Results of Proficiency Test
Gasoil - EN (summer)
February 2020

Organised by: Institute for Interlaboratory Studies
Spijkenisse, the Netherlands

Author: ing. G.A. Oosterlaken-Buijs
Correctors: ing. A.S. Noordman-de Neef & ing. R.J. Starink

Report: iis20G01EN

April 2020

-- Empty page –

CONTENTS

1 INTRODUCTION

Since 1994 the Institute for Interlaboratory Studies (iis) organizes proficiency scheme for Gasoil twice a year. One round according to EN590 specification and one round according to ASTM D975 (amongst others). During the annual proficiency testing program of 2019/2020 it was decided to continue the proficiency tests for the analysis of Gasoil summer quality in accordance with the latest applicable version of EN590 specification.

In this interlaboratory study registered for participation:
- 170 laboratories in 59 countries on Gasoil-EN (summer) (iis20G01EN),
- 53 laboratories in 26 countries for Cetane Number PT (iis20G01CN),
- 90 laboratories in 37 countries for Total Contamination PT (iis20G01TC),
- 66 participants from 32 countries registered for the Oxidation Stability PT (iis20G01OX).

In total 176 laboratories in 59 different countries registered for participation. See appendix 2 for the number of participants per country. In this report the results of this 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 to four different samples of Gas Oil, see table below.

Samples	Purpose
#20005: 1x 1L + 1x 0.5L	Regular analyzes
#20006: 4x 1L	Cetane Number & DCN
#20007: 1x 1L	Total Contamination
#20008: 1x 1L	Oxidation Stability

Table 1: Gas Oil samples used in PT iis20G01

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

Preparation of subsamples for the regular Gas Oil PT
A batch of approximately 400 liters of Gasoil (summer) was purchased from the local market and spiked with HFA 2072 standard especially for the Manganese determination.
After homogenisation 205 amber glass bottles of 1L and 205 amber glass bottles of 500 mL were filled and labelled #20005. The homogeneity of the subsamples #20005 was checked by the determination of Density in accordance with ASTM D4052 on 9 stratified randomly selected subsamples.

	Density at 15°C in kg/m^3
sample #20005-1	842.96
sample #20005-2	842.89
sample #20005-3	842.96
sample #20005-4	842.96
sample #20005-5	842.94
sample #20005-6	842.95
sample #20005-7	842.95
sample #20005-8	842.93
sample #20005-9	842.94

Table 2: homogeneity test results of subsamples #20005

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)	0.06
reference test method	ISO12185:96
0.3 * R (reference test method)	0.15

Table 3: evaluation of the repeatability of subsamples #20005

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

Preparation of subsamples for the PT Cetane Number in Gasoil

Another batch of approximately 300 liters of Gasoil was purchased from the local market. After homogenisation 300 amber glass bottles of 1L were filled and labelled #20006. The homogeneity of the subsamples #20006 was checked by the determination of Density in accordance with ASTM D4052 on 9 stratified randomly selected subsamples.

	Density at 15°C in kg/m^3
sample #20006-1	842.96
sample #20006-2	842.95
sample #20006-3	842.95
sample #20006-4	842.94
sample #20006-5	842.94
sample #20006-6	842.95
sample #20006-7	842.96
sample #20006-8	842.93
sample #20006-9	842.95
sample #20006-10	842.94

Table 4: homogeneity test results of subsamples #20006

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)	0.03
reference test method	ISO12185:96
0.3 * R (reference test method)	0.15

Table 5: evaluation of the repeatability of the subsamples #20006

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

Preparation of subsamples for the PT on Total Contamination in Gasoil
A batch of approximately 160 liters of Gasoil was used for the preparation of the subsamples of this PT. A defined volume of fresh prepared and well shaken dust suspension of Arizona Dust material in an oil was added to an 1L empty bottle by means of a calibrated pipette. The addition was checked by weighing the bottle before and after the addition. In total 127 bottles were prepared and subsequently filled up to 1L with Gasoil. The subsamples were homogenized and labelled #20007.

Preparation of subsamples for the PT on Oxidation Stability in Gasoil
A batch of approximately 200 liters of Gasoil was purchased from the local market. The batch Gasoil was made positive for Oxidation Stability by adding a copper rod for a while to enhance the oxidation of Gasoil. After homogenisation 90 amber glass bottles of 1L were filled and labelled #20008. The homogeneity of the 1L subsamples was checked by the determination of Density in accordance with ISO12185 on 8 stratified randomly selected subsamples.

	Density at 15°C in kg/m^3
sample #20008-1	837.78
sample #20008-2	837.66
sample #20008-3	837.73
sample #20008-4	837.63
sample #20008-5	837.77
sample #20006-6	837.70
sample #20008-7	837.67
sample #20008-8	837.68

Table 6: homogeneity test results of subsamples #20008

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)	0.15
reference test method	ISO12185:96
0.3 * R (reference test method)	0.15

Table 7: evaluation of the repeatability of the subsamples #20008

The calculated repeatability was 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 22, 2020. 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 ANALYSES

The participants were asked to determine on sample #20005: Acid Number (Total), 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 content, Flash Point PMcc, Kinematic Viscosity at 40°C, Lubricity by HFRR at 60°C, Manganese as Mn, Nitrogen, Polycyclic-, Mono-, Di-, Tri+- and Total Aromatic Hydrocarbons, Pour Point (Manual and Automated), Sulfur and Water.
On sample #20006 was requested to determine: Cetane Number and Derived Cetane Number (EN15195 and EN16715).
On sample #20007 was requested to determine: Total Contamination.
On sample #20008 was requested to determine: Oxidation Stability (EN15751) and Oxidation Stability (ISO12205; 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 appropiate reference test methods 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 reanalyses). Additional or corrected test results are used for data analysis and the original test results are placed under ‘Remarks’ in the test 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.

According to ISO5725 the original test results per determination were submitted to Dixon's and/or Grubbs' and/or Rosner's outlier tests. 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 was projected over the Kernel Density Graph for reference.

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. EN or 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.

This 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. In some cases, a reproducibility based on former iis proficiency tests could be used.

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 result tables of appendix 1.

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

	$\lvert z \rvert < 1$	good
$1 <$	$\lvert z \rvert < 2$	satisfactory
$2 <$	$\lvert z \rvert < 3$	questionable
$3 <$	$\lvert z \rvert$	unsatisfactory

4 EVALUATION

In this interlaboratory study, some problems were encountered with the dispatch of the samples due to several reasons with transportation (eg. customs).
For the regular Gas Oil PT: three participants reported the test results after the final reporting date and five other participants did not report any test results at all.
For the PT on Cetane Number: one participant reported the test results after the final reporting date and five other participants did not report any test results at all.
For the PT on Total Contamination: three participants reported the test results after the final reporting date and seven other participants did not report any test results at all.
For the Oxidation Stability PT: three participants reported the test results after the final reporting date and nine other participants did not report any test results at all.

In total 170 participants reported 3624 numerical test results. Observed were 93 outlying test results, which is 2.6% of the numerical test results. In proficiency studies, outlier percentages of 3%-7.5% are quite normal.

Not all original 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.

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 where possible and applicable. These test methods are also in the tables together with the reported 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. D4737) and an added designation for the year that the test method was adopted or revised (e.g. D4737:10). If applicable, a designation in parentheses is added to designate the year of reapproval (e.g. D4737:10(2016)). In the results tables of appendix 1 only the test method number and year of adoption or revision e.g. D4737:10 will be used.

Sample #20005

Total Acid Number: This determination was not problematic. Seven statistical outliers were observed. However, 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. Six statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO6245:01.

Cetane 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. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of iis memo 1904.

Cloud Point: This determination was not problematic. Seven statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO3015:19.

CFPP: 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 EN116:15.

Carbon Residue on 10% residue: This determination was problematic. No statistical outliers were observed. However, the calculated reproducibility is not in agreement with ISO10370:14.

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

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

Distillation: This determination was not problematic. In total eightteen statistical outliers were observed and two test results were excluded over eight parameters. However, 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 95% rec. and FBP recovered are not in agreement.

FAME content: This determination was problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers 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. Two statistical outliers were observed. However, 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. Four statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with ISO3104:94.

Lubricity: This determination was problematic for a number of laboratories. Five statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of modes A or B of ISO12156:18.
When evaluated with or without correction no significant effect was observed on the means and reproducibilities.

Manganese: This determination was very problematic. No statistical outlies were observed. The batch was spiked with Manganese (HFA 2072) and the minimal concentration in the subsamples should be 5 mg/L (blanc Mn concentration was not known). The laboratories should be able to find at least 4.3 mg/L [5 mg/L – 0.7 mg/L $_{(R\ EN12662)}$]. Seven laboratories reported a test result lower than 4.3 mg/L. Therefore, these test results were excluded from the statistical evaluation. The calculated reproducibility after rejection of the suspect data is not at all in agreement with the very strict requirements of EN16576:14.

Nitrogen: This determination was very problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not at all in agreement with ASTM D4629:17.

Polycyclic Aromatics: This determination was problematic. One statistical outlier was. The calculated reproducibility after rejection of the statistical outlier is not in agreement with the requirements EN12916:16.

Mono-Aromatics: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements EN12916:16.

Di-Aromatics: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in full agreement with the requirements EN12916:16.

Tri+-Aromatics: This determination was problematic for a number of laboratories. Seven statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements EN12916:16.

Total Aromatics: 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 EN12916:16.

Pour Point manual: This determination was not problematic. Two statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with ISO3016:19.

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

Sulfur: 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 ISO20846:19.

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

Sample #20006

Cetane Number: 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 ISO5165:17.

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

DCN - EN16715: This determination was problematic for Ignition Delay and Combustion Delay. No statistical outliers were observed over three parameters (Derived Cetane Number, Ignition Delay and Combustion Delay). The calculated reproducibility is for Derived Cetane Number in agreement with the requirements of EN16715:15 but not in agreement for Ignition Delay and Combustion Delay.

Sample #20007

Total Contamination: This determination was problematic. One statistical outlier was observed. The subsamples were spiked with Arizone Dust and the minimal concentration in the subsamples was 24 mg/kg. the laboratories should be able to find at least 16 mg/kg [24 mg/kg – 8 mg/kg $_{(R\ EN12662)}$]. Four laboratories reported a lower test result than 16 mg/kg. 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 requirements of EN12662:14.

Sample #20008

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

Oxidation Stability Filterable Insolubles A / Adherent Insolubles B / Total Insolubles A+B: This determination was very problematic. In total nine outliers were observed over three parameters. The variation in the test results was very high. After consultation of an expert it was decided to calculate no z-scores. This expert mentioned to have observed this more often. It is not clear what has caused this large variation.

4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES

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

Parameters	unit	n	average	2.8 * sd	R (lit)
Total Acid Number (TAN)	mgKOH/g	82	0.040	0.025	0.04
Ash content	%M/M	61	0.0007	0.0013	0.005
Calc. Cetane Index, four variables		128	52.69	0.75	0.91
Cloud Point	°C	133	-2.5	2.5	4
Cold Filter Plugging Point	°C	128	-6.4	2.5	3.4
Carbon Residue on 10% residue	%M/M	79	0.028	0.036	0.022
Copper Corrosion, 3hrs at 50°C		117	1 (1a/1b)	n.a.	n.a.
Density at 15°C	kg/m^3	151	843.0	0.2	0.5
Initial Boiling Point	°C	148	163.6	7.3	9.0
Temp at 10% recovery	°C	144	209.5	5.0	4.6
Temp at 50% recovery	°C	145	289.1	2.5	3.0
Temp at 90% recovery	°C	149	339.8	3.9	5.1
Temp at 95% recovery	°C	149	353.6	6.5	8.8
Final Boiling Point	°C	147	362.9	5.8	7.1
Volume at 250°C	%V/V	140	24.5	1.8	2.7
Volume at 350°C	%V/V	143	94.0	1.7	2.7
FAME content	%V/V	94	6.49	0.58	0.47
Flash Point PMcc	°C	157	62.0	3.9	4.4
Kinematic Viscosity at 40°C	mm^2/s	140	3.116	0.030	0.034
Lubricity by HFRR	µm	73	194	49	80
Manganese as Mn	mg/L	31	5.31	1.51	0.70
Nitrogen	mg/kg	52	28.4	9.9	4.5
Polycyclic Aromatics	%M/M	68	4.72	1.79	1.34

Parameters	unit	n	average	2.8 * sd	R (lit)
Mono-Aromatics	%M/M	65	20.8	2.2	2.7
Di-Aromatics	%M/M	67	4.19	1.55	1.43
Tri^{+}-Aromatics	%M/M	60	0.47	0.38	0.68
Total Aromatics	%M/M	65	25.6	3.6	5.5
Pour Point, Manual	°C	93	-10.9	4.0	9
Pour Point, Automated	°C	56	-10.4	4.5	6.1
Sulfur	mg/kg	139	8.6	2.0	2.1
Water	mg/kg	135	65.7	25.8	55.7

Table 8: reproducibilities of tests on sample #20005

Parameters	unit	n	average	2.8 * sd	R (lit)
Cetane Number		31	53.5	3.0	4.5
DCN (EN15195)		8	54.2	2.0	2.5
Ignition Delay (EN15195)	ms	6	3.77	0.15	0.20
DCN (EN16715)		14	54.3	1.4	1.5
Ignition Delay (EN16715)	ms	13	2.90	0.24	0.14
Combustion Delay (EN16715)	ms	13	4.39	0.14	0.12
Total Contamination	mg/kg	71	34.0	13.2	9.7
Ox. Stab. Induction period	hours	28	6.74	1.85	1.66
Ox. Stab. Filterable Insolubles (A)	g/m^3	36	20.70	106.50	(9.34)
Ox. Stab. Adherent Insolubles (B)	g/m^3	35	3.08	6.67	(9.34)
Ox. Stab. Total Insolubles (A+B)	g/m^3	39	24.09	104.41	(13.21)

Table 9: reproducibilities of tests on samples #20006, #20007 and #20008

Without further statistical calculations, it can be concluded that for several tests there is a good compliance of the group of participating laboratories with the relevant standards. The problematic tests have been discussed in paragraph 4.1.

4.3 COMPARISON OF THE PROFICIENCY TEST OF FEBRUARY 2020 WITH PREVIOUS PTS.

	February 2020	March 2019	March 2018	March 2017	March 2016
Number of reporting laboratories	170	173	180	174	161
Number of test results	3624	3565	3748	3737	4203
Number of statistical outliers	93	108	77	101	121
Percentage of statistical outliers	2.6%	3.0%	2.1%	2.7%	2.9%

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 against the requirements of the respective reference test methods. The conclusions are given the following table.

	February 2020	March 2019	March 2018	March 2017	March 2016
Total Acid Number (TAN)	+	+	+	+	+
Ash content	++	++	++	++	++
Calc. Cetane Index, four variables	+	-	n.e.	n.e.	n.e.
Cloud Point	+	+	+	+	++
Cold Filter Plugging Point	+	-	+	+	-
Carbon Residue on 10% residue	-	--	+/-	-	--
Copper Corrosion, 3hrs at 50°C	+	+	++	++	+
Density at 15°C	++	+	+	+	+
FAME content	-	--	--	-	-
Flash Point PMcc	+	+/-	+	+	+
Kinematic Viscosity at 40°C	+	+	+/-	+/-	+/-
Lubricity by HFRR	+	+	-	-	+/-
Manganese as Mn	--	--	n.e.	n.e.	-
Nitrogen	--	-	--	--	-
Polycyclic Aromatics	--	+/-	+/-	+	-
Mono-, Di-, Tri^{+}-Aromatics	+	+/-	+	+	+
Total Aromatics	+	+	+	+	++
Pour Point	+	+	+	+	+
Sulfur	+/-	+	+/-	+/-	+/-
Water	++	++	++	++	++
Cetane Number	+	+	+	+	n.e.
DCN (EN15195)	+	-	-	+	n.e.
DCN (EN16715)	-	-	+	+/-	n.e.
Total Contamination	-	-	-	-	+
Ox. Stability Induction period	-	--	--	-	--
Ox. Stability Filterable Insolubles	(--)	+	+	+	n.e.

Table 11: comparison determinations against the reference test method

The following performance categories were used:

- ++: group performed much better than the reference test method
- + : group performed better than the s reference test method
- +/-: group performance similar to 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

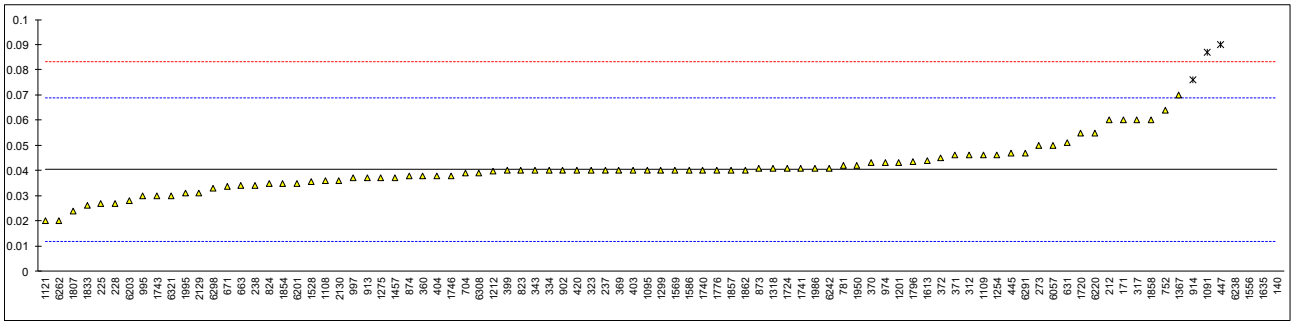
Determination of Total Acid Number (TAN) on sample #20005; result in mgKOH/g

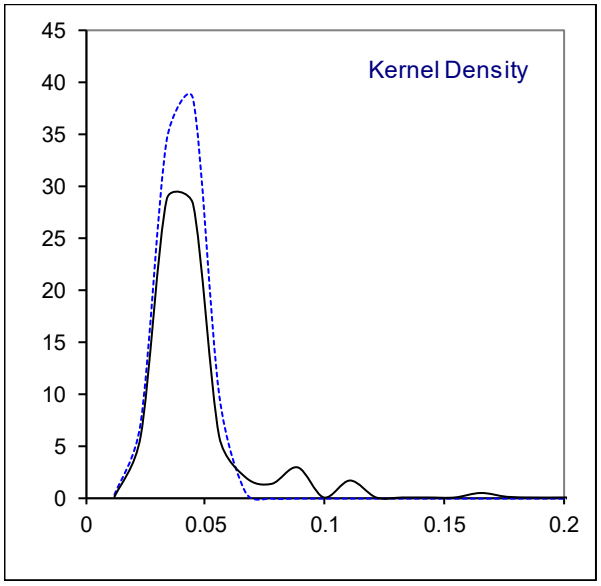
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D664-A	<0.1		-----	971		-----		-----
140	D974	2.8	R(0.01)	193.17	974	D974	0.043		0.18
171	D974	0.06		1.37	995	D974	0.030		-0.73
212	D664-A	0.06		1.37	997	D974	0.037		-0.24
218		-----		-----	998		-----		-----
220		-----		-----	1006		-----		-----
225	D974	0.027		-0.94	1026	D974	<0.03		-----
228	D974	0.027	C	-0.94	1059		-----		-----
237	D974	0.04		-0.03	1080		-----		-----
238	D974	0.034		-0.45	1091	D664-A	0.087	C,R(0.01)	3.26
273	D974	0.05		0.67	1095	D974	0.04		-0.03
311	D664-A	<0.10		-----	1097		-----		-----
312	D974	0.046		0.39	1099		-----		-----
317	D974	0.06		1.37	1108	D974	0.0359		-0.32
323	D974	0.04		-0.03	1109	D974	0.046		0.39
331	D664Mod.	<0.05		-----	1121	D664-A	0.02		-1.43
333		-----		-----	1126		-----		-----
334	D974	0.04		-0.03	1146		-----		-----
335		-----		-----	1150		-----		-----
336		-----		-----	1167		-----		-----
337		-----		-----	1201	D974	0.043		0.18
338		-----		-----	1205		-----		-----
342	D664-A	<0.1	C	-----	1212	D974	0.0399		-0.04
343	D974	0.04		-0.03	1254	D664-A	0.0463		0.41
345		-----		-----	1275	IP177	0.037		-0.24
351		-----		-----	1286		-----		-----
353		-----		-----	1299	D664-A	0.040		-0.03
357	D664-A	<0,1		-----	1318	D664-A	0.041		0.04
360	ISO6618	0.038		-0.17	1356	D664-A	<0.05		-----
369	D974	0.040		-0.03	1367	IP139	0.07		2.07
370	D974	0.043		0.18	1397		-----		-----
371	D974	0.046		0.39	1430		-----		-----
372	D974	0.045		0.32	1438		-----		-----
381		-----		-----	1457	D974	0.037		-0.24
391		-----		-----	1459		-----		-----
398		-----		-----	1498		-----		-----
399	D974	0.040		-0.03	1528	D974	0.0356		-0.34
403	D664-A	0.04		-0.03	1556	D974	0.17	C,R(0.01)	9.07
404	D664-A	0.038		-0.17	1569	D664-A	0.04		-0.03
420	ISO6618	0.04		-0.03	1586	D664-A	0.04		-0.03
431		-----		-----	1613	D974	0.044		0.25
432		-----		-----	1634		-----		-----
440		-----		-----	1635	D664-A	0.346	R(0.01)	21.39
444		-----		-----	1656		-----		-----
445	D974	0.047		0.46	1676		-----		-----
447	D974	0.09	R(0.01)	3.47	1681		-----		-----
485		-----		-----	1720	D974	0.055		1.02
498		-----		-----	1724	D664-A	0.041		0.04
541	D974	<0.05		-----	1730		-----		-----
631	D974	0.051		0.74	1740	D664-A	0.04		-0.03
663	D664-A	0.034		-0.45	1741	ISO6619	0.041		0.04
671	D974	0.03365		-0.47	1742		-----		-----
704	D974	0.039		-0.10	1743	D664-A	0.03	C	-0.73
751		-----		-----	1746	D974	0.038		-0.17
752	D664-A	0.064		1.65	1776	D664-A	0.04		-0.03
759		-----		-----	1796	D664-A	0.0434		0.21
778		-----		-----	1807	D664-A	0.024	C	-1.15
779		-----		-----	1833	D664-A	0.026		-1.01
781	D974	0.042		0.11	1849		-----		-----
782		-----		-----	1854	D664-A	0.035		-0.38
785		-----		-----	1857	D974	0.040		-0.03
823	D974	0.04		-0.03	1858	D664-A	0.06		1.37
824	D974	0.035		-0.38	1862	D974	0.040		-0.03
846		-----		-----	1941		-----		-----
872		-----		-----	1950	D974	0.042		0.11
873	D664-A	0.041		0.04	1953		-----		-----
874	D974	0.038		-0.17	1961		-----		-----
875		-----		-----	1976		-----		-----
902	D664-A	0.04		-0.03	1984		-----		-----
913	D974	0.037		-0.24	1986	D664-A	0.041		0.04
914	D974	0.076	R(0.05)	2.49	1995	D664-A	0.031		-0.66
962		-----		-----	2129	D974	0.031		-0.66
963		-----		-----	2130	D974	0.036		-0.31

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146		-----		-----	6203	D974	0.0281		-0.86
6005		-----		-----	6220	D664-A	0.055		1.02
6012		-----		-----	6238	D664-A	0.11	R(0.01)	4.87
6018		-----		-----	6242	D664-A	0.041		0.04
6046		-----		-----	6262	D664-A	0.02		-1.43
6057	D974	0.05		0.67	6291	D974	0.047		0.46
6075		-----		-----	6298	D974	0.033		-0.52
6142		-----		-----	6299		-----		-----
6143		-----		-----	6308	D974	0.039		-0.10
6170		-----		-----	6316		-----		-----
6192		-----		-----	6321	D664-A	0.03		-0.73
6201	D974	0.035		-0.38	9057		-----		-----

normality	suspect
n	82
outliers	7
mean (n)	0.04041
st.dev. (n)	0.009101
R(calc.)	0.02548
st.dev.(D974:14e2)	0.014286
R(D974:14e2)	0.04

Lab 228 first reported 0.27
Lab 342 first reported 0.5
Lab 1091 first reported 0.107
Lab 1556 first reported 0.13
Lab 1743 first reported 0.1
Lab 1807 first reported 0.11





Determination of Ash content on sample #20005; result in %M/M

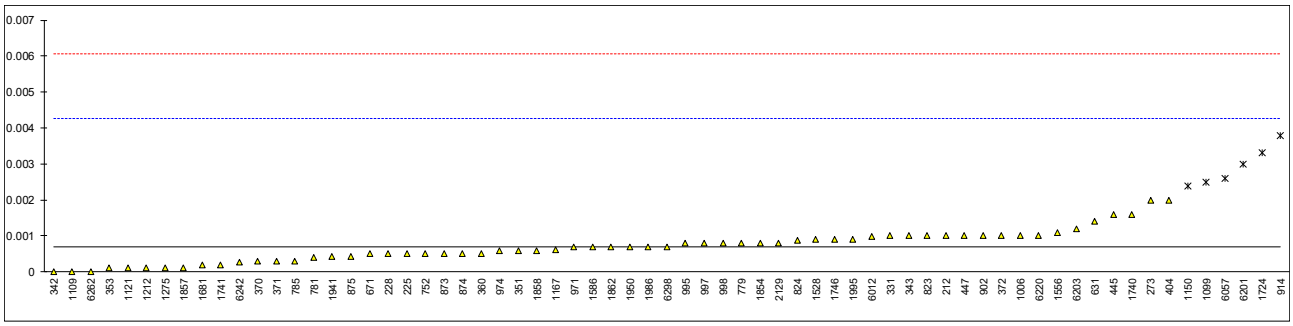
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D482	<0.010		-----	971	ISO6245	0.0007		0.00
140	ISO6245	<0.001		-----	974	D482	0.00059		-0.06
171	D482	<0.010		-----	995	ISO6245	0.0008		0.06
212	ISO6245	0.001		0.17	997	D482	0.0008		0.06
218		-----		-----	998	D482	0.0008		0.06
220		-----		-----	1006	D482	0.001		0.17
225	D482	0.0005		-0.11	1026	ISO6245	<0.01		-----
228	D482	0.0005	C	-0.11	1059	ISO6245	<0,001		-----
237	D482	<0.01		-----	1080		-----		-----
238		-----		-----	1091		-----		-----
273	D482	0.002		0.73	1095	ISO6245	<0.001		-----
311	ISO6245	<0.001		-----	1097		-----		-----
312		-----		-----	1099	ISO6245	0.0025	R(0.05)	1.01
317	ISO6245	<0.001		-----	1108		-----		-----
323	ISO6245	<0.001		-----	1109	D482	0.0000		-0.39
331	ISO6245	0.001		0.17	1121	ISO6245	0.0001	C	-0.34
333		-----		-----	1126		-----		-----
334	ISO6245	<0.001		-----	1146	D482	<0.001		-----
335		-----		-----	1150	ISO6245	0.002395	R(0.05)	0.95
336		-----		-----	1167	ISO6245	0.00061		-0.05
337		-----		-----	1201		-----		-----
338		-----		-----	1205		-----		-----
342	ISO6245	0		-0.39	1212	ISO6245	0.0001		-0.34
343	ISO6245	0.001		0.17	1254	ISO6245	< 0.001		-----
345		-----		-----	1275	IP4	0.0001		-0.34
351	ISO6245	0.0006		-0.06	1286		-----		-----
353	IP4	0.0001		-0.34	1299	D482	<0.001		-----
357	ISO6245	< 0,001		-----	1318		-----		-----
360	D482	0.0005		-0.11	1356	D482	<0.01		-----
369	ISO6245	<0.001		-----	1367	IP4	<0.001		-----
370	ISO6245	0.0003		-0.22	1397		-----		-----
371	ISO6245	0.0003		-0.22	1430	D482	<0.01		-----
372	ISO6245	0.001		0.17	1438		-----		-----
381		-----		-----	1457		-----		-----
391		-----		-----	1459		-----		-----
398		-----		-----	1498		-----		-----
399	ISO6245	<0.001		-----	1528	ISO6245	0.0009		0.11
403		-----		-----	1556	ISO6245	0.0011		0.22
404	ISO6245	0.002		0.73	1569	ISO6245	<0.005		-----
420	ISO6245	<0,001		-----	1586	D482	0.0007		0.00
431		-----		-----	1613	D482	<0.01		-----
432		-----		-----	1634		-----		-----
440		-----		-----	1635		-----		-----
444		-----		-----	1656	ISO6245	<0.01		-----
445	IP4	0.0016		0.50	1676		-----		-----
447	IP4	0.001		0.17	1681	ISO6245	0.0002		-0.28
485		-----		-----	1720		-----		-----
498		-----		-----	1724	D482	0.0033	R(0.05)	1.46
541	ISO6245	<0.001		-----	1730		-----		-----
631	D482	0.0014		0.39	1740	ISO6245	0.0016		0.50
663	D482	<0.010		-----	1741	ISO6245	0.00020		-0.28
671	D482	0.0004997		-0.11	1742		-----		-----
704	ISO6245	< 0.001		-----	1743		-----		-----
751		-----		-----	1746	D482	0.0009		0.11
752	ISO6245	0.0005		-0.11	1776		-----		-----
759	ISO6245	less 0.001		-----	1796		-----		-----
778		-----		-----	1807		-----		-----
779	ISO6245	0.0008		0.06	1833	ISO6245	<0.001		-----
781	ISO6245	0.0004		-0.17	1849	ISO6245	<0,001		-----
782		-----		-----	1854	ISO6245	0.0008		0.06
785	ISO6245	0.0003		-0.22	1857	ISO6245	0.0001		-0.34
823	ISO6245	0.001		0.17	1858	D482	0.0006		-0.06
824	ISO6245	0.00089		0.11	1862	ISO6245	0.0007		0.00
846		-----		-----	1941	ISO6245	0.00042		-0.16
872		-----		-----	1950	ISO6245	0.0007		0.00
873	D482	0.0005		-0.11	1953		-----		-----
874	ISO6245	0.0005		-0.11	1961		-----		-----
875	D482	0.00043		-0.15	1976		-----		-----
902	ISO6245	0.001		0.17	1984		-----		-----
913	D482	<0.001		-----	1986	ISO6245	0.0007		0.00
914	D482	0.0038	R(0.01)	1.74	1995	D482	0.0009		0.11
962		-----		-----	2129	ISO6245	0.0008		0.06
963		-----		-----	2130		-----		-----

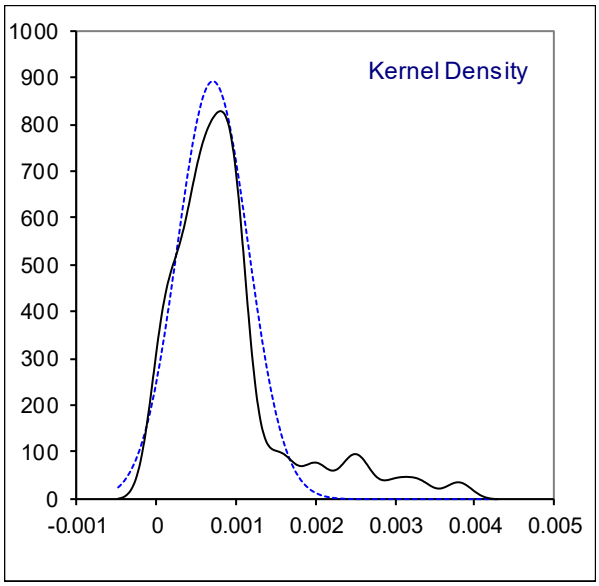
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146		-----		-----	6203	ISO6245	0.0012		0.28
6005		-----		-----	6220	D482	0.001		0.17
6012	ISO6245	0.00098		0.16	6238	D482	<0.01		-----
6018		-----		-----	6242	D482	0.00026		-0.25
6046		-----		-----	6262	D482	0		-0.39
6057	ISO6245	0.0026	R(0.05)	1.06	6291		-----		-----
6075	ISO6245	<0.001		-----	6298	ISO6245	0.0007		0.00
6142		-----		-----	6299		-----		-----
6143		-----		-----	6308	ISO6245	<0.001		-----
6170		-----		-----	6316		-----		-----
6192		-----		-----	6321	IP4	<0.001		-----
6201	ISO6245	0.003	R(0.05)	1.29	9057		-----		-----

normality	suspect
n	61
outliers	6
mean (n)	0.00070
st.dev. (n)	0.000447
R(calc.)	0.00125
st.dev.(ISO6245:01)	0.001786
R(ISO6245:01)	0.005

application range: 0.001 – 0.079 %M/M

Lab 228 first reported 0.010897
Lab 1121 first reported 0.011





Determination of Calculated Cetane Index, four variables on sample #20005

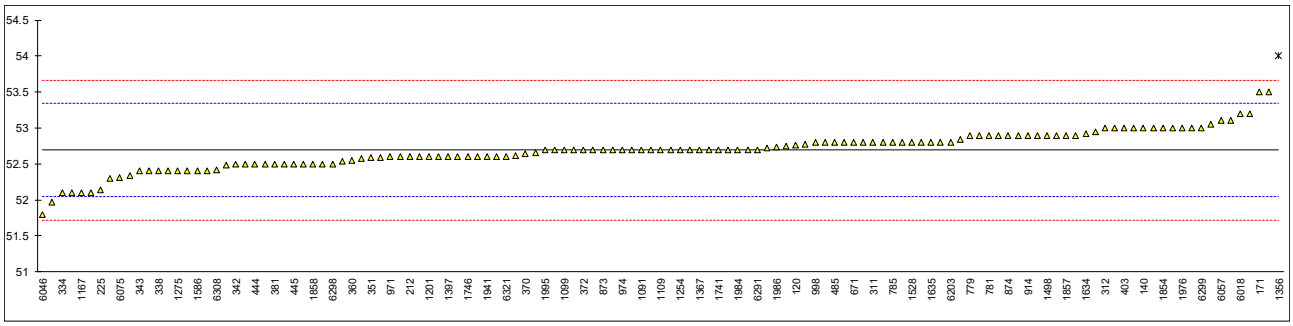
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D4737-A	52.76		0.21	971	D4737-A	52.6		-0.28
140	ISO4264	53.0		0.95	974	D4737-A	52.7		0.03
171	D4737-A	53.5		2.50	995	ISO4264	52.8		0.34
212	ISO4264	52.6		-0.28	997	ISO4264	52.7		0.03
218		-----		-----	998	D4737-A	52.8		0.34
220	ISO4264	52.581		-0.34	1006		-----		-----
225	D4737-A	52.14		-1.70	1026	ISO4264	52.5		-0.59
228	D4737-A	52.5		-0.59	1059	ISO4264	52.9		0.65
237	D4737-A	52.4		-0.90	1080		-----		-----
238		-----		-----	1091	ISO4264	52.7		0.03
273	D4737-A	52.49		-0.62	1095	ISO4264	53.0		0.95
311	D4737-A	52.8		0.34	1097	ISO4264	52.6		-0.28
312	ISO4264	53.0		0.95	1099	ISO4264	52.7		0.03
317	ISO4264	52.7		0.03	1108	ISO4264	52.7		0.03
323	ISO4264	52.7		0.03	1109	D4737-A	52.7		0.03
331		-----		-----	1121	IP380	52.5	C	-0.59
333		-----		-----	1126		-----		-----
334	ISO4264	52.1		-1.82	1146		-----		-----
335	ISO4264	52.9		0.65	1150	ISO4264	52.65		-0.13
336		-----		-----	1167	ISO4264	52.1	E	-1.82
337		-----		-----	1201	ISO4264	52.6		-0.28
338	ISO4264	52.4		-0.90	1205	ISO4264	52.945		0.79
342	ISO4264	52.5		-0.59	1212	ISO4264	52.7		0.03
343	ISO4264	52.4	E	-0.90	1254	ISO4264	52.7		0.03
345		-----		-----	1275	IP380	52.4		-0.90
351	ISO4264	52.59		-0.31	1286		-----		-----
353		-----		-----	1299	D4737-A	52.7		0.03
357	ISO4264	52.75	E	0.18	1318	D4737-A	52.6		-0.28
360	ISO4264	52.55		-0.43	1356	ISO4264	54	R(0.01)	4.04
369	ISO4264	52.5		-0.59	1367	IP380	52.7		0.03
370	ISO4264	52.64		-0.16	1397	ISO4264	52.6		-0.28
371	ISO4264	52.8		0.34	1430		-----		-----
372	ISO4264	52.7		0.03	1438		-----		-----
381	ISO4264	52.5		-0.59	1457	ISO4264	52.4		-0.90
391		-----		-----	1459		-----		-----
398		-----		-----	1498	D4737-A	52.9		0.65
399	D4737-A	52.9		0.65	1528	ISO4264	52.8		0.34
403	ISO4264	53.0		0.95	1556	ISO4264	52.8		0.34
404	ISO4264	52.8		0.34	1569	ISO4264	53.5		2.50
420	ISO4264	52.7	E	0.03	1586	D4737-A	52.4		-0.90
431		-----		-----	1613	D4737-A	52.593		-0.30
432		-----		-----	1634	ISO4264	52.92		0.71
440		-----		-----	1635	ISO4264	52.8		0.34
444	ISO4264	52.5		-0.59	1656	ISO4264	52.6		-0.28
445	IP380	52.5		-0.59	1676		-----		-----
447	IP380	53.0		0.95	1681	ISO4264	52.84		0.46
485	ISO4264	52.8		0.34	1720	D4737-B	52.80		0.34
498		-----		-----	1724		-----		-----
541	D4737-A	52.77		0.24	1730		-----		-----
631	D4737-A	53.048	E	1.10	1740	ISO4264	52.7		0.03
663	D4737-A	52.72		0.09	1741	ISO4264	52.7		0.03
671	D4737-A	52.8		0.34	1742		-----		-----
704	D4737-A	52.8		0.34	1743		-----		-----
751	ISO4264	52.9		0.65	1746	D4737-A	52.6		-0.28
752	ISO4264	53.0		0.95	1776	ISO4264	52.4		-0.90
759	ISO4264	52.6		-0.28	1796	D4737-A	52.7	C	0.03
778		-----		-----	1807	ISO4264	52.1		-1.82
779	ISO4264	52.9		0.65	1833	ISO4264	52.9	E	0.65
781	ISO4264	52.9		0.65	1849		-----		-----
782	D4737-A	52.7		0.03	1854	D4737-A	53.0		0.95
785	ISO4264	52.8		0.34	1857	ISO4264	52.9		0.65
823	ISO4264	52.8		0.34	1858	D4737-A	52.5		-0.59
824	ISO4264	52.4		-0.90	1862	ISO4264	52.6		-0.28
846		-----		-----	1941	ISO4264	52.6		-0.28
872		-----		-----	1950	ISO4264	53.0		0.95
873	ISO4264	52.7		0.03	1953		-----		-----
874	ISO4264	52.9		0.65	1961		-----		-----
875	ISO4264	52.3	E	-1.21	1976	D4737-A	53.00		0.95
902	ISO4264	52.1		-1.82	1984	ISO4264	52.7		0.03
913	D4737-A	52.54	C	-0.47	1986	ISO4264	52.74		0.15
914	D4737-A	52.9		0.65	1995	D4737-A	52.69		0.00
962		-----		-----	2129	IP380	53.0		0.95
963		-----		-----	2130	D4737-A	52.62		-0.22

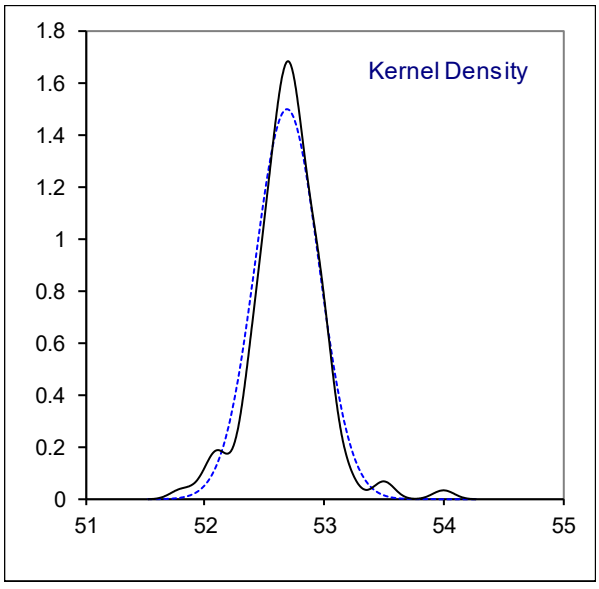
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146		-----		-----	6203	ISO4264	52.8		0.34
6005	ISO4264	52.9		0.65	6220	D4737-A	51.97	E	-2.22
6012	ISO4264	52.5	E	-0.59	6238		-----		-----
6018	ISO4264	53.2		1.57	6242	D4737-A	53.1		1.26
6046	ISO4264	51.8		-2.75	6262	ISO4264	52.6		-0.28
6057	ISO4264	53.1		1.26	6291	D4737-A	52.7		0.03
6075	ISO4264	52.31		-1.18	6298	D4737-A	52.5		-0.59
6142	ISO4264	52.335		-1.10	6299	ISO4264	53.0		0.95
6143		-----		-----	6308	ISO4264	52.42	C	-0.84
6170		-----		-----	6316		-----		-----
6192	ISO4264	53.2		1.57	6321	IP380	52.6		-0.28
6201	ISO4264	52.7		0.03	9057		-----		-----

normality	suspect
n	128
outliers	1
mean (n)	52.691
st.dev. (n)	0.2666
R(calc.)	0.746
st.dev.(iis memo 1904)	0.3239
R(iis memo 1904)	0.907

Lab 913 first reported 51.3
Lab 1121 first reported 51.8
Lab 1796 first reported 53.7
Lab 6308 first reported 53.93

The CCI calculated by iis for labs marked with an E:
Lab 343: 52.8
Lab 357: 52.50
Lab 420: 53.2
Lab 631: 52.651
Lab 875: 52.8
Lab 1167: 52.6 (Density test results were corrected without correction of CCI)
Lab 1833: 52.6
Lab 6012: 52.1 (Density test results were corrected without correction of CCI)
Lab 6220: 52.43





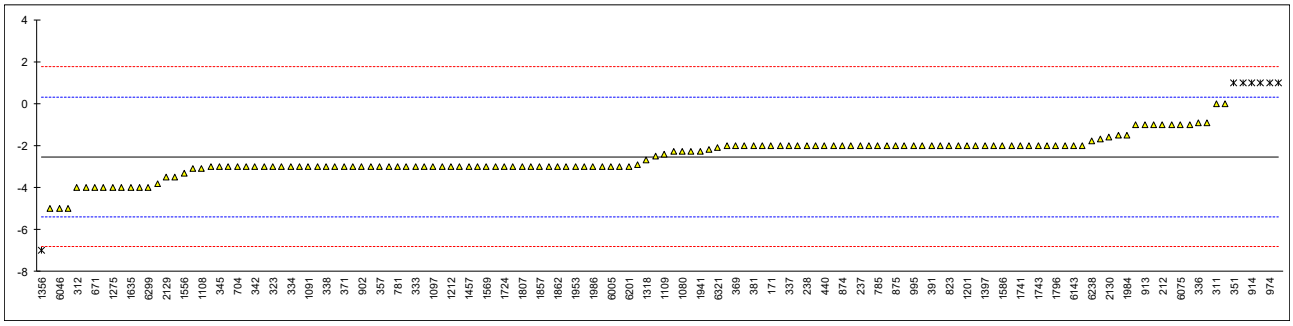
Determination of Cloud Point on sample #20005; result in °C

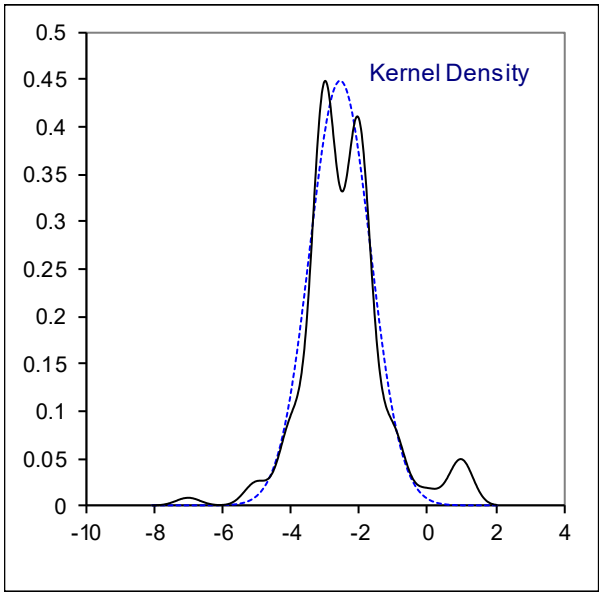
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D5773	-2.3		0.17	971	ISO3015	1	R(0.05)	2.48
140	EN23015	-3		-0.32	974	D2500	1	R(0.05)	2.48
171	D2500	-2		0.38	995	EN23015	-2		0.38
212	ISO3015	-1		1.08	997	ISO3015	-3		-0.32
218		-----		-----	998	D2500	-2		0.38
220		-----		-----	1006		-----		-----
225	D2500	-2		0.38	1026	D5773	-2		0.38
228	D2500	-3		-0.32	1059	ISO3015	-3		-0.32
237	D2500	-2		0.38	1080	D2500	-2.3		0.17
238	D2500	-2		0.38	1091	ISO3015	-3		-0.32
273	D2500	-1		1.08	1095	EN23015	-3		-0.32
311	EN23015	0		1.78	1097	ISO3015	-3		-0.32
312	EN23015	-4		-1.02	1099	ISO3015	-5		-1.72
317	D5771	-3		-0.32	1108	D5771	-3.1		-0.39
323	EN23015	-3		-0.32	1109	D5773	-2.4		0.10
331		-----		-----	1121	ISO3015	-2		0.38
333	EN23015	-3		-0.32	1126		-----		-----
334	ISO3015	-3		-0.32	1146	D2500	-3		-0.32
335	ISO3015	-2.9		-0.25	1150	ISO3015	-1.5		0.73
336	ISO3015	-0.9		1.15	1167		-----		-----
337	EN23015	-2		0.38	1201	ISO3015	-2		0.38
338	EN23015	-3		-0.32	1205		-----		-----
342	D2500	-3		-0.32	1212	D7689	-3		-0.32
343	EN23015	-3		-0.32	1254	EN23015	-2		0.38
345	D5771	-3		-0.32	1275	IP219	-4.0		-1.02
351	D7683	1.0	R(0.05)	2.48	1286		-----		-----
353	IP219	-3		-0.32	1299	D2500	-1		1.08
357	D5771	-3		-0.32	1318	D7689	-2.7		-0.11
360	ISO3015	-2		0.38	1356	EN23015	-7	R(0.05)	-3.12
369	ISO3015	-2		0.38	1367	IP219	-3.0		-0.32
370	ISO3015	-3		-0.32	1397	EN23015	-2		0.38
371	ISO3015	-3		-0.32	1430	D5771	-0.9		1.15
372	ISO3015	-2		0.38	1438		-----		-----
381	ISO3015	-2		0.38	1457	EN23015	-3		-0.32
391	D2500	-2		0.38	1459	EN23015	-3.0		-0.32
398		-----		-----	1498	D2500	0		1.78
399	D2500	-2		0.38	1528	ISO3015	-2		0.38
403	ISO3015	-1		1.08	1556	ISO3015	-3.3	C	-0.53
404	D2500	-3		-0.32	1569	EN23015	-3		-0.32
420	EN23015	-3		-0.32	1586	D2500	-2		0.38
431		-----		-----	1613	D2500	-4.0		-1.02
432		-----		-----	1634		-----		-----
440	IP219	-2		0.38	1635	D7689	-4		-1.02
444		-----		-----	1656	IP219	-3		-0.32
445	IP219	1	R(0.05)	2.48	1676		-----		-----
447	IP219	-2		0.38	1681	ISO3015	-2		0.38
485		-----		-----	1720	D5773	-2.5		0.03
498		-----		-----	1724	D2500	-3		-0.32
541	D5771	-2.0		0.38	1730		-----		-----
631	D5773	-3.1		-0.39	1740	ISO3015	-3		-0.32
663	D2500	-2		0.38	1741	ISO3015	-2		0.38
671	D2500	-4		-1.02	1742	ISO3015	-2		0.38
704	D2500	-3		-0.32	1743	EN23015	-2		0.38
751	D2500	-4		-1.02	1746	D2500	-2		0.38
752	D2500	-2		0.38	1776	ISO3015	-2.3		0.17
759	EN23015	-3		-0.32	1796	D2500	-2		0.38
778	D2500	-2		0.38	1807	D2500	-3		-0.32
779	EN23015	-4		-1.02	1833	D2500	1	R(0.05)	2.48
781	EN23015	-3		-0.32	1849		-----		-----
782	EN23015	-3		-0.32	1854	D2500	-3		-0.32
785	D7683	-2.0		0.38	1857	EN23015	-3		-0.32
823	ISO3015	-2		0.38	1858	D2500	-3		-0.32
824	ISO3015	-2		0.38	1862	EN23015	-3		-0.32
846		-----		-----	1941	ISO3015	-2.3		0.17
872		-----		-----	1950	EN23015	-3		-0.32
873	D2500	-2		0.38	1953	D7683	-3		-0.32
874	D2500	-2		0.38	1961		-----		-----
875	D2500	-2		0.38	1976	ISO3015	-3		-0.32
902	EN23015	-3		-0.32	1984	EN23015	-1.5		0.73
913	D2500	-1		1.08	1986	D2500	-3		-0.32
914	D2500	1	R(0.05)	2.48	1995	D5771	-3		-0.32
962		-----		-----	2129	EN23015	-3.5		-0.67
963		-----		-----	2130	D5771	-1.6		0.66

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146		-----		-----	6203	ISO3015	-4		-1.02
6005	ISO3015	-3		-0.32	6220	D5773	-2.2		0.24
6012	D2500	-3		-0.32	6238	D2500	-1.8		0.52
6018		-----		-----	6242	EN23015	-3.5		-0.67
6046	EN23015	-5		-1.72	6262	EN23015	-2		0.38
6057	EN23015	-2		0.38	6291	ISO3015	-3.8		-0.88
6075	ISO3015	-1		1.08	6298	D2500	-1		1.08
6142	ISO3015	-1.7		0.59	6299	EN23015	-4.0		-1.02
6143	D2500	-2		0.38	6308	EN23015	-5		-1.72
6170		-----		-----	6316		-----		-----
6192		-----		-----	6321	D5773	-2.1		0.31
6201	D5771	-3		-0.32	9057		-----		-----

normality	OK	
n	133	
outliers	7	
mean (n)	-2.54	
st.dev. (n)	0.888	
R(calc.)	2.49	
st.dev.(ISO3015:19)	1.429	
R(ISO3015:19)	4	
compare		
R(EN23015:94)	4	EN23015:94 is withdrawn

Lab 1556 first reported 7





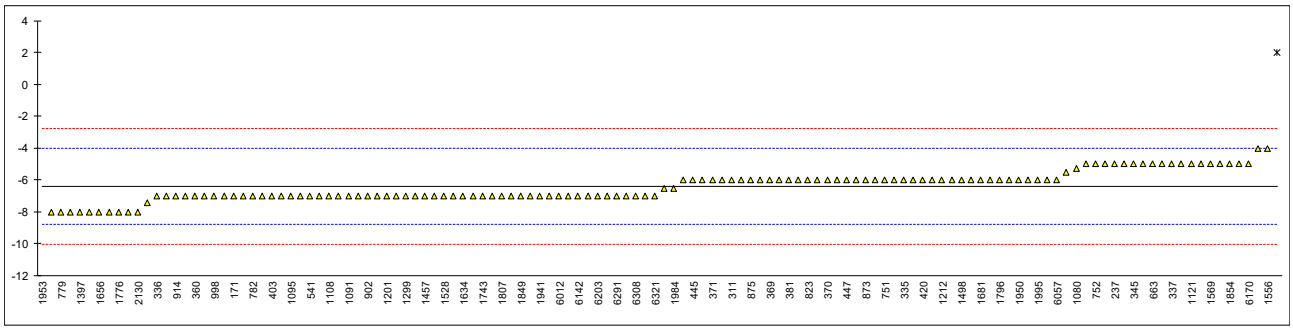
Determination of Cold Filter Plugging Point (CFPP) on sample #20005; result in °C

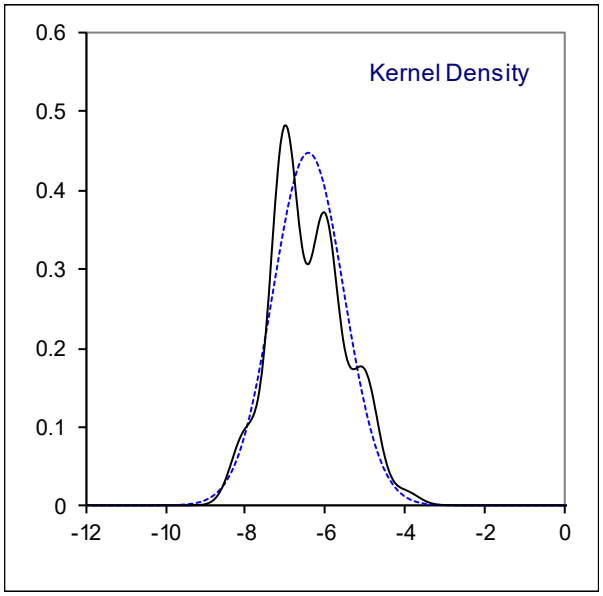
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D6371	-8.0		-1.32	971	IP309	-6		0.34
140	EN116	-5		1.16	974	IP309	-6		0.34
171	D6371	-7		-0.49	995		-----		-----
212		-----		-----	997	EN116	-4		1.99
218		-----		-----	998	D6371	-7		-0.49
220	EN116	-7		-0.49	1006		-----		-----
225		-----		-----	1026	EN16329	-6		0.34
228		-----		-----	1059	EN116	-7		-0.49
237	D6371	-5		1.16	1080	EN16329	-5.3		0.92
238		-----		-----	1091	EN116	-7		-0.49
273	IP309	-5		1.16	1095	EN116	-7		-0.49
311	EN116	-6		0.34	1097	EN116	-7		-0.49
312	EN116	-6		0.34	1099	EN116	-7		-0.49
317	EN116	-5		1.16	1108	EN116	-7		-0.49
323	EN116	-6		0.34	1109	IP309	-7.4		-0.82
331		-----		-----	1121	IP309	-5		1.16
333	EN116	-7		-0.49	1126		-----		-----
334	EN116	-6		0.34	1146		-----		-----
335	EN116	-6		0.34	1150	EN116	-7		-0.49
336	EN116	-7		-0.49	1167	EN116	-8		-1.32
337	EN116	-5		1.16	1201	EN116	-7		-0.49
338	EN116	-7		-0.49	1205		-----		-----
342	EN116	-7		-0.49	1212	EN116	-6		0.34
343	EN116	-5		1.16	1254	EN116	-6.5		-0.08
345	EN116	-5		1.16	1275	IP309	-7.0		-0.49
351	EN116	-7.0		-0.49	1286		-----		-----
353	IP309	-6		0.34	1299	EN116	-7		-0.49
357	EN116	-6		0.34	1318	D6371	-6		0.34
360	EN116	-7		-0.49	1356	EN116	2	R(0.01)	6.96
369	EN116	-6		0.34	1367	D6371	-7.0		-0.49
370	EN116	-6		0.34	1397	EN116	-8		-1.32
371	EN116	-6		0.34	1430	EN116	-5		1.16
372	EN116	-6		0.34	1438		-----		-----
381	EN116	-6		0.34	1457	EN116	-7		-0.49
391	EN116	-7		-0.49	1459	EN116	-7.0		-0.49
398	EN116	-7		-0.49	1498	D6371	-6		0.34
399		-----		-----	1528	EN116	-7		-0.49
403	EN116	-7		-0.49	1556	EN116	-4		1.99
404	EN116	-6		0.34	1569	EN116	-5		1.16
420	EN116	-6		0.34	1586	D6371	-6		0.34
431		-----		-----	1613	D6371	-7.0		-0.49
432		-----		-----	1634	EN116	-7		-0.49
440		-----		-----	1635	EN116	-8		-1.32
444		-----		-----	1656	EN116	-8		-1.32
445	IP309	-6		0.34	1676		-----		-----
447	IP309	-6		0.34	1681	EN116	-6.0		0.34
485		-----		-----	1720		-----		-----
498		-----		-----	1724	IP309	-6		0.34
541	EN116	-7		-0.49	1730		-----		-----
631		-----		-----	1740	EN116	-5		1.16
663	EN116	-5		1.16	1741	EN116	-7		-0.49
671		-----		-----	1742	EN116	-8		-1.32
704	EN116	-6		0.34	1743	EN116	-7	C	-0.49
751	EN116	-6		0.34	1746	D6371	-7		-0.49
752	D6371	-5		1.16	1776	EN116	-8		-1.32
759	D6371	-6		0.34	1796	D6371	-6		0.34
778	EN116	-6		0.34	1807	EN116	-7		-0.49
779	EN116	-8		-1.32	1833	EN116	-7		-0.49
781	EN116	-7		-0.49	1849	EN116	-7		-0.49
782	EN116	-7		-0.49	1854	EN116	-5		1.16
785	EN116	-5		1.16	1857	EN116	-6		0.34
823	D6371	-6		0.34	1858	IP309	-8		-1.32
824	EN116	-5		1.16	1862	EN116	-7		-0.49
846		-----		-----	1941	EN116	-7		-0.49
872		-----		-----	1950	EN116	-6		0.34
873	EN116	-6		0.34	1953	EN116	-13	R(0.01)	-5.45
874	EN116	-6		0.34	1961		-----		-----
875	EN116	-6		0.34	1976	EN116	-7		-0.49
902	EN116	-7		-0.49	1984	EN116	-6.5		-0.08
913		-----		-----	1986	EN116	-6		0.34
914	D6371	-7		-0.49	1995	D6371	-6		0.34
962		-----		-----	2129	EN116	-6		0.34
963		-----		-----	2130	EN116	-8.0		-1.32

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146		-----		-----	6203	EN116	-7		-0.49
6005	EN116	-5		1.16	6220		-----		-----
6012	EN116	-7		-0.49	6238		-----		-----
6018		-----		-----	6242	EN116	-5.5		0.75
6046	EN116	-7		-0.49	6262	EN116	-7		-0.49
6057	EN116	-6		0.34	6291	EN116	-7		-0.49
6075		-----		-----	6298		-----		-----
6142		-7		-0.49	6299	EN116	-7.0		-0.49
6143		-----		-----	6308	EN116	-7		-0.49
6170	EN116	-5		1.16	6316	EN116	-7		-0.49
6192		-----		-----	6321	IP309	-7		-0.49
6201	EN116	-7		-0.49	9057		-----		-----

normality	OK
n	128
outliers	2
mean (n)	-6.41
st.dev. (n)	0.891
R(calc.)	2.50
st.dev.(EN116:15)	1.209
R(EN116:15)	3.38

Lab 1743 first reported -10





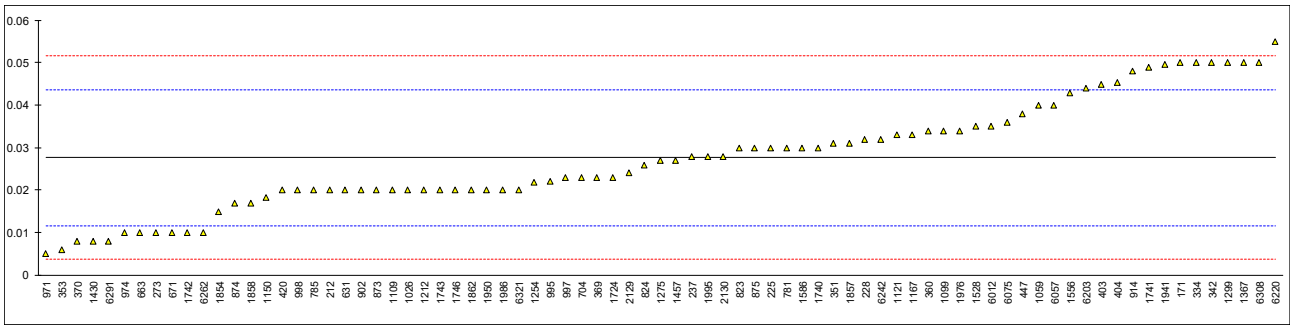
Determination of Carbon Residue (Micro method) on 10% residue on sample #20005; result in %M/M

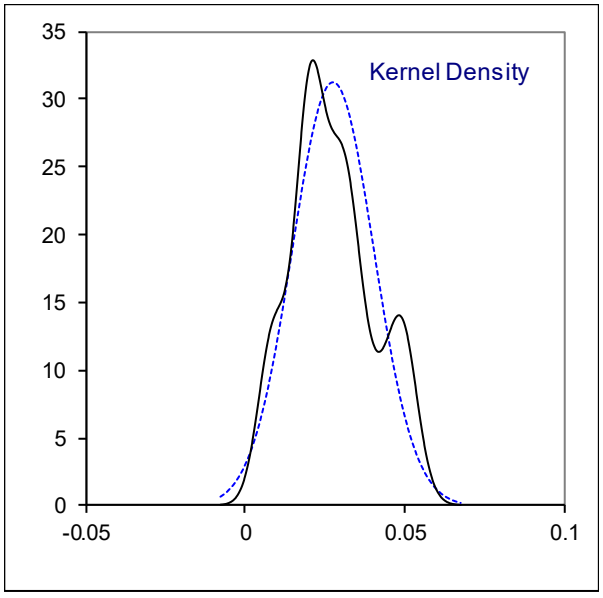
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D4530	<0.10		-----	971	ISO10370	0.005		-2.83
140	ISO10370	<0.10		-----	974	D4530	0.01		-2.20
171	D189	0.05		2.80	995	D189	0.022		-0.70
212	ISO10370	0.02		-0.95	997	ISO10370	0.023		-0.58
218		-----		-----	998	D189	0.020		-0.95
220		-----		-----	1006		-----		-----
225	D4530	0.03		0.30	1026	ISO10370	0.02		-0.95
228	D189	0.0319		0.53	1059	ISO10370	0.04		1.55
237	D4530	0.028		0.05	1080		-----		-----
238		-----		-----	1091		-----		-----
273	D4530	0.01		-2.20	1095	ISO10370	<0.30		-----
311	D4530	<0.10		-----	1097		-----		-----
312		-----		-----	1099	ISO10370	0.034		0.80
317	ISO10370	<0.10		-----	1108		-----		-----
323	ISO10370	<0.10		-----	1109	D4530	0.02		-0.95
331	ISO10370	<0.10		-----	1121	ISO10370	0.033		0.67
333		-----		-----	1126		-----		-----
334	ISO10370	0.05		2.80	1146		-----		-----
335		-----		-----	1150	ISO6615	0.01835		-1.16
336		-----		-----	1167	ISO10370	0.033		0.67
337		-----		-----	1201		-----		-----
338		-----		-----	1205		-----		-----
342	ISO10370	0.05		2.80	1212	ISO10370	0.02		-0.95
343	ISO10370	<10		-----	1254	ISO10370	0.0218		-0.73
345		-----		-----	1275	IP398	0.027		-0.08
351	ISO10370	0.031		0.42	1286		-----		-----
353	IP13	0.006		-2.70	1299	D4530	0.05		2.80
357		-----		-----	1318		-----		-----
360	ISO10370	0.034		0.80	1356	ISO10370	<0.010		-----
369	ISO10370	0.023		-0.58	1367	IP398	0.05		2.80
370	ISO10370	0.008		-2.45	1397		-----		-----
371		-----		-----	1430	D4530	0.008		-2.45
372	ISO10370	<0.10		-----	1438		-----		-----
381		-----		-----	1457	ISO10370	0.027		-0.08
391		-----		-----	1459		-----		-----
398		-----		-----	1498		-----		-----
399		-----		-----	1528	ISO10370	0.035		0.92
403	ISO10370	0.045		2.17	1556	ISO10370	0.043		1.92
404	ISO10370	0.0454		2.22	1569	ISO10370	<0.10		-----
420	ISO6615	0.02		-0.95	1586	D4530	0.03		0.30
431		-----		-----	1613	D4530	<0.1		-----
432		-----		-----	1634		-----		-----
440		-----		-----	1635		-----		-----
444		-----		-----	1656	ISO10370	<0.1		-----
445	IP398	<0.01		-----	1676		-----		-----
447	IP398	0.038		1.30	1681		-----		-----
485		-----		-----	1720		-----		-----
498		-----		-----	1724	D4530	0.023		-0.58
541	ISO10370	<0.10		-----	1730		-----		-----
631	D4530	0.02		-0.95	1740	ISO10370	0.03		0.30
663	D4530	0.01		-2.20	1741	ISO10370	0.049		2.67
671	D4530	0.01	C	-2.20	1742	ISO10370	0.01		-2.20
704	ISO10370	0.023		-0.58	1743	ISO10370	0.02	C	-0.95
751		-----		-----	1746	D4530	0.020		-0.95
752		-----		-----	1776		-----		-----
759		-----		-----	1796		-----		-----
778		-----		-----	1807		-----		-----
779		-----		-----	1833	ISO10370	<0.1		-----
781	ISO10370	0.03		0.30	1849	ISO10370	<0,1		-----
782		-----		-----	1854	ISO10370	0.015		-1.58
785	D4530	0.02		-0.95	1857	ISO10370	0.031		0.42
823	ISO10370	0.03		0.30	1858	D4530	0.017		-1.33
824	ISO10370	0.026		-0.20	1862	ISO10370	0.020		-0.95
846		-----		-----	1941	ISO10370	0.0496		2.75
872		-----		-----	1950	ISO10370	0.02		-0.95
873	D4530	0.020		-0.95	1953		-----		-----
874	D4530	0.017		-1.33	1961		-----		-----
875	D4530	0.03		0.30	1976	ISO10370	0.0340		0.80
902	ISO10370	0.02		-0.95	1984		-----		-----
913		-----		-----	1986	ISO10370	0.020		-0.95
914	D4530	0.048		2.55	1995	D4530	0.028		0.05
962		-----		-----	2129	ISO10370	0.024		-0.45
963		-----		-----	2130	IP398	0.028		0.05

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146		-----		-----	6203	ISO10370	0.044		2.05
6005		-----		-----	6220	D189	0.055		3.42
6012	D189	0.035		0.92	6238	D4530	<0.01		-----
6018		-----		-----	6242	ISO10370	0.032		0.55
6046		-----		-----	6262	D4530	0.01		-2.20
6057	ISO10370	0.04		1.55	6291	D4530	0.008		-2.45
6075	ISO10370	0.036		1.05	6298		-----		-----
6142		-----		-----	6299		-----		-----
6143		-----		-----	6308	ISO10370	0.05		2.80
6170		-----		-----	6316		-----		-----
6192		-----		-----	6321	IP398	0.02		-0.95
6201	ISO10370	<0.10		-----	9057		-----		-----

normality	OK
n	79
outliers	0
mean (n)	0.02763
st.dev. (n)	0.012743
R(calc.)	0.03568
st.dev.(ISO10370:14)	0.008001
R(ISO10370:14)	0.02240

Lab 671 first reported 0.09
Lab 1743 first reported 0.09





Determination of Copper Corrosion, 3hrs at 50°C on sample #20005

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D130	1A		-----	971	ISO2160	1a		-----
140	ISO2160	1a		-----	974	D130	1a		-----
171	D130	1a		-----	995	D130	1a		-----
212	D130	A1		-----	997		-----		-----
218		-----		-----	998	D130	1A		-----
220		-----		-----	1006	D130	1a		-----
225	D130	1a		-----	1026	ISO2160	1A		-----
228	D130	1a		-----	1059	ISO2160	1a		-----
237	D130	1A		-----	1080		-----		-----
238	D130	1A		-----	1091		-----		-----
273	D130	1a		-----	1095	ISO2160	1a		-----
311	D130	1A		-----	1097	ISO2160	1a		-----
312		-----		-----	1099	ISO2160	1a		-----
317	D130	1a		-----	1108	ISO2160	1		-----
323		1A		-----	1109	D130	1a		-----
331		-----		-----	1121	IP154	1		-----
333		-----		-----	1126		-----		-----
334	ISO2160	1		-----	1146		-----		-----
335		-----		-----	1150		-----		-----
336	ISO2160	1		-----	1167	ISO2160	1A		-----
337		-----		-----	1201		-----		-----
338		-----		-----	1205		-----		-----
342	ISO2160	1a		-----	1212	ISO2160	1A		-----
343	ISO2160	1a		-----	1254	ISO2160	1A		-----
345	ISO2160	1a		-----	1275	IP154	1A		-----
351	ISO2160	1a		-----	1286		-----		-----
353		-----		-----	1299	D130	1a		-----
357	ISO2160	1a		-----	1318	D130	1a		-----
360	D130	1A		-----	1356		-----		-----
369	ISO2160	1a		-----	1367	D130	1A		-----
370	ISO2160	1A		-----	1397		-----		-----
371	ISO2160	1a		-----	1430	D130	1a		-----
372	ISO2160	1A		-----	1438		-----		-----
381		-----		-----	1457	ISO2160	1A		-----
391	D130	1a		-----	1459		-----		-----
398		-----		-----	1498		-----		-----
399	D130	1A		-----	1528	ISO2160	1b		-----
403	ISO2160	cls 1A		-----	1556	ISO2160	class 1		-----
404	ISO2160	clasa 1		-----	1569	D130	1a		-----
420		-----		-----	1586	D130	1a		-----
431		-----		-----	1613	D130	1a		-----
432		-----		-----	1634	ISO2160	1a		-----
440	IP154	1a		-----	1635	ISO2160	1A		-----
444		-----		-----	1656	IP154	1a		-----
445	IP154	1a		-----	1676		-----		-----
447	IP154	1A		-----	1681	ISO2160	1a		-----
485	ISO2160	1a		-----	1720		-----		-----
498		-----		-----	1724	D130	1a		-----
541	D130	1A		-----	1730		-----		-----
631	D130	1a		-----	1740	ISO2160	1A		-----
663	D130	1a		-----	1741	ISO2160	Class1a		-----
671	D130	1A		-----	1742		-----		-----
704	ISO2160	1		-----	1743		-----		-----
751		-----		-----	1746	D130	1a		-----
752		-----		-----	1776		-----		-----
759		-----		-----	1796	D130	1a		-----
778		-----		-----	1807	D130	1A		-----
779	ISO2160	1a		-----	1833	ISO2160	No.1		-----
781	ISO2160	1A		-----	1849	ISO2160	1a		-----
782		-----		-----	1854	D130	1A		-----
785	D130	1a		-----	1857	D130	1a		-----
823	D130	1a		-----	1858	D130	1a		-----
824	D130	1a		-----	1862	ISO2160	1A		-----
846		-----		-----	1941	ISO2160	class 1A		-----
872		-----		-----	1950	D130	1a		-----
873	D130	1a		-----	1953	ISO2160	1a		-----
874	D130	1a		-----	1961	ISO2160	1a		-----
875	D130	1a		-----	1976	ISO2160	1a		-----
902	ISO2160	1a		-----	1984		-----		-----
913	D130	1a		-----	1986	ISO2160	1A		-----
914	D130	1a		-----	1995	D130	1a		-----
962		-----		-----	2129	D130	1a		-----
963		-----		-----	2130	D130	1a		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146		-----		-----	6203	ISO2160	1a		-----
6005	ISO2160	1a		-----	6220	D130	1a		-----
6012	D130	1A		-----	6238	ISO2160	1 A		-----
6018	ISO2160	1a		-----	6242	D130	1a		-----
6046	ISO2160	1a		-----	6262	D130	1a		-----
6057	ISO2160	1A		-----	6291	D130	1A		-----
6075	ISO2160	1a		-----	6298	D130	1a		-----
6142		-----		-----	6299	ISO2160	1b		-----
6143		-----		-----	6308	D130	1a		-----
6170		-----		-----	6316		-----		-----
6192		-----		-----	6321	IP154	1A		-----
6201	D130	1A		-----	9057		-----		-----
	n	117							
	mean (n)	1 (1a/1b)							

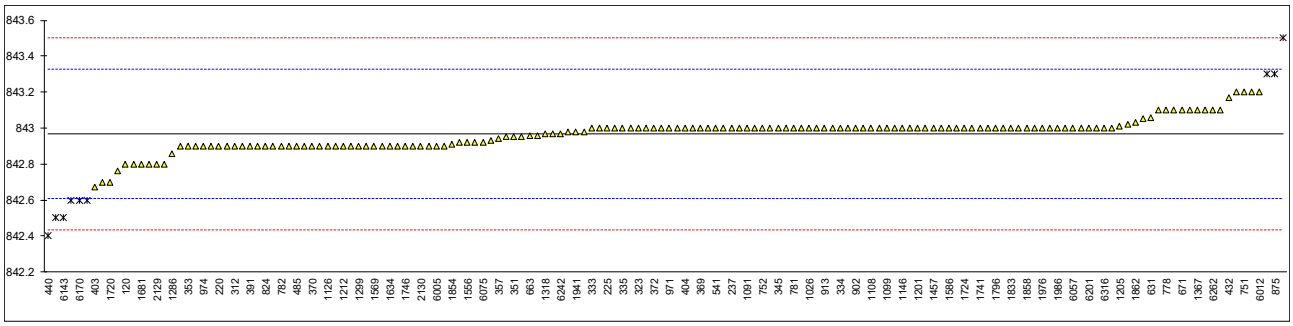
Determination of Density at 15°C on sample #20005; result in kg/m^3

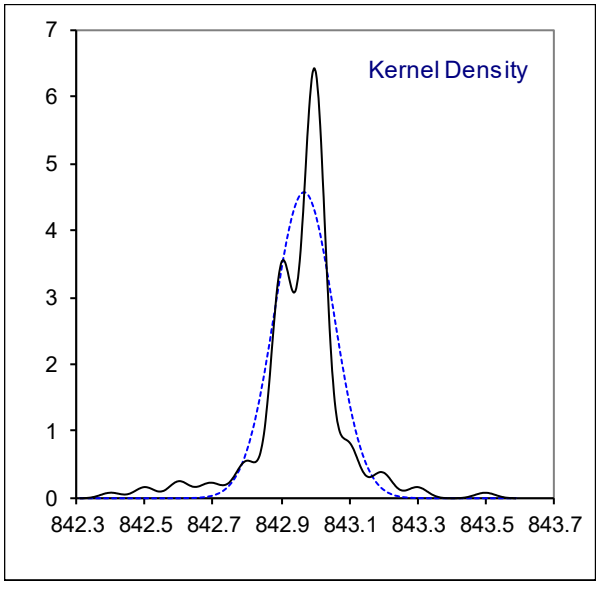
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D4052	842.8		-0.94	971	ISO12185	843.0		0.18
140	D4052	843.0		0.18	974	D1298	842.9		-0.38
171	D4052	843.0		0.18	995	ISO12185	843.0		0.18
212	ISO12185	843.2		1.30	997	ISO12185	842.9		-0.38
218	ISO12185Mod.	842.9		-0.38	998	D4052	843.0		0.18
220	ISO3675	842.9		-0.38	1006	D4052	843.0		0.18
225	D4052	843.0		0.18	1026	D4052	843.0		0.18
228	D4052	843.1	C	0.74	1059	ISO12185	842.9		-0.38
237	D4052	843.0		0.18	1080		-----		-----
238	D4052	842.92		-0.27	1091	D4052	843.0		0.18
273	D4052	842.7		-1.50	1095	ISO12185	843.0		0.18
311	ISO12185	843.0		0.18	1097	ISO12185	842.98		0.07
312	ISO12185	842.9		-0.38	1099	ISO12185	843.0		0.18
317	ISO12185	843.0		0.18	1108	ISO12185	843.0		0.18
323	ISO12185	843.0	C	0.18	1109	D4052	842.95		-0.10
331	ISO12185	843.5	R(0.01)	2.98	1121	ISO12185	843.0		0.18
333	ISO12185	843.0		0.18	1126	ISO12185	842.90		-0.38
334	ISO12185	843.0		0.18	1146	D4052	843.0		0.18
335	ISO12185	843.0		0.18	1150	ISO12185	842.90		-0.38
336	ISO12185	842.6	R(0.05)	-2.06	1167	ISO12185	843.0	C	0.18
337	ISO12185	843.3	R(0.05)	1.86	1201	D1298	843.0		0.18
338	ISO12185	843.1		0.74	1205	ISO12185	843.01		0.24
342	D4052	843.0		0.18	1212	ISO12185	842.9		-0.38
343	ISO12185	842.9		-0.38	1254	ISO12185	842.96		-0.04
345	ISO12185	843.0		0.18	1275	IP365	842.9		-0.38
351	ISO12185	842.95		-0.10	1286	ISO12185	842.855		-0.63
353	IP365	842.9		-0.38	1299	IP365	842.9		-0.38
357	D4052	842.94		-0.16	1318	D4052	842.97		0.01
360	D4052	843.0		0.18	1356	ISO12185	843.1		0.74
369	ISO12185	843.0		0.18	1367	IP365	843.1		0.74
370	ISO12185	842.9		-0.38	1397	ISO12185	843.2		1.30
371	ISO12185	843.0		0.18	1430	D4052	843.0		0.18
372	ISO12185	843.0		0.18	1438		-----		-----
381	ISO12185	842.95		-0.10	1457	ISO12185	843.0		0.18
391	ISO12185	842.9		-0.38	1459	ISO12185	842.97		0.01
398	ISO12185	842.9		-0.38	1498	D4052	843.0		0.18
399	D4052	843.0		0.18	1528	ISO12185	842.9		-0.38
403	ISO12185	842.67		-1.67	1556	ISO12185	842.92		-0.27
404	ISO12185	843.0		0.18	1569	ISO12185	842.9		-0.38
420	ISO12185	842.9		-0.38	1586	D4052	843.0		0.18
431		-----		-----	1613	D4052	842.9		-0.38
432	D4052	843.17		1.13	1634	ISO12185	842.9		-0.38
440	D4052	842.4	R(0.01)	-3.18	1635	ISO12185	843.0		0.18
444	D4052	843.0		0.18	1656	D4052	842.8		-0.94
445	IP365	842.9		-0.38	1676	ISO12185	842.93		-0.21
447	IP365	842.9		-0.38	1681	ISO12185	842.8		-0.94
485	ISO12185	842.9		-0.38	1720	D4052	842.7		-1.50
498		-----		-----	1724	D4052	843.0		0.18
541	ISO12185	843.0		0.18	1730	ISO12185	842.92		-0.27
631	D4052	843.06		0.52	1740	ISO3675	843.0		0.18
663	D4052	842.96		-0.04	1741	ISO12185	843.00		0.18
671	D4052	843.1		0.74	1742	ISO12185	842.9		-0.38
704	ISO12185	843.0		0.18	1743	ISO12185	843.0		0.18
751	D4052	843.2		1.30	1746	D4052	842.9		-0.38
752	ISO12185	843.0		0.18	1776	ISO12185	843.02		0.29
759	D4052	843.0		0.18	1796	D4052	843.0		0.18
778	ISO12185	843.1		0.74	1807	ISO12185	843.0		0.18
779	ISO12185	843.0		0.18	1833	ISO12185	843.0		0.18
781	ISO12185	843.0		0.18	1849	ISO12185	843.0		0.18
782	D4052	842.9		-0.38	1854	ISO12185	842.91		-0.32
785	ISO12185	843.0		0.18	1857	ISO12185	843.1		0.74
823	ISO12185	843.0		0.18	1858	D4052	843.0		0.18
824	ISO12185	842.9		-0.38	1862	ISO12185	843.03		0.35
846		-----		-----	1941	ISO12185	842.98		0.07
872		-----		-----	1950	ISO12185	843.0		0.18
873	D4052	842.9		-0.38	1953		842.8		-0.94
874	D4052	842.9		-0.38	1961		-----		-----
875	D4052	843.3	R(0.05)	1.86	1976	ISO12185	843.0		0.18
902	ISO12185	843.0		0.18	1984	ISO12185	843.0		0.18
913	D4052	843.0		0.18	1986	ISO12185	843.0		0.18
914	D4052	843.0		0.18	1995	D4052	842.9		-0.38
962		-----		-----	2129	D4052	842.8		-0.94
963		-----		-----	2130	D4052	842.9		-0.38

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146	ISO12185	842.9		-0.38	6203	ISO12185	842.9		-0.38
6005	ISO12185	842.9		-0.38	6220	D4052	842.76		-1.16
6012	ISO3675	843.2	C	1.30	6238		-----		-----
6018	ISO12185	843.0		0.18	6242	ISO12185	842.97		0.01
6046	ISO3675	842.5	R(0.01)	-2.62	6262	ISO12185	843.1		0.74
6057	ISO12185	843.0		0.18	6291	D4052	843.05		0.46
6075	ISO12185	842.92		-0.27	6298	D4052	843.0		0.18
6142	ISO12185	843.0		0.18	6299	ISO12185	842.98		0.07
6143	D4052	842.5	R(0.01)	-2.62	6308	ISO12185	842.8		-0.94
6170	ISO3675	842.6	R(0.05)	-2.06	6316	ISO3675	843.0		0.18
6192	D1298	842.6	R(0.05)	-2.06	6321	IP365	843.0		0.18
6201	ISO12185	843.0		0.18	9057	D5002	843.10		0.74

normality	suspect
n	151
outliers	9
mean (n)	842.97
st.dev. (n)	0.087
R(calc.)	0.24
st.dev.(ISO12185:96)	0.179
R(ISO12185:96)	0.5

Lab 228 first reported 0.8439 kg/L
Lab 323 reported 0.8430 kg/m^3
Lab 1167 first reported 844.2
Lab 6012 first reported 842.3





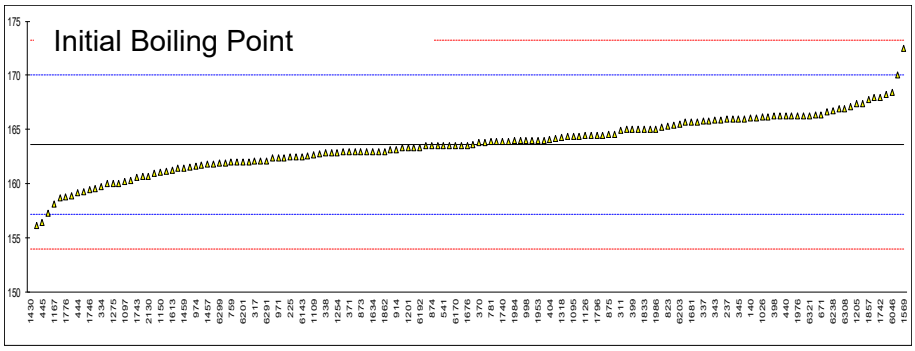
Determination of Distillation on sample #20005; result in °C

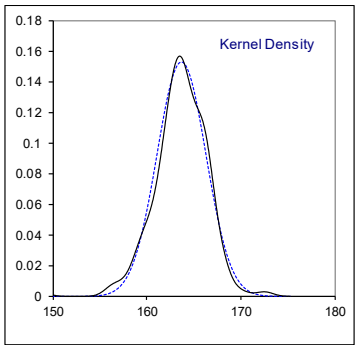
lab	method	IBP	10%rec	50%rec	90%rec	95%rec	FBP
120	D86-automated	162.1	209.3	289.0	341.0	356.6	364.5
140		166.1	211.1	290.3	341.0	356.4	365.5
171	D86-automated	162.6	215.7 R5	290.9	341.5	357.1	362.3
212	ISO3405-automated	162.9	210.5	288.7	340.7	354.3	363.2
218		-----	-----	-----	-----	-----	-----
220	ISO3405-automated	165.4	209.3	288.3	338.7	352.5	361.0
225	D86-manual	162.5	205.0	288.0	338.5	351.5	354.0 R5
228	D86-manual	168.0	209.0	288.0	336.0	348.0	361.0
237	D86-manual	166.0	208.0	288.0	336.0	349.0	363.0
238		-----	-----	-----	-----	-----	-----
273	D86-automated	163.3	210.4	286.0	339.4	355.5	364.2
311	D86-automated	164.9	210.7	288.9	339.1	353.2	362.8
312	ISO3405-automated	163.9	212.0	289.5	338.6	352.4	360.5
317	ISO3405-automated	162.1	209.9	288.8	340.2	354.8	362.7
323	ISO3405-automated	163.1	209.3	289.5	340.9	357.1	362.9
331		-----	-----	-----	-----	-----	-----
333		156.2	207.4	287.4	337.1	350.1	361.1
334	D86-automated	159.7	206.6	286.9	337.0	350.0	359.4 C
335		-----	-----	-----	-----	-----	-----
336		-----	-----	-----	-----	-----	-----
337	ISO3405-automated	165.8	211.1	289.9	340.2	352.5	359.7
338	ISO3405-automated	162.9	207.4	288.6	338.3	350.3	359.5
342	D86-automated	165.2	208.2	288.3	339.5	352.1	354.7 R5
343	ISO3405-automated	165.9	212.7	287.9	338.3	348.7	361.1
345	ISO3405-automated	166	210.2	288.8	338.8	352.1	361.9
351	ISO3405-automated	164.6	207.1	289.4	342.0	359.3	364.4
353	IP123-automated	164.2	211.4	289.5	340.4	354.0	366.2
357	D86-automated	161.7	206.9	289.1	339.5	353.1	362.9
360	D86-automated	159.6	208.0	288.7	340.3	354.2	360.9
369	ISO3405-automated	164.4	208.5	288.3	340.4	353.9	361.6
370	ISO3405-automated	163.8	207.8	289.3	341.8	357.7	363.8
371		163.0	208.6	290.3	342.4	355.3	363.9
372	ISO3405-automated	158.7	210.0	289.0	339.0	352.0	361.0
381	ISO3405-automated	160.0	207.8	288.9	339.4	351.4	360.9
391	D86-automated	165.7	210.3	290.2	340.2	353.4	363.3
398		166.3	212.2	290.6	340.9	353.1	364.2
399	D86-automated	165.0	212.0	289.0	340.0	353.1	362.7
403	ISO3405-automated	164.5	211.4	289.2	340.6	353.8	364.8
404	D86-automated	164.1	210.4	289.2	339.7	353.5	363.4
420	ISO3924	163.99	212.43	290.61	342.29	356.33	364.99
431		-----	-----	-----	-----	-----	-----
432		-----	-----	-----	-----	-----	-----
440	D86-automated	166.3	209.1	289.8	340.1	353.3	355.7
444	D86-automated	159.2	208.8	288.1	338.6	351.9	362.9
445	IP123-automated	156.4	208.5	287.9	338.7	353.4	360.4
447	IP123-automated	165.9	211.6	289.4	340.6	355.2	365.5
485		160.70	209.95	289.50	340.10	353.85	361.75
498		-----	-----	-----	-----	-----	-----
541	ISO3405-automated	163.50	210.10	289.30	340.40	355.45	363.00
631	D86-manual	163.5	207.5	290.0	341.0	355.0	366.0
663	D86-automated	161.95	209.45	289.35	339.05	352.40	362.75
671		166.4	211.3	289.2	337.3	350.0	361.1
704	ISO3405-manual	166.0	210.5	289.0	338.0	349.5	361.0
751	D86-manual	165.0	209.5	291.0	344.0	359.0	367.5
752	ISO3405-manual	162.0	210.5	290.5	342.0	356.5	365.0
759	ISO3405-manual	162.0	208.0	289.0	340.0	354.0	363.5
778		-----	-----	-----	-----	-----	-----
779	ISO3405-manual	163.0	209.0	290.5	342.0	356.0	368.0
781	ISO3405-automated	163.9	210.6	289.5	340.6	355.3	364.2
782	ISO3405-manual	162.5	209.5	289.0	340.0	354.0	366.0
785	ISO3405-automated	162.4	209.6	289.5	340.7	355.9	363.8
823	D86-automated	165.3	211.2	288.8	338.9	351.5	364.1
824	D86-automated	163.0	206.9	288.3	338.5	351.6	359.8
846		-----	-----	-----	-----	-----	-----
872		-----	-----	-----	-----	-----	-----
873	D86-manual	163.0	209.0	289.0	341.0	356.0	364.5
874	ISO3405-manual	163.5	209.0	290.5	341.5	354.5	364.5
875	D86-automated	164.6	211.8	289.3	340.2	355.1	363.3
902	D86-automated	159.3	205.9	287.5	337.3	350.3	360.4
913		-----	-----	-----	-----	-----	-----
914	D86-automated	163.1	211.6	289.1	339.7	354.1	362.4
962		-----	-----	-----	-----	-----	-----
963		-----	-----	-----	-----	-----	-----
971	ISO3405-automated	162.4	208.9	288.8	340.3	355.9	362.7
974	D86-automated	161.6	208.0	289.4	340.9	355.1	363.0

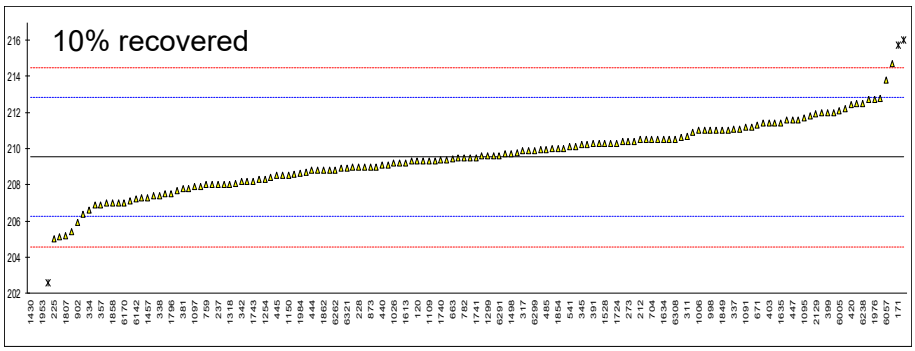
lab	method	IBP	10%rec	50%rec	90%rec	95%rec	FBP
995	ISO3405-manual	163.5	210.5	289.5	340.5	358.5	363.5
997	ISO3405-manual	163.0	211.0	288.0	340.5	355.5	362.5
998	D86-manual	164.0	211.0	289.0	340.5	359.0	363.0
1006	D86-automated	162.8	211.0	289.6	339.6	353.4	362.7
1026	ISO3405-automated	166.2	209.2	288.1	338.4	352	363.6
1059	ISO3405-automated	166.6	210.3	289.5	340.3	354.8	363.7
1080		-----	-----	-----	-----	-----	-----
1091	D86-automated	166.4	211.2	288.7	337.2	349.6	359.5
1095	ISO3405-automated	164.4	211.7	289.6	339.3	352.6	363.7
1097	ISO3405-automated	160.2	207.9	289.4	340.5	353.8	361.5
1099	ISO3405-automated	161.2	209.8	288.9	339.0	352.0	361.0
1108	D86-automated	161.4	210.4	288.9	339.5	354.0	362.0
1109	D86-automated	162.7	209.3	289.4	339.3	353.1	363.5
1121	ISO3405-automated	166.3	208.1	288.5	339.4	353.3	364.5
1126		164.5	214.7	290.6	341.0	354.1	360.4
1146	D86-automated	163.8	209.0	290.1	340.9	353.2	365.9
1150	ISO3405-automated	161.1	208.5	289.1	339.65	352.85	361.25
1167	ISO3405-automated	158.1	209.7	288.4	340.9	354.8	365.2
1201		163.3	208.3	289.0	340.0	354.8	364.2
1205	D86-automated	167.4	211.4	289.7	340.3	354.1	363.9
1212	ISO3405-automated	164.0	208.8	289.1	339.4	353.1	364.6
1254	ISO3405-automated	162.9	208.3	289.9	340.7	355.5	364.0
1275	IP123-automated	160.0	207.3	288.4	339.8	354.6	361.9
1286		-----	-----	-----	-----	-----	-----
1299	D86-automated	166.9	209.6	289.1	339.7	353.0	362.8
1318	D86-automated	164.3	208.0	289.0	340.4	353.2	363.3
1356		-----	-----	-----	-----	-----	-----
1367	ISO3405-automated	168.2	211.0	288.8	337.7	349.7	362.7
1397	ISO3405-automated	166.2	209.6	289.3	339.9	353.5	363.4
1430		148.6 R1	196.8 R1	284.5 R1	336.0 ex	348.7 ex	354.8 R5
1438	D86-automated	160.3	208.2	287.3	337.3	350.2	356.4
1457	ISO3405-automated	161.8	207.3	288.3	338.9	352.4	362.0
1459	ISO3405-automated	161.4	209.2	288.8	339.0	352.7	361.5
1498	D86-automated	163.3	209.7	290.2	341.8	358.5	365.3
1528	D86-automated	166.0	210.3	289.3	340.1	355.0	363.1
1556	ISO3405-automated	163.6	209.5	289.5	340.5	354.2	363.4
1569	ISO3924	172.5	216.0 R5	290.0	343.0	357.0	369.0
1586	D86-automated	161.5	207.7	288.6	338.4	351.2	359.7
1613	D86-automated	161.3	209.2	288.4	339.1	352.4	363.6
1634	ISO3405-automated	163.0	210.5	289.9	340.4	354.2	365.7
1635	ISO3405-automated	161.0	211.4	288.8	339.6	352.5	364.0
1656		-----	209.9	287.7	340.5	354.9	363.2
1676	ISO3405-automated	163.52	209.93	288.65	339.53	352.97	363.08
1681	ISO3405-automated	165.7	210.3	289.1	339.5	353.1	362.5
1720	D86-automated	166.3	208.7	289.4	339.6	352.2	362.7
1724	D86-automated	165.0	210.3	288.5	338.7	351.7	362.1
1730		-----	-----	-----	-----	-----	-----
1740	ISO3405-automated	163.9	209.4	289.0	339.1	353.2	362.9
1741		158.9	209.5	289.0	339.4	352.9	363.3
1742	ISO3405-automated	168.0	210.9	289.8	340.9	354.9	365.0
1743	ISO3405-automated	160.6	208.2	288.7	340.7	356.6	362.2
1746	D86-manual	159.5	207.0	289.5	340.0	353.0	363.0
1776	ISO3405-automated	158.8	207.9	288.0	339.3	354.3	362.6
1796	D86-manual	164.5	207.5	290.0 C	338.5 C	359.5	360.0 C
1807	ISO3405-automated	163	205.2	287.4	338.5	351.8	362.3
1833	ISO3405-automated	165	209.3	288.5	339.0	352.2	363.2
1849	ISO3405-automated	164.4	211.0	289.2	339.8	353.7	364.4
1854	ISO3405-automated	163.9	210.0	290.1	341.5	356.7	364.3
1857	ISO3405-automated	167.8	211.6	289.3	340.5	354.6	365.0
1858	D86-manual	163.5	207.0	289.0	339.5	354.0	362.0
1862	ISO3405-automated	163.0	208.8	288.9	340.6	355.3	364.0
1941	ISO3405-automated	160.0	208.4	289.3	340.9	354.2	364.7
1950	ISO3405-manual	165.0	211.0	290.0	340.5	355.5	365.0
1953		164	200.5 R1	233.6 R1	340.4	355.2	363.5
1961		-----	-----	-----	-----	-----	-----
1976	ISO3405-automated	166.3	212.7	289.1	338.9	350.8	364.1
1984	ISO3405-automated	163.95	208.65	289.35	340.1	354.5	364.35
1986	ISO3405-manual	165.0	210.5	289.0	338.0	350.0	361.0
1995	D86-automated	164.5	207	290	341.5	354.5	356.5
2129	ISO3405-automated	167.1	211.9	289.7	339.6	352.1	365.2
2130	D86-automated	160.7	208.8	288.8	339.3	353.2	362.3
2146		161.8	212.5	291.7 R5	344.3	361.3	365.4
6005	ISO3405-automated	166.1	212.1	288.8	339.4	353.3	364.0
6012	D86-manual	167.4	206.4	287.5	339.5	350.5	362.5
6018	ISO3405-automated	166.3	212.8	290.3	340.1	353.9	364.7
6046	ISO3405-manual	168.4	202.6 R5	285.8 R5	336.8	349.8	360.9
6057	ISO3405-automated	170.0	213.8	289.3	338.8	351.3	361.6
6075	ISO3405-automated	165.7	205.4	288.4	339.9	353.9	362.5

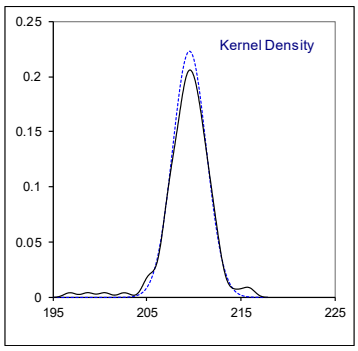
lab	method	IBP	10%rec	50%rec	90%rec	95%rec	FBP
6142	ISO3405-automated	157.3	207.25	288.05	339.2	353.15	363.95
6143	D86-automated	162.5	198.7 R1	283.7 R1	336.5	351	358.4
6170	ISO3405-manual	163.5	207.0	289.0	340.0	353.0	364.0
6192	D86-automated	163.3	210.0	290.4	341.6	356.5	364.4
6201	D86-automated	162.0	210.2	288.5	339.8	353.5	363.3
6203	ISO3405-automated	165.5	210.1	289.2	339.8	353.8	362.8
6220	D86-automated	162.4	209.4	287	337.3	350	364.3
6238	D86-automated	166.7	212.5	290.2	341.4	356.4	364.9
6242	D86-automated	165.8	212.0	290.0	340.6	353.3	365.0
6262		163.5	208.8	289.3	338.8	352.0	363.1
6291	D86-automated	162.1	209.6	289.3	340.7	355.3	364.5
6298	D86-automated	162.0	209.1	288.1	339.2	353.6	362.7
6299	ISO3405-automated	161.9	209.9	290.6	340.0	353.7	360.9
6308	ISO3405-automated	166.9	210.5	286.4	337.5	351.1	357.9
6316		164.0	205.1	288.2	337.6	349.9	359.4
6321	IP123-automated	166.3	208.9	289.0	339.7	353.5	363.2
9057		-----	-----	-----	-----	-----	-----
	normality	OK	OK	OK	suspect	OK	suspect
	n	148	144	145	149	149	147
	outliers	1	6	5	0 (+1 ex)	0 (+1 ex)	3
	mean (n)	163.64	209.53	289.06	339.77	353.64	362.92
	st.dev. (n)	2.603	1.787	0.874	1.386	2.315	2.061
	R(calc.)	7.29	5.00	2.45	3.88	6.48	5.77
	st.dev.(ISO3405-A:19)	3.214	1.646	1.071	1.820	3.132	2.536
	R(ISO3405-A:19)	9.00	4.61	3.00	5.10	8.77	7.10
	compare						
	R(ISO3405-M:19)	7.07	5.14	3.97	3.71	4.88	3.88

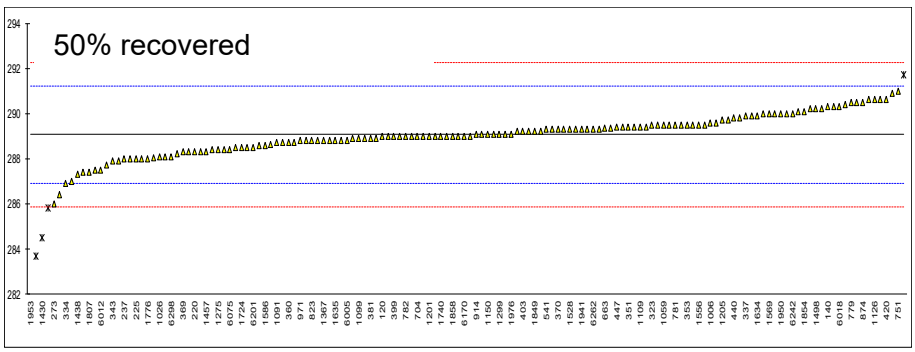
Lab 334 first reported 355.8
Lab 1430 two test results excluded as four other related test results are statistical outliers
Lab 1796 first reported 296.0, 345.5 and 369.0 respectively

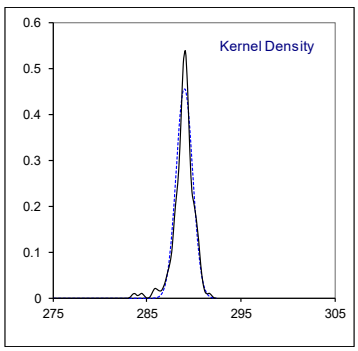


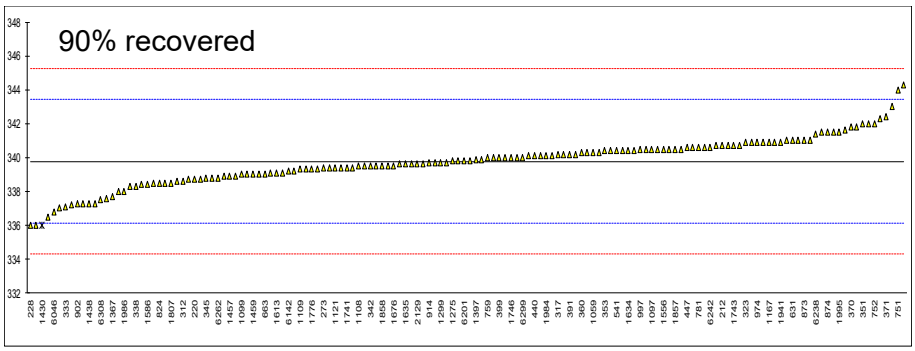


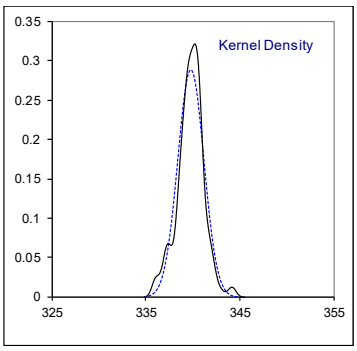


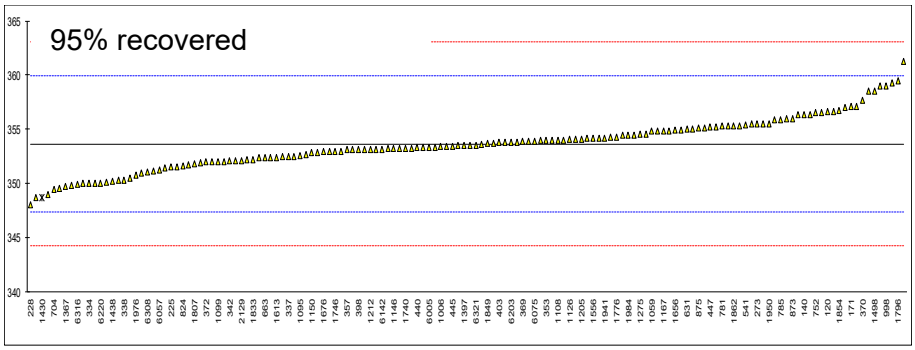


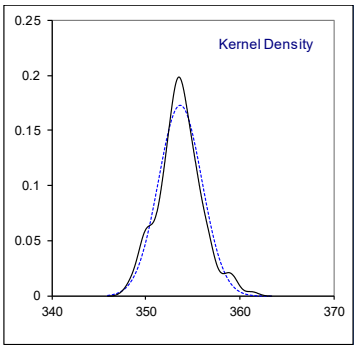


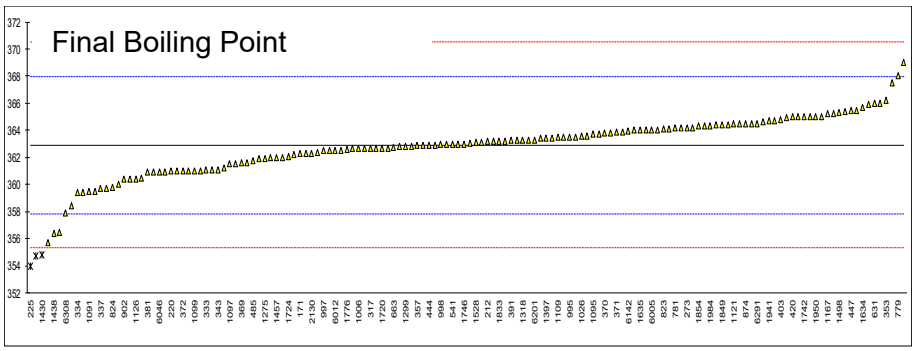


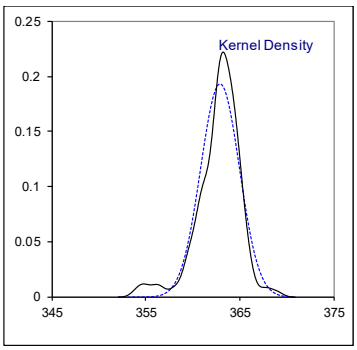

90% recovered


Kernel Density


95% recovered


Kernel Density


Final Boiling Point


Kernel Density

z-scores Distillation on sample #20005

lab	IBP	10%rec	50%rec	90%rec	95%rec	FBP
120	-0.48	-0.14	-0.05	0.67	0.94	0.62
140	0.76	0.95	1.16	0.67	0.88	1.02
171	-0.32	3.75	1.72	0.95	1.10	-0.24
212	-0.23	0.59	-0.33	0.51	0.21	0.11
218	-----	-----	-----	-----	-----	-----
220	0.55	-0.14	-0.71	-0.59	-0.36	-0.76
225	-0.36	-2.75	-0.99	-0.70	-0.68	-3.52
228	1.36	-0.32	-0.99	-2.07	-1.80	-0.76
237	0.73	-0.93	-0.99	-2.07	-1.48	0.03
238	-----	-----	-----	-----	-----	-----
273	-0.11	0.53	-2.85	-0.21	0.59	0.51
311	0.39	0.71	-0.15	-0.37	-0.14	-0.05
312	0.08	1.50	0.41	-0.65	-0.40	-0.95
317	-0.48	0.23	-0.24	0.23	0.37	-0.09
323	-0.17	-0.14	0.41	0.62	1.10	-0.01
331	-----	-----	-----	-----	-----	-----
333	-2.32	-1.29	-1.55	-1.47	-1.13	-0.72
334	-1.23	-1.78	-2.01	-1.52	-1.16	-1.39
335	-----	-----	-----	-----	-----	-----
336	-----	-----	-----	-----	-----	-----
337	0.67	0.95	0.79	0.23	-0.36	-1.27
338	-0.23	-1.29	-0.43	-0.81	-1.07	-1.35
342	0.48	-0.81	-0.71	-0.15	-0.49	-3.24
343	0.70	1.93	-1.08	-0.81	-1.58	-0.72
345	0.73	0.41	-0.24	-0.54	-0.49	-0.40
351	0.30	-1.47	0.32	1.22	1.81	0.58
353	0.17	1.14	0.41	0.34	0.11	1.29
357	-0.60	-1.60	0.04	-0.15	-0.17	-0.01
360	-1.26	-0.93	-0.33	0.29	0.18	-0.80
369	0.24	-0.62	-0.71	0.34	0.08	-0.52
370	0.05	-1.05	0.23	1.11	1.30	0.35
371	-0.20	-0.56	1.16	1.44	0.53	0.39
372	-1.54	0.29	-0.05	-0.43	-0.52	-0.76
381	-1.13	-1.05	-0.15	-0.21	-0.72	-0.80
391	0.64	0.47	1.07	0.23	-0.08	0.15
398	0.83	1.62	1.44	0.62	-0.17	0.51
399	0.42	1.50	-0.05	0.12	-0.17	-0.09
403	0.27	1.14	0.13	0.45	0.05	0.74
404	0.14	0.53	0.13	-0.04	-0.05	0.19
420	0.11	1.76	1.45	1.38	0.86	0.82
431	-----	-----	-----	-----	-----	-----
432	-----	-----	-----	-----	-----	-----
440	0.83	-0.26	0.69	0.18	-0.11	-2.85
444	-1.38	-0.44	-0.89	-0.65	-0.56	-0.01
445	-2.25	-0.62	-1.08	-0.59	-0.08	-0.99
447	0.70	1.26	0.32	0.45	0.50	1.02
485	-0.92	0.26	0.41	0.18	0.07	-0.46
498	-----	-----	-----	-----	-----	-----
541	-0.04	0.35	0.23	0.34	0.58	0.03
631	-0.04	-1.23	0.88	0.67	0.43	1.22
663	-0.53	-0.05	0.27	-0.40	-0.40	-0.07
671	0.86	1.08	0.13	-1.36	-1.16	-0.72
704	0.73	0.59	-0.05	-0.97	-1.32	-0.76
751	0.42	-0.02	1.81	2.32	1.71	1.81
752	-0.51	0.59	1.35	1.22	0.91	0.82
759	-0.51	-0.93	-0.05	0.12	0.11	0.23
778	-----	-----	-----	-----	-----	-----
779	-0.20	-0.32	1.35	1.22	0.75	2.00
781	0.08	0.65	0.41	0.45	0.53	0.51
782	-0.36	-0.02	-0.05	0.12	0.11	1.22
785	-0.39	0.04	0.41	0.51	0.72	0.35
823	0.52	1.02	-0.24	-0.48	-0.68	0.47
824	-0.20	-1.60	-0.71	-0.70	-0.65	-1.23
846	-----	-----	-----	-----	-----	-----
872	-----	-----	-----	-----	-----	-----
873	-0.20	-0.32	-0.05	0.67	0.75	0.62
874	-0.04	-0.32	1.35	0.95	0.27	0.62
875	0.30	1.38	0.23	0.23	0.47	0.15
902	-1.35	-2.20	-1.45	-1.36	-1.07	-0.99
913	-----	-----	-----	-----	-----	-----
914	-0.17	1.26	0.04	-0.04	0.15	-0.20
962	-----	-----	-----	-----	-----	-----
963	-----	-----	-----	-----	-----	-----
971	-0.39	-0.38	-0.24	0.29	0.72	-0.09
974	-0.64	-0.93	0.32	0.62	0.47	0.03
995	-0.04	0.59	0.41	0.40	1.55	0.23

lab	IBP	10%rec	50%rec	90%rec	95%rec	FBP
997	-0.20	0.89	-0.99	0.40	0.59	-0.16
998	0.11	0.89	-0.05	0.40	1.71	0.03
1006	-0.26	0.89	0.51	-0.10	-0.08	-0.09
1026	0.80	-0.20	-0.89	-0.76	-0.52	0.27
1059	0.92	0.47	0.41	0.29	0.37	0.31
1080	-----	-----	-----	-----	-----	-----
1091	0.86	1.02	-0.33	-1.41	-1.29	-1.35
1095	0.24	1.32	0.51	-0.26	-0.33	0.31
1097	-1.07	-0.99	0.32	0.40	0.05	-0.56
1099	-0.76	0.17	-0.15	-0.43	-0.52	-0.76
1108	-0.70	0.53	-0.15	-0.15	0.11	-0.36
1109	-0.29	-0.14	0.32	-0.26	-0.17	0.23
1121	0.83	-0.87	-0.52	-0.21	-0.11	0.62
1126	0.27	3.14	1.44	0.67	0.15	-0.99
1146	0.05	-0.32	0.97	0.62	-0.14	1.18
1150	-0.79	-0.62	0.04	-0.07	-0.25	-0.66
1167	-1.72	0.10	-0.61	0.62	0.37	0.90
1201	-0.11	-0.75	-0.05	0.12	0.37	0.51
1205	1.17	1.14	0.60	0.29	0.15	0.39
1212	0.11	-0.44	0.04	-0.21	-0.17	0.66
1254	-0.23	-0.75	0.79	0.51	0.59	0.43
1275	-1.13	-1.35	-0.61	0.01	0.31	-0.40
1286	-----	-----	-----	-----	-----	-----
1299	1.01	0.04	0.04	-0.04	-0.21	-0.05
1318	0.20	-0.93	-0.05	0.34	-0.14	0.15
1356	-----	-----	-----	-----	-----	-----
1367	1.42	0.89	-0.24	-1.14	-1.26	-0.09
1397	0.80	0.04	0.23	0.07	-0.05	0.19
1430	-4.68	-7.73	-4.25	-2.07	-1.58	-3.20
1438	-1.04	-0.81	-1.64	-1.36	-1.10	-2.57
1457	-0.57	-1.35	-0.71	-0.48	-0.40	-0.36
1459	-0.70	-0.20	-0.24	-0.43	-0.30	-0.56
1498	-0.11	0.10	1.07	1.11	1.55	0.94
1528	0.73	0.47	0.23	0.18	0.43	0.07
1556	-0.01	-0.02	0.41	0.40	0.18	0.19
1569	2.76	3.93	0.88	1.77	1.07	2.40
1586	-0.67	-1.11	-0.43	-0.76	-0.78	-1.27
1613	-0.73	-0.20	-0.61	-0.37	-0.40	0.27
1634	-0.20	0.59	0.79	0.34	0.18	1.10
1635	-0.82	1.14	-0.24	-0.10	-0.36	0.43
1656	-----	0.23	-1.27	0.40	0.40	0.11
1676	-0.04	0.24	-0.38	-0.13	-0.21	0.06
1681	0.64	0.47	0.04	-0.15	-0.17	-0.16
1720	0.83	-0.50	0.32	-0.10	-0.46	-0.09
1724	0.42	0.47	-0.52	-0.59	-0.62	-0.32
1730	-----	-----	-----	-----	-----	-----
1740	0.08	-0.08	-0.05	-0.37	-0.14	-0.01
1741	-1.48	-0.02	-0.05	-0.21	-0.24	0.15
1742	1.36	0.83	0.69	0.62	0.40	0.82
1743	-0.95	-0.81	-0.33	0.51	0.94	-0.28
1746	-1.29	-1.54	0.41	0.12	-0.21	0.03
1776	-1.51	-0.99	-0.99	-0.26	0.21	-0.13
1796	0.27	-1.23	0.88	-0.70	1.87	-1.15
1807	-0.20	-2.63	-1.55	-0.70	-0.59	-0.24
1833	0.42	-0.14	-0.52	-0.43	-0.46	0.11
1849	0.24	0.89	0.13	0.01	0.02	0.58
1854	0.08	0.29	0.97	0.95	0.98	0.55
1857	1.29	1.26	0.23	0.40	0.31	0.82
1858	-0.04	-1.54	-0.05	-0.15	0.11	-0.36
1862	-0.20	-0.44	-0.15	0.45	0.53	0.43
1941	-1.13	-0.69	0.23	0.62	0.18	0.70
1950	0.42	0.89	0.88	0.40	0.59	0.82
1953	0.11	-5.48	-51.76	0.34	0.50	0.23
1961	-----	-----	-----	-----	-----	-----
1976	0.83	1.93	0.04	-0.48	-0.91	0.47
1984	0.10	-0.53	0.27	0.18	0.27	0.57
1986	0.42	0.59	-0.05	-0.97	-1.16	-0.76
1995	0.27	-1.54	0.88	0.95	0.27	-2.53
2129	1.08	1.44	0.60	-0.10	-0.49	0.90
2130	-0.92	-0.44	-0.24	-0.26	-0.14	-0.24
2146	-0.57	1.81	2.47	2.49	2.44	0.98
6005	0.76	1.56	-0.24	-0.21	-0.11	0.43
6012	1.17	-1.90	-1.45	-0.15	-1.00	-0.16
6018	0.83	1.99	1.16	0.18	0.08	0.70
6046	1.48	-4.21	-3.04	-1.63	-1.23	-0.80
6057	1.98	2.59	0.23	-0.54	-0.75	-0.52
6075	0.64	-2.51	-0.61	0.07	0.08	-0.16
6142	-1.97	-1.38	-0.94	-0.32	-0.16	0.41

lab	IBP	10%rec	50%rec	90%rec	95%rec	FBP
6143	-0.36	-6.58	-5.00	-1.80	-0.84	-1.78
6170	-0.04	-1.54	-0.05	0.12	-0.21	0.43
6192	-0.11	0.29	1.25	1.00	0.91	0.58
6201	-0.51	0.41	-0.52	0.01	-0.05	0.15
6203	0.58	0.35	0.13	0.01	0.05	-0.05
6220	-0.39	-0.08	-1.92	-1.36	-1.16	0.55
6238	0.95	1.81	1.07	0.89	0.88	0.78
6242	0.67	1.50	0.88	0.45	-0.11	0.82
6262	-0.04	-0.44	0.23	-0.54	-0.52	0.07
6291	-0.48	0.04	0.23	0.51	0.53	0.62
6298	-0.51	-0.26	-0.89	-0.32	-0.01	-0.09
6299	-0.54	0.23	1.44	0.12	0.02	-0.80
6308	1.01	0.59	-2.48	-1.25	-0.81	-1.98
6316	0.11	-2.69	-0.80	-1.19	-1.20	-1.39
6321	0.83	-0.38	-0.05	-0.04	-0.05	0.11
9057	-----	-----	-----	-----	-----	-----

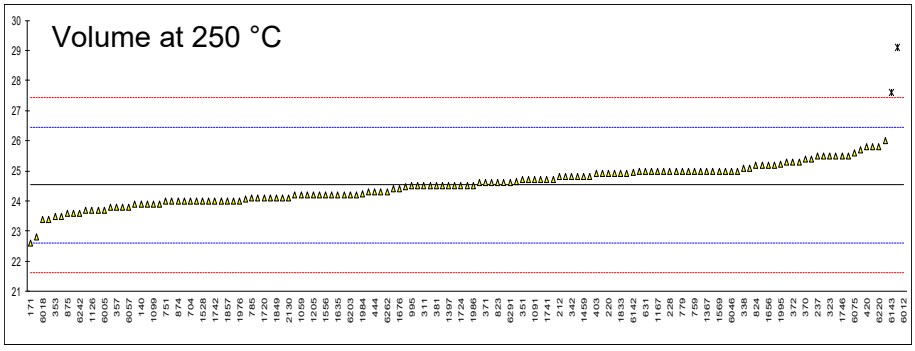
Determination of Distillation on sample #20005; result in %V/V

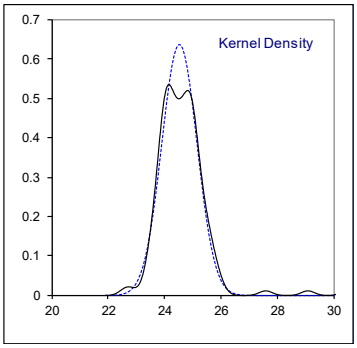
lab	method	Vol.250°C	mark	z(targ)	Vol.350°C	mark	z(targ)
120		-----		-----	-----		-----
140		23.9		-0.65	92.9		-1.17
171	D86-automated	22.6		-2.00	93.2		-0.85
212	ISO3405-automated	24.8		0.28	94.2		0.18
218		-----		-----	-----		-----
220	ISO3405-automated	24.9		0.39	94.7		0.70
225	D86-manual	25.5		1.01	94.5		0.49
228	D86-manual	25.0		0.49	95.5	C	1.53
237	D86-manual	25.5		1.01	95.5		1.53
238		-----		-----	-----		-----
273		-----		-----	-----		-----
311	D86-automated	24.5		-0.03	94.2		0.18
312	ISO3405-automated	23.8		-0.75	94.4		0.39
317	ISO3405-automated	24.1		-0.44	93.9		-0.13
323	ISO3405-automated	25.5		1.01	94.3		0.29
331		-----		-----	-----		-----
333		-----		-----	-----		-----
334	D86-automated	25.7		1.22	95.0		1.01
335		-----		-----	-----		-----
336		-----		-----	-----		-----
337	ISO3405-automated	23.9		-0.65	94.2		0.18
338	ISO3405-automated	25.1		0.59	94.8	C	0.80
342	D86-automated	24.8		0.28	94.1		0.08
343	ISO3405-automated	23.7		-0.86	95.5		1.53
345	ISO3405-automated	24		-0.55	94		-0.02
351	ISO3405-automated	24.7		0.18	93.0		-1.06
353	IP123-automated	23.5		-1.07	93.7		-0.34
357	D86-automated	23.8		-0.75	94.3		0.29
360	D86-automated	25.0		0.49	93.9		-0.13
369	ISO3405-automated	25.3		0.80	93.5		-0.54
370	ISO3405-automated	25.4		0.90	93.0		-1.06
371		24.6		0.07	93.0		-1.06
372	ISO3405-automated	25.3		0.80	95.1		1.12
381	ISO3405-automated	24.5		-0.03	94.9		0.91
391	D86-automated	24.0		-0.55	94.1		0.08
398		23.5		-1.07	94.1		0.08
399	D86-automated	23.9		-0.65	94.2		0.18
403	ISO3405-automated	24.9		0.39	93.6		-0.44
404	D86-automated	24.2		-0.34	94.0		-0.02
420	ISO3924	25.79		1.31	92.71		-1.36
431		-----		-----	-----		-----
432		-----		-----	-----		-----
440	D86-automated	24.3		-0.24	93.9		-0.13
444	D86-automated	24.3		-0.24	94.5		0.49
445	IP123-automated	24.6		0.07	94.1		0.08
447	IP123-automated	24.2		-0.34	93.6		-0.44
485		24.40		-0.13	93.90		-0.13
498		-----		-----	-----		-----
541	ISO3405-automated	24.70		0.18	93.20		-0.85
631	D86-manual	25		0.49	94.5		0.49
663	D86-automated	24.05		-0.50	94.30		0.29
671		-----		-----	-----		-----
704	ISO3405-manual	24.0		-0.55	95.0		1.01
751	D86-manual	24.0		-0.55	92.5		-1.58
752	ISO3405-manual	25.0		0.49	93.5		-0.54
759	ISO3405-manual	25.0		0.49	94.0		-0.02
778		-----		-----	-----		-----
779	ISO3405-manual	25.0		0.49	94.0		-0.02
781	ISO3405-automated	24.3		-0.24	93.9		-0.13
782	ISO3405-manual	25.0		0.49	94.0		-0.02
785	ISO3405-automated	24.1		-0.44	93.5		-0.54
823	D86-automated	24.6		0.07	94.4		0.39
824	D86-automated	25.2		0.70	94.5		0.49
846		-----		-----	-----		-----
872		-----		-----	-----		-----
873	D86-manual	24.5		-0.03	94.0		-0.02
874	ISO3405-manual	24.0		-0.55	93.5		-0.54
875	D86-automated	23.6		-0.96	93.7		-0.34
902	D86-automated	25.5		1.01	94.9		0.91
913		-----		-----	-----		-----
914	D86-automated	24.0		-0.55	93.8		-0.23
962		-----		-----	-----		-----
963		-----		-----	-----		-----
971	ISO3405-automated	24.8		0.28	93.6		-0.44
974	D86-automated	24.82		0.30	93.50		-0.54

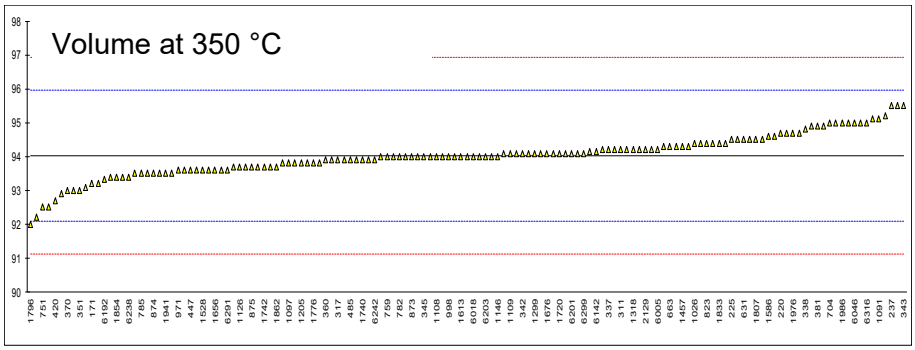
lab	method	Vol.250°C	mark	z(targ)	Vol.350°C	mark	z(targ)
995	ISO3405-manual	24.5		-0.03	94.0		-0.02
997	ISO3405-manual	25.0		0.49	94.0		-0.02
998	D86-manual	25		0.49	94		-0.02
1006		-----		-----	-----		-----
1026	ISO3405-automated	24.6		0.07	94.4		0.39
1059	ISO3405-automated	24.2		-0.34	93.7		-0.34
1080		-----		-----	-----		-----
1091	D86-automated	24.7		0.18	95.1		1.12
1095		-----		-----	-----		-----
1097	ISO3405-automated	24.9		0.39	93.8		-0.23
1099	ISO3405-automated	23.9		-0.65	94.0		-0.02
1108	D86-automated	24.9		0.39	94.0		-0.02
1109	D86-automated	24.5		-0.03	94.1		0.08
1121	ISO3405-automated	25.3		0.80	94.0		-0.02
1126		23.7		-0.86	93.7		-0.34
1146	D86-automated	24.46		-0.07	94.01		-0.01
1150	ISO3405-automated	24.65		0.13	94.15		0.13
1167	ISO3405-automated	25.0		0.49	93.8		-0.23
1201		24.5		-0.03	93.7		-0.34
1205	D86-automated	24.2		-0.34	93.8		-0.23
1212	ISO3405-automated	24.7		0.18	94.2		0.18
1254	ISO3405-automated	24.2		-0.34	93.6		-0.44
1275	IP123-automated	25.0		0.49	93.8		-0.23
1286		-----		-----	-----		-----
1299	D86-automated	24.8		0.28	94.1		0.08
1318	D86-automated	25.2		0.70	94.2		0.18
1356		-----		-----	-----		-----
1367	ISO3405-automated	25.0		0.49	95.2	C	1.22
1397	ISO3405-automated	24.5		-0.03	94.1		0.08
1430		-----		-----	-----		-----
1438	D86-automated	25.8		1.32	94.9		0.91
1457	ISO3405-automated	25.1		0.59	94.3		0.29
1459	ISO3405-automated	24.8		0.28	94.3		0.29
1498	D86-automated	25		0.49	94		-0.02
1528	D86-automated	24		-0.55	93.6		-0.44
1556	ISO3405-automated	24.2		-0.34	93.9		-0.13
1569	ISO3924	25		0.49	92.5		-1.58
1586	D86-automated	24.5		-0.03	94.6		0.60
1613	D86-automated	24		-0.55	94		-0.02
1634	ISO3405-automated	24.2		-0.34	93.6		-0.44
1635	ISO3405-automated	24.2		-0.34	94.2		0.18
1656	D86-automated	25.2		0.70	93.6		-0.44
1676	ISO3405-automated	24.4		-0.13	94.1		0.08
1681	ISO3405-automated	24.2		-0.34	94.1		0.08
1720	D86-automated	24.1		-0.44	94.1		0.08
1724	D86-automated	24.5		-0.03	94.4		0.39
1730		-----		-----	-----		-----
1740	ISO3405-automated	23.8		-0.75	93.9		-0.13
1741		24.7		0.18	94.7		0.70
1742	ISO3405-automated	24.0		-0.55	93.7		-0.34
1743	ISO3405-automated	24.6		0.07	93.4		-0.65
1746	D86-manual	25.5		1.01	94.0		-0.02
1776	ISO3405-automated	24.1		-0.44	93.8		-0.23
1796	D86-manual	24.0		-0.55	92.0		-2.10
1807	ISO3405-automated	25.5		1.01	94.5		0.49
1833	ISO3405-automated	24.9		0.39	94.4		0.39
1849	ISO3405-automated	24.1		-0.44	94.1		0.08
1854	ISO3405-automated	23.6		-0.96	93.4		-0.65
1857	ISO3405-automated	24.0		-0.55	93.7		-0.34
1858	D86-manual	25.0		0.49	94.5		0.49
1862	ISO3405-automated	24.5		-0.03	93.7		-0.34
1941	ISO3405-automated	24.1		-0.44	93.5		-0.54
1950	ISO3405-manual	24.0		-0.55	93.5		-0.54
1953		29.1	R(0.01)	4.74	93.6		-0.44
1961		-----		-----	-----		-----
1976	ISO3405-automated	24		-0.55	94.7		0.70
1984	ISO3405-automated	24.25		-0.29	93.8		-0.23
1986	ISO3405-manual	24.5		-0.03	95.0		1.01
1995	D86-automated	25.238		0.74	93.400		-0.65
2129	ISO3405-automated	23.7		-0.86	94.2		0.18
2130	D86-automated	24.1		-0.44	94.2		0.18
2146		22.8		-1.79	92.2		-1.89
6005	ISO3405-automated	23.7		-0.86	94.2		0.18
6012	D86-manual	30.5	C,R(0.01)	6.19	95.0		1.01
6018	ISO3405-automated	23.4		-1.17	94.0		-0.02
6046	ISO3405-manual	25.0		0.49	95.0		1.01
6057	ISO3405-automated	23.8		-0.75	94.6		0.60
6075	ISO3405-automated	25.6		1.11	93.9		-0.13

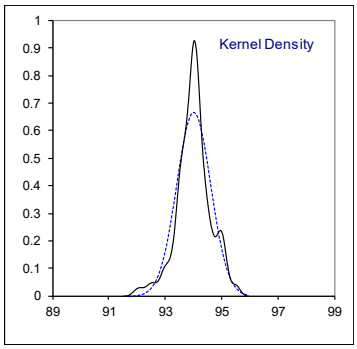
lab	method	Vol.250°C	mark	z(targ)	Vol.350°C	mark	z(targ)
6142	ISO3405-automated	24.95		0.44	94.15		0.13
6143	D86-automated	27.6	R(0.01)	3.19	94.4		0.39
6170	ISO3405-manual	25.0		0.49	94.0		-0.02
6192	D86-automated	23.88		-0.67	93.32		-0.73
6201	D86-automated	24.9		0.39	94.1		0.08
6203	ISO3405-automated	24.2		-0.34	94.0		-0.02
6220	D86-automated	25.8		1.32	95		1.01
6238	D86-automated	23.4		-1.17	93.4		-0.65
6242	D86-automated	23.6		-0.96	93.9		-0.13
6262		24.3		-0.24	93.1		-0.96
6291	D86-automated	24.6		0.07	93.6		-0.44
6298	D86-automated	25.2		0.70	94.1		0.08
6299	ISO3405-automated	24.2	C	-0.34	94.1		0.08
6308	ISO3405-automated	26.0		1.53	94.7		0.70
6316		25.4		0.90	95.0		1.01
6321	IP123-automated	24.7		0.18	94.0		-0.02
9057		-----		-----	-----		-----
	normality	OK			suspect		
	n	140			143		
	outliers	3			0		
	mean (n)	24.53			94.02		
	st.dev. (n)	0.626			0.609		
	R(calc.)	1.75			1.71		
	st.dev.(ISO3405-A:19)	0.964			0.964		
	R(ISO3405-A:19)	2.70			2.70		
	compare						
	R(ISO3405-M:19)	2.40			2.14		

Lab 228 first reported 96.5
Lab 338 first reported 54.8
Lab 1367 first reported 362.7
Lab 6012 first reported 27.0
Lab 6299 first reported 29.2









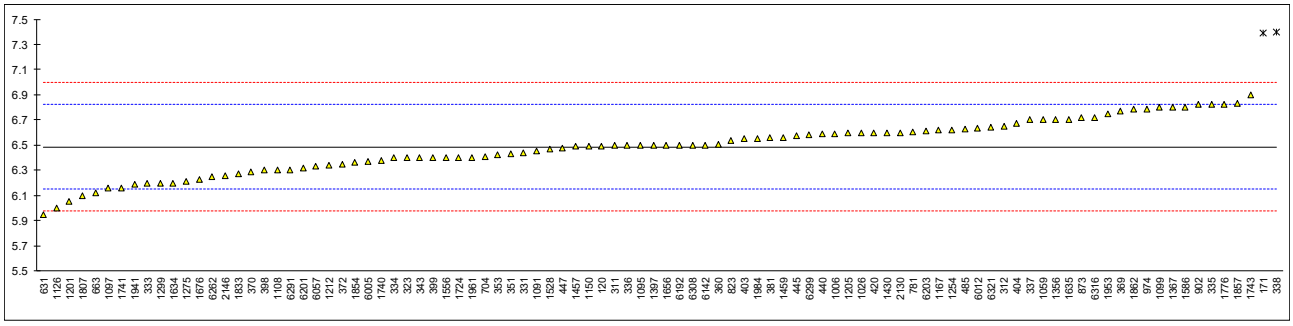
Determination of FAME content on sample #20005; result in %V/V

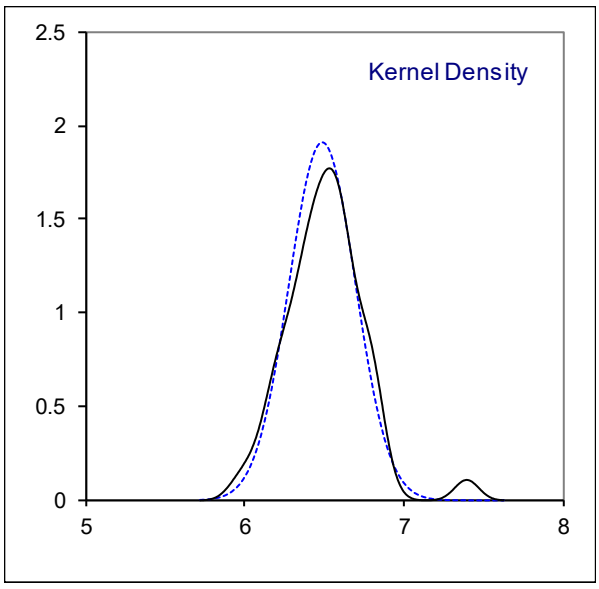
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D7371	6.495		0.05	971		-----		-----
140		-----		-----	974	EN14078-B	6.786	C	1.77
171	D7371	7.39	R(0.01)	5.34	995		-----		-----
212		-----		-----	997		-----		-----
218		-----		-----	998		-----		-----
220		-----		-----	1006	EN14078-B	6.59		0.61
225		-----		-----	1026	EN14078-B	6.6		0.67
228		-----		-----	1059	EN14078-B	6.7		1.26
237		-----		-----	1080		-----		-----
238		-----		-----	1091	EN14078-B	6.45		-0.22
273		-----		-----	1095	EN14078-B	6.5		0.08
311	EN14078-A	6.5		0.08	1097	EN14078-B	6.16		-1.93
312	EN14078-B	6.65		0.97	1099	EN14078-B	6.8		1.85
317		-----		-----	1108	EN14078-B	6.3		-1.11
323	EN14078-A	6.4		-0.51	1109		-----		-----
331	EN14078-B	6.44		-0.28	1121		-----		-----
333	EN14078-B	6.2		-1.70	1126	In house	6.0		-2.88
334	EN14078-B	6.4		-0.51	1146		-----		-----
335	EN14078-A	6.82		1.97	1150	EN14078-A	6.4926		0.03
336	EN14078-B	6.5		0.08	1167	EN14078-A	6.618		0.78
337	EN14078-B	6.7		1.26	1201	EN14078-B	6.05		-2.59
338	EN14078-B	7.4	R(0.01)	5.40	1205	EN14078-A	6.5951		0.64
342		-----		-----	1212	EN14078-A	6.34		-0.87
343	EN14078-B	6.4		-0.51	1254	EN14078-B	6.62		0.79
345		-----		-----	1275	EN14078-B	6.21		-1.64
351	EN14078-B	6.43		-0.34	1286		-----		-----
353	EN14078-B	6.424	C	-0.37	1299	EN14078-B	6.2		-1.70
357		-----		-----	1318		-----		-----
360	EN14078-B	6.51		0.14	1356	D7371	6.7		1.26
369	EN14078-B	6.77		1.68	1367	EN14078-B	6.8		1.85
370	EN14078-B	6.29		-1.17	1397	EN14078-A	6.5		0.08
371		-----		-----	1430		6.6		0.67
372	EN14078-B	6.35		-0.81	1438		-----		-----
381	EN14078-B	6.56		0.43	1457	EN14078-B	6.49		0.02
391		-----		-----	1459	EN14078-B	6.56		0.43
398	EN14078-B	6.3		-1.11	1498		-----		-----
399	EN14078-B	6.4		-0.51	1528	EN14078-B	6.47		-0.10
403	EN14078-B	6.55		0.37	1556	EN14078-A	6.40		-0.51
404	EN14078-B	6.67		1.08	1569		-----		-----
420	EN14078-A	6.6		0.67	1586	EN14078-B	6.8		1.85
431		-----		-----	1613		-----		-----
432		-----		-----	1634	EN14078-B	6.2		-1.70
440	EN14078-A	6.589		0.60	1635	EN14078-B	6.7		1.26
444		-----		-----	1656	EN14078-A	6.5		0.08
445	EN14078-B	6.578		0.54	1676	EN14078-B	6.225		-1.55
447	EN14078-B	6.479		-0.05	1681		-----		-----
485	EN14078-A	6.63		0.85	1720		-----		-----
498		-----		-----	1724	EN14078-A	6.4		-0.51
541		-----		-----	1730		-----		-----
631	EN14078-A/mod	5.947		-3.20	1740	EN14078-B	6.38		-0.63
663	EN14078-B	6.12		-2.17	1741	EN14078-B	6.16		-1.93
671		-----		-----	1742		-----		-----
704	EN14078-B	6.41		-0.45	1743	EN14078-B	6.9		2.45
751		-----		-----	1746		-----		-----
752		-----		-----	1776	EN14078-A	6.82		1.97
759		-----		-----	1796		-----		-----
778		-----		-----	1807	EN14078-B	6.1	C	-2.29
779		-----		-----	1833	EN14078-B	6.27		-1.28
781	EN14078-B	6.605		0.70	1849		-----		-----
782		-----		-----	1854	EN14078-A	6.36		-0.75
785		-----		-----	1857	EN14078-B	6.83		2.03
823	EN14078-A	6.54		0.31	1858		-----		-----
824		-----		-----	1862	EN14078-B	6.785		1.76
846		-----		-----	1941	EN14078-B	6.19		-1.76
872		-----		-----	1950		-----		-----
873	EN14078-A	6.72		1.38	1953		6.75		1.56
874		-----		-----	1961	EN14078-B	6.4		-0.51
875		-----		-----	1976		-----		-----
902	EN14078-B	6.82		1.97	1984	EN14078-B	6.55		0.37
913		-----		-----	1986		-----		-----
914		-----		-----	1995		-----		-----
962		-----		-----	2129		-----		-----
963		-----		-----	2130	EN14078-A	6.60		0.67

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146	In house	6.26		-1.34	6203	EN14078-B	6.61		0.73
6005	EN14078-B	6.3701		-0.69	6220		-----		-----
6012	EN14078-A	6.636		0.88	6238		-----		-----
6018		-----		-----	6242		-----		-----
6046		-----		-----	6262	EN14078-B	6.25		-1.40
6057	EN14078-A	6.33		-0.93	6291	EN14078-B	6.3		-1.11
6075		-----		-----	6298		-----		-----
6142	EN14078-A	6.50095		0.08	6299	EN14078-B	6.58		0.55
6143		-----		-----	6308	EN14078-B	6.5		0.08
6170		-----		-----	6316	EN14078-B	6.72		1.38
6192	D7371	6.5		0.08	6321	D8274	6.64		0.91
6201	EN14078-A	6.32		-0.99	9057		-----		-----

			EN14078-B only	EN14078-A only
	normality	OK	OK	OK
	n	94	62	24
	outliers	2	1	0
	mean (n)	6.487	6.478	6.534
	st.dev. (n)	0.2086	0.2147	0.1415
	R(calc.)	0.584	0.601	0.396
	st.dev.(EN14078-B:14)	0.1690	0.1687	-----
	R(EN14078-B:14)	0.473	0.472	-----
	compare	range:3-20% V/V		
	R(EN14078-A:14)	0.347	-----	0.349

Lab 353 first reported 4.33
Lab 974 first reported 5.742
Lab 1807 first reported 5.7



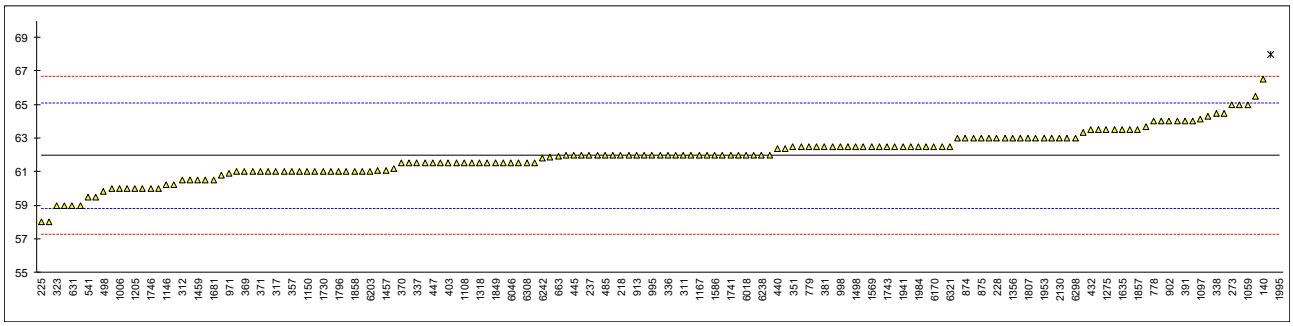


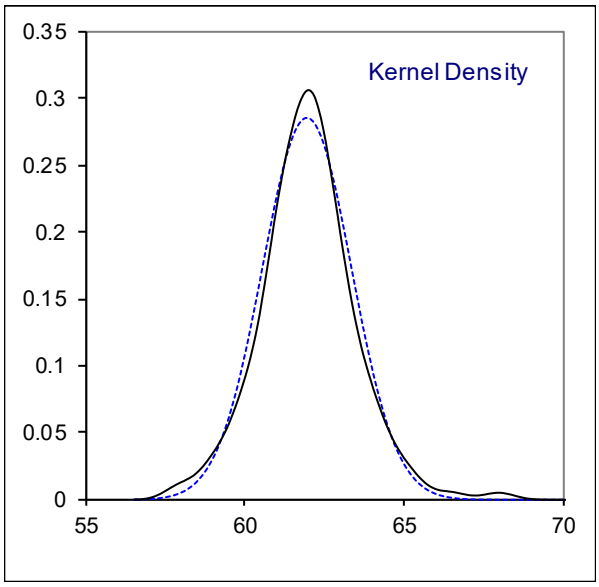
Determination of Flash Point PMcc on sample #20005; result in °C

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D93-A	61.1		-0.55	971	ISO2719-A	60.9		-0.68
140	ISO2719-A	66.5		2.89	974	D93-A	61.0		-0.61
171	D93-A	61.0		-0.61	995	ISO2719-A	62.0		0.02
212	ISO2719-A	63.5		0.98	997	ISO2719-A	61.0		-0.61
218	ISO2719-A	62.0		0.02	998	D93-A	62.5		0.34
220	ISO2719-A	61.85		-0.07	1006	D93-A	60.0		-1.25
225	D93-A	58.0		-2.52	1026	ISO2719-A	61.5		-0.30
228	D93-A	63.0		0.66	1059	ISO2719-A	65.0		1.93
237	D93-A	62.0		0.02	1080		-----		-----
238	D93	61.5		-0.30	1091	D93-A	62.0		0.02
273	D93-A	65.0		1.93	1095	ISO2719-A	64.0		1.29
311	D93-A	62.0		0.02	1097	ISO2719-A	64.15		1.39
312	ISO2719-A	60.5		-0.93	1099	ISO2719-A	62.0		0.02
317	ISO2719-A	61.0		-0.61	1108	D93-A	61.5		-0.30
323	ISO2719-A	59.0		-1.89	1109	D93-A	61.0		-0.61
331	D93-A	64.3		1.49	1121	ISO2719-A	60.0		-1.25
333	ISO2719-A	62.0		0.02	1126	ISO2719-A	63		0.66
334	D93-A	61.0		-0.61	1146	D93-A	60.2		-1.12
335	ISO2719-A	63.0		0.66	1150	ISO2719-A	61.0		-0.61
336	ISO2719-A	62.0		0.02	1167	ISO2719-A	62.0		0.02
337	ISO2719-A	61.5		-0.30	1201	ISO2719-A	59.0		-1.89
338	ISO2719-A	64.5		1.61	1205	D93-A	60.0		-1.25
342	ISO2719-A	62		0.02	1212	ISO2719-A	61.5		-0.30
343	ISO2719-A	64.5		1.61	1254	ISO2719-A	60.8		-0.74
345	ISO2719-B	63.7		1.10	1275	IP34-A	63.5		0.98
351	ISO2719-A	62.50		0.34	1286		-----		-----
353	IP34-A	63.35		0.88	1299	D93-A	63.5		0.98
357	D93-A	61.0		-0.61	1318	D93-A	61.5		-0.30
360	D93-A	65.0		1.93	1356	ISO2719-A	63		0.66
369	ISO2719-A	61.0		-0.61	1367	D93-A	61.0		-0.61
370	ISO2719-A	61.5		-0.30	1397	ISO2719-A	62		0.02
371	ISO2719-A	61.0		-0.61	1430	D93-A	68.0	R(0.01)	3.84
372	ISO2719-A	62.0		0.02	1438	D93-A	60.0		-1.25
381	ISO2719-A	62.5		0.34	1457	ISO2719-A	61.1		-0.55
391	ISO2719-A	64.0		1.29	1459	ISO2719-A	60.5		-0.93
398	ISO2719-A	64		1.29	1498	D93-A	62.5		0.34
399	D93-A	63		0.66	1528	ISO2719-A	60.5		-0.93
403	ISO2719-A	61.5		-0.30	1556	ISO2719-A	62.5		0.34
404	ISO2719-A	62.5		0.34	1569	ISO2719-A	62.5		0.34
420	ISO2719-A	60.5		-0.93	1586	D93-A	62.0		0.02
431		-----		-----	1613	D93-A	59.5		-1.57
432	ISO2719-A	63.5		0.98	1634	ISO2719-A	62.0		0.02
440	IP34-A	62.4		0.28	1635	ISO2719-A	63.5		0.98
444	D93-A	62.5		0.34	1656	D93-A	63.0		0.66
445	D93-A	62.0		0.02	1676		-----		-----
447	IP34-A	61.5		-0.30	1681	ISO2719-A	60.5		-0.93
485	ISO2719-A	62.0		0.02	1720	D93-A	65.5		2.25
498	ISO2719-B	59.8		-1.38	1724	D93-A	62.5		0.34
541	ISO2719-A	59.50		-1.57	1730	ISO2719-A	61.0		-0.61
631	D93-A	59.0		-1.89	1740	ISO2719-A	61.0		-0.61
663	D93-A	61.95		-0.01	1741	ISO2719-A	62		0.02
671	D93-A	60		-1.25	1742	ISO2719-A	61.5		-0.30
704	ISO2719-A	59.0		-1.89	1743	ISO2719-A	62.5		0.34
751	D93-A	61.5		-0.30	1746	D93-A	60.0		-1.25
752	D93-A	61.5		-0.30	1776	ISO2719-A	63.5		0.98
759	ISO2719-A	62.0		0.02	1796	D93-A	61.0		-0.61
778	ISO2719-A	64.0		1.29	1807	D93-A	63		0.66
779	ISO2719-A	62.5		0.34	1833	ISO2719-A	63.0		0.66
781	ISO2719-A	62.5		0.34	1849	ISO2719-A	61.5		-0.30
782	D93-A	62.4		0.28	1854	ISO2719-A	61		-0.61
785	ISO2719-A	62.5		0.34	1857	ISO2719-A	63.5		0.98
823	ISO2719-A	62.0		0.02	1858	D93-A	61.0		-0.61
824	ISO2719-A	63.0		0.66	1862	ISO2719-A	62.5		0.34
846		-----		-----	1941	ISO2719-A	62.5		0.34
872		-----		-----	1950	ISO2719-A	62.5		0.34
873	D93-A	62.0		0.02	1953	ISO2719-A	63		0.66
874	ISO2719-A	63.0		0.66	1961		-----		-----
875	D93-A	63.0		0.66	1976	ISO2719-A	63.0		0.66
902	ISO2719-A	64.0		1.29	1984	ISO2719-A	62.5		0.34
913	D93-A	62		0.02	1986	ISO2719-A	61.0		-0.61
914	D93-A	62.0		0.02	1995	D93-A	93	R(0.01)	19.75
962		-----		-----	2129	ISO2719-A	61.5		-0.30
963		-----		-----	2130	D93-A	63.0		0.66

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146		-----		-----	6203	ISO2719-A	61.0		-0.61
6005	ISO2719-A	62.0		0.02	6220	D93-A	60		-1.25
6012	D93-A	60.2		-1.12	6238	D93-A	62.0		0.02
6018	ISO2719-A	62.0		0.02	6242	ISO2719-A	61.8		-0.11
6046	ISO2719-A	61.5		-0.30	6262	D93-A	62.0		0.02
6057	ISO2719-C	62.5		0.34	6291	D93-A	62.5		0.34
6075	ISO2719-A	63.0		0.66	6298	D93-A	63.0		0.66
6142	ISO2719-A	61.5		-0.30	6299	ISO2719-A	61.2		-0.49
6143	D93-C	58		-2.52	6308	ISO2719-A	61.5		-0.30
6170	ISO2719-A	62.5		0.34	6316	ISO2719-A	61.5		-0.30
6192	D93-A	64		1.29	6321	IP34-A	62.5		0.34
6201	D93-A	62.0		0.02	9057		-----		-----

normality	OK
n	157
outliers	2
mean (n)	61.966
st.dev. (n)	1.4013
R(calc.)	3.924
st.dev.(ISO2719-A:16)	1.5713
R(ISO2719-A:16)	4.400





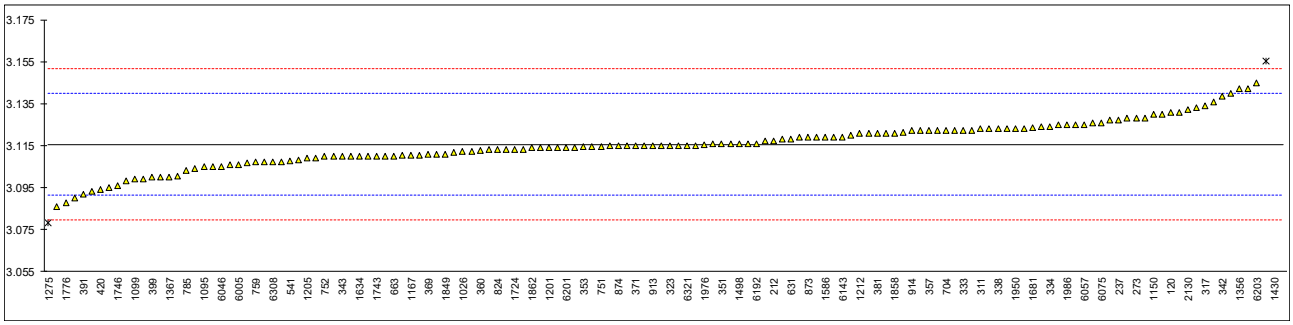
Determination of Kinematic Viscosity at 40°C on sample #20005; result in mm²/s

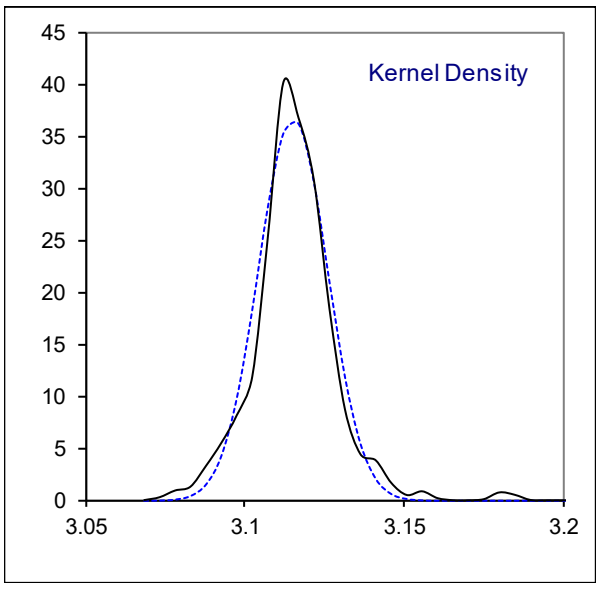
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D445	3.1308		1.27	971	ISO3104	3.098		-1.45
140	ISO3104	3.095		-1.70	974	D445	3.127		0.95
171	D445	3.116		0.04	995	ISO3104	3.122		0.54
212	ISO3104	3.117		0.12	997	ISO3104	3.140		2.03
218		-----		-----	998	D445	3.123		0.62
220		-----		-----	1006	D445	3.112		-0.29
225	D445	3.122		0.54	1026	ISO3104	3.112		-0.29
228	D445	3.115		-0.04	1059	ISO3104	3.100		-1.29
237	D445	3.12708		0.96	1080	ISO3104	3.1422		2.21
238		-----		-----	1091	D445	3.124		0.70
273	D445	3.128		1.03	1095	ISO3104	3.105		-0.87
311	D445	3.123		0.62	1097	ISO3104	3.1212		0.47
312	ISO3104	3.125		0.79	1099	ISO3104	3.099		-1.37
317	ISO3104	3.134		1.53	1108	D7042	3.123		0.62
323	ISO3104	3.115		-0.04	1109	D445	3.1150		-0.04
331		-----		-----	1121	ISO3104	3.110		-0.46
333	ISO3104	3.122		0.54	1126		-----		-----
334	ISO3104	3.124		0.70	1146	D445	3.1118		-0.31
335	ISO3104	3.111		-0.38	1150	ISO3104	3.1298		1.18
336	ISO3104	3.119		0.29	1167	ISO3104	3.1105		-0.42
337	ISO3104	3.121		0.45	1201	ISO3104	3.114		-0.13
338	ISO3104	3.123		0.62	1205	ISO3104	3.109		-0.54
342	ISO3104	3.1387		1.92	1212	EN16896	3.1209		0.45
343	ISO3104	3.110		-0.46	1254	ISO3104	3.1132		-0.19
345		-----		-----	1275	IP71	3.0783	R(0.01)	-3.09
351	ISO3104	3.116		0.04	1286		-----		-----
353	IP71	3.1143		-0.10	1299	D445	3.114		-0.13
357	ISO3104	3.122		0.54	1318	D7042	3.1106		-0.41
360	D445	3.1128		-0.23	1356	ISO3104	3.142		2.20
369	ISO3104	3.111		-0.38	1367	D7279	3.1		-1.29
370	ISO3104	3.1105		-0.42	1397		-----		-----
371	ISO3104	3.115		-0.04	1430	D445	3.182	R(0.01)	5.51
372	ISO3104	3.117		0.12	1438	D445	3.13		1.20
381	D445	3.121		0.45	1457	ISO3104	3.1142		-0.11
391	ISO3104	3.092		-1.95	1459	D7042	3.1149		-0.05
398	ISO3104	3.105		-0.87	1498	D445	3.116		0.04
399	D445	3.100		-1.29	1528	D445	3.1260		0.87
403	ISO3104	3.128		1.03	1556	ISO3104	3.113		-0.21
404	ISO3104	3.133		1.45	1569	ISO3104	3.119		0.29
420	ISO3104	3.094		-1.79	1586	D445	3.119		0.29
431		-----		-----	1613	D445	3.128		1.03
432	D445	3.118		0.20	1634	ISO3104	3.110		-0.46
440	D445	3.11		-0.46	1635	ISO3104	3.136		1.70
444		-----		-----	1656	D445	3.121		0.45
445	IP71	3.1073		-0.68	1676		-----		-----
447	D445	3.122		0.54	1681	ISO3104	3.1235		0.66
485		-----		-----	1720	D7042	3.108		-0.63
498		-----		-----	1724	D445	3.113		-0.21
541	ISO3104	3.1077		-0.65	1730		-----		-----
631	D445	3.1181		0.21	1740	ISO3104	3.110		-0.46
663	D445	3.1101		-0.45	1741	ISO3104	3.109	C	-0.54
671		3.09		-2.12	1742	ISO3104	3.122		0.54
704	ISO3104	3.122		0.54	1743	D7279	3.11		-0.46
751	D445	3.1145		-0.09	1746	D445	3.096		-1.62
752	D445	3.110		-0.46	1776	ISO3104	3.0878		-2.30
759	ISO3104	3.107		-0.71	1796	D445	3.086		-2.45
778	ISO3104	3.113		-0.21	1807	ISO3104	3.099		-1.37
779	ISO3104	3.115		-0.04	1833	ISO3104	3.110		-0.46
781	ISO3104	3.115		-0.04	1849	ISO3104	3.111		-0.38
782		-----		-----	1854	ISO3104	3.119		0.29
785	ISO3104	3.103		-1.04	1857	ISO3104	3.1066		-0.74
823	ISO3104	3.104		-0.96	1858	D445	3.121		0.45
824	ISO3104	3.113		-0.21	1862	ISO3104	3.1138		-0.14
846		-----		-----	1941	ISO3104	3.107	C	-0.71
872		-----		-----	1950	ISO3104	3.123		0.62
873	D445	3.119		0.29	1953		-----		-----
874	D445	3.115		-0.04	1961		-----		-----
875	D445	3.106		-0.79	1976	ISO3104	3.1152		-0.03
902	ISO3104	3.116		0.04	1984	ISO3104	3.093		-1.87
913	D445	3.115	C	-0.04	1986	ISO3104	3.125		0.79
914	D445	3.122	C	0.54	1995	D7042	3.123		0.62
962		-----		-----	2129	ISO3104	3.116		0.04
963		-----		-----	2130	D445	3.132		1.37

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146		-----		-----	6203	ISO3104	3.145		2.44
6005	ISO3104	3.106		-0.79	6220	D7042	3.1139		-0.14
6012	ISO3104	3.125	C	0.79	6238	D445	4.296	R(0.01)	97.94
6018		-----		-----	6242	ISO3104	3.1151		-0.04
6046	ISO3104	3.105		-0.87	6262	ISO3104	3.1144		-0.09
6057	ISO3104	3.125		0.79	6291	D445	3.131		1.28
6075	ISO3104	3.1260		0.87	6298	D445	3.120		0.37
6142	ISO3104	3.1555	R(0.01)	3.32	6299	ISO3104	3.1004		-1.26
6143	D445	3.119		0.29	6308	ISO3104	3.107		-0.71
6170		-----		-----	6316		-----		-----
6192	D7042	3.116		0.04	6321	IP71	3.115		-0.04
6201	ISO3104	3.114		-0.13	9057		-----		-----

normality	OK
n	140
outliers	4
mean (n)	3.1155
st.dev. (n)	0.01087
R(calc.)	0.0304
st.dev.(ISO3104:94)	0.01205
R(ISO3104:94)	0.0337

Lab 913 first reported 3.175
Lab 914 first reported 3.175
Lab 1741 first reported 3.05
Lab 1941 first reported 3.027
Lab 6012 first reported 3.035





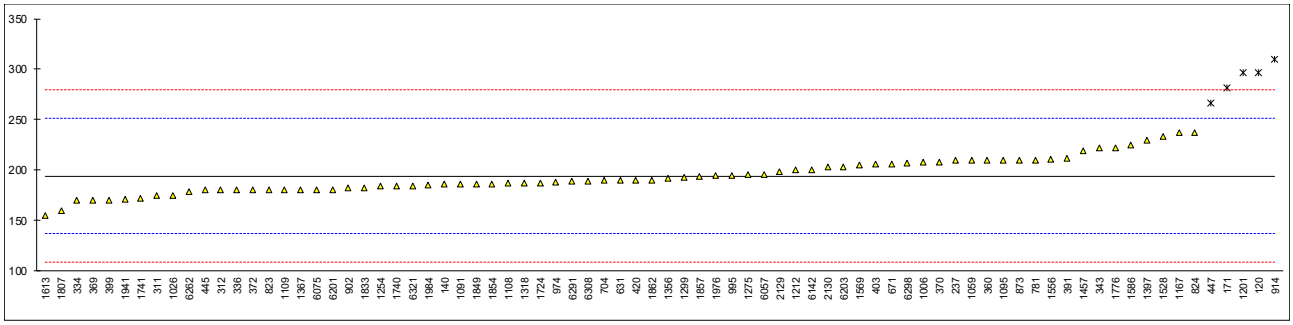
Determination of Lubricity by HFRR at 60°C on sample #20005; result in µm

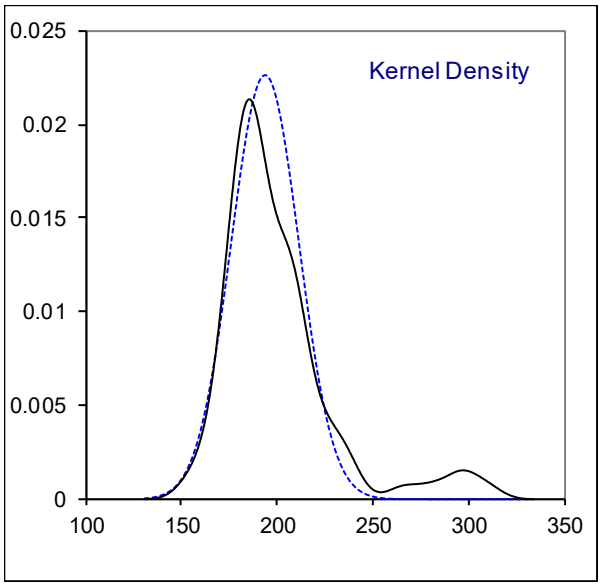
lab	method	value	mark	z(targ)	corrected	remarks
120	D6079	297.0	C,R(0.01)	3.61	NO	first reported 335.0
140	ISO12156-1 (2006)	186		-0.28	YES	
171	D6079	281.5	C,R(0.01)	3.06	NO	first reported 280
212		-----		-----		
218		-----		-----		
220		-----		-----		
225		-----		-----		
228		-----		-----		
237	D6079	210		0.56		
238		-----		-----		
273		-----		-----		
311	ISO12156-1 meth B	175		-0.66		
312	ISO12156-1 meth A	180		-0.49	NO	
317		-----		-----		
323	ISO12156-1 meth A	<200		-----		
331		-----		-----		
333		-----		-----		
334	ISO12156-1 meth B	170		-0.84	NO	
335		-----		-----		
336	ISO12156-1 meth A	180		-0.49	YES	
337		-----		-----		
338		-----		-----		
342		-----		-----		
343	ISO12156-1 (2006)	222		0.98		
345		-----		-----		
351		-----		-----		
353		-----		-----		
357		-----		-----		
360	ISO12156-1 meth B	210	C	0.56	NO	first reported 310
369	ISO12156-1 meth B	170		-0.84	NO	
370	ISO12156-1 meth B	208		0.49	NO	
371		-----		-----		
372	ISO12156-1 meth B	180		-0.49	NO	
381		-----		-----		
391	ISO12156-1 meth A	212		0.63		
398		-----		-----		
399	D6079	170		-0.84	NO	
403	ISO12156-1 meth A	206		0.42	NO	
404		-----		-----		
420	ISO12156-1 (2006)	190		-0.14		
431		-----		-----		
432		-----		-----		
440		-----		-----		
444		-----		-----		
445	IP450	180		-0.49	NO	
447	ISO12156-1 meth B	266	R(0.01)	2.52	NO	
485		-----		-----		
498		-----		-----		
541		-----		-----		
631	D7688	190		-0.14	NO	
663		-----		-----		
671		206.0		0.42		
704	ISO12156-1 meth A	190		-0.14	NO	
751		-----		-----		
752		-----		-----		
759		-----		-----		
778		-----		-----		
779		-----		-----		
781	ISO12156-1 meth B	210		0.56	NO	
782		-----		-----		
785		-----		-----		
823	ISO12156-1 meth A	180		-0.49	YES	
824	ISO12156-1 meth A	237.5		1.52	NO	
846		-----		-----		
872		-----		-----		
873	ISO12156-1 meth A	210		0.56	NO	
874		-----		-----		
875		-----		-----		
902	ISO12156-1 (2006)	182		-0.42	YES	
913		-----		-----		
914	ISO12156-1 meth A	310	R(0.01)	4.06	NO	
962		-----		-----		
963		-----		-----		

lab	method	value	mark	z(targ)	corrected	remarks
971		-----		-----		
974	ISO12156-1 meth A	188		-0.21		
995	ISO12156-1 meth A	195		0.04		
997		-----		-----		
998		-----		-----		
1006	D6079	208		0.49		
1026	ISO12156-1 meth A	175		-0.66	NO	
1059	ISO12156-1 meth B	210		0.56	NO	
1080		-----		-----		
1091	ISO12156-1 meth B	186		-0.28	NO	
1095	ISO12156-1 meth A	210		0.56		
1097		-----		-----		
1099		-----		-----		
1108	ISO12156-1 meth B	187		-0.24	NO	
1109	IP450	180		-0.49	YES	
1121		-----		-----		
1126		-----		-----		
1146		-----		-----		
1150		-----		-----		
1167	ISO12156-1 meth B	237		1.51		
1201	ISO12156-1 meth A	296.5	R(0.01)	3.59	NO	
1205		-----		-----		
1212	ISO12156-1 meth A	200		0.21	NO	
1254	ISO12156-1 meth B	184		-0.35	NO	
1275	IP450	196		0.07	YES	
1286		-----		-----		
1299	ISO12156-1 (2006)	193		-0.03	YES	
1318	ISO12156-1 (2006)	187		-0.24	YES	
1356	ISO12156-1 meth A	192		-0.07	NO	
1367	IP450	180.00		-0.49	NO	
1397	ISO12156-1 meth A	230		1.26		
1430		-----		-----		
1438		-----		-----		
1457	ISO12156-1 meth A	219		0.88	NO	
1459		-----		-----		
1498		-----		-----		
1528	ISO12156-1 meth A	233		1.37	NO	
1556	ISO12156-1 meth B	211		0.60	NO	
1569	ISO12156-1 (2006)	205		0.39	YES	
1586	ISO12156-1 (2006)	225		1.09	YES	
1613	ISO12156-1 meth A	155	C	-1.36	YES	first reported 279
1634		-----		-----		
1635		-----		-----		
1656		-----		-----		
1676		-----		-----		
1681		-----		-----		
1720		-----		-----		
1724	IP450	187		-0.24	NO	
1730		-----		-----		
1740	ISO12156-1 meth A	184		-0.35	NO	
1741	ISO12156-1 meth A	172		-0.77	NO	
1742		-----		-----		
1743		-----		-----		
1746		-----		-----		
1776	ISO12156-1 meth A	222		0.98	NO	
1796		-----		-----		
1807	ISO12156-1 (2006)	160		-1.19		
1833	ISO12156-1 (2006)	182		-0.42		
1849	ISO12156-1 meth B	186		-0.28	NO	
1854	ISO12156-1 meth A	186		-0.28	NO	
1857	ISO12156-1 meth B	194		0.00	NO	
1858		-----		-----		
1862	ISO12156-1 (2006)	190		-0.14	NO	
1941	ISO12156-1 meth A	171		-0.80	NO	
1950		-----		-----		
1953		-----		-----		
1961		-----		-----		
1976	ISO12156-1 meth A	194.2		0.01		
1984	ISO12156-1 meth A	185		-0.31		
1986		-----		-----		
1995		-----		-----		
2129	IP450	198		0.14	NO	
2130	IP450	203		0.32		
2146		-----		-----		
6005		-----		-----		
6012		-----		-----		

lab	method	value	mark	z(targ)	corrected	remarks
6018		-----		-----		
6046		-----		-----		
6057	ISO12156-1 meth A	196		0.07	NO	
6075	ISO12156-1 meth A	180	C	-0.49	NO	first reported 270
6142	ISO12156-1 meth A	200		0.21		
6143		-----		-----		
6170		-----		-----		
6192		-----		-----		
6201	ISO12156-1 meth A	180		-0.49	NO	
6203	ISO12156-1 meth A	203		0.32	YES	
6220		-----		-----		
6238		-----		-----		
6242		-----		-----		
6262	ISO12156-1 meth B	179		-0.52	NO	
6291	ISO12156-1 meth A	188.5		-0.19	NO	
6298	ISO12156-1 (2006)	207		0.46	NO	
6299		-----		-----		
6308	IP450	189		-0.17	YES	
6316		-----		-----		
6321	ISO12156-1 meth B	184		-0.35	NO	
9057		-----		-----		

				"NO" only	"YES" only
	normality	OK		OK	suspect
	n	73		42	15
	outliers	5		5	0
	mean (n)	193.989		192.690	186.867
	st.dev. (n)	17.6586		16.9673	17.1042
	R(calc.)	49.444		47.508	47.892
	st.dev.(ISO12156-A:18)	28.5714		28.5714	28.5714
	R(ISO12156-A:18)	80	(digital camera)	80	80
	compare				
	R(ISO12156-B:18)	90	(visual)		
	R(D6079:18)	80			


350
300
250
200
150
100
1613 1807 334 369 399 1941 1741 311 1026 6262 445 312 336 372 823 1109 1367 6075 6201 902 1833 1254 1740 6321 1984 140 1091 1849 1854 1108 1318 1724 974 6291 6308 704 631 420 1862 1356 1299 1857 1976 995 1275 6057 2129 1212 6142 2130 6203 1569 403 671 6298 1006 370 237 1059 360 1095 873 781 1556 391 1457 343 1776 1586 1397 1528 1167 824 447 171 1201 120 914


Kernel Density
0.025
0.02
0.015
0.01
0.005
0
100
150
200
250
300
350

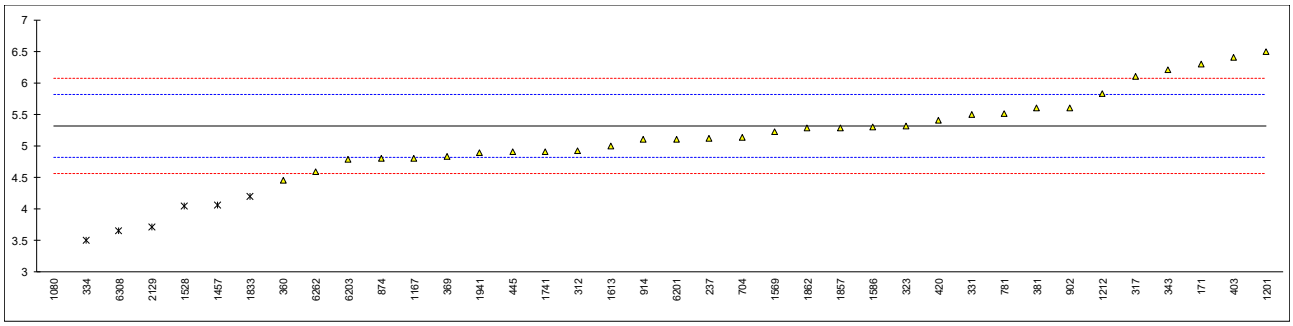
Determination of Manganese as Mn on sample #20005; result in mg/L

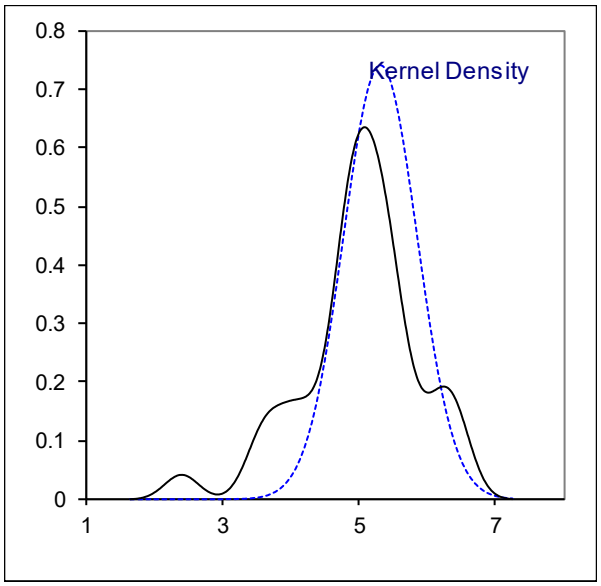
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	971		-----		-----
140		-----		-----	974		-----		-----
171	D3831	6.3		3.93	995		-----		-----
212		-----		-----	997		-----		-----
218		-----		-----	998		-----		-----
220		-----		-----	1006		-----		-----
225		-----		-----	1026		-----		-----
228		-----		-----	1059		-----		-----
237	EN16576	5.122		-0.76	1080	EN16576	2.4	ex	-11.59
238		-----		-----	1091		-----		-----
273		-----		-----	1095		-----		-----
311		-----		-----	1097		-----		-----
312	EN16576	4.92		-1.56	1099		-----		-----
317	EN16576	6.10	C	3.13	1108		-----		-----
323	EN16576	5.32		0.03	1109		-----		-----
331	In house	5.5		0.75	1121		-----		-----
333		-----		-----	1126		-----		-----
334	EN16576	3.5	ex,C	-7.21	1146		-----		-----
335		-----		-----	1150		-----		-----
336		-----		-----	1167	EN16576	4.803		-2.03
337		-----		-----	1201	EN16576	6.5		4.72
338		-----		-----	1205		-----		-----
342		-----		-----	1212	EN16576	5.83		2.06
343	EN16576	6.2		3.53	1254		-----		-----
345		-----		-----	1275		-----		-----
351		-----		-----	1286		-----		-----
353		-----		-----	1299		-----		-----
357		-----		-----	1318		-----		-----
360	EN16576	4.458		-3.40	1356		-----		-----
369	EN16576	4.83		-1.92	1367		-----		-----
370		-----		-----	1397		-----		-----
371		-----		-----	1430		-----		-----
372		-----		-----	1438		-----		-----
381	EN16576	5.6		1.14	1457	EN16576	4.058	ex	-4.99
391		-----		-----	1459		-----		-----
398		-----		-----	1498		-----		-----
399		-----		-----	1528	IP592	4.044	ex	-5.05
403	EN16576	6.40		4.33	1556		-----		-----
404		-----		-----	1569	EN16576	5.23		-0.33
420	EN16576	5.4		0.35	1586	EN16576	5.3		-0.05
431		-----		-----	1613	EN16576	5.0		-1.24
432		-----		-----	1634		-----		-----
440		-----		-----	1635		-----		-----
444		-----		-----	1656		-----		-----
445	EN16576	4.90		-1.64	1676		-----		-----
447		-----		-----	1681		-----		-----
485		-----		-----	1720		-----		-----
498		-----		-----	1724		-----		-----
541		-----		-----	1730		-----		-----
631		-----		-----	1740		-----		-----
663		-----		-----	1741	EN16576	4.90		-1.64
671		-----		-----	1742		-----		-----
704	EN16576	5.14		-0.69	1743		-----		-----
751		-----		-----	1746		-----		-----
752		-----		-----	1776		-----		-----
759		-----		-----	1796		-----		-----
778		-----		-----	1807		-----		-----
779		-----		-----	1833	EN16576	4.2	ex	-4.43
781	EN16576	5.51		0.79	1849		-----		-----
782		-----		-----	1854		-----		-----
785		-----		-----	1857	EN16576	5.29		-0.09
823		-----		-----	1858		-----		-----
824		-----		-----	1862	EN16576	5.28		-0.13
846		-----		-----	1941	EN16576	4.89		-1.68
872		-----		-----	1950		-----		-----
873		-----		-----	1953		-----		-----
874	EN16576	4.8		-2.04	1961		-----		-----
875		-----		-----	1976		-----		-----
902	EN16576	5.6	C	1.14	1984		-----		-----
913		-----		-----	1986		-----		-----
914	D7111	5.1		-0.85	1995		-----		-----
962		-----		-----	2129	D7111	3.71	ex,C	-6.38
963		-----		-----	2130		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146		-----		-----	6203	EN16576	4.78		-2.12
6005		-----		-----	6220		-----		-----
6012		-----		-----	6238		-----		-----
6018		-----		-----	6242		-----		-----
6046		-----		-----	6262	EN16576	4.584		-2.90
6057		-----		-----	6291		-----		-----
6075		-----		-----	6298		-----		-----
6142		-----		-----	6299		-----		-----
6143		-----		-----	6308	EN16576	3.66	ex	-6.57
6170		-----		-----	6316		-----		-----
6192		-----		-----	6321		-----		-----
6201	EN16576	5.1		-0.85	9057		-----		-----

normality	OK
n	31
outliers	0 (+7 ex)
mean (n)	5.312
st.dev. (n)	0.5393
R(calc.)	1.510
st.dev.(EN16576:14)	0.2513
R(EN16576:14)	0.704

Lab 317 first reported >7.00
Lab 334 first reported 3.26; test result excluded, see § 4.1
Lab 902 first reported 3.6
Lab 1457 test result excluded, see § 4.1
Lab 1528 test result excluded, see § 4.1
Lab 1833 test result excluded, see § 4.1
Lab 2129 first reported 2.95; test result excluded, see § 4.1
Lab 6308 test result excluded, see § 4.1





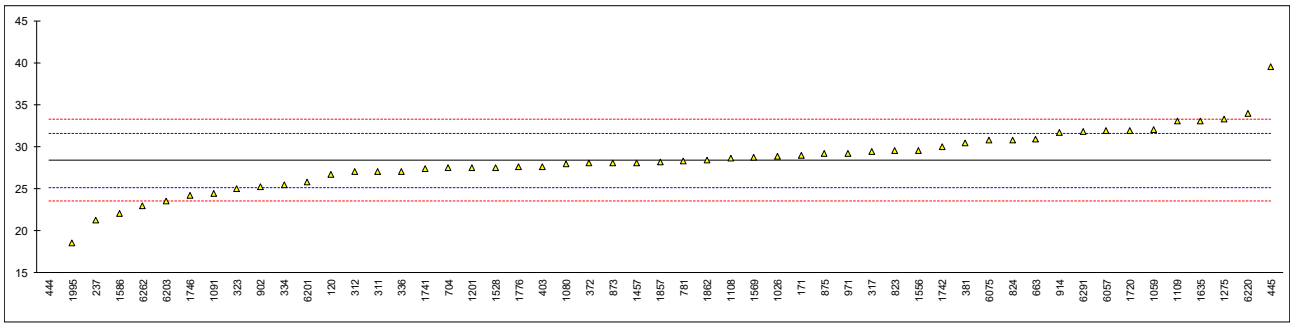
Determination of Nitrogen on sample #20005; result in mg/kg

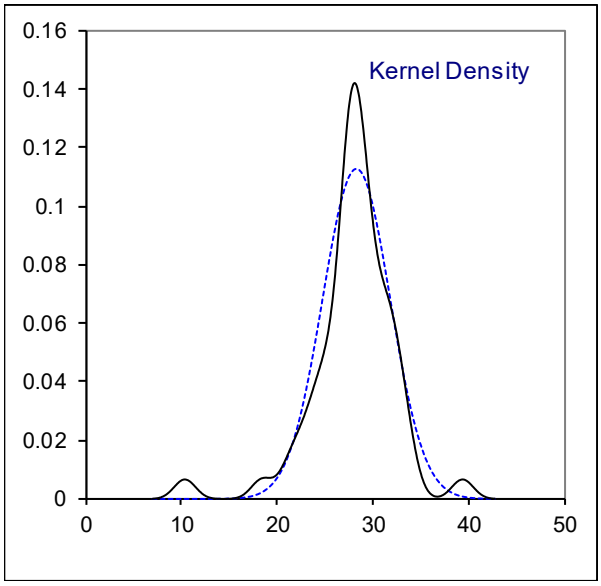
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D4629	26.716		-1.02	971	D4629	29.23		0.53
140		-----		-----	974		-----		-----
171	D4629	29		0.39	995		-----		-----
212		-----		-----	997		-----		-----
218		-----		-----	998		-----		-----
220		-----		-----	1006		-----		-----
225		-----		-----	1026	D4629	28.9		0.33
228		-----		-----	1059	D4629	32		2.24
237	D4629	21.2		-4.43	1080	D4629	27.9		-0.29
238		-----		-----	1091	D4629	24.4		-2.45
273		-----		-----	1095		-----		-----
311	D4629	27.0		-0.85	1097		-----		-----
312	D4629	27		-0.85	1099		-----		-----
317	D4629	29.4		0.64	1108	D5762	28.6		0.14
323	D4629	25		-2.08	1109	D4629	33		2.86
331		-----		-----	1121		-----		-----
333		-----		-----	1126		-----		-----
334	D4629	25.5		-1.77	1146		-----		-----
335		-----		-----	1150		-----		-----
336	D4629	27		-0.85	1167		-----		-----
337		-----		-----	1201	D4629	27.50		-0.54
338		-----		-----	1205		-----		-----
342		-----		-----	1212		-----		-----
343		-----		-----	1254		-----		-----
345		-----		-----	1275	IP379	33.27		3.03
351		-----		-----	1286		-----		-----
353		-----		-----	1299		-----		-----
357		-----		-----	1318		-----		-----
360		-----		-----	1356		-----		-----
369		-----		-----	1367		-----		-----
370		-----		-----	1397		-----		-----
371		-----		-----	1430		-----		-----
372	D4629	28		-0.23	1438		-----		-----
381	D4629	30.4		1.25	1457	D4629	28.1		-0.17
391		-----		-----	1459		-----		-----
398		-----		-----	1498		-----		-----
399		-----		-----	1528	D4629	27.51		-0.53
403	D4629	27.64		-0.45	1556	D4629	29.5		0.70
404		-----		-----	1569	D4629	28.7		0.20
420		-----		-----	1586	D4629	22		-3.94
431		-----		-----	1613		-----		-----
432		-----		-----	1634		-----		-----
440		-----		-----	1635	D4629	33		2.86
444	D4629	10.4	R(0.01)	-11.10	1656		-----		-----
445	D4629	39.49		6.87	1676		-----		-----
447		-----		-----	1681		-----		-----
485		-----		-----	1720	D4629	31.94	C	2.21
498		-----		-----	1724		-----		-----
541		-----		-----	1730		-----		-----
631		-----		-----	1740		-----		-----
663	D4629	30.9		1.56	1741	D4629	27.4		-0.60
671		-----		-----	1742	D4629	30		1.01
704	D4629	27.5		-0.54	1743		-----		-----
751		-----		-----	1746	D4629	24.2		-2.58
752		-----		-----	1776	D4629	27.62		-0.46
759		-----		-----	1796		-----		-----
778		-----		-----	1807		-----		-----
779		-----		-----	1833		-----		-----
781	D4629	28.3		-0.04	1849		-----		-----
782		-----		-----	1854		-----		-----
785		-----		-----	1857	D4629	28.2		-0.10
823	D4629	29.5		0.70	1858		-----		-----
824	D4629	30.8		1.50	1862	D4629	28.4		0.02
846		-----		-----	1941		-----		-----
872		-----		-----	1950		-----		-----
873	D4629	28.1		-0.17	1953		-----		-----
874		-----		-----	1961		-----		-----
875	D4629	29.2		0.51	1976		-----		-----
902	D5762	25.2		-1.96	1984		-----		-----
913		-----		-----	1986		-----		-----
914	D4629	31.7		2.06	1995	D4629	18.5		-6.10
962		-----		-----	2129		-----		-----
963		-----		-----	2130		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146		-----		-----	6203	D4629	23.5		-3.01
6005		-----		-----	6220	D5762	34		3.48
6012		-----		-----	6238		-----		-----
6018		-----		-----	6242		-----		-----
6046		-----		-----	6262	D4629	23		-3.32
6057	D4629	31.9		2.18	6291	D4629	31.83		2.14
6075	D4629	30.76		1.48	6298		-----		-----
6142		-----		-----	6299		-----		-----
6143		-----		-----	6308		-----		-----
6170		-----		-----	6316		-----		-----
6192		-----		-----	6321		-----		-----
6201	D4629	25.8		-1.59	9057		-----		-----

normality	suspect
n	52
outliers	1
mean (n)	28.37
st.dev. (n)	3.539
R(calc.)	9.91
st.dev.(D4629:17)	1.618
R(D4629:17)	4.53

Lab 1720 first reported 17.896





Determination of Polycyclic Aromatic Hydrocarbons on sample #20005; result in %M/M

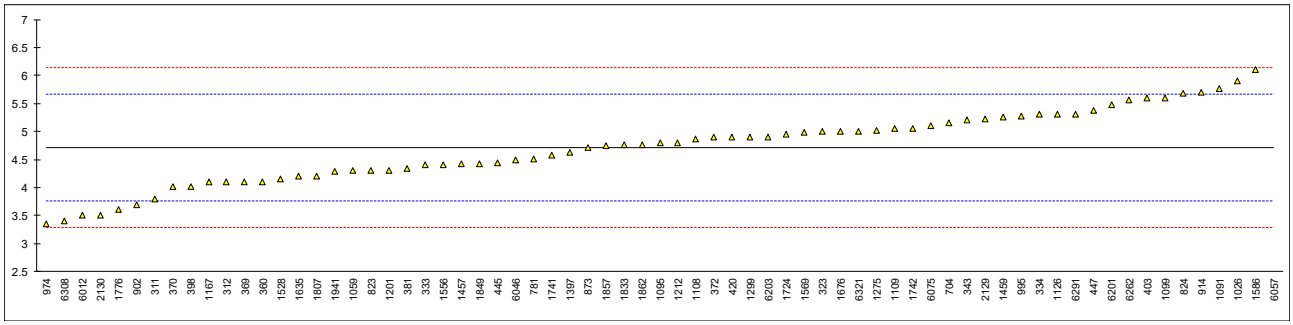
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	971		-----		-----
140	EN12916	<1.0	f-?	<-7.78	974	IP391	3.35		-2.86
171		-----		-----	995		5.28		1.18
212		-----		-----	997		-----		-----
218		-----		-----	998		-----		-----
220		-----		-----	1006		-----		-----
225		-----		-----	1026	EN12916	5.9		2.48
228		-----		-----	1059	EN12916	4.3	C	-0.87
237		-----		-----	1080		-----		-----
238		-----		-----	1091	IP391	5.76	E	2.19
273		-----		-----	1095		4.8		0.18
311	EN12916	3.8		-1.92	1097		-----		-----
312	EN12916	4.1		-1.29	1099		5.6		1.85
317		-----		-----	1108	EN12916	4.86		0.30
323	EN12916	5.0		0.59	1109	IP391	5.06		0.72
331		-----		-----	1121		-----		-----
333	EN12916	4.4		-0.66	1126		5.3		1.22
334	IP391	5.3	E	1.22	1146		-----		-----
335		-----		-----	1150		-----		-----
336		-----		-----	1167	EN12916	4.099		-1.29
337		-----		-----	1201	EN12916	4.3		-0.87
338		-----		-----	1205		-----		-----
342		-----		-----	1212	EN12916	4.8		0.18
343	EN12916	5.2		1.01	1254		-----		-----
345		-----		-----	1275	IP391	5.02		0.64
351		-----		-----	1286		-----		-----
353		-----		-----	1299	EN12916	4.9		0.38
357		-----		-----	1318		-----		-----
360	EN12916	4.10		-1.29	1356		-----		-----
369	EN12916	4.10		-1.29	1367		-----		-----
370	EN12916	4.01		-1.48	1397		4.62		-0.20
371		-----		-----	1430		-----		-----
372	EN12916	4.9		0.38	1438		-----		-----
381	EN12916	4.34		-0.79	1457	EN12916	4.43	C	-0.60
391		-----		-----	1459	EN12916	5.26		1.14
398		4.02		-1.46	1498		-----		-----
399		-----		-----	1528	EN12916	4.16		-1.16
403	EN12916	5.59		1.83	1556	EN12916	4.4157	E	-0.63
404		-----		-----	1569	EN12916	4.98		0.55
420	EN12916	4.9		0.38	1586	IP391	6.1	E	2.90
431		-----		-----	1613		-----		-----
432		-----		-----	1634		-----		-----
440		-----		-----	1635	EN12916	4.2		-1.08
444		-----		-----	1656		-----		-----
445	IP391	4.449		-0.56	1676	EN12916	5.00	C	0.59
447	IP391	5.369		1.37	1681		-----		-----
485		-----		-----	1720		-----		-----
498		-----		-----	1724	IP391	4.95		0.49
541		-----		-----	1730		-----		-----
631		-----		-----	1740		-----		-----
663		-----		-----	1741	EN12916	4.580		-0.29
671		-----		-----	1742	EN12916	5.06		0.72
704	EN12916	5.16		0.93	1743		-----		-----
751		-----		-----	1746		-----		-----
752		-----		-----	1776	EN12916	3.61532	E	-2.30
759		-----		-----	1796		-----		-----
778		-----		-----	1807	EN12916	4.2		-1.08
779		-----		-----	1833		4.77		0.11
781	EN12916	4.51		-0.43	1849	EN12916	4.43		-0.60
782		-----		-----	1854		-----		-----
785		-----		-----	1857	EN12916	4.75		0.07
823		4.3		-0.87	1858		-----		-----
824	EN12916	5.69		2.04	1862	EN12916	4.77		0.11
846		-----		-----	1941	EN12916	4.288		-0.90
872		-----		-----	1950		-----		-----
873	EN12916	4.71		-0.01	1953		-----		-----
874		-----		-----	1961		-----		-----
875		-----		-----	1976		-----		-----
902	EN12916	3.69		-2.15	1984		-----		-----
913		-----		-----	1986		-----		-----
914	IP391	5.7	C	2.06	1995		-----		-----
962		-----		-----	2129	EN12916	5.22		1.05
963		-----		-----	2130		3.510		-2.53

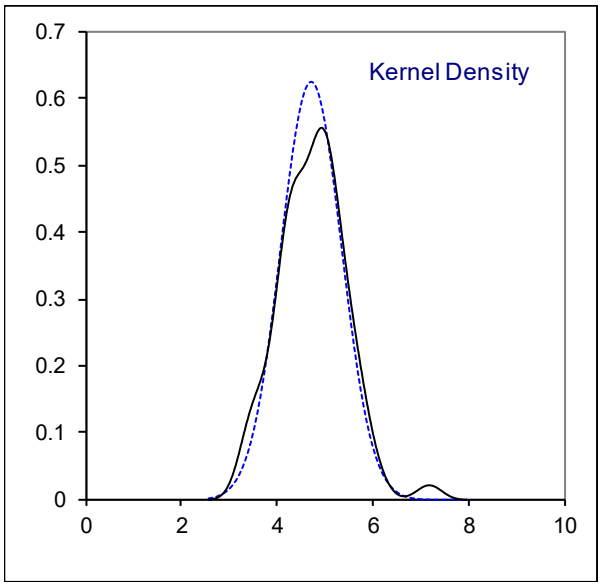
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146		-----		-----	6203	EN12916	4.9		0.38
6005		-----		-----	6220		-----		-----
6012	In house	3.5		-2.55	6238		-----		-----
6018		-----		-----	6242		-----		-----
6046		4.5		-0.45	6262	EN12916	5.558		1.76
6057		7.2	R(0.05)	5.20	6291	IP391	5.3		1.22
6075	EN12916	5.10		0.80	6298		-----		-----
6142		-----		-----	6299		-----		-----
6143		-----		-----	6308	EN12916	3.4		-2.76
6170		-----		-----	6316		-----		-----
6192		-----		-----	6321	IP391	5.0		0.59
6201	EN12916	5.47		1.58	9057		-----		-----

normality	OK
n	68
outliers	1
mean (n)	4.716
st.dev. (n)	0.6381
R(calc.)	1.787
st.dev.(EN12916:16)	0.4777
R(EN12916:16)	1.338

Lab 140 f-? = possibly a false negative test result?
Lab 914 first reported 6.4
Lab 1059 first reported 5.0
Lab 1457 first reported 5.17
Lab 1676 first reported 5.448

The Polycyclic Aromatics test results calculated by iis for labs marked with an E:
Lab 334: 4.9 (Tri$^+$-Aromatics test results were corrected without correction of Polycyclic Aromatics test results)
Lab 1091: 4.83
Lab 1556: 4.6664
Lab 1586: 5.7 (Tri$^+$-Aromatics test results were corrected without correction of Polycyclic Aromatics test results)
Lab 1776: 4.12309





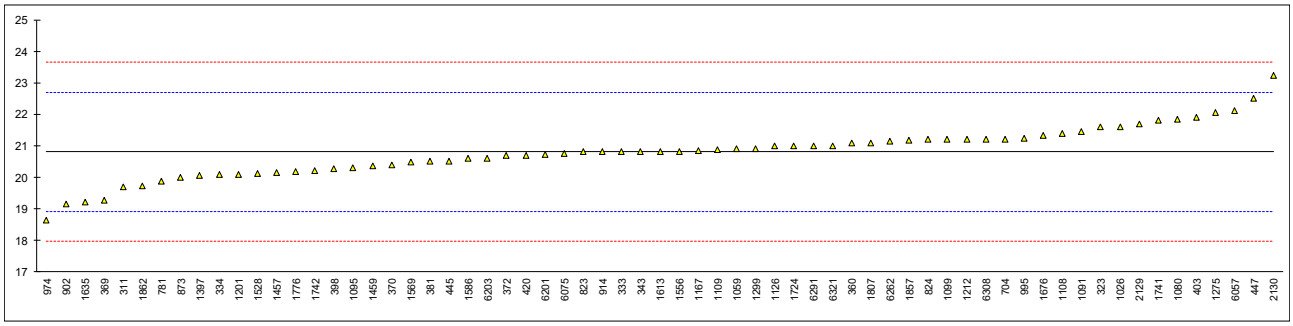
Determination of Mono-Aromatic Hydrocarbons on sample #20005; result in %M/M

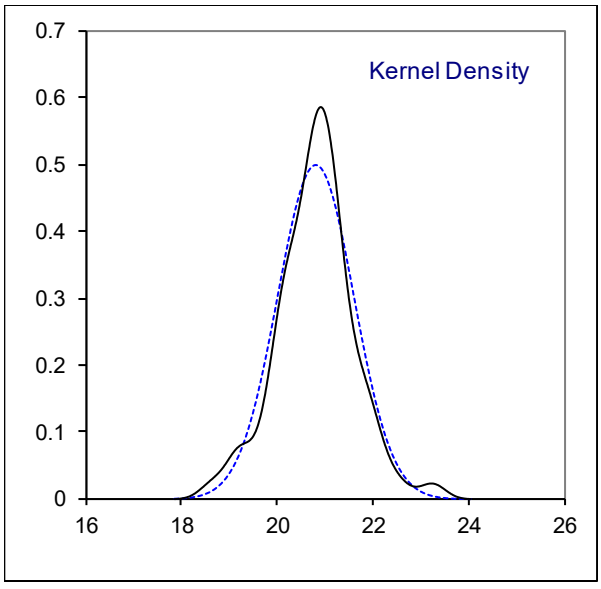
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	971		-----		-----
140	EN12916	>30.0	f+?	>9.72	974	IP391	18.65		-2.27
171		-----		-----	995		21.23		0.45
212		-----		-----	997		-----		-----
218		-----		-----	998		-----		-----
220		-----		-----	1006		-----		-----
225		-----		-----	1026	EN12916	21.6		0.85
228		-----		-----	1059	EN12916	20.9	C	0.11
237		-----		-----	1080		21.85		1.11
238		-----		-----	1091	IP391	21.46		0.70
273		-----		-----	1095		20.3		-0.53
311	EN12916	19.7		-1.16	1097		-----		-----
312		-----		-----	1099		21.2		0.42
317		-----		-----	1108	EN12916	21.4		0.63
323	EN12916	21.6		0.85	1109	IP391	20.88		0.08
331		-----		-----	1121		-----		-----
333	EN12916	20.8		0.00	1126		21.0		0.21
334	IP391	20.1		-0.74	1146		-----		-----
335		-----		-----	1150		-----		-----
336		-----		-----	1167	EN12916	20.83		0.03
337		-----		-----	1201	EN12916	20.1		-0.74
338		-----		-----	1205		-----		-----
342		-----		-----	1212	EN12916	21.2		0.42
343	EN12916	20.8		0.00	1254		-----		-----
345		-----		-----	1275	IP391	22.05		1.32
351		-----		-----	1286		-----		-----
353		-----		-----	1299	EN12916	20.9		0.11
357		-----		-----	1318		-----		-----
360	EN12916	21.10		0.32	1356		-----		-----
369	EN12916	19.27		-1.62	1367		-----		-----
370	EN12916	20.38		-0.44	1397		20.06		-0.78
371		-----		-----	1430		-----		-----
372	EN12916	20.7		-0.11	1438		-----		-----
381	EN12916	20.5		-0.32	1457	EN12916	20.15	C	-0.69
391		-----		-----	1459	EN12916	20.37		-0.45
398		20.26		-0.57	1498		-----		-----
399		-----		-----	1528	EN12916	20.12		-0.72
403	EN12916	21.91		1.17	1556	EN12916	20.8215		0.02
404		-----		-----	1569	EN12916	20.47		-0.35
420	EN12916	20.7		-0.11	1586	IP391	20.6		-0.21
431		-----		-----	1613	IP391	20.8		0.00
432		-----		-----	1634		-----		-----
440		-----		-----	1635	EN12916	19.2		-1.69
444		-----		-----	1656		-----		-----
445	IP391	20.507		-0.31	1676	EN12916	21.32	C	0.55
447	IP391	22.511		1.81	1681		-----		-----
485		-----		-----	1720		-----		-----
498		-----		-----	1724	IP391	21		0.21
541		-----		-----	1730		-----		-----
631		-----		-----	1740		-----		-----
663		-----		-----	1741	EN12916	21.821		1.08
671		-----		-----	1742	EN12916	20.21		-0.62
704	EN12916	21.204		0.43	1743		-----		-----
751		-----		-----	1746		-----		-----
752		-----		-----	1776	EN12916	20.16753		-0.67
759		-----		-----	1796		-----		-----
778		-----		-----	1807	EN12916	21.1		0.32
779		-----		-----	1833		-----		-----
781	EN12916	19.89		-0.96	1849		-----		-----
782		-----		-----	1854		-----		-----
785		-----		-----	1857	EN12916	21.18		0.40
823		20.8		0.00	1858		-----		-----
824	EN12916	21.20		0.42	1862	EN12916	19.73		-1.13
846		-----		-----	1941		-----		-----
872		-----		-----	1950		-----		-----
873	EN12916	20.00		-0.84	1953		-----		-----
874		-----		-----	1961		-----		-----
875		-----		-----	1976		-----		-----
902	EN12916	19.15		-1.74	1984		-----		-----
913		-----		-----	1986		-----		-----
914	IP391	20.8	C	0.00	1995		-----		-----
962		-----		-----	2129	EN12916	21.68		0.93
963		-----		-----	2130		23.240		2.58

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146		-----		-----	6203	EN12916	20.6		-0.21
6005		-----		-----	6220		-----		-----
6012		-----		-----	6238		-----		-----
6018		-----		-----	6242		-----		-----
6046		-----		-----	6262	EN12916	21.156		0.38
6057		22.1		1.37	6291	IP391	21.0		0.21
6075	EN12916	20.74		-0.06	6298		-----		-----
6142		-----		-----	6299		-----		-----
6143		-----		-----	6308	EN12916	21.2		0.42
6170		-----		-----	6316		-----		-----
6192		-----		-----	6321	IP391	21.0		0.21
6201	EN12916	20.71		-0.09	9057		-----		-----

normality	suspect
n	65
outliers	0
mean (n)	20.800
st.dev. (n)	0.7983
R(calc.)	2.235
st.dev.(EN12916:16)	0.9468
R(EN12916:16)	2.651

Lab 140 f+? = possibly a false positive test result?
Lab 914 first reported 19.4
Lab 1059 first reported 24.3
Lab 1457 first reported 20.37
Lab 1676 first reported 20.809





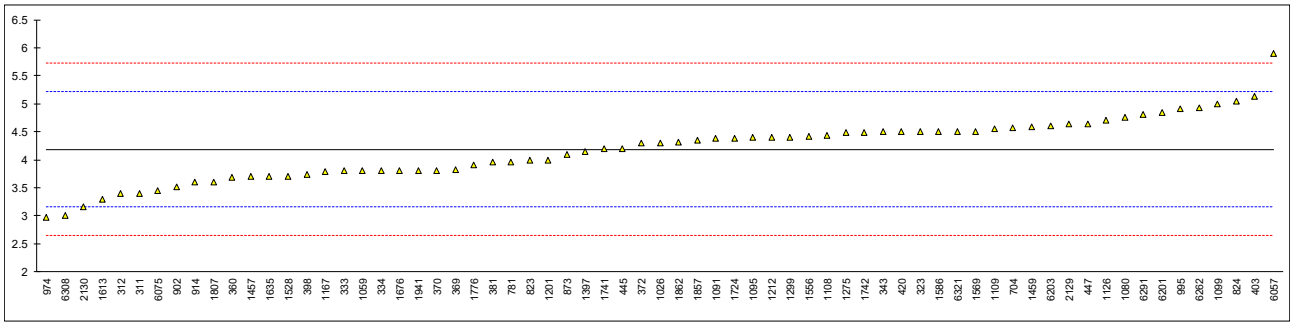
Determination of Di-Aromatic Hydrocarbons on sample #20005; result in %M/M

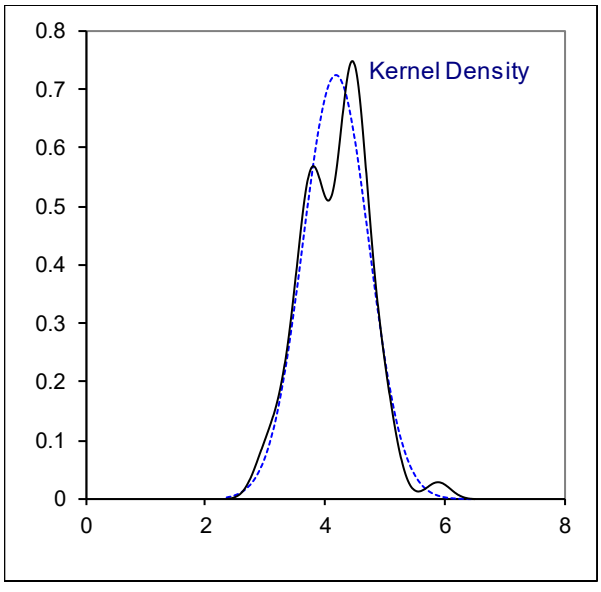
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	971		-----		-----
140	EN12916	<1.0	f-?	<-6.23	974	IP391	2.97		-2.38
171		-----		-----	995		4.91		1.41
212		-----		-----	997		-----		-----
218		-----		-----	998		-----		-----
220		-----		-----	1006		-----		-----
225		-----		-----	1026	EN12916	4.3		0.22
228		-----		-----	1059	EN12916	3.8	C	-0.75
237		-----		-----	1080		4.75		1.10
238		-----		-----	1091	IP391	4.39		0.40
273		-----		-----	1095		4.4		0.42
311	EN12916	3.4		-1.54	1097		-----		-----
312	EN12916	3.4		-1.54	1099		5.0		1.59
317		-----		-----	1108	EN12916	4.43		0.48
323	EN12916	4.5		0.61	1109	IP391	4.55		0.71
331		-----		-----	1121		-----		-----
333	EN12916	3.8		-0.75	1126		4.7		1.00
334	IP391	3.8		-0.75	1146		-----		-----
335		-----		-----	1150		-----		-----
336		-----		-----	1167	EN12916	3.78		-0.79
337		-----		-----	1201	EN12916	4.0		-0.36
338		-----		-----	1205		-----		-----
342		-----		-----	1212	EN12916	4.4		0.42
343	EN12916	4.5		0.61	1254		-----		-----
345		-----		-----	1275	IP391	4.48		0.57
351		-----		-----	1286		-----		-----
353		-----		-----	1299	EN12916	4.4		0.42
357		-----		-----	1318		-----		-----
360	EN12916	3.69		-0.97	1356		-----		-----
369	EN12916	3.82		-0.72	1367		-----		-----
370	EN12916	3.81		-0.74	1397		4.14		-0.09
371		-----		-----	1430		-----		-----
372	EN12916	4.3		0.22	1438		-----		-----
381	EN12916	3.95		-0.46	1457	EN12916	3.70	C	-0.95
391		-----		-----	1459	EN12916	4.59		0.79
398		3.74		-0.87	1498		-----		-----
399		-----		-----	1528	EN12916	3.71		-0.93
403	EN12916	5.13		1.84	1556	EN12916	4.41659		0.45
404		-----		-----	1569	EN12916	4.51		0.63
420	EN12916	4.5		0.61	1586	IP391	4.5		0.61
431		-----		-----	1613	IP391	3.3		-1.73
432		-----		-----	1634		-----		-----
440		-----		-----	1635	EN12916	3.7		-0.95
444		-----		-----	1656		-----		-----
445	IP391	4.203		0.03	1676	EN12916	3.80	C	-0.75
447	IP391	4.636		0.88	1681		-----		-----
485		-----		-----	1720		-----		-----
498		-----		-----	1724	IP391	4.39		0.40
541		-----		-----	1730		-----		-----
631		-----		-----	1740		-----		-----
663		-----		-----	1741	EN12916	4.194		0.02
671		-----		-----	1742	EN12916	4.49		0.59
704	EN12916	4.574		0.76	1743		-----		-----
751		-----		-----	1746		-----		-----
752		-----		-----	1776	EN12916	3.90817		-0.54
759		-----		-----	1796		-----		-----
778		-----		-----	1807	EN12916	3.6		-1.15
779		-----		-----	1833		-----		-----
781	EN12916	3.95		-0.46	1849		-----		-----
782		-----		-----	1854		-----		-----
785		-----		-----	1857	EN12916	4.35		0.32
823		4.0		-0.36	1858		-----		-----
824	EN12916	5.05		1.69	1862	EN12916	4.32		0.26
846		-----		-----	1941	EN12916	3.806		-0.74
872		-----		-----	1950		-----		-----
873	EN12916	4.10		-0.17	1953		-----		-----
874		-----		-----	1961		-----		-----
875		-----		-----	1976		-----		-----
902	EN12916	3.52		-1.30	1984		-----		-----
913		-----		-----	1986		-----		-----
914	IP391	3.6	C	-1.15	1995		-----		-----
962		-----		-----	2129	EN12916	4.63		0.87
963		-----		-----	2130		3.167		-1.99

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146		-----		-----	6203	EN12916	4.6		0.81
6005		-----		-----	6220		-----		-----
6012		-----		-----	6238		-----		-----
6018		-----		-----	6242		-----		-----
6046		-----		-----	6262	EN12916	4.931		1.46
6057		5.9		3.35	6291	IP391	4.8		1.20
6075	EN12916	3.45		-1.44	6298		-----		-----
6142		-----		-----	6299		-----		-----
6143		-----		-----	6308	EN12916	3.0		-2.32
6170		-----		-----	6316		-----		-----
6192		-----		-----	6321	IP391	4.5		0.61
6201	EN12916	4.84		1.28	9057		-----		-----

normality	OK
n	67
outliers	0
mean (n)	4.186
st.dev. (n)	0.5520
R(calc.)	1.546
st.dev.(EN12916:16)	0.5116
R(EN12916:16)	1.433

Lab 140 f-? = possibly a false negative test result?
Lab 914 first reported 3.3
Lab 1059 first reported 5.0
Lab 1457 first reported 4.12
Lab 1676 first reported 3.824





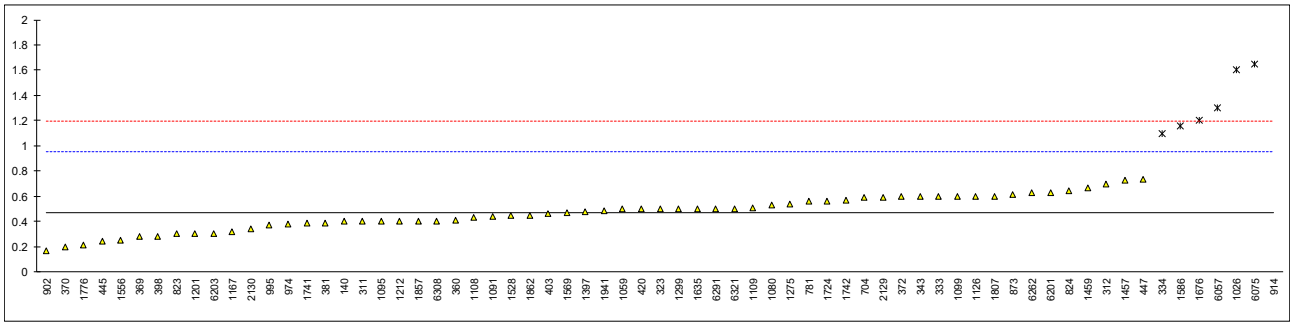
Determination of Tri+-Aromatic Hydrocarbons on sample #20005; result in %M/M

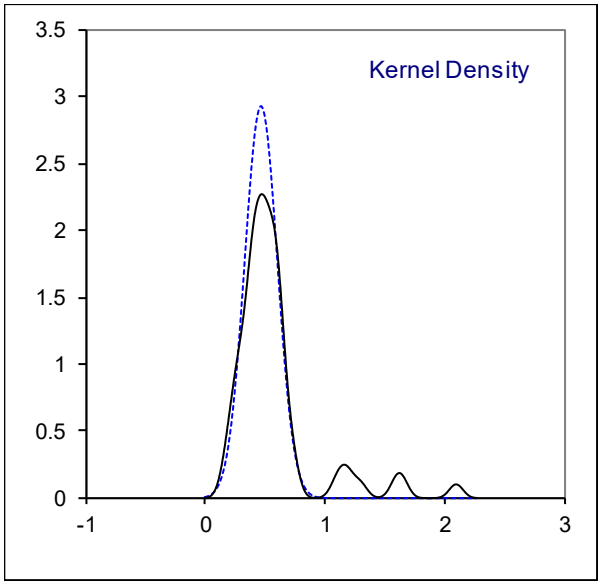
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	971		-----		-----
140	EN12916	0.4		-0.28	974	IP391	0.38		-0.36
171		-----		-----	995		0.37		-0.41
212		-----		-----	997		-----		-----
218		-----		-----	998		-----		-----
220		-----		-----	1006		-----		-----
225		-----		-----	1026	EN12916	1.6	R(0.01)	4.67
228		-----		-----	1059	EN12916	0.5	C	0.13
237		-----		-----	1080		0.53		0.26
238		-----		-----	1091	IP391	0.44	C	-0.12
273		-----		-----	1095		0.4		-0.28
311	EN12916	0.4		-0.28	1097		-----		-----
312	EN12916	0.7		0.96	1099		0.6		0.54
317		-----		-----	1108	EN12916	0.43		-0.16
323	EN12916	0.5		0.13	1109	IP391	0.51		0.17
331		-----		-----	1121		-----		-----
333	EN12916	0.6		0.54	1126		0.6		0.54
334	IP391	1.1	C,R(0.01)	2.61	1146		-----		-----
335		-----		-----	1150		-----		-----
336		-----		-----	1167	EN12916	0.32		-0.61
337		-----		-----	1201	EN12916	0.3		-0.69
338		-----		-----	1205		-----		-----
342		-----		-----	1212	EN12916	0.4		-0.28
343	EN12916	0.6		0.54	1254		-----		-----
345		-----		-----	1275	IP391	0.54		0.30
351		-----		-----	1286		-----		-----
353		-----		-----	1299	EN12916	0.5		0.13
357		-----		-----	1318		-----		-----
360	EN12916	0.41		-0.24	1356		-----		-----
369	EN12916	0.28		-0.78	1367		-----		-----
370	EN12916	0.20		-1.11	1397		0.48		0.05
371		-----		-----	1430		-----		-----
372	EN12916	0.6		0.54	1438		-----		-----
381	EN12916	0.39		-0.32	1457	EN12916	0.73	C	1.08
391		-----		-----	1459	EN12916	0.67		0.83
398		0.28		-0.78	1498		-----		-----
399		-----		-----	1528	EN12916	0.45		-0.08
403	EN12916	0.46		-0.03	1556	EN12916	0.2498		-0.90
404		-----		-----	1569	EN12916	0.47		0.01
420	EN12916	0.5		0.13	1586	IP391	1.16	C,R(0.01)	2.86
431		-----		-----	1613		-----		-----
432		-----		-----	1634		-----		-----
440		-----		-----	1635	EN12916	0.5		0.13
444		-----		-----	1656		-----		-----
445	IP391	0.246		-0.92	1676	EN12916	1.20	C,R(0.01)	3.02
447	IP391	0.733		1.09	1681		-----		-----
485		-----		-----	1720		-----		-----
498		-----		-----	1724	IP391	0.56		0.38
541		-----		-----	1730		-----		-----
631		-----		-----	1740		-----		-----
663		-----		-----	1741	EN12916	0.386		-0.34
671		-----		-----	1742	EN12916	0.57		0.42
704	EN12916	0.59		0.50	1743		-----		-----
751		-----		-----	1746		-----		-----
752		-----		-----	1776	EN12916	0.214916		-1.05
759		-----		-----	1796		-----		-----
778		-----		-----	1807	EN12916	0.6		0.54
779		-----		-----	1833		-----		-----
781	EN12916	0.56		0.38	1849		-----		-----
782		-----		-----	1854		-----		-----
785		-----		-----	1857	EN12916	0.40		-0.28
823		0.3		-0.69	1858		-----		-----
824	EN12916	0.64		0.71	1862	EN12916	0.45		-0.08
846		-----		-----	1941	EN12916	0.482		0.06
872		-----		-----	1950		-----		-----
873	EN12916	0.61		0.59	1953		-----		-----
874		-----		-----	1961		-----		-----
875		-----		-----	1976		-----		-----
902	EN12916	0.17		-1.23	1984		-----		-----
913		-----		-----	1986		-----		-----
914	IP391	2.1	C,R(0.01)	6.74	1995		-----		-----
962		-----		-----	2129	EN12916	0.59		0.50
963		-----		-----	2130		0.343		-0.52

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146		-----		-----	6203	EN12916	0.3		-0.69
6005		-----		-----	6220		-----		-----
6012		-----		-----	6238		-----		-----
6018		-----		-----	6242		-----		-----
6046		-----		-----	6262	EN12916	0.627		0.66
6057		1.3	R(0.01)	3.44	6291	IP391	0.5		0.13
6075	EN12916	1.65	R(0.01)	4.88	6298		-----		-----
6142		-----		-----	6299		-----		-----
6143		-----		-----	6308	EN12916	0.4		-0.28
6170		-----		-----	6316		-----		-----
6192		-----		-----	6321	IP391	0.5		0.13
6201	EN12916	0.63		0.67	9057		-----		-----

normality	OK
n	60
outliers	7
mean (n)	0.468
st.dev. (n)	0.1361
R(calc.)	0.381
st.dev.(EN12916:16)	0.2421
R(EN12916:16)	0.678

Lab 334 first reported 1.5
Lab 914 first reported 3.1
Lab 1059 first reported <0.1
Lab 1091 first reported 1.67
Lab 1457 first reported 1.05
Lab 1586 first reported 1.6
Lab 1676 first reported 1.624





Determination of Total Aromatic Hydrocarbons on sample #20005; result in %M/M

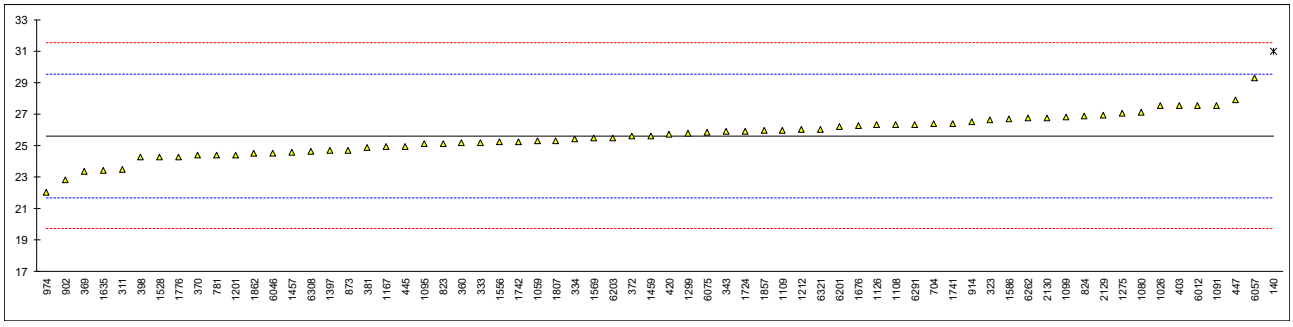
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	971		-----		-----
140	EN12916	31.0	R(0.01)	2.74	974	IP391	22.0		-1.84
171		-----		-----	995		-----		-----
212		-----		-----	997		-----		-----
218		-----		-----	998		-----		-----
220		-----		-----	1006		-----		-----
225		-----		-----	1026	EN12916	27.5		0.96
228		-----		-----	1059	EN12916	25.3	C	-0.16
237		-----		-----	1080		27.13		0.77
238		-----		-----	1091	IP391	27.52	E	0.97
273		-----		-----	1095		25.1		-0.26
311	EN12916	23.5		-1.08	1097		-----		-----
312		-----		-----	1099		26.8		0.60
317		-----		-----	1108	EN12916	26.3		0.35
323	EN12916	26.6		0.50	1109	IP391	25.94		0.16
331		-----		-----	1121		-----		-----
333	EN12916	25.2		-0.21	1126		26.3		0.35
334	IP391	25.4	E	-0.11	1146		-----		-----
335		-----		-----	1150		-----		-----
336		-----		-----	1167	EN12916	24.93		-0.35
337		-----		-----	1201	EN12916	24.4		-0.62
338		-----		-----	1205		-----		-----
342		-----		-----	1212	EN12916	26.0		0.20
343	EN12916	25.9		0.14	1254		-----		-----
345		-----		-----	1275	IP391	27.07		0.74
351		-----		-----	1286		-----		-----
353		-----		-----	1299	EN12916	25.8		0.09
357		-----		-----	1318		-----		-----
360	EN12916	25.20		-0.21	1356		-----		-----
369	EN12916	23.37		-1.14	1367		-----		-----
370	EN12916	24.39		-0.62	1397		24.68		-0.48
371		-----		-----	1430		-----		-----
372	EN12916	25.6		-0.01	1438		-----		-----
381	EN12916	24.84		-0.40	1457	EN12916	24.58	C	-0.53
391		-----		-----	1459	EN12916	25.62		0.00
398		24.28		-0.68	1498		-----		-----
399		-----		-----	1528	EN12916	24.28		-0.68
403	EN12916	27.5		0.96	1556	EN12916	25.237	E	-0.19
404		-----		-----	1569	EN12916	25.45		-0.08
420	EN12916	25.7		0.04	1586	IP391	26.7	E	0.55
431		-----		-----	1613		-----		-----
432		-----		-----	1634		-----		-----
440		-----		-----	1635	EN12916	23.4		-1.13
444		-----		-----	1656		-----		-----
445	IP391	24.956		-0.34	1676	EN12916	26.27	C	0.33
447	IP391	27.880		1.15	1681		-----		-----
485		-----		-----	1720		-----		-----
498		-----		-----	1724	IP391	25.9		0.14
541		-----		-----	1730		-----		-----
631		-----		-----	1740		-----		-----
663		-----		-----	1741	EN12916	26.401		0.40
671		-----		-----	1742	EN12916	25.26		-0.18
704	EN12916	26.364		0.38	1743		-----		-----
751		-----		-----	1746		-----		-----
752		-----		-----	1776	EN12916	24.29062		-0.68
759		-----		-----	1796		-----		-----
778		-----		-----	1807	EN12916	25.3		-0.16
779		-----		-----	1833		-----		-----
781	EN12916	24.40		-0.62	1849		-----		-----
782		-----		-----	1854		-----		-----
785		-----		-----	1857	EN12916	25.93		0.16
823		25.1		-0.26	1858		-----		-----
824	EN12916	26.88		0.64	1862	EN12916	24.50		-0.57
846		-----		-----	1941		-----		-----
872		-----		-----	1950		-----		-----
873	EN12916	24.71		-0.46	1953		-----		-----
874		-----		-----	1961		-----		-----
875		-----		-----	1976		-----		-----
902	EN12916	22.84		-1.41	1984		-----		-----
913		-----		-----	1986		-----		-----
914	IP391	26.5	C	0.45	1995		-----		-----
962		-----		-----	2129	EN12916	26.90		0.65
963		-----		-----	2130		26.750		0.58

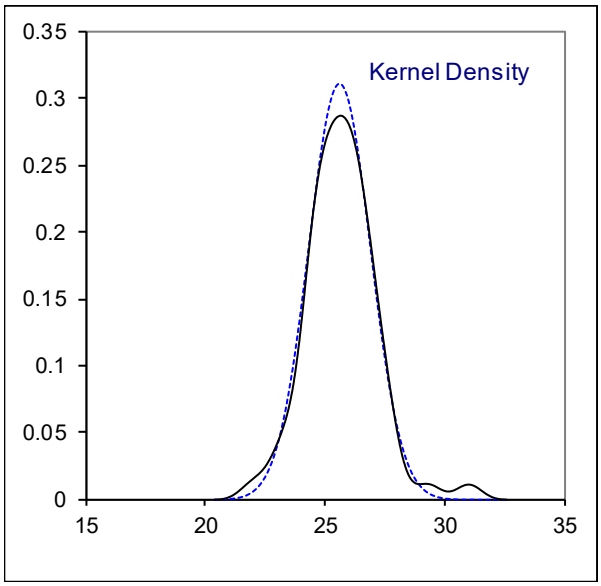
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146		-----		-----	6203	EN12916	25.5		-0.06
6005		-----		-----	6220		-----		-----
6012	In house	27.5		0.96	6238		-----		-----
6018		-----		-----	6242		-----		-----
6046		24.5		-0.57	6262	EN12916	26.714		0.56
6057		29.3		1.88	6291	IP391	26.3		0.35
6075	EN12916	25.84		0.11	6298		-----		-----
6142		-----		-----	6299		-----		-----
6143		-----		-----	6308	EN12916	24.6		-0.52
6170		-----		-----	6316		-----		-----
6192		-----		-----	6321	IP391	26.0		0.20
6201	EN12916	26.18		0.29	9057		-----		-----

normality	OK
n	65
outliers	1
mean (n)	25.617
st.dev. (n)	1.2855
R(calc.)	3.599
st.dev.(EN12916:16)	1.9643
R(EN12916:16)	5.500

Lab 914 first reported 25.8
Lab 1059 first reported 29.3
Lab 1457 first reported 25.54
Lab 1676 first reported 26.257

The Total Aromatics test results calculated by iis for labs marked with an E:
Lab 334: 25.0 (Tri$^+$-Aromatics test results were corrected without correction of Total Aromatics test results)
Lab 1091: 26.29 (Tri$^+$-Aromatics test results were corrected without correction of Total Aromatics test results)
Lab 1556: 25.488
Lab 1586: 26.3 (Tri$^+$-Aromatics test results were corrected without correction of Total Aromatics test results)





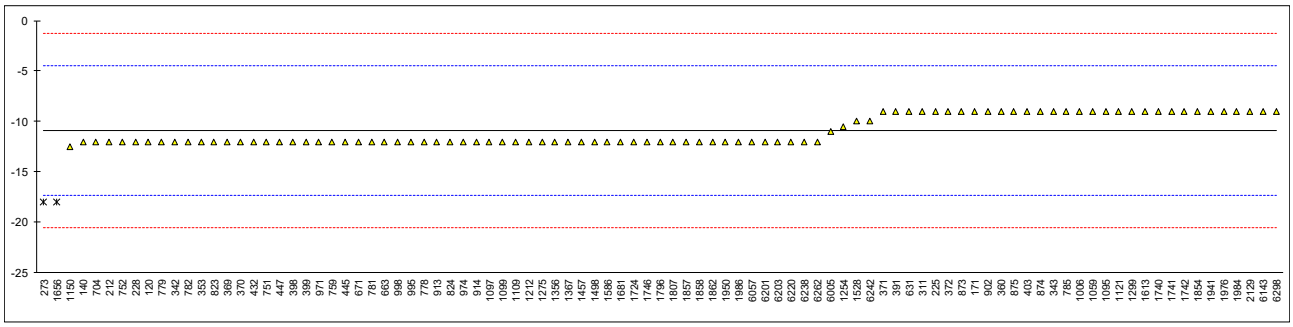
Determination of Pour Point, Manual on sample #20005; result in °C

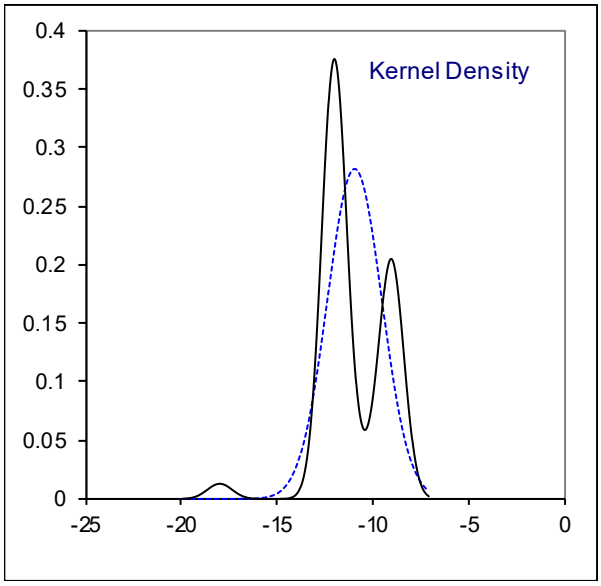
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D97	-12.0		-0.33	971	ISO3016	-12		-0.33
140	ISO3016	-12		-0.33	974	D97	-12		-0.33
171	D97	-9		0.60	995	ISO3016	-12		-0.33
212	ISO3016	-12		-0.33	997		-----		-----
218		-----		-----	998	D97	-12		-0.33
220		-----		-----	1006	D97	-9		0.60
225	D97	-9		0.60	1026		-----		-----
228	D97	-12		-0.33	1059	ISO3016	-9		0.60
237		-----		-----	1080		-----		-----
238		-----		-----	1091		-----		-----
273	D97	-18	R(0.01)	-2.20	1095	ISO3016	-9		0.60
311	ISO3016	-9		0.60	1097	NF T60-105	-12		-0.33
312		-----		-----	1099	ISO3016	-12		-0.33
317		-----		-----	1108		-----		-----
323		-----		-----	1109	D97	-12		-0.33
331		-----		-----	1121	ISO3016	-9.0		0.60
333		-----		-----	1126		-----		-----
334		-----		-----	1146		-----		-----
335		-----		-----	1150	BDS1731	-12.5		-0.49
336		-----		-----	1167		-----		-----
337		-----		-----	1201		-----		-----
338		-----		-----	1205		-----		-----
342	ISO3016	-12		-0.33	1212	ISO3016	-12		-0.33
343	ISO3016	-9		0.60	1254	ISO3016	-10.5		0.14
345		-----		-----	1275	IP15	-12.0		-0.33
351		-----		-----	1286		-----		-----
353	IP15	-12		-0.33	1299	D97	-9		0.60
357		-----		-----	1318		-----		-----
360	ISO3016	-9		0.60	1356	ISO3016	-12		-0.33
369	ISO3016	-12		-0.33	1367	IP15	-12.0		-0.33
370	ISO3016	-12		-0.33	1397		-----		-----
371	ISO3016	-9		0.60	1430		-----		-----
372	ISO3016	-9		0.60	1438		-----		-----
381		-----		-----	1457	ISO3016	-12		-0.33
391	ISO3016	-9		0.60	1459		-----		-----
398	ISO3016	-12		-0.33	1498	D97	-12		-0.33
399	D97	-12		-0.33	1528	ISO3016	-10		0.29
403	D97	-9		0.60	1556		-----		-----
404		-----		-----	1569		-----		-----
420		-----		-----	1586	D97	-12		-0.33
431		-----		-----	1613	D97	-9.0		0.60
432	D97	-12		-0.33	1634		-----		-----
440		-----		-----	1635		-----		-----
444		-----		-----	1656	IP15	-18	R(0.01)	-2.20
445	IP15	-12		-0.33	1676		-----		-----
447	IP15	-12		-0.33	1681	ISO3016	-12		-0.33
485		-----		-----	1720		-----		-----
498		-----		-----	1724	D97	-12		-0.33
541		-----		-----	1730		-----		-----
631	D97	-9		0.60	1740	ISO3016	-9		0.60
663	D97	-12		-0.33	1741	ISO3016	-9		0.60
671	D97	-12		-0.33	1742	ISO3016	-9		0.60
704	ISO3016	-12		-0.33	1743		-----		-----
751	D97	-12		-0.33	1746	D97	-12		-0.33
752	ISO3016	-12		-0.33	1776		-----		-----
759	ISO3016	-12		-0.33	1796	D97	-12		-0.33
778	ISO3016	-12		-0.33	1807	D97	-12		-0.33
779	D97	-12		-0.33	1833		-----		-----
781	ISO3016	-12		-0.33	1849		-----		-----
782	D97	-12		-0.33	1854	ISO3016	-9		0.60
785	D97	-9		0.60	1857	ISO3016	-12		-0.33
823	ISO3016	-12		-0.33	1858	D97	-12		-0.33
824	ISO3016	-12		-0.33	1862	ISO3016	-12		-0.33
846		-----		-----	1941	ISO3016	-9		0.60
872		-----		-----	1950	ISO3016	-12		-0.33
873	D97	-9		0.60	1953		-----		-----
874	ISO3016	-9		0.60	1961		-----		-----
875	D97	-9		0.60	1976	ISO3016	-9		0.60
902	ISO3016	-9	C	0.60	1984	NFT60105	-9		0.60
913	D97	-12		-0.33	1986	ISO3016	-12		-0.33
914	D97	-12		-0.33	1995		-----		-----
962		-----		-----	2129	ISO3016	-9		0.60
963		-----		-----	2130		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146		-----		-----	6203	ISO3016	-12		-0.33
6005	ISO3016	-11		-0.02	6220	D97	-12		-0.33
6012		-----		-----	6238	ISO3016	-12		-0.33
6018		-----		-----	6242	ISO3016	-10		0.29
6046		-----		-----	6262	ISO3016	-12		-0.33
6057	ISO3016	-12		-0.33	6291		-----		-----
6075		-----		-----	6298	D97	-9		0.60
6142		-----		-----	6299		-----		-----
6143	D97	-9		0.60	6308		-----		-----
6170		-----		-----	6316		-----		-----
6192		-----		-----	6321		-----		-----
6201	ISO3016	-12		-0.33	9057		-----		-----

normality	OK
n	93
outliers	2
mean (n)	-10.94
st.dev. (n)	1.418
R(calc.)	3.97
st.dev.(ISO3016:19)	3.214
R(ISO3016:19)	9

Lab 902 first reported -27





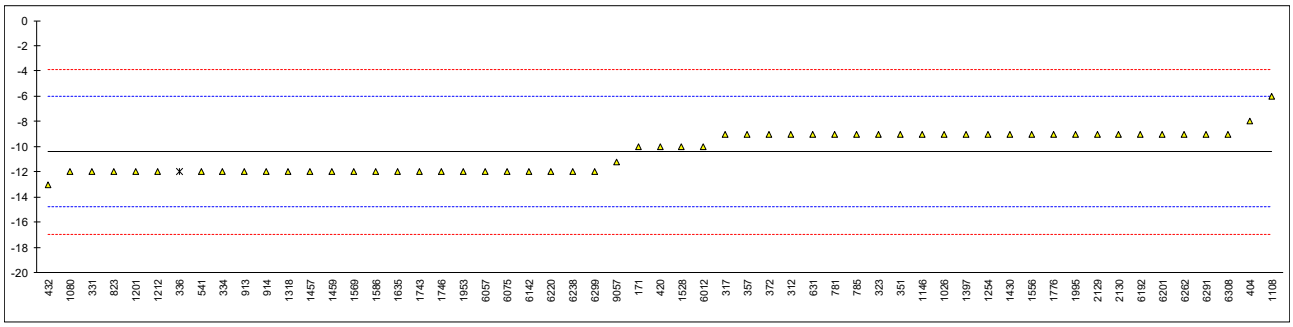
Determination of Pour Point, Automated, 3°C interval on sample #20005; result in °C

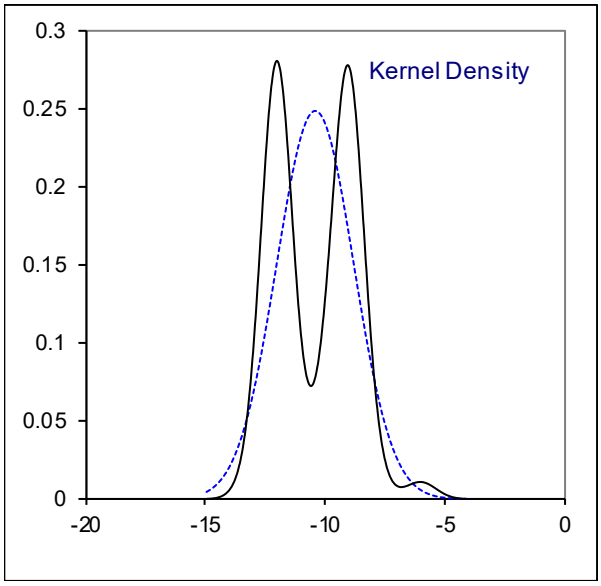
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	971		-----		-----
140		-----		-----	974		-----		-----
171	D5950	-10		0.18	995		-----		-----
212		-----		-----	997		-----		-----
218		-----		-----	998		-----		-----
220		-----		-----	1006		-----		-----
225		-----		-----	1026	D5950	-9		0.64
228		-----		-----	1059		-----		-----
237		-----		-----	1080	D5950	-12		-0.74
238		-----		-----	1091		-----		-----
273		-----		-----	1095		-----		-----
311		-----		-----	1097		-----		-----
312	D5950	-9		0.64	1099		-----		-----
317	D6892	-9		0.64	1108	D5950	-6		2.02
323	D5950	-9		0.64	1109		-----		-----
331	D5950	-12		-0.74	1121		-----		-----
333		-----		-----	1126		-----		-----
334	D5950	-12		-0.74	1146	D6892	-9		0.64
335		-----		-----	1150		-----		-----
336	ISO3016	-12	ex	-0.74	1167		-----		-----
337		-----		-----	1201	D5950	-12		-0.74
338		-----		-----	1205		-----		-----
342		-----		-----	1212	D7346	-12		-0.74
343		-----		-----	1254	D5950	-9		0.64
345		-----		-----	1275		-----		-----
351	D6749	-9.0		0.64	1286		-----		-----
353		-----		-----	1299		-----		-----
357	D5950	-9		0.64	1318	D7346	-12		-0.74
360		-----		-----	1356		-----		-----
369		-----		-----	1367		-----		-----
370		-----		-----	1397	D5950	-9		0.64
371		-----		-----	1430	D5950	-9		0.64
372	D5950	-9		0.64	1438		-----		-----
381		-----		-----	1457	D5950	-12		-0.74
391		-----		-----	1459	In house	-12.0		-0.74
398		-----		-----	1498		-----		-----
399		-----		-----	1528	D5950	-10		0.18
403		-----		-----	1556		-9		0.64
404	D6892	-8		1.10	1569	D5950	-12		-0.74
420	D6749	-10		0.18	1586	D5950	-12		-0.74
431		-----		-----	1613		-----		-----
432	D5950	-13		-1.20	1634		-----		-----
440		-----		-----	1635	D7346	-12		-0.74
444		-----		-----	1656		-----		-----
445		-----		-----	1676		-----		-----
447		-----		-----	1681		-----		-----
485		-----		-----	1720		-----		-----
498		-----		-----	1724		-----		-----
541	D5950	-12		-0.74	1730		-----		-----
631	D5950	-9		0.64	1740		-----		-----
663		-----		-----	1741		-----		-----
671		-----		-----	1742		-----		-----
704		-----		-----	1743	NFT 60-105	-12		-0.74
751		-----		-----	1746	D5950	-12		-0.74
752		-----		-----	1776	D5950	-9		0.64
759		-----		-----	1796		-----		-----
778		-----		-----	1807		-----		-----
779		-----		-----	1833		-----		-----
781	D5950	-9		0.64	1849		-----		-----
782		-----		-----	1854		-----		-----
785	D6749	-9		0.64	1857		-----		-----
823	D5950	-12		-0.74	1858		-----		-----
824		-----		-----	1862		-----		-----
846		-----		-----	1941		-----		-----
872		-----		-----	1950		-----		-----
873		-----		-----	1953	D6749	-12		-0.74
874		-----		-----	1961		-----		-----
875		-----		-----	1976		-----		-----
902		-----		-----	1984		-----		-----
913	D6749	-12		-0.74	1986		-----		-----
914	D5950	-12		-0.74	1995	D5950	-9		0.64
962		-----		-----	2129	D5950	-9		0.64
963		-----		-----	2130	D5950	-9.0		0.64

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146		-----		-----	6203		-----		-----
6005		-----		-----	6220	D5949	-12		-0.74
6012	D97	-10		0.18	6238	D5950	-12		-0.74
6018		-----		-----	6242		-----		-----
6046		-----		-----	6262	D5950	-9		0.64
6057	D5950	-12		-0.74	6291	D5950	-9		0.64
6075	NFT 60-105	-12		-0.74	6298		-----		-----
6142	D5950	-12		-0.74	6299	NFT 60-105	-12		-0.74
6143		-----		-----	6308	D5950	-9		0.64
6170		-----		-----	6316		-----		-----
6192	D5950	-9		0.64	6321		-----		-----
6201	D5950	-9		0.64	9057		-11.2		-0.37

normality	OK	
n	56	
outliers	0 (+1 ex)	
mean (n)	-10.40	
st.dev. (n)	1.605	
R(calc.)	4.49	
st.dev.(D5950:14)	2.179	
R(D5950:14)	6.1	3°C interval

Lab 336 excluded as reported test method is a manual method





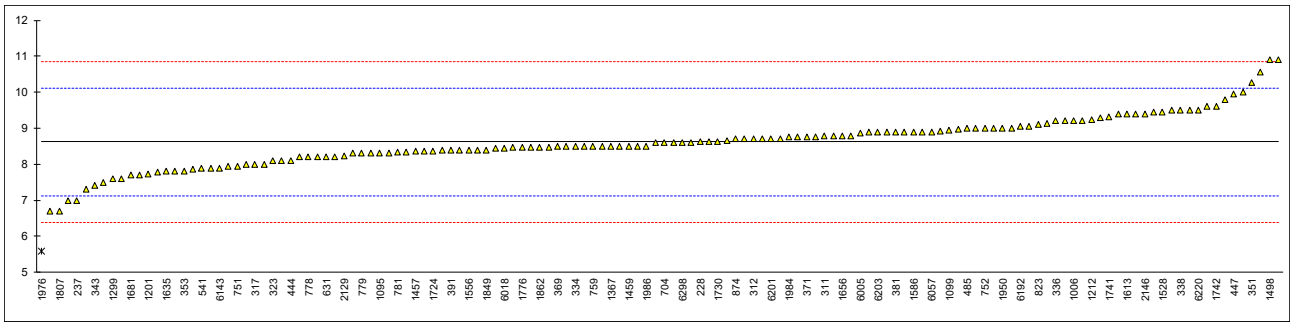
Determination of Sulfur on sample #20005; result in mg/kg

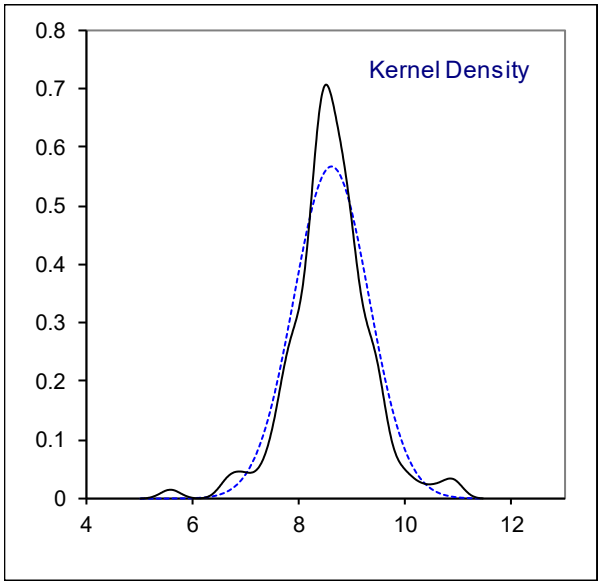
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D7039	8.43		-0.26	971	ISO20846	8.5		-0.16
140	D2622	8.5		-0.16	974		-----		-----
171	D5453	8.3		-0.43	995	ISO20846	8.2		-0.57
212		-----		-----	997		-----		-----
218		-----		-----	998		-----		-----
220		-----		-----	1006	D5453	9.2		0.78
225		-----		-----	1026	ISO20846	8.0		-0.83
228	D2622	8.63		0.01	1059	ISO20846	9.8		1.58
237	D5453	7.0		-2.18	1080	ISO20846	8.4		-0.30
238		-----		-----	1091	D5453	8.60		-0.03
273		-----		-----	1095	ISO20846	8.3		-0.43
311	ISO20846	8.8		0.24	1097	D5453	10.57		2.62
312	ISO20846	8.7		0.11	1099	ISO20846	8.95		0.44
317	ISO20846	8.0		-0.83	1108	D5453	9.6		1.31
323	ISO20846	8.1		-0.70	1109	D7039	8.47		-0.20
331		-----		-----	1121	ISO20846	9.06		0.59
333	ISO20846	8.8		0.24	1126	ISO20846	8.5		-0.16
334	ISO20846	8.5		-0.16	1146		-----		-----
335		-----		-----	1150	ISO20884	6.98		-2.20
336	ISO20846	9.2		0.78	1167		-----		-----
337	ISO20846	9.4		1.05	1201	ISO20846	7.73		-1.20
338	ISO20846	9.5		1.18	1205	ISO20846	8.92		0.40
342		-----		-----	1212	ISO20846	9.24		0.83
343	ISO20846	7.4		-1.64	1254	ISO20846	8.64		0.03
345	ISO20846	7.3		-1.77	1275	IP490	9.45		1.11
351	ISO20846	10.26		2.20	1286		-----		-----
353	IP490	7.82		-1.08	1299	ISO20884	7.6		-1.37
357	ISO20846	9.0		0.51	1318		-----		-----
360	ISO20846	8.76		0.19	1356	ISO8754	<0.03	f-?	<-11.53
369	ISO20846	8.49		-0.18	1367	D4294	8.5		-0.16
370	ISO20846	7.93		-0.93	1397	ISO20846	8.5		-0.16
371	ISO20846	8.77		0.20	1430	ISO13032	6.7		-2.58
372	ISO20846	9.2		0.78	1438	D4294	9.5	C	1.18
381	ISO20846	8.9		0.37	1457	ISO20846	8.36		-0.35
391	ISO20846	8.4		-0.30	1459	ISO20884	8.5		-0.16
398		-----		-----	1498	D5453	10.9		3.06
399	D5453	9.2		0.78	1528	ISO20846	9.45		1.11
403	ISO20846	8.1		-0.70	1556	ISO20884	8.4		-0.30
404	ISO20846	7.85		-1.04	1569	ISO20846	8.3		-0.43
420	ISO20846	8.88		0.35	1586	D5453	8.9		0.37
431		-----		-----	1613	D5453	9.4	C	1.05
432		-----		-----	1634	ISO20846	10.9		3.06
440	D5453	8.37		-0.34	1635	ISO20846	7.8		-1.10
444	D5453	8.10		-0.70	1656	D5453	8.8		0.24
445	IP490	8.77		0.20	1676	ISO20846	9.12		0.67
447	IP490	9.94		1.77	1681	ISO13032	7.7		-1.24
485	ISO20846	8.99		0.49	1720	D5453	8.90	C	0.37
498		-----		-----	1724	D5453	8.37		-0.34
541	ISO20846	7.90		-0.97	1730	ISO20846	8.64		0.03
631	D7039	8.20		-0.57	1740	ISO20846	9.0		0.51
663	D5453	8.48		-0.19	1741	ISO20846/D5453	9.32		0.94
671	D5453	7.79		-1.12	1742	ISO20846	9.6		1.31
704	ISO20846	8.6		-0.03	1743		-----		-----
751	D2622	7.9342		-0.92	1746	D5453	8.4		-0.30
752	D4294	9		0.51	1776	ISO20846	8.47		-0.20
759	ISO20884	8.5		-0.16	1796		-----		-----
778	ISO20884	8.2		-0.57	1807	ISO20846	6.7		-2.58
779	ISO20884	8.3		-0.43	1833	ISO20846	8.34		-0.38
781	ISO20846	8.34		-0.38	1849	ISO20846	8.4		-0.30
782	ISO20884	8.2		-0.57	1854	ISO20846	8.7		0.11
785	ISO20846	9.3		0.91	1857	ISO20846	8.38		-0.32
823	D5453	9.1		0.64	1858	ISO20846	8.5		-0.16
824	D5453	8.7		0.11	1862	ISO20846	8.48		-0.19
846		-----		-----	1941	ISO20846	8.48		-0.19
872		-----		-----	1950	ISO20884	9.00		0.51
873	ISO20846	8.9		0.37	1953		10		1.85
874	ISO20846	8.7		0.11	1961		-----		-----
875	ISO20846	8.6		-0.03	1976	ISO20846	5.6	R(0.01)	-4.06
902	ISO20846	8.3		-0.43	1984	ISO20846	8.75		0.17
913	D5453	8.9		0.37	1986	ISO13032	8.5		-0.16
914	D5453	9.5		1.18	1995	D5453	7.9		-0.97
962		-----		-----	2129	ISO20846	8.23		-0.53
963		-----		-----	2130	IP490	9.4		1.05

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146	ISO20846	9.4		1.05	6203	D5453	8.88		0.35
6005	ISO20846	8.86		0.32	6220	D5453	9.5		1.18
6012	ISO20846	8.8		0.24	6238	ISO20846	7.6		-1.37
6018	ISO20846	8.43		-0.26	6242		-----		-----
6046	ISO20846	7.8		-1.10	6262	ISO20846	8.2		-0.57
6057	ISO20846	8.9		0.37	6291	D5453	7.50		-1.51
6075	ISO20846	8.71		0.12	6298	D5453	8.6		-0.03
6142	ISO20846	8.645		0.03	6299	ISO20846	8.6		-0.03
6143	D2622	7.9		-0.97	6308	ISO20846	9.0		0.51
6170	ISO20846	7.7		-1.24	6316	ISO20846	8.96		0.45
6192	ISO20846	9.05		0.58	6321	ISO20846	8.0		-0.83
6201	ISO20846	8.7		0.11	9057		-----		-----

normality	suspect
n	139
outliers	1
mean (n)	8.621
st.dev. (n)	0.7040
R(calc.)	1.971
st.dev.(ISO20846:19)	0.7449
R(ISO20846:19)	2.086

Lab 1356 f-? = possibly a false negative test result? (unit error?)
Lab 1438 first reported 12.3
Lab 1613 first reported 6.0
Lab 1720 first reported 3.146





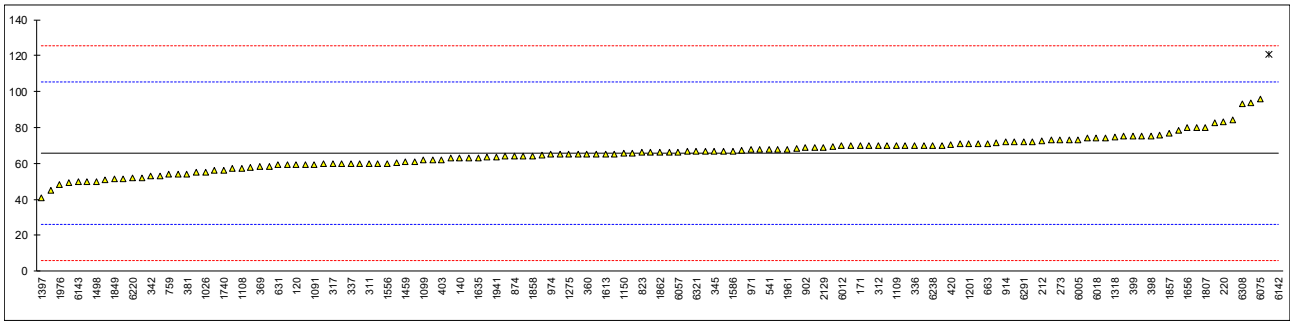
Determination of Water on sample #20005; result in mg/kg

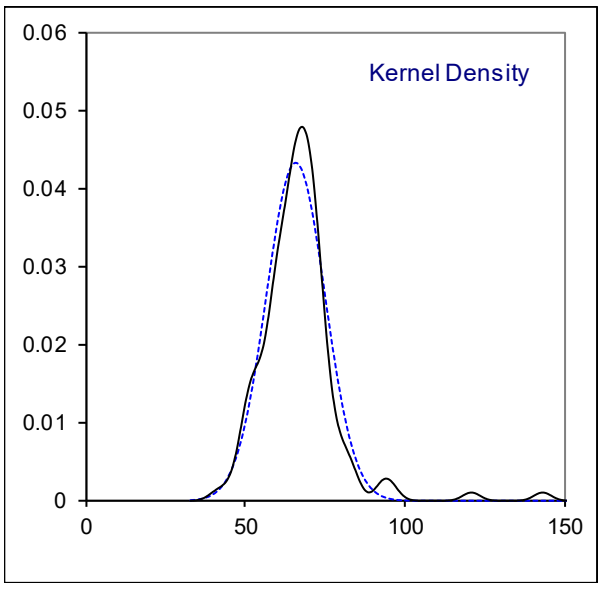
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	E1064	59.31		-0.32	971	ISO12937	67.69		0.10
140	ISO12937	63		-0.14	974	D6304-A	65		-0.04
171	D6304-A	70		0.22	995	D6304-A	58		-0.39
212	D6304-A	72.44		0.34	997	ISO12937	50.0		-0.79
218		-----		-----	998		-----		-----
220	ISO12937	83.1		0.87	1006	D6304-A	73		0.37
225		-----		-----	1026	D6304-B	55		-0.54
228		-----		-----	1059	ISO12937	70		0.22
237	D6304-C	57		-0.44	1080		-----		-----
238		-----		-----	1091	ISO12937	59.6		-0.31
273	D6304-A	73		0.37	1095	ISO12937	70	C	0.22
311	ISO12937	60		-0.29	1097		-----		-----
312	ISO12937	70		0.22	1099	ISO12937	62		-0.19
317	ISO12937	60		-0.29	1108	ISO12937	57.1		-0.43
323	ISO12937	60		-0.29	1109	D6304-A	70		0.22
331	In house	60		-0.29	1121	ISO12937	78.6		0.65
333	ISO12937	75		0.47	1126		-----		-----
334	ISO12937	70		0.22	1146	D6304-C	<100		-----
335	ISO12937	69.4		0.19	1150	ISO12937	65.45		-0.01
336	ISO12937	70		0.22	1167	ISO12937	67.3		0.08
337	ISO12937	60		-0.29	1201	ISO12937	71		0.27
338	ISO12937	63.6		-0.11	1205		-----		-----
342	ISO12937	52.9		-0.64	1212	ISO12937	64.75		-0.05
343	ISO12937	60		-0.29	1254	ISO12937	53.23		-0.63
345	ISO12937	67		0.07	1275	IP438	65.0		-0.04
351	ISO12937	67		0.07	1286		-----		-----
353		-----		-----	1299	ISO12937	60		-0.29
357	E1064	68		0.12	1318	D6304-C	74.9		0.46
360	ISO12937	65.1		-0.03	1356	D6304-A	<200	C	-----
369	ISO12937	58.1		-0.38	1367	D6304-C	56.0		-0.49
370	ISO12937	62		-0.19	1397	ISO12937	41		-1.24
371	ISO12937	54.9		-0.54	1430	D6304-A	45		-1.04
372	ISO12937	67		0.07	1438		-----		-----
381	ISO12937	54		-0.59	1457	ISO12937	64		-0.09
391	ISO12937	70		0.22	1459	ISO12937	61		-0.24
398	ISO12937	75.4		0.49	1498	D2709	50	C	-0.79
399	ISO12937	75		0.47	1528	ISO12937	65.1		-0.03
403	ISO12937	62.0		-0.19	1556	ISO12937	60		-0.29
404	ISO12937	74		0.42	1569	In house	71		0.27
420	ISO12937	70.3		0.23	1586	E1064	67		0.07
431		-----		-----	1613	D6304-A	65.3		-0.02
432		-----		-----	1634	ISO12937	63		-0.14
440		-----		-----	1635	ISO12937	63		-0.14
444	IP438	71		0.27	1656	ISO12937	80		0.72
445	D6304-A	72.2		0.33	1676	ISO12937	59.24		-0.32
447	IP438	69		0.17	1681	ISO12937	82.7		0.85
485	ISO12937	58.5		-0.36	1720		-----		-----
498	ISO12937	49.5		-0.81	1724	D6304-A	52.2		-0.68
541	ISO12937	68.0		0.12	1730		-----		-----
631	D6304-B	59.08		-0.33	1740	D6304-A	56		-0.49
663	D6304-A	71.2		0.28	1741	ISO12937	72		0.32
671		-----		-----	1742	E1064	65.4		-0.02
704	ISO12937	72.9		0.36	1743	ISO12937	80		0.72
751		-----		-----	1746	ISO12937	59.4		-0.32
752		-----		-----	1776	ISO12937	66		0.01
759	ISO12937	54		-0.59	1796		-----		-----
778	D6304-A	63		-0.14	1807	ISO12937	80		0.72
779	ISO12937	64		-0.09	1833	ISO12937	51		-0.74
781	ISO12937	60.2		-0.28	1849	ISO12937	51.3		-0.72
782		-----		-----	1854	D6304-C	68.3		0.13
785	ISO12937	54		-0.59	1857	ISO12937	77		0.57
823	ISO12937	66		0.01	1858	IP438	64		-0.09
824	ISO12937	93.6		1.40	1862	ISO12937	66		0.01
846		-----		-----	1941	ISO12937	63.7		-0.10
872		-----		-----	1950	IP439	70		0.22
873	D6304-A	68		0.12	1953	ISO12937	51.45		-0.72
874	ISO12937	64		-0.09	1961	ISO12937	68		0.12
875	D6304-A	65		-0.04	1976	ISO12937	48.17		-0.88
902	ISO12937	69		0.17	1984	ISO12937	66.5		0.04
913		-----		-----	1986	IP439	75		0.47
914	E203	72		0.32	1995		-----		-----
962		-----		-----	2129	IP439	69		0.17
963		-----		-----	2130	IP439	120.8	R(0.01)	2.77

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
2146		-----		-----	6203	ISO12937	74		0.42
6005	ISO12937	73.2		0.38	6220	D4928	52		-0.69
6012	ISO12937	69.72		0.20	6238	ISO12937	70		0.22
6018	ISO12937	74		0.42	6242	ISO12937	71.4		0.29
6046	ISO12937	66.2		0.02	6262	ISO12937	70		0.22
6057	ISO12937	66.3		0.03	6291	ISO12937	72		0.32
6075	ISO12937	96	C	1.52	6298	ISO12937	65		-0.04
6142	ISO12937	143.15	R(0.01)	3.89	6299	ISO12937	84	C	0.92
6143	D6304-B	49.6		-0.81	6308	ISO12937	93		1.37
6170	ISO12937	76		0.52	6316		-----		-----
6192	ISO12937	61		-0.24	6321	IP438	66.8		0.06
6201	ISO12937	65.5		-0.01	9057		-----		-----

normality	suspect
n	135
outliers	2
mean (n)	65.702
st.dev. (n)	9.2167
R(calc.)	25.807
st.dev.(ISO12937:00)	19.9082
R(ISO12937:00)	55.743

Lab 1095 reported 0.007 mg/kg, possibly a unit error?
Lab 1356 reported <0.02 mg/kg, possibly a unit error?
Lab 1498 reported 0.005 mg/kg, possibly a unit error?
Lab 6075 first reported 134 mg/kg
Lab 6299 first reported 0.00084 mg/kg

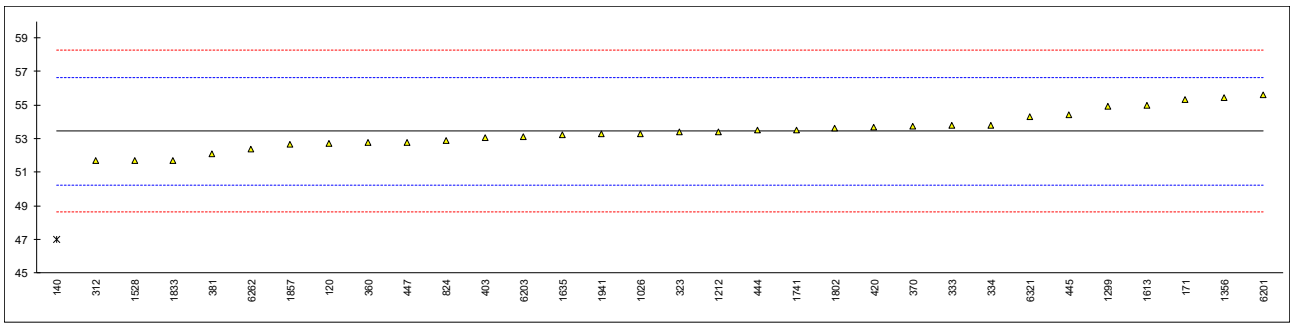


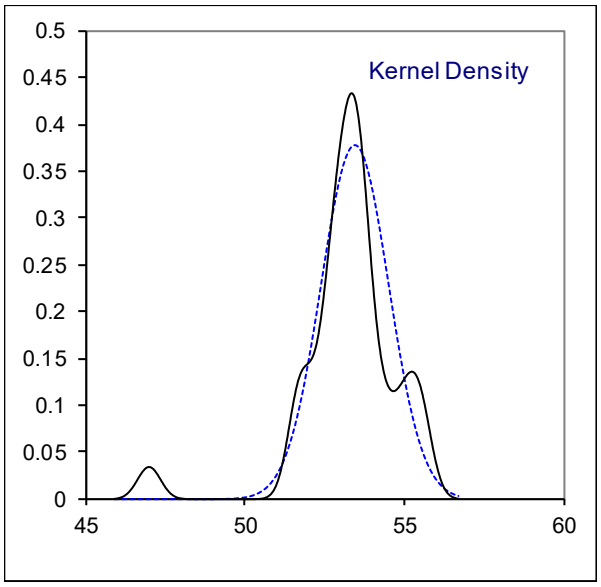


Determination of Cetane Number on sample #20006;

lab	method	value	mark	z(targ)	remarks
120	D613	52.7		-0.47	
140	D613	47.0	R(0.01)	-4.03	
171	D613	55.328		1.18	
311		-----		-----	
312	ISO5165	51.7		-1.09	
323	ISO5165	53.4		-0.03	
333	ISO5165	53.8		0.22	
334	ISO5165	53.8		0.22	
336		-----		-----	
343		-----		-----	
360	D613	52.78		-0.42	
370	ISO5165	53.73		0.18	
381	D8183	52.1		-0.84	
403	ISO5165	53.07		-0.24	
420	ISO5165	53.7		0.16	
444	D613	53.5		0.03	
445	IP41	54.4		0.60	
447	IP41	52.8		-0.40	
824	ISO5165	52.9		-0.34	
846		-----		-----	
1026	ISO5165	53.3		-0.09	
1059		-----		-----	
1095		-----		-----	
1167		-----		-----	
1201		-----		-----	
1212	ISO5165	53.4		-0.03	
1275		-----		-----	
1299	D613	54.9		0.91	
1356	ISO5165	55.46		1.26	
1457		-----		-----	
1528	ISO5165	51.7		-1.09	
1556		-----		-----	
1586		-----		-----	
1613	D613	55.0		0.97	
1635	ISO5165	53.2		-0.15	
1741	ISO5165	53.51		0.04	
1776		-----		-----	
1802	ISO5165	53.62		0.11	
1807		-----		-----	
1833	ISO5165	51.7		-1.09	
1857	ISO5165	52.67		-0.48	
1941	In house	53.26		-0.12	
1976		-----		-----	
6057		-----		-----	
6075		-----		-----	
6142		-----		-----	
6201	EN17155	55.6		1.35	
6203	ISO5165	53.1		-0.22	
6238		-----		-----	
6262	ISO5165	52.4		-0.65	
6291		-----		-----	
6308		-----		-----	
6321	IP617	54.3		0.53	

normality	OK
n	31
outliers	1
mean (n)	53.45
st.dev. (n)	1.058
R(calc.)	2.96
st.dev.(ISO5165:17)	1.600
R(ISO5165:17)	4.48
compare	
R(D613:18)	4.48


59
57
55
53
51
49
47
45
140
312
1528
1833
381
6262
1857
120
360
447
824
403
6203
1635
1941
1026
323
1212
444
1741
1802
420
370
333
334
6321
445
1299
1613
171
1356
6201

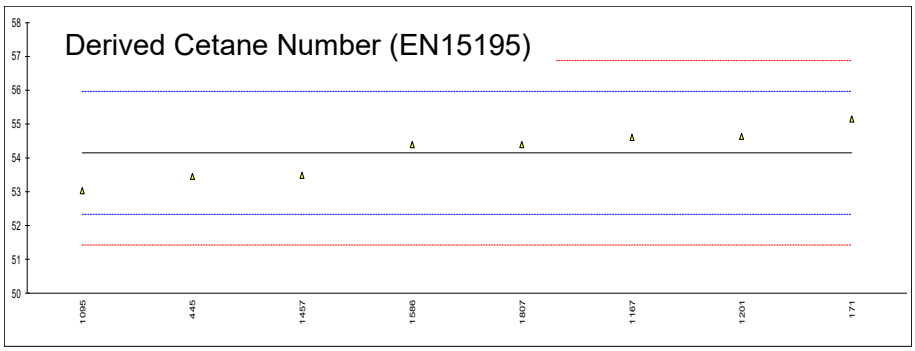

Kernel Density
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
45
50
55
60

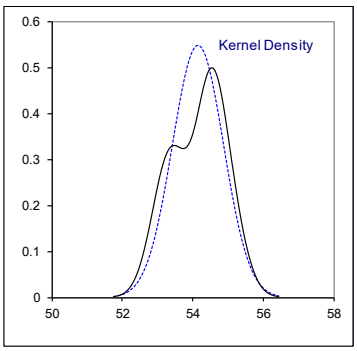
Determination of Derived Cetane Number (EN15195) on sample #20006;

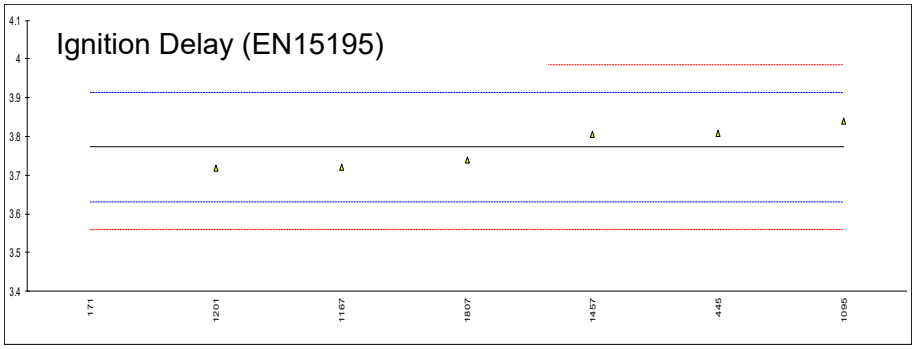
lab	method	DCN	mark	z(targ)	ID (ms)	mark	z(targ)	Air Temp. (°C)	mark
120		-----		-----	-----		-----	-----	
140		-----		-----	-----		-----	-----	
171	D6890	55.15	E	1.11	2.5581	G(0.01)	-17.20	620.15	
311		-----		-----	-----		-----	-----	
312		-----		-----	-----		-----	-----	
323		-----		-----	-----		-----	-----	
333		-----		-----	-----		-----	-----	
334		-----		-----	-----		-----	-----	
336		-----		-----	-----		-----	-----	
343		-----		-----	-----		-----	-----	
360		-----		-----	-----		-----	-----	
370		-----		-----	-----		-----	-----	
381		-----		-----	-----		-----	-----	
403		-----		-----	-----		-----	-----	
420		-----		-----	-----		-----	-----	
444		-----		-----	-----		-----	-----	
445	IP498	53.46		-0.76	3.808		0.51	580.5	
447		-----		-----	-----		-----	-----	
824		-----		-----	-----		-----	-----	
846		-----		-----	-----		-----	-----	
1026		-----		-----	-----		-----	-----	
1059		-----		-----	-----		-----	-----	
1095	EN15195	53.04		-1.22	3.84		0.96	-----	
1167	EN15195	54.61		0.51	3.721		-0.73	547.4	
1201	EN15195	54.63		0.53	3.719		-0.75	582.8	
1212		-----		-----	-----		-----	-----	
1275		-----		-----	-----		-----	-----	
1299		-----		-----	-----		-----	-----	
1356		-----		-----	-----		-----	-----	
1457	EN15195	53.49		-0.73	3.806		0.48	583.6	
1528		-----		-----	-----		-----	-----	
1556		-----		-----	-----		-----	-----	
1586	EN15195	54.4		0.28	-----		-----	-----	
1613		-----		-----	-----		-----	-----	
1635		-----		-----	-----		-----	-----	
1741		-----		-----	-----		-----	-----	
1776		-----		-----	-----		-----	-----	
1802		-----		-----	-----		-----	-----	
1807	EN15195	54.4		0.28	3.739		-0.47	-----	
1833		-----		-----	-----		-----	-----	
1857		-----		-----	-----		-----	-----	
1941		-----		-----	-----		-----	-----	
1976		-----		-----	-----		-----	-----	
6057		-----		-----	-----		-----	-----	
6075		-----		-----	-----		-----	-----	
6142		-----		-----	-----		-----	-----	
6201		-----		-----	-----		-----	-----	
6203		-----		-----	-----		-----	-----	
6238		-----		-----	-----		-----	-----	
6262		-----		-----	-----		-----	-----	
6291		-----		-----	-----		-----	-----	
6308		-----		-----	-----		-----	-----	
6321		-----		-----	-----		-----	-----	

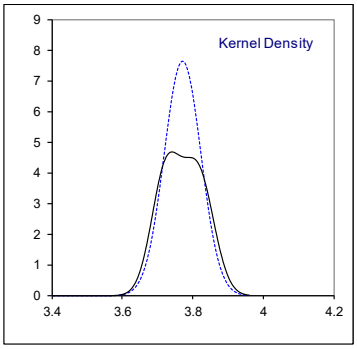
	DCN	ID (ms)
normality	unknown	unknown
n	8	6
outliers	0	1
mean (n)	54.15	3.77
st.dev. (n)	0.728	0.052
R(calc.)	2.04	0.15
st.dev.(EN15195:14)	0.905	0.071
R(EN15195:14)	2.54	0.20

The DCN test results calculated by iis for labs marked with an E:
Lab 171: 77.40


Derived Cetane Number (EN15195)
58
57
56
55
54
53
52
51
50
1095
445
1457
1986
1807
1167
1201
171


Kernel Density
0.6
0.5
0.4
0.3
0.2
0.1
0
50
52
54
56
58

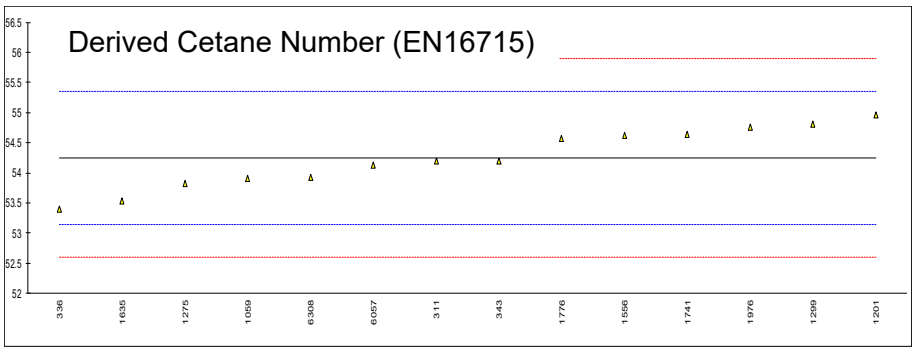

Ignition Delay (EN15195)
4.1
4
3.9
3.8
3.7
3.6
3.5
3.4
171
1201
1167
1807
1457
445
1095

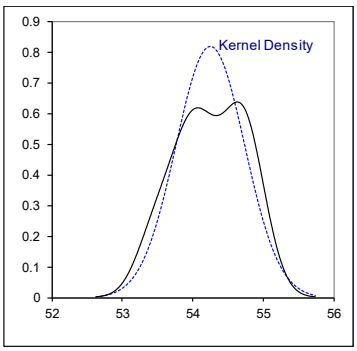

Kernel Density
9
8
7
6
5
4
3
2
1
0
3.4
3.6
3.8
4
4.2

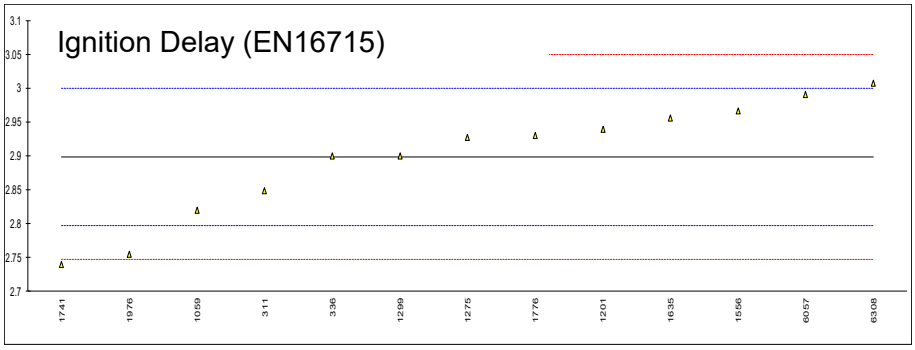
Determination of Derived Cetane Number (EN16715) on sample #20006;

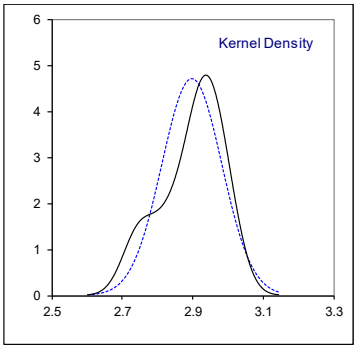
Lab	method	DCN	mark	z(targ)	ID (ms)	mark	z(targ)	CD (ms)	mark	z(targ)	W. T. (°C)	mark
120		-----		-----	-----		-----	-----		-----	-----	
140		-----		-----	-----		-----	-----		-----	-----	
171		-----		-----	-----		-----	-----		-----	-----	
311	D7668	54.2		-0.09	2.8481		-0.99	4.3858		-0.03	592.27	
312		-----		-----	-----		-----	-----		-----	-----	
323		-----		-----	-----		-----	-----		-----	-----	
333		-----		-----	-----		-----	-----		-----	-----	
334		-----		-----	-----		-----	-----		-----	-----	
336	D7668	53.4	E	-1.54	2.90		0.04	4.50		2.55	597.5	
343	D7668	54.2		-0.09	-----		-----	-----		-----	-----	
360		-----		-----	-----		-----	-----		-----	-----	
370		-----		-----	-----		-----	-----		-----	-----	
381		-----		-----	-----		-----	-----		-----	-----	
403		-----		-----	-----		-----	-----		-----	-----	
420		-----		-----	-----		-----	-----		-----	-----	
444		-----		-----	-----		-----	-----		-----	-----	
445		-----		-----	-----		-----	-----		-----	-----	
447		-----		-----	-----		-----	-----		-----	-----	
824		-----		-----	-----		-----	-----		-----	-----	
846		-----		-----	-----		-----	-----		-----	-----	
1026		-----		-----	-----		-----	-----		-----	-----	
1059	EN16715	53.9		-0.63	2.8192		-1.57	4.4029		0.36	599.21	
1095		-----		-----	-----		-----	-----		-----	-----	
1167		-----		-----	-----		-----	-----		-----	-----	
1201	EN16715	54.96		1.30	2.9391		0.81	4.3316		-1.25	594.76	
1212		-----		-----	-----		-----	-----		-----	-----	
1275	D7668	53.83		-0.76	2.927		0.57	4.415		0.63	583.5	
1299	D7668	54.8		1.01	2.90		0.04	4.34		-1.06	593.2	
1356		-----		-----	-----		-----	-----		-----	-----	
1457		-----		-----	-----		-----	-----		-----	-----	
1528		-----		-----	-----		-----	-----		-----	-----	
1556	EN16715/D7668	54.62		0.68	2.9663		1.35	4.3573		-0.67	583.23	
1586		-----		-----	-----		-----	-----		-----	-----	
1613		-----		-----	-----		-----	-----		-----	-----	
1635	EN16715	53.54		-1.29	2.9550		1.13	4.4397		1.19	590.54	
1741	EN16715	54.63		0.70	2.74		-3.14	4.35		-0.84	600.08	
1776	EN16715	54.57		0.59	2.93		0.63	4.36		-0.61	589.20	
1802		-----		-----	-----		-----	-----		-----	-----	
1807		-----		-----	-----		-----	-----		-----	-----	
1833		-----		-----	-----		-----	-----		-----	-----	
1857		-----		-----	-----		-----	-----		-----	-----	
1941		-----		-----	-----		-----	-----		-----	-----	
1976	EN16715	54.76		0.93	2.7542		-2.86	4.3377		-1.11	609.95	
6057	EN16715	54.12		-0.23	2.99		1.82	4.40		0.29	591.99	
6075		-----		-----	-----		-----	-----		-----	-----	
6142		-----		-----	-----		-----	-----		-----	-----	
6201		-----		-----	-----		-----	-----		-----	-----	
6203		-----		-----	-----		-----	-----		-----	-----	
6238		-----		-----	-----		-----	-----		-----	-----	
6262		-----		-----	-----		-----	-----		-----	-----	
6291		-----		-----	-----		-----	-----		-----	-----	
6308	EN16715	53.93		-0.58	3.0073		2.17	4.4112		0.55	604.04	
6321		-----		-----	-----		-----	-----		-----	-----	
	normality	OK			OK			suspect				
	n	14			13			13				
	outliers	0			0			0				
	mean (n)	54.25			2.90			4.39				
	st.dev. (n)	0.488			0.085			0.048				
	R(calc.)	1.37			0.24			0.14				
	st.dev.(EN16715:15)	0.550			0.050			0.044				
	R(EN16715:15)	1.54			0.14			0.12				
	compare											
	R(D7688:17)	1.54			0.14			0.12				

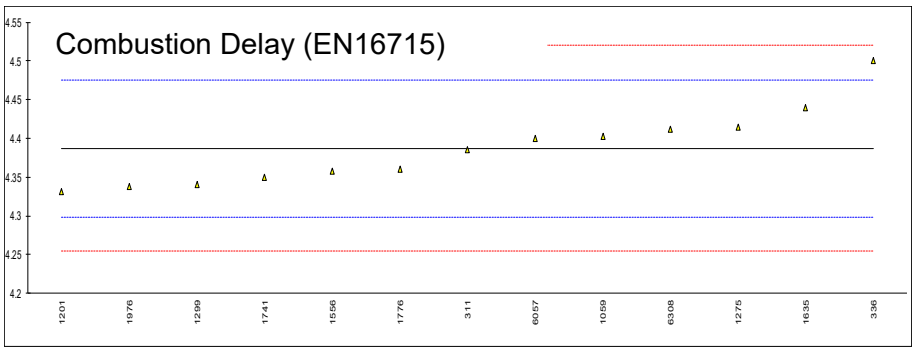
The DCN test results calculated by iis for labs marked with an E:
Lab 336: 52.76

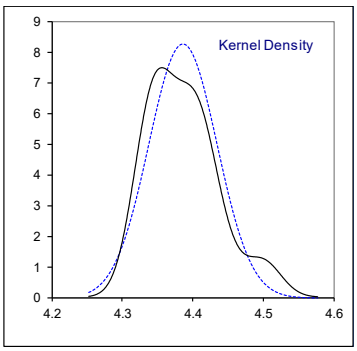

Derived Cetane Number (EN16715)
56.5
56
55.5
55
54.5
54
53.5
53
52.5
52
336
1635
1275
1059
6308
6057
311
343
1776
1556
1741
1976
1299
1201


Kernel Density
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
52
53
54
55
56


Ignition Delay (EN16715)
3.1
3.05
3
2.95
2.9
2.85
2.8
2.75
2.7
1741
1976
1059
311
336
1299
1275
1776
1201
1635
1556
6057
6308


Kernel Density
6
5
4
3
2
1
0
2.5
2.7
2.9
3.1
3.3


Combustion Delay (EN16715)
4.55
4.5
4.45
4.4
4.35
4.3
4.25
4.2
1201
1976
1299
1741
1556
1776
311
6057
1059
6308
1275
1635
336

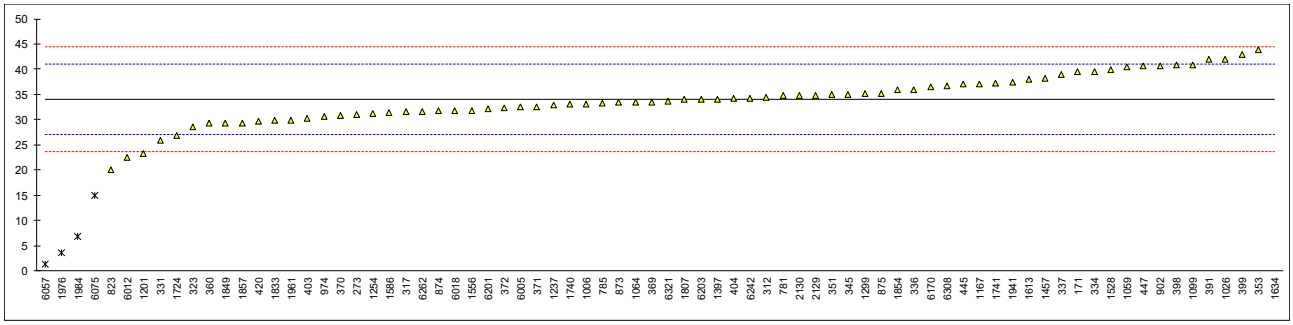

Kernel Density
9
8
7
6
5
4
3
2
1
0
4.2
4.3
4.4
4.5
4.6

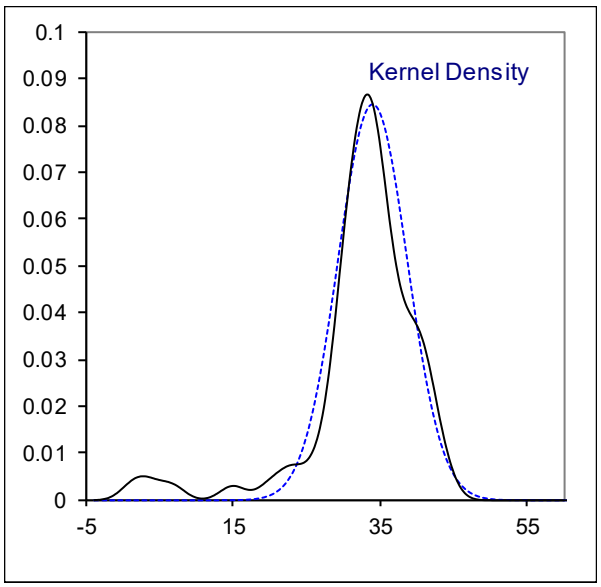
Determination of Total Contamination on sample #20007; result in mg/kg

lab	method	Total C.	mark	z(targ)	incomplete	vol. filtered (mL)	stopped (min)	remarks
120	EN12662:2014	<12.0	f-?	<-6.35	NO	-----	-----	
140	EN12662:2014	<12	f-?	<-6.35	NO	-----	-----	
171	EN12662:2014	39.5		1.58		300	-----	
273	IP440	31		-0.87	NO	-----	-----	
311	EN12662:2014	>30		-----	NO	300	-----	
312	EN12662:2014	34.5		0.14	NO	300	-----	
317	EN12662:2014	31.5		-0.73	NO	-----	-----	
323	EN12662:2014	28.5		-1.59	NO	-----	-----	
331	EN12662:2014	26.0		-2.31		-----	-----	
334	EN12662:2014	39.5		1.58	NO	-----	-----	
335		-----		-----		-----	-----	
336	EN12662:2014	36		0.57	NO	-----	-----	
337	EN12662:2014	39.0	C	1.44		-----	-----	first reported 19.0
343	EN12662:2014	>30.0		-----		-----	-----	
345	EN12662:2014	35		0.28	NO	-----	-----	
351	EN12662:2014	34.90		0.25	NO	-----	-----	
353	IP440	43.86		2.84		307 gram	30	
360	EN12662:2014	29.23		-1.38	NO	-----	-----	
369	EN12662:2014	33.5		-0.15	NO	300	2	
370	EN12662:2014	30.9		-0.90	NO	300	9	
371	EN12662:2014	32.6		-0.41		-----	-----	
372	EN12662:2014	32.4		-0.47	YES	275	30	
391	EN12662:2014	41.9		2.27		-----	-----	
398	EN12662:2014	40.8		1.96	NO	543 *)	NA	vol. not acc. test method
399	EN12662:2014	43		2.59		-----	-----	
403	EN12662:2014	30.33		-1.07	NO	-----	-----	
404	EN12662:2014	34.2		0.05	NO	300	-----	
420	EN12662:2014	29.6		-1.28		-----	-----	
445	IP440	37.04		0.87	NO	-----	-----	
447	IP440	40.6		1.90		-----	-----	
663		-----		-----		-----	-----	
704	EN12662:2014	> 30		-----	NO	-----	-----	
750		-----		-----		-----	-----	
781	EN12662:2014	34.7		0.20	NO	-----	-----	
785	EN12662	33.25		-0.22	NO	-----	-----	
823	EN12662:2014	20.0		-4.05		300	1	
873	EN12662:2014	33.4		-0.18	NO	-----	-----	
874	EN12662:2014	31.7		-0.67	NO	-----	-----	
875	EN12662:2014	35.2		0.34	YES	-----	-----	
902	EN12662:2014	40.7		1.93		215 *)	30	vol. not acc. test method
963		-----		-----		-----	-----	
974	IP440	30.6		-0.99	YES	-----	-----	
1006	EN12662:2014	33.1		-0.27		-----	-----	
1026	EN12662:2014	42.0		2.30	NO	300	-----	
1059	EN12662:2014	40.5		1.87	NO	293	-----	
1064	EN12662:2014	33.45		-0.17	NO	300	-----	
1095	EN12662:2014	>30.0		-----		-----	-----	
1099	EN12662:2014	40.9		1.98	YES	-----	-----	
1167	EN12662:2014	37.11		0.89	NO	-----	-----	
1201	EN12662:2014	23.3		-3.09	NO	-----	-----	
1237	EN12662:2014	32.9		-0.32	NO	-----	-----	
1254	EN12662:2014	31.29		-0.79	NO	-----	-----	
1286		-----		-----		-----	-----	
1299	EN12662:2014	35.1		0.31		300	-----	
1397	EN12662:2014	34.1		0.02		-----	-----	
1457	EN12662:2014	38.1		1.18	NO	-----	-----	
1528	EN12662:2014	39.8		1.67	NO	-----	9	
1556	EN12662:2014	31.86		-0.62	NO	300	<1	
1586	EN12662:1998	31.4		-0.76		-----	-----	
1613	IP440	38.0		1.15	NO	--	--	
1634	EN12662:2014	82.4	C,R(0.01)	13.96	NO	300	16	first reported 74.9
1681		-----		-----	YES	210	30	
1724	IP440	26.91		-2.05		-----	-----	
1740	EN12662:2014	33		-0.30	NO	-----	-----	
1741	EN12662:2014	37.2		0.92		-----	-----	
1807	EN12662:2014	34		-0.01		-----	-----	
1833	EN12662:2014	29.8		-1.22		-----	-----	
1849	EN12662:2014	29.3		-1.36		-----	-----	
1854	EN12662:2014	35.9		0.54	NO	300	-----	
1857	EN12662:2014	29.40		-1.33	NO	-----	-----	
1941	EN12662:2014	37.42		0.98		300	-----	

lab	method	Total C.	mark	z(targ)	incomplete	vol. filtered (mL)	stopped (min)	remarks
1961	EN12662:2014	29.9		-1.19	NO	-----	-----	
1976	EN12662:1998	3.59	ex	-8.78		300	-----	
1984	EN12662:2014	6.75	ex	-7.87	NO	-----	-----	
2129	EN12662:2014	34.82		0.23		-----	-----	
2130	IP440	34.72		0.20	NO	-----	-----	
6005	EN12662:2014	32.5		-0.44	NO	300	-----	
6012	EN12662:2008	22.6		-3.30	NO	250	-----	
6018	EN12662:2014	31.7		-0.67	NO	300	-----	
6057	EN12662:2014	1.40	ex	-9.41		-----	-----	
6075	EN12662:2014	15.0	ex	-5.49	NO	-----	-----	
6170	EN12662:2014	36.5		0.71	NO	-----	-----	
6201	EN12662:2014	32.1		-0.55	NO	300	-----	
6203	EN12662:2014	34		-0.01	NO	-----	-----	
6238		-----		-----		-----	-----	
6242	EN12662:2014	34.30		0.08	NO	-----	-----	
6262	EN12662:2014	31.5		-0.73	NO	300	2	
6291		-----		-----		-----	-----	
6308	IP440	36.6		0.74	NO	292	-----	
6321	IP440	33.65		-0.11	NO	-----	-----	

normality	OK
n	71
outliers	1 (+4 ex)
mean (n)	34.023
st.dev. (n)	4.7121
R(calc.)	13.194
st.dev.(EN12662:14)	3.4659
R(EN12662:14)	9.704

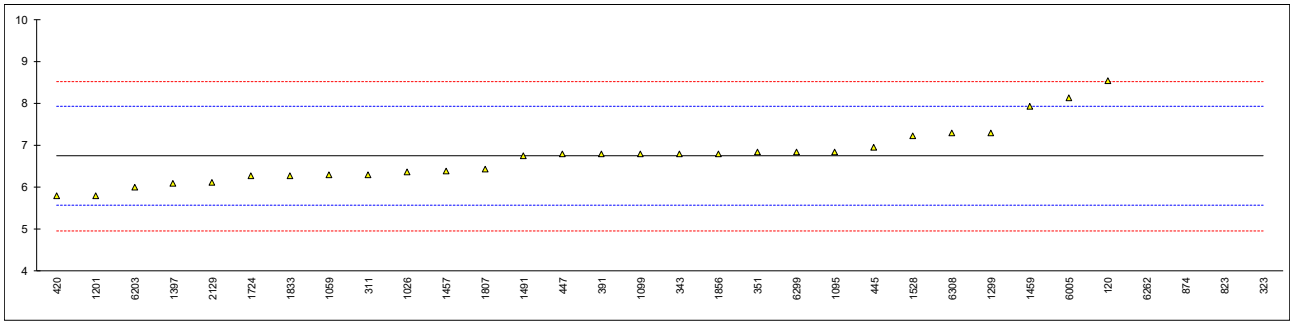


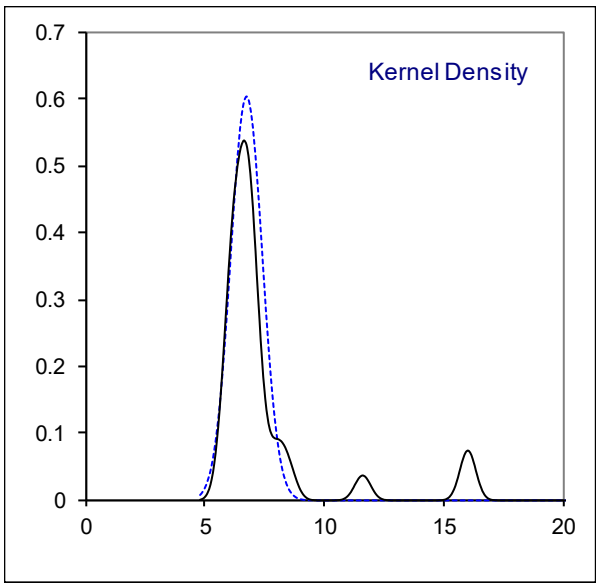


Determination of Oxidation Stability Induction period on sample #20008; results in hrs

lab	method	value	mark	z(targ)	remarks
120	EN15751	8.53		3.03	
140		-----		-----	
171		-----		-----	
311	EN15751	6.3		-0.74	
323	EN15751	31.3	R(0.01)	41.53	
334		-----		-----	
342		-----		-----	
343	EN15751	6.8		0.10	
351	EN15751	6.83		0.15	
360		-----		-----	
370		-----		-----	
372		-----		-----	
391	EN15751	6.8		0.10	
403		-----		-----	
420	EN15751	5.8		-1.59	
445	EN15751	6.96		0.37	
447	EN15751	6.8		0.10	
750		-----		-----	
823		16	R(0.01)	15.66	
846		-----		-----	
874	EN15751	16	R(0.01)	15.66	
902		-----		-----	
963		-----		-----	
974		-----		-----	
1006		-----		-----	
1026	EN15751	6.37		-0.63	
1059	EN15751	6.3		-0.74	
1095	EN15751	6.84		0.17	
1099	EN15751	6.8		0.10	
1109		-----		-----	
1167		-----		-----	
1201	EN15751	5.8		-1.59	
1254		-----		-----	
1299	EN15751	7.3		0.95	
1397	EN15751	6.1		-1.08	
1457	EN15751	6.38		-0.61	
1459	EN15751	7.92		1.99	
1491	EN15751	6.75		0.02	
1528	EN15751	7.22		0.81	
1586		-----		-----	
1613		-----		-----	
1681		-----		-----	
1724	EN15751	6.26		-0.81	
1740		-----		-----	
1741		-----		-----	
1807	EN15751	6.44		-0.51	
1833	EN15751	6.26		-0.81	
1849		-----		-----	
1856	EN15751	6.8		0.10	
1857		-----		-----	
1941		-----		-----	
1950		-----		-----	
1984		-----		-----	
2129	EN15751	6.12		-1.05	
2130		-----		-----	
6005	EN15751	8.14		2.37	
6057		-----		-----	
6075		-----		-----	
6201		-----		-----	
6203	EN15751	6.0		-1.25	
6242		-----		-----	
6262	EN15751	11.6	R(0.05)	8.22	
6291		-----		-----	
6299	EN15751	6.83		0.15	
6308	EN15751	7.28		0.91	
6321		-----		-----	

normality	not OK
n	28
outliers	4
mean (n)	6.74
st.dev. (n)	0.661
R(calc.)	1.85
st.dev.(EN15751:14)	0.591
R(EN15751:14)	1.66

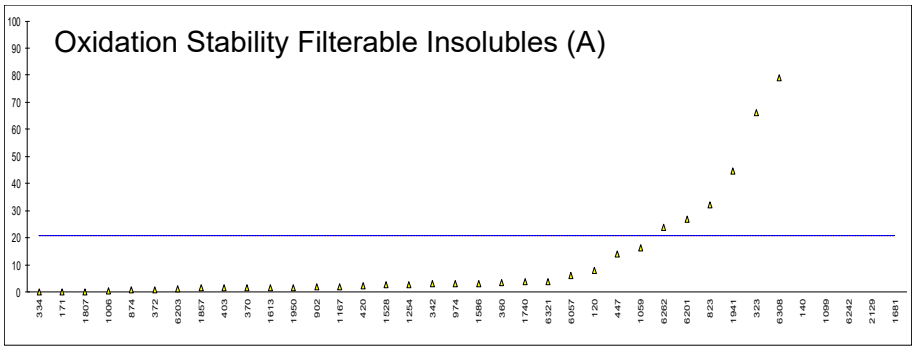

10
9
8
7
6
5
4
420
1201
6203
1387
2129
1724
1833
1059
311
1026
1457
1807
1491
447
391
1099
343
1856
351
6299
1095
445
1528
6308
1299
1459
6005
120
6262
874
823
323

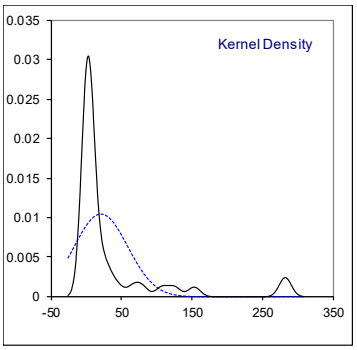

Kernel Density
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
5
10
15
20

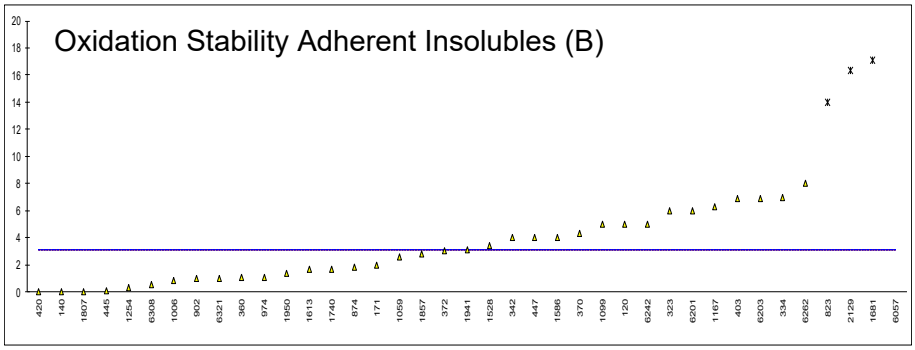
Determination of Oxidation Stability Insolubles on sample #20008; results in g/m^3

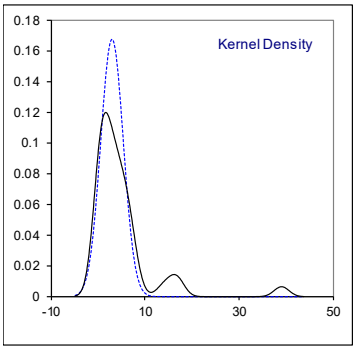
lab	method	Filterable (A)	mark	z(targ)	Adherent (B)	mark	z(targ)	Total (A+B)	mark	z(targ)
120	D2274	8		-----	5		-----	13		-----
140	ISO12205	107		-----	0		-----	107		-----
171	D2274	0		-----	2		-----	2		-----
311		-----		-----	-----		-----	-----		-----
323	ISO12205	66		-----	6		-----	72		-----
334	ISO12205	0		-----	7		-----	7		-----
342	ISO12205	3		-----	4		-----	7		-----
343		-----		-----	-----		-----	5		-----
351		-----		-----	-----		-----	-----		-----
360	ISO12205	3.3		-----	1.1		-----	4.4		-----
370	ISO12205	1.5		-----	4.3		-----	5.8		-----
372	ISO12205	1		-----	3		-----	4		-----
391		-----		-----	-----		-----	-----		-----
403	ISO12205	1.43		-----	6.86		-----	8.29		-----
420	ISO12205	2.29		-----	0		-----	2.29		-----
445	ISO12205	<0.1		-----	0.1		-----	0.1		-----
447	ISO12205	14.0		-----	4.0		-----	18.0		-----
750		-----		-----	-----		-----	-----		-----
823	D2274	32		-----	14	R(0.01)	-----	46		-----
846		-----		-----	-----		-----	-----		-----
874	ISO12205	0.69		-----	1.85		-----	2.54		-----
902	ISO12205	2		-----	1		-----	3		-----
963		-----		-----	-----		-----	-----		-----
974	D2274	3.1		-----	1.1		-----	4.2		-----
1006	D2274	0.57		-----	0.86		-----	1.43		-----
1026		-----		-----	-----		-----	-----		-----
1059	ISO12205	16.29		-----	2.57		-----	18.96		-----
1095		-----		-----	-----		-----	>30		-----
1099	ISO12205	125		-----	5		-----	130		-----
1109		-----		-----	-----		-----	-----		-----
1167	ISO12205	2.0		-----	6.3		-----	8.3		-----
1201		-----		-----	-----		-----	-----		-----
1254	ISO12205	2.85		-----	0.35		-----	3.20		-----
1299		-----		-----	-----		-----	4.6		-----
1397		-----		-----	-----		-----	-----		-----
1457		-----		-----	-----		-----	-----		-----
1459		-----		-----	-----		-----	-----		-----
1491		-----		-----	-----		-----	-----		-----
1528	ISO12205	2.8		-----	3.4		-----	6.2		-----
1586	D2274	3.14		-----	4.0		-----	7.14		-----
1613	D2274	1.5		-----	1.7		-----	3.2		-----
1681	ISO12205	282.6	R(0.01)	-----	17.1	R(0.01)	-----	299.7	R(0.01)	-----
1724		-----		-----	-----		-----	-----		-----
1740	ISO12205	4		-----	1.7		-----	5.7		-----
1741		-----		-----	-----		-----	-----		-----
1807	ISO12205	0.028		-----	0		-----	0.3	E	-----
1833		-----		-----	-----		-----	-----		-----
1849		-----		-----	-----		-----	23.0		-----
1856		-----		-----	-----		-----	-----		-----
1857	ISO12205	1.4		-----	2.8		-----	4.2		-----
1941	ISO12205	44.57		-----	3.14		-----	47.71		-----
1950	ISO12205	1.6		-----	1.4		-----	3.0		-----
1984		-----		-----	-----		-----	-----		-----
2129	ISO12205	281.7	R(0.01)	-----	16.3	R(0.01)	-----	298.0	R(0.01)	-----
2130		-----		-----	-----		-----	-----		-----
6005		-----		-----	-----		-----	-----		-----
6057	ISO12205	6		-----	39	R(0.01)	-----	45		-----
6075		-----		-----	-----		-----	-----		-----
6201	ISO12205	27		-----	6		-----	33		-----
6203	ISO12205	1.32		-----	6.86		-----	8.18		-----
6242	D7462	153.0		-----	5.0		-----	158.0		-----
6262	ISO12205	24		-----	8		-----	32		-----
6291		-----		-----	-----		-----	-----		-----
6299		-----		-----	-----		-----	-----		-----
6308	ISO12205	79		-----	0.57		-----	80		-----
6321	ISO12205	4		-----	1		-----	5		-----
	normality	not OK			OK			not OK		
	n	36			35			39		
	outliers	2			4			3		
	mean (n)	20.70			3.08			24.09		
	st.dev. (n)	38.037			2.382			37.288		
	R(calc.)	106.50			6.67			104.41		
	st.dev.(ISO12205:95)	(3.335)			(3.335)			(4.716)		
	R(ISO12205:95)	(9.34)			(9.34)			(13.21)		

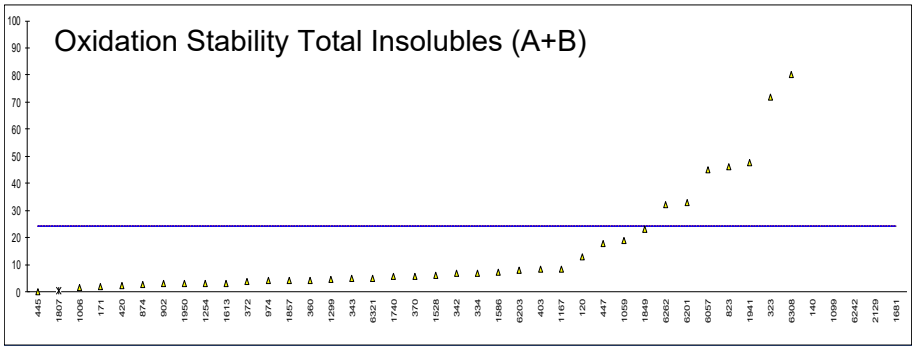
The Total (A+B) test results calculated by iis for labs marked with an E:
Lab 1807: 0.028

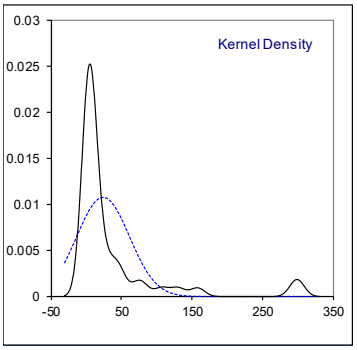












APPENDIX 2

Number of participants per country

1 lab in	AFGHANISTAN	1 lab in	MALTA
1 lab in	ARGENTINA	1 lab in	MARTINIQUE
1 lab in	AUSTRALIA	1 lab in	MOROCCO
3 labs in	AUSTRIA	11 labs in	NETHERLANDS
4 labs in	BELGIUM	1 lab in	NIGER
2 labs in	BOSNIA and HERZEGOVINA	2 labs in	NIGERIA
2 labs in	BULGARIA	2 labs in	NORWAY
1 lab in	CHILE	1 lab in	PHILIPPINES
1 lab in	CHINA, People's Republic	6 labs in	POLAND
1 lab in	CONGO Brazzaville	7 labs in	PORTUGAL
1 lab in	COTE D'IVOIRE	4 labs in	ROMANIA
3 labs in	CROATIA	18 labs in	RUSSIAN FEDERATION
1 lab in	CZECH REPUBLIC	2 labs in	SAUDI ARABIA
2 labs in	EGYPT	3 labs in	SERBIA
1 lab in	ESTONIA	2 lab in	SLOVENIA
3 labs in	FINLAND	1 lab in	SOUTH AFRICA
12 labs in	FRANCE	2 labs in	SOUTH KOREA
2 labs in	GEORGIA	8 labs in	SPAIN
3 labs in	GERMANY	1 lab in	SUDAN
5 labs in	GREECE	4 labs in	SWEDEN
1 lab in	GUAM	1 lab in	TAIWAN
1 lab in	HUNGARY	1 lab in	THAILAND
2 labs in	INDIA	1 lab in	TOGO
1 lab in	IRAQ	2 labs in	TUNISIA
2 labs in	IRELAND	5 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	14 labs in	UNITED KINGDOM
3 labs in	LATVIA	3 labs in	UNITED STATES OF AMERICA
1 lab in	LITHUANIA		

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	= possibly an error in calculations
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
2 ASTM E178:02
3 ASTM E1301:03
4 ISO5725:86
5 ISO5725, parts 1-6, 1994
6 ISO13528:05
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 IP 367:84
10 DIN 38402 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
14 P.J. Lowthian and M. Thompson, The Royal Society of Chemistry, Analyst, 127, 1359-1364 (2002)
15 Bernard Rosner, Percentage Points for a Generalized ESD Many-Outlier Procedure, Technometrics, 25(2), 165-172, (1983)
16 iis memo 1904 Precision data of Calculated Cetane Index Four Variables in Gasoil