29		-0.72	0.29		-0.60	0.58		-0.92
1095		-----		-----	-----		-----	4		0.28
1109	D2274	0.4		-0.66	0.3		-0.59	0.7		-0.88
1140	ISO12205	0.29		-0.72	0.86		-0.31	1.15		-0.72
1189		-----		-----	-----		-----	-----		-----
1227		-----		-----	-----		-----	-----		-----
1299		-----		-----	-----		-----	1		-0.78
1300	ISO12205	6.61	C,R(5)	2.42	2.57		0.53	9.18	ex,C	2.09
1340	ISO12205	4.29		1.27	3.43		0.96	7.72		1.58
1397		-----		-----	-----		-----	-----		-----
1459		-----		-----	-----		-----	-----		-----
1510	ISO12205	1.1		-0.32	0.3		-0.59	1	E	-0.78
1539	ISO12205	2		0.13	2.8		0.65	4.8		0.56
1544	ISO12205	3.71		0.98	2.29		0.40	6.00		0.98
1557	ISO12205	1.26		-0.24	1.49		0.00	2.75		-0.16
1586		-----		-----	-----		-----	-----		-----
1602	ISO12205	1.9		0.08	0.7		-0.39	2.6		-0.21
1613	D2274	2.8		0.53	2.5		0.50	5.3		0.73
1681	ISO12205	0.8		-0.47	3.4		0.95	4.2		0.35
1724		-----		-----	-----		-----	3.71		0.17
1740	D2274	3	C	0.63	3.5		1.00	4.5	C,E	0.45
1807	ISO12205	1.257		-0.24	0		-0.74	12.6	R(1),E	3.29
1833		-----		-----	-----		-----	6		0.98
1849		-----		-----	-----		-----	6.0		0.98
1971		-----		-----	-----		-----	-----		-----
1984		-----		-----	-----		-----	-----		-----
2129	ISO12205	2.3		0.28	1.7		0.10	4.0		0.28
2130		-----		-----	-----		-----	-----		-----
6057	ISO12205	1.5		-0.12	1.1		-0.20	2.6		-0.21
6075	ISO12205	1.5		-0.12	0.8		-0.34	2.3		-0.32
6201	ISO12205	2.3		0.28	<1		-----	2.3		-0.32
6203		-----		-----	-----		-----	-----		-----
6262	D2274	1		-0.37	2		0.25	4	E	0.28
6291	ISO12205	1.4	C	-0.17	11.4	C,R(1)	4.92	12.8	C,R(1)	3.36
6299		-----		-----	-----		-----	-----		-----
6308	ISO12205	0.09		-0.82	0.14		-0.67	0.23		-1.05
6321	ISO12205	1.1		-0.32	1.1		-0.20	2.2		-0.35
6373	ISO12205	3.1		0.68	0.3		-0.59	3.4		0.07
	normality	OK			OK			OK		
	n	42			40			46		
	outliers	1			1			2 +1ex		
	mean (n)	1.74			1.49			3.21		
	st.dev. (n)	1.232			1.156			1.869		
	R(calc.)	3.45			3.24			5.23		
	st.dev.(ISO12205:95)	2.015			2.015			2.850		
	R(ISO12205:95)	5.64			5.64			7.98		

Lab 902 first reported 9 (B) and 14 (A + B)
Lab 1059 first reported 23 (A), 0 (B) and 23 (A + B)
Lab 1300 first reported 16.29 (A) and 18.86 (A + B), test result (A + B) excluded because of statistical outlier in test result (A)
Lab 1740 first reported 14 (A) and 17.5 (A + B)
Lab 6291 first reported 14 (A), 114 (B) and 128 (A + B)

For labs marked with an E iis calculated a difference in the Total (A + B) test results:
Lab 140: 2
Lab 1510: 1.4
Lab 1740: 6.5
Lab 1807: 1.3
Lab 6262: 3.0







APPENDIX 2

Number of participants per country

1 lab in	AFGHANISTAN	1 lab in	KENYA
1 lab in	ARGENTINA	2 labs in	LATVIA
1 lab in	AUSTRALIA	2 labs in	LITHUANIA
2 labs in	AUSTRIA	1 lab in	MALTA
5 labs in	BELGIUM	1 lab in	MARTINIQUE
2 labs in	BOSNIA and HERZEGOVINA	4 labs in	MOROCCO
4 labs in	BULGARIA	10 labs in	NETHERLANDS
1 lab in	CHILE	2 labs in	NIGERIA
1 lab in	CHINA, People's Republic	1 lab in	NORTH MACEDONIA, Republic of
1 lab in	COTE D'IVOIRE	3 labs in	NORWAY
1 lab in	CROATIA	1 lab in	PHILIPPINES
1 lab in	CYPRUS	7 labs in	POLAND
2 labs in	CZECH REPUBLIC	4 labs in	PORTUGAL
1 lab in	DENMARK	3 labs in	ROMANIA
2 labs in	ESTONIA	21 labs in	RUSSIAN FEDERATION
5 labs in	FINLAND	2 labs in	SAUDI ARABIA
12 labs in	FRANCE	2 labs in	SERBIA
2 labs in	GEORGIA	1 lab in	SLOVENIA
3 labs in	GERMANY	3 labs in	SOUTH AFRICA
5 labs in	GREECE	1 lab in	SOUTH KOREA
1 lab in	GUAM	9 labs in	SPAIN
1 lab in	HONG KONG	3 labs in	SWEDEN
2 labs in	INDIA	1 lab in	TAIWAN
1 lab in	IRAN, Islamic Republic of	1 lab in	THAILAND
1 lab in	IRAQ	1 lab in	TOGO
2 labs in	IRELAND	7 labs in	TURKEY
1 lab in	ISRAEL	2 labs in	UKRAINE
3 labs in	ITALY	3 labs in	UNITED ARAB EMIRATES
1 lab in	JORDAN	16 labs in	UNITED KINGDOM
1 lab in	KAZAKHSTAN	3 labs in	UNITED STATES OF AMERICA

APPENDIX 3

Abbreviations

C = final test result after checking of first reported suspect test result
D(0.01) = outlier in Dixon's outlier test
D(0.05) = straggler in Dixon's outlier test
G(0.01) = outlier in Grubbs' outlier test
G(0.05) = straggler in Grubbs' outlier test
DG(0.01) = outlier in Double Grubbs' outlier test
DG(0.05) = straggler in Double Grubbs' outlier test
R(0.01)/R(1) = outlier in Rosner's outlier test
R(0.05)/R(5) = straggler in Rosner's outlier test
E = calculation difference between reported test result and result calculated by iis
W = test result withdrawn on request of participant
ex = test result excluded from statistical evaluation
n.a. = not applicable
n.e. = not evaluated
n.d. = not detected
fr. = first reported
f+? = possibly a false positive test result?
f-? = possibly a false negative test result?
SDS = Safety Data Sheet

Literature

1 iis Interlaboratory Studies, Protocol for the Organisation, Statistics & Evaluation, June 2018
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3 ASTM E1301:03
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5 ISO5725, parts 1-6, 1994
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7 M. Thompson and R. Wood, J. AOAC Int, 76, 926, (1993)
8 W.J. Youden and E.H. Steiner, Statistical Manual of the AOAC, (1975)
9 IP367:84
10 DIN38402 T41/42
11 P.L. Davies, Fr. Z. Anal. Chem, 331, 513, (1988)
12 J.N. Miller, Analyst, 118, 455, (1993)
13 Analytical Methods Committee, Technical Brief, No 4 January 2001
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15 Bernard Rosner, Percentage Points for a Generalized ESD Many-Outlier Procedure, Technometrics, 25(2), 165-172, (1983)
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