Results of Proficiency Test
Gasoil (Diesel - EN spec.)
March 2014

Organised by: Institute for Interlaboratory Studies
Spijkenisse, the Netherlands

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1 INTRODUCTION

Since 1994, the institute for Interlaboratory Studies organizes proficiency tests for Gasoil - Automotive Diesel. In the annual proficiency testing program of 2013-2014, it was decided to continue the proficiency test for the analysis of Gasoil - Diesel in accordance with the latest applicable version of EN590 specification.
In this interlaboratory study, 169 laboratories from 58 different countries have participated. See appendix 3 for a list of participants in alphabetical country order. In this report the results of the 2014 EN Gasoil - Diesel proficiency test are presented and discussed.

2 SET UP

The Institute for Interlaboratory Studies (iis) in Spijkenisse, the Netherlands, was the organiser of this proficiency test.
For the EN specification round robin it was decided to use two identical samples of Gasoil, 1*1L Gasoil and 1*0.5L Gasoil, both labelled #14013. For Total Contamination, it was decided to use one bottle of 1L (80% filled), labelled #14014. As the institute decided to try to certify again a reference material, sample #14013 was added as candidate reference material. Sample analyses for fit-for-use and homogeneity testing were subcontracted. Participants were requested to report rounded and unrounded results. The unrounded 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/IEC 17043:2010 (R007), since January 2000, by the Dutch Accreditation Council (Raad voor Accreditatie). This ensures strict adherence to protocols for sample preparation and statistical evaluation and 100% confidentially 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 organisation 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 April 2014 (iis-protocol, version 3.3), which can be downloaded from www.iisnl.com.

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

The 500 litre low sulphur Gasoil (automotive diesel) was purchased from the local market.
After homogenization, the material was subsequently divided over 200 amber glass bottles of 1L, 200 amber glass bottles of 500 mL with inner and outer caps and both labelled #14013 and 745 amber glass bottles of 100 mL to be used for candidate reference material.
The homogeneity of the 1L, 500 mL and 100 mL subsamples were checked by the determination of Density in accordance with D4052 on (in total) 20 stratified randomly selected samples.

	Density @ 15 °C in kg/m^3		Density @ 15 °C in kg/m^3
sample #14013-1	834.29	sample #14013-11	834.30
sample #14013-2	834.30	sample #14013-12	834.29
sample #14013-3	834.30	sample #14013-13	834.30
sample #14013-4	834.30	sample #14013-14	834.29
sample #14013-5	834.30	sample #14013-15	834.29
sample #14013-6	834.30	sample #14013-16	834.29
sample #14013-7	834.30	sample #14013-17	834.29
sample #14013-8	834.30	sample #14013-18	834.30
sample #14013-9	834.30	sample #14013-19	834.30
Sample #14013-10	834.30	Sample #14013-20	834.29

table 1: homogeneity test of subsamples #14013

From the above test results, the repeatabilities were calculated and compared with 0.3 times the corresponding reproducibilities in agreement with the procedure of ISO 13528, Annex B2 in the next table:

	Density @ 15ºC in kg/m^3
r (sample #14013)	0.01
reference test	ISO12185:96
0.3*R (reference test)	0.15

Table 2: precision data of the subsamples #14013

The calculated repeatability was less than 0.3 times the reproducibility of the reference method. Therefore, homogeneity of the subsamples #14013 was assumed.

For Total Contamination, out of the same batch, another 98 amber glass bottles of 1L with inner and outer caps were filled up to approx 700 g and subsequently labelled #14014.
Each sample was spiked with 1 ml of a fresh prepared and well shaken, 10 g/kg particulate quartz material BCR-067 (ø 2.4-32 µm) in oil suspension.
The addition was checked by weighing the bottles before and after addition of the spike.

Depending on the registration, two bottles of regular Gasoil (1*1 L and 1*0.5 L both labelled #14013) and/or 1 bottle of Gasoil for Total Contamination (1*1 L labelled #14014) were sent to the participating laboratories on February 19, 2014.

2.5 STABILITY OF THE SAMPLES

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

2.6 ANALYSIS

The participants were asked to determine on the samples #14013: Ash Content, Cetane Index, Carbon Residue on 10% residue, Cloud Point, Cold Filter Plugging Point (CFPP), Copper Corrosion, Density @ 15°C, Distillation (IBP, 5%, 10%, 50%, 90%, 95% recovered, FBP and %V/V at 250ºC and 350ºC), FAME content, Flash Point PMcc, Kinematic Viscosity @ 40°C, Lubricity by HFRR, Poly-Aromatics, Nitrogen, Pour Point, Sulphur content, Total Acid Number and Water. On sample #14014 was requested to determine Total Contamination only. The participants were also requested to report additional information for some determinations.
To get comparable results a detailed report form, on which the units were prescribed as well as some of the required standards and a letter of instructions were prepared and made available for download on the iis website www.iisnl.com.
A SDS and a form to confirm receipt of the samples were added to the sample package

3 RESULTS

During four weeks after sample despatch, the results of the individual laboratories were gathered. The original data are tabulated per determination in the appendix 1 of this report. The laboratories are presented by their code numbers.

Directly after deadline, a reminder fax was sent to those laboratories that had not yet reported.

Shortly after the deadline, the available results were screened for suspect data. A 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 (raw data of the) reported results. Additional or corrected results have been used for data analysis and the original results are placed under 'Remarks' in the result tables in appendix 1.

3.1 STATISTICS

Statistical calculations were performed as described in the report ‘iis Interlaboratory Studies: Protocol for the Organisation, Statistics and Evaluation’ of April 2014 (iis-protocol, version 3.3).

For the statistical evaluation the *unrounded* (when available) figures were used instead of the rounded results. 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.

Not all data sets proved to have a normal distribution, in which cases the statistical evaluation of the results should be used with due care.
In accordance to ISO 5725 (1986 and 1994) the original results per determination were submitted subsequently to Dixon and Grubbs outlier tests. Outliers are marked by D(0.01) for the Dixon test, by G(0.01) or DG(0.01) for the Grubbs test and by R(0.01) for the Rosner General ESD test (see appendix 4, no.15). Stragglers are marked by D(0.05) for the Dixon test, by G(0.05) or DG(0.05) for the Grubbs test and by R(0.05). Both outliers and stragglers were not included in the calculations of the averages and the 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. When the uncertainty passed the evaluation, no remarks are made in the report. However, when the uncertainty failed the evaluation it is mentioned in the report and it will have consequences for the evaluation of the test results.

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

3.2 GRAPHICS

In order to visualise 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 analysis results are plotted. The corresponding laboratory numbers are under 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 standard. 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 (see appendix 4; nos.13 and 14). Also a normal Gauss curve was projected over the Kernel Density Graph.

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. ASTM reproducibilities, the z-scores were calculated using a target standard deviation. This results in an evaluation independent of the spread of this interlaboratory study. The target standard deviation was calculated from the literature reproducibility by division with 2.8.

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:

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

The $z_{(target)}$ scores are listed in the result tables in appendix 1.
Absolute values for z<2 are very common and absolute values for z>3 are very rare.
Therefore, the usual interpretation of z-scores may be 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 with customs clearance were encountered during dispatch of the samples to Nigeria, Russia and Saudi Arabia.
For sample #14013, twenty-eight participants reported results after the final reporting date and seven participants did not report any test results.
For sample #14014, eleven participants reported results after the final reporting date and three participants did not report any test results.

Finally, 162 participants reported 3191 numerical results in total. Observed were 90 outlying results, which is 2.8%. In proficiency studies, outlier percentages of 3%-7.5% are quite normal.

4.1 EVALUATION PER TEST

In this section, the results are discussed per test. The methods, which are used by the various laboratories, are taken into account for explaining the observed differences where possible and applicable. These methods are also in the tables together with the reported data. The abbreviations, used in these tables, are listed in appendix 4.
In the iis PT reports, ASTM methods are referred to with a number (e.g. D2086) and an added designation for the year that the method was adopted or revised (e.g. D2086-08). If applicable, a designation in parentheses is added to designate the year of reapproval (e.g. D2086-08 (2013)). In the results tables of Appendix 1 only the method number and year of adoption or revision will be used.

The majority of the data sets proved to have a normal distribution. However, a number of data sets were not Gaussian distributed and the distribution of a few data sets was suspect. The statistical evaluation for these latter data sets should be used with due care.

Ash: This determination was not problematic. Four statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with the requirements of ISO6245:01.

C.I. ISO4264: Thirteen participants reported results according ASTM D976, a test method that leads to results that are not equivalent with ISO4264/ASTM D4737 results. Therefore, these results were excluded from the statistical evaluation. For the other results, apparently almost all participants used the same calculation method: procedure A of ISO4264:95/IP380:98/ASTM D4737. The calculated reproducibility of the group is small in comparison with the reproducibility as found in last year's round: 0.79 vs 1.30. Five participants probably made a calculation error.

Cloud Point: This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in good agreement with the requirements of EN23015:94.

CFPP: This determination was not problematic. Only one statistical outlier was observed and the calculated reproducibility after rejection of the statistical outlier is in full agreement with the requirements of EN116:97.

CR on 10% res.: This determination was problematic at this low level of carbon residue. Seven test results were excluded as the reported test method (ASTM D524, Ramsbottom CR) is not equivalent with ISO10370. Also, two statistical outliers were observed. The calculated reproducibility after rejection of the suspect test results is not in agreement with ISO10370:93. According to the appendix in ISO10370 (or ASTM D4530), the test results of ISO10370 are equivalent to the test results of ISO6615, but the precision of the micro method is better.

Copper Corrosion: This determination was not problematic. All participants agreed on a result of 1.

Density @15°C: This determination was problematic for a number of laboratories. Nine statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with ISO12185:96.

FAME: This determination was problematic. Only one statistical outlier was observed . However, the calculated reproducibility after rejection of the statistical outlier is not in agreement with EN14078:09 (range B).

Flash Point: This determination was not problematic. Only one statistical outlier was observed and the calculated reproducibility after rejection of the statistical outlier is in full agreement with the requirements of ISO2719:02.

Kin. visc. 40°C: This determination was problematic for a number of laboratories. Twelve statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in full agreement with ISO3104:94.

Lubricity: This determination was problematic. No statistical outliers were observed. Five results were excluded for statistical evaluation, as the reported test method (ASTM D6079 and D7688) uses a deviating calculation procedure and the test result therefore is not equivalent with a test result of ISO12156. The calculated reproducibility is not in agreement with ISO12156:04. The test results vary over a large range: 191 – 401 µm.

Manganese: All reporting laboratories agreed on a test result below 0.5, which is below the detection limit of the test method. Therefore no significant conclusions were drawn.

Nitrogen: This determination was problematic. Four statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with ASTM D4629:12.

Poly-aromatics: This determination may be problematic for a number of laboratories. Seven statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in full agreement with the requirements EN12916:06..

Mono-aromatics: This determination may be problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements EN12916:06.

Di-aromatics: This determination may be problematic. Only one statistical outlier was observed. However, the calculated reproducibility after rejection of the statistical outlier is not in agreement with the requirements EN12916:06.

Tri^{+}-aromatics: This determination may be not problematic. Five statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with the requirements EN12916:06.

Pour Point manual: This determination was not problematic. Three statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with ISO3016:94.

Pour Point automated: Several participants reported a test method that describes a manual mode. Therefore, these results were excluded from the statistical evaluation. This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in good agreement with ASTM D5950:07.

Sulphur: This determination was problematic at this low level of 7.3 mg/kg. Four statistical outliers were observed and the calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ISO20846:11.

Total Acid Number: This determination was problematic for a number of participants. Six statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with the requirements of ASTM D974:06. One should keep in mind that ASTM D974 and D664, may or may not give the same results (see note 2 in ASTM D664 and note 3 in ASTM D974).

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

Distillation: The automated method was not problematic. No statistical outliers were observed. All calculated reproducibilities, except for 10% recovered, are in agreement with the requirements of ISO3405:09.
The manual method was problematic. In total nine statistical outliers were observed. The calculated reproducibilities of IBP, 10% and 95% recovered, FBP and Vol. at 250ºC, after rejection of the statistical outliers, are not in agreement with the requirements of ISO3405:09. The calculated reproducibilities of 50% and 90% recovered and Vol. at 350ºC did meet the precision requirements of ISO3405:09.

Total Contamination: This determination was problematic at the level of 22.5 mg/kg. The samples were spiked with 1 ml of a fresh prepared and ultrasonically homogenized, 10 g/kg particulate quartz material BCR-067 (ø 2.4-32 µm) in oil suspension. Therefore, the minimal contamination concentration to be found was known (added amount = 14.9 mg/kg). The laboratories should be able to find at least 10.4 mg/kg [14.9 $mg/kg_{(added\ amount)}$ – 4.5 $mg/kg_{(R\ EN12662)}$].
Two statistical outliers were observed and three test results were excluded as the test method used is not equivalent (ASTM D6217 prescribed to use a different membrane compared to EN12662). The D6217 test results all showed a negative bias. The calculated reproducibility after rejection of the suspect test results is still not in agreement with the requirements of EN12662:08 or the new EN12662:14.
The correctness of the sample pretreatment is critical for this determination.

4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES

A comparison has been made between the reproducibility as declared by the relevant standard and the reproducibility as found for the group of participating laboratories that participated. The average results of the evaluated parameters, calculated reproducibilities and reproducibilities, derived from literature standards (in casu ASTM standards) are compared in the next tables.

Parameters	unit	n	average	2.8 * sd	R (lit)
Ash content	%M/M	71	0.0007	0.0010	0.0050
Cetane index ISO4264		106	54.86	0.79	unknown
Cloud Point	°C	128	-3.15	2.61	4.00
Cold Filter Plugging Point	°C	115	-13.58	3.90	3.97
Carbon Residue	%M/M	63	0.012	0.018	0.014
Copper Corrosion 3hrs@50ºC		123	1(1A)	unknown	unknown
Density @ 15 °C	kg/m^3	145	834.25	0.28	0.50
FAME	%V/V	81	5.25	0.64	0.46
Flash Point PMcc	°C	148	62.60	3.79	4.45
Kinematic Viscosity @ 40 °C	mm^2/s	127	2.92	0.03	0.03
Lubricity by HFRR	µm	73	272.0	132.3	102.0
Manganese	mg/L	13	<0.5	unknown	unknown
Nitrogen	mg/kg	33	5.9	2.3	2.0
Polyaromatics	%M/M	52	1.84	0.80	0.81
Mono-aromatics	%M/M	51	18.19	2.79	2.28
Di-aromatics	%M/M	54	1.62	0.75	0.50
Tri^+-aromatics	%M/M	44	0.22	0.44	0.57
Pour Point, manual	ºC	74	-12.57	4.81	6.43
Pour Point, automated	ºC	35	-11.91	3.80	6.10
Total Sulphur	mg/kg	126	7.26	2.42	1.93
Total Acid Number	mgKOH/g	75	0.025	0.024	0.040
Water	mg/kg	116	52.09	23.32	49.63
IBP (automated)	°C	114	167.16	8.43	9.19
10% recovery (automated)	°C	114	209.18	5.29	4.60
50% recovery (automated)	°C	114	279.24	2.31	2.97
90% recovery (automated)	°C	114	337.41	3.87	5.06
95% recovery (automated)	°C	113	352.73	6.74	8.99
FBP (automated)	°C	113	362.78	7.08	7.10
Volume at 250ºC	%V/V	107	29.63	2.31	2.70
Volume at 350ºC	%V/V	107	94.31	1.70	2.70
IBP (manual)	°C	30	167.54	8.72	6.64
10% recovery (manual)	°C	31	208.79	7.63	4.77
50% recovery (manual)	°C	30	279.12	2.70	4.20
90% recovery (manual)	°C	28	338.27	3.25	3.20
95% recovery (manual)	°C	29	353.20	5.24	4.03
FBP (manual)	°C	31	363.09	7.93	3.52
Volume at 250ºC	%V/V	29	30.14	2.96	2.51
Volume at 350ºC	%V/V	31	94.22	2.24	2.51
Total Contamination #14014	mg/kg	69	22.51	8.94	6.75

table 3: summary of tests results of Gasoil #14013 and #14014

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 INTERLABORATORY STUDY OF MARCH 2014 WITH PREVIOUS PTS.

	March 2014	*March 2013*	*March 2012*	*March 2011*
Number of reporting labs	162	132	116	102
Number of results reported	3191	2572	2135	1950
Statistical outliers	90	75	59	66
Percentage outliers	2.8%	2.9%	2.8%	3.4%

table 4: 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 standards. The conclusions are given the following table:

	March 2014	*March 2013*	*March 2012*	*March 2011*
Ash content	++	++	++	(++)
Cloud Point	++	++	++	++
Cold Filter Plugging Point	+	-	+	++
CR 10% residue	--	--	--	--
Density @ 15 °C	++	+	++	++
Distillation – automated mode	++	++	++	++
Distillation – manual mode	--	--	--	--
FAME	--	-	-	--
Flash Point PMcc	++	++	+	++
Kinematic Viscosity @ 40 °C	+/-	+/-	+	--
Lubricity by HFRR	--	--	+/-	+/-
Nitrogen content	--	-	--	--
Polyaromatics	+/-	+/-	--	--
Aromatics (mono,di,tri^{+})	-	-	n.e.	n.e.
Pour Point	++	++	++	++
Sulphur	--	-	-	-
Total Acid Number	++	++	++	++
Water content	++	++	++	++
Total Contamination #14014	--	--	+	+/-

table 5: comparison determinations against the standard
results between brackets should used with care, because the average was below the application range

The performance of the determinations against the requirements of the respective standards is listed in the above table. The following performance categories were used:

++: group performed much better than the standard
+ : group performed better than the standard
+/-: group performance similar to the standard
- : group performed worse than the standard
-- : group performed much worse than the standard
n.e.: not evaluated

APPENDIX 1

Determination of Ash on sample #14013; result in %M/M

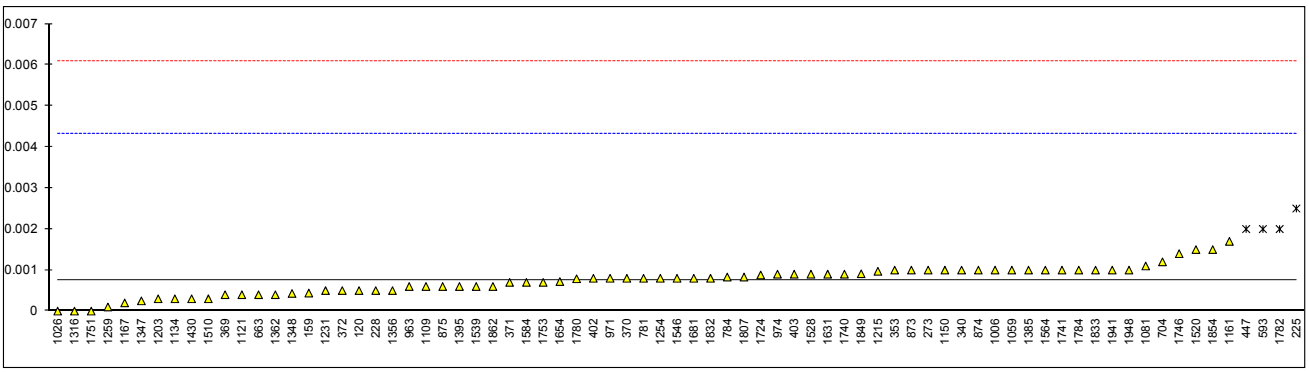
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D482	<0.001		-----	1194		-----		-----
120	ISO6245	0.0005		-0.14	1199		-----		-----
132	D482	<0.001		-----	1201	ISO6245	<0.001		-----
150	ISO6245	<0.001		-----	1203	ISO6245	0.0003		-0.25
159	D482	0.00044		-0.17	1205		-----		-----
175		-----		-----	1213	D482	<0.001		-----
193		-----		-----	1215	D482	0.00097		0.13
194	D482	<0.001		-----	1218		-----		-----
221	D482	<0.01		-----	1227		-----		-----
225	D482	0.0025	R(0.05)	0.98	1231	D482	0.00050		-0.14
228	D482	0.0005		-0.14	1254	ISO6245	0.0008		0.03
237		-----		-----	1259	ISO6245	0.0001		-0.36
238		-----		-----	1266		-----		-----
258		-----		-----	1297		-----		-----
273	D482	0.001		0.14	1299	D482	<0.001		-----
311	ISO6245	<0.001		-----	1316	D482	0		-0.42
312		-----		-----	1318		-----		-----
317	ISO6245	<0.001		-----	1347	D482	0.00025		-0.28
323	ISO6245	<0.001		-----	1348	D482	0.00043		-0.17
333		-----		-----	1356	ISO6245	0.0005		-0.14
334		-----		-----	1362	ISO6245	0.0004		-0.19
335		-----		-----	1385	D482	0.001		0.14
336		-----		-----	1395	ISO6245	0.0006		-0.08
337		-----		-----	1409	ISO6245	<0.001		-----
338		-----		-----	1412		-----		-----
340	ISO6245	0.001		0.14	1423		-----		-----
351	ISO6245	<0.001		-----	1428	ISO6245	<0.001		-----
353	IP4	0.001		0.14	1430	D482	0.0003		-0.25
357	ISO6245	<0.001		-----	1459		-----		-----
369	ISO6245	0.0004		-0.19	1460		-----		-----
370	ISO6245	0.0008		0.03	1484		-----		-----
371	ISO6245	0.0007		-0.02	1491		-----		-----
372	ISO6245	0.0005		-0.14	1510	ISO6245	0.0003		-0.25
391		-----		-----	1520	ISO6245	0.0015		0.42
398		-----		-----	1528	ISO6245	0.0009		0.09
399		-----		-----	1539	ISO6245	0.0006		-0.08
402	ISO6245	0.0008		0.03	1546	ISO6245	0.0008		0.03
403	ISO6245	0.0009		0.09	1556	ISO6245	<0.001		-----
420	ISO6245	<0.001		-----	1564	D482	0.001		0.14
430		-----		-----	1569		-----		-----
431		-----		-----	1584	ISO6245	0.0007		-0.02
432		-----		-----	1586	ISO6245	<0.001		-----
433		-----		-----	1631	ISO6245	0.0009		0.09
440		-----		-----	1634		-----		-----
445	IP4	<0.001		-----	1654	ISO6245	0.00072		-0.01
447	D482	0.002	R(0.05)	0.70	1677	ISO6245	<0.001		-----
463	D482	<0.001		-----	1681	ISO6245	0.0008		0.03
485		-----		-----	1720		-----		-----
488		-----		-----	1724	D482	0.00088		0.08
495	ISO6245	<0.001		-----	1730		-----		-----
593	D482	0.0020	R(0.05)	0.70	1740	ISO6245	0.0009		0.09
663	D482	0.0004		-0.19	1741	ISO6245	0.0010		0.14
671		-----		-----	1742		-----		-----
704	ISO6245	0.0012		0.26	1746	D482	0.0014		0.37
750		-----		-----	1751	ISO6245	0.000		-0.42
781	ISO6245	0.0008		0.03	1753	ISO6245	0.0007		-0.02
784	D482	0.00083		0.05	1776		-----		-----
785		-----		-----	1780	D482	0.000788	C	0.03
863	ISO6245	<0.001		-----	1782	ISO6245	0.002	C, R(0.05)	0.70
873	ISO6245	0.001		0.14	1783		-----		-----
874	ISO6245	0.001		0.14	1784	ISO6245	0.001		0.14
875	D482	0.0006		-0.08	1787		-----		-----
904	ISO6245	<0.01		-----	1807	ISO6245	0.00083		0.05
912	ISO6245	<0.001		-----	1810		-----		-----
962		-----		-----	1811		-----		-----
963	ISO6245	0.0006		-0.08	1832	ISO6245	0.0008		0.03
970		-----		-----	1833	ISO6245	0.001		0.14
971	ISO6245	0.0008		0.03	1834		-----		-----
974	ISO6245	0.0009		0.09	1849	ISO6245	0.00091		0.09
1006	D482	0.001		0.14	1854	ISO6245	0.0015		0.42
1016	D482	<0.001		-----	1861		-----		-----
1017	ISO6245	<0.001		-----	1862	ISO6245	0.0006		-0.08
1026	ISO6245	0		-0.42	1906		-----		-----
1033		-----		-----	1915		-----		-----
1059	ISO6245	0.001		0.14	1936		-----		-----
1081	D482	0.0011		0.20	1937		-----		-----

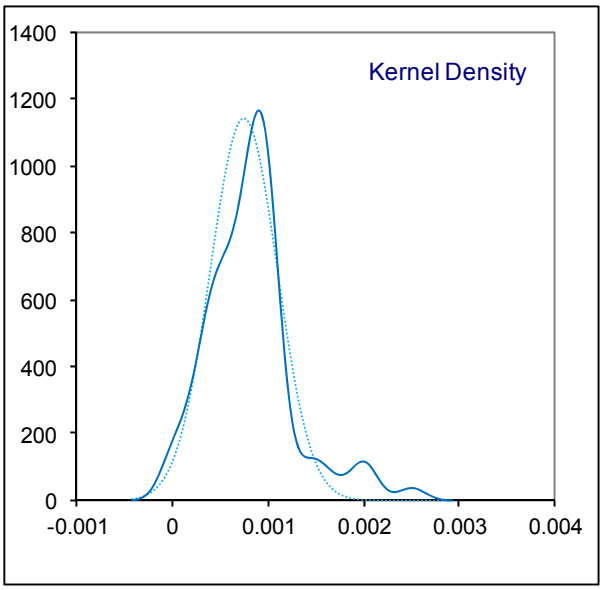
1109	D482	0.0006		-0.08	1938		-----	-----
1121	IP4	0.0004	C	-0.19	1941	ISO6245	0.0010	0.14
1126		-----		-----	1948	ISO6245	0.0010	0.14
1134	IP4	0.0003		-0.25	1951	ISO6245	<0.005	-----
1146	ISO6245	<0.001		-----	2102		-----	-----
1150	ISO6245	0.001		0.14	2129	ISO6245	<0.001	-----
1161	ISO6245	0.0017		0.54	2146		-----	-----
1167	ISO6245	0.0002		-0.30	5019		-----	-----
1186		-----		-----				

normality	OK
n	71
outliers	4
mean (n)	0.00074
st.dev. (n)	0.000350
R(calc.)	0.00098
R(ISO6245:01)	0.00500

Application range: 0.001-0.180% M/M

Lab 1121: first reported 0.0048
Lab 1780: first reported 0.007884
Lab 1782: first reported 0.0005





Determination of Cetane Index on sample #14013

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D4737	55.2		-----	1194	D4737Mod.	53.6	R(0.01)	-----
120	D976	55.1	ex	-----	1199		-----		-----
132	D4737	55.2		-----	1201	ISO4264	54.9		-----
150	ISO4264	54.8		-----	1203	ISO4264	55.2		-----
159	D976	54.99	ex	-----	1205		-----		-----
175		-----		-----	1213	D4737	54.7		-----
193		-----		-----	1215	D976	54.88	ex	-----
194	D4737	50.7	R(0.01)	-----	1218		-----		-----
221	D4737	54.53		-----	1227	D976	54.1	ex	-----
225	D4737	54.6		-----	1231	D976	55.89	ex	-----
228	D976	54.6	ex	-----	1254	ISO4264	55.012		-----
237		-----		-----	1259	ISO4264	54.38		-----
238		-----		-----	1266	ISO4264	54.88		-----
258		-----		-----	1297	D4737	55.0		-----
273	D4737	54.9		-----	1299	D4737	54.7		-----
311	ISO4264	54.6		-----	1316	D4737	54.9		-----
312	ISO4264	54.6		-----	1318	D4737	54.6		-----
317	ISO4264	54.9		-----	1347	D4737	54.59		-----
323	ISO4264	54.9		-----	1348	D976	54.60	ex	-----
333		-----		-----	1356	ISO4264	58.0	C, R(0.01)	-----
334		-----		-----	1362	ISO4264	55.50		-----
335		-----		-----	1385	D4737	54.61		-----
336	ISO4264	54.9		-----	1395	ISO4264	54.7		-----
337		-----		-----	1409	ISO4264	55.2		-----
338		-----		-----	1412		-----		-----
340	ISO4264	55.2		-----	1423		-----		-----
351	ISO4264	54.82		-----	1428	ISO4264	55.1		-----
353	IP380	54.98		-----	1430	D4737	55		-----
357	ISO4264	55.03		-----	1459	ISO4264	54.8		-----
369	ISO4264	54.8		-----	1460		-----		-----
370	ISO4264	54.87		-----	1484		-----		-----
371	ISO4264	54.8		-----	1491	ISO4264	54.8		-----
372	ISO4264	55.1		-----	1510		-----		-----
391	ISO4264	55.0		-----	1520	ISO4264	54.66		-----
398	ISO4264	54.9		-----	1528	ISO4264	54.7		-----
399	ISO4264	55.1		-----	1539	ISO4264	54.8		-----
402	ISO4264	55.3		-----	1546	ISO4264	54.244		-----
403	ISO4264	54.40	C	-----	1556	ISO4264	54.89		-----
420	ISO4264	55.1		-----	1564		-----		-----
430		-----		-----	1569	ISO4264	54.81		-----
431		-----		-----	1584	ISO4264	55.2		-----
432		-----		-----	1586	ISO4264	54.4		-----
433		-----		-----	1631	ISO4264	55.0		-----
440	IP380	55.33		-----	1634	ISO4264	54.95		-----
445	IP380	55.0		-----	1654	ISO4264	55.19		-----
447	D4737	55.2		-----	1677	ISO4264	54.60		-----
463	ISO4264	54.9		-----	1681	ISO4264	54.45		-----
485	ISO4264	55.0		-----	1720		-----		-----
488	ISO4264	55.0		-----	1724	IP380	55.04		-----
495	ISO4264	54.82		-----	1730		-----		-----
593		-----		-----	1740	ISO4264	54.64		-----
663		-----		-----	1741	ISO4264	54.42		-----
671		-----		-----	1742		-----		-----
704	ISO4264	54.7		-----	1746	D976	54.9	ex	-----
750	D976	55.0	ex	-----	1751	ISO4264	54.52		-----
781	ISO4264	54.9		-----	1753	ISO4264	55.017		-----
784	ISO4264	54.8		-----	1776	ISO4264	54.3		-----
785	ISO4264	54.9		-----	1780		-----		-----
863	ISO4264	55.1		-----	1782		-----		-----
873	ISO4264	54.7		-----	1783		-----		-----
874	ISO4264	55.0		-----	1784	ISO4264	54.82		-----
875	ISO4264	55.2		-----	1787	ISO4264	54.38	C	-----
904	ISO4264	55.1		-----	1807	ISO4264	54.7		-----
912	ISO4264	54.84		-----	1810		-----		-----
962	D976	55.1	ex	-----	1811	ISO4264	55.0		-----
963	ISO4264	55.4		-----	1832		-----		-----
970		-----		-----	1833	ISO4264	55.16		-----
971	ISO4264	55.1		-----	1834		-----		-----
974	ISO4264	55.1		-----	1849	ISO4264	54.88		-----
1006	D976	55.1	ex	-----	1854	ISO4264	54.99		-----
1016		-----		-----	1861		-----		-----
1017	ISO4264	54.68		-----	1862	ISO4264	55.3		-----
1026	ISO4264	54.7		-----	1906		-----		-----
1033	D976	55.2	ex	-----	1915		-----		-----
1059	ISO4264	54.6		-----	1936	ISO4264	54.3		-----
1081	ISO4264	54.9		-----	1937	ISO4264	54.45		-----
1109	D4737	55.1		-----	1938	ISO4264	54.5		-----
1121	D976	55.15	ex	-----	1941	ISO4264	54.5		-----

1126		-----		-----	1948		-----	-----
1134	ISO4264	54.8		-----	1951	ISO4264	55.6	-----
1146		-----		-----	2102		-----	-----
1150	ISO4264	55.3	C	-----	2129	ISO4264	54.80	-----
1161	ISO4264	54.7		-----	2146		-----	-----
1167	ISO4264	54.2		-----	5019		-----	-----
1186		-----		-----				

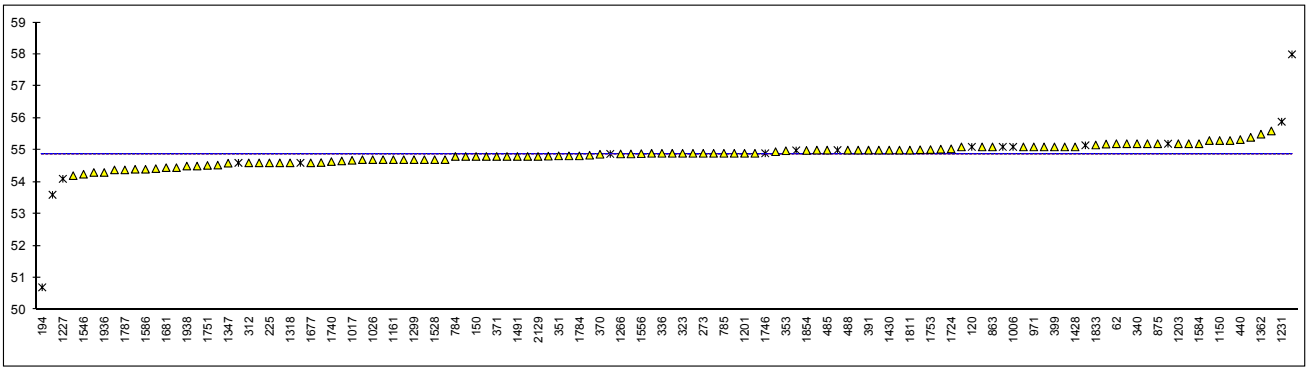
	normality	OK	
	n	106	
	outliers	3	+ 13 excl.
	mean (n)	54.862	
	st.dev. (n)	0.2813	
	R(calc.)	0.788	
	R(ISO4264:07)	n.a.	

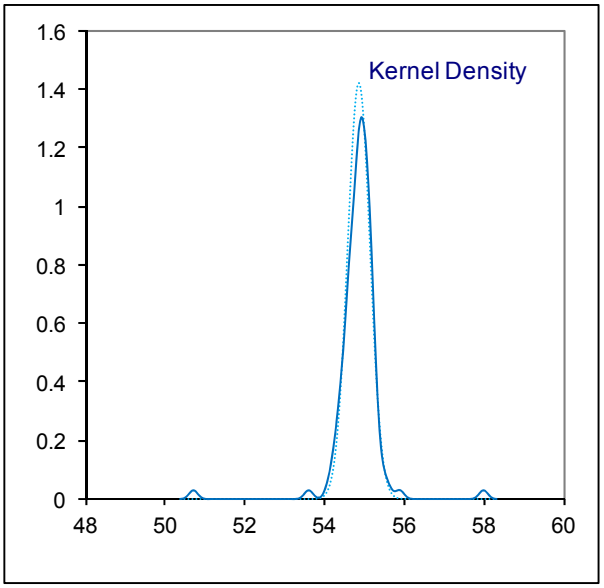
Compare R(iis13G01EN) = 1.297

Recalculated values (= E)

971	D4737	54.89	-----
1194	D4737	52.93	-----
1259	D4737	54.93	-----
1631	D4737	54.67	-----
1937	D4737	54.94	-----

Ex = reported test results are excluded as the test method is not equivalent (different calculation)
Lab 403: first reported 53.91
Lab 1150: first reported 56
Lab 1356: first reported 66.6
Lab 1787: first reported 54.27





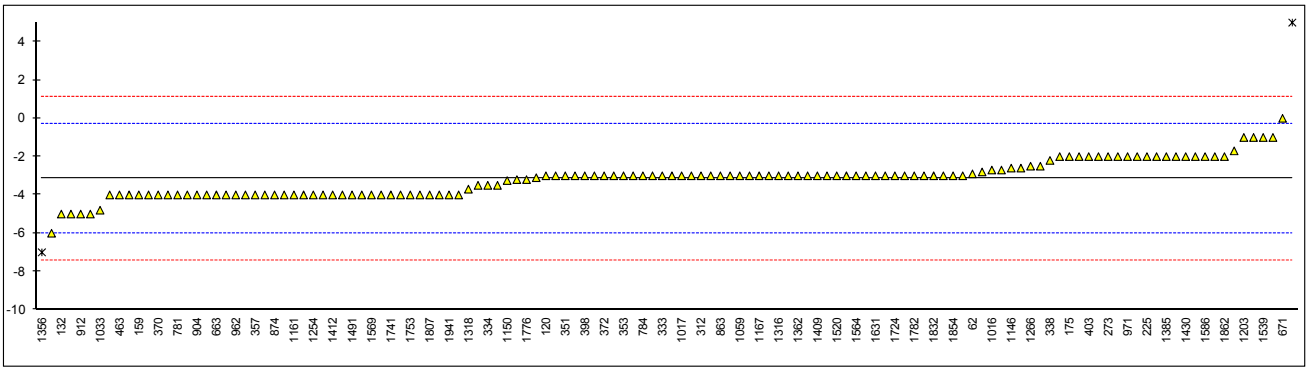
Determination of Cloud Point on sample #14013; result in °C

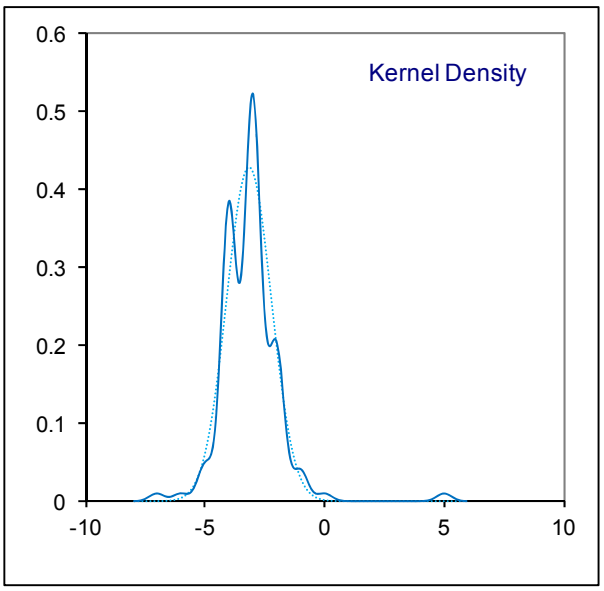
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D5773	-2.9		0.17	1194	EN23015	-2.8		0.24
120	EN23015	-3		0.10	1199		-----		-----
132	D2500	-5		-1.30	1201	D2500	-2		0.80
150	EN23015	-4		-0.60	1203	EN23015	-1		1.50
159	D2500	-4		-0.60	1205		-----		-----
175	D2500	-2		0.80	1213	D2500	-1		1.50
193		-----		-----	1215		-----		-----
194	D2500	-3		0.10	1218		-----		-----
221	D2500	-2		0.80	1227	D2500	-3.1		0.03
225	D2500	-2		0.80	1231	D2500	-4		-0.60
228	D2500	-6		-2.00	1254	D2500	-4		-0.60
237		-----		-----	1259	EN23015	-3		0.10
238		-----		-----	1266	EN23015	-2.5		0.45
258		-----		-----	1297	D5771	-2.7		0.31
273	D2500	-2		0.80	1299	D5772	-2.6		0.38
311	EN23015	-3		0.10	1316	D5771	-3.0		0.10
312	EN23015	-3		0.10	1318	D7689	-3.7		-0.39
317	D5771	-4		-0.60	1347	D2500	-3		0.10
323	EN23015	-3		0.10	1348	D2500	-4		-0.60
333	EN23015	-3		0.10	1356	ISO3015	-7	R(0.01)	-2.70
334	EN23015	-3.5		-0.25	1362	EN23015	-3		0.10
335	EN23015	-3		0.10	1385	D2500	-2		0.80
336	EN23015	-1.7		1.01	1395	EN23015	-3		0.10
337	EN23015	-2		0.80	1409	EN23015	-3		0.10
338	EN23015	-2.2		0.66	1412	D2500	-4		-0.60
340	EN23015	-3		0.10	1423		-----		-----
351	ISO3015	-3		0.10	1428	EN23015	-2		0.80
353	IP219	-3		0.10	1430	EN23015	-2		0.80
357	D5771	-4		-0.60	1459	EN23015	-4		-0.60
369	EN23015	-3		0.10	1460		-----		-----
370	EN23015	-4		-0.60	1484		-----		-----
371	EN23015	-4		-0.60	1491	EN23015	-4		-0.60
372	EN23015	-3		0.10	1510	D2500	-3		0.10
391	EN23015	-3		0.10	1520	EN23015	-3		0.10
398	EN23015	-3		0.10	1528	EN23015	-4		-0.60
399	EN23015	-4		-0.60	1539	ISO3015	-1		1.50
402	EN23015	-4		-0.60	1546	EN23015	-2		0.80
403	EN23015	-2		0.80	1556	ISO3015	-3.0		0.10
420	EN23015	-3		0.10	1564	D5772	-3.0		0.10
430		-----		-----	1569	EN23015	-4		-0.60
431		-----		-----	1584	EN23015	-3		0.10
432		-----		-----	1586	D5771	-2		0.80
433		-----		-----	1631	EN23015	-3		0.10
440	IP219	-2.0		0.80	1634		-----		-----
445	IP219	-3		0.10	1654		-----		-----
447	D2500	5	R(0.01)	5.70	1677	EN23015	-3		0.10
463	EN23015	-4		-0.60	1681		-----		-----
485		-----		-----	1720	D5773	-3.5		-0.25
488		-----		-----	1724	D2500	-3		0.10
495	EN23015	-4		-0.60	1730		-----		-----
593		-----		-----	1740	EN23015	-4		-0.60
663	D2500	-4		-0.60	1741	ISO3015	-4		-0.60
671	D2500	0	C	2.20	1742	ISO3015	-4.0		-0.60
704	ISO3015	-3.5		-0.25	1746	D2500	-3		0.10
750	D2500	-4		-0.60	1751	EN23015	-2.5		0.45
781	EN23015	-4		-0.60	1753	EN23015	-4		-0.60
784	D2500	-3		0.10	1776	EN23015	-3.2		-0.04
785		-----		-----	1780	D2500	-4		-0.60
863	ISO3015	-3		0.10	1782	EN23015	-3		0.10
873	D2500	-4		-0.60	1783		-----		-----
874	EN23015	-4		-0.60	1784	EN23015	-3		0.10
875	D2500	-4		-0.60	1787		-----		-----
904	D2500	-4		-0.60	1807	EN23015	-4		-0.60
912	EN23015	-5		-1.30	1810	EN23015	-4		-0.60
962	D2500	-4		-0.60	1811	EN23015	-2		0.80
963	EN23015	-4		-0.60	1832	EN23015	-3.0		0.10
970		-----		-----	1833	EN23015	-1		1.50
971	D2500	-2		0.80	1834	EN23015	-3		0.10
974	EN23015	-2		0.80	1849		-----		-----
1006		-----		-----	1854	EN23015	-3		0.10
1016	EN23015	-2.7		0.31	1861		-----		-----
1017	D5771	-3		0.10	1862	EN23015	-2		0.80
1026	ISO3015	-3		0.10	1906		-----		-----
1033	D5772	-4.8		-1.16	1915		-----		-----
1059	EN23015	-3		0.10	1936		-----		-----
1081	D5771	-3.2		-0.04	1937		-----		-----
1109	D5773	-3.0		0.10	1938		-----		-----
1121	IP219	-2.0		0.80	1941	EN23015	-4		-0.60

1126		-----	-----
1134	EN23015	-5	-1.30
1146	D2500	-2.6	0.38
1150	EN23015	-3.25	-0.07
1161	EN23015	-4	-0.60
1167	EN23015	-3	0.10
1186		-----	-----
1948	EN23015	-5	-1.30
1951	EN23015	-3.00	0.10
2102		-----	-----
2129	EN23015	-4	-0.60
2146		-----	-----
5019		-----	-----

normality	OK
n	128
outliers	2
mean (n)	-3.148
st.dev. (n)	0.9315
R(calc.)	2.608
R(EN23015:94)	4.000

Lab 671: first reported 3





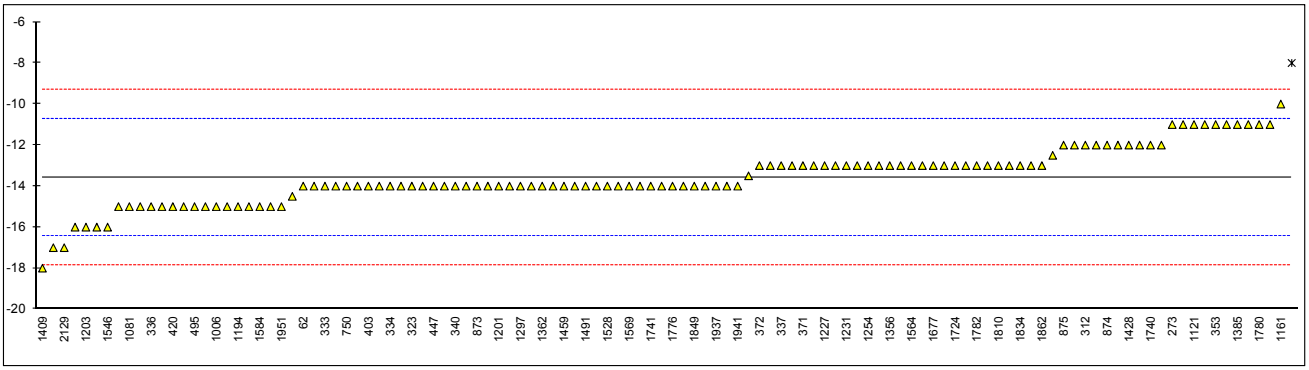
Determination of Cold Filter Plugging Point on sample #14013; result in °C

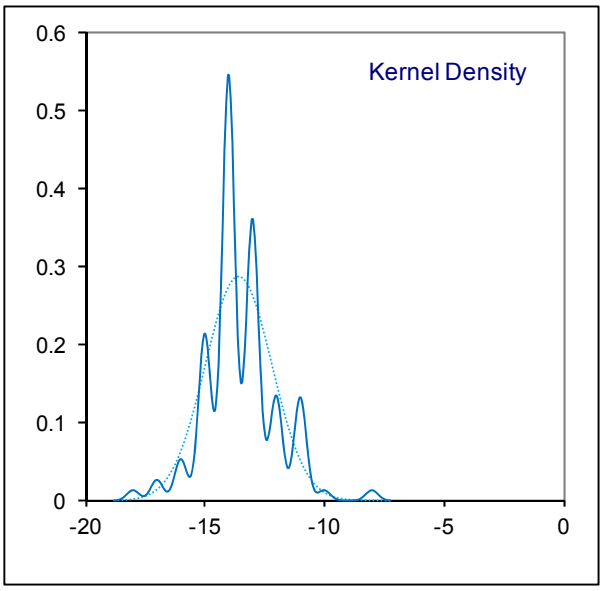
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D6371	-14		-0.30	1194	EN116	-15		-1.00
120		-----		-----	1199		-----		-----
132		-----		-----	1201	EN116	-14		-0.30
150		-----		-----	1203	EN116	-16		-1.71
159		-----		-----	1205		-----		-----
175		-----		-----	1213		-----		-----
193		-----		-----	1215		-----		-----
194		-----		-----	1218		-----		-----
221		-----		-----	1227	EN116	-13		0.41
225		-----		-----	1231	D6371	-13		0.41
228		-----		-----	1254	EN116	-13		0.41
237		-----		-----	1259	EN116	-14		-0.30
238		-----		-----	1266	EN116	-16		-1.71
258		-----		-----	1297	D6371	-14		-0.30
273	IP309	-11		1.82	1299	EN116	-15		-1.00
311	EN116	-13		0.41	1316	EN116	-14.0		-0.30
312	EN116	-12		1.11	1318	D6371	-12.0		1.11
317	EN116	-15		-1.00	1347	IP309	-11		1.82
323	EN116	-14		-0.30	1348	IP309	-13		0.41
333	EN116	-14		-0.30	1356	D6371	-13		0.41
334	EN116	-14		-0.30	1362	EN116	-14		-0.30
335	EN116	-14		-0.30	1385	IP309	-11		1.82
336	EN116	-15		-1.00	1395	EN116	-14		-0.30
337	EN116	-13		0.41	1409	EN116	-18		-3.12
338	EN116	-14		-0.30	1412		-----		-----
340	EN116	-14		-0.30	1423		-----		-----
351		-----		-----	1428	EN116	-12		1.11
353	IP309	-11		1.82	1430	EN116	-11		1.82
357	EN116	-14		-0.30	1459	EN116	-14		-0.30
369	EN116	-13		0.41	1460		-----		-----
370	EN116	-14		-0.30	1484	EN116	-14		-0.30
371	EN116	-13		0.41	1491	EN116	-14		-0.30
372	EN116	-13		0.41	1510	EN116	-14		-0.30
391	EN116	-15		-1.00	1520	EN116	-12		1.11
398	EN116	-14		-0.30	1528	EN116	-14		-0.30
399	EN116	-15		-1.00	1539	EN116	-13		0.41
402	EN116	-15		-1.00	1546	EN116	-16		-1.71
403	EN116	-14		-0.30	1556	EN116	-14		-0.30
420	EN116	-15		-1.00	1564	IP309	-13		0.41
430		-----		-----	1569	EN116	-14		-0.30
431	EN116	-15		-1.00	1584	EN116	-15		-1.00
432		-----		-----	1586	EN116	-13		0.41
433		-----		-----	1631	EN116	-14		-0.30
440	IP309	-17.0		-2.41	1634		-----		-----
445	IP309	-14		-0.30	1654	EN116	-14.5		-0.65
447	IP309	-14		-0.30	1677	EN116	-13		0.41
463	EN116	-14		-0.30	1681	EN116	-13.0		0.41
485		-----		-----	1720		-----		-----
488		-----		-----	1724	IP309	-13		0.41
495	EN116	-15		-1.00	1730		-----		-----
593		-----		-----	1740	EN116	-12		1.11
663		-----		-----	1741	EN116	-14		-0.30
671		-----		-----	1742	EN116	-15.0		-1.00
704	EN116	-13.5		0.06	1746		-----		-----
750	IP309	-14		-0.30	1751	EN116	-13.0		0.41
781	EN116	-12		1.11	1753	EN116	-14		-0.30
784		-----		-----	1776	EN116	-14		-0.30
785		-----		-----	1780	D6371	-11		1.82
863	IP309	-14		-0.30	1782	EN116	-13		0.41
873	IP309	-14		-0.30	1783		-----		-----
874	EN116	-12		1.11	1784	EN116	-13		0.41
875	EN116	-12		1.11	1787	EN116	-11		1.82
904		-----		-----	1807	EN116	-12		1.11
912		-----		-----	1810	EN116	-13		0.41
962	IP309	-8	R(0.05)	3.93	1811	EN116	-13		0.41
963	EN116	-11		1.82	1832		-----		-----
970		-----		-----	1833	EN116	-14		-0.30
971		-----		-----	1834	EN116	-13		0.41
974		-----		-----	1849	EN116	-14		-0.30
1006	D6371	-15		-1.00	1854	EN116	-13		0.41
1016	EN116	-15		-1.00	1861		-----		-----
1017	EN116	-13		0.41	1862	EN116	-13		0.41
1026	EN116	-13		0.41	1906		-----		-----
1033	IP309	-16		-1.71	1915		-----		-----
1059	EN116	-14		-0.30	1936	EN116	-14		-0.30
1081	EN116	-15		-1.00	1937	EN116	-14		-0.30
1109	IP309	-11.0		1.82	1938	EN116	-14		-0.30
1121	IP309	-11.0		1.82	1941	EN116	-14		-0.30

1126		-----		-----	1948		-----	-----
1134	EN116	-12		1.11	1951	EN116	-15.0	-1.00
1146		-----		-----	2102		-----	-----
1150	EN116	-12.5	C	0.76	2129	EN116	-17	-2.41
1161	EN116	-10		2.52	2146		-----	-----
1167	EN116	-13		0.41	5019		-----	-----
1186		-----		-----				

normality	OK
n	115
outliers	1
mean (n)	-13.578
st.dev. (n)	1.3933
R(calc.)	3.901
R(EN116:97)	3.974

Lab 1150: first reported -14.50





Determination of Carbon Residue on 10% residue on sample #14013; result in %M/M

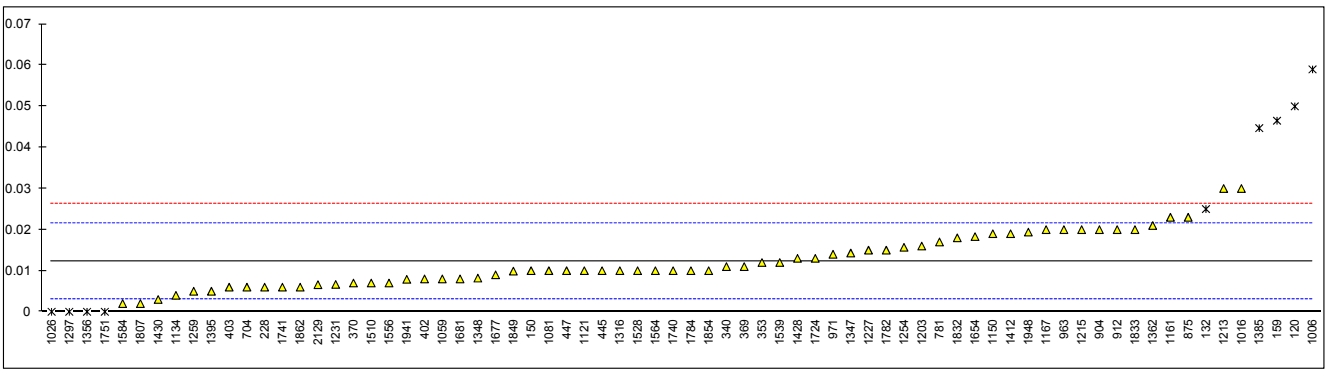
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D4530	<0.1		-----	1194		-----		-----
120	D4530	0.05	R(0.01)	8.09	1199		-----		-----
132	D524	0.025	ex	2.73	1201	ISO10370	<0.10		-----
150	ISO10370	0.01	C	-0.49	1203	ISO10370	0.016		0.80
159	D524	0.0465	ex	7.34	1205		-----		-----
175		-----		-----	1213	D4530	0.03	C	3.80
193		-----		-----	1215	D4530	0.02		1.66
194	D4530	<0.01		-----	1218		-----		-----
221		-----		-----	1227	D4530	0.015		0.58
225		-----		-----	1231	D4530	0.00666		-1.21
228	D130	0.006		-1.35	1254	ISO10370	0.0157		0.73
237		-----		-----	1259	ISO10370	0.005		-1.56
238		-----		-----	1266		-----		-----
258		-----		-----	1297	D4530	0	ex	-2.64
273	D4530	<0.1		-----	1299	D4530	<0.01		-----
311	ISO10370	<0.1		-----	1316	D189	0.01		-0.49
312		-----		-----	1318		-----		-----
317	ISO10370	<0.10		-----	1347	D189	0.0143		0.43
323	ISO10370	<0.10		-----	1348	D4530	0.0082		-0.88
333		-----		-----	1356	ISO10370	0	ex	-2.64
334		-----		-----	1362	ISO10370	0.021		1.87
335		-----		-----	1385	D189	0.0447	R(0.01)	6.95
336		-----		-----	1395	ISO10370	0.005		-1.56
337		-----		-----	1409	ISO10370	<0.01		-----
338		-----		-----	1412	D189	0.019		1.44
340	ISO10370	0.011		-0.28	1423		-----		-----
351	ISO10370	<0.01		-----	1428	ISO10370	0.013		0.15
353	IP13	0.012		-0.06	1430	D189	0.003		-1.99
357		-----		-----	1459		-----		-----
369	ISO10370	0.011		-0.28	1460		-----		-----
370	ISO10370	0.007		-1.13	1484		-----		-----
371		-----		-----	1491		-----		-----
372	ISO10370	<0.10		-----	1510	ISO10370	0.007		-1.13
391		-----		-----	1520	ISO10370	<0.01		-----
398		-----		-----	1528	ISO10370	0.01		-0.49
399		-----		-----	1539	ISO10370	0.012		-0.06
402	ISO10370	0.008		-0.92	1546		-----		-----
403	ISO10370	0.006		-1.35	1556	ISO10370	0.007		-1.13
420		-----		-----	1564	D4530	0.01		-0.49
430		-----		-----	1569	ISO10370	<0.001		-----
431		-----		-----	1584	ISO6615	0.002		-2.21
432		-----		-----	1586	ISO10370	<0.01		-----
433		-----		-----	1631	ISO10370	<0.1		-----
440		-----		-----	1634		-----		-----
445	IP398	0.01		-0.49	1654	ISO10370	0.0183		1.29
447	IP398	0.01		-0.49	1677	ISO10370	0.009		-0.70
463	ISO10370	<0.10		-----	1681	ISO6615	0.008		-0.92
485		-----		-----	1720		-----		-----
488		-----		-----	1724	D4530	0.013		0.15
495	ISO10370	<0.01		-----	1730		-----		-----
593		-----		-----	1740	ISO10370	0.010		-0.49
663		-----		-----	1741	ISO10370	0.0060		-1.35
671		-----		-----	1742		-----		-----
704	ISO10370	0.006		-1.35	1746		-----		-----
750		-----		-----	1751	ISO10370	0.00	ex	-2.64
781	ISO10370	0.017		1.01	1753		-----		-----
784		-----		-----	1776		-----		-----
785		-----		-----	1780		-----		-----
863	ISO10370	<0.1		-----	1782	D4530	0.015		0.58
873	ISO10370	<0.10		-----	1783		-----		-----
874	ISO10370	<0.1		-----	1784	ISO10370	0.01		-0.49
875	D4530	0.023		2.30	1787		-----		-----
904	ISO10370	0.02		1.66	1807	ISO10370	0.002		-2.21
912	ISO10370	0.02		1.66	1810		-----		-----
962		-----		-----	1811		-----		-----
963	ISO10370	0.02		1.66	1832	ISO6615	0.0180		1.23
970		-----		-----	1833	ISO10370	0.02		1.66
971	ISO10370	0.014		0.37	1834		-----		-----
974		-----		-----	1849	ISO10370	0.0099		-0.51
1006	D524	0.059	ex	10.02	1854	ISO10370	0.01		-0.49
1016	ISO10370	0.03		3.80	1861		-----		-----
1017	ISO10370	<0.01		-----	1862	ISO10370	0.006		-1.35
1026	ISO10370	0.0	ex	-2.64	1906		-----		-----
1033		-----		-----	1915		-----		-----
1059	ISO10370	0.008		-0.92	1936		-----		-----
1081	ISO10370	0.01		-0.49	1937		-----		-----
1109	D4530	<0.01		-----	1938		-----		-----
1121	IP398	0.01		-0.49	1941	ISO10370	0.0079		-0.94

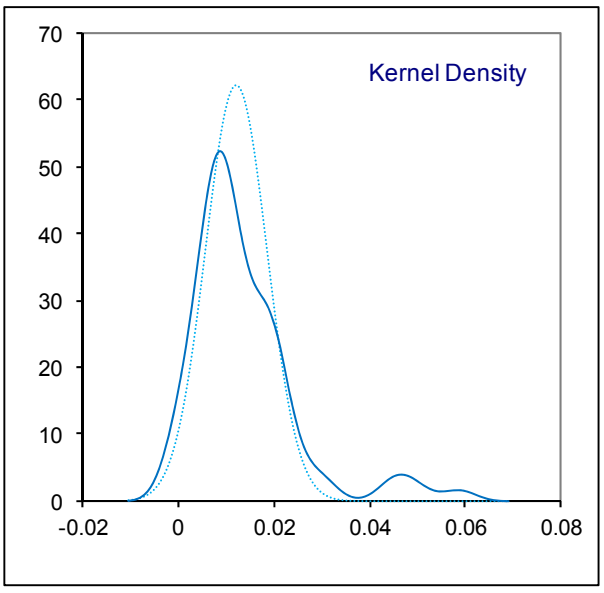
1126		-----	-----
1134	IP13	0.004	-1.78
1146		-----	-----
1150	ISO6615	0.019	1.44
1161	ISO10370	0.023	2.30
1167	ISO10370	0.02	1.66
1186		-----	-----

1948	ISO10370	0.0194	1.53
1951	ISO10370	<0.01	-----
2102		-----	-----
2129	ISO10370	0.0066	-1.22
2146		-----	-----
5019		-----	-----

normality	OK	
n	63	
outliers	2	+ 7 excl
mean (n)	0.01229	
st.dev. (n)	0.006422	
R(calc.)	0.01798	
R(ISO10370:93)	0.01305	

Test results of lab 132,159 and 1006 were excluded, as reported Ramsbottom test result may be biased from the Conradson result.
Test results of lab 1026, 1297, 1356 and 1751 were excluded, as zero is not a real result.
Lab 150: first reported: 0.06
Lab 1213: first reported 0.050





Determination of Copper Corrosion (3 hrs @ 50°C) on sample #14013;

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D130	1A		-----	1194		-----		-----
120	ISO2160	1A		-----	1199		-----		-----
132	D130	1A		-----	1201	ISO2160	1A		-----
150	ISO2160	1A		-----	1203	ISO2160	1		-----
159	D130	1A		-----	1205		-----		-----
175	D130	1A		-----	1213	D130	1A		-----
193		-----		-----	1215	D130	1A		-----
194	D130	1A		-----	1218		-----		-----
221	D130	1A		-----	1227	D130	1A		-----
225	D130	1A		-----	1231	D130	1A		-----
228	D189	1A		-----	1254	ISO2160	1A		-----
237		-----		-----	1259	ISO2160	1A		-----
238		-----		-----	1266	ISO2160	1		-----
258	D130	1A		-----	1297	D130	1A		-----
273	D130	1A		-----	1299	ISO2160	1A		-----
311	ISO2160	1A		-----	1316	D130	1A		-----
312	D130	1A		-----	1318	D130	1A		-----
317	ISO2160	1A		-----	1347	D130	1A		-----
323	ISO2160	1A		-----	1348	D130	1A		-----
333		-----		-----	1356		-----		-----
334		-----		-----	1362	ISO2160	1A		-----
335	ISO2160	1		-----	1385	D130	1B		-----
336	ISO2160	1		-----	1395	ISO2160	1A		-----
337		-----		-----	1409	ISO2160	1B		-----
338		-----		-----	1412	D130	1A		-----
340	ISO2160	1A		-----	1423		-----		-----
351	ISO2160	1A		-----	1428	ISO2160	1A		-----
353	IP154	1A		-----	1430	D130	1B		-----
357	ISO2160	1A		-----	1459		-----		-----
369	ISO2160	1A		-----	1460		-----		-----
370	ISO2160	1A		-----	1484		-----		-----
371	ISO2160	1A		-----	1491	ISO2160	1A		-----
372	ISO2160	1A		-----	1510	ISO2160	1A		-----
391	ISO2160	1A		-----	1520	ISO2160	1A		-----
398	ISO2160	1A		-----	1528	ISO2160	1A		-----
399	ISO2160	1A		-----	1539	ISO2160	1A		-----
402		-----		-----	1546	ISO2160	1		-----
403	ISO2160	1A		-----	1556	ISO2160	1		-----
420	ISO2160	1A		-----	1564		-----		-----
430		-----		-----	1569	ISO2160	1A		-----
431		-----		-----	1584	ISO2160	1A		-----
432		-----		-----	1586	ISO2160	1A		-----
433		-----		-----	1631	ISO2160	1A		-----
440	IP154	1A		-----	1634	ISO2160	1A		-----
445	IP154	1A		-----	1654	ISO2160	1A		-----
447	D130	1A		-----	1677	ISO2160	1A		-----
463	ISO2160	1A		-----	1681	ISO2160	1A		-----
485		-----		-----	1720		-----		-----
488		-----		-----	1724	D130	1A		-----
495	ISO2160	1		-----	1730		-----		-----
593		-----		-----	1740	ISO2160	1A		-----
663	D130	1A		-----	1741	ISO2160	1A		-----
671	D130	1A		-----	1742		-----		-----
704	ISO2160	1A		-----	1746	D130	1A		-----
750	D130	1A		-----	1751	ISO2160	1A		-----
781	ISO2160	1A		-----	1753	ISO2160	1A		-----
784	D130	1A		-----	1776	ISO2160	1A		-----
785	D130	1A		-----	1780		-----		-----
863	D130	1A		-----	1782	D130	1A		-----
873	D130	1A		-----	1783		-----		-----
874	ISO2160	1A		-----	1784	ISO2160	1A		-----
875	D130	1A		-----	1787		-----		-----
904	ISO2160	1A		-----	1807	ISO2160	1A		-----
912	ISO2160	1A		-----	1810		-----		-----
962	D130	1A		-----	1811		-----		-----
963	ISO2160	1A		-----	1832	ISO2160	1A		-----
970		-----		-----	1833	ISO2160	1A		-----
971	ISO2160	1A		-----	1834		-----		-----
974	ISO2160	1A		-----	1849	ISO2160	1A		-----
1006	D130	1A		-----	1854	ISO2160	1A		-----
1016	ISO2160	1A		-----	1861		-----		-----
1017	ISO2160	1A		-----	1862	ISO2160	1A		-----
1026	ISO2160	1A		-----	1906		-----		-----
1033	IP154	1B		-----	1915		-----		-----
1059	ISO2160	1A		-----	1936		-----		-----
1081	D130	1A		-----	1937		-----		-----
1109	D130	1A		-----	1938		-----		-----
1121	IP143	1A		-----	1941	ISO2160	1A		-----

1126		-----	-----	1948	ISO2160	1A	-----
1134	ISO2160	1A	-----	1951	ISO2160	1A	-----
1146		-----	-----	2102		-----	-----
1150	ISO2160	1A	-----	2129	ISO2160	1A	-----
1161	ISO2160	1A	-----	2146		-----	-----
1167	ISO2160	1A	-----	5019		-----	-----
1186	D130	1A	-----				

normality	n.a.
n	123
outliers	0
mean (n)	1(1A)
st.dev. (n)	n.a.
R(calc.)	n.a.
R(ISO10370:93)	n.a.

Determination of Density @15 °C on sample #14013; result in kg/m^3

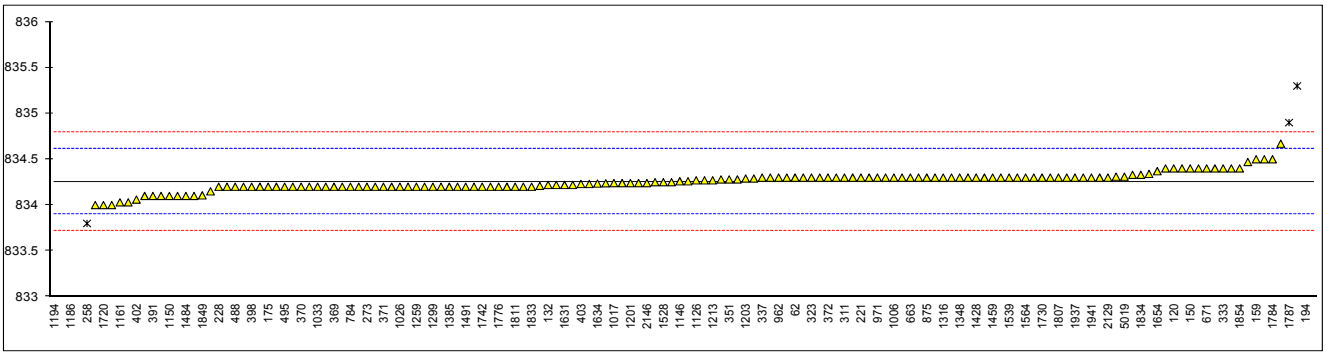
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D4052	834.3		0.25	1194	ISO12185Mod.	828.2	C,R(0.01)	-33.91
120	ISO12185	834.4		0.81	1199		-----		-----
132	D4052	834.22		-0.20	1201	ISO12185	834.24		-0.08
150	ISO12185	834.4		0.81	1203	ISO12185	834.29		0.20
159	D4052	834.5		1.37	1205		-----		-----
175	D4052	834.2		-0.31	1213	D4052	834.27		0.08
193		-----		-----	1215	D4052	834.238	C	-0.09
194	D4052	844.4	R(0.01)	56.81	1218		-----		-----
221	D4052	834.3		0.25	1227	D4052	834.3		0.25
225	D4052	834.2		-0.31	1231	D4052	830.9	R(0.01)	-18.79
228	D4052	834.2		-0.31	1254	ISO12185	834.15		-0.59
237		-----		-----	1259	ISO12185	834.2		-0.31
238		-----		-----	1266	ISO3675	834.67		2.32
258	D1298	833.8	R(0.01)	-2.55	1297	D4052	834.2		-0.31
273	D4052	834.2	C	-0.31	1299	ISO12185	834.2		-0.31
311	ISO12185	834.3		0.25	1316	D4052	834.3		0.25
312	ISO12185	834.2		-0.31	1318	D4052	834.26		0.03
317	ISO12185	834.3		0.25	1347	D4052	834.3		0.25
323	ISO12185	834.3	C	0.25	1348	D4052	834.3		0.25
333	ISO12185	834.4		0.81	1356	ISO12185	835.3	C,R(0.01)	5.85
334	ISO12185	834.24		-0.08	1362	ISO12185	834.2		-0.31
335	ISO12185	834.2		-0.31	1385	D4052	834.2		-0.31
336	ISO12185	834.3		0.25	1395	ISO12185	834.1		-0.87
337	ISO12185	834.3		0.25	1409	ISO12185	834.2		-0.31
338	ISO12185	834.2		-0.31	1412	D4052	834.3		0.25
340	ISO12185	834.4		0.81	1423		-----		-----
351	ISO12185	834.28		0.14	1428	ISO12185	834.3		0.25
353	IP365	834.3		0.25	1430	D4052	834.3		0.25
357	ISO12185	834.2		-0.31	1459	ISO12185	834.3		0.25
369	ISO12185	834.2		-0.31	1460		-----		-----
370	ISO12185	834.2		-0.31	1484	ISO3675	834.1		-0.87
371	ISO12185	834.2		-0.31	1491	ISO12185	834.2		-0.31
372	ISO12185	834.3		0.25	1510	ISO12185	834.3		0.25
391	ISO12185	834.1		-0.87	1520	ISO12185	834.22		-0.20
398	ISO12185	834.2		-0.31	1528	ISO12185	834.25		-0.03
399	ISO12185	834.2		-0.31	1539	ISO12185	834.3		0.25
402	ISO12185	834.06		-1.09	1546	ISO12185	834.5		1.37
403	ISO12185	834.23		-0.14	1556	ISO12185	834.3		0.25
420	ISO12185	834.25		-0.03	1564	D4052	834.3		0.25
430		-----		-----	1569	ISO12185	834.03		-1.26
431	ISO12185	834.23		-0.14	1584	ISO12185	834.25		-0.03
432	ISO12185	834.47		1.20	1586	ISO12185	834.2		-0.31
433	ISO12185	834.3		0.25	1631	ISO12185	834.22		-0.20
440	D4052	834.0		-1.43	1634	ISO12185	834.235		-0.11
445	IP365	834.2		-0.31	1654	ISO12185	834.37		0.64
447	D4052	834.2		-0.31	1677	ISO12185	834.3		0.25
463	ISO12185	834.21		-0.25	1681	ISO12185	834.29		0.20
485	ISO12185	834.2		-0.31	1720	D4052	834.0		-1.43
488	ISO12185	834.2		-0.31	1724	D4052	834.31		0.31
495	ISO12185	834.2		-0.31	1730	ISO12185	834.3		0.25
593	D1298	874.5	C,R(0.01)	225.37	1740	ISO3675	834.3		0.25
663	D4052	834.3		0.25	1741	ISO12185	834.00		-1.43
671	D4052	834.4		0.81	1742	ISO12185	834.2		-0.31
704	ISO12185	834.27		0.08	1746	D4052	834.4		0.81
750	D1298	834.3		0.25	1751	ISO12185	834.33		0.42
781	ISO12185	834.2		-0.31	1753	ISO12185	834.2		-0.31
784	ISO12185	834.2		-0.31	1776	ISO12185	834.2		-0.31
785	D4052	834.3		0.25	1780	D4052	834.22	C	-0.20
863	ISO12185	834.28		0.14	1782	D4052	834.34		0.48
873	D4052	834.2		-0.31	1783	D4052	834.2		-0.31
874	D4052	834.3		0.25	1784	ISO12185	834.5		1.37
875	D4052	834.3		0.25	1787	ISO3675	834.9	C,R(0.01)	3.61
904	ISO12185	834.3		0.25	1807	ISO12185	834.3		0.25
912	D4052	834.3		0.25	1810	ISO12185	834.1		-0.87
962	D4052	834.3		0.25	1811	ISO12185	834.2		-0.31
963	ISO12185	834.4		0.81	1832	ISO12185	834.2		-0.31
970		-----		-----	1833	ISO12185	834.2		-0.31
971	ISO12185	834.3		0.25	1834	ISO12185	834.33		0.42
974	ISO12185	834.4		0.81	1849	ISO12185	834.106		-0.83
1006	D4052	834.3		0.25	1854	ISO12185	834.4		0.81
1016		-----		-----	1861		-----		-----
1017	ISO12185	834.24		-0.08	1862	ISO12185	834.24		-0.08
1026	D4052	834.2		-0.31	1906		-----		-----
1033	IP365	834.2		-0.31	1915		-----		-----
1059	ISO12185	834.1		-0.87	1936	ISO12185	834.3		0.25
1081	ISO12185	834.4		0.81	1937	ISO12185	834.30		0.25
1109	D4052	834.28		0.14	1938	ISO12185	834.3		0.25
1121	IP365	834.3		0.25	1941	ISO12185	834.30		0.25

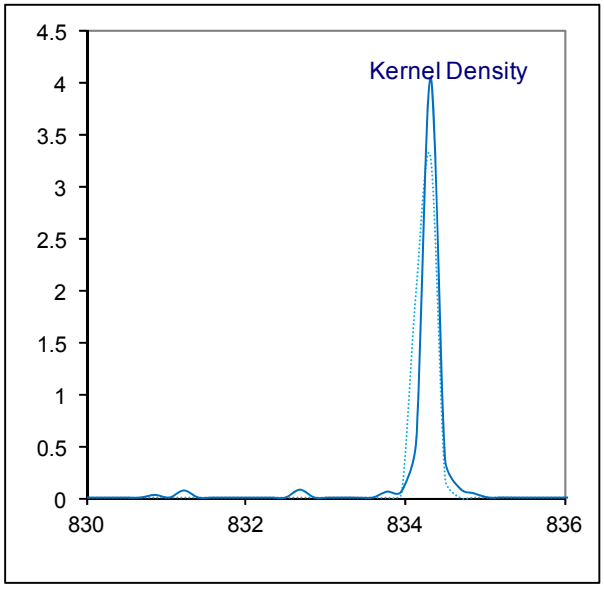
1126	ISO12185	834.27		0.08
1134	IP365	834.1		-0.87
1146	ISO12185	834.26		0.03
1150	ISO12185	834.1		-0.87
1161	ISO12185	834.03		-1.26
1167	ISO12185	834.2		-0.31
1186	D1298	831.2	C,R(0.01)	-17.11
1948	ISO12185	834.3		0.25
1951	ISO12185	832.7	R(0.01)	-8.71
2102		-----		-----
2129	D4052	834.3		0.25
2146	ISO12185	834.24		-0.08
5019	D4052	834.31		0.31

normality	not OK
n	145
outliers	9
mean (n)	834.25
st.dev. (n)	0.099
R(calc.)	0.28
R(ISO12185:96)	0.50

Lab 273 : first reported 0.8342
Lab 323: first reported 0.8343
Lab 1186: first reported 833.2
Lab 1215: first reported 0.834238
Lab 1356: first reported 816.9
Lab 1780: first reported 835.0

Lab 593: reported test results probably in a deviating unit (kg/l)
Lab 1194: reported test results probably in a deviating unit (kg/l)
Lab 1787: reported test results probably in a deviating unit (kg/l)





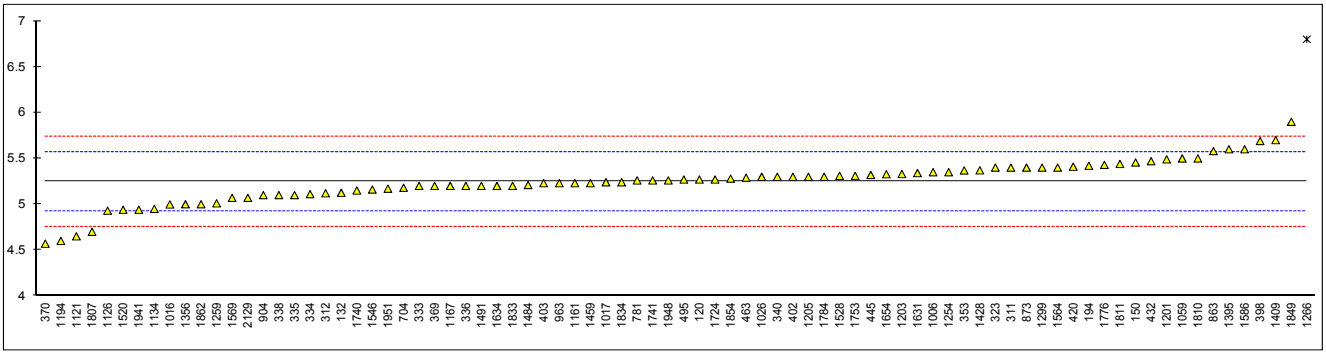
Determination of FAME Content on sample #14013; result in %V/V

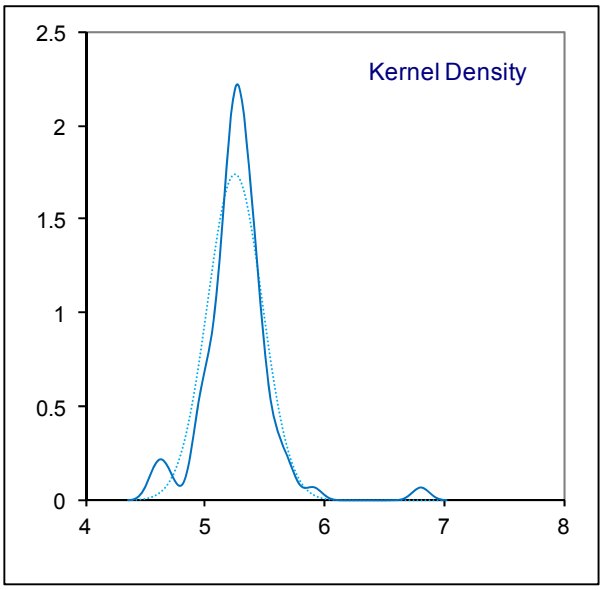
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	1194	EN14078Mod.	4.6		-3.96
120	D7371	5.27		0.14	1199		-----		-----
132	D7371	5.125		-0.74	1201	EN14078	5.49		1.49
150	EN14078	5.456		1.28	1203	EN14078	5.33		0.51
159		-----		-----	1205	EN14078	5.3		0.33
175		-----		-----	1213		-----		-----
193		-----		-----	1215		-----		-----
194	D7371	5.42		1.06	1218		-----		-----
221		-----		-----	1227		-----		-----
225		-----		-----	1231		-----		-----
228		-----		-----	1254	EN14078	5.35		0.63
237		-----		-----	1259	EN14078	5.01		-1.45
238		-----		-----	1266	EN14078	6.8	R(0.05)	9.51
258		-----		-----	1297		-----		-----
273		-----		-----	1299	EN14078	5.4		0.94
311	EN14078	5.4		0.94	1316		-----		-----
312	EN14078	5.12		-0.78	1318		-----		-----
317		-----		-----	1347		-----		-----
323	EN14078	5.4		0.94	1348		-----		-----
333	EN14078	5.2		-0.29	1356	EN14078	5.0		-1.51
334	EN14078	5.11		-0.84	1362		-----		-----
335	EN14078	5.1		-0.90	1385		-----		-----
336	EN14078	5.2		-0.29	1395	EN14078	5.6		2.16
337		-----		-----	1409	EN14078	5.7		2.78
338	EN14078	5.1		-0.90	1412		-----		-----
340	EN14078	5.3		0.33	1423		-----		-----
351		-----		-----	1428	EN14078	5.37		0.76
353	EN14078	5.369		0.75	1430		-----		-----
357		-----		-----	1459	EN14078	5.23		-0.10
369	EN14078	5.2		-0.29	1460		-----		-----
370	EN14078	4.57		-4.14	1484	EN14078	5.21		-0.22
371		-----		-----	1491	EN14078	5.2		-0.29
372		-----		-----	1510		-----		-----
391		-----		-----	1520	EN14078	4.94		-1.88
398	EN14078	5.69		2.71	1528	EN14078	5.31		0.39
399		-----		-----	1539		-----		-----
402	EN14078	5.3		0.33	1546	EN14078	5.161		-0.52
403	EN14078	5.23		-0.10	1556		-----		-----
420	EN14078	5.41		1.00	1564	EN14078	5.4		0.94
430		-----		-----	1569	EN14078	5.07		-1.08
431		-----		-----	1584		-----		-----
432	EN14078	5.47		1.37	1586	EN14078	5.6		2.16
433		-----		-----	1631	EN14078	5.34		0.57
440		-----		-----	1634	EN14078	5.2		-0.29
445	EN14078	5.32		0.45	1654	EN14078	5.3275		0.50
447		-----		-----	1677		-----		-----
463	EN14078	5.29		0.27	1681		-----		-----
485		-----		-----	1720		-----		-----
488		-----		-----	1724	EN14078	5.27		0.14
495	EN14078	5.27		0.14	1730		-----		-----
593		-----		-----	1740	EN14078	5.15		-0.59
663		-----		-----	1741	EN14078	5.26		0.08
671		-----		-----	1742		-----		-----
704	EN14078	5.18		-0.41	1746		-----		-----
750		-----		-----	1751		-----		-----
781	EN14078	5.26		0.08	1753	EN14078	5.31		0.39
784		-----		-----	1776	EN14078	5.43		1.12
785		-----		-----	1780		-----		-----
863	EN14078	5.58		2.04	1782		-----		-----
873	EN14078	5.40		0.94	1783		-----		-----
874		-----		-----	1784	EN14078	5.30		0.33
875		-----		-----	1787		-----		-----
904	EN14078	5.1	C	-0.90	1807	EN14078	4.7		-3.35
912		-----		-----	1810	EN14078	5.5		1.55
962		-----		-----	1811	EN14078	5.44		1.18
963	EN14078	5.23		-0.10	1832		-----		-----
970		-----		-----	1833	EN14078	5.20		-0.29
971		-----		-----	1834	EN14078	5.24		-0.04
974		-----		-----	1849	EN14078	5.9		4.00
1006	EN14078	5.35		0.63	1854	EN14078	5.28		0.20
1016	EN14078	4.998		-1.52	1861		-----		-----
1017	EN14078	5.24		-0.04	1862	EN14078	5.00		-1.51
1026	EN14078	5.3		0.33	1906		-----		-----
1033		-----		-----	1915		-----		-----
1059	EN14078	5.5		1.55	1936		-----		-----
1081		-----		-----	1937		-----		-----
1109		-----		-----	1938		-----		-----
1121	EN14078	4.65		-3.65	1941	EN14078	4.94		-1.88

1126	EN14078	4.93		-1.94	1948	EN14078	5.26	0.08
1134	EN14078	4.95		-1.82	1951	EN14078	5.17	-0.47
1146		-----		-----	2102		-----	-----
1150		-----		-----	2129	EN14078	5.07	-1.08
1161	EN14078	5.23		-0.10	2146		-----	-----
1167	EN14078	5.2	C	-0.29	5019		-----	-----
1186		-----		-----				

normality	suspect	
n	81	
outliers	1	
mean (n)	5.247	
st.dev. (n)	0.2289	
R(calc.)	0.641	
R(EN14078:09)	0.457	Range B

Lab 904: first reported 1
Lab 1167: first reported 4.9





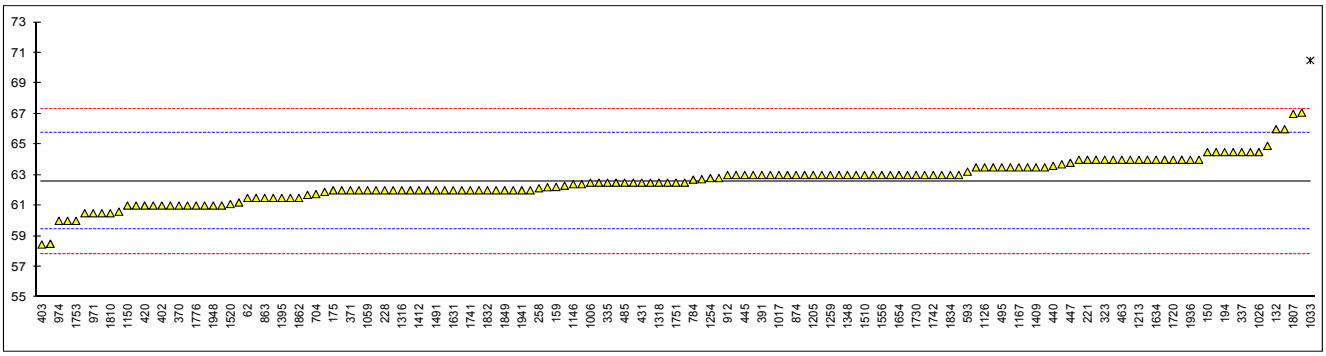
Determination of Flash Point PMcc on sample #14013; result in °C

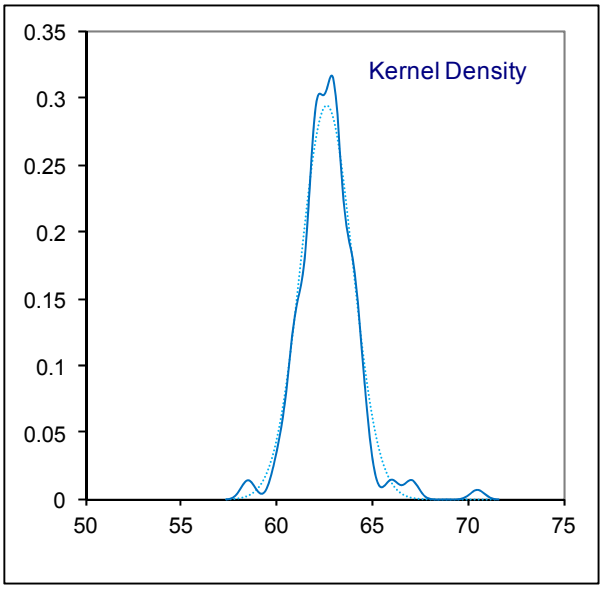
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D93	61.5		-0.69	1194		-----		-----
120	ISO2719	61.7		-0.57	1199		-----		-----
132	D93	66.0		2.14	1201	ISO2719	61.5		-0.69
150	ISO2719	64.5		1.20	1203	ISO2719	58.5		-2.58
159	D93	62.22		-0.24	1205	D93	63.0		0.25
175	D93	62		-0.38	1213	D93	64		0.88
193		-----		-----	1215	D93	63.5		0.57
194	D93	64.5		1.20	1218		-----		-----
221	D93	64.0		0.88	1227	D93	63		0.25
225	D93	62.0		-0.38	1231	D93	62.0		-0.38
228	D93	62.0		-0.38	1254	ISO2719	62.8		0.13
237		-----		-----	1259	ISO2719	63.0		0.25
238		-----		-----	1266	ISO2719	62.3		-0.19
258	D93	62.133		-0.29	1297	D93	63.0		0.25
273	D93	63		0.25	1299	ISO2719	62.5		-0.06
311	ISO2719	64.5		1.20	1316	D93	62.0		-0.38
312	ISO2719	63.5		0.57	1318	D93	62.5		-0.06
317	ISO2719	62.5		-0.06	1347	D93	62.2		-0.25
323	ISO2719	64.0		0.88	1348	D93	63		0.25
333	ISO2719	64.0		0.88	1356	ISO2719	60		-1.64
334	ISO2719	61.9		-0.44	1362	ISO2719	63.00		0.25
335	ISO2719	62.5		-0.06	1385	D93	62		-0.38
336	ISO2719	64.5		1.20	1395	ISO2719	61.5		-0.69
337	ISO2719	64.5		1.20	1409	ISO2719	63.5		0.57
338	ISO2719	63.5		0.57	1412	D93	62.0		-0.38
340	ISO2719	63.0		0.25	1423		-----		-----
351	ISO2719	62.0		-0.38	1428	ISO2719	63.5		0.57
353	IP34	62.725		0.08	1430		-----		-----
357	ISO2719	64.5		1.20	1459	ISO2719	62.0		-0.38
369	ISO2719	61.0		-1.01	1460		-----		-----
370	ISO2719	61.0		-1.01	1484	ISO2719	61.5		-0.69
371	ISO2719	62.0		-0.38	1491	ISO2719	62.0		-0.38
372	ISO2719	61.0		-1.01	1510	ISO2719	63		0.25
391	ISO2719	63.0		0.25	1520	ISO2719	61.1		-0.94
398	ISO2719	64.0		0.88	1528	ISO2719	63	C	0.25
399	ISO2719	64		0.88	1539	ISO2719	62.0		-0.38
402	ISO2719	61		-1.01	1546	ISO2719	62.5		-0.06
403	ISO2719	58.45		-2.61	1556	ISO2719	63.0		0.25
420	ISO2719	61.0		-1.01	1564	D93	66.0		2.14
430		-----		-----	1569	ISO2719	62.4		-0.13
431	ISO2719	62.5		-0.06	1584	ISO2719	63.0		0.25
432	ISO2719	63.5		0.57	1586	ISO2719	64.0		0.88
433		-----		-----	1631	ISO2719	62		-0.38
440	IP34	63.6		0.63	1634	ISO2719	64.0		0.88
445	IP34	63.0		0.25	1654	ISO2719	63.0		0.25
447	D93	63.8		0.76	1677	ISO2719	64.0		0.88
463	ISO2719	64.0		0.88	1681	ISO2719	63.0		0.25
485	ISO2719	62.5		-0.06	1720	D93	64.0		0.88
488		-----		-----	1724	D93	62		-0.38
495	ISO2719	63.5		0.57	1730	ISO2719	63.0		0.25
593	D93	63.22		0.39	1740	ISO2719	63.0		0.25
663	D93	63.7		0.69	1741	ISO2719	62.0		-0.38
671	D93	61		-1.01	1742	ISO2719	63.0		0.25
704	ISO2719	61.75		-0.54	1746	D93	64.0		0.88
750	D93	61.0		-1.01	1751	ISO2719	62.5		-0.06
781	ISO2719	62.5		-0.06	1753	ISO2719	60		-1.64
784	D93	62.7		0.06	1776	ISO2719	61.0		-1.01
785	D93	63.0		0.25	1780	D93	67.0875		2.83
863	ISO2719	61.5		-0.69	1782	D93	62		-0.38
873	D93	64.0		0.88	1783	D93	62.8		0.13
874	ISO2719	63.0		0.25	1784	ISO2719	63		0.25
875	D93	62.5		-0.06	1787	ISO2719	64.91		1.46
904	ISO2719	63.0		0.25	1807	ISO2719	67.0		2.77
912	D93	63.0		0.25	1810	ISO2719	60.5		-1.32
962	D93	63.0		0.25	1811	ISO2719	61		-1.01
963	ISO2719	60.5		-1.32	1832	ISO2719	62.0		-0.38
970		-----		-----	1833	ISO2719	62		-0.38
971	ISO2719	60.5		-1.32	1834	ISO2719	63.0		0.25
974	ISO2719	60.0		-1.64	1849	ISO2719	62		-0.38
1006	D93	62.5		-0.06	1854	ISO2719	63		0.25
1016		-----		-----	1861		-----		-----
1017	ISO2719	63.0		0.25	1862	ISO2719	61.5		-0.69
1026	ISO2719	64.5		1.20	1906		-----		-----
1033	IP34	70.5	R(0.01)	4.98	1915		-----		-----
1059	ISO2719	62.0		-0.38	1936	ISO2719	64		0.88
1081	D93	62.0		-0.38	1937	ISO2719	64		0.88
1109	D93	61.5		-0.69	1938	ISO2719	62		-0.38
1121	IP34	61.2		-0.88	1941	ISO2719	62.0		-0.38

1126	ISO2719	63.5	0.57	1948	ISO2719	61.0	-1.01
1134	IP34	60.6	-1.26	1951	ISO2719	62.5	-0.06
1146	D93	62.40	-0.13	2102		-----	-----
1150	ISO2719	61.0	-1.01	2129	ISO2719	62.0	-0.38
1161	ISO2719	60.5	-1.32	2146		-----	-----
1167	ISO2719	63.5	0.57	5019	ISO3679	61.0	-1.01
1186		-----	-----				

normality	suspect
n	148
outliers	1
mean (n)	62.599
st.dev. (n)	1.3537
R(calc.)	3.790
R(ISO2719:02)	4.445

Lab 1528: first reported 57.0





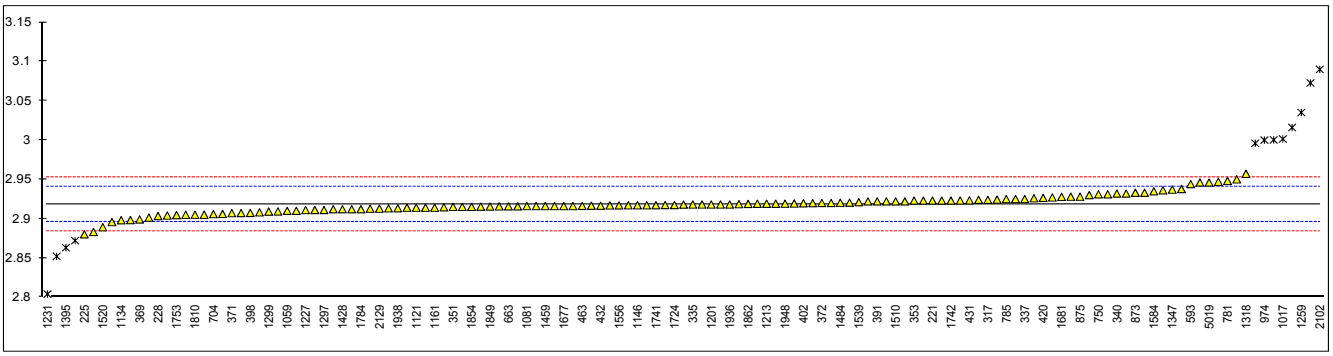
Determination of Kinematic Viscosity @ 40°C on sample #14013; result in mm^2/s

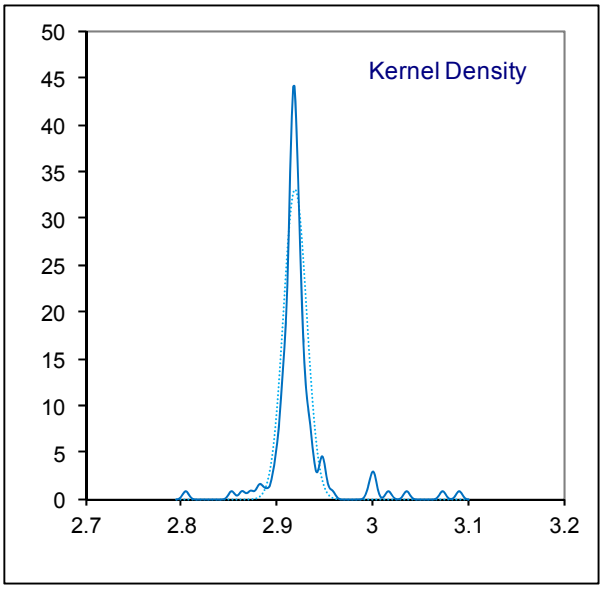
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D445	2.911		-0.64	1194		-----		-----
120	ISO3104	2.922		0.32	1199		-----		-----
132	D445	2.9156		-0.24	1201	ISO3104	2.918		-0.03
150	ISO3104	2.9184		0.01	1203	ISO3104	2.9243		0.52
159	D445	2.9165		-0.16	1205		-----		-----
175	D445	2.908		-0.90	1213	D445	2.919		0.06
193		-----		-----	1215	D445	2.922		0.32
194	D445	2.910		-0.73	1218		-----		-----
221	D445	2.923		0.41	1227	D445	2.9109		-0.65
225	D445	2.880		-3.34	1231	D445	2.804	R(0.01)	-9.96
228	D445	2.9033		-1.31	1254	ISO3104	2.9092		-0.80
237		-----		-----	1259	ISO3104	3.0351	R(0.01)	10.18
238		-----		-----	1266	ISO3104	2.9131		-0.46
258		-----		-----	1297	D7042	2.911		-0.64
273	D445	2.927		0.76	1299	ISO3104	2.909		-0.81
311	ISO3104	2.926		0.67	1316	D445	2.919		0.06
312	ISO3104	2.912		-0.55	1318	D7042	2.9571		3.38
317	ISO3104	2.924		0.49	1347	D445	2.937		1.63
323	ISO3104	2.925		0.58	1348	D445	2.93		1.02
333	ISO3104	2.918		-0.03	1356	ISO3104	2.933		1.28
334	ISO3104	2.920		0.15	1362	ISO3104	3.0003	R(0.01)	7.14
335	ISO3104	2.918		-0.03	1385	D445	2.872	R(0.05)	-4.04
336		-----		-----	1395	ISO3104	2.863	R(0.01)	-4.82
337	ISO3104	2.925		0.58	1409	ISO3104	2.918		-0.03
338		-----		-----	1412	D445	2.923		0.41
340	ISO3104	2.932		1.19	1423		-----		-----
351	ISO3104	2.915		-0.29	1428	ISO3104	2.912		-0.55
353	IP71	2.923		0.41	1430	D445	2.852	R(0.01)	-5.78
357	ISO3104	2.924		0.49	1459	D7042	2.916		-0.20
369	ISO3104	2.8990		-1.68	1460		-----		-----
370	ISO3104	2.9231		0.42	1484	ISO3104	2.9203		0.17
371	ISO3104	2.907		-0.99	1491	ISO3104	2.931		1.10
372	ISO3104	2.920		0.15	1510	ISO3104	2.922		0.32
391	ISO3104	2.922		0.32	1520	ISO3104	2.8891		-2.55
398	ISO3104	2.9073		-0.96	1528	ISO3104	2.89565		-1.98
399		-----		-----	1539	ISO3104	2.921		0.23
402	ISO3104	2.9196		0.11	1546	ISO3104	2.91977		0.13
403	ISO3104	2.928		0.84	1556	ISO3104	2.9169		-0.12
420	ISO3104	2.9265		0.71	1564	D445	2.915		-0.29
430		-----		-----	1569	ISO3104	3.016	R(0.01)	8.51
431	ISO3104	2.9233		0.43	1584	ISO3104	2.9348		1.44
432	ISO3104	2.9165		-0.16	1586	ISO3104	2.916		-0.20
433		-----		-----	1631	ISO3104	2.917		-0.12
440	D445	2.914		-0.38	1634		-----		-----
445	IP71	2.950		2.76	1654	ISO3104	2.9173		-0.09
447	D445	2.914		-0.38	1677	ISO3104	2.916		-0.20
463	ISO3104	2.9163		-0.18	1681	ISO3104	2.9278		0.83
485		-----		-----	1720		-----		-----
488		-----		-----	1724	D445	2.9173		-0.09
495	ISO3104	2.9153		-0.26	1730		-----		-----
593	D445	2.944		2.24	1740	ISO3104	2.912		-0.55
663	D445	2.9157		-0.23	1741	ISO3104	2.9171		-0.11
671	D445	2.916		-0.20	1742	ISO3104	2.923		0.41
704	ISO3104	2.9058		-1.09	1746	D445	2.906	C	-1.07
750	D445	2.931		1.10	1751	ISO3104	2.9127		-0.49
781	ISO3104	2.948		2.59	1753	ISO3104	2.9045		-1.20
784	ISO3104	2.946		2.41	1776	D7042	2.947		2.50
785	D445	2.925		0.58	1780	D445	3.072675	R(0.01)	13.45
863	ISO3104	2.9361		1.55	1782	D7042	2.9013		-1.48
873	ISO3104	2.933		1.28	1783		-----		-----
874	ISO3104	2.932		1.19	1784	ISO3104	2.912		-0.55
875	D445	2.928		0.84	1787		-----		-----
904	ISO3104	2.904		-1.25	1807	ISO3104	2.9193		0.08
912	ISO3104	2.919		0.06	1810	ISO3104	2.905		-1.16
962	D445	2.905		-1.16	1811	ISO3104	2.922		0.32
963	ISO3104	2.923		0.41	1832	ISO3104	2.9071		-0.98
970		-----		-----	1833	ISO3104	2.916		-0.20
971	ISO3104	2.996	R(0.01)	6.77	1834	ISO3104	2.9204		0.18
974	ISO3104	3.000	R(0.01)	7.12	1849	ISO3104	2.9155		-0.25
1006	D445	2.9168		-0.13	1854	ISO3104	2.915		-0.29
1016		-----		-----	1861		-----		-----
1017	D445	3.0014	R(0.01)	7.24	1862	ISO3104	2.9187		0.03
1026	ISO3104	2.883		-3.08	1906		-----		-----
1033	IP71	2.917		-0.12	1915		-----		-----
1059	ISO3104	2.910		-0.73	1936	ISO3104	2.918		-0.03
1081	D445	2.916		-0.20	1937	ISO3104	2.9145		-0.33
1109	D445	2.8982		-1.75	1938	ISO3104	2.9132		-0.45
1121	IP71	2.914		-0.38	1941	ISO3104	2.9157		-0.23

1126		-----	-----	1948	ISO3104	2.9191		0.07
1134	IP71	2.898	-1.77	1951	ISO3104	2.905		-1.16
1146	ISO3104	2.917	-0.12	2102	ISO3219	3.09	R(0.01)	14.96
1150	ISO3104	2.9179	-0.04	2129	ISO3104	2.91273		-0.49
1161	ISO3104	2.914	-0.38	2146		-----		-----
1167	ISO3104	2.9377	1.69	5019	ISO3104	2.946		2.41
1186		-----	-----					

normality	suspect
n	127
outliers	12
mean (n)	2.9183
st.dev. (n)	0.01209
R(calc.)	0.0339
R(ISO3104:94)	0.0321

Lab 1746: first reported 2.998





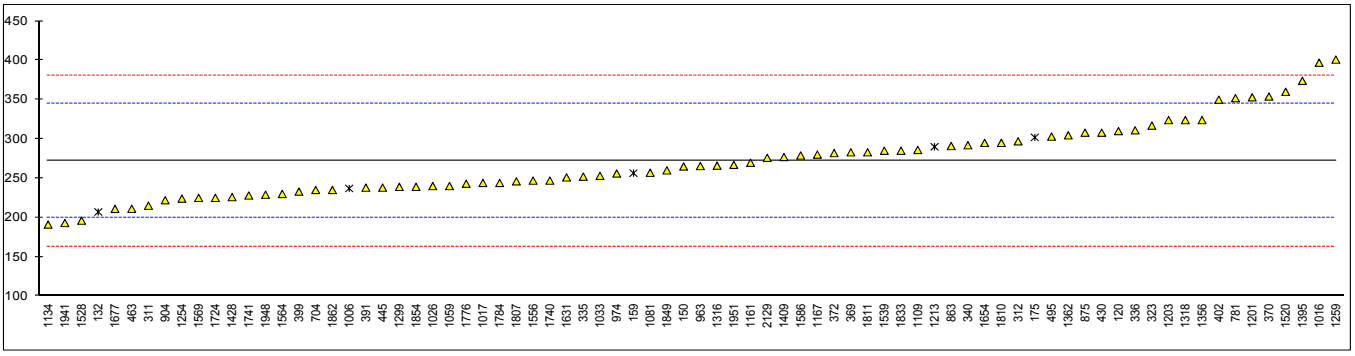
Determination of Lubricity by HFRR on sample #14013; result in µm

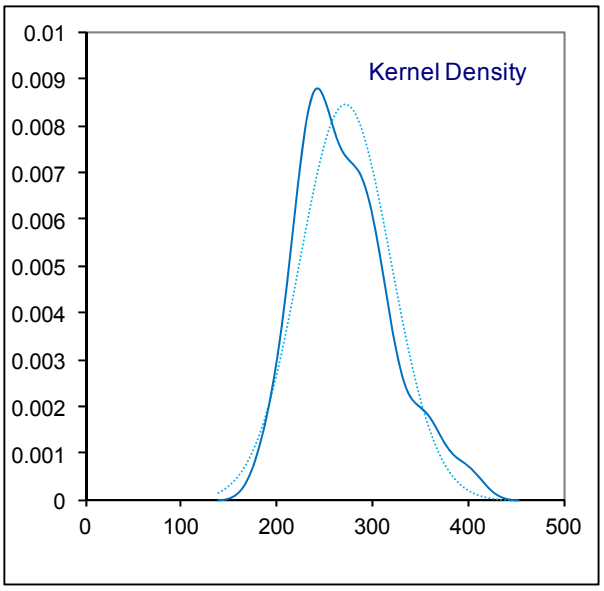
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	1194		-----		-----
120	ISO12156	310		1.04	1199		-----		-----
132	D7688	207	ex	-1.78	1201	ISO12156	353		2.22
150	ISO12156	265		-0.19	1203	ISO12156	324		1.43
159	D6079	256.5	ex	-0.43	1205		-----		-----
175	D6079	302	ex	0.82	1213	D6079	290	ex	0.49
193		-----		-----	1215		-----		-----
194		-----		-----	1218		-----		-----
221		-----		-----	1227		-----		-----
225		-----		-----	1231		-----		-----
228		-----		-----	1254	ISO12156	224		-1.32
237		-----		-----	1259	ISO12156	401		3.54
238		-----		-----	1266		-----		-----
258		-----		-----	1297		-----		-----
273		-----		-----	1299	ISO12156	239		-0.91
311	ISO12156	215		-1.57	1316	ISO12156	266		-0.17
312	ISO12156	297		0.69	1318	ISO12156	324		1.43
317		-----		-----	1347		-----		-----
323	ISO12156	317		1.23	1348		-----		-----
333		-----		-----	1356	ISO12156	324		1.43
334		-----		-----	1362	ISO12156	304.6		0.89
335	ISO12156	252		-0.55	1385		-----		-----
336	ISO12156	311		1.07	1395	ISO12156	374		2.80
337		-----		-----	1409	ISO12156	277		0.14
338		-----		-----	1412		-----		-----
340	ISO12156	292		0.55	1423		-----		-----
351		-----		-----	1428	ISO12156	226		-1.26
353		-----		-----	1430		-----		-----
357		-----		-----	1459		-----		-----
369	ISO12156	283		0.30	1460		-----		-----
370	ISO12156	354		2.25	1484		-----		-----
371		-----		-----	1491		-----		-----
372	ISO12156	282		0.27	1510		-----		-----
391	ISO12156	238		-0.93	1520	ISO12156	360		2.42
398		-----		-----	1528	ISO12156	196		-2.09
399	ISO12156	233		-1.07	1539	ISO12156	285		0.36
402	ISO12156	350		2.14	1546		-----		-----
403		-----		-----	1556	ISO12156	247		-0.69
420		-----		-----	1564	ISO12156	230		-1.15
430	ISO12156	308		0.99	1569	ISO12156	225		-1.29
431		-----		-----	1584		-----		-----
432		-----		-----	1586	ISO12156	279		0.19
433		-----		-----	1631	ISO12156	251		-0.58
440		-----		-----	1634		-----		-----
445	IP450	238		-0.93	1654	ISO12156	295		0.63
447		-----		-----	1677	ISO12156	211		-1.67
463	ISO12156	211.1		-1.67	1681		-----		-----
485		-----		-----	1720		-----		-----
488		-----		-----	1724	IP450	225		-1.29
495	ISO12156	303		0.85	1730		-----		-----
593		-----		-----	1740	ISO12156	247		-0.69
663		-----		-----	1741	ISO12156	228		-1.21
671		-----		-----	1742		-----		-----
704	ISO12156	235		-1.02	1746		-----		-----
750		-----		-----	1751		-----		-----
781	ISO12156	352		2.20	1753		-----		-----
784		-----		-----	1776	ISO12156	243		-0.80
785		-----		-----	1780		-----		-----
863	ISO12156	291		0.52	1782		-----		-----
873		-----		-----	1783		-----		-----
874		-----		-----	1784	ISO12156	244		-0.77
875	ISO12156	308		0.99	1787		-----		-----
904	ISO12156	222		-1.37	1807	ISO12156	246		-0.71
912		-----		-----	1810	ISO12156	295		0.63
962		-----		-----	1811	ISO12156	283		0.30
963	ISO12156	265.5		-0.18	1832		-----		-----
970		-----		-----	1833	ISO12156	285		0.36
971		-----		-----	1834		-----		-----
974	ISO12156	256		-0.44	1849	ISO12156	260		-0.33
1006	D6079	237	ex	-0.96	1854	ISO12156	239		-0.91
1016	ISO12156	397		3.43	1861		-----		-----
1017	ISO12156	244		-0.77	1862	ISO12156	235		-1.02
1026	ISO12156	240		-0.88	1906		-----		-----
1033	IP450	253		-0.52	1915		-----		-----
1059	ISO12156	240		-0.88	1936		-----		-----
1081	ISO12156	257		-0.41	1937		-----		-----
1109	IP450	286		0.38	1938		-----		-----
1121		-----		-----	1941	ISO12156	193		-2.17

1126		-----	-----	1948	ISO12156	229	-1.18
1134	ISO12156	191	-2.22	1951	ISO12156	267	-0.14
1146		-----	-----	2102		-----	-----
1150		-----	-----	2129	ISO12156	276	0.11
1161	ISO12156	269.7	-0.06	2146		-----	-----
1167	ISO3104	280.1	0.22	5019		-----	-----
1186		-----	-----				

normality	OK	
n	73	
outliers	0	+ 5 excl.
mean (n)	272.01	
st.dev. (n)	47.234	
R(calc.)	132.26	
R(ISO12156:04)	102.00	

Ex = result excluded, calculation procedure of test method is different from ISO12185.





Determination of Manganese Content on sample #14013; result in mg/L

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	1194		-----		-----
120		-----		-----	1199		-----		-----
132		-----		-----	1201	prEN16576	0.066		-----
150		-----		-----	1203	prEN16576	<0.5		-----
159		-----		-----	1205		-----		-----
175		-----		-----	1213	D3831	<0.25		-----
193		-----		-----	1215		-----		-----
194		-----		-----	1218		-----		-----
221		-----		-----	1227		-----		-----
225		-----		-----	1231		-----		-----
228		-----		-----	1254		-----		-----
237		-----		-----	1259		-----		-----
238		-----		-----	1266		-----		-----
258		-----		-----	1297		-----		-----
273	D3831	1.9	False positive?	-----	1299		-----		-----
311		-----		-----	1316		-----		-----
312		-----		-----	1318		-----		-----
317		-----		-----	1347		-----		-----
323		-----		-----	1348		-----		-----
333		-----		-----	1356		-----		-----
334		-----		-----	1362		-----		-----
335		-----		-----	1385		-----		-----
336		-----		-----	1395		-----		-----
337		-----		-----	1409		-----		-----
338		-----		-----	1412		-----		-----
340		-----		-----	1423		-----		-----
351		-----		-----	1428		-----		-----
353		-----		-----	1430	D5185	0		-----
357		-----		-----	1459		-----		-----
369		-----		-----	1460		-----		-----
370		-----		-----	1484		-----		-----
371		-----		-----	1491		-----		-----
372		-----		-----	1510		-----		-----
391		-----		-----	1520		-----		-----
398		-----		-----	1528	EN16135	0.06		-----
399		-----		-----	1539		-----		-----
402		-----		-----	1546		-----		-----
403	prEN16576	<0.5		-----	1556		-----		-----
420		-----		-----	1564		-----		-----
430		-----		-----	1569	prEN16576	<0.1		-----
431		-----		-----	1584		-----		-----
432		-----		-----	1586		-----		-----
433		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
445	prEN16576	<0.3		-----	1654		-----		-----
447		-----		-----	1677	prEN16576	<2.5		-----
463		-----		-----	1681		-----		-----
485		-----		-----	1720		-----		-----
488		-----		-----	1724		-----		-----
495	prEN16576	<0.5		-----	1730		-----		-----
593		-----		-----	1740		-----		-----
663		-----		-----	1741		-----		-----
671		-----		-----	1742		-----		-----
704		-----		-----	1746		-----		-----
750		-----		-----	1751		-----		-----
781		-----		-----	1753		-----		-----
784		-----		-----	1776	prEN16576	<0.5		-----
785		-----		-----	1780		-----		-----
863		-----		-----	1782		-----		-----
873		-----		-----	1783		-----		-----
874		-----		-----	1784		-----		-----
875		-----		-----	1787		-----		-----
904		-----		-----	1807		-----		-----
912		-----		-----	1810		-----		-----
962		-----		-----	1811		-----		-----
963		-----		-----	1832		-----		-----
970		-----		-----	1833		-----		-----
971		-----		-----	1834		-----		-----
974		-----		-----	1849		-----		-----
1006		-----		-----	1854		-----		-----
1016		-----		-----	1861		-----		-----
1017		-----		-----	1862		-----		-----
1026		-----		-----	1906		-----		-----
1033		-----		-----	1915		-----		-----
1059		-----		-----	1936		-----		-----
1081		-----		-----	1937		-----		-----
1109		-----		-----	1938		-----		-----
1121		-----		-----	1941		-----		-----

1126		-----	-----	1948		-----	-----
1134		-----	-----	1951		-----	-----
1146		-----	-----	2102		-----	-----
1150		-----	-----	2129	D7111Mod.	<0.1	-----
1161		-----	-----	2146		-----	-----
1167		-----	-----	5019		-----	-----
1186		-----	-----				

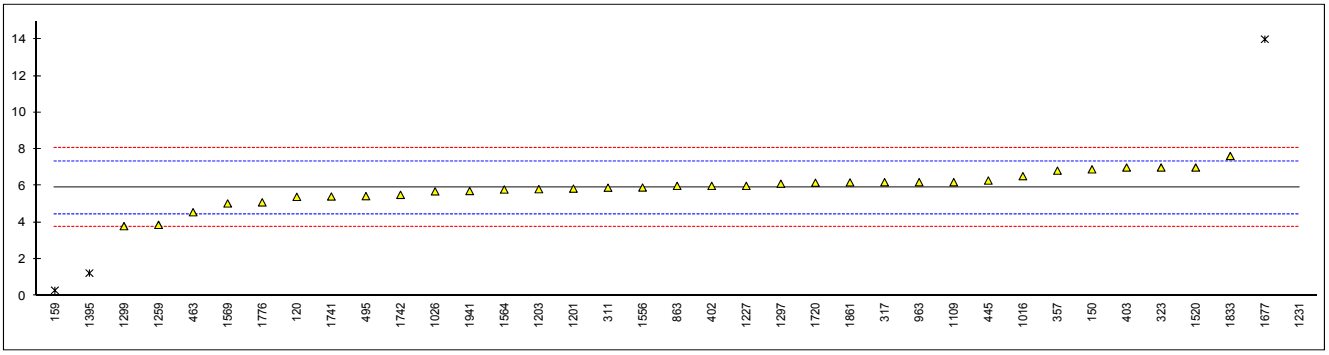
normality	n.a.
n	13
outliers	n.a
mean (n)	<0.5
st.dev. (n)	n.a.
R(calc.)	n.a.
R(prEN16576:13)	n.a.

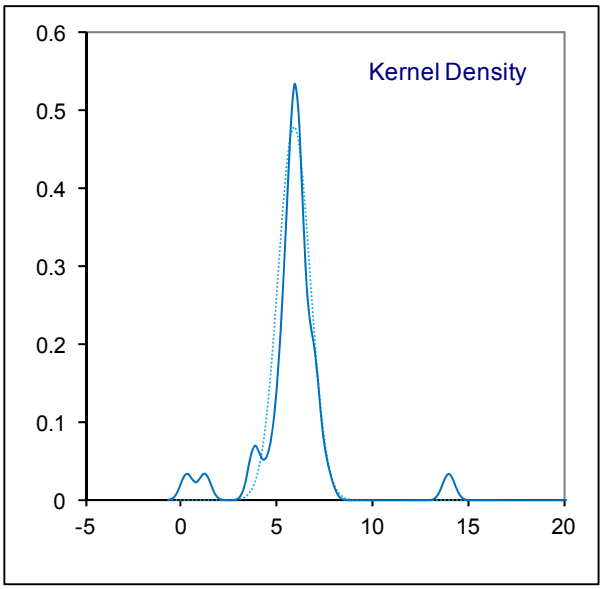
Determination of Total Nitrogen on sample #14013; result in mg/kg

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	1194		-----		-----
120	D4629	5.4		-0.71	1199		-----		-----
132		-----		-----	1201	D4629	5.85		-0.09
150	D4629	6.9		1.37	1203	D4629	5.82		-0.13
159	D4629	0.3	R(0.01)	-7.78	1205		-----		-----
175		-----		-----	1213		-----		-----
193		-----		-----	1215		-----		-----
194		-----		-----	1218		-----		-----
221		-----		-----	1227	D4629	6.0		0.12
225		-----		-----	1231	D4629	51	R(0.01)	62.47
228		-----		-----	1254		-----		-----
237		-----		-----	1259	D4629	3.872		-2.83
238		-----		-----	1266		-----		-----
258		-----		-----	1297	D4629	6.12		0.29
273		-----		-----	1299	D4629	3.8		-2.93
311	D4629	5.9		-0.02	1316		-----		-----
312		-----		-----	1318		-----		-----
317	D4629	6.2		0.40	1347		-----		-----
323	D4629	7		1.51	1348		-----		-----
333		-----		-----	1356		-----		-----
334		-----		-----	1362		-----		-----
335		-----		-----	1385		-----		-----
336		-----		-----	1395	D4629	1.24	R(0.01)	-6.47
337		-----		-----	1409		-----		-----
338		-----		-----	1412		-----		-----
340		-----		-----	1423		-----		-----
351		-----		-----	1428		-----		-----
353		-----		-----	1430		-----		-----
357	D4629	6.83		1.27	1459		-----		-----
369		-----		-----	1460		-----		-----
370		-----		-----	1484		-----		-----
371		-----		-----	1491		-----		-----
372		-----		-----	1510		-----		-----
391		-----		-----	1520	D4629	7.00		1.51
398		-----		-----	1528		-----		-----
399		-----		-----	1539		-----		-----
402	D4629	6.0		0.12	1546		-----		-----
403	D4629	7.0		1.51	1556	D4629	5.91		0.00
420		-----		-----	1564	D4629	5.8		-0.16
430		-----		-----	1569	D4629	5.04		-1.21
431		-----		-----	1584		-----		-----
432		-----		-----	1586		-----		-----
433		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
445	D4629	6.29		0.52	1654		-----		-----
447		-----		-----	1677	D4629	14	R(0.01)	11.21
463	D4629	4.56		-1.87	1681		-----		-----
485		-----		-----	1720	D4629	6.17		0.36
488		-----		-----	1724		-----		-----
495	D4629	5.44		-0.65	1730		-----		-----
593		-----		-----	1740		-----		-----
663		-----		-----	1741	D4629	5.42		-0.68
671		-----		-----	1742	D4629	5.51		-0.56
704		-----		-----	1746		-----		-----
750		-----		-----	1751		-----		-----
781		-----		-----	1753		-----		-----
784		-----		-----	1776	D4629	5.1		-1.13
785		-----		-----	1780		-----		-----
863	D4629	6.0		0.12	1782		-----		-----
873		-----		-----	1783		-----		-----
874		-----		-----	1784		-----		-----
875		-----		-----	1787		-----		-----
904		-----		-----	1807		-----		-----
912		-----		-----	1810		-----		-----
962		-----		-----	1811		-----		-----
963	D4629	6.2		0.40	1832		-----		-----
970		-----		-----	1833	D4629	7.63		2.38
971		-----		-----	1834		-----		-----
974		-----		-----	1849		-----		-----
1006		-----		-----	1854		-----		-----
1016	D4629	6.53		0.86	1861	D4629	6.188		0.38
1017		-----		-----	1862		-----		-----
1026	D4629	5.7		-0.29	1906		-----		-----
1033		-----		-----	1915		-----		-----
1059		-----		-----	1936		-----		-----
1081		-----		-----	1937		-----		-----
1109	D4629	6.2		0.40	1938		-----		-----
1121		-----		-----	1941	D4629	5.72		-0.27

1126	-----	-----	1948	-----	-----
1134	-----	-----	1951	-----	-----
1146	-----	-----	2102	-----	-----
1150	-----	-----	2129	-----	-----
1161	-----	-----	2146	-----	-----
1167	-----	-----	5019	-----	-----
1186	-----	-----			

normality	suspect
n	33
outliers	4
mean (n)	5.912
st.dev. (n)	0.8323
R(calc.)	2.331
R(D4629:12)	2.021





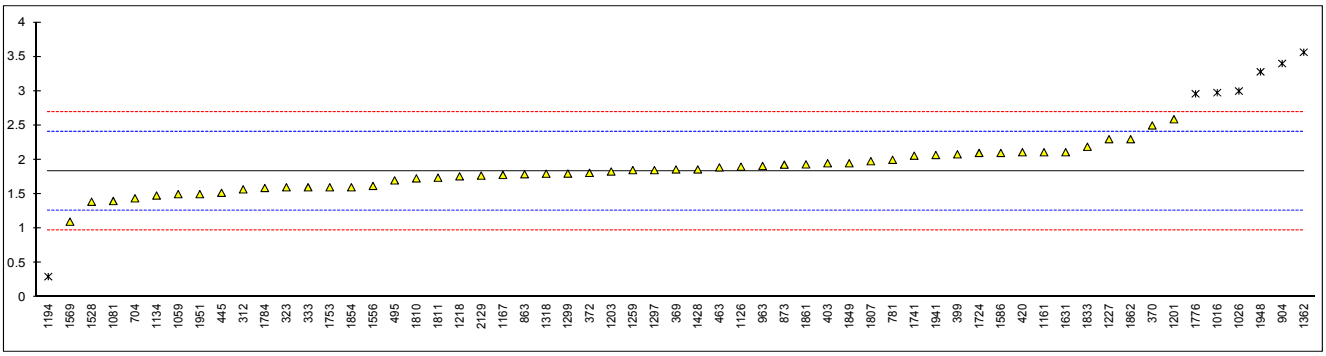
Determination of Poly-Aromatic Hydrocarbons on sample #14013; result in %M/M

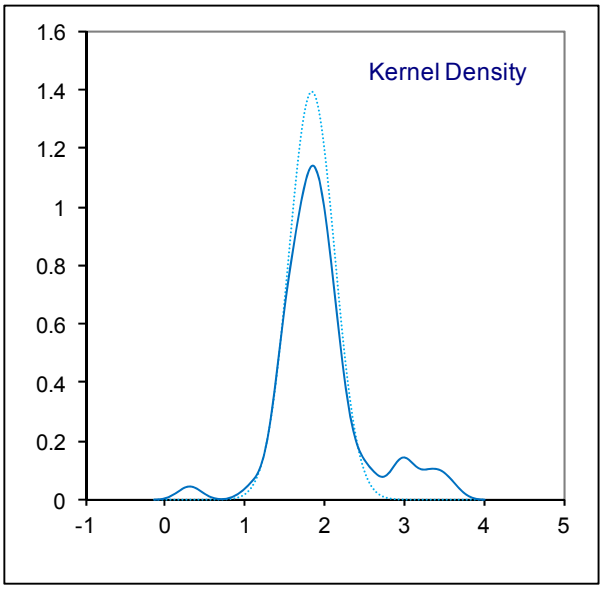
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	1194	EN12916Mod.	0.3	R(0.05)	-5.35
120		-----		-----	1199		-----		-----
132		-----		-----	1201	EN12916	2.59		2.62
150		-----		-----	1203	EN12916	1.83		-0.02
159		-----		-----	1205		-----		-----
175		-----		-----	1213		-----		-----
193		-----		-----	1215		-----		-----
194		-----		-----	1218	EN12916	1.76		-0.27
221		-----		-----	1227	EN12916	2.3		1.61
225		-----		-----	1231		-----		-----
228		-----		-----	1254		-----		-----
237		-----		-----	1259	EN12916	1.85		0.05
238		-----		-----	1266		-----		-----
258		-----		-----	1297	EN12916	1.85		0.05
273		-----		-----	1299	EN12916	1.8		-0.13
311		-----		-----	1316		-----		-----
312	EN12916	1.57		-0.93	1318	IP391	1.7980		-0.13
317		-----		-----	1347		-----		-----
323	EN12916	1.6		-0.82	1348		-----		-----
333	EN12916	1.6		-0.82	1356		-----		-----
334		-----		-----	1362	EN12916	3.5646	R(0.05)	6.01
335		-----		-----	1385		-----		-----
336		-----		-----	1395		-----		-----
337		-----		-----	1409		-----		-----
338		-----		-----	1412		-----		-----
340		-----		-----	1423		-----		-----
351		-----		-----	1428	EN12916	1.86		0.08
353		-----		-----	1430		-----		-----
357		-----		-----	1459		-----		-----
369	EN12916	1.86		0.08	1460		-----		-----
370	EN12916	2.5		2.31	1484		-----		-----
371		-----		-----	1491		-----		-----
372	EN12916	1.81		-0.09	1510		-----		-----
391		-----		-----	1520		-----		-----
398		-----		-----	1528	EN12916	1.39		-1.55
399	EN12916	2.08		0.85	1539		-----		-----
402		-----		-----	1546		-----		-----
403	EN12916	1.95		0.39	1556	EN12916	1.62		-0.75
420	EN12916	2.11	C	0.95	1564		-----		-----
430		-----		-----	1569	EN12916	1.1		-2.56
431		-----		-----	1584		-----		-----
432		-----		-----	1586	EN12916	2.1		0.92
433		-----		-----	1631	EN12916	2.11		0.95
440		-----		-----	1634		-----		-----
445	IP391	1.52		-1.10	1654		-----		-----
447		-----		-----	1677		-----		-----
463	EN12916	1.89		0.19	1681		-----		-----
485		-----		-----	1720		-----		-----
488		-----		-----	1724	IP391	2.0999		0.92
495	EN12916	1.7		-0.48	1730		-----		-----
593		-----		-----	1740		-----		-----
663		-----		-----	1741	EN12916	2.060		0.78
671		-----		-----	1742		-----		-----
704	EN12916	1.44		-1.38	1746		-----		-----
750		-----		-----	1751		-----		-----
781	EN12916	2.00		0.57	1753	EN12916	1.6		-0.82
784		-----		-----	1776	EN12916	2.96	R(0.05)	3.91
785		-----		-----	1780		-----		-----
863	EN12916	1.79		-0.16	1782		-----		-----
873	EN12916	1.93		0.33	1783		-----		-----
874		-----		-----	1784	EN12916	1.59		-0.86
875		-----		-----	1787		-----		-----
904	EN12916	3.4	R(0.05)	5.44	1807	EN12916	1.98		0.50
912		-----		-----	1810	EN12916	1.73		-0.37
962		-----		-----	1811	EN12916	1.74		-0.34
963	EN12916	1.91		0.26	1832		-----		-----
970		-----		-----	1833	EN12916	2.19		1.23
971		-----		-----	1834		-----		-----
974		-----		-----	1849	EN12916	1.95		0.39
1006		-----		-----	1854	EN12916	1.60		-0.82
1016	EN12916	2.977	R(0.05)	3.97	1861	EN12916	1.934		0.34
1017		-----		-----	1862	EN12916	2.3	C	1.61
1026	EN12916	3.0	R(0.05)	4.05	1906		-----		-----
1033		-----		-----	1915		-----		-----
1059	EN12916	1.5	C	-1.17	1936		-----		-----
1081	EN12916	1.4		-1.52	1937		-----		-----
1109		-----	W	-----	1938		-----		-----
1121		-----		-----	1941	EN12916	2.07		0.81

1126	EN12916	1.9	0.22	1948	EN12916	3.28	R(0.05)	5.02
1134	IP391	1.48	-1.24	1951	EN12916	1.5		-1.17
1146		-----	-----	2102		-----		-----
1150		-----	-----	2129	EN12916	1.77		-0.23
1161	EN12916	2.11	0.95	2146		-----		-----
1167	EN12916	1.78	-0.20	5019		-----		-----
1186		-----	-----					

normality	OK
n	52
outliers	7
mean (n)	1.837
st.dev. (n)	0.2869
R(calc.)	0.803
R(EN12916:06)	0.805

Lab 420: first reported 3.53
Lab 1059: first reported 19.8
Lab 1862: first reported 3.4
Lab 1109: result withdrawn, reported 4.07





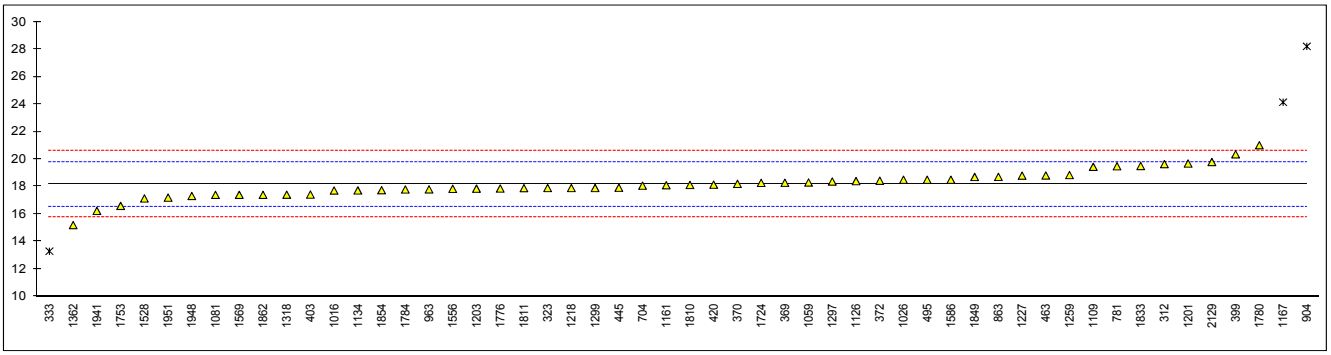
Determination of Mono-Aromatic Hydrocarbons on sample #14013; result in %M/M

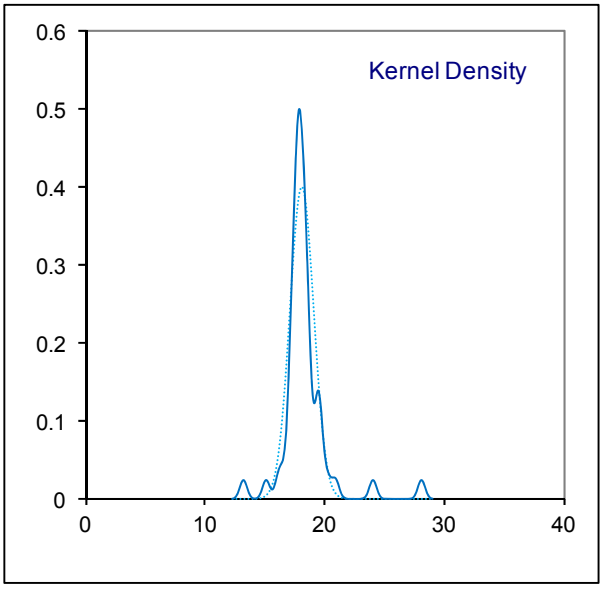
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	1194		-----		-----
120		-----		-----	1199		-----		-----
132		-----		-----	1201	EN12916	19.68		1.84
150		-----		-----	1203	EN12916	17.85		-0.41
159		-----		-----	1205		-----		-----
175		-----		-----	1213		-----		-----
193		-----		-----	1215		-----		-----
194		-----		-----	1218	EN12916	17.9		-0.35
221		-----		-----	1227	EN12916	18.8		0.76
225		-----		-----	1231		-----		-----
228		-----		-----	1254		-----		-----
237		-----		-----	1259	EN12916	18.84		0.81
238		-----		-----	1266		-----		-----
258		-----		-----	1297	EN12916	18.37		0.23
273		-----		-----	1299	EN12916	17.9		-0.35
311		-----		-----	1316		-----		-----
312	EN12916	19.64		1.79	1318	IP391	17.415		-0.95
317		-----		-----	1347		-----		-----
323	EN12916	17.9		-0.35	1348		-----		-----
333	EN12916	13.3	R(0.01)	-6.01	1356		-----		-----
334		-----		-----	1362	EN12916	15.2005		-3.67
335		-----		-----	1385		-----		-----
336		-----		-----	1395		-----		-----
337		-----		-----	1409		-----		-----
338		-----		-----	1412		-----		-----
340		-----		-----	1423		-----		-----
351		-----		-----	1428		-----		-----
353		-----		-----	1430		-----		-----
357		-----		-----	1459		-----		-----
369	EN12916	18.28		0.12	1460		-----		-----
370	EN12916	18.2		0.02	1484		-----		-----
371		-----		-----	1491		-----		-----
372	EN12916	18.43		0.30	1510		-----		-----
391		-----		-----	1520		-----		-----
398		-----		-----	1528	EN12916	17.14		-1.29
399	EN12916	20.35		2.66	1539		-----		-----
402		-----		-----	1546		-----		-----
403	EN12916	17.42		-0.94	1556	EN12916	17.84		-0.43
420	EN12916	18.14		-0.06	1564		-----		-----
430		-----		-----	1569	EN12916	17.4		-0.97
431		-----		-----	1584		-----		-----
432		-----		-----	1586	EN12916	18.5		0.39
433		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
445	IP391	17.92		-0.33	1654		-----		-----
447		-----		-----	1677		-----		-----
463	EN12916	18.81		0.77	1681		-----		-----
485		-----		-----	1720		-----		-----
488		-----		-----	1724	IP391	18.2724		0.11
495	EN12916	18.5		0.39	1730		-----		-----
593		-----		-----	1740		-----		-----
663		-----		-----	1741		-----		-----
671		-----		-----	1742		-----		-----
704	EN12916	18.07		-0.14	1746		-----		-----
750		-----		-----	1751		-----		-----
781	EN12916	19.48		1.59	1753	EN12916	16.6		-1.95
784		-----		-----	1776	EN12916	17.86		-0.40
785		-----		-----	1780	D6379	21.01		3.48
863	EN12916	18.71		0.65	1782		-----		-----
873		-----		-----	1783		-----		-----
874		-----		-----	1784	EN12916	17.79		-0.49
875		-----		-----	1787		-----		-----
904	EN12916	28.2	R(0.01)	12.33	1807		-----		-----
912		-----		-----	1810	EN12916	18.12		-0.08
962		-----		-----	1811	EN12916	17.89		-0.36
963	EN12916	17.8		-0.48	1832		-----		-----
970		-----		-----	1833	EN12916	19.5	C	1.62
971		-----		-----	1834		-----		-----
974		-----		-----	1849	EN12916	18.70		0.63
1006		-----		-----	1854	EN12916	17.74		-0.55
1016	EN12916	17.716		-0.58	1861		-----		-----
1017		-----		-----	1862	EN12916	17.4	C	-0.97
1026	EN12916	18.5	C	0.39	1906		-----		-----
1033		-----		-----	1915		-----		-----
1059	EN12916	18.3		0.14	1936		-----		-----
1081	EN12916	17.4		-0.97	1937		-----		-----
1109	D6591	19.44		1.54	1938		-----		-----
1121		-----		-----	1941	EN12916	16.23		-2.41

1126	EN12916	18.4		0.26	1948	EN12916	17.32	-1.07
1134	IP391	17.72		-0.57	1951	EN12916	17.2	-1.21
1146		-----		-----	2102		-----	-----
1150		-----		-----	2129	EN12916	19.79	1.97
1161	EN12916	18.1		-0.11	2146		-----	-----
1167	EN12916	24.14	R(0.01)	7.33	5019		-----	-----
1186		-----		-----				

normality	suspect
n	51
outliers	3
mean (n)	18.186
st.dev. (n)	0.9956
R(calc.)	2.788
R(EN12916:06)	2.275

Lab 1026: first reported 18.2
Lab 1833: first reported 22.5
Lab 1862: first reported 17.3





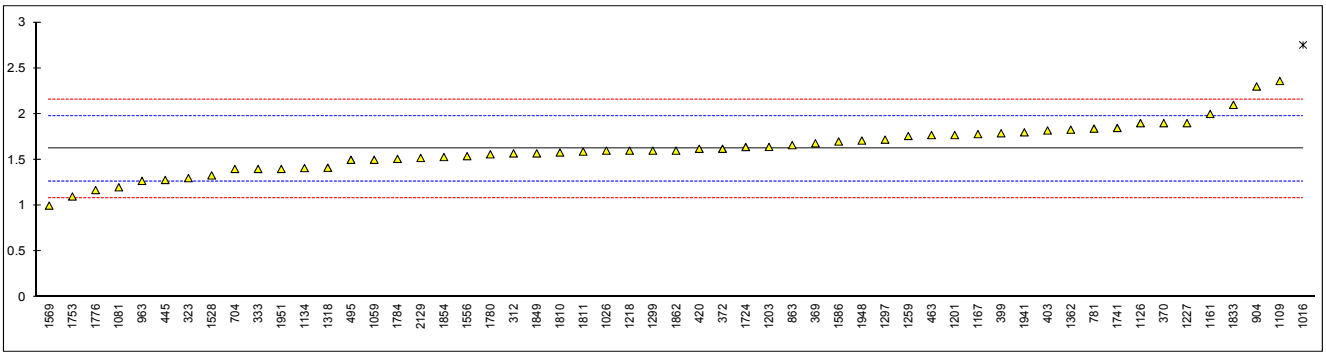
Determination of Di-Aromatic Hydrocarbons on sample #14013; result in %M/M

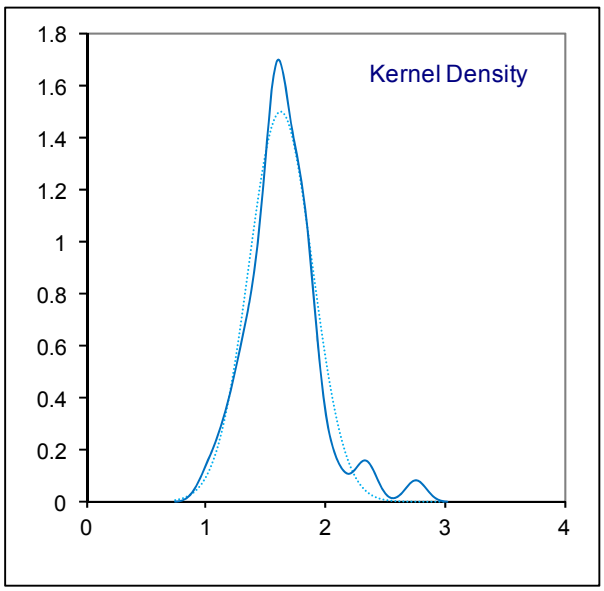
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	1194		-----		-----
120		-----		-----	1199		-----		-----
132		-----		-----	1201	EN12916	1.77		0.84
150		-----		-----	1203	EN12916	1.64		0.11
159		-----		-----	1205		-----		-----
175		-----		-----	1213		-----		-----
193		-----		-----	1215		-----		-----
194		-----		-----	1218	EN12916	1.60		-0.11
221		-----		-----	1227	EN12916	1.9		1.56
225		-----		-----	1231		-----		-----
228		-----		-----	1254		-----		-----
237		-----		-----	1259	EN12916	1.76		0.78
238		-----		-----	1266		-----		-----
258		-----		-----	1297	EN12916	1.72		0.56
273		-----		-----	1299	EN12916	1.6		-0.11
311		-----		-----	1316		-----		-----
312	EN12916	1.57		-0.28	1318	IP391	1.413		-1.16
317		-----		-----	1347		-----		-----
323	EN12916	1.3		-1.79	1348		-----		-----
333	EN12916	1.4		-1.23	1356		-----		-----
334		-----		-----	1362	EN12916	1.8286		1.16
335		-----		-----	1385		-----		-----
336		-----		-----	1395		-----		-----
337		-----		-----	1409		-----		-----
338		-----		-----	1412		-----		-----
340		-----		-----	1423		-----		-----
351		-----		-----	1428		-----		-----
353		-----		-----	1430		-----		-----
357		-----		-----	1459		-----		-----
369	EN12916	1.68		0.33	1460		-----		-----
370	EN12916	1.9	C	1.56	1484		-----		-----
371		-----		-----	1491		-----		-----
372	EN12916	1.62		0.00	1510		-----		-----
391		-----		-----	1520		-----		-----
398		-----		-----	1528	EN12916	1.33		-1.62
399	EN12916	1.79		0.95	1539		-----		-----
402		-----		-----	1546		-----		-----
403	EN12916	1.82		1.12	1556	EN12916	1.54		-0.45
420	EN12916	1.62	C	0.00	1564		-----		-----
430		-----		-----	1569	EN12916	1.0		-3.47
431		-----		-----	1584		-----		-----
432		-----		-----	1586	EN12916	1.7		0.45
433		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
445	IP391	1.28		-1.90	1654		-----		-----
447		-----		-----	1677		-----		-----
463	EN12916	1.77		0.84	1681		-----		-----
485		-----		-----	1720		-----		-----
488		-----		-----	1724	IP391	1.6394		0.11
495	EN12916	1.5		-0.67	1730		-----		-----
593		-----		-----	1740		-----		-----
663		-----		-----	1741	EN12916	1.847		1.27
671		-----		-----	1742		-----		-----
704	EN12916	1.40		-1.23	1746		-----		-----
750		-----		-----	1751		-----		-----
781	EN12916	1.84		1.23	1753	EN12916	1.1		-2.91
784		-----		-----	1776	EN12916	1.17		-2.52
785		-----		-----	1780	D6379	1.56		-0.34
863	EN12916	1.66		0.22	1782		-----		-----
873		-----		-----	1783		-----		-----
874		-----		-----	1784	EN12916	1.51		-0.62
875		-----		-----	1787		-----		-----
904	EN12916	2.3		3.80	1807		-----		-----
912		-----		-----	1810	EN12916	1.58		-0.23
962		-----		-----	1811	EN12916	1.59		-0.17
963	EN12916	1.27		-1.96	1832		-----		-----
970		-----		-----	1833	EN12916	2.1		2.68
971		-----		-----	1834		-----		-----
974		-----		-----	1849	EN12916	1.57		-0.28
1006		-----		-----	1854	EN12916	1.53		-0.50
1016	EN12916	2.753	R(0.01)	6.33	1861		-----		-----
1017		-----		-----	1862	EN12916	1.6	C	-0.11
1026	EN12916	1.6	C	-0.11	1906		-----		-----
1033		-----		-----	1915		-----		-----
1059	EN12916	1.5		-0.67	1936		-----		-----
1081	EN12916	1.2		-2.35	1937		-----		-----
1109	D6591	2.36		4.13	1938		-----		-----
1121		-----		-----	1941	EN12916	1.80		1.00

1126	EN12916	1.9	1.56	1948	EN12916	1.71	0.50
1134	IP391	1.41	-1.18	1951	EN12916	1.4	-1.23
1146		-----	-----	2102		-----	-----
1150		-----	-----	2129	EN12916	1.52	-0.56
1161	EN12916	2.0	2.12	2146		-----	-----
1167	EN12916	1.78	0.89	5019		-----	-----
1186		-----	-----				

normality	OK
n	54
outliers	1
mean (n)	1.620
st.dev. (n)	0.2661
R(calc.)	0.745
R(EN12916:06)	0.501

Lab 370: first reported 2.4
Lab 420: first reported 2.49
Lab 1026: first reported 1.9
Lab 1862: first reported 1.7





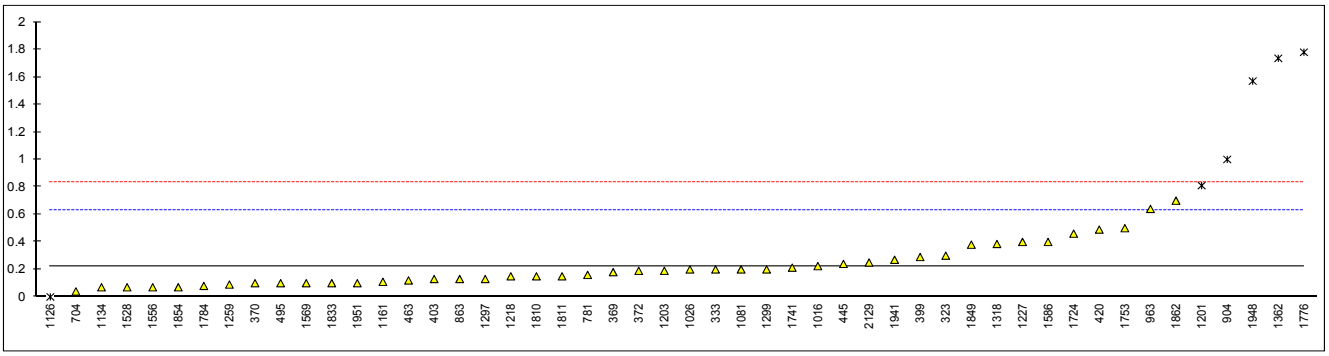
Determination of Tri$^+$-Aromatic Hydrocarbons on sample #14013; result in %M/M

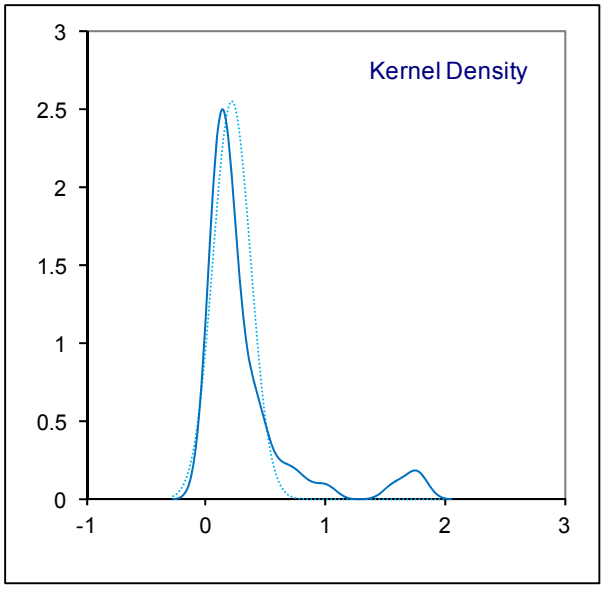
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	1194		-----		-----
120		-----		-----	1199		-----		-----
132		-----		-----	1201	EN12916	0.81	R(0.05)	2.90
150		-----		-----	1203	EN12916	0.19		-0.15
159		-----		-----	1205		-----		-----
175		-----		-----	1213		-----		-----
193		-----		-----	1215		-----		-----
194		-----		-----	1218	EN12916	0.15		-0.35
221		-----		-----	1227	EN12916	0.4		0.88
225		-----		-----	1231		-----		-----
228		-----		-----	1254		-----		-----
237		-----		-----	1259	EN12916	0.09		-0.64
238		-----		-----	1266		-----		-----
258		-----		-----	1297	EN12916	0.13		-0.45
273		-----		-----	1299	EN12916	0.2		-0.10
311		-----		-----	1316		-----		-----
312	EN12916	<0.01	false -?	-----	1318	IP391	0.385		0.81
317		-----		-----	1347		-----		-----
323	EN12916	0.3		0.39	1348		-----		-----
333	EN12916	0.2		-0.10	1356		-----		-----
334		-----		-----	1362	EN12916	1.7359	R(0.01)	7.46
335		-----		-----	1385		-----		-----
336		-----		-----	1395		-----		-----
337		-----		-----	1409		-----		-----
338		-----		-----	1412		-----		-----
340		-----		-----	1423		-----		-----
351		-----		-----	1428		-----		-----
353		-----		-----	1430		-----		-----
357		-----		-----	1459		-----		-----
369	EN12916	0.18		-0.20	1460		-----		-----
370	EN12916	0.1		-0.60	1484		-----		-----
371		-----		-----	1491		-----		-----
372	EN12916	0.19		-0.15	1510		-----		-----
391		-----		-----	1520		-----		-----
398		-----		-----	1528	EN12916	0.07		-0.74
399	EN12916	0.29		0.34	1539		-----		-----
402		-----		-----	1546		-----		-----
403	EN12916	0.13		-0.45	1556	EN12916	0.07		-0.74
420	EN12916	0.49	C	1.32	1564		-----		-----
430		-----		-----	1569	EN12916	0.1		-0.60
431		-----		-----	1584		-----		-----
432		-----		-----	1586	EN12916	0.4		0.88
433		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
445	IP391	0.24		0.09	1654		-----		-----
447		-----		-----	1677		-----		-----
463	EN12916	0.12		-0.50	1681		-----		-----
485		-----		-----	1720		-----		-----
488		-----		-----	1724	IP391	0.4605		1.18
495	EN12916	0.1		-0.60	1730		-----		-----
593		-----		-----	1740		-----		-----
663		-----		-----	1741	EN12916	0.213		-0.04
671		-----		-----	1742		-----		-----
704	EN12916	0.04		-0.89	1746		-----		-----
750		-----		-----	1751		-----		-----
781	EN12916	0.16		-0.30	1753	EN12916	0.5		1.37
784		-----		-----	1776	EN12916	1.78	R(0.01)	7.68
785		-----		-----	1780		-----		-----
863	EN12916	0.13		-0.45	1782		-----		-----
873		-----		-----	1783		-----		-----
874		-----		-----	1784	EN12916	0.08		-0.69
875		-----		-----	1787		-----		-----
904	EN12916	1.0	R(0.01)	3.84	1807		-----		-----
912		-----		-----	1810	EN12916	0.15		-0.35
962		-----		-----	1811	EN12916	0.15		-0.35
963	EN12916	0.64		2.06	1832		-----		-----
970		-----		-----	1833	EN12916	0.1		-0.60
971		-----		-----	1834		-----		-----
974		-----		-----	1849	EN12916	0.38		0.78
1006		-----		-----	1854	EN12916	0.07		-0.74
1016	EN12916	0.224		0.01	1861		-----		-----
1017		-----		-----	1862	EN12916	0.7	C	2.36
1026	EN12916	0.2	C	-0.10	1906		-----		-----
1033		-----		-----	1915		-----		-----
1059	EN12916	<0.1		-----	1936		-----		-----
1081	EN12916	0.2		-0.10	1937		-----		-----
1109		-----	W	-----	1938		-----		-----
1121		-----		-----	1941	EN12916	0.27		0.24

1126	EN12916	0	ex	-1.09	1948	EN12916	1.57	R(0.01)	6.64
1134	IP391	0.07		-0.74	1951	EN12916	0.1		-0.60
1146		-----		-----	2102		-----		-----
1150		-----		-----	2129	EN12916	0.25		0.14
1161	EN12916	0.11		-0.55	2146		-----		-----
1167	EN12916	n.d.		-----	5019		-----		-----
1186		-----		-----					

normality	not OK	
n	44	
outliers	5	(+1 excl.)
mean (n)	0.221	
st.dev. (n)	0.1562	
R(calc.)	0.437	
R(EN12916:06)	0.569	

Ex = result excluded as zero is not a real test result
Lab 420: first reported 1.04
Lab 1026; first reported 1.1
Lab 1862: first reported 1.7
Lab 1109: result was withdrawn, reported 1.71





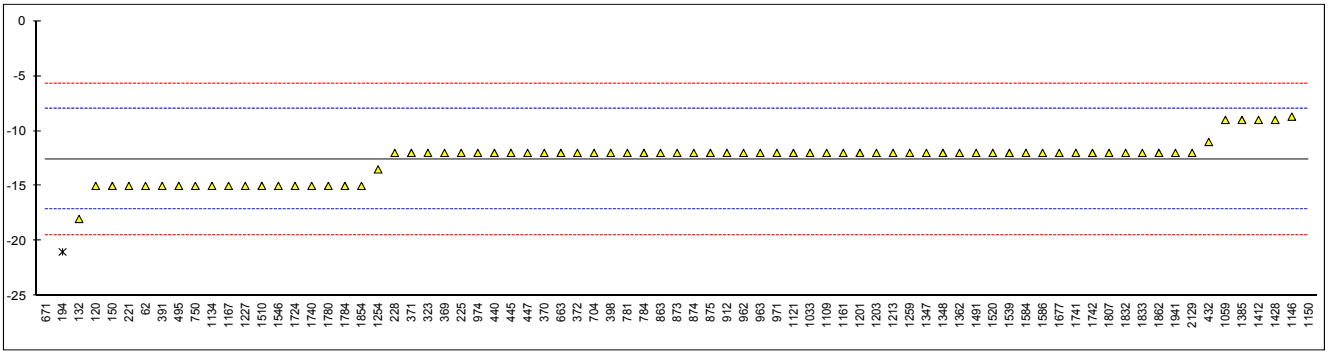
Determination of Pour Point, Manual on sample #14013; result in °C

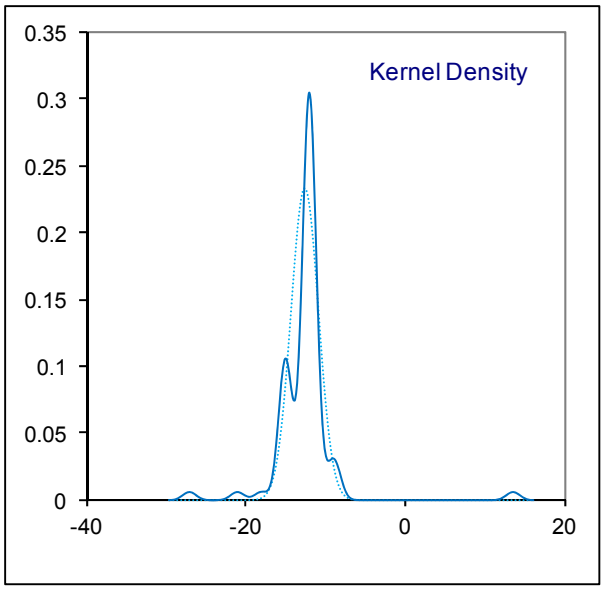
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D97	-15.0		-1.06	1194		-----		-----
120	ISO3016	-15		-1.06	1199		-----		-----
132	D97	-18		-2.36	1201	ISO3016	-12		0.25
150	ISO3016	-15		-1.06	1203	ISO3016	-12		0.25
159		-----		-----	1205		-----		-----
175		-----		-----	1213	D97	-12		0.25
193		-----		-----	1215		-----		-----
194	D97	-21	R(0.01)	-3.67	1218		-----		-----
221	D97	-15		-1.06	1227	D97	-15		-1.06
225	D97	-12		0.25	1231		-----		-----
228	D97	-12		0.25	1254	D97	-13.5		-0.40
237		-----		-----	1259	ISO3016	-12		0.25
238		-----		-----	1266		-----		-----
258		-----		-----	1297		-----		-----
273		-----		-----	1299		-----		-----
311		-----		-----	1316		-----		-----
312		-----		-----	1318		-----		-----
317		-----		-----	1347	D97	-12		0.25
323	ISO3016	-12		0.25	1348	D97	-12		0.25
333		-----		-----	1356	ISO3016	<-15	C	-----
334		-----		-----	1362	ISO3016	-12.0		0.25
335		-----		-----	1385	D97	-9		1.55
336		-----		-----	1395		-----		-----
337		-----		-----	1409		-----		-----
338		-----		-----	1412	D97	-9		1.55
340		-----		-----	1423		-----		-----
351		-----		-----	1428	ISO3016	-9		1.55
353		-----		-----	1430		-----		-----
357		-----		-----	1459		-----		-----
369	ISO3016	-12		0.25	1460		-----		-----
370	ISO3016	-12		0.25	1484		-----		-----
371	ISO3016	-12		0.25	1491	ISO3016	-12		0.25
372	ISO3016	-12		0.25	1510	ISO3016	-15		-1.06
391	ISO3016	-15		-1.06	1520	ISO3016	-12		0.25
398	ISO3016	-12		0.25	1528		-----		-----
399		-----		-----	1539	ISO3016	-12		0.25
402		-----		-----	1546	ISO3016	-15		-1.06
403		-----		-----	1556		-----		-----
420		-----		-----	1564		-----		-----
430		-----		-----	1569		-----		-----
431		-----		-----	1584	ISO3016	-12		0.25
432	ISO3016	-11		0.68	1586	ISO3016	-12		0.25
433		-----		-----	1631		-----		-----
440	IP15	-12.0		0.25	1634		-----		-----
445	IP15	-12		0.25	1654		-----		-----
447	D97	-12		0.25	1677	ISO3016	-12		0.25
463		-----		-----	1681		-----		-----
485		-----		-----	1720		-----		-----
488		-----		-----	1724	D97	-15		-1.06
495	ISO3016	-15		-1.06	1730		-----		-----
593		-----		-----	1740	ISO3016	-15		-1.06
663	D97	-12		0.25	1741	ISO3016	-12		0.25
671	D97	-27	C,R(0.01)	-6.28	1742	ISO3016	-12.0		0.25
704	ISO3016	-12		0.25	1746		-----		-----
750	D97	-15		-1.06	1751		-----		-----
781	ISO3016	-12		0.25	1753		-----		-----
784	D97	-12		0.25	1776		-----		-----
785		-----		-----	1780	D97	-15		-1.06
863	ISO3016	-12		0.25	1782		-----		-----
873	D97	-12		0.25	1783		-----		-----
874	ISO3016	-12		0.25	1784	ISO3016	-15		-1.06
875	D97	-12		0.25	1787		-----		-----
904		-----		-----	1807	ISO3016	-12		0.25
912	ISO3016	-12		0.25	1810		-----		-----
962	D97	-12		0.25	1811		-----		-----
963	ISO3016	-12		0.25	1832	ISO3016	-12		0.25
970		-----		-----	1833	ISO3016	-12		0.25
971	ISO3016	-12		0.25	1834		-----		-----
974	ISO3016	-12		0.25	1849		-----		-----
1006		-----		-----	1854	ISO3016	-15		-1.06
1016		-----		-----	1861		-----		-----
1017		-----		-----	1862	ISO3016	-12		0.25
1026		-----		-----	1906		-----		-----
1033	IP15	-12		0.25	1915		-----		-----
1059	ISO3016	-9		1.55	1936		-----		-----
1081		-----		-----	1937		-----		-----
1109	D97	-12		0.25	1938		-----		-----
1121	IP15	-12		0.25	1941	ISO3016	-12		0.25

1126		-----		-----	1948		-----	-----
1134	IP15	-15		-1.06	1951		-----	-----
1146	ISO3016	-8.7		1.69	2102		-----	-----
1150	ISO3016	13.5	R(0.01)	11.35	2129	ISO3016	-12	0.25
1161	ISO3016	-12		0.25	2146		-----	-----
1167	ISO3016	-15		-1.06	5019		-----	-----
1186		-----		-----				

normality	OK
n	74
outliers	3
mean (n)	-12.570
st.dev. (n)	1.7165
R(calc.)	4.806
R(ISO3016:94)	6.430

Lab 671: first reported -24
Lab 1356: first reported -19





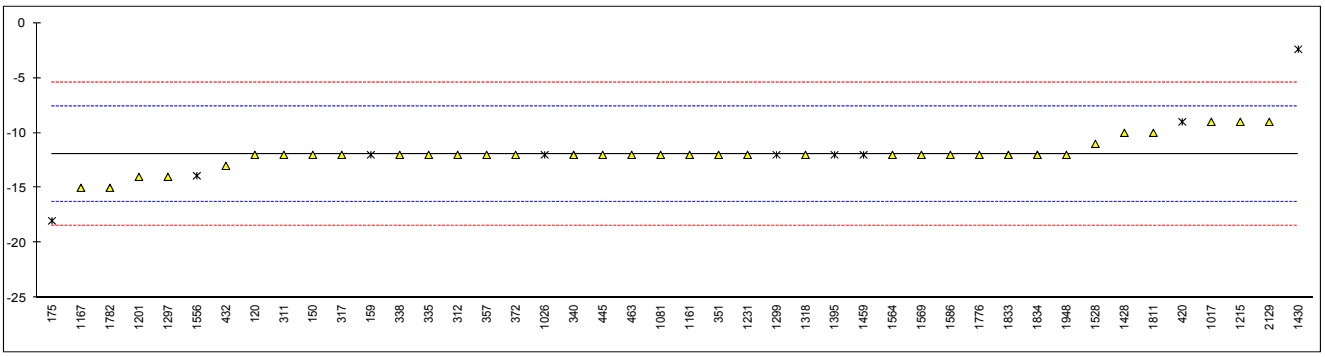
Determination of Pour Point, Automated on sample #14013; result in °C

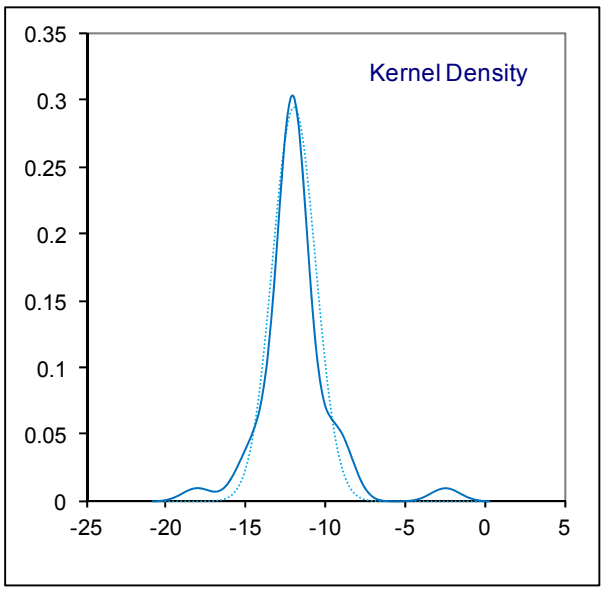
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	1194		-----		-----
120	D5949	-12		-0.04	1199		-----		-----
132		-----		-----	1201	D5950	-14		-0.96
150	D5950	-12		-0.04	1203		-----		-----
159	D97	-12	ex	-0.04	1205		-----		-----
175	D5950	-18	R(0.01)	-2.79	1213		-----		-----
193		-----		-----	1215	D5950	-9		1.34
194		-----		-----	1218		-----		-----
221		-----		-----	1227		-----		-----
225		-----		-----	1231	D5950	-12		-0.04
228		-----		-----	1254		-----		-----
237		-----		-----	1259		-----		-----
238		-----		-----	1266		-----		-----
258		-----		-----	1297	D5950	-14		-0.96
273		-----		-----	1299	D97	-12	ex	-0.04
311	D5950	-12		-0.04	1316		-----		-----
312	D5950	-12		-0.04	1318	D7346	-12.0		-0.04
317	D5949	-12		-0.04	1347		-----		-----
323		-----		-----	1348		-----		-----
333		-----		-----	1356		-----		-----
334		-----		-----	1362		-----		-----
335	INH-60105	-12		-0.04	1385		-----		-----
336		-----		-----	1395	D97	-12	ex	-0.04
337		-----		-----	1409		-----		-----
338	D5950	-12		-0.04	1412		-----		-----
340	D5950	-12		-0.04	1423		-----		-----
351	D6749	-12		-0.04	1428	D6749	-10		0.88
353		-----		-----	1430	D5950	-2.4	R(0.01)	4.37
357	D5950	-12		-0.04	1459	ISO3016	-12	ex	-0.04
369		-----		-----	1460		-----		-----
370		-----		-----	1484		-----		-----
371		-----		-----	1491		-----		-----
372	D5950	-12		-0.04	1510		-----		-----
391		-----		-----	1520		-----		-----
398		-----		-----	1528	D5950	-11		0.42
399		-----		-----	1539		-----		-----
402		-----		-----	1546		-----		-----
403		-----		-----	1556	ISO3016	-13.9	ex	-0.91
420	ISO3016	-9	ex	1.34	1564	D5950	-12		-0.04
430		-----		-----	1569	D5950	-12		-0.04
431		-----		-----	1584		-----		-----
432	D5950	-13		-0.50	1586	D5950	-12		-0.04
433		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
445	D5950	-12		-0.04	1654		-----		-----
447		-----		-----	1677		-----		-----
463	D6892	-12		-0.04	1681		-----		-----
485		-----		-----	1720		-----		-----
488		-----		-----	1724		-----		-----
495		-----		-----	1730		-----		-----
593		-----		-----	1740		-----		-----
663		-----		-----	1741		-----		-----
671		-----		-----	1742		-----		-----
704		-----		-----	1746		-----		-----
750		-----		-----	1751		-----		-----
781		-----		-----	1753		-----		-----
784		-----		-----	1776	D5950	-12		-0.04
785		-----		-----	1780		-----		-----
863		-----		-----	1782	D5950	-15		-1.42
873		-----		-----	1783		-----		-----
874		-----		-----	1784		-----		-----
875		-----		-----	1787		-----		-----
904		-----		-----	1807		-----		-----
912		-----		-----	1810		-----		-----
962		-----		-----	1811	D5950	-10		0.88
963		-----		-----	1832		-----		-----
970		-----		-----	1833	D5950	-12		-0.04
971		-----		-----	1834	D5950	-12		-0.04
974		-----		-----	1849		-----		-----
1006		-----		-----	1854		-----		-----
1016		-----		-----	1861		-----		-----
1017	D5950	-9		1.34	1862		-----		-----
1026	D97	-12	ex	-0.04	1906		-----		-----
1033		-----		-----	1915		-----		-----
1059		-----		-----	1936		-----		-----
1081	D5950	-12		-0.04	1937		-----		-----
1109		-----		-----	1938		-----		-----
1121		-----		-----	1941		-----		-----

1126		-----	-----	1948	D5950	-12	-0.04
1134		-----	-----	1951		-----	-----
1146		-----	-----	2102		-----	-----
1150		-----	-----	2129	D5950	-9	1.34
1161	D6749	-12	-0.04	2146		-----	-----
1167	D6749	-15	-1.42	5019		-----	-----
1186		-----	-----				

normality	suspect	
n	35	
outliers	2	+ 7 excl
mean (n)	-11.914	
st.dev. (n)	1.3584	
R(calc.)	3.804	
R(D5950:07)	6.100	

Ex =result is excluded as reported test method is a manual method.





Determination of Sulphur Content on sample #14013; result in mg/kg

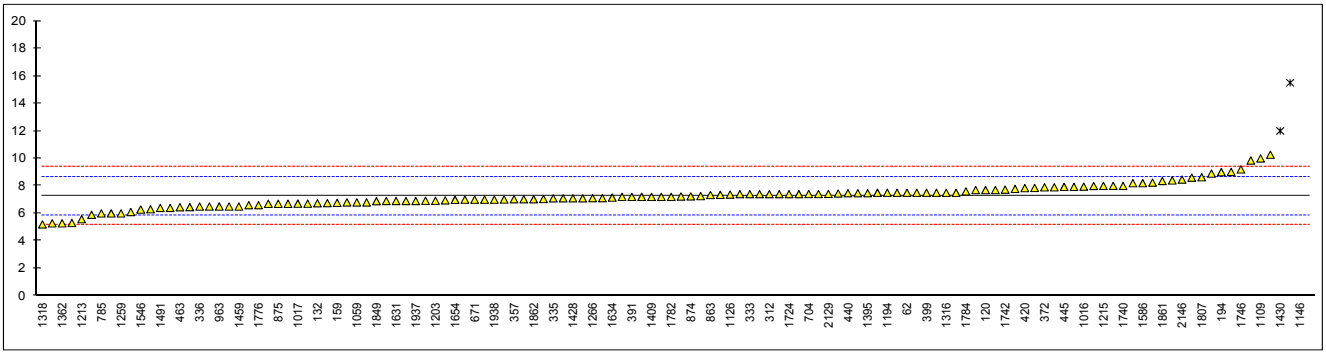
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D5453	7.5	C	0.34	1194	D7220Mod.	7.5		0.34
120	D7039	7.7		0.63	1199	ISO20884	7.03		-0.34
132	D5453	6.74		-0.76	1201	ISO20846	7.5		0.34
150	ISO20846	7.5		0.34	1203	ISO20846	6.92		-0.50
159	D5453	6.77		-0.71	1205	ISO20884	6.8		-0.67
175	D5453	7.5		0.34	1213	D5453	5.58		-2.44
193		-----		-----	1215	D5453	8.00		1.07
194	D5453	9.0		2.51	1218		-----		-----
221		-----		-----	1227	D5453	7.2		-0.09
225		-----		-----	1231	D5453	5.28		-2.87
228		-----		-----	1254	ISO20846	7.47		0.30
237		-----		-----	1259	ISO20846	6.0		-1.83
238		-----		-----	1266	ISO20846	7.11		-0.22
258	D5453	8.2		1.36	1297	D5453	7.40		0.20
273	D5453	6.95		-0.45	1299	ISO20846	6.7		-0.82
311	ISO20846	6.3		-1.40	1316	ISO13032	7.5		0.34
312	D5453	7.4		0.20	1318	D4294	5.2		-2.99
317	ISO20846	7.7		0.63	1347		-----		-----
323	ISO20846	6.9		-0.53	1348		-----		-----
333	ISO20846	7.4		0.20	1356	D4294	<100	C	-----
334	ISO20846	6.7		-0.82	1362	ISO20846	5.28		-2.87
335	ISO20846	7.1		-0.24	1385		-----		-----
336	ISO20846	6.5		-1.11	1395	ISO20846	7.47		0.30
337		-----		-----	1409	ISO20846	7.2		-0.09
338	ISO20846	6.6		-0.96	1412		-----		-----
340	ISO20846	6.5		-1.11	1423		-----		-----
351		-----		-----	1428	ISO20846	7.1		-0.24
353	IP531	10.27		4.35	1430	in house	12	R(0.01)	6.86
357	ISO20846	7.03		-0.34	1459	in house	6.5		-1.11
369		-----		-----	1460		-----		-----
370	ISO20846	7.4		0.20	1484	ISO20846	9.02		2.54
371	ISO20846	7.50		0.34	1491	ISO20846	6.4		-1.25
372	ISO20846	7.9		0.92	1510		-----		-----
391	ISO20846	7.2		-0.09	1520	ISO20846	7.11		-0.22
398	ISO20846	7.41		0.21	1528	ISO20884	6.75		-0.74
399	ISO20846	7.5		0.34	1539	ISO20846	7.93		0.96
402	ISO20846	7.2		-0.09	1546	ISO20846	6.28		-1.42
403	ISO20846	7.05		-0.31	1556	ISO20846	7.35		0.13
420	ISO20846	7.84		0.83	1564	ISO8754	8		1.07
430		-----		-----	1569	ISO20846	7.00		-0.38
431		-----		-----	1584	D4294	15.5	R(0.01)	11.93
432		-----		-----	1586	ISO20846	8.2		1.36
433		-----		-----	1631	ISO20846	6.9		-0.53
440	D5453	7.47		0.30	1634	ISO20846	7.15		-0.16
445	IP490	7.93		0.96	1654	ISO20846	6.99		-0.40
447	D5453	6.92		-0.50	1677	D5453	7.2		-0.09
463	D5453	6.45		-1.18	1681		-----		-----
485		-----		-----	1720	D5453	7.85		0.85
488	ISO20846	7.1		-0.24	1724	D5453	7.4		0.20
495	ISO20846	5.90		-1.97	1730	ISO20846	7.7		0.63
593	D4294	134	R(0.01)	183.53	1740	ISO20846	8.00		1.07
663	D5453	6.1		-1.69	1741	D5453	7.78		0.75
671	D5453	7.0		-0.38	1742	ISO20846	7.73		0.68
704	ISO20846	7.41		0.21	1746	D5453	9.2		2.80
750		-----		-----	1751	ISO20884	6.9		-0.53
781	ISO20846	7.26		-0.01	1753	ISO20846	6.46		-1.16
784	D4294	5.3		-2.84	1776	ISO20846	6.6		-0.96
785	ISO20846	6		-1.83	1780		-----		-----
863	D5453	7.34		0.11	1782	D5453	7.2		-0.09
873	ISO20846	7.0		-0.38	1783		-----		-----
874	ISO20846	7.24		-0.03	1784	ISO20846	7.6		0.49
875	D5453	6.7		-0.82	1787		-----		-----
904	ISO20846	7.9		0.92	1807	ISO20846	8.63		1.98
912		-----		-----	1810	ISO20846	6.4		-1.25
962		-----		-----	1811	ISO20846	7.4		0.20
963	ISO20846	6.5		-1.11	1832	ISO20846	7.995		1.06
970		-----		-----	1833	ISO20846	7.45		0.27
971	ISO20846	9.85		3.75	1834	ISO20846	8.24		1.41
974		-----		-----	1849	ISO20846	6.89		-0.54
1006	D5453	6.5		-1.11	1854	ISO20846	7.5		0.34
1016	ISO20846	7.95		0.99	1861	ISO20846	8.357		1.58
1017	ISO20846	6.71		-0.80	1862	ISO20846	7.03		-0.34
1026	ISO20846	6.0		-1.83	1906		-----		-----
1033		-----		-----	1915		-----		-----
1059	ISO20846	6.8		-0.67	1936	ISO20846	7.1		-0.24
1081	ISO20846	6.8		-0.67	1937	ISO20846	6.9		-0.53
1109	D7039	10.0		3.96	1938	ISO20846	7.0		-0.38
1121		-----		-----	1941	ISO20846	7.01		-0.37

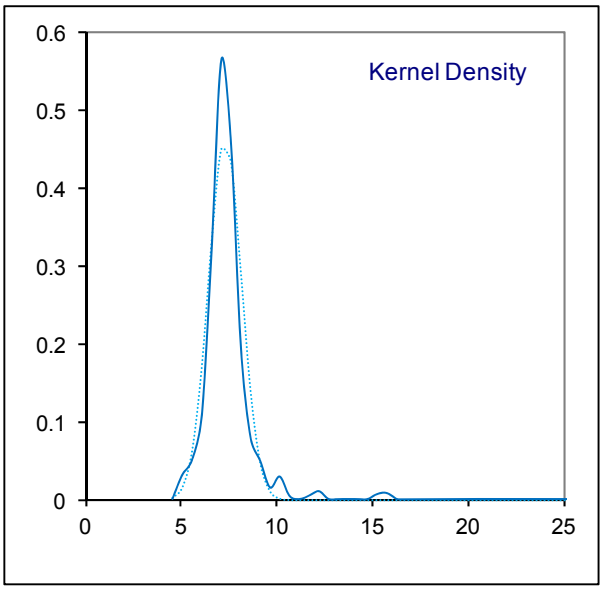
1126	ISO20846	7.37		0.15
1134	ISO20846	7.40		0.20
1146	D4294	40	R(0.01)	47.41
1150		-----		-----
1161	ISO20846	8.9		2.37
1167	ISO20846	6.71		-0.80
1186	D5453	7.23		-0.05

1948	ISO20846	8.40	1.65
1951	ISO20846	8.6	1.94
2102		-----	-----
2129	ISO20846	7.42	0.23
2146	ISO20846	8.46	1.73
5019		-----	-----

		Only D5453/ISO20846/IP490 data:
normality	suspect	suspect
n	126	113
outliers	4	0
mean (n)	7.264	7.255
st.dev. (n)	0.8635	0.7704
R(calc.)	2.418	2.157
R(ISO20846:11)	1.934	1.933

Lab 62: first reported 50.0
Lab 1356: first reported 0.01





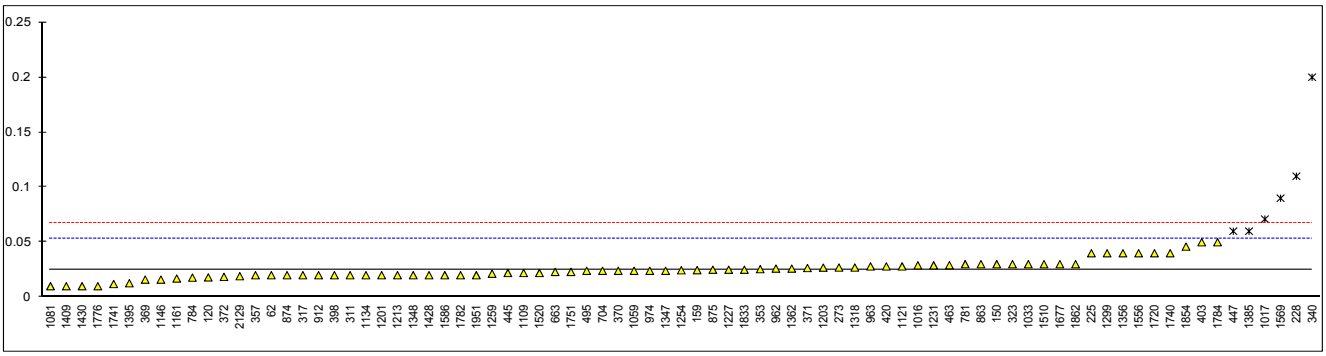
Determination of Total Acid Number (TAN) on sample #14013; result in mgKOH/g

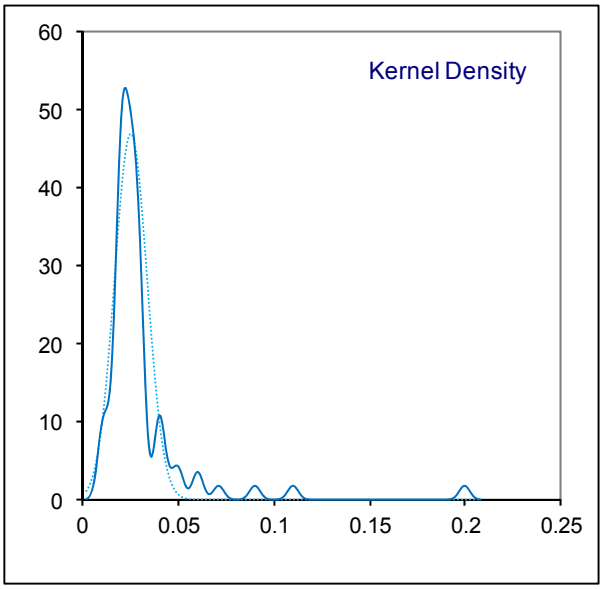
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D974	0.02		-0.35	1194		-----		-----
120	D974	0.018		-0.49	1199		-----		-----
132	D664	<0.1		-----	1201	D974	0.02		-0.35
150	D974	0.03		0.35	1203	D974	0.0269		0.14
159	D974	0.0246		-0.02	1205		-----		-----
175		-----		-----	1213	D974	0.020		-0.35
193		-----		-----	1215		-----		-----
194	D664	<0.1		-----	1218		-----		-----
221		-----		-----	1227	D664	0.025		0.00
225	D974	0.04		1.05	1231	D974	0.029		0.28
228	D974	0.11	R(0.01)	5.95	1254	D664	0.0245		-0.03
237		-----		-----	1259	D974	0.0214		-0.25
238		-----		-----	1266		-----		-----
258		-----		-----	1297		-----		-----
273	D974	0.027		0.14	1299	D974	0.040		1.05
311	D974	0.02		-0.35	1316		-----		-----
312		-----		-----	1318	D664	0.027		0.14
317	D974	0.02		-0.35	1347	D974	0.024		-0.07
323	D974	0.03		0.35	1348	D974	0.02		-0.35
333		-----		-----	1356	D664	0.04		1.05
334		-----		-----	1362	D664	0.026		0.07
335		-----		-----	1385	D974	0.06	R(0.01)	2.45
336		-----		-----	1395	D664	0.0127		-0.86
337		-----		-----	1409	D664	0.01		-1.05
338		-----		-----	1412		-----		-----
340	D974	0.2	R(0.01)	12.25	1423		-----		-----
351		-----		-----	1428	D664	0.020		-0.35
353	IP177	0.0255		0.04	1430	D974	0.01		-1.05
357	D664	0.02		-0.35	1459		-----		-----
369	D974	0.016		-0.63	1460		-----		-----
370	D974	0.024		-0.07	1484		-----		-----
371	D974	0.0265		0.11	1491		-----		-----
372	D974	0.0185		-0.45	1510	D974	0.03		0.35
391		-----		-----	1520	D974	0.022		-0.21
398	D664	0.0200		-0.35	1528		-----		-----
399		-----		-----	1539		-----		-----
402		-----		-----	1546		-----		-----
403	D974	0.05		1.75	1556	D664	0.04		1.05
420	ISO6618	0.028		0.21	1564	D664	<0.05		-----
430		-----		-----	1569	D664	0.09	R(0.01)	4.55
431		-----		-----	1584		-----		-----
432		-----		-----	1586	D664	0.02	C	-0.35
433		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
445	D974	0.022		-0.21	1654		-----		-----
447	D664	0.06	R(0.01)	2.45	1677	D974	0.03		0.35
463	D974	0.0291		0.29	1681		-----		-----
485		-----		-----	1720	D974	0.04		1.05
488		-----		-----	1724		-----		-----
495	D974	0.024		-0.07	1730		-----		-----
593		-----		-----	1740	D664	0.04		1.05
663	D974	0.023		-0.14	1741	ISO6619	0.012		-0.91
671		-----		-----	1742		-----		-----
704	D974	0.024		-0.07	1746		-----		-----
750		-----		-----	1751	ISO6619	0.023		-0.14
781	D974	0.030		0.35	1753		-----		-----
784	D664	0.0178		-0.50	1776	D664	0.01		-1.05
785		-----		-----	1780		-----		-----
863	D974	0.030		0.35	1782	D974	0.02		-0.35
873		-----		-----	1783		-----		-----
874	D974	0.020		-0.35	1784	D974	0.05		1.75
875	D664	0.025		0.00	1787		-----		-----
904		-----		-----	1807		-----		-----
912	D974	0.020		-0.35	1810		-----		-----
962	D974	0.026		0.07	1811		-----		-----
963	D974	0.028		0.21	1832		-----		-----
970		-----		-----	1833	D664	0.025		0.00
971		-----		-----	1834		-----		-----
974	D974	0.024		-0.07	1849		-----		-----
1006		-----		-----	1854	D974	0.046		1.47
1016	ISO6618	0.029		0.28	1861		-----		-----
1017	D974	0.071	R(0.01)	3.22	1862	D974	0.03		0.35
1026		-----		-----	1906		-----		-----
1033	D974	0.030		0.35	1915		-----		-----
1059	ISO6619	0.024		-0.07	1936		-----		-----
1081	D664	0.01		-1.05	1937		-----		-----
1109	D974	0.022		-0.21	1938		-----		-----
1121	IP139	0.028		0.21	1941		-----		-----

1126		-----	-----
1134	D974	0.02	-0.35
1146	D664	0.016	-0.63
1150		-----	-----
1161	D664	0.017	-0.56
1167		-----	-----
1186		-----	-----
1948		-----	-----
1951	D974	0.02	-0.35
2102		-----	-----
2129	D974	0.0191	-0.41
2146		-----	-----
5019		-----	-----

normality	suspect
n	75
outliers	6
mean (n)	0.0249
st.dev. (n)	0.00853
R(calc.)	0.0239
R(D974:06)	0.0400

Lab 1586: first reported 0.02





Determination of Water Content on sample #14013; result in mg/kg

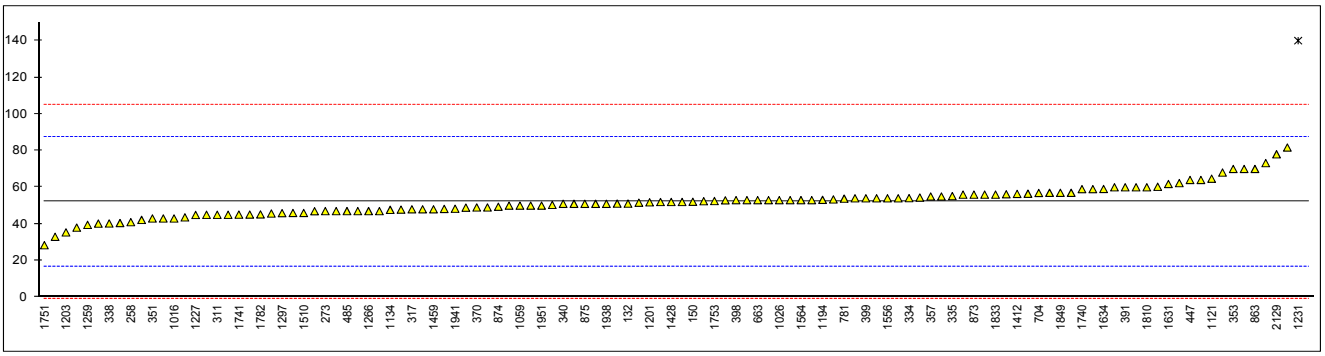
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D6304	38	C	-0.79	1194	ISO12937	53.15		0.06
120	E1064	73.2	C	1.19	1199		-----		-----
132	D6304	51.1		-0.06	1201	ISO12937	51.8		-0.02
150	ISO12937	52.1		0.00	1203	ISO12937	35.4		-0.94
159	D4377	81.7		1.67	1205		-----		-----
175		-----		-----	1213	D6304	56.5		0.25
193		-----		-----	1215		-----		-----
194		-----		-----	1218		-----		-----
221	D95	<500	C	-----	1227	D6304	44.9		-0.41
225	D95	<500		-----	1231	ISO12937	140	C,R(0.01)	4.96
228		-----		-----	1254	ISO12937	47.84		-0.24
237		-----		-----	1259	ISO12937	39.5		-0.71
238		-----		-----	1266	ISO12937	47.0		-0.29
258	D6304	41		-0.63	1297	D6304	45.9		-0.35
273	D6304	47		-0.29	1299	ISO12937	51		-0.06
311	ISO12937	45		-0.40	1316		-----		-----
312	ISO12937	52.4		0.02	1318	D6304	48.2		-0.22
317	ISO12937	48		-0.23	1347		-----		-----
323	ISO12937	50		-0.12	1348		-----		-----
333		-----		-----	1356	D6304	<500	C	-----
334	ISO12937	54.1		0.11	1362	ISO12937	48		-0.23
335	ISO12937	55.2		0.18	1385		-----		-----
336	ISO12937	60		0.45	1395	ISO12937	48.9		-0.18
337	ISO12937	43		-0.51	1409	ISO12937	56		0.22
338	ISO12937	40.27		-0.67	1412	D6304	56.4		0.24
340	ISO12937	51		-0.06	1423		-----		-----
351	ISO12937	43		-0.51	1428	ISO12937	52		-0.01
353	IP439	70		1.01	1430	D6304	49		-0.17
357	ISO12937	55		0.16	1459	ISO12937	48		-0.23
369	ISO12937	51		-0.06	1460		-----		-----
370	ISO12937	49		-0.17	1484		-----		-----
371	ISO12937	45.7		-0.36	1491	ISO12937	53		0.05
372	ISO12937	55		0.16	1510	ISO12937	46		-0.34
391	ISO12937	60		0.45	1520	ISO12937	50.4		-0.10
398	ISO12937	53		0.05	1528	ISO12937	54		0.11
399	ISO12937	54		0.11	1539	ISO12937	47		-0.29
402	ISO12937	60		0.45	1546	ISO12937	45.11		-0.39
403	ISO12937	42.2		-0.56	1556	ISO12937	54		0.11
420	ISO12937	56		0.22	1564	ISO12937	53		0.05
430		-----		-----	1569	ISO12937	54.4		0.13
431		-----		-----	1584		-----		-----
432		-----		-----	1586	ISO12937	64		0.67
433		-----		-----	1631	ISO12937	61.8		0.55
440	IP438	68.05		0.90	1634	ISO12937	59.1		0.40
445	IP438	53		0.05	1654	ISO12937	51.97		-0.01
447	IP438	64		0.67	1677	ISO12937	53		0.05
463	ISO12937	40.5		-0.65	1681	ISO12937	51.6		-0.03
485	ISO12937	47		-0.29	1720		-----		-----
488	ISO12937	47.0		-0.29	1724	D6304	62.3		0.58
495	ISO12937	47		-0.29	1730		-----		-----
593	D95	500	R(0.01)	25.27	1740	ISO12937	59		0.39
663	D6304	53		0.05	1741	ISO12937	45.1		-0.39
671	D2709	<100	C	-----	1742		-----		-----
704	ISO12937	56.9		0.27	1746		-----		-----
750		-----		-----	1751	ISO12937	28.42		-1.34
781	ISO12937	53.8		0.10	1753	ISO12937	52.51		0.02
784		-----		-----	1776	ISO12937	50		-0.12
785		-----		-----	1780		-----		-----
863	ISO12937	70.0		1.01	1782	IP438	45.2		-0.39
873	D6304	56		0.22	1783		-----		-----
874	ISO12937	49.4		-0.15	1784	ISO12937	59		0.39
875	D6304	51		-0.06	1787		-----		-----
904		-----		-----	1807	ISO12937	56.2		0.23
912		-----		-----	1810	ISO12937	60		0.45
962	D6304	54		0.11	1811	ISO12937	45		-0.40
963	ISO12937	57		0.28	1832	ISO12937	52.88		0.04
970		-----		-----	1833	ISO12937	56		0.22
971		-----		-----	1834	ISO12937	40.2		-0.67
974	ISO12937	45		-0.40	1849	ISO12937	57		0.28
1006		-----		-----	1854	ISO12937	57		0.28
1016	ISO12937	43		-0.51	1861		-----		-----
1017		-----		-----	1862	ISO12937	33		-1.08
1026	D6304	53		0.05	1906	D6304	43.59		-0.48
1033	IP438	70	C	1.01	1915		-----		-----
1059	ISO12937	50		-0.12	1936	ISO12937	52		-0.01
1081	ISO12937	53		0.05	1937	ISO12937	54		0.11
1109	D6304	60.3		0.46	1938	ISO12937	51		-0.06
1121	IP438	64.7		0.71	1941	ISO12937	48.3		-0.21

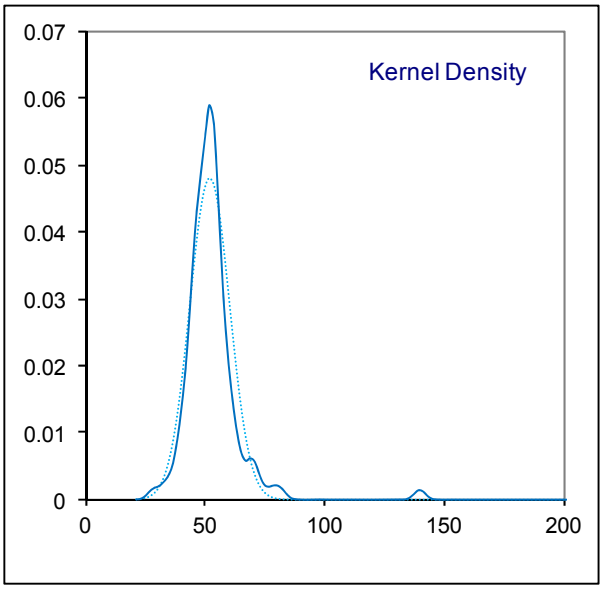
1126		-----	-----	1948	ISO12937	46.9414		-0.29
1134	IP438	47.7	-0.25	1951	ISO12937	50		-0.12
1146	D6304	46	-0.34	2102		-----		-----
1150		-----	-----	2129	IP439	78	C	1.46
1161	ISO12937	51.091	-0.06	2146		-----		-----
1167	ISO12937	53.4	0.07	5019		-----		-----
1186		-----	-----					

normality	suspect
n	116
outliers	2
mean (n)	52.089
st.dev. (n)	8.3275
R(calc.)	23.317
R(ISO12937:00)	49.633

Lab 62: first reported 22
Lab 120: first reported 25
Lab 1356: first reported 0
Lab 2129: first reported 121

Lab 221: reported test result probably in a deviating unit (%M/M)
Lab 671: reported test result probably in a deviating unit (%M/M)
Lab 1033: reported test result probably in a deviating unit (%M/M)
Lab 1231: reported test result probably in a deviating unit (%M/M)





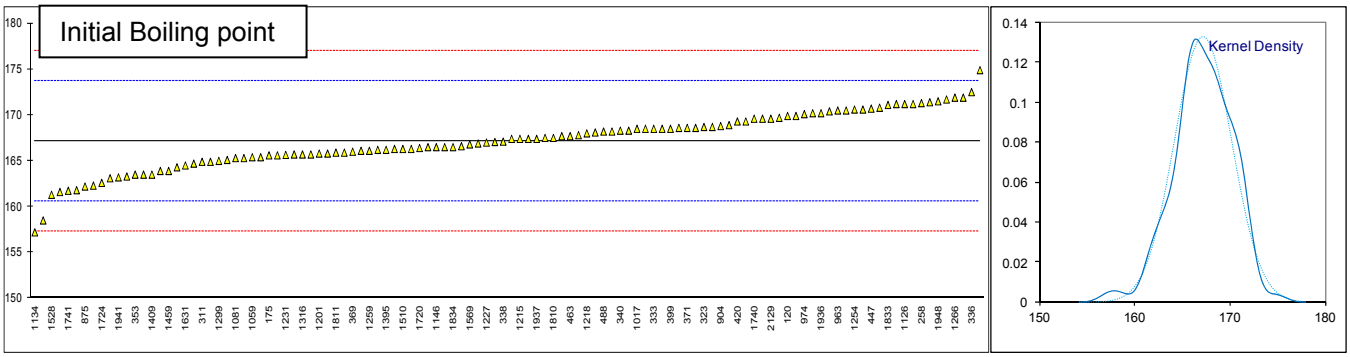
Determination of Distillation (automated) on sample #14013; result in °C

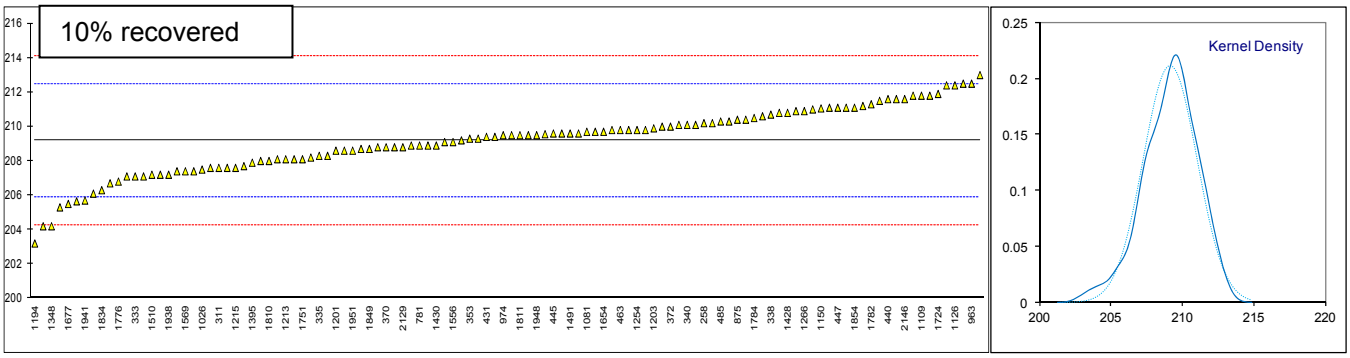
lab	method	IBP	10% rec	50% rec	90% rec	95% rec	FBP		Vol 250ºC	Vol 350ºC
62		-----	-----	-----	-----	-----	-----		-----	-----
120	D86-A	169.9	211.1	279.8	339.0	358.2	362.5		29.3	92.9
132	D86-A	170.2	212.4	279.3	337.2	353.1	364.2		28.4	94.2
150	ISO3405-A	168.7	211.2	278.3	335.3	350.1	358.1		29.5	95.0
159	D86-A	168.5	210.6	280.6	337.7	353.4	360.6		-----	-----
175	D86-A	165.6	208.9	279.8	340.1	358.2	363.2		29.6	93.2
193		-----	-----	-----	-----	-----	-----		-----	-----
194	D86-A	168.6	211.6	279.2	337.9	354.8	363.5		29.6	93.8
221		-----	-----	-----	-----	-----	-----		-----	-----
225		-----	-----	-----	-----	-----	-----		-----	-----
228		-----	-----	-----	-----	-----	-----		-----	-----
237		-----	-----	-----	-----	-----	-----		-----	-----
238		-----	-----	-----	-----	-----	-----		-----	-----
258	D86-A	171.3	210.2	280.6	337.8	348.4	358.6		-----	-----
273	D86-A	169.7	210.9	279.1	336.3	350.1	355.5	C	30	94
311	ISO3405-A	164.9	207.6	278.6	337.7	353.1	364.6		30.3	94.2
312	ISO3405-A	167.5	207.6	278.3	333.9	346.9	360.8		30.2	95.8
317	ISO3405-A	168.6	210.1	279.6	337.4	352.5	363.5		29.5	94.5
323	ISO3405-A	168.7	209.8	279.5	337.9	354.0	363.7		29.3	94.0
333	ISO3405-A	168.5	207.1	279.6	336.8	352.0	361.6		29.7	94.5
334	ISO3405-A	170.8	210.4	280.0	336.5	352.2	363.7		29.3	94.5
335	ISO3405-A	168.1	208.3	280.1	339.5	356.5	365.4		29.7	93.7
336	ISO3405-A	172.5	210.2	279.3	337.1	353.0	364.6		29.5	93.9
337		-----	-----	-----	-----	-----	-----		-----	-----
338	ISO3405-A	167.1	210.7	280.4	338.6	354.6	364.8		28.5	93.9
340	ISO3405-A	168.3	210.1	280.8	339.9	355.8	362.5		28.8	93.5
351	ISO3405-A	165.8	208.2	279.5	341.7	359.1	359.6		29.5	93.0
353	IP123-A	163.5	209.3	279.9	339.8	356.3	368.5		29.7	93.5
357	ISO3405-A	166.1	209.8	279.7	336.8	351.8	361.9		28.9	94.5
369	ISO3405-A	166.0	208.9	278.6	338.1	353.6	365.2		29.2	93.9
370	ISO3405-A	166.3	208.8	279.3	337.6	354.1	363.0		31.8	93.5
371	ISO3405-A	168.6	209.1	278.8	337.7	352.7	363.3		29.3	94.3
372	ISO3405-A	166.5	210.0	279.6	337.2	352.0	362.2		29.3	94.3
391		-----	-----	-----	-----	-----	-----		-----	-----
398	ISO3405-A	168.9	210.1	278.6	337.1	351.6	365.1		30.5	95.3
399	ISO3405-A	168.5	213.0	278.4	336.1	351.2	364.0		29.6	94.7
402	ISO3405-A	163.3	212.5	279.9	338.5	354.3	356.5		29.2	93.9
403		-----	-----	-----	-----	-----	-----		-----	-----
420	ISO3405-A	169.3	211.5	279.7	336.8	351.8	362.6		28.9	94.6
430		-----	-----	-----	-----	-----	-----		-----	-----
431	ISO3405-A	166.2	209.4	278.7	338.0	355.2	361.8		-----	-----
432		-----	-----	-----	-----	-----	-----		-----	-----
433		-----	-----	-----	-----	-----	-----		-----	-----
440	D86-A	171.2	211.6	280.0	338.6	353.2	365.5		29.2	94.1
445	IP123-A	163.9	209.6	279.4	337.6	353.9	363.5		29.2	94.1
447	D86-A	170.7	211.1	280.3	338.6	354.0	366.0		28.8	94.0
463	ISO3405-A	167.7	209.8	278.8	336.6	352.7	361.8		29.5	94.4
485	ISO3405-A	167.7	210.3	279.35	337.2	353.0	361.25		29.25	94.35
488	ISO3405-A	168.2	211.8	278.6	337.4	354.2	362.6		29.8	94.1
495	ISO3405-A	165.1	208.6	279.1	337.2	352.5	362.8		30.5	95.3
593		-----	-----	-----	-----	-----	-----		-----	-----
663		-----	-----	-----	-----	-----	-----		-----	-----
671		-----	-----	-----	-----	-----	-----		-----	-----
704		-----	-----	-----	-----	-----	-----		-----	-----
750		-----	-----	-----	-----	-----	-----		-----	-----
781	ISO3405-A	168.5	208.9	279.3	336.3	351.3	363.8		29.3	94.9
784		-----	-----	-----	-----	-----	-----		-----	-----
785		-----	-----	-----	-----	-----	-----		-----	-----
863		-----	-----	-----	-----	-----	-----		-----	-----
873		-----	-----	-----	-----	-----	-----		-----	-----
874		-----	-----	-----	-----	-----	-----		-----	-----
875	D86-A	162.2	210.4	280.7	338.6	354.2	365.4		30.5	93.9
904	ISO3405-A	168.8	209.6	280.2	338.4	353.7	365.5		29.1	94.1
912		-----	-----	-----	-----	-----	-----		-----	-----
962		-----	-----	-----	-----	-----	-----		-----	-----
963	D86-A	170.5	212.5	280.9	337.9	352.7	364.7		28.0	94.5
970		-----	-----	-----	-----	-----	-----		-----	-----
971		-----	-----	-----	-----	-----	-----		-----	-----
974	ISO3405-A	170.1	209.5	280.5	338.8	355.2	362.4		28.7	93.7
1006	D86	167.8	209.7	279.9	336.3	350.1	359.3		-----	-----
1016		-----	-----	-----	-----	-----	-----		-----	-----
1017	ISO3405-A	168.5	207.4	279.0	337.3	352.2	366.0		29.9	94.0
1026	ISO3405-A	162.3	207.5	278.8	337.4	353.3	362.6		29.9	94.3
1033	IP123-A	171.2	210.0	280.2	338.5	352.9	364.9		28.2	93.3
1059	ISO3405-A	165.4	207.6	278.1	337.5	353.3	363.2		30.0	94.2
1081	D86-A	165.3	209.7	279.4	335.4	348.0	361.6		29.6	95.6
1109	D86-A	167.4	211.8	279.1	336.5	351.2	359.6		29.1	94.7

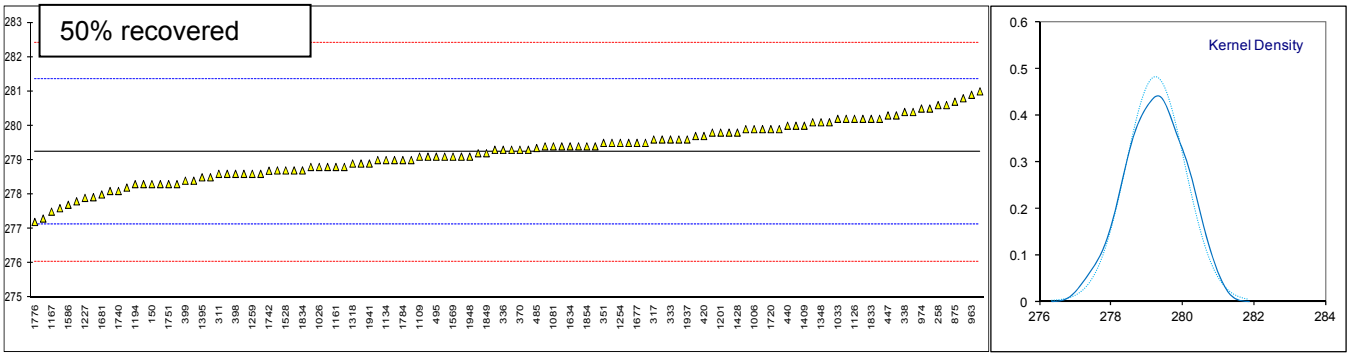
1121		-----	-----	-----	-----	-----	-----	-----	-----
1126	in house-A	171.2	212.4	280.2	339.9	356.3	369.6	28.9	93.1
1134	D86-A	157.2	208.1	279.0	337.5	354.5	359.6	29.4	93.9
1146	ISO3405-A	166.5	208.8	278.3	335.1	348.7	362.3	30.28	95.36
1150	ISO3405-A	174.90	211.06	280.40	338.76	353.27	362.03	28.64	93.82
1161	ISO3405	164.3	207.1	278.8	338.4	355.1	365.1	30.4	94.2
1167	ISO3405-A	165.7	204.2	277.5	337.5	352.9	362.5	32.0	94.5
1186		-----	-----	-----	-----	-----	-----	-----	-----
1194	D86Mod.	165.3	203.2	278.3	337.1	351.9	354.8	31.8	94.5
1199		-----	-----	-----	-----	-----	-----	-----	-----
1201	ISO3405-A	165.8	208.6	279.8	338.4	354.3	363.7	29.2	94.0
1203	ISO3405-A	164.9	209.9	281.0	339.0	352.7	364.1	28.5	94.1
1205	D86-A	169.9	210.8	280.3	337.8	352.6	364.5	28.9	94.3
1213	D86	163.1	208.1	279.4	338.9	358.0	362.5	29.9	93.6
1215	D86-A	167.4	207.6	278.4	335.4	349.1	362.4	-----	-----
1218	ISO3405-A	168.0	206.7	277.8	335.1	348.1	354.9	30.8	95.5
1227	D86-A	167.0	208.7	277.9	339.9	357.6	362.1	29.2	94.1
1231	D86-A	165.65	205.65	277.60	335.0	-----	-----	-----	-----
1254	ISO3405-A	170.6	209.8	279.5	336.6	352.1	363.7	29.1	94.5
1259	ISO3405-A	166.1	211.1	278.6	335.1	347.7	360.6	29.4	95.7
1266	ISO3405-A	171.9	210.9	279.6	339.1	354.4	357.2	29.1	93.9
1297		-----	-----	-----	-----	-----	-----	-----	-----
1299	ISO3405-A	165.0	207.7	278.8	337.7	353.5	364.1	30.0	94.1
1316	D86-A	165.7	209.3	279.3	338.2	354.1	362.0	29.5	94.0
1318	D86-A	163.5	206.1	278.9	337.7	351.4	363.9	30.6	94.7
1347		-----	-----	-----	-----	-----	-----	-----	-----
1348	D86-A	165.6	204.2	280.1	338.6	352.4	368.7	30.0	94.3
1356		-----	-----	-----	-----	-----	-----	-----	-----
1362		-----	-----	-----	-----	-----	-----	-----	-----
1385		-----	-----	-----	-----	-----	-----	-----	-----
1395	ISO3405-A	166.2	207.9	278.5	337.0	351.5	361.8	30.3	94.6
1409	ISO3405-A	163.5	211.0	280.0	337.6	353.2	362.3	28.5	94.2
1412		-----	-----	-----	-----	-----	-----	-----	-----
1423		-----	-----	-----	-----	-----	-----	-----	-----
1428	ISO3405-A	168.3	210.8	279.8	336.0	350.8	362.9	29.2	94.8
1430	D86-A	164.7	208.9	280.1	339.7	357.5	364.1	-----	-----
1459	ISO3405-A	163.9	209.8	278.9	335.8	350.1	360.7	29.6	95.0
1460		-----	-----	-----	-----	-----	-----	-----	-----
1484		-----	-----	-----	-----	-----	-----	-----	-----
1491	ISO3405-A	166.9	209.6	278.5	338.2	354.9	362.9	29.5	93.9
1510	ISO3405-A	166.3	207.2	279.0	337.7	353.7	362.0	29.8	94.1
1520		-----	-----	-----	-----	-----	-----	-----	-----
1528	ISO3405-A	161.3	208.8	278.7	337.4	353.2	361.9	29.8	94.2
1539	ISO3405-A	171.7	209.4	279.1	338.1	354.0	362.5	30.1	94.0
1546		-----	-----	-----	-----	-----	-----	-----	-----
1556	ISO3405-A	166.5	209.1	279.5	337.8	353.1	363.3	29.5	94.2
1564	D86-A	165.4	211.8	278.2	334.4	350.0	356.6	29.9	95.0
1569	ISO3405-A	166.8	207.4	279.1	337.3	350.6	364.9	29.8	94.8
1584		-----	-----	-----	-----	-----	-----	-----	-----
1586	D86-A	165.7	207.1	277.7	336.3	351.6	362.3	31.0	94.6
1631	ISO3405-A	164.5	208.1	278.6	335.7	350.2	363.5	29.2	94.1
1634	ISO3405-A	161.6	209.5	279.4	336.8	352.1	363.9	29.2	94.3
1654	ISO3405-A	170.4	209.7	280.2	338.3	353.6	366.5	29.1	94.1
1677	ISO3405	158.5	205.5	279.5	338.0	353.0	363.0	29.4	94.1
1681	ISO3405-A	166.3	207.2	278.0	335.9	349.8	360.1	30.5	95.1
1720	D86-A	166.4 C	208.0 C	279.9 C	337.6 C	352.5 C	364.7 C	27.3 C	93.0 C
1724	D86-A	162.6	211.9	279.4	337.5	352.8	364.3	29.3	94.4
1730		-----	-----	-----	-----	-----	-----	-----	-----
1740	ISO3405-A	169.6	209.2	278.1	335.3	349.6	360.6	30.6	95.1
1741	ISO3405-A	161.74	205.30	277.92	337.33	353.70	361.40	31.60	94.90
1742	ISO3405-A	167.06	209.56	278.69	336.24	350.82	363.07	29.7	94.7
1746		-----	-----	-----	-----	-----	-----	-----	-----
1751	ISO3405-A	167.4	208.1	278.3	337.4	353.3	362.2	30.68	94.23
1753		-----	-----	-----	-----	-----	-----	-----	-----
1776	ISO3405-A	161.8	206.8	277.2	334.7	348.6	360.0	30.3	95.4
1780		-----	-----	-----	-----	-----	-----	-----	-----
1782	D86-A	170.6	211.3	280.5	338.9	354.5	364.1	28.6	93.8
1783		-----	-----	-----	-----	-----	-----	-----	-----
1784	ISO3405-A	169.6	210.5	279.0	336.2	350.8	361.6	29.6	94.8
1787		-----	-----	-----	-----	-----	-----	-----	-----
1807	ISO3405-A	166.6	208.3	279.1	336.1	350.4	363.4	29.72	94.88
1810	ISO3405-A	167.5	208.0	278.7	335.0	348.3	363.3	30.1	95.4
1811	ISO3405-A	165.9	209.5	279.5	337.3	351.6	364.1	29.3	94.6
1832	ISO3405-A	171.4	209.6	279.0	336.2	352.1	364.0	29.4	94.6
1833	ISO3405-A	171.1	210.3	280.2	337.5	352.7	365.1	28.8	94.4
1834	ISO3405-A	166.5	206.3	278.7	338.9	355.1	363.5	31.9	93.7
1849	ISO3405-A	168.2	208.7	279.2	337.3	351.9	365.2	29.5	94.5
1854	ISO3405-A	169.3	211.1	279.4	336.6	351.4	362.1	29.1	94.6
1861		-----	-----	-----	-----	-----	-----	-----	-----
1862		-----	-----	-----	-----	-----	-----	-----	-----

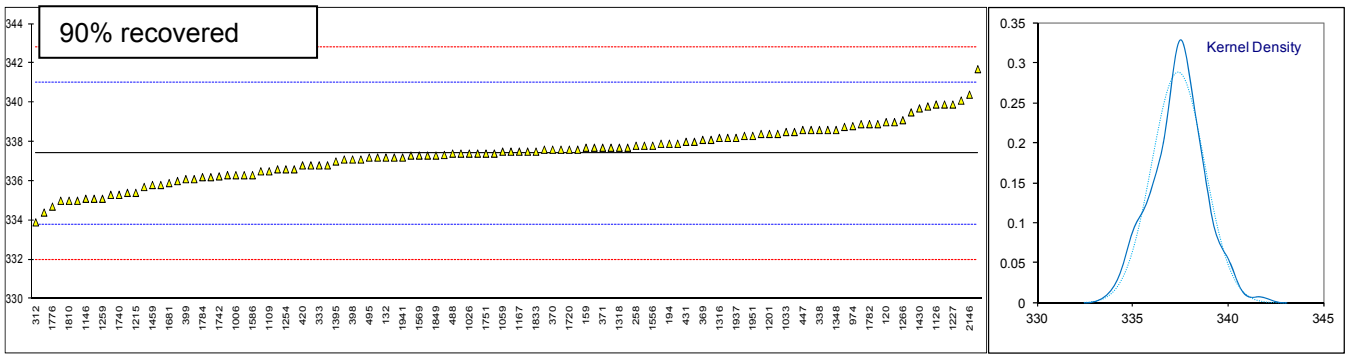
1906		-----	-----	-----	-----	-----	-----	-----	-----
1915		-----	-----	-----	-----	-----	-----	-----	-----
1936	ISO3405-A	170.2	207.4	277.3	335.0	348.9	362.2	31.1	95.3
1937	ISO3405-A	167.4	209.5	279.6	338.2	354.0	363.5	29.3	94.0
1938	ISO3405-A	165.9	207.2	278.3	337.4	351.6	363.3	31.1	94.6
1941	ISO3405-A	163.2	205.7	278.9	337.2	352.9	362.9	30.8	94.8
1948	ISO3405-A	171.5	209.5	279.1	337.6	353.3	363.0	30.0	94.2
1951	ISO3405	170.5	208.6	279.9	338.3	354.7	366.6	29.3	93.7
2102		-----	-----	-----	-----	-----	-----	-----	-----
2129	ISO3405-A	169.6	208.8	279.4	335.8	349.1	365.8	29.5	95.1
2146	ISO3405-A	171.9	211.6	280.2	340.4	358.0	361.0	28.5	92.9
5019		-----	-----	-----	-----	-----	-----	-----	-----
	normality	OK	OK	OK	OK	OK	suspect	suspect	OK
	n	114	114	114	114	113	113	107	107
	outliers	0	0	0	0	0	0	0	0
	mean (n)	167.16	209.18	279.24	337.41	352.73	362.78	29.63	94.31
	st.dev. (n)	3.009	1.889	0.826	1.383	2.408	2.527	0.825	0.607
	R(calc.)	8.43	5.29	2.31	3.87	6.74	7.08	2.31	1.70
	R(ISO3405:09)	9.19	4.60	2.97	5.06	8.99	7.10	2.70	2.70

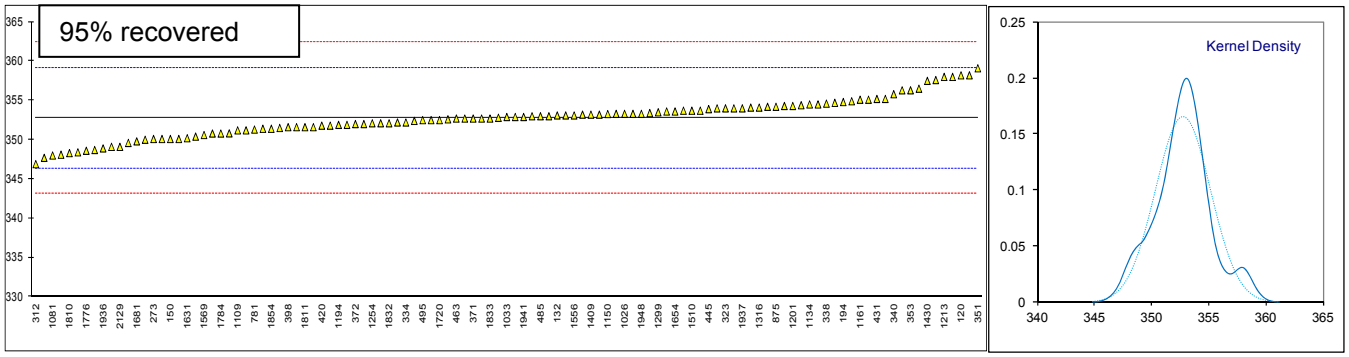
Lab 273 : first reported 354.9
Lab 1720: first reported 165.9, 207.7, 277.8, 334.1, 346.7, 362.4, 34.5, 96.6

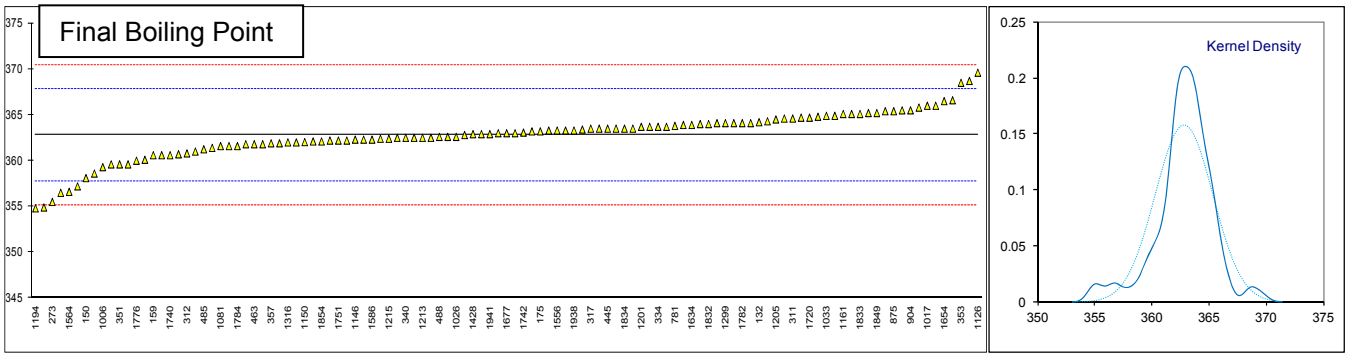


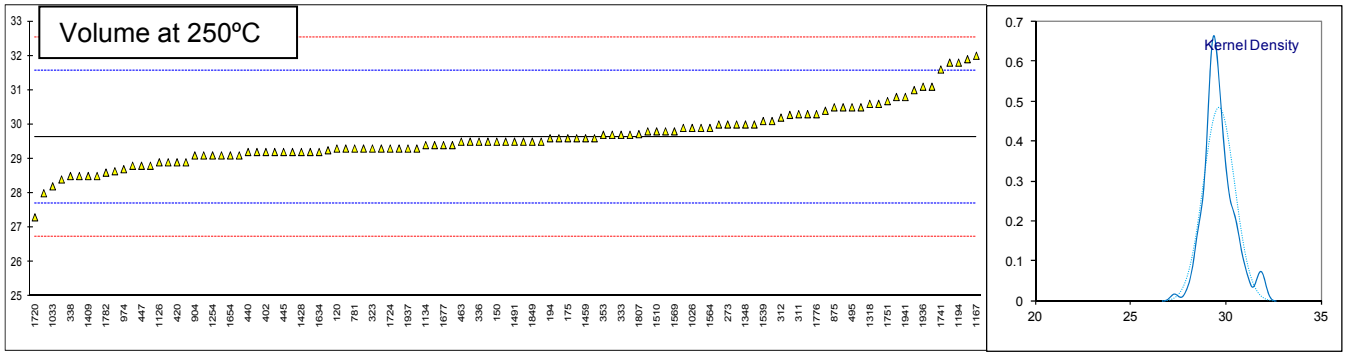


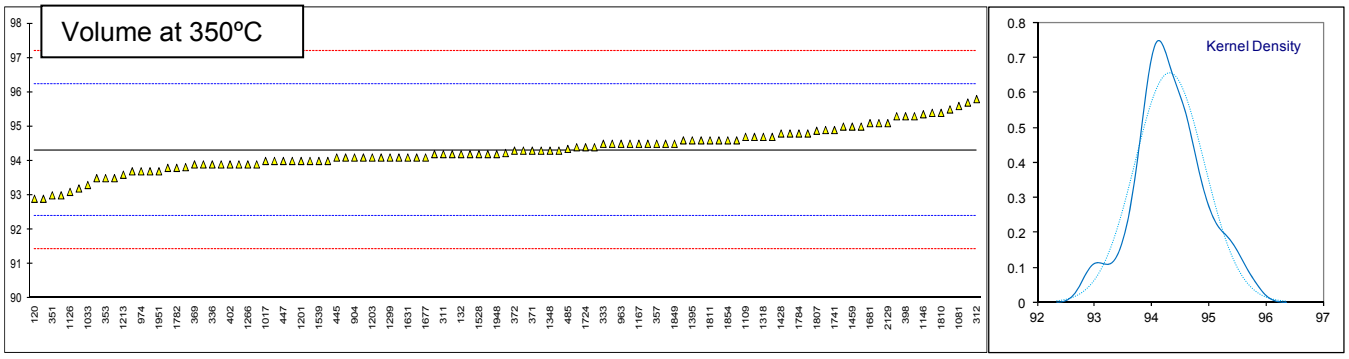



90% recovered
Kernel Density


95% recovered
Kernel Density


Final Boiling Point
Kernel Density


Volume at 250ºC
Kernel Density


Volume at 350ºC
Kernel Density

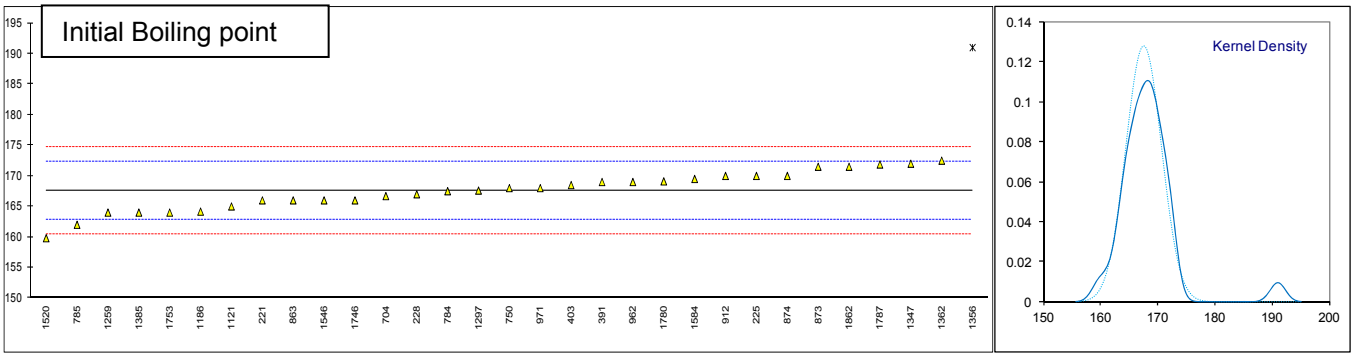
Determination of Distillation (manual) on sample #14013; result in °C

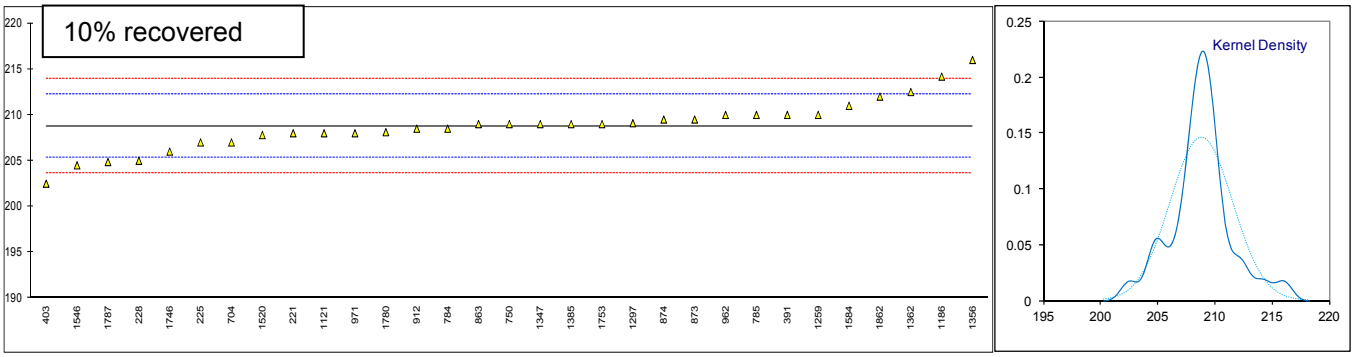
lab	method	IBP	10% rec	50% rec	90% rec	95% rec	FBP	Vol 250ºC	Vol 350ºC
62		-----	-----	-----	-----	-----	-----	-----	-----
120		-----	-----	-----	-----	-----	-----	-----	-----
132		-----	-----	-----	-----	-----	-----	-----	-----
150		-----	-----	-----	-----	-----	-----	-----	-----
159		-----	-----	-----	-----	-----	-----	-----	-----
175		-----	-----	-----	-----	-----	-----	-----	-----
193		-----	-----	-----	-----	-----	-----	-----	-----
194		-----	-----	-----	-----	-----	-----	-----	-----
221	D86-M	166.0	208.0	278.0	340.0	353.0	360.0	32.0	94.0
225	D86-M	170.0	207.0	278.5	337.0	354.5	361.0	30.0	94.0
228	D86-M	167.0	205.0	277.0	340.0	357.0	362.0	***34.0***	93.0
237		-----	-----	-----	-----	-----	-----	-----	-----
238		-----	-----	-----	-----	-----	-----	-----	-----
258		-----	-----	-----	-----	-----	-----	-----	-----
273		-----	-----	-----	-----	-----	-----	-----	-----
311		-----	-----	-----	-----	-----	-----	-----	-----
312		-----	-----	-----	-----	-----	-----	-----	-----
317		-----	-----	-----	-----	-----	-----	-----	-----
323		-----	-----	-----	-----	-----	-----	-----	-----
333		-----	-----	-----	-----	-----	-----	-----	-----
334		-----	-----	-----	-----	-----	-----	-----	-----
335		-----	-----	-----	-----	-----	-----	-----	-----
336		-----	-----	-----	-----	-----	-----	-----	-----
337		-----	-----	-----	-----	-----	-----	-----	-----
338		-----	-----	-----	-----	-----	-----	-----	-----
340		-----	-----	-----	-----	-----	-----	-----	-----
351		-----	-----	-----	-----	-----	-----	-----	-----
353		-----	-----	-----	-----	-----	-----	-----	-----
357		-----	-----	-----	-----	-----	-----	-----	-----
369		-----	-----	-----	-----	-----	-----	-----	-----
370		-----	-----	-----	-----	-----	-----	-----	-----
371		-----	-----	-----	-----	-----	-----	-----	-----
372		-----	-----	-----	-----	-----	-----	-----	-----
391	ISO3405-M	169	210	279	338	353	364	30	94
398		-----	-----	-----	-----	-----	-----	-----	-----
399		-----	-----	-----	-----	-----	-----	-----	-----
402		-----	-----	-----	-----	-----	-----	-----	-----
403	ISO3405-M	168.5	202.5	278.6	338.7	354.7	365.7	33	94
420		-----	-----	-----	-----	-----	-----	-----	-----
430		-----	-----	-----	-----	-----	-----	-----	-----
431		-----	-----	-----	-----	-----	-----	-----	-----
432		-----	-----	-----	-----	-----	-----	-----	-----
433		-----	-----	-----	-----	-----	-----	-----	-----
440		-----	-----	-----	-----	-----	-----	-----	-----
445		-----	-----	-----	-----	-----	-----	-----	-----
447		-----	-----	-----	-----	-----	-----	-----	-----
463		-----	-----	-----	-----	-----	-----	-----	-----
485		-----	-----	-----	-----	-----	-----	-----	-----
488		-----	-----	-----	-----	-----	-----	-----	-----
495		-----	-----	-----	-----	-----	-----	-----	-----
593		-----	-----	-----	-----	-----	-----	-----	-----
663		-----	-----	-----	-----	-----	-----	-----	-----
671		-----	-----	-----	-----	-----	-----	-----	-----
704	ISO3405-M	166.7	207.0	279.3	337.4	351.4	360.7	29.9	94.8
750	D86-M	168.0	209.0	279.0	338.5	353.5	365.0	30.0	94.0
781		-----	-----	-----	-----	-----	-----	-----	-----
784	D86-M	167.5	208.5	279.5	338.5	354.5	364.5	30.5	93.5
785	D86-M	162.0	210.0	279.0	340.5	352.5	365.5	32.0	95.0
863	ISO3405-M	166.0	209.0	280.5	337.5	352.5	366.5	28.8	94.6
873	D86-M	171.5	209.5	277.5	337.5	353.5	362.5	30.5	94.0
874	ISO3405-M	170.0	209.5	280.0	339.0	353.0	363.0	29.0	94.0
875		-----	-----	-----	-----	-----	-----	-----	-----
904		-----	-----	-----	-----	-----	-----	-----	-----
912	ISO3405-M	170.0	208.5	279.5	337.0	350.0	360.0	30	95
962	D86-M	169.0	210.0	279.5	338.0	353.5	360.0	30.0	94.5
963		-----	-----	-----	-----	-----	-----	-----	-----
970		-----	-----	-----	-----	-----	-----	-----	-----
971	ISO3405-M	168	208	280	338	352	362	29	94
974		-----	-----	-----	-----	-----	-----	-----	-----
1006		-----	-----	-----	-----	-----	-----	-----	-----
1016		-----	-----	-----	-----	-----	-----	-----	-----
1017		-----	-----	-----	-----	-----	-----	-----	-----
1026		-----	-----	-----	-----	-----	-----	-----	-----
1033		-----	-----	-----	-----	-----	-----	-----	-----
1059		-----	-----	-----	-----	-----	-----	-----	-----
1081		-----	-----	-----	-----	-----	-----	-----	-----
1109		-----	-----	-----	-----	-----	-----	-----	-----

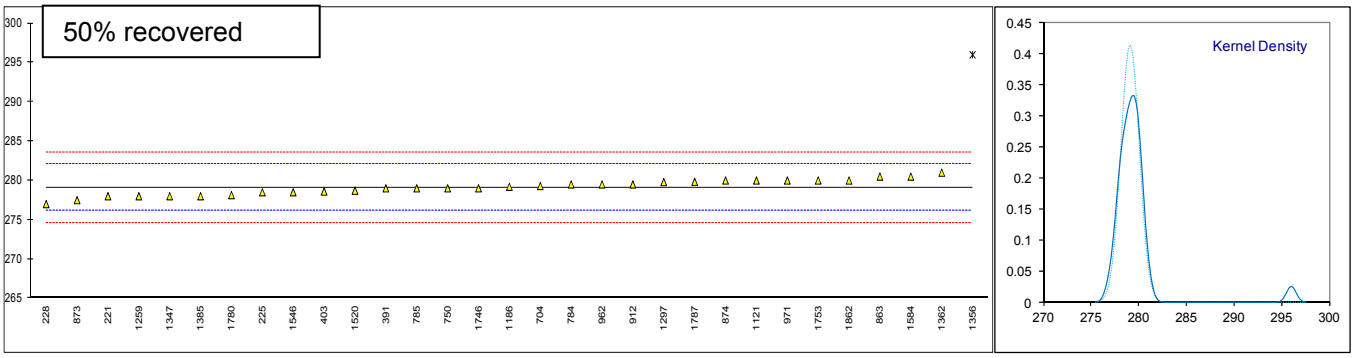
1121	IP123-M	165.0		208.0		280.0		340.0		354.0		358.0		29.0		94.0					
1126		-----		-----		-----		-----		-----		-----		-----		-----					
1134		-----		-----		-----		-----		-----		-----		-----		-----					
1146		-----		-----		-----		-----		-----		-----		-----		-----					
1150		-----		-----		-----		-----		-----		-----		-----		-----					
1161		-----		-----		-----		-----		-----		-----		-----		-----					
1167		-----		-----		-----		-----		-----		-----		-----		-----					
1186	D86-M	164.16		214.18		279.20		338.22		356.5	C	366.0		30.0		94.0					
1194		-----		-----		-----		-----		-----		-----		-----		-----					
1199		-----		-----		-----		-----		-----		-----		-----		-----					
1201		-----		-----		-----		-----		-----		-----		-----		-----					
1203		-----		-----		-----		-----		-----		-----		-----		-----					
1205		-----		-----		-----		-----		-----		-----		-----		-----					
1213		-----		-----		-----		-----		-----		-----		-----		-----					
1215		-----		-----		-----		-----		-----		-----		-----		-----					
1218		-----		-----		-----		-----		-----		-----		-----		-----					
1227		-----		-----		-----		-----		-----		-----		-----		-----					
1231		-----		-----		-----		-----		-----		-----		-----		-----					
1254		-----		-----		-----		-----		-----		-----		-----		-----					
1259	ISO3405-M	164.0		210.0		278.0		335.0		***347.0***		362.0		30.5		95.5					
1266		-----		-----		-----		-----		-----		-----		-----		-----					
1297	D86-M	167.6		209.1		279.8		338.2		354.4		363.8		29.0		93.9					
1299		-----		-----		-----		-----		-----		-----		-----		-----					
1316		-----		-----		-----		-----		-----		-----		-----		-----					
1318		-----		-----		-----		-----		-----		-----		-----		-----					
1347	D86-M	172		209		278		***333***		350		364		30		95					
1348		-----		-----		-----		-----		-----		-----		-----		-----					
1356	ISO3405-M	***191***	C	216	C	296	C	***347***		352		356		***24***	C	92					
1362	ISO3405-M	172.50		212.50		281.00		339.00		352.50		368.00		29.50		94.00					
1385	D86-M	164		209		278		***334***		***346***		362		30		96					
1395		-----		-----		-----		-----		-----		-----		-----		-----					
1409		-----		-----		-----		-----		-----		-----		-----		-----					
1412		-----		-----		-----		-----		-----		-----		-----		-----					
1423		-----		-----		-----		-----		-----		-----		-----		-----					
1428		-----		-----		-----		-----		-----		-----		-----		-----					
1430		-----		-----		-----		-----		-----		-----		-----		-----					
1459		-----		-----		-----		-----		-----		-----		-----		-----					
1460		-----		-----		-----		-----		-----		-----		-----		-----					
1484		-----		-----		-----		-----		-----		-----		-----		-----					
1491		-----		-----		-----		-----		-----		-----		-----		-----					
1510		-----		-----		-----		-----		-----		-----		-----		-----					
1520	ISO3405-M	159.8		207.8		278.7		338.7		352.7		361.7		29.0		94.0					
1528		-----		-----		-----		-----		-----		-----		-----		-----					
1539		-----		-----		-----		-----		-----		-----		-----		-----					
1546	ISO3405-M	166.0		204.5		278.5		337.0		351.0		364.5		31.5		94.5					
1556		-----		-----		-----		-----		-----		-----		-----		-----					
1564		-----		-----		-----		-----		-----		-----		-----		-----					
1569		-----		-----		-----		-----		-----		-----		-----		-----					
1584	ISO3405-M	169.5		211.0		280.5		338.5		357.0		363.5		30.0		93.0	C				
1586		-----		-----		-----		-----		-----		-----		-----		-----					
1631		-----		-----		-----		-----		-----		-----		-----		-----					
1634		-----		-----		-----		-----		-----		-----		-----		-----					
1654		-----		-----		-----		-----		-----		-----		-----		-----					
1677		-----		-----		-----		-----		-----		-----		-----		-----					
1681		-----		-----		-----		-----		-----		-----		-----		-----					
1720		-----		-----		-----		-----		-----		-----		-----		-----					
1724		-----		-----		-----		-----		-----		-----		-----		-----					
1730		-----		-----		-----		-----		-----		-----		-----		-----					
1740		-----		-----		-----		-----		-----		-----		-----		-----					
1741		-----		-----		-----		-----		-----		-----		-----		-----					
1742		-----		-----		-----		-----		-----		-----		-----		-----					
1746	D86-M	166.0		206.0		279.0		338.5		352.0		367.0		31.0		94.5					
1751		-----		-----		-----		-----		-----		-----		-----		-----					
1753	ISO3405-M	164		209		280		339		353		369		29		94					
1776		-----		-----		-----		-----		-----		-----		-----		-----					
1780	D86-M	169.11		208.12		278.14		338.15		354.16		363.16		31.0		95.5					
1782		-----		-----		-----		-----		-----		-----		-----		-----					
1783		-----		-----		-----		-----		-----		-----		-----		-----					
1784		-----		-----		-----		-----		-----		-----		-----		-----					
1787	ISO3405-M	171.87		204.86		279.84		336.82	C	349.82	C	362.81	C	31		95	C				
1807		-----		-----		-----		-----		-----		-----		-----		-----					
1810		-----		-----		-----		-----		-----		-----		-----		-----					
1811		-----		-----		-----		-----		-----		-----		-----		-----					
1832		-----		-----		-----		-----		-----		-----		-----		-----					
1833		-----		-----		-----		-----		-----		-----		-----		-----					
1834		-----		-----		-----		-----		-----		-----		-----		-----					
1849		-----		-----		-----		-----		-----		-----		-----		-----					
1854		-----		-----		-----		-----		-----		-----		-----		-----					
1861		-----		-----		-----		-----		-----		-----		-----		-----					
1862	ISO3405-M	171.5		212.0		280.0		339.0		355.0		362.0		29.0		93.5					

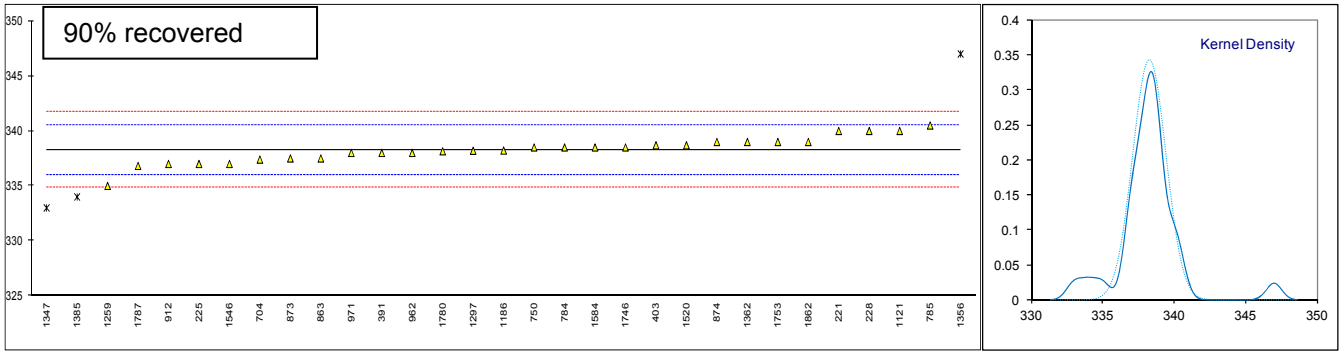
1906	-----	-----	-----	-----	-----	-----	-----	-----
1915	-----	-----	-----	-----	-----	-----	-----	-----
1936	-----	-----	-----	-----	-----	-----	-----	-----
1937	-----	-----	-----	-----	-----	-----	-----	-----
1938	-----	-----	-----	-----	-----	-----	-----	-----
1941	-----	-----	-----	-----	-----	-----	-----	-----
1948	-----	-----	-----	-----	-----	-----	-----	-----
1951	-----	-----	-----	-----	-----	-----	-----	-----
2102	-----	-----	-----	-----	-----	-----	-----	-----
2129	-----	-----	-----	-----	-----	-----	-----	-----
2146	-----	-----	-----	-----	-----	-----	-----	-----
5019	-----	-----	-----	-----	-----	-----	-----	-----
normality	OK	suspect	OK	suspect	OK	OK	OK	suspect
n	30	31	30	28	29	31	29	31
outliers	1	0	1	3	2	0	2	0
mean (n)	167.54	208.79	279.12	338.27	353.20	363.09	30.14	94.22
st.dev. (n)	3.114	2.724	0.966	1.162	1.872	2.830	1.054	0.801
R(calc.)	8.72	7.63	2.70	3.25	5.24	7.93	2.959	2.24
R(ISO3405:09)	6.64	4.77	4.20	3.20	4.03	3.52	2.51	2.51

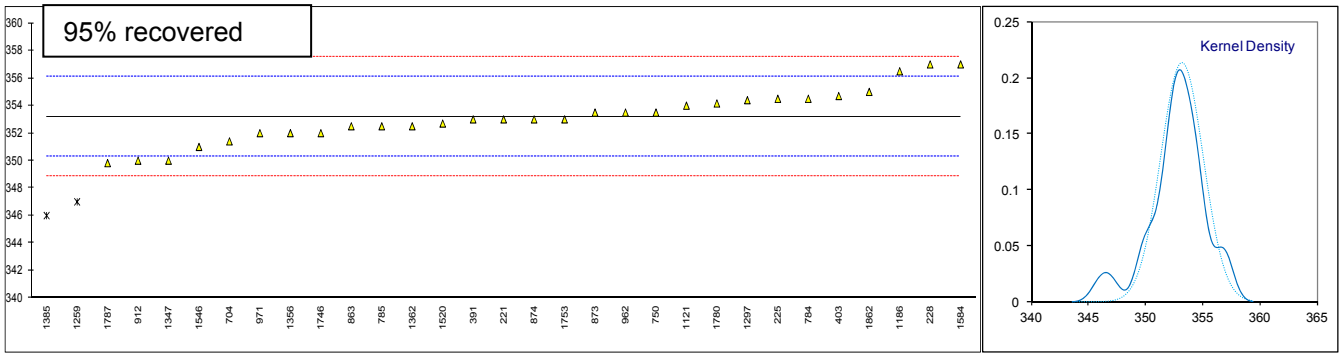
Lab 1186: first reported 360.23
Lab 1356: first reported 184, 220, 291, 347, 25
Lab 1584: first reported 89,0
Lab 1787: first reported 332.82, 345.82, 354.81, 96

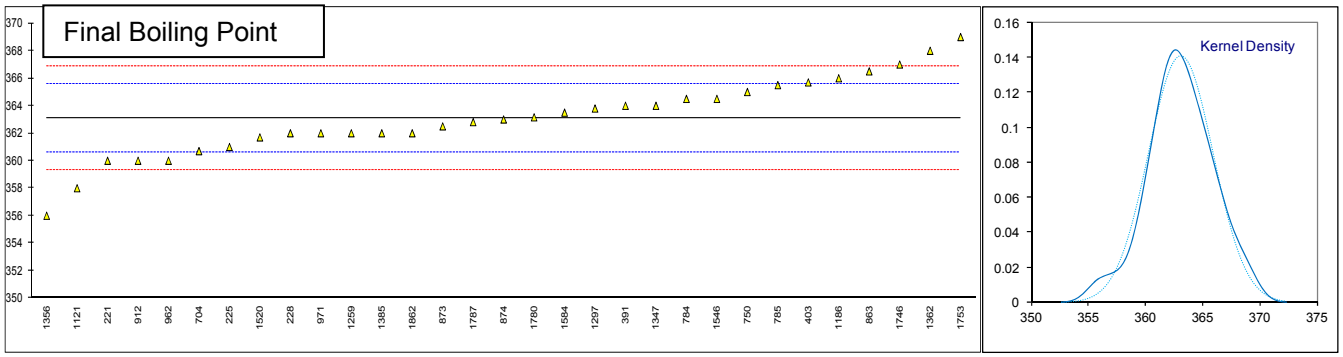


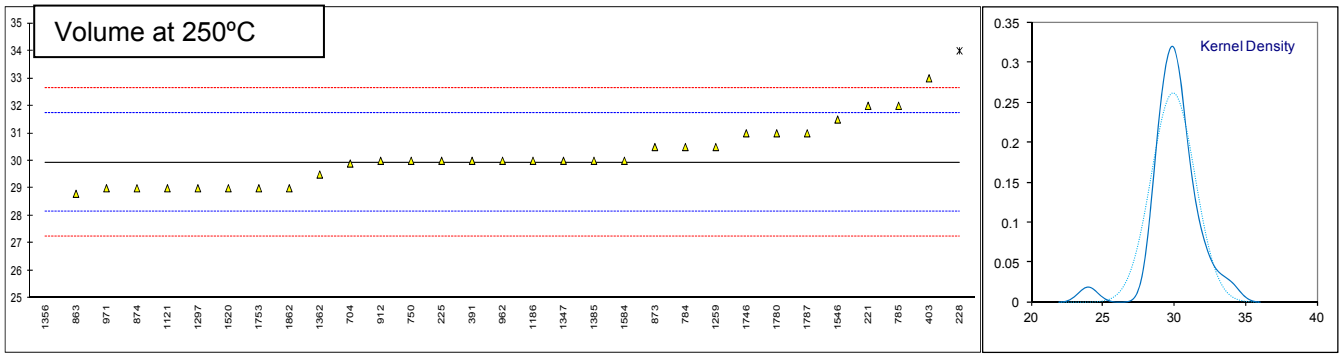


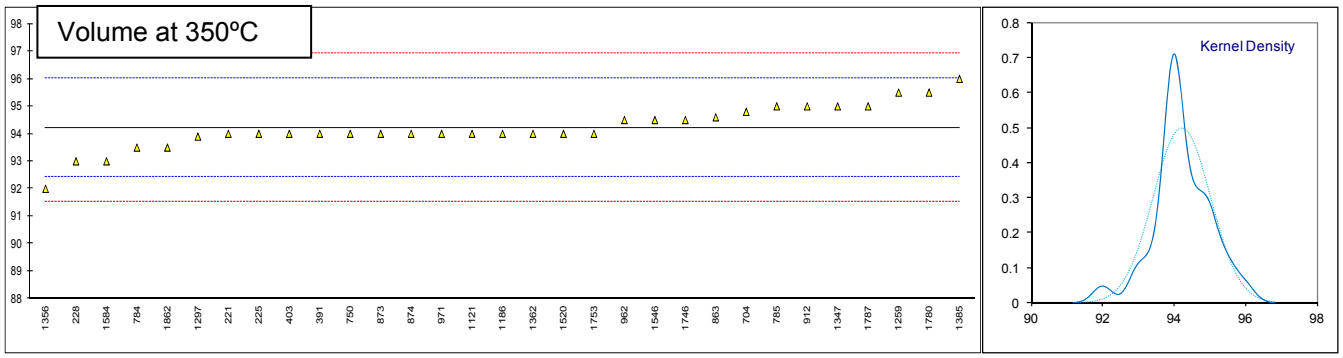



90% recovered
Kernel Density


95% recovered
Kernel Density


Final Boiling Point
Kernel Density


Volume at 250ºC
Kernel Density


Volume at 350ºC
Kernel Density

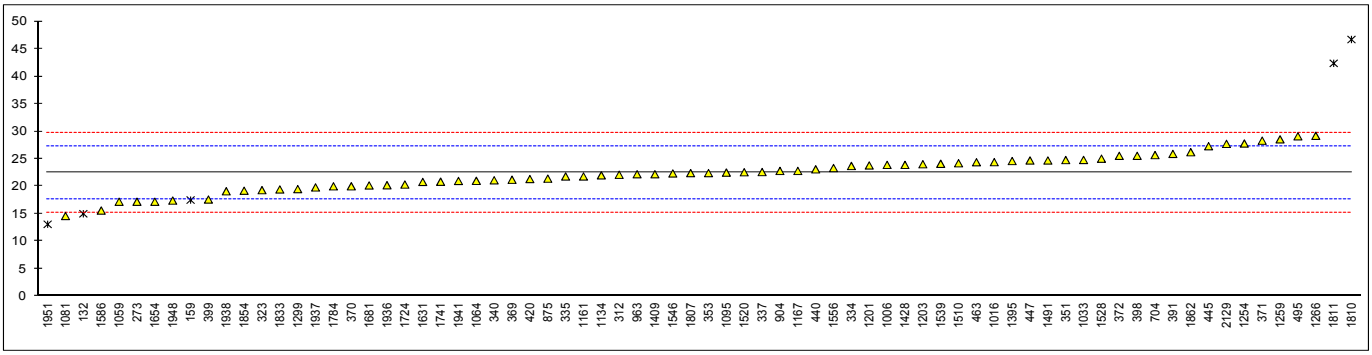
Determination of Total Contamination on sample #14014; result in mg/kg

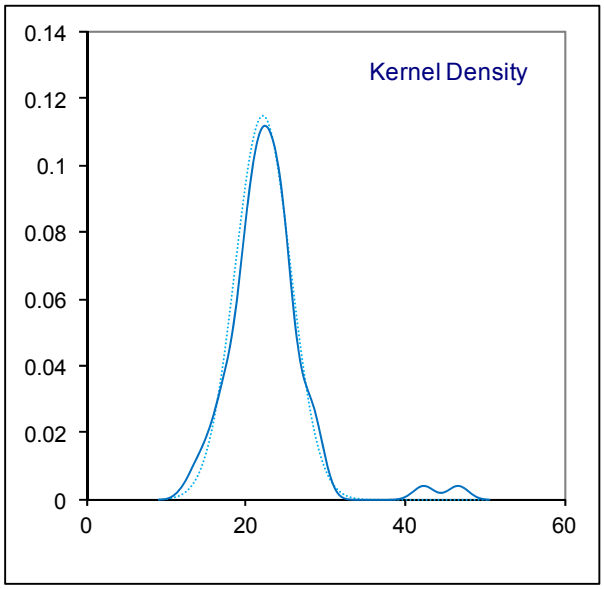
lab	method	value	mark	z(targ)	Volume used	remarks
120		-----		-----	-----	
132	D6217	15.01	ex	-3.11	870	Result excluded, see §4.1
159	D6217	17.5	ex	-2.08	950	Result excluded, see §4.1
273	IP440	17.2		-2.20	-----	
311	EN12662:14	<12		<-4.36	300	False negative?
312	EN12662:08	22.10		-0.17	800	
323	EN12662:08	19.3		-1.33	800	
334	EN12662:08	23.7		0.49	820	
335	EN12662:08	21.8		-0.29	779	
337	EN12662:08	22.6		0.04	800	
340	EN12662	21.1		-0.59	800	
351	EN12662:08	24.78		0.94	400	
353	EN12662:08	22.41		-0.04	830	
369	EN12662:08	21.2		-0.54	800	
370	EN12662:08	20.01		-1.04	800	
371	EN12662:08	28.3		2.40	800	
372	EN12662:08	25.55		1.26	800	
391	EN12662:14	25.9		1.41	300	
398	EN12662:98	25.55		1.26	375	
399	EN12662	17.6		-2.04	383	
420	EN12662:08	21.33		-0.49	665	
440	IP440:08	23.09		0.24	800	
445	IP440:08	27.3		1.99	880	
447	IP440:08	24.7		0.91	-----	
463	EN12662:08	24.38		0.77	800	
495	EN12662:08	29.1		2.73	600	
704	EN12662:08	25.68		1.31	870	
875	EN12662	21.396		-0.46	250	
904	EN12662	22.8		0.12	800	
963	EN12662	22.2		-0.13	800	
970		-----		-----	-----	
974		-----		-----	-----	
1006	EN12662	23.9		0.58	-----	
1016	EN12662:08	24.4		0.78	785	
1033	IP440	24.8		0.95	535	
1059	EN12662:08	17.2		-2.20	798.9	
1064	EN12662:08	21.0		-0.63	322	
1081	EN12662	14.6		-3.28	800	
1095	EN12662:08	22.5		0.00	800	
1134	EN12662:08	22.00		-0.21	805	
1161	EN12662	21.8		-0.29	-----	
1167	EN12662	22.8		0.12	800	
1201	EN12662:08	23.8		0.53	800	
1203	EN12662:08	24.02		0.63	800	
1254	EN12662:08	27.79		2.19	800	
1259	EN12662:99	28.5451		2.50	400	
1266	EN12662:08	29.19		2.77	800	
1299	EN12662:08	19.5		-1.25	800	
1395	EN12662	24.6		0.87	800	
1409	EN12662:08	22.2		-0.13	800	
1428	EN12662	23.9		0.58	800	
1460		-----		-----	-----	
1491	EN12662:08	24.7		0.91	800	
1510	EN12662:08	24.2		0.70	800	
1520	EN12662:08	22.56		0.02	800	
1528	EN12662:08	25.03		1.04	800	
1539	EN12662:09/ap:10	24.1		0.66	800	
1546	EN12662:08	22.344		-0.07	770	
1556	EN12662:08	23.33		0.34	800	
1586	EN12662:11	15.6		-2.87	800	
1631	IP440:08	20.8		-0.71	815	
1654	EN12662	17.2		-2.20	800	
1681	EN12662:08	20.16		-0.97	800	
1724	IP440:08	20.33		-0.90	825	
1741	EN12662:08	20.84		-0.69	800	
1784	EN12662	20.0		-1.04	800	
1807	EN12662:08	22.4		-0.05	-----	
1810	EN12662:08	46.7	R(0.01)	10.03	800	
1811	EN12662	42.37	R(0.01)	8.23	300	
1833	EN12662	19.44		-1.27	800	
1854	EN12662	19.2		-1.37	800	
1862	EN12662:08	26.21		1.53	-----	
1936	EN12662:09	20.2		-0.96	800	
1937	EN12662	19.8		-1.12	-----	
1938	EN12662	19.10		-1.41	743	
1941	EN12662:08	20.98		-0.63	800	
1948	EN12662	17.41		-2.12	-----	
1951	D6217	13.10	ex	-3.90	880	Result excluded, see §4.1

2129	EN12662:08	27.72		2.16	820

normality	OK	
n	69	
outliers	2 (+3 excl)	Spike:
mean (n)	22.511	14.9
st.dev. (n)	3.1935	
R(calc.)	8.942	
R(EN12662:08)	6.753	

Compare R(EN12662:14) = 7.812





APPENDIX 2
z-scores Distillation (Automated + manual)

	Automated								Manual							
lab	IBP	10% rec	50% rec	90% rec	95% rec	FBP	Vol 250ºC	Vol 350ºC	IBP	10% rec	50% rec	90% rec	95% rec	FBP	Vol 250ºC	Vol 350ºC
62	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
120	0.83	1.17	0.53	0.88	1.70	-0.11	-0.35	-1.47	-----	-----	-----	-----	-----	-----	-----	-----
132	0.93	1.96	0.06	-0.12	0.12	0.56	-1.28	-0.12	-----	-----	-----	-----	-----	-----	-----	-----
150	0.47	1.23	-0.88	-1.17	-0.82	-1.85	-0.14	0.71	-----	-----	-----	-----	-----	-----	-----	-----
159	0.41	0.86	1.28	0.16	0.21	-0.86	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
175	-0.48	-0.17	0.53	1.49	1.70	0.17	-0.03	-1.15	-----	-----	-----	-----	-----	-----	-----	-----
193	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
194	0.44	1.47	-0.04	0.27	0.64	0.28	-0.03	-0.53	-----	-----	-----	-----	-----	-----	-----	-----
221	-----	-----	-----	-----	-----	-----	-----	-----	-0.65	-0.47	-0.75	1.51	-0.14	-2.46	2.07	-0.24
225	-----	-----	-----	-----	-----	-----	-----	-----	1.04	-1.05	-0.41	-1.12	0.91	-1.67	-0.16	-0.24
228	-----	-----	-----	-----	-----	-----	-----	-----	-0.23	-2.23	-1.41	1.51	2.64	-0.87	4.30	-1.36
237	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
238	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
258	1.26	0.62	1.28	0.22	-1.35	-1.65	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
273	0.77	1.05	-0.13	-0.61	-0.82	-2.87	0.38	-0.33	-----	-----	-----	-----	-----	-----	-----	-----
311	-0.69	-0.96	-0.60	0.16	0.12	0.72	0.69	-0.12	-----	-----	-----	-----	-----	-----	-----	-----
312	0.10	-0.96	-0.88	-1.94	-1.82	-0.78	0.59	1.54	-----	-----	-----	-----	-----	-----	-----	-----
317	0.44	0.56	0.34	-0.01	-0.07	0.28	-0.14	0.19	-----	-----	-----	-----	-----	-----	-----	-----
323	0.47	0.38	0.25	0.27	0.40	0.36	-0.35	-0.33	-----	-----	-----	-----	-----	-----	-----	-----
333	0.41	-1.26	0.34	-0.34	-0.23	-0.47	0.07	0.19	-----	-----	-----	-----	-----	-----	-----	-----
334	1.11	0.74	0.72	-0.50	-0.16	0.36	-0.35	0.19	-----	-----	-----	-----	-----	-----	-----	-----
335	0.29	-0.53	0.81	1.16	1.17	1.03	0.07	-0.64	-----	-----	-----	-----	-----	-----	-----	-----
336	1.63	0.62	0.06	-0.17	0.08	0.72	-0.14	-0.43	-----	-----	-----	-----	-----	-----	-----	-----
337	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
338	-0.02	0.93	1.10	0.66	0.58	0.80	-1.18	-0.43	-----	-----	-----	-----	-----	-----	-----	-----
340	0.35	0.56	1.47	1.38	0.96	-0.11	-0.86	-0.84	-----	-----	-----	-----	-----	-----	-----	-----
351	-0.41	-0.60	0.25	2.37	1.98	-1.25	-0.14	-1.36	-----	-----	-----	-----	-----	-----	-----	-----
353	-1.11	0.07	0.62	1.32	1.11	2.26	0.07	-0.84	-----	-----	-----	-----	-----	-----	-----	-----
357	-0.32	0.38	0.44	-0.34	-0.29	-0.35	-0.76	0.19	-----	-----	-----	-----	-----	-----	-----	-----
369	-0.35	-0.17	-0.60	0.38	0.27	0.95	-0.45	-0.43	-----	-----	-----	-----	-----	-----	-----	-----
370	-0.26	-0.23	0.06	0.10	0.43	0.09	2.25	-0.84	-----	-----	-----	-----	-----	-----	-----	-----
371	0.44	-0.05	-0.41	0.16	-0.01	0.21	-0.35	-0.01	-----	-----	-----	-----	-----	-----	-----	-----
372	-0.20	0.50	0.34	-0.12	-0.23	-0.23	-0.35	-0.01	-----	-----	-----	-----	-----	-----	-----	-----
391	-----	-----	-----	-----	-----	-----	-----	-----	0.62	0.71	-0.08	-0.24	-0.14	0.72	-0.16	-0.24
398	0.53	0.56	-0.60	-0.17	-0.35	0.92	0.90	1.02	-----	-----	-----	-----	-----	-----	-----	-----
399	0.41	2.33	-0.79	-0.73	-0.48	0.48	-0.03	0.40	-----	-----	-----	-----	-----	-----	-----	-----
402	-1.18	2.02	0.62	0.60	0.49	-2.48	-0.45	-0.43	-----	-----	-----	-----	-----	-----	-----	-----
403	-----	-----	-----	-----	-----	-----	-----	-----	0.40	-3.70	-0.35	0.37	1.04	2.08	3.18	-0.24
420	0.65	1.41	0.44	-0.34	-0.29	-0.07	-0.76	0.30	-----	-----	-----	-----	-----	-----	-----	-----
430	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
431	-0.29	0.13	-0.51	0.33	0.77	-0.39	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
432	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
433	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
440	1.23	1.47	0.72	0.66	0.15	1.07	-0.45	-0.22	-----	-----	-----	-----	-----	-----	-----	-----
445	-0.99	0.26	0.15	0.10	0.36	0.28	-0.45	-0.22	-----	-----	-----	-----	-----	-----	-----	-----
447	1.08	1.17	1.00	0.66	0.40	1.27	-0.86	-0.33	-----	-----	-----	-----	-----	-----	-----	-----
463	0.16	0.38	-0.41	-0.45	-0.01	-0.39	-0.14	0.09	-----	-----	-----	-----	-----	-----	-----	-----
485	0.16	0.68	0.11	-0.12	0.08	-0.60	-0.40	0.04	-----	-----	-----	-----	-----	-----	-----	-----
488	0.32	1.59	-0.60	-0.01	0.46	-0.07	0.17	-0.22	-----	-----	-----	-----	-----	-----	-----	-----
495	-0.63	-0.35	-0.13	-0.12	-0.07	0.01	0.90	1.02	-----	-----	-----	-----	-----	-----	-----	-----
593	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
663	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
671	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
704	-----	-----	-----	-----	-----	-----	-----	-----	-0.35	-1.05	0.12	-0.77	-1.25	-1.91	-0.27	0.65
750	-----	-----	-----	-----	-----	-----	-----	-----	0.19	0.12	-0.08	0.20	0.21	1.52	-0.16	-0.24
781	0.41	-0.17	0.06	-0.61	-0.45	0.40	-0.35	0.61	-----	-----	-----	-----	-----	-----	-----	-----
784	-----	-----	-----	-----	-----	-----	-----	-----	-0.02	-0.17	0.25	0.20	0.91	1.12	0.40	-0.80
785	-----	-----	-----	-----	-----	-----	-----	-----	-2.34	0.71	-0.08	1.95	-0.48	1.92	2.07	0.87
863	-----	-----	-----	-----	-----	-----	-----	-----	-0.65	0.12	0.92	-0.68	-0.48	2.71	-1.50	0.42
873	-----	-----	-----	-----	-----	-----	-----	-----	1.67	0.42	-1.08	-0.68	0.21	-0.47	0.40	-0.24
874	-----	-----	-----	-----	-----	-----	-----	-----	1.04	0.42	0.59	0.64	-0.14	-0.07	-1.28	-0.24
875	-1.51	0.74	1.38	0.66	0.46	1.03	0.90	-0.43	-----	-----	-----	-----	-----	-----	-----	-----
904	0.50	0.26	0.91	0.55	0.30	1.07	-0.55	-0.22	-----	-----	-----	-----	-----	-----	-----	-----
912	-----	-----	-----	-----	-----	-----	-----	-----	1.04	-0.17	0.25	-1.12	-2.22	-2.46	-0.16	0.87
962	-----	-----	-----	-----	-----	-----	-----	-----	0.62	0.71	0.25	-0.24	0.21	-2.46	-0.16	0.31
963	1.02	2.02	1.57	0.27	-0.01	0.76	-1.69	0.19	-----	-----	-----	-----	-----	-----	-----	-----
970	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
971	-----	-----	-----	-----	-----	-----	-----	-----	0.19	-0.47	0.59	-0.24	-0.83	-0.87	-1.28	-0.24
974	0.90	0.20	1.19	0.77	0.77	-0.15	-0.97	-0.64	-----	-----	-----	-----	-----	-----	-----	-----
1006	0.19	0.32	0.62	-0.61	-0.82	-1.37	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1016	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1017	0.41	-1.08	-0.22	-0.06	-0.16	1.27	0.28	-0.33	-----	-----	-----	-----	-----	-----	-----	-----
1026	-1.48	-1.02	-0.41	-0.01	0.18	-0.07	0.28	-0.01	-----	-----	-----	-----	-----	-----	-----	-----
1033	1.23	0.50	0.91	0.60	0.05	0.84	-1.49	-1.05	-----	-----	-----	-----	-----	-----	-----	-----

1059	-0.54	-0.96	-1.07	0.05	0.18	0.17	0.38	-0.12	-----	-----	-----	-----	-----	-----	-----	-----
1081	-0.57	0.32	0.15	-1.11	-1.47	-0.47	-0.03	1.33	-----	-----	-----	-----	-----	-----	-----	-----
1109	0.07	1.59	-0.13	-0.50	-0.48	-1.25	-0.55	0.40	-----	-----	-----	-----	-----	-----	-----	-----
1121	-----	-----	-----	-----	-----	-----	-----	-----	-1.07	-0.47	0.59	1.51	0.56	-4.06	-1.28	-0.24
1126	1.23	1.96	0.91	1.38	1.11	2.69	-0.76	-1.26	-----	-----	-----	-----	-----	-----	-----	-----
1134	-3.03	-0.66	-0.22	0.05	0.55	-1.25	-0.24	-0.43	-----	-----	-----	-----	-----	-----	-----	-----
1146	-0.20	-0.23	-0.88	-1.28	-1.25	-0.19	0.67	1.09	-----	-----	-----	-----	-----	-----	-----	-----
1150	2.36	1.14	1.10	0.75	0.17	-0.30	-1.03	-0.51	-----	-----	-----	-----	-----	-----	-----	-----
1161	-0.87	-1.26	-0.41	0.55	0.74	0.92	0.80	-0.12	-----	-----	-----	-----	-----	-----	-----	-----
1167	-0.44	-3.03	-1.64	0.05	0.05	-0.11	2.45	0.19	-----	-----	-----	-----	-----	-----	-----	-----
1186	-----	-----	-----	-----	-----	-----	-----	-----	-1.43	3.16	0.05	-0.05	2.29	2.32	-0.16	-0.24
1194	-0.57	-3.64	-0.88	-0.17	-0.26	-3.15	2.25	0.19	-----	-----	-----	-----	-----	-----	-----	-----
1199	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1201	-0.41	-0.35	0.53	0.55	0.49	0.36	-0.45	-0.33	-----	-----	-----	-----	-----	-----	-----	-----
1203	-0.69	0.44	1.66	0.88	-0.01	0.52	-1.18	-0.22	-----	-----	-----	-----	-----	-----	-----	-----
1205	0.83	0.99	1.00	0.22	-0.04	0.68	-0.76	-0.01	-----	-----	-----	-----	-----	-----	-----	-----
1213	-1.24	-0.66	0.15	0.82	1.64	-0.11	0.28	-0.74	-----	-----	-----	-----	-----	-----	-----	-----
1215	0.07	-0.96	-0.79	-1.11	-1.13	-0.15	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1218	0.26	-1.51	-1.36	-1.28	-1.44	-3.11	1.21	1.23	-----	-----	-----	-----	-----	-----	-----	-----
1227	-0.05	-0.29	-1.26	1.38	1.52	-0.27	-0.45	-0.22	-----	-----	-----	-----	-----	-----	-----	-----
1231	-0.46	-2.15	-1.54	-1.33	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1254	1.05	0.38	0.25	-0.45	-0.20	0.36	-0.55	0.19	-----	-----	-----	-----	-----	-----	-----	-----
1259	-0.32	1.17	-0.60	-1.28	-1.57	-0.86	-0.24	1.44	-1.49	0.71	-0.75	-2.87	-4.30	-0.87	0.40	1.43
1266	1.44	1.05	0.34	0.93	0.52	-2.20	-0.55	-0.43	-----	-----	-----	-----	-----	-----	-----	-----
1297	-----	-----	-----	-----	-----	-----	-----	-----	0.02	0.18	0.45	-0.07	0.84	0.56	-1.28	-0.36
1299	-0.66	-0.90	-0.41	0.16	0.24	0.52	0.38	-0.22	-----	-----	-----	-----	-----	-----	-----	-----
1316	-0.44	0.07	0.06	0.44	0.43	-0.31	-0.14	-0.33	-----	-----	-----	-----	-----	-----	-----	-----
1318	-1.11	-1.87	-0.32	0.16	-0.41	0.44	1.00	0.40	-----	-----	-----	-----	-----	-----	-----	-----
1347	-----	-----	-----	-----	-----	-----	-----	-----	1.88	0.12	-0.75	-4.62	-2.22	0.72	-0.16	0.87
1348	-0.48	-3.03	0.81	0.66	-0.10	2.33	0.38	-0.01	-----	-----	-----	-----	-----	-----	-----	-----
1356	-----	-----	-----	-----	-----	-----	-----	-----	9.90	4.23	11.25	7.64	-0.83	-5.65	-6.85	-2.47
1362	-----	-----	-----	-----	-----	-----	-----	-----	2.09	2.18	1.25	0.64	-0.48	3.91	-0.72	-0.24
1385	-----	-----	-----	-----	-----	-----	-----	-----	-1.49	0.12	-0.75	-3.74	-5.00	-0.87	-0.16	1.98
1395	-0.29	-0.78	-0.70	-0.23	-0.38	-0.39	0.69	0.30	-----	-----	-----	-----	-----	-----	-----	-----
1409	-1.11	1.11	0.72	0.10	0.15	-0.19	-1.18	-0.12	-----	-----	-----	-----	-----	-----	-----	-----
1412	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1423	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1428	0.35	0.99	0.53	-0.78	-0.60	0.05	-0.45	0.50	-----	-----	-----	-----	-----	-----	-----	-----
1430	-0.75	-0.17	0.81	1.27	1.49	0.52	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1459	-0.99	0.38	-0.32	-0.89	-0.82	-0.82	-0.03	0.71	-----	-----	-----	-----	-----	-----	-----	-----
1460	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1484	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1491	-0.08	0.26	-0.70	0.44	0.68	0.05	-0.14	-0.43	-----	-----	-----	-----	-----	-----	-----	-----
1510	-0.26	-1.20	-0.22	0.16	0.30	-0.31	0.17	-0.22	-----	-----	-----	-----	-----	-----	-----	-----
1520	-----	-----	-----	-----	-----	-----	-----	-----	-3.27	-0.58	-0.28	0.37	-0.34	-1.11	-1.28	-0.24
1528	-1.78	-0.23	-0.51	-0.01	0.15	-0.35	0.17	-0.12	-----	-----	-----	-----	-----	-----	-----	-----
1539	1.38	0.13	-0.13	0.38	0.40	-0.11	0.48	-0.33	-----	-----	-----	-----	-----	-----	-----	-----
1546	-----	-----	-----	-----	-----	-----	-----	-----	-0.65	-2.52	-0.41	-1.12	-1.52	1.12	1.51	0.31
1556	-0.20	-0.05	0.25	0.22	0.12	0.21	-0.14	-0.12	-----	-----	-----	-----	-----	-----	-----	-----
1564	-0.54	1.59	-0.98	-1.67	-0.85	-2.44	0.28	0.71	-----	-----	-----	-----	-----	-----	-----	-----
1569	-0.11	-1.08	-0.13	-0.06	-0.66	0.84	0.17	0.50	-----	-----	-----	-----	-----	-----	-----	-----
1584	-----	-----	-----	-----	-----	-----	-----	-----	0.83	1.30	0.92	0.20	2.64	0.32	-0.16	-1.36
1586	-0.44	-1.26	-1.45	-0.61	-0.35	-0.19	1.42	0.30	-----	-----	-----	-----	-----	-----	-----	-----
1631	-0.81	-0.66	-0.60	-0.95	-0.79	0.28	-0.45	-0.22	-----	-----	-----	-----	-----	-----	-----	-----
1634	-1.69	0.20	0.15	-0.34	-0.20	0.44	-0.45	-0.01	-----	-----	-----	-----	-----	-----	-----	-----
1654	0.99	0.32	0.91	0.49	0.27	1.47	-0.55	-0.22	-----	-----	-----	-----	-----	-----	-----	-----
1677	-2.64	-2.24	0.25	0.33	0.08	0.09	-0.24	-0.22	-----	-----	-----	-----	-----	-----	-----	-----
1681	-0.26	-1.20	-1.17	-0.84	-0.91	-1.06	0.90	0.82	-----	-----	-----	-----	-----	-----	-----	-----
1720	-0.23	-0.72	0.62	0.10	-0.07	0.76	-2.42	-1.36	-----	-----	-----	-----	-----	-----	-----	-----
1724	-1.39	1.66	0.15	0.05	0.02	0.60	-0.35	0.09	-----	-----	-----	-----	-----	-----	-----	-----
1730	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1740	0.74	0.01	-1.07	-1.17	-0.97	-0.86	1.00	0.82	-----	-----	-----	-----	-----	-----	-----	-----
1741	-1.65	-2.36	-1.24	-0.04	0.30	-0.54	2.04	0.61	-----	-----	-----	-----	-----	-----	-----	-----
1742	-0.03	0.23	-0.52	-0.65	-0.59	0.11	0.07	0.40	-----	-----	-----	-----	-----	-----	-----	-----
1746	-----	-----	-----	-----	-----	-----	-----	-----	-0.65	-1.64	-0.08	0.20	-0.83	3.11	0.95	0.31
1751	0.07	-0.66	-0.88	-0.01	0.18	-0.23	1.09	-0.09	-----	-----	-----	-----	-----	-----	-----	-----
1753	-----	-----	-----	-----	-----	-----	-----	-----	-1.49	0.12	0.59	0.64	-0.14	4.70	-1.28	-0.24
1776	-1.63	-1.45	-1.92	-1.50	-1.29	-1.10	0.69	1.13	-----	-----	-----	-----	-----	-----	-----	-----
1780	-----	-----	-----	-----	-----	-----	-----	-----	0.66	-0.39	-0.65	-0.11	0.67	0.05	0.95	1.43
1782	1.05	1.29	1.19	0.82	0.55	0.52	-1.07	-0.53	-----	-----	-----	-----	-----	-----	-----	-----
1783	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1784	0.74	0.80	-0.22	-0.67	-0.60	-0.47	-0.03	0.50	-----	-----	-----	-----	-----	-----	-----	-----
1787	-----	-----	-----	-----	-----	-----	-----	-----	1.83	-2.31	0.48	-1.27	-2.34	-0.23	0.95	0.87
1807	-0.17	-0.53	-0.13	-0.73	-0.73	0.24	0.09	0.59	-----	-----	-----	-----	-----	-----	-----	-----
1810	0.10	-0.72	-0.51	-1.33	-1.38	0.21	0.48	1.13	-----	-----	-----	-----	-----	-----	-----	-----
1811	-0.38	0.20	0.25	-0.06	-0.35	0.52	-0.35	0.30	-----	-----	-----	-----	-----	-----	-----	-----
1832	1.29	0.26	-0.22	-0.67	-0.20	0.48	-0.24	0.30	-----	-----	-----	-----	-----	-----	-----	-----
1833	1.20	0.68	0.91	0.05	-0.01	0.92	-0.86	0.09	-----	-----	-----	-----	-----	-----	-----	-----
1834	-0.20	-1.75	-0.51	0.82	0.74	0.28	2.35	-0.64	-----	-----	-----	-----	-----	-----	-----	-----
1849	0.32	-0.29	-0.04	-0.06	-0.26	0.95	-0.14	0.19	-----	-----	-----	-----	-----	-----	-----	-----

1854	0.65	1.17	0.15	-0.45	-0.41	-0.27	-0.55	0.30	-----	-----	-----	-----	-----	-----	-----	-----
1861	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1862	-----	-----	-----	-----	-----	-----	-----	-----	1.67	1.88	0.59	0.64	1.25	-0.87	-1.28	-0.80
1906	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1915	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1936	0.93	-1.08	-1.83	-1.33	-1.19	-0.23	1.52	1.02	-----	-----	-----	-----	-----	-----	-----	-----
1937	0.07	0.20	0.34	0.44	0.40	0.28	-0.35	-0.33	-----	-----	-----	-----	-----	-----	-----	-----
1938	-0.38	-1.20	-0.88	-0.01	-0.35	0.21	1.52	0.30	-----	-----	-----	-----	-----	-----	-----	-----
1941	-1.21	-2.12	-0.32	-0.12	0.05	0.05	1.21	0.50	-----	-----	-----	-----	-----	-----	-----	-----
1948	1.32	0.20	-0.13	0.10	0.18	0.09	0.38	-0.12	-----	-----	-----	-----	-----	-----	-----	-----
1951	1.02	-0.35	0.62	0.49	0.61	1.51	-0.35	-0.64	-----	-----	-----	-----	-----	-----	-----	-----
2102	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2129	0.74	-0.23	0.15	-0.89	-1.13	1.19	-0.14	0.82	-----	-----	-----	-----	-----	-----	-----	-----
2146	1.44	1.47	0.91	1.65	1.64	-0.70	-1.18	-1.47	-----	-----	-----	-----	-----	-----	-----	-----
5019	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

APPENDIX 3

Number of participants per country

1 lab in ALGERIA
2 labs in AUSTRALIA
4 labs in AUSTRIA
1 lab in AZERBAIJAN
4 labs in BELGIUM
3 labs in BULGARIA
1 lab in CANADA
1 lab in CÔTE D'IVOIRE
1 lab in CROATIA
3 lab in CYPRUS
3 labs in CZECH REPUBLIC
1 lab in ECUADOR
3 labs in ESTONIA
4 labs in FINLAND
8 labs in FRANCE
1 lab in GERMANY
6 labs in GREECE
1 lab in GUAM
1 lab in HONG KONG
1 lab in HUNGARY
1 lab in INDIA
2 labs in IRELAND
3 labs in ITALY
4 labs in LATVIA
3 labs in LEBANON
2 labs in LITHUANIA
1 lab in MALTA
1 lab in MOZAMBIQUE
1 lab in NIGER
3 labs in NIGERIA
1 lab in NORTHERN IRELAND
1 lab in NORWAY
1 lab in OMAN
1 lab in P.R. of CHINA
3 labs in POLAND
4 labs in PORTUGAL
4 labs in ROMANIA
10 labs in RUSSIA
4 labs in SAUDI ARABIA
1 lab in SENEGAL
2 labs in SERBIA
1 lab in SLOVENIA
1 lab in SOUTH AFRICA
1 lab in SOUTH KOREA
7 labs in SPAIN
1 lab in SUDAN
5 labs in SWEDEN
1 lab in TAIWAN R.O.C.
3 labs in THAILAND
10 labs in THE NETHERLANDS
1 lab in TOGO
1 lab in TUNESIA
13 labs in TURKEY
2 labs in U.A.E.
7 labs in U.S.A.
1 lab in UKRAINE
10 labs in UNITED KINGDOM
1 lab in VIETNAM

APPENDIX 4

Abbreviations:

C	= final result after checking of first reported suspect 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)	= outlier in Rosner's outlier test
R(0.05)	= straggler in Rosner's outlier test
ex	= excluded from calculations
E	= probably error in calculations
U	= probably reported in different unit
n.a.	= not applicable
fr.	= first reported
Rep./R	= reported
W	= withdrawn on request of the participant

Literature:

1	iis Interlaboratory Studies, Protocol for the Organisation, Statistics & Evaluation, April 2014
2	ASTM E178-02
3	ASTM E1301-03
4	ISO 5725-86
5	ISO 5725, parts 1-6, 1994
6	ISO 13528-05
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, No4 January 2001
14	The Royal Society of Chemistry 2002, Analyst 2002, 127 page1359-1364, P.J. Lowthian and M. Thompson. (see http://www.rsc.org/suppdata/an/b2/b2110140n/)
15	Bernard Rosner, Percentage Points for a Generalized ESD Many-Outlier Procedure, *Technometrics*, 25(2), pp. 165-172, (1983)