Results of Proficiency Test
Gasoline - EN (winter)
October 2021

Organized by: Institute for Interlaboratory Studies
Spijkenisse, the Netherlands

Author: ing. M. Meijer
Correctors: ing. R.J. Starink & ing. A.S. Noordman-de Neef
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1 INTRODUCTION

Since 1995 the Institute for Interlaboratory Studies (iis) organizes a proficiency scheme for the analysis of Gasoline twice a year. One round according to the latest version of ASTM D4814 specification and one round according to EN228 specification. During the annual proficiency testing program 2021/2022 it was decided to continue the round robin for the analysis of Gasoline according to the latest version of the EN228 specification.

In this interlaboratory study registered for participation on Gasoline EN (winter):
- 149 laboratories in 53 different countries for the regular analyzes (iis21B05EN)
- 118 laboratories in 46 different countries for DVPE analyzes (iis21B05DVPE)
- 77 laboratories in 45 different countries for RON and MON analyzes (iis21B05RON)

In total 154 laboratories in 54 different countries registered for participation in one or more rounds. See appendix 4 for the number of participants per country. In this report the results of the Gasoline - EN (winter) proficiency tests are presented and discussed. This report is also electronically available through the iis website www.iisnl.com.

2 SET UP

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

Sample ID	PT ID	Quantity	Purpose
#21185	iis21B05EN	1x 1L	Regular analyzes
#21186	iis21B05DVPE	1x 1L (± 750 mL filled)	DVPE
#21187	iis21B05RON	2x 1L	RON and MON

Table 1: Gasoline samples used in PT iis21B05

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

2.1 ACCREDITATION

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

2.2 PROTOCOL

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

2.3 CONFIDENTIALITY STATEMENT

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

2.4 SAMPLES

For the preparation of the Gasoline samples for the regular and RON/MON analyzes a batch of approximately 800 liters of a regular winter grade Gasoline was purchased from a local supplier. After homogenization 185 amber glass bottles of 1L were filled and labelled #21185 for the regular PT and 225 amber glass bottles of 1L were filled and labelled #21187 for the RON/MON PT.
The homogeneity of the subsamples was checked by determination of Density at 15°C in accordance with test method ISO12185 on 10 stratified randomly selected subsamples.

	Density at 15°C in kg/m^3
sample 1	730.76
sample 2	730.76
sample 3	730.76
sample 4	730.85
sample 5	730.92
sample 6	730.81
sample 7	730.90
sample 8	730.76
sample 9	730.86
sample 10	730.81

Table 2: homogeneity test results of subsamples #21185 and #21187

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

	Density at 15°C in kg/m^3
r (observed)	0.17
reference test method	ISO12185:96
0.3 x R (reference test method)	0.45

Table 3: evaluation of the repeatability of subsamples #21185 and #21187

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

For the preparation of the DVPE sample a batch of approximately 170 liters of a regular winter grade Gasoline was purchased from a local supplier. After homogenization 158 amber glass bottles of 1L were filled with approximately 750mL Gasoline and labelled #21186.
The homogeneity of the subsamples was checked by determination of DVPE according to EN13016 on 8 stratified randomly selected subsamples.

	DVPE in kPa
sample #21186-1	90.6
sample #21186-2	90.4
sample #21186-3	90.4
sample #21186-4	90.8
sample #21186-5	90.6
sample #21186-6	90.3
sample #21186-7	90.6
sample #21186-8	90.1

Table 4: homogeneity test results of subsamples #21186

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

	DVPE in kPa
r (observed)	0.6
reference test method	EN13016-1:18
0.3 x R (reference test method)	0.5

Table 5: evaluation of the repeatability of subsamples #21186

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

Depending on the registration of the participant the appropriate set of PT samples was sent on September 15, 2021. An SDS was added to the sample package.

2.5 STABILITY OF THE SAMPLES

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

2.6 ANALYZES

The participants were requested to determine on sample #21185: API Gravity, Appearance, Aromatics by FIA and by GC (%V/V and %M/M), Benzene, Copper Corrosion 3 hrs at 50°C, Density at 15°C, Distillation at 760 mmHg, Doctor Test, Gum (solvent washed), Lead, Manganese, Olefins by FIA and by GC (%V/V and %M/M), Oxidation Stability, Oxygenates: Methanol, Ethanol, iso-Propyl alcohol, iso-Butyl alcohol, tert-Butyl alcohol, Ethers (C5 or more C atoms), DIPE, ETBE, MTBE, TAME, Sum of Other Oxygenates, Oxygen content and Sulfur.
On sample #21186 it was requested to determine: Air Saturated Vapour Pressure (ASVP) and Dry Vapour Pressure Equivalent (DVPE).
On sample #21187 it was requested to determine: RON and MON.

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

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

3 RESULTS

During five weeks after sample dispatch, the test results of the individual laboratories were gathered via the data entry portal www.kpmd.co.uk/sgs-iis/. The reported test results are tabulated per determination in appendix 1 and 2 of this report. The laboratories are presented by their code numbers.

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

3.1 STATISTICS

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

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

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

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

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

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

3.2 GRAPHICS

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

Outliers and other data, which were excluded from the calculations, are represented as a cross. Accepted data are represented as a triangle.

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

3.3 Z-SCORES

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

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

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

z(target) = (test result - average of PT) / target standard deviation

The z(target) scores are listed in the test result tables in appendix 1.

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

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

4 EVALUATION

Some problems were encountered with the dispatch of the samples due to COVID-19 pandemic. Therefore, the reporting time on the data entry portal was extended with another week. For the regular Gasoline PT fifteen participants reported test results after the extended reporting date and eleven other participants did not report any test results.
For the DVPE round eleven participants reported test results after the extended reporting date and thirteen other participants did not report any test results.

For the RON/MON round eight participants reported test results after the extended reporting date and eight other participants did not report any test results.
Not all participants were able to report all tests requested.
In total 143 participants reported 2379 numerical test results. Observed were 79 outlying test results, which is 3.3%. In proficiency tests outlier percentages of 3% - 7.5% are quite normal.

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

4.1 EVALUATION PER SAMPLE AND PER TEST

In this section the reported test results are discussed per sample and per test. The test methods which were used by the various laboratories were taken into account for explaining the observed differences when possible and applicable. These test methods are also in the tables together with the original data. The abbreviations, used in these tables, are explained in appendix 5.

In the iis PT reports the ASTM test methods are referred to with a number (e.g. D1298) and an added designation for the year that the test method was adopted or revised (e.g. D1298:12b). If applicable, a designation in parentheses is added to designate the year of reapproval (e.g. D1298:12b(2017)). In the test results tables of appendix 1 only the method number and year of adoption or revision will be used.

sample #21185

API Gravity: This determination may be problematic for a number of laboratories. Five statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D1298:12b(2017).

Appearance: This determination was not problematic. Allmost all reporting participants agreed on the appearance as Pass or Clear and Bright.

Aromatics by FIA: This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of EN15553:07.

Aromatics by GC: The determination in %V/V was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ISO22854-A:21.
The determination in %M/M may not be problematic. Regretfully for the determination in %M/M no precision data is available. Therefore, no z-scores are calculated. One statistical outlier was observed in the test results reported in %M/M. The calculated reproducibility after rejection of the statistical outlier is lower than in the previous PT iis20B06EN.

Benzene: This determination was problematic depending on the test method used. Five statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ISO22854-A:21, but is in agreement with the requirements of EN12177:00.
When the test results from the method ISO22854 are evaluated separately the calculated reproducibility is still not in agreement with the respective requirements of ISO22854-A:21.

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

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

Distillation: This determination was not problematic for six of the eight reported distillation parameters. In total twenty-six statistical outliers were observed and one other test result was excluded. Most calculated reproducibilities after rejection of the suspect data are in agreement with the requirements of ISO3405:19 automatic mode, except for IBP and % evaporated at 100°C. For the manual mode all parameters with known requirements are in agreement with ISO3405:19.

Doctor Test: This determination was not problematic. All reporting participants agreed on the absence of Mercaptans and reported sweet or negative.

Gum (solvent washed): This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ISO6246:17.

Lead: This determination was not problematic. Almost all reporting participants agreed on a level of <3 mg/L. Therefore, no z-scores are calculated.

Manganese: This determination was not problematic. All reporting participants agreed on a level of <2 mg/L. Therefore, no z-scores are calculated.

Olefins by FIA: This determination was problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not in agreement with the requirements of EN15553:07.

Olefins by GC: The determination in %V/V was not problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO22854-A:21. The determination in %M/M may not be problematic. Regretfully, no precision data is available for the determination in %M/M. Therefore, no z-scores are calculated. Two statistical outliers were observed in the test

results reported in %M/M. The calculated reproducibility is lower than observed in previous PT iis20B06EN.

Oxidation Stability: This determination was not problematic. All reporting participants agreed on an Oxidation Stability >360 minutes. Therefore, no z-scores are calculated.

Ethanol: This determination was problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not in agreement with the requirements of ISO22854-A:21.

Ethers (C5 or more): This determination was not problematic. Four statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO22854-A:21.

MTBE: This determination was problematic. Seven statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not at all in agreement with the requirements of ISO22854-A:21.

Oxygen content: This determination was problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ISO22854-A:21.

Sulfur: This determination was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in full agreement with the requirements of ISO20846:19 and also in agreement with the requirements of ASTM D5453:19a.

All other Oxygenates are near or below the detection limit and therefore not further evaluated. The reported test results are given in appendix 2.

sample #21186

ASVP: This determination was problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not in agreement with the requirements of EN13016-1:18.
Sixteen participants reported to have used ASTM method D5191 in which the ASVP is not defined. Therefore, in appendix 1 also the evaluation without ASTM D5191 is given. But still the calculated reproducibility is not in agreement with the requirements of EN13016-1:18.

DVPE: The Air Saturated Vapour Pressure (ASVP) can be converted to Dry Vapour Pressure Equivalent (DVPE) according to EN13016-1. This conversion was problematic. Four statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of EN13016-1:18.
No calculation differences are observed.

sample #21187

RON: This determination was problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ISO5164:14.

MON: This determination may be problematic for a number of laboratories. Six statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO5163:14.

4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES

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

Parameter	unit	n	average	2.8 * sd	R(lit)
API Gravity		55	62.0	0.2	0.3
Appearance		95	Pass	n.a.	n.a.
Aromatics by FIA	%V/V	54	25.3	3.3	3.7
Aromatics by GC	%V/V	63	24.3	1.1	1.2
Aromatics by GC	%M/M	42	29.1	1.1	n.a.
Benzene	%V/V	92	0.43	0.05	0.03
Copper Corrosion 3 hrs at 50°C		98	1(1a/1b)	n.a.	n.a.
Density at 15°C	kg/m^3	129	731.0	0.9	1.5
Initial Boiling Point	°C	120	27.1	5.2	4.7
Temp. at 10% evaporated	°C	121	41.5	3.5	4.0
Temp. at 50% evaporated	°C	120	88.1	4.4	4.1
Temp. at 90% evaporated	°C	112	141.6	3.2	5.5
Final Boiling Point	°C	123	171.5	4.4	7.1
%volume at 70°C	%V/V	117	41.0	2.7	2.7
%volume at 100°C	%V/V	116	57.7	2.7	2.2
%volume at 150°C	%V/V	105	94.3	1.4	1.3
Doctor Test		53	negative	n.a.	n.a.
Gum (solvent washed)	mg/100mL	57	0.6	1.1	2.2
Lead as Pb	mg/L	52	<3	n.e.	n.e.
Manganese as Mn	mg/L	44	<2	n.e.	n.e.
Olefins by FIA	%V/V	55	6.1	3.9	2.4
Olefins by GC	%V/V	58	6.5	0.7	1.3
Olefins by GC	%M/M	40	6.0	0.7	n.a.
Oxidation Stability	minutes	57	>360	n.a.	n.a.
Ethanol	%V/V	83	4.60	0.64	0.34

Parameter	unit	n	average	2.8 * sd	R(lit)
Ethers (C5 or more C atoms)	%V/V	49	4.14	0.33	0.46
MTBE	%V/V	76	4.13	0.39	0.19
Oxygen content	%M/M	75	2.49	0.25	0.18
Sulfur	mg/kg	121	9.0	2.3	2.5

Table 6: reproducibilities of tests on sample #21185

Parameter	unit	n	average	2.8 * sd	R(lit)
ASVP	kPa	68	91.0	2.3	1.6
DVPE acc. to EN13016-1	kPa	97	84.1	1.9	1.6

Table 7: reproducibilities of tests on sample #21186

Parameter	unit	n	average	2.8 * sd	R(lit)
RON		67	95.4	1.1	0.7
MON		51	85.8	0.8	0.9

Table 8: reproducibilities of tests on sample #21187

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

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

	October 2021	October 2020	October 2019	October 2018	October 2017
Number of reporting laboratories	143	140	161	143	148
Number of test results	2379	2447	2643	2587	2694
Number of statistical outliers	79	83	83	77	77
Percentage of statistical outliers	3.3%	3.4%	3.1%	3.0%	2.9%

Table 9: comparison with previous proficiency tests

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

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

Parameter	October 2021	October 2020	October 2019	October 2018	October 2017
API Gravity	+	+	+	+/-	+/-
Aromatics by FIA	+	-	-	-	+
Aromatics by GC	+/-	-	+	+/-	+/-
Benzene	-	-	-	+	+/-
Density at 15°C	+	+	+	+	++
Distillation	+/-	+/-	+/-	+/-	+/-
Gum (solvent washed)	++	+	+	+	++

Parameter	October 2021	October 2020	October 2019	October 2018	October 2017
Lead as Pb	n.e.	n.e.	n.e.	+	n.e.
Manganese as Mn	n.e.	n.e.	n.e.	-	n.e.
Olefins by FIA	-	+/-	+/-	-	+/-
Olefins by GC	+	+	+/-	+	+/-
Methanol	n.e.	n.e.	n.e.	n.e.	+
Ethanol	-	+/-	+/-	+/-	-
Ethers (C5 or more C atoms)	+	+	+	+	+
ETBE	n.e.	+	+	n.e.	n.e.
MTBE	--	+	+	+	+
Oxygen content	-	+	+	+	+
Sulfur	+/-	+/-	+/-	+/-	+/-
ASVP	-	-	-	+/-	+
DVPE acc. to EN13016-1	-	-	-	+/-	+
RON	-	-	+/-	-	-
MON	+/-	-	+/-	-	+/-

Table 10: comparison determinations against the reference test methods

The following performance categories were used:

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

APPENDIX 1

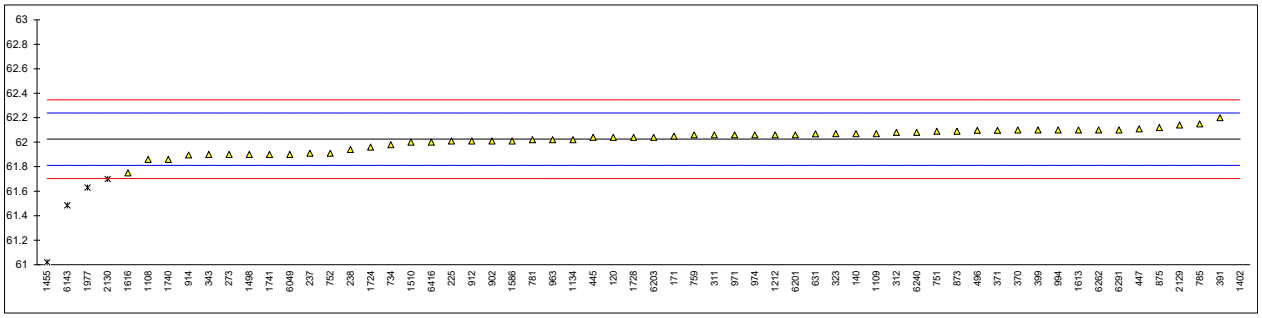
Determination of API Gravity on sample #21185;

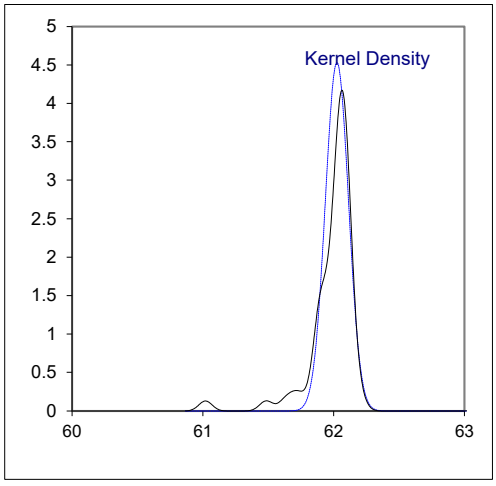
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D4052	62.04		0.14	1199		-----		-----
140	D4052	62.07		0.42	1205		-----		-----
171	D4052	62.05		0.23	1212	ISO12185	62.06		0.33
225	D4052	62.01		-0.14	1237		-----		-----
237	D4052	61.91		-1.07	1272		-----		-----
238	D4052	61.94		-0.79	1275		-----		-----
273	D4052	61.9		-1.17	1357		-----		-----
311	D1298	62.06		0.33	1397		-----		-----
312	ISO12185	62.08		0.51	1399		-----		-----
323	D1298	62.07		0.42	1402	D4052	63.16	R(0.01)	10.59
328		-----		-----	1455	D4052	61.02	C,R(0.01)	-9.38
333		-----		-----	1459		-----		-----
334		-----		-----	1476		-----		-----
335		-----		-----	1488		-----		-----
337		-----		-----	1498	D4052	61.9		-1.17
338		-----		-----	1510	D1298	62		-0.23
343	D1298	61.9		-1.17	1538		-----		-----
344		-----		-----	1546		-----		-----
352		-----		-----	1554		-----		-----
365		-----		-----	1557		-----		-----
369		-----		-----	1569		-----		-----
370	ISO12185	62.1		0.70	1586	D4052	62.01		-0.14
371	D4052	62.097		0.67	1602		-----		-----
381		-----		-----	1613	D4052	62.1		0.70
391	D1298	62.2		1.63	1616	Calculated	61.75		-2.57
399	D1298	62.1		0.70	1631		-----		-----
403		-----		-----	1634		-----		-----
404		-----		-----	1650		-----		-----
420		-----		-----	1676		-----		-----
431		-----		-----	1710		-----		-----
440		-----		-----	1720		-----		-----
444		-----		-----	1724	D4052	61.96		-0.61
445	D4052	62.04		0.14	1728	D4052	62.04		0.14
447	D4052	62.11		0.79	1740	D1298	61.859		-1.55
467		-----		-----	1741	D1298	61.9	C	-1.17
480		-----		-----	1742		-----		-----
496	D4052	62.097		0.67	1746		-----		-----
631	D1298	62.069		0.41	1753		-----		-----
734	D4052	61.98		-0.42	1776		-----		-----
751	D4052	62.09		0.61	1811		-----		-----
752	D1250	61.91		-1.07	1833		-----		-----
759	D1298	62.06		0.33	1936		-----		-----
779		-----		-----	1937		-----		-----
781	D4052	62.02		-0.05	1938		-----		-----
782		-----		-----	1953		-----		-----
785	D1298	62.15		1.17	1977	D4052	61.63	C,R(0.05)	-3.69
798		-----		-----	1980		-----		-----
846		-----		-----	2129	D1298	62.14		1.07
873	D1298	62.09		0.61	2130		61.7	R(0.05)	-3.03
875	D1298	62.12		0.89	2146		-----		-----
902	D4052	62.01		-0.14	6012		-----		-----
912	D1298	62.01		-0.14	6018		-----		-----
913		-----		-----	6028		-----		-----
914	D4052	61.896		-1.20	6045		-----		-----
963	D4052	62.02		-0.05	6046		-----		-----
971	ISO12185	62.06		0.33	6049	D4052	61.9		-1.17
974		62.06		0.33	6054		-----		-----
994	D1250	62.1		0.70	6068		-----		-----
1006		-----		-----	6075		-----		-----
1011		-----		-----	6103		-----		-----
1033		-----		-----	6142		-----		-----
1059		-----		-----	6143	D4052	61.484	R(0.01)	-5.05
1080		-----		-----	6192		-----		-----
1082		-----		-----	6201	D4052	62.06		0.33
1095		-----		-----	6203	ISO12185	62.04		0.14
1097		-----		-----	6240	D4052	62.08		0.51
1108	ISO12185	61.859	C	-1.55	6249		-----		-----
1109	D4052	62.07		0.42	6258		-----		-----
1126		-----		-----	6262	D4052	62.10		0.70
1134	D1298	62.02	C	-0.05	6291	D1298	62.10		0.70
1155		-----		-----	6299		-----		-----
1191		-----		-----	6321		-----		-----
1194		-----		-----	6359		-----		-----

lab	method	value	mark	z(targ)
6404		-----		-----
6410		-----		-----
6416	D1298	62.0		-0.23

normality	OK
n	55
outliers	5
mean (n)	62.025
st.dev. (n)	0.0881
R(calc.)	0.247
st.dev.(D1298:12b)	0.1071
R(D1298:12b)	0.3

Lab 1108 first reported 61.632
Lab 1134 first reported 61.41
Lab 1455 first reported 61.67
Lab 1741 first reported 61.5
Lab 1977 first reported 61.23





Determination of Appearance on sample #21185;

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D4176	C & B		-----	1199		-----		-----
140		-----		-----	1205		-----		-----
171	Visual	C&B, free from solid matter		-----	1212	Visual	C&B		-----
225	Visual	Clear & Bright		-----	1237	Visual	clear, bright		-----
237	D4176	C&B		-----	1272		-----		-----
238	Visual	B & C		-----	1275	D4176	Clear & bright		-----
273		-----		-----	1357	Visual	Clear & Bright		-----
311		-----		-----	1397		-----		-----
312	Visual	br&cl		-----	1399		-----		-----
323	Visual	pass		-----	1402	D4176	Clear and Bright		-----
328	Visual	C&B		-----	1455	Visual	Slightly yellow		-----
333		-----		-----	1459		-----		-----
334	Visual	Clear and bright		-----	1476		-----		-----
335		-----		-----	1488	Visual	Clear & Bright		-----
337	Visual	Clear and bright		-----	1498	D4176	Clear & Bright		-----
338		-----		-----	1510		Clear & Bbright		-----
343	Visual	C&B		-----	1538	Visual	C&B		-----
344	D4176	Clear & Bright		-----	1546	Visual	clear and bright		-----
352	Visual	Clear and Bright		-----	1554		clear and bright		-----
365	D4176	Pass		-----	1557	In house	Clear and bright		-----
369	Visual	clear&bright		-----	1569	D4176	Clear and Bright		-----
370	D4176	clear and bright		-----	1586	Visual	Clear & Bright		-----
371	D4176	Pass		-----	1602	Visual	clear and transparent		-----
381	Visual	clear		-----	1613	Visual	B&C		-----
391	Visual	C&B		-----	1616	Visual	Clear		-----
399	Visual	Clear & Bright		-----	1631		-----		-----
403		-----		-----	1634	Visual	C&B		-----
404		-----		-----	1650		-----		-----
420	D4176	clear and bright		-----	1676		-----		-----
431		-----		-----	1710	Visual	Clear & bright		-----
440		-----		-----	1720		-----		-----
444	E2680	Pass		-----	1724	Visual	clear & bright		-----
445	Visual	C&B		-----	1728	Visual	CLEAR		-----
447	Visual	Clear & Bright		-----	1740		-----		-----
467		-----		-----	1741	Visual	clear and bright		-----
480		-----		-----	1742		-----		-----
496	Visual	clear&bright		-----	1746		-----		-----
631	Visual	clear & bright		-----	1753		-----		-----
734	Visual	Cl&Br		-----	1776		-----		-----
751	D4176	pass		-----	1811		-----		-----
752	D4176	Clear and bright		-----	1833		-----		-----
759	D4176	Pass		-----	1936	Visual	C&B		-----
779	Visual	clear and bright		-----	1937	Visual	C&B		-----
781	D4176	pass		-----	1938	Visual	C&B		-----
782		-----		-----	1953	D4176	C&B		-----
785		Clear		-----	1977		-----		-----
798		-----		-----	1980	Visual	bright transparent		-----
846		-----		-----	2129	Visual	C&B		-----
873	D4176	pass		-----	2130	Visual	C&B		-----
875		C&B		-----	2146		-----		-----
902	D4176	PASS		-----	6012	Visual	clear & bright		-----
912	Visual	Clear and Bright		-----	6018	Visual	Clear&Bright		-----
913		-----		-----	6028	D4176	C&B		-----
914	Visual	Clear & Bright		-----	6045	Visual	Clear and bright		-----
963	Visual	Clear & Bright		-----	6046	Visual	clear & bright		-----
971	Visual	Clear		-----	6049	Visual	Clear & Bright		-----
974	Visual	Clear and Bright		-----	6054		-----		-----
994	D4176	c&b		-----	6068	Visual	clear and bright		-----
1006		-----		-----	6075	Visual	Clear & Bright		-----
1011		-----		-----	6103		-----		-----
1033		-----		-----	6142	Visual	Clear & Bright		-----
1059	Visual	Clear & Bright		-----	6143		-----		-----
1080		-----		-----	6192		B/C		-----
1082		-----		-----	6201	Visual	Br & Cl		-----
1095		-----		-----	6203	Visual	Clear end Brightt		-----
1097	Visual	Limpide		-----	6240	Visual	C&B		-----
1108	Visual	bright/clear		-----	6249		-----		-----
1109	D4176	Pass		-----	6258	Visual	Clear and Bright		-----
1126		-----		-----	6262	Visual	Cl. & Br.		-----
1134	D4176	Clear & Bright		-----	6291	D4176	Bright & Clear		-----
1155		-----		-----	6299	Visual	Clear and Bright		-----
1191		-----		-----	6321		-----		-----
1194		-----		-----	6359		-----		-----

lab	method	value	mark	z(targ)
6404		-----		-----
6410		-----		-----
6416	D4176	Pass		-----
	n	95		
	mean (n)	Pass (Clear & Bright)		

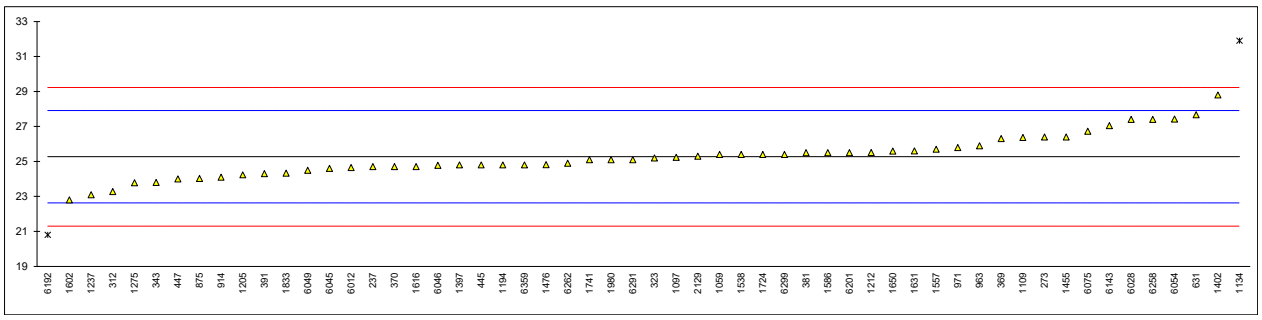
Determination of Aromatics by FIA (without oxygenates correction) on sample #21185; results in %V/V

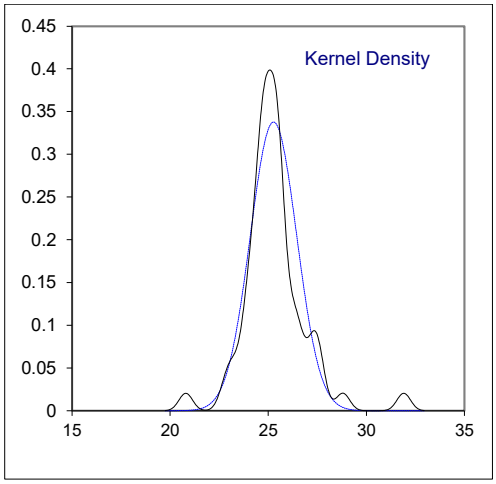
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1199		-----		-----
140		-----		-----	1205	D1319	24.234		-0.78
171		-----		-----	1212	EN15553	25.51		0.18
225		-----		-----	1237	EN15553	23.1		-1.64
237	D1319	24.7		-0.43	1272		-----		-----
238		-----		-----	1275	IP156	23.78		-1.13
273	D1319	26.4	C	0.86	1357		-----		-----
311		-----		-----	1397	EN15553	24.8		-0.35
312	EN15553	23.28		-1.50	1399		-----		-----
323	EN15553	25.2		-0.05	1402	D1319	28.8		2.67
328		-----		-----	1455	D1319	26.4	C	0.86
333		-----		-----	1459		-----		-----
334		-----		-----	1476	EN15553	24.8165		-0.34
335		-----		-----	1488		-----		-----
337		-----		-----	1498		-----		-----
338		-----		-----	1510		-----		-----
343	D1319	23.8		-1.11	1538	EN15553	25.4		0.10
344		-----		-----	1546		-----		-----
352		-----		-----	1554		-----		-----
365		-----		-----	1557	In house	25.7		0.33
369	EN15553	26.31		0.79	1569		-----		-----
370	D1319	24.7		-0.43	1586	D1319	25.5		0.18
371		-----		-----	1602	EN15553	22.8		-1.87
381	EN15553	25.5		0.18	1613		-----		-----
391	EN15553	24.3		-0.73	1616	D1319	24.7		-0.43
399		-----		-----	1631	EN15553	25.6		0.25
403		-----		-----	1634		-----		-----
404		-----		-----	1650	EN15553	25.59		0.24
420		-----		-----	1676		-----		-----
431		-----		-----	1710		-----		-----
440		-----		-----	1720		-----		-----
444		-----		-----	1724	D1319	25.4		0.10
445	D1319	24.8		-0.35	1728		-----		-----
447	D1319	24.0		-0.96	1740		-----		-----
467		-----		-----	1741	EN15553	25.10		-0.13
480		-----		-----	1742		-----		-----
496		-----		-----	1746		-----		-----
631	D1319	27.67		1.82	1753		-----		-----
734		-----		-----	1776		-----		-----
751		-----		-----	1811		-----		-----
752		-----		-----	1833	D1319	24.33		-0.71
759		-----		-----	1936		-----		-----
779		-----		-----	1937		-----		-----
781		-----		-----	1938		-----		-----
782		-----		-----	1953		-----		-----
785		-----		-----	1977		-----		-----
798		-----		-----	1980	EN15553	25.1	C	-0.13
846		-----		-----	2129	D1319	25.30		0.02
873		-----		-----	2130		-----		-----
875	EN15553	24.03		-0.94	2146		-----		-----
902		-----		-----	6012	D1319	24.65		-0.47
912		-----		-----	6018		-----		-----
913		-----		-----	6028	D1319	27.4		1.61
914	D1319	24.1		-0.88	6045	D1319	24.6		-0.51
963	D1319	25.9		0.48	6046	D1319	24.78		-0.37
971	D1319	25.8		0.40	6049	EN15553	24.5		-0.58
974		-----		-----	6054	D1319	27.43		1.64
994		-----		-----	6068		-----		-----
1006		-----		-----	6075	EN15553	26.73		1.11
1011		-----		-----	6103		-----		-----
1033		-----		-----	6142		-----		-----
1059	EN15553	25.4		0.10	6143	D1319	27.05		1.35
1080		-----		-----	6192	EN15553	20.8	R(0.05)	-3.38
1082		-----		-----	6201	D1319	25.5		0.18
1095		-----		-----	6203		-----		-----
1097	D1319	25.24		-0.02	6240		-----		-----
1108		-----		-----	6249		-----		-----
1109	D1319	26.37		0.83	6258	D1319	27.4		1.61
1126		-----		-----	6262	D1319	24.9		-0.28
1134	D1319	31.9	R(0.01)	5.02	6291	D1319	25.1		-0.13
1155		-----		-----	6299	EN15553	25.4		0.10
1191		-----		-----	6321		-----		-----
1194	EN15553	24.8		-0.35	6359	EN15553	24.8		-0.35

lab	method	value	mark	z(targ)
6404		-----		-----
6410		-----		-----
6416		-----		-----

normality	OK
n	54
outliers	2
mean (n)	25.269
st.dev. (n)	1.1816
R(calc.)	3.308
st.dev.(EN15553:07)	1.3214
R(EN15553:07)	3.7

Lab 273 first reported 29.0
Lab 1455 first reported 38.8
Lab 1980 first reported 30.0





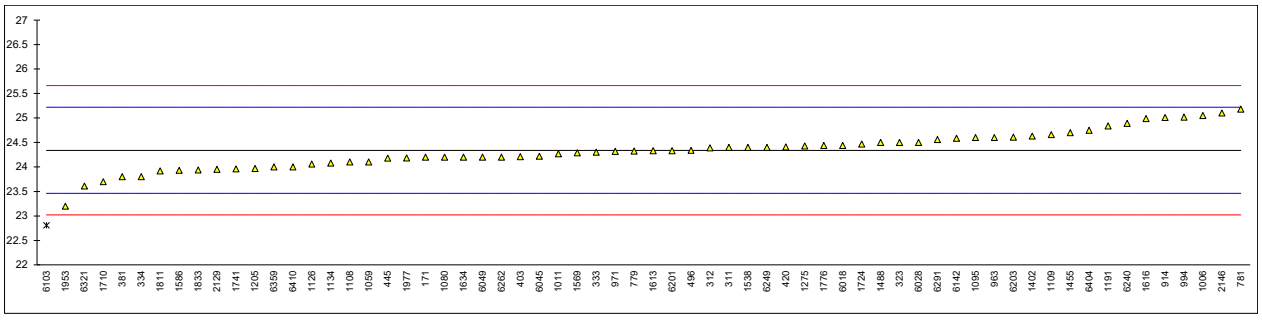
Determination of Aromatics by GC on sample #21185; results in %V/V

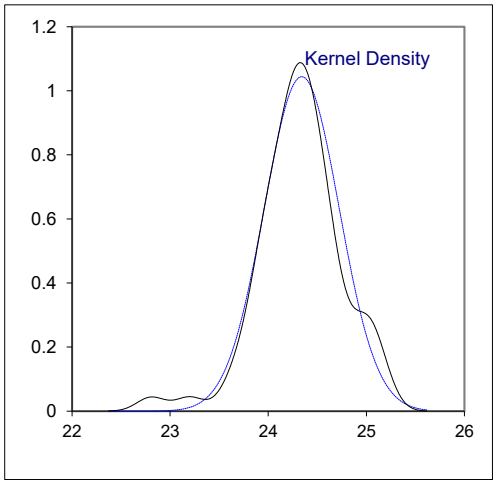
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1199		-----		-----
140		-----		-----	1205	D5769	23.968		-0.85
171	ISO22854-A	24.2		-0.32	1212		-----		-----
225		-----		-----	1237		-----		-----
237		-----		-----	1272		-----		-----
238		-----		-----	1275	ISO22854-A	24.43		0.20
273		-----		-----	1357		-----		-----
311	ISO22854-A	24.4		0.13	1397		-----		-----
312	ISO22854-A	24.39		0.11	1399		-----		-----
323	ISO22854-A	24.5		0.36	1402	ISO22854-A	24.63		0.66
328		-----		-----	1455	ISO22854-A	24.7		0.82
333	ISO22854-A	24.3		-0.09	1459		-----		-----
334	ISO22854-A	23.80		-1.23	1476		-----		-----
335		-----		-----	1488	EN12177	24.50	C	0.36
337		-----		-----	1498		-----		-----
338		-----		-----	1510		-----		-----
343		-----		-----	1538	ISO22854-A	24.4		0.13
344		-----		-----	1546		-----		-----
352		-----		-----	1554		-----		-----
365		-----		-----	1557		-----		-----
369		-----		-----	1569	D6839	24.29		-0.12
370		-----		-----	1586	ISO22854-A	23.93		-0.93
371		-----		-----	1602		-----		-----
381	ISO22854-A	23.8		-1.23	1613	D6839	24.33	C	-0.02
391		-----		-----	1616	D6839	24.99		1.47
399		-----		-----	1631		-----		-----
403	ISO22854-A	24.21		-0.30	1634	ISO22854-A	24.20		-0.32
404		-----		-----	1650		-----		-----
420	ISO22854-A	24.41		0.16	1676		-----		-----
431		-----		-----	1710	ISO22854-A	23.7		-1.45
440		-----		-----	1720		-----		-----
444		-----		-----	1724	ISO22854-A	24.47		0.29
445	ISO22854-A	24.18		-0.36	1728		-----		-----
447		-----		-----	1740		-----		-----
467		-----		-----	1741	ISO22854-A	23.96		-0.86
480		-----		-----	1742		-----		-----
496	ISO22854-A	24.34		0.00	1746		-----		-----
631		-----		-----	1753		-----		-----
734		-----		-----	1776	ISO22854-A	24.44		0.23
751		-----		-----	1811	ISO22854-A	23.92		-0.96
752		-----		-----	1833	ISO22854-A	23.94		-0.91
759		-----		-----	1936		-----		-----
779	D6729	24.324		-0.04	1937		-----		-----
781	D6729	25.180		1.90	1938		-----		-----
782		-----		-----	1953	In house	23.2		-2.59
785		-----		-----	1977	D6730	24.1839		-0.36
798		-----		-----	1980		-----		-----
846		-----		-----	2129	D6730	23.95		-0.89
873		-----		-----	2130		-----		-----
875		-----		-----	2146	ISO22854-A	25.1		1.72
902		-----		-----	6012		-----		-----
912		-----		-----	6018	ISO22854-A	24.44		0.23
913		-----		-----	6028	ISO22854-A	24.5		0.36
914	D5580	25.01		1.52	6045	D5580	24.22		-0.27
963	D6839	24.6		0.59	6046		-----		-----
971	D5580	24.32		-0.05	6049	ISO22854-A	24.2		-0.32
974		-----		-----	6054		-----		-----
994	D6729	25.019		1.54	6068		-----		-----
1006	D6730	25.05		1.61	6075		-----		-----
1011	ISO22854-A	24.27		-0.16	6103	D6730	22.807	R(0.05)	-3.48
1033		-----		-----	6142	ISO22854-A	24.585		0.55
1059	ISO22854-A	24.1		-0.55	6143		-----		-----
1080	ISO22854-A	24.20		-0.32	6192		-----		-----
1082		-----		-----	6201	ISO22854-A	24.33		-0.02
1095	ISO22854-A	24.6		0.59	6203	ISO22854-A	24.61		0.61
1097		-----		-----	6240	ISO22854-A	24.89		1.25
1108	ISO22854-A	24.10		-0.55	6249	ISO22854-A	24.40		0.13
1109	D6839	24.66		0.72	6258		-----		-----
1126	ISO22854-A	24.06		-0.64	6262	D5580	24.20		-0.32
1134	ISO22854-A	24.08		-0.59	6291	ISO22854-A	24.56		0.50
1155		-----		-----	6299		-----		-----
1191	ISO22854-A	24.84		1.13	6321	ISO22854-A	23.61		-1.66
1194		-----		-----	6359	ISO22854-A	24.0		-0.77

lab	method	value	mark	z(targ)
6404	ISO22854-A	24.75		0.93
6410	ISO22854-A	24.0		-0.77
6416		-----		-----

normality	OK
n	63
outliers	1
mean (n)	24.341
st.dev. (n)	0.3822
R(calc.)	1.070
st.dev.(ISO22854-A:21)	0.4406
R(ISO22854-A:21)	1.234

Lab 1488 first reported 15.7
Lab 1613 first reported 50.51





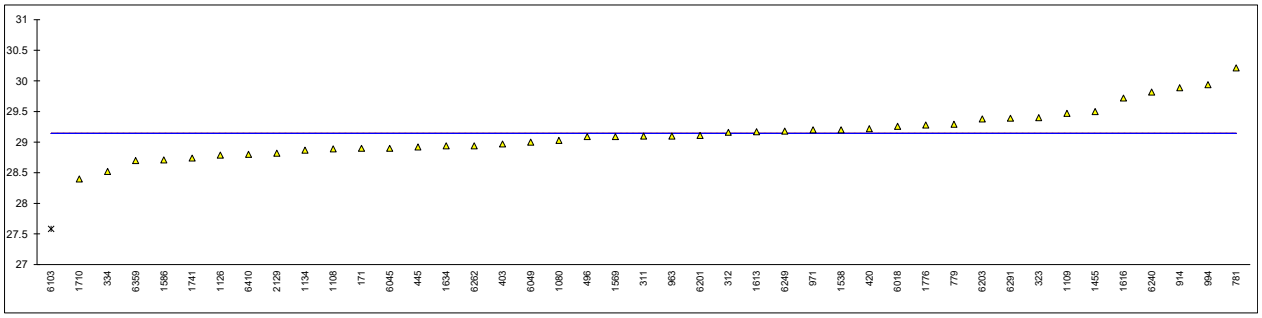
Determination of Aromatics by GC on sample #21185; results in %M/M

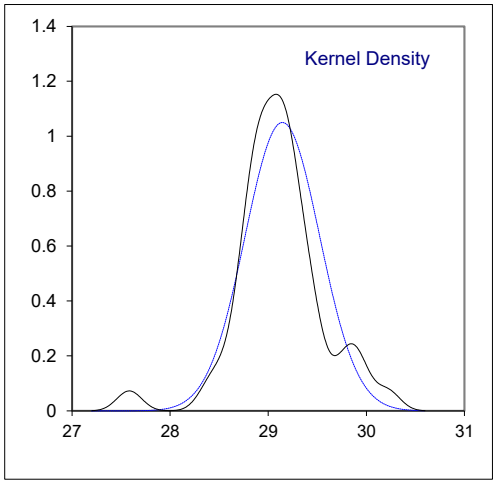
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1199		-----		-----
140		-----		-----	1205		-----		-----
171	ISO22854-A	28.9		-----	1212		-----		-----
225		-----		-----	1237		-----		-----
237		-----		-----	1272		-----		-----
238		-----		-----	1275		-----		-----
273		-----		-----	1357		-----		-----
311	ISO22854-A	29.1		-----	1397		-----		-----
312	ISO22854-A	29.16		-----	1399		-----		-----
323	ISO22854-A	29.4		-----	1402		-----		-----
328		-----		-----	1455	ISO22854-A	29.5		-----
333		-----		-----	1459		-----		-----
334	ISO22854-A	28.52		-----	1476		-----		-----
335		-----		-----	1488		-----		-----
337		-----		-----	1498		-----		-----
338		-----		-----	1510		-----		-----
343		-----		-----	1538	ISO22854-A	29.2		-----
344		-----		-----	1546		-----		-----
352		-----		-----	1554		-----		-----
365		-----		-----	1557		-----		-----
369		-----		-----	1569	D6839	29.09		-----
370		-----		-----	1586	ISO22854-A	28.71		-----
371		-----		-----	1602		-----		-----
381		-----		-----	1613	D6839	29.17	C	-----
391		-----		-----	1616	D6839	29.72		-----
399		-----		-----	1631		-----		-----
403	ISO22854-A	28.97		-----	1634	ISO22854-A	28.94		-----
404		-----		-----	1650		-----		-----
420	ISO22854-A	29.22		-----	1676		-----		-----
431		-----		-----	1710	ISO22854-A	28.4		-----
440		-----		-----	1720		-----		-----
444		-----		-----	1724		-----		-----
445	ISO22854-A	28.92		-----	1728		-----		-----
447		-----		-----	1740		-----		-----
467		-----		-----	1741	ISO22854-A	28.74		-----
480		-----		-----	1742		-----		-----
496	ISO22854-A	29.09		-----	1746		-----		-----
631		-----		-----	1753		-----		-----
734		-----		-----	1776	ISO22854-A	29.28		-----
751		-----		-----	1811		-----		-----
752		-----		-----	1833		-----		-----
759		-----		-----	1936		-----		-----
779	D6729	29.293		-----	1937		-----		-----
781	D6729	30.215		-----	1938		-----		-----
782		-----		-----	1953		-----		-----
785		-----		-----	1977		-----		-----
798		-----		-----	1980		-----		-----
846		-----		-----	2129	D6730	28.82		-----
873		-----		-----	2130		-----		-----
875		-----		-----	2146		-----		-----
902		-----		-----	6012		-----		-----
912		-----		-----	6018	ISO22854-A	29.26		-----
913		-----		-----	6028		-----		-----
914	D5580	29.89		-----	6045	D5580	28.90		-----
963	D6839	29.1		-----	6046		-----		-----
971	D5580	29.20		-----	6049	ISO22854-A	29.0		-----
974		-----		-----	6054		-----		-----
994	D6729	29.939		-----	6068		-----		-----
1006		-----		-----	6075		-----		-----
1011		-----		-----	6103	D6730	27.583	R(0.01)	-----
1033		-----		-----	6142		-----		-----
1059		-----		-----	6143		-----		-----
1080	ISO22854-A	29.03		-----	6192		-----		-----
1082		-----		-----	6201	ISO22854-A	29.11		-----
1095		-----		-----	6203	ISO22854-A	29.38		-----
1097		-----		-----	6240	ISO22854-A	29.82		-----
1108	ISO22854-A	28.89		-----	6249	ISO22854-A	29.18		-----
1109	D6839	29.47		-----	6258		-----		-----
1126	ISO22854-A	28.79		-----	6262	D5580	28.94		-----
1134	ISO22854-A	28.87		-----	6291	ISO22854-A	29.39		-----
1155		-----		-----	6299		-----		-----
1191		-----		-----	6321		-----		-----
1194		-----		-----	6359	ISO22854-A	28.7		-----

lab	method	value	mark	z(targ)
6404		-----		-----
6410	ISO22854-A	28.8		-----
6416		-----		-----

	normality	OK
	n	42
	outliers	1
	mean (n)	29.143
	st.dev. (n)	0.3798
	R(calc.)	1.063
	st.dev.(lit)	unknown
	R(lit)	unknown
Compare		
	R(iis20B06EN)	1.549

Lab 1613 first reported 45.12





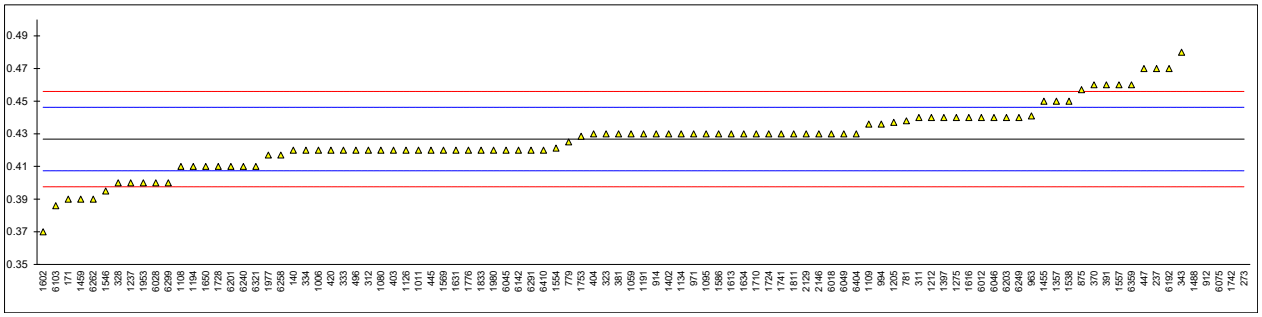
Determination of Benzene on sample #21185; results in %V/V

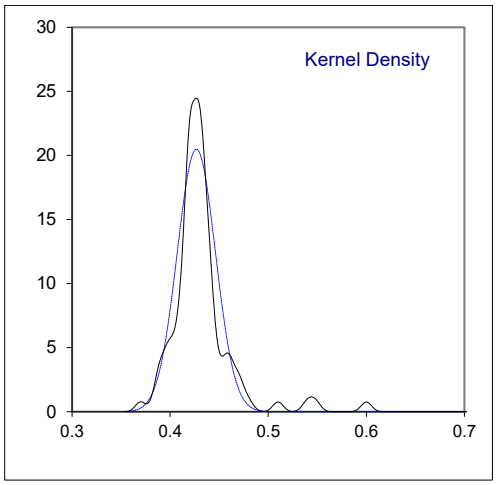
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1199		-----		-----
140	D3606	0.42		-0.70	1205	D3606	0.437		1.05
171	ISO22854-A	0.39		-3.78	1212	EN238	0.44		1.36
225		-----		-----	1237	EN238	0.40		-2.75
237	D5580	0.47		4.43	1272		-----		-----
238		-----		-----	1275	ISO22854-A	0.44		1.36
273	D6277	0.76	C,R(0.01)	34.20	1357	D6839	0.45		2.38
311	ISO22854-A	0.44		1.36	1397	EN238	0.44		1.36
312	ISO22854-A	0.42		-0.70	1399		-----		-----
323	ISO22854-A	0.43		0.33	1402	ISO22854-A	0.43		0.33
328	EN238	0.4		-2.75	1455	ISO22854-A	0.45		2.38
333	ISO22854-A	0.42		-0.70	1459	In house	0.39		-3.78
334	ISO22854-A	0.42		-0.70	1476		-----	W	-----
335		-----		-----	1488	EN12177	0.51	C,R(0.01)	8.54
337		-----		-----	1498		-----		-----
338		-----		-----	1510		-----		-----
343	EN238	0.48	C	5.46	1538	EN238	0.45		2.38
344		-----		-----	1546	EN238	0.395		-3.26
352		-----		-----	1554	EN12177	0.4212		-0.57
365		-----		-----	1557	EN238	0.46	C	3.41
369		-----		-----	1569	D6839	0.42		-0.70
370	EN238	0.46		3.41	1586	ISO22854-A	0.43		0.33
371		-----		-----	1602	EN12177	0.37	C	-5.83
381	ISO22854-A	0.43		0.33	1613	D6839	0.43		0.33
391	EN12177	0.46		3.41	1616	D6839	0.44		1.36
399		-----		-----	1631	EN12177	0.42		-0.70
403	ISO22854-A	0.42		-0.70	1634	ISO22854-A	0.43		0.33
404	EN238	0.43		0.33	1650	EN238	0.41		-1.72
420	ISO22854-A	0.42		-0.70	1676		-----		-----
431		-----		-----	1710	ISO22854-A	0.43		0.33
440		-----		-----	1720		-----		-----
444		-----		-----	1724	ISO22854-A	0.43		0.33
445	ISO22854-A	0.42		-0.70	1728	EN238	0.41		-1.72
447	IP429	0.47		4.43	1740		-----		-----
467		-----		-----	1741	EN12177	0.43		0.33
480		-----		-----	1742	EN238	0.6	C,R(0.01)	17.78
496	ISO22854-A	0.42		-0.70	1746		-----		-----
631		-----		-----	1753	EN12177	0.4286		0.19
734		-----		-----	1776	ISO22854-A	0.42		-0.70
751		-----		-----	1811	ISO22854-A	0.43		0.33
752		-----		-----	1833	ISO22854-A	0.42		-0.70
759		-----		-----	1936		-----		-----
779	D6729	0.425		-0.18	1937		-----		-----
781	D6729	0.438		1.15	1938		-----		-----
782		-----		-----	1953	In house	0.4		-2.75
785		-----		-----	1977	D6730	0.417		-1.00
798		-----		-----	1980	EN238	0.42	C	-0.70
846		-----		-----	2129	D6730	0.43		0.33
873		-----		-----	2130		-----		-----
875	EN12177	0.457		3.10	2146	ISO22854-A	0.43		0.33
902		-----		-----	6012	D6277	0.44		1.36
912	D5580	0.54	C,R(0.01)	11.62	6018	ISO22854-A	0.43		0.33
913		-----		-----	6028	EN238	0.40		-2.75
914	D5580	0.43		0.33	6045	D3606	0.42		-0.70
963	D6839	0.441		1.46	6046	D6277	0.44		1.36
971	D5580A	0.43		0.33	6049	ISO22854-A	0.43		0.33
974		-----		-----	6054		-----		-----
994		0.436		0.95	6068		-----		-----
1006	D5580	0.42		-0.70	6075	EN238	0.548	C,R(0.01)	12.44
1011	ISO22854-A	0.42		-0.70	6103	D6730	0.3860		-4.19
1033		-----		-----	6142	ISO22854-A	0.42		-0.70
1059	ISO22854-A	0.43		0.33	6143		-----		-----
1080	ISO22854-A	0.42		-0.70	6192	ISO22854	0.47		4.43
1082		-----		-----	6201	D3606	0.41		-1.72
1095	ISO22854-A	0.43		0.33	6203	ISO22854-A	0.44		1.36
1097		-----		-----	6240	ISO22854-A	0.41		-1.72
1108	EN238	0.41		-1.72	6249	ISO22854-A	0.44		1.36
1109	D3606	0.436		0.95	6258	EN12177	0.417		-1.00
1126	ISO22854-A	0.42		-0.70	6262	D3606	0.39		-3.78
1134	ISO22854-A	0.43		0.33	6291	ISO22854-A	0.42		-0.70
1155		-----		-----	6299	EN238	0.40		-2.75
1191	ISO22854-A	0.43		0.33	6321	ISO22854-A	0.41		-1.72
1194	EN12177	0.41		-1.72	6359	EN238	0.46		3.41

lab	method	value	mark	z(targ)
6404	ISO22854-A	0.43		0.33
6410	ISO22854-A	0.42		-0.70
6416		-----		-----

			Only ISO22854:
	normality	OK	not OK
	n	92	40
	outliers	5	0
	mean (n)	0.4268	0.4268
	st.dev. (n)	0.01947	0.01228
	R(calc.)	0.0545	0.0344
	st.dev.(ISO22854-A:21)	0.00974	0.00974
	R(ISO22854-A:21)	0.0273	0.0273
Compare			
	R(EN12177:00)	0.10	-----

Lab 273 first reported 0.56
Lab 343 first reported 0.68
Lab 912 first reported 0.48
Lab 1476 test result withdrawn, reported 0.37
Lab 1488 first reported 0.37
Lab 1557 first reported 0.76
Lab 1602 first reported <0.05
Lab 1742 first reported 0.5
Lab 1980 first reported 0.484
Lab 6075 first reported 0.348





Determination of Copper Corrosion 3 hrs at 50°C on sample #21185;

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D130	1A		-----	1199		-----		-----
140	D130	1a		-----	1205		-----		-----
171	D130	1a		-----	1212	D130	1A		-----
225	D130	1a		-----	1237	ISO2160	1a		-----
237	D130	1A		-----	1272		-----		-----
238	D130	1A		-----	1275	IP154	1a		-----
273	D130	1a		-----	1357	D130	1a		-----
311	D130	1A		-----	1397	ISO2160	1		-----
312	ISO2160	1a		-----	1399		-----		-----
323	D130	1A		-----	1402	IP154	1A		-----
328	D130	1		-----	1455	D130	1A		-----
333		-----		-----	1459		-----		-----
334	ISO2160	1a		-----	1476	ISO2160	1a		-----
335	D130	1a		-----	1488	ISO2160	1A		-----
337		-----		-----	1498		-----		-----
338		-----		-----	1510		1A		-----
343	D130	1a		-----	1538	ISO2160	1A		-----
344	D130	1a		-----	1546	ISO2160	1		-----
352	ISO2160	1a		-----	1554	ISO2160	1 a		-----
365	D130	1a		-----	1557	ISO2160	1A		-----
369	ISO2160	1A		-----	1569	ISO2160	1a		-----
370	ISO2160	1A		-----	1586	D130	1 A		-----
371	ISO2160	1a		-----	1602	ISO2160	1a		-----
381		-----		-----	1613	D130	1a		-----
391		-----		-----	1616	D130	1a		-----
399		-----		-----	1631		-----		-----
403		-----		-----	1634	D130	1a		-----
404	ISO2160	clasa 1		-----	1650	ISO2160	1a		-----
420	ISO2160	class 1a		-----	1676		-----		-----
431		-----		-----	1710	ISO2160	1A		-----
440		-----		-----	1720		-----		-----
444		-----		-----	1724	D130	1a		-----
445	IP154	1a		-----	1728	D130	1a		-----
447	D130	1A		-----	1740	ISO2160	1A		-----
467		-----		-----	1741	ISO2160	Class 1a		-----
480		-----		-----	1742		-----		-----
496	ISO2160	1a		-----	1746		-----		-----
631	D130	1a		-----	1753		-----		-----
734		-----		-----	1776		-----		-----
751	ISO2160	1a		-----	1811		-----		-----
752		-----		-----	1833		-----		-----
759		-----		-----	1936		-----		-----
779	D130	1a		-----	1937		-----		-----
781	D130	1a		-----	1938		-----		-----
782		-----		-----	1953	ISO2160	class 1 A		-----
785	ISO2160	1a		-----	1977		-----		-----
798		-----		-----	1980	ISO2160	1a		-----
846		-----		-----	2129	IP154	1A		-----
873	D130	1a		-----	2130	IP154	1a		-----
875	D130	1a		-----	2146		-----		-----
902	D130	1A		-----	6012	D130	1A		-----
912	D130	1A		-----	6018	ISO2160	1a		-----
913		-----		-----	6028	ISO2160	1a		-----
914	D130	1a		-----	6045	D130	1a		-----
963	D130	1a		-----	6046	ISO2160	1 a		-----
971	ISO2160	1a		-----	6049	D130	1A		-----
974	D130	1a		-----	6054	D130	1a		-----
994	D130	1a		-----	6068		-----		-----
1006	D130	1a		-----	6075	ISO2160	1a		-----
1011	ISO2160	1a		-----	6103	D130	1a		-----
1033		-----		-----	6142		-----		-----
1059	ISO2160	1a		-----	6143		-----		-----
1080		-----		-----	6192		-----		-----
1082		-----		-----	6201	D130	1a		-----
1095	ISO2160	1a		-----	6203	ISO2160	1 b		-----
1097	ISO2160	1a		-----	6240	D130	1a		-----
1108	ISO2160	1		-----	6249		-----		-----
1109	D130	1a		-----	6258	D130	1a		-----
1126		-----		-----	6262	D130	1A		-----
1134	D130	1a		-----	6291	ISO2160	1A		-----
1155	ISO2160	1a		-----	6299	ISO2160	1a		-----
1191		-----		-----	6321	IP154	1A		-----
1194		-----		-----	6359	D130	1		-----

lab	method	value	mark	z(targ)
6404		-----		-----
6410	D130	1a		-----
6416	D130	1		-----
	n	98		
	mean (n)	1 (1a / 1b)		

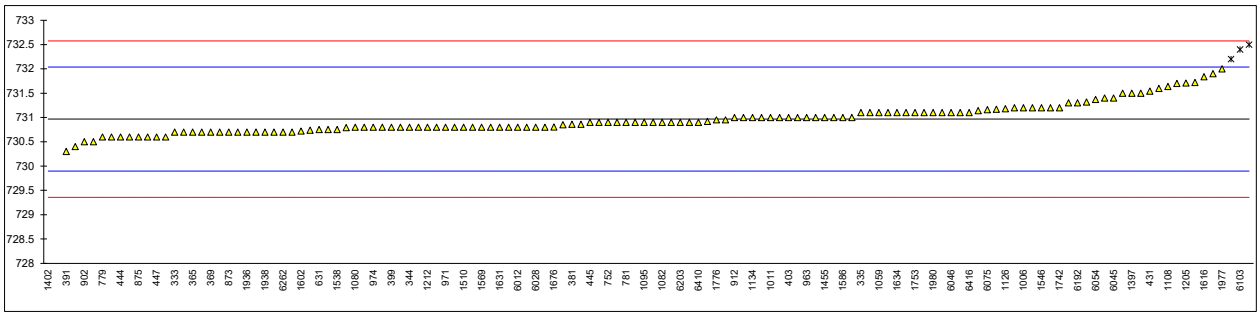
Determination of Density at 15°C on sample #21185; results in kg/m^3

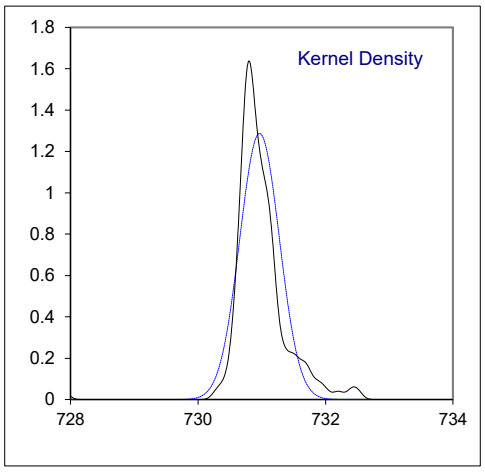
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D4052	730.92	C	-0.09	1199		-----		-----
140	D4052	730.8		-0.31	1205	ISO12185	731.71		1.39
171		-----		-----	1212	ISO12185	730.8		-0.31
225	D4052	731.0		0.06	1237	ISO12185	730.7		-0.50
237	D4052	730.9		-0.12	1272		-----		-----
238	D4052	731.3		0.62	1275	IP365	731.0		0.06
273	D4052	731.7	C	1.37	1357	D4052	731.2		0.44
311	ISO12185	730.75		-0.40	1397	ISO12185	731.5		1.00
312	ISO12185	730.7		-0.50	1399		-----		-----
323	ISO12185	730.8		-0.31	1402	IP365	726.7	R(0.01)	-7.96
328	ISO12185	730.6		-0.68	1455	ISO12185	731.0	C	0.06
333	ISO12185	730.7		-0.50	1459	ISO12185	730.85		-0.22
334	ISO12185	730.74		-0.42	1476	ISO12185	731.17		0.38
335	ISO12185	731.1		0.25	1488	ISO3675	730.86	C	-0.20
337	ISO12185	731.1		0.25	1498	D4052	731.5		1.00
338	ISO12185	731.2		0.44	1510	ISO12185	730.8		-0.31
343	ISO12185	730.8		-0.31	1538	ISO12185	730.75		-0.40
344	D4052	730.8		-0.31	1546	ISO3675	731.2		0.44
352	ISO12185	731.0		0.06	1554	ISO12185	731.00		0.06
365	IP365	730.7		-0.50	1557	ISO12185	730.8		-0.31
369	ISO12185	730.7		-0.50	1569	D4052	730.8		-0.31
370	ISO12185	730.8		-0.31	1586	D4052	731.0		0.06
371	ISO12185	730.7		-0.50	1602	ISO3675	730.72		-0.46
381	ISO12185	730.86		-0.20	1613	D4052	730.8		-0.31
391	D4052	730.3		-1.24	1616	D4052	731.84		1.63
399	D4052	730.8		-0.31	1631	D4052	730.8		-0.31
403	ISO12185	731.0		0.06	1634	ISO12185	731.1		0.25
404	ISO12185	730.9		-0.12	1650	ISO12185	731.72		1.41
420	ISO12185	731.0		0.06	1676	ISO12185	730.805		-0.30
431	ISO12185	731.54		1.07	1710	ISO12185	731.1		0.25
440		-----		-----	1720		-----		-----
444	D4052	730.6		-0.68	1724	D4052	731.2		0.44
445	D4052	730.9		-0.12	1728	D4052	730.90		-0.12
447	D4052	730.6		-0.68	1740	ISO3675	731.6		1.18
467		-----		-----	1741	ISO12185	731.4		0.81
480	ISO12185	730.60		-0.68	1742	ISO12185	731.2		0.44
496	ISO12185	730.79		-0.33	1746		-----		-----
631	D4052	730.75		-0.40	1753	ISO12185	731.1		0.25
734	D4052	731.1		0.25	1776	ISO12185	730.95		-0.03
751	ISO12185	730.7		-0.50	1811	ISO12185	730.8		-0.31
752	D4052	730.9		-0.12	1833	ISO12185	731.1		0.25
759	ISO12185	730.8		-0.31	1936	ISO12185	730.7		-0.50
779	D4052	730.6		-0.68	1937	ISO12185	730.7		-0.50
781	ISO12185	730.9		-0.12	1938	ISO12185	730.7		-0.50
782	D4052	730.6		-0.68	1953	In house	727.9	C,R(0.01)	-5.72
785	ISO12185	730.5		-0.87	1977	ISO3675	732.0		1.93
798		-----		-----	1980	ISO12185	731.10		0.25
846		-----		-----	2129	ISO3675	730.4		-1.06
873	ISO12185	730.7		-0.50	2130	IP365	732.2	R(0.05)	2.30
875	D4052	730.6		-0.68	2146	ISO12185	731.1		0.25
902	D4052	730.5		-0.87	6012	ISO3675	730.8		-0.31
912	ISO12185	731.0		0.06	6018	ISO12185	730.8		-0.31
913		-----		-----	6028	ISO12185	730.8		-0.31
914	D4052	731.0		0.06	6045	D4052	731.4		0.81
963	ISO12185	731.0		0.06	6046	ISO3675	731.1		0.25
971	ISO12185	730.8		-0.31	6049	D4052	731.0		0.06
974	D1298	730.8		-0.31	6054	D4052	731.37		0.75
994	ISO12185	730.9		-0.12	6068	ISO12185	732.5	R(0.01)	2.86
1006	D4052	731.2		0.44	6075	ISO12185	731.16		0.36
1011	ISO12185	731.0		0.06	6103	ISO12185	732.4	R(0.01)	2.68
1033		-----		-----	6142	ISO12185	730.95		-0.03
1059	ISO12185	731.1		0.25	6143	D4052	731.9		1.74
1080	ISO12185	730.8		-0.31	6192	ISO12185	731.3		0.62
1082	ISO12185	730.9		-0.12	6201	ISO12185	730.8		-0.31
1095	ISO12185	730.9		-0.12	6203	ISO12185	730.9		-0.12
1097	ISO12185	731.32		0.66	6240	D4052	730.7		-0.50
1108	ISO12185	731.64	C	1.26	6249		-----		-----
1109	D4052	730.8	C	-0.31	6258	D4052	730.9		-0.12
1126	ISO12185	731.18		0.40	6262	D4052	730.7		-0.50
1134	IP365	731.0	C	0.06	6291	ISO12185	730.7		-0.50
1155	ISO3675	731.5		1.00	6299	ISO12185	731.14		0.32
1191	ISO12185	730.9		-0.12	6321	IP365	731.1		0.25
1194		-----		-----	6359	D4052	730.6		-0.68

lab	method	value	mark	z(targ)
6404		-----		-----
6410	D4052	730.9		-0.12
6416	D1298	731.1		0.25

normality	not OK
n	129
outliers	5
mean (n)	730.967
st.dev. (n)	0.3100
R(calc.)	0.868
st.dev.(ISO12185:96)	0.5357
R(ISO12185:96)	1.5

Lab 120 first reported 0.73092 without unit
Lab 273 first reported 722.7
Lab 1108 first reported 732.54
Lab 1109 first reported 0.7308 kg/m^3
Lab 1134 first reported 0.7333 kg/L
Lab 1455 first reported 732.3
Lab 1488 first reported 732.8
Lab 1953 first reported 7279





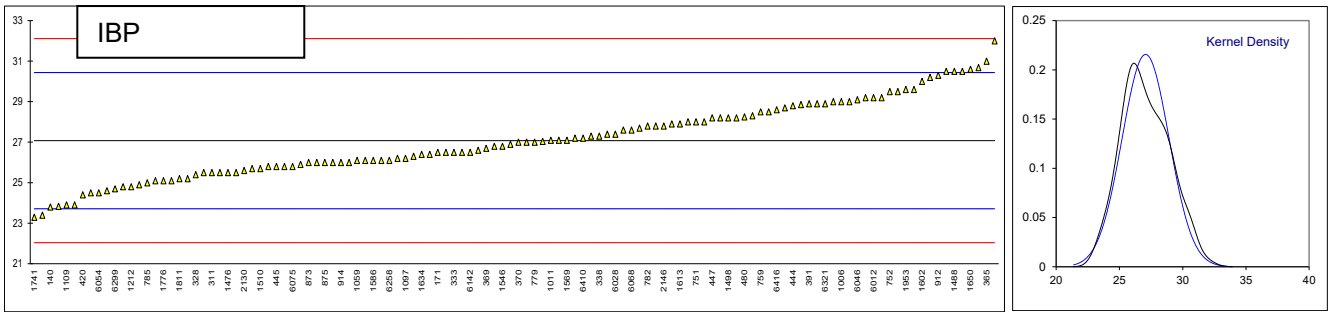
Determination of Distillation at 760 mmHg on sample #21185; results in °C

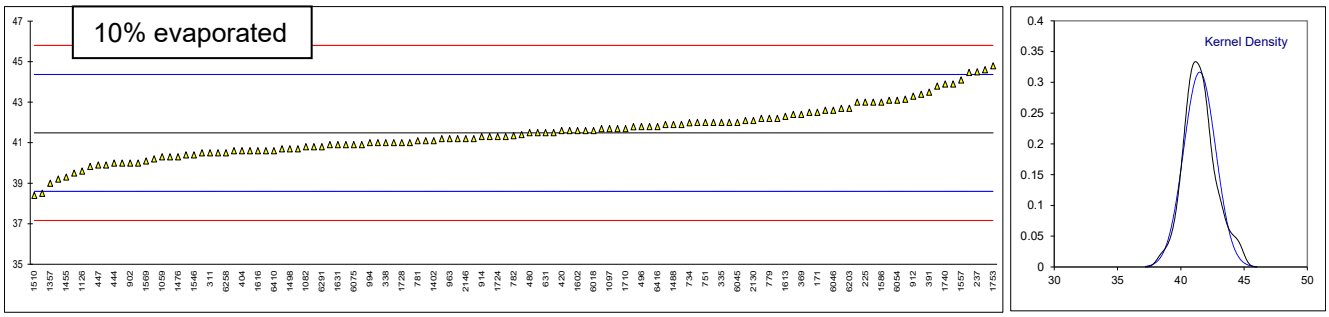
lab	method	IBP	mark	10% eva	mark	50% eva	mark	90% eva	mark	FBP	mark
120	D86-automated	26.3		41.5		87.7		141.2		171.4	
140	D86-automated	23.8		40.7		88.0		141.1		172.0	
171	ISO3405-automated	26.5		42.5		87.9		141.3		171.5	
225	D86-manual	29.0		43.0		92.0		151.0	R(0.01)	171.0	
237	D86-manual	32.0		44.5		92.1		144.6		173.0	
238		-----		-----		-----		-----		-----	
273	D86-automated	28.3		42.7		91.1		144.5		176.2	
311	D86-automated	25.5		40.5		87.4		140.8		170.9	
312	ISO3405-automated	25.5		40.5		87.2		141.1		172.5	
323	ISO3405-automated	30.2		41.4		87.3		141.4		170.7	
328	D86-automated	25.4		40.6		87.1		140.7		173.0	
333	ISO3405-automated	26.5		38.5		88.8		141.5		171.5	
334	ISO3405-automated	26.2		41.9		88.6		142.1		169.4	
335	D86-automated	29.5		42.0		87.7		140.9	C	171.0	
337		-----		-----		-----		-----		-----	
338	ISO3405	27.3		41.0		87.9		150.2	R(0.01)	171.3	
343		-----		-----		-----		-----		-----	
344		-----		-----		-----		-----		-----	
352		-----		-----		-----		-----		-----	
365	IP123-automated	31.0		41.7		86.6		142.1		170.5	
369	ISO3405-automated	26.7		42.4		88.1		143.6		170.6	
370	ISO3405-automated	27.0		42.6		90.8		145.8	R(0.05)	171.2	
371	ISO3405-automated	27.0		41.2		87.1		144.1		172.4	
381	ISO3405-automated	29.2		42.0		88.2		143.5		174.8	
391	D86-automated	28.9		43.5		88.0		140.4		172.4	
399		-----		-----		-----		-----		-----	
403	ISO3405-automated	28.0		41.0		85.7		140.1		173.1	
404	ISO3405-automated	28.2		40.6		85.8		140.8		175.1	
420	ISO3405-automated	24.4		41.6		90.15		143.25		169.7	
431		30.5		42.2		92.4		147.6	R(0.01)	176.5	
440		-----		-----		-----		-----		-----	
444	D86-automated	28.8		40.0		85.9		140.3		173.0	
445	IP123-automated	25.8		41.6		87.7		141.1		170.4	
447	D86-automated	28.2		39.9		85.7		140.9		171.0	
467		-----		-----		-----		-----		-----	
480	ISO3405-automated	28.25		41.50		88.65		141.75		173.1	
496	D86-automated	28.5		41.8		88.2		141.8		172.0	
631	D86-manual	26.0		41.5		87.5		139.5		173.0	
734	D86-automated	23.83		41.99		88.25		141.12		170.2	
751	D86-manual	28.0		42.0		88.5		141.5		170.5	
752	D86	29.5		42.5		88.5		142.0		173.5	
759	D86-manual	28.5		42.0		88.0		142.0		172.0	
779	D86-manual	27.0		42.2		88.2		140.8		172.5	
781	D86-automated	24.8		41.1		87.9		142.0		170.7	
782	ISO3405-automated	27.80		41.35		87.95		142.25		171.3	
785	ISO3405-manual	25.0		43.0		90.5		144.0		169.5	
798		-----		-----		-----		-----		-----	
846		-----		-----		-----		-----		-----	
873	ISO3405-manual	26.0		43.0		90.5		144.0		170.0	
875	ISO3405-automated	26.0		42.4		89.9		142.5		170.1	
902	D86-automated	25.8		40		87.1		140.6		172.1	
912	D86-manual	30.3		43.3		90	C	143	C	171.5	
913		-----		-----		-----		-----		-----	
914	D86-automated	26.0		41.3		88.5		141.7		169.0	
963	ISO3405-automated	27.1		41.2		88.1		141.3		173.5	
971	ISO3405-automated	26.8		41.0		87.6		141.4		172.3	
974	D86-automated	26.0		40.6		87.8		142.2		172.3	
994	D86-manual	26.5		41.0		88.0		141.0		172.0	
1006	D86-automated	29.0		41.3		87.8		141.5		171.0	
1011	ISO3405-automated	27.1		44.6		88.5		141.3		172.4	
1033		-----		-----		-----		-----		-----	
1059	ISO3405-automated	26.1		40.3		87.2		140.6		171.6	
1080		-----		-----		-----		-----		-----	
1082	ISO3405-automated	24.5		40.8		88.1		141.3		173.0	
1095	ISO3405-automated	27.3		41.5		87.7		141.2		172.1	
1097	ISO3405-automated	26.2		41.7		89.9		142.5		171.1	
1108	ISO3405-automated	29.0	C	41.7	C	87.3	C	141.0	C	172.1	C
1109	D86-automated	23.9		40.2		87.3		140.9		171.4	
1126	ISO3405-automated	25.9		39.6		87.1		140.9		172.3	
1134	D86-automated	25.1		40.4		87.3		141.2		173.0	
1155	ISO3405-automated	25.5		42.1		89.2		141.7		168.5	
1191	ISO3405-automated	24.9		39.5		85.9		140.6		172.2	
1194		-----		-----		-----		-----		-----	

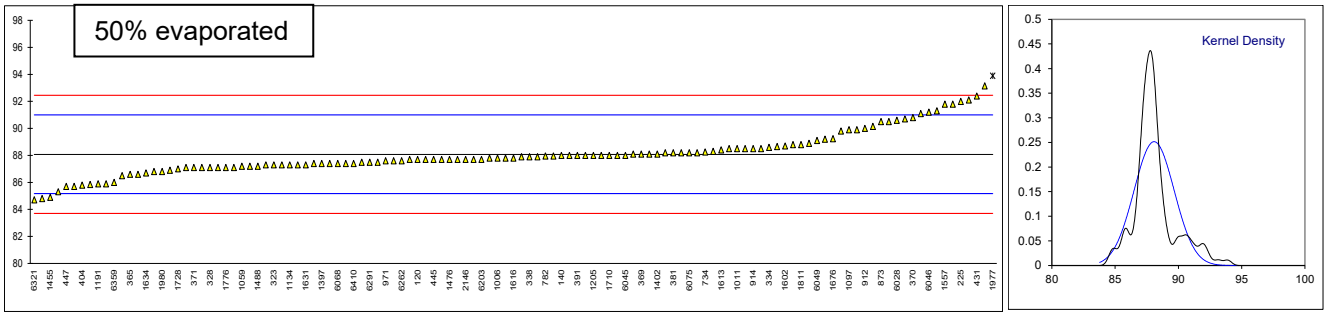
lab	method	IBP	mark	10% eva	mark	50% eva	mark	90% eva	mark	FBP	mark
1199		-----		-----		-----		-----		-----	
1205	D86-automated	27.9		41.1		88.0		142.0		177.6	R(0.05)
1212	ISO3405-automated	24.8		40.0		86.5		140.9		171.4	
1237	ISO3405-automated	26.6		40.5		87.3		140.8		171.1	
1272		-----		-----		-----		-----		-----	
1275	IP123-automated	25.7		43.1		91.3		145.2		171.5	
1357		-----		39		86.8		140.2		170.7	
1397	ISO3405-automated	27.7		40.9		87.4		141.0		171.7	
1399		-----		-----		-----		-----		-----	
1402	ISO3405-automated	26.1		41.1		88.1		141.8		172.1	
1455	D86-automated	23.4		39.3		84.9		140.4		168.7	
1459	ISO3405-automated	23.9		40.3		87.7		140.9		169.2	
1476	ISO3405-automated	25.5		40.3		87.7		141.2		167.0	
1488	ISO3405-manual	30.5		41.9		87.2		143.0		173.6	
1498	D86-automated	28.2		40.7		87.1		141.5		172.0	
1510	ISO3405-automated	25.7		38.4		85.3		140.8		178.6	R(0.05)
1538		26.5		40.8		88.0		141.3		170.0	
1546	ISO3405-automated	26.8		40.4		86.6		140.6		169.6	
1554		-----		-----		-----		-----		172.9	
1557	ISO3405-automated	28.9		44.1		91.8		143.7	C	170.3	
1569	ISO3405-automated	27.1		40.1		87.8		142.0		171.1	
1586	D86-automated	26.1		43.0		88.9		140.6		170.7	
1602		30.0		41.6		88.7		141.4		170.1	
1613	D86-automated	27.9		42.3		88.4		141.7		173.8	
1616	D86-automated	24.6		40.6		87.8		140.2		169.8	
1631		27.4		40.9		87.3		141.3		171.8	
1634	ISO3405-automated	26.4		40.6		86.7		140.9		169.9	
1650	ISO3405-automated	30.6		41.6		88.5		141.8		172.2	
1676		27.04		41.79		89.24		141.6		170.0	
1710	ISO3405-automated	25.8		41.7		88.0		140.4		169.9	
1720		-----		-----		-----		-----		-----	
1724	D86-automated	26.9		41.3		87.6		141.4		171.3	
1728	ISO3405-manual	28		41		87		141.5		171.5	
1740	ISO3405-automated	28.2		43.9		88.0		140.5		171.2	
1741		23.3		41.0		87.4		141.0		171.4	
1742	ISO3405-automated	28.86		39.83		85.84		141.16		170.7	
1746		-----		-----		-----		-----		-----	
1753	ISO3405-manual	27.8		44.8		89.8		143.8		171	
1776	ISO3405-automated	25.1		40.9		87.1		140.6		168.5	
1811	ISO3405-automated	25.2		43.4		88.8		141.3		171.2	
1833		-----		-----		-----		-----		170.5	
1936		-----		-----		-----		-----		170.7	
1937		-----		-----		-----		-----		171.0	
1938		-----		-----		-----		-----		170.3	
1953		29.6		41.2		84.8		140.9		170.8	
1977		30.68		44.47		93.90	R(0.05)	148.02	C,R(0.01)	170.7	
1980	ISO3405-automated	30.5		40.7		86.8		140.8		172.6	
2129	D86-automated	27.6		42.0		86.9		140.4		171.1	
2130	IP123-automated	25.6		42.1		87.7		140.9		171.3	
2146		27.8		41.2		87.7		141.5		172.4	
6012	D86-manual	29.2		42.2		90.7		145.7	R(0.05)	172.7	
6018	ISO3405-automated	26.0		41.6		88.3		141.3		171.7	
6028	ISO3405-automated	27.4		41.9		90.6		143.5		174.2	
6045		-----		42.0		88.0		141.6		-----	
6046	ISO3405-manual	29.1		42.6		91.2		146.7	R(0.05)	174.2	
6049	D86-automated	29.2		43.9		89.1		142.3		173.2	
6054	D86-automated	24.5		43.1		91.8		145.3		171.5	
6068	ISO3405-automated	27.6		41.2		87.4		140.8		171.2	
6075	ISO3405-automated	25.8		40.9		88.2		141.0		170.4	
6103	ISO3405-automated	28.7		43.15		93.15		147.75	R(0.01)	173.2	
6142		26.5		41.8		87.95		140.85		171.5	
6143		-----		-----		-----		-----		-----	
6192	ISO3405	29.6		-----		-----		-----		170.0	
6201	D86-automated	25.2		41.3		87.7		141.3		171.8	
6203	ISO3405-automated	27.2		42.7		87.7		143.8		175.3	
6240	D86-automated	26.1		39.9		87.1		140.9		171.4	
6249		-----		-----		-----		-----		-----	
6258	D86-automated	26.1		40.5		87.4		141.1		171.5	
6262	D86-automated	25.5		40.9		87.6		140.7		169.9	
6291	ISO3405-automated	25.1		40.8		87.5		141.0		168.2	
6299	ISO3405-automated	24.7		40.0		88.2		141.1		169.2	
6321	IP123-automated	28.9		43.8		84.7		136.7	R(0.05)	169.2	
6359	D86-automated	26.4		39.2		86.0		140.6		171.0	

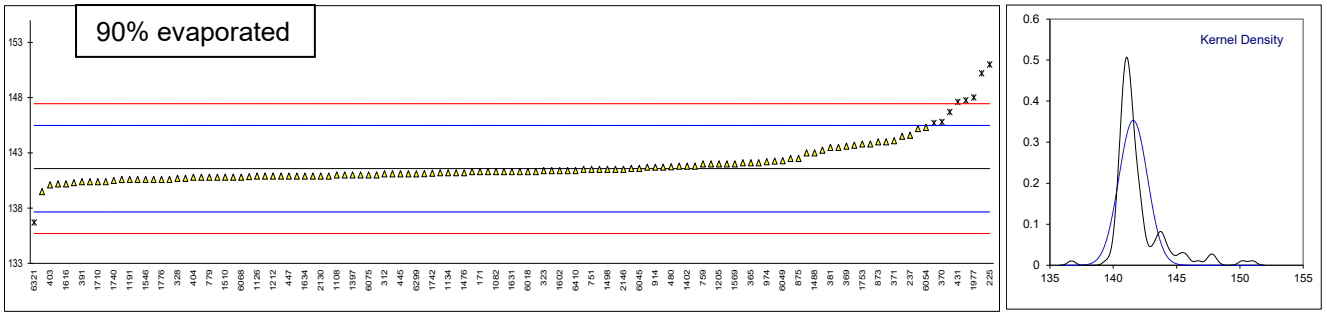
lab	method	IBP	mark	10% eva	mark	50% eva	mark	90% eva	mark	FBP	mark
6404		-----		-----		-----		-----		-----	
6410	D86-automated	27.2		40.6		87.4		141.4		173.1	
6416	D86-automated	28.6		41.8		87.5		142.1		177.6	R(0.05)
	normality	OK		OK		suspect		not OK		suspect	
	n	120		121		120		112		123	
	outliers	0		0		1		9		3	
	mean (n)	27.07		41.49		88.08		141.57		171.48	
	st.dev. (n)	1.851		1.261		1.586		1.130		1.559	
	R(calc.)	5.18		3.53		4.44		3.16		4.37	
	st.dev.(ISO3405-A:19)	1.679		1.443		1.457		1.957		2.536	
	R(ISO3405-A:19)	4.7		4.04		4.08		5.48		7.10	
Compare											
	R(ISO3405-M:19)	5.6		4.11		4.17		3.67		7.2	

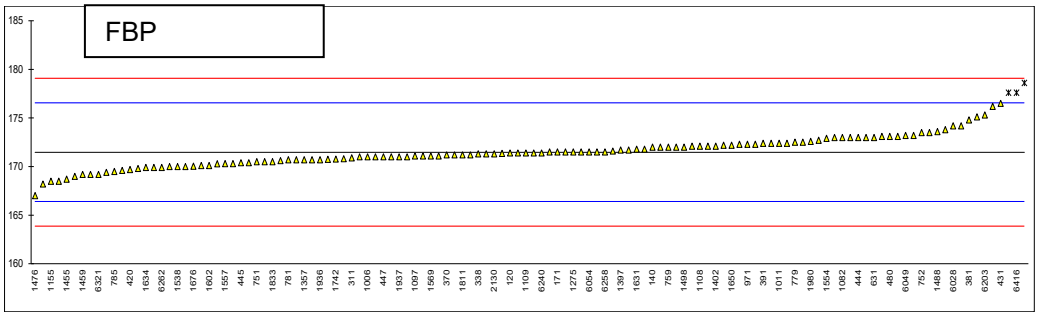
Lab 335 first reported 150.4
Lab 912 first reported 94.9 (50% eva) and 148.5 (90% eva)
Lab 1108 first reported 27.4 (IBP), 43.1 (10% eva), 85.6 (50% eva), 139.9 (90% eva) and 175.6 (FBP)
Lab 1557 first reported 148.2
Lab 1977 first reported 170.02










FBP
185
180
175
170
165
160
1476
1155
1455
1459
6321
785
420
1634
6262
1538
1676
1602
1557
445
751
1833
781
1357
1936
1742
311
1006
447
1937
1097
1569
370
1811
338
2130
120
1109
6240
171
1275
6054
6258
1397
1631
140
759
1498
1108
1402
1650
971
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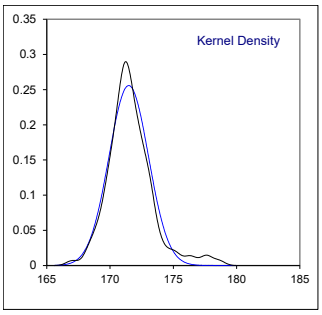
480
6049
752
1488
6028
381
6203
431
6416


Kernel Density
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
165
170
175
180
185

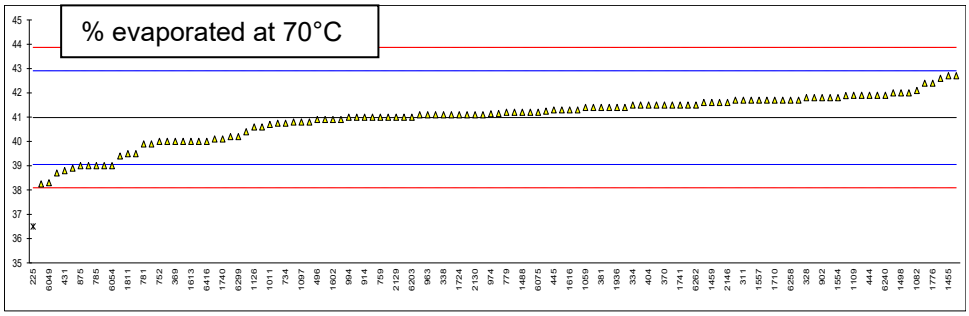
Determination of Distillation at 760 mmHg on sample #21185; results in %V/V

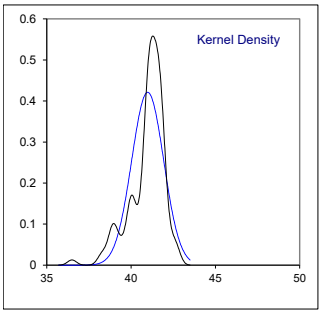
lab	method	%E70°C	mark	%E100°C	mark	%E150°C	mark	%residue	%loss
120		-----		-----		-----		-----	-----
140		-----		-----		-----		1.0	1.8
171	ISO3405-automated	40.4		57.8		94.2		1.2	1.6
225	D86-manual	36.5	R(0.01)	55.5	ex	89.0	R(0.01)	1.0	5.0
237	D86-manual	40.0	C	58.0	C	94.5	C	1.0	0.5
238		-----		-----		-----		-----	-----
273		-----		-----		-----		-----	-----
311	D86-automated	41.7		57.7		94.9		0.9	2.8
312	ISO3405-automated	41.8		58.0		94.8		1.0	2.2
323	ISO3405-automated	41.1		57.6		93.9		1.0	2.9
328	D86-automated	41.8		58.0		94.6		0.8	2.0
333		-----		-----		-----		-----	-----
334	ISO3405-automated	41.5		57.4		93.6		1.6	1.4
335	D86-automated	41.0		57.9		94.7		1.0	1.8
337		-----		-----		-----		-----	-----
338	ISO3405	41.1		57.7		95.0		0.9	2.4
343		-----		-----		-----		-----	-----
344		-----		-----		-----		-----	-----
352		-----		-----		-----		-----	-----
365	IP123-automated	41.5		59.4		94.4		1.0	2.4
369	ISO3405-automated	40.0		57.7		93.3		1.5	2.5
370	ISO3405-automated	41.5		57.9		94.5		1.0	2.0
371	ISO3405-automated	41.3		58.2		94.1		0.7	1.8
381	ISO3405-automated	41.4		56.9		93.0		1.0	1.4
391	D86-automated	40.1		57.9		94.7		0.9	1.9
399		-----		-----		-----		-----	-----
403	ISO3405-automated	41.7		58.8		94.8		1.0	3.0
404	ISO3405-automated	41.5		58.8		94.9		0.9	3.1
420	ISO3405-automated	41.6		58.1		95.1		1.0	-----
431		38.8		55.0		91.2	R(0.05)	4.1	0.2
440		-----		-----		-----		-----	-----
444	D86-automated	41.9		58.6		94.4		0.7	3.8
445	IP123-automated	41.3		58.0		94.4		1.0	1.8
447	D86-automated	42.6		58.7		94.3		1.0	3.7
467		-----		-----		-----		-----	-----
480	ISO3405-automated	40.75		57.15		93.85		1.3	1.5
496	D86-automated	40.9		57.6		93.9		1.0	2.4
631	D86-manual	41		58		95		0.5	0.5
734	D86-automated	40.75		57.65		94.30		0.9	1.25
751	D86-manual	41.5		58.5		94.5		1.0	1.0
752	D86	40.0		57.0		93.0		1.0	1.5
759	D86-manual	41.0		60.0		94.5		0.8	2.2
779	D86-manual	41.2		57.8		94.0		1.05	0.95
781	D86-automated	39.9		56.0		92.4	R(0.05)	1.4	1.7
782	ISO3405-automated	41.15		57.35		93.75		0.9	1.65
785	ISO3405-manual	39.0		55.5		92.0	R(0.05)	1.5	1.5
798		-----		-----		-----		-----	-----
846		-----		-----		-----		-----	-----
873	ISO3405-manual	39.0		55.5		92.2	R(0.05)	1.4	1.6
875	ISO3405-automated	39.0		56.0		92.0	R(0.05)	1.0	1.0
902	D86-automated	41.8		58.1		94.7		1	2.6
912	D86-manual	39		57	C	94	C	1.1	0.9
913		-----		-----		-----		-----	-----
914	D86-automated	41.0		56.9		94.3		1.0	0.7
963	ISO3405-automated	41.1		56.9		94.0		1.0	2.1
971	ISO3405-automated	41.2		57.8		94.2		1.0	2.5
974	D86-automated	41.14		57.92		93.43		1.0	2.6
994	D86-manual	41.0		58.0		93.5		1.0	1.0
1006		-----		-----		-----		1.0	2.6
1011	ISO3405-automated	40.7		57.2		94.7		1.0	1.3
1033		-----		-----		-----		-----	-----
1059	ISO3405-automated	41.4		58.0		94.6		1.0	2.5
1080		-----		-----		-----		-----	-----
1082	ISO3405-automated	42.1		57.4		94.6		1.0	-----
1095	ISO3405-automated	40.8		57.5		94.4		0.8	2.3
1097	ISO3405-automated	40.8		56.5		93.6		1.2	1.0
1108	ISO3405-automated	41.0	C	58.1	C	94.9	C	1.0	2.3
1109	D86-automated	41.9		57.8		94.4		0.9	2.9
1126	ISO3405-automated	40.6		55.4		92.3	R(0.05)	1.0	2.6
1134	D86-automated	41.7		57.8		94.8		1.0	2.1
1155	ISO3405-automated	40.8		56.9		94.1		0.9	1.1
1191	ISO3405-automated	42.4		58.6		95.0		0.9	-----
1194		-----		-----		-----		-----	-----

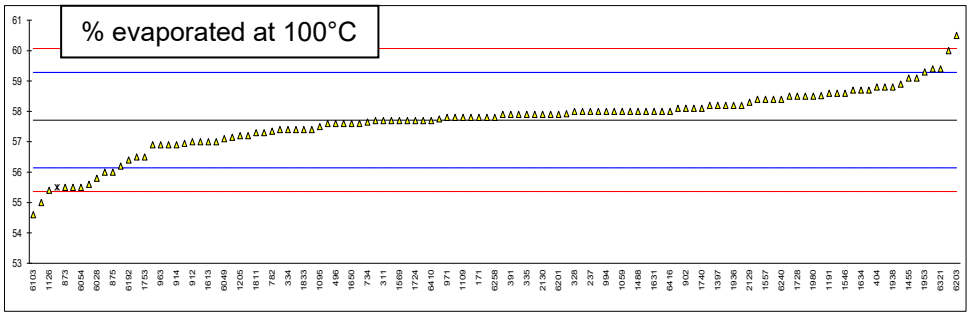
lab	method	%E70°C	mark	%E100°C	mark	%E150°C	mark	%residue	%loss
1199		-----		-----		-----		-----	-----
1205	D86-automated	40.9		57.2		93.8		1.0	1.9
1212	ISO3405-automated	42.0		58.4		95.0		0.9	3.2
1237	ISO3405-automated	41.9		57.9		94.3		1.0	2.6
1272		-----		-----		-----		-----	-----
1275	IP123-automated	41.1		58.0		94.3		1.0	2.1
1357		-----		-----		-----		1.0	1.8
1397	ISO3405-automated	41.4		58.2		94.8		-----	-----
1399		-----		-----		-----		-----	-----
1402	ISO3405-automated	41.1		57.6		94.1		1.0	1.3
1455	D86-automated	42.7		59.1		94.8		1.0	2.5
1459	ISO3405-automated	41.6		57.9		94.4		1.0	2.0
1476	ISO3405-automated	38.9		-----	W	-----	W	1.0	2.8
1488	ISO3405-manual	41.2		58.0		93.2		0.8	1.4
1498	D86-automated	42		58		94		1.0	1.9
1510	ISO3405-automated	42.7		58.9		94.4		1.0	4.0
1538		-----		-----		-----		1.0	1.2
1546	ISO3405-automated	41.8		58.6		94.4		1	2
1554	ISO3405-automated	41.8		59.1		95.9	R(0.05)	0.7	-----
1557	ISO3405-automated	41.7		58.4		94.5		1.0	1.4
1569	ISO3405-automated	38.7		57.7	C	93.9	C	1.0	2.3
1586	D86-automated	40.0		57.7		94.5		1.0	1.9
1602		40.9		57.4		94.0		1.1	1.8
1613	D86-automated	40		57		94		1.0	1.7
1616	D86-automated	41.3		58.4		94.4		1.0	1.0
1631		41.4		58		94.1		-----	-----
1634	ISO3405-automated	40.9		58.7		93.8		1.0	2.2
1650	ISO3405-automated	40.6		57.6		94.3		1.3	1.8
1676		41.70		56.95		93.98		0.98	-----
1710	ISO3405-automated	41.7		57.8		95.0		0.6	0.9
1720		-----		-----		-----		-----	-----
1724	D86-automated	41.1		57.7		94.6		1.0	1.4
1728	ISO3405-manual	41.5		58.5		94		1.3	1.7
1740	ISO3405-automated	40.1		58.1		94.4		1.0	1.8
1741		41.5		58.0		95.0		0.8	1.3
1742	ISO3405-automated	41.89		58.52		94.34		1.0	3.9
1746		-----		-----		-----		-----	-----
1753	ISO3405-manual	39.4		56.5		92.8		0.7	0.3
1776	ISO3405-automated	42.4		58.2		94.4		1.0	2.2
1811	ISO3405-automated	39.5		57.3		94.4		1.0	0.8
1833		41.2		57.4		94.2		-----	-----
1936	ISO3405-automated	41.4		58.2		94.7		1	-----
1937		41.1		58.5		94.7		1.0	-----
1938	ISO3405-automated	41.7		58.8		94.7		1.0	-----
1953		41.9		59.3		93.9		0.9	3.1
1977		-----	W	-----	W	-----	W	1.9	1.1
1980	ISO3405-automated	41.6		58.5		94.4		1.0	3.1
2129	D86-automated	41.0		58.3		94.5		1.0	1.6
2130	IP123-automated	41.1		57.9		94.2		1.0	1.5
2146		41.6		57.6		94.3		1.0	1.5
6012	D86-manual	40.2		56.2		93.2		1.3	2.5
6018	ISO3405-automated	41.0		57.3		94.4		0.8	2.1
6028	ISO3405-automated	40.0		55.8		93.3		0.8	1.2
6045		-----		-----		-----		-----	-----
6046	ISO3405-manual	41.5		57.0		93.5		0.8	2.4
6049	D86-automated	38.3		57.1		93.9		0.9	1.9
6054	D86-automated	39		55.5		92.1	R(0.05)	1.0	2.3
6068	ISO3405-automated	41.4		57.9		94.4		1.0	1.8
6075	ISO3405-automated	41.2		57.4		94.6		1.0	1.8
6103	ISO3405-automated	38.25		54.6		91.1	R(0.05)	1.0	3.5
6142		41.25		57.75		94.45		1.0	1.85
6143		-----		-----		-----		-----	-----
6192	ISO3405	39.5		56.4		92.9		0.92	1.1
6201	D86-automated	41.1		57.9		94.2		1	2.2
6203	ISO3405-automated	41.0		60.5		94.6		1.0	1.6
6240	D86-automated	41.9		58.4		94.6		1.0	3.2
6249		-----		-----		-----		-----	-----
6258	D86-automated	41.7		57.8		94.8		1.0	2.3
6262	D86-automated	41.5		57.7		94.5		1.0	2.5
6291	ISO3405-automated	41.3		58.2		95.0		1.0	2.0
6299	ISO3405-automated	40.2		55.6		92.3	R(0.05)	1.0	1.8
6321	IP123-automated	39.9		59.4		96.0	R(0.05)	0.5	3.1
6359	D86-automated	42.0		58.7		94.8		1.0	3.9

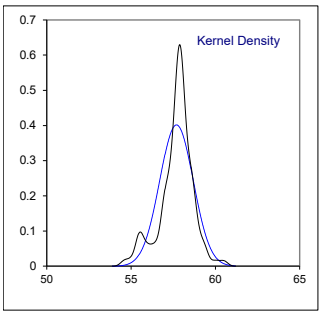
lab	method	%E70°C	mark	%E100°C	mark	%E150°C	mark	%residue	%loss
6404		-----		-----		-----		-----	-----
6410	D86-automated	41.7		57.7		94.6		1.0	2.3
6416	D86-automated	40		58		94		0.8	1.4
	normality	OK		suspect		OK			
	n	117		116		105			
	outliers	1		0 +1ex		12			
	mean (n)	40.984		57.713		94.280			
	st.dev. (n)	0.9474		0.9757		0.5101			
	R(calc.)	2.653		2.732		1.428			
	st.dev.(ISO3405-A:19)	0.9643		0.7857		0.4643			
	R(ISO3405-A:19)	2.7		2.2		1.3			
Compare									
	R(ISO3405-M:19)	unknown		unknown		unknown			

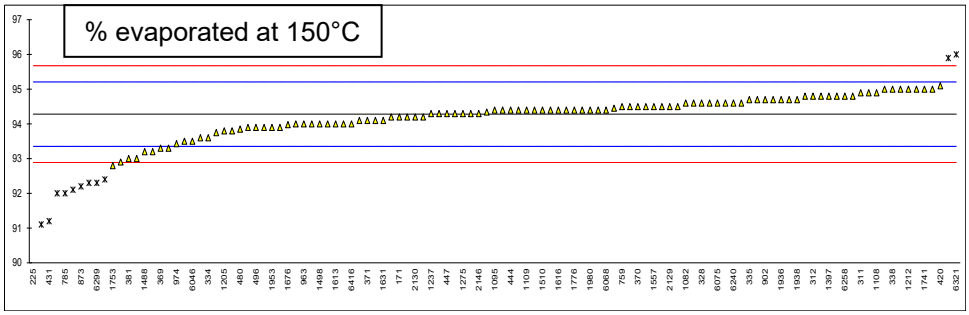
Lab 225 test result excluded as statistical outliers in related parameters
Lab 237 first reported 37.5 (%E70), 55.0 (%E100), 91.5 (%E150)
Lab 912 first reported 55 (%E100) and 91 (%E150)
Lab 1108 first reported 41.1 (%E70), 60.2 (%E100), 94.0 (%E150)
Lab 1476 test results withdrawn, reported 55.0 (%E100) and 92.0 (%E150)
Lab 1569 first reported 55.5 (%E100) and 91.0 (%E150)
Lab 1977 test results withdrawn, reported 36.75 (%E70), 54.54 (%E100) and 91.09 (%E150)

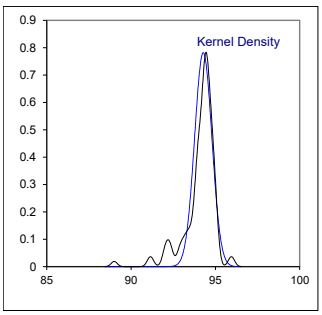












Determination of Doctor Test on sample #21185;

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D4952	Negative		-----	1199		-----		-----
140	D4952	Negatvie		-----	1205		-----		-----
171	D4952	Negative		-----	1212	D4952	Neg.		-----
225	D4952	Negative		-----	1237		-----		-----
237	D4952	NEGATIVE		-----	1272		-----		-----
238		-----		-----	1275	IP30	Negative		-----
273	IP30	Negative		-----	1357	D4952	Negative		-----
311		-----		-----	1397		-----		-----
312	IP30	negative		-----	1399		-----		-----
323	D4952	negative, mercap abs.		-----	1402	IP30	Negative		-----
328	D4952	Negative		-----	1455	IP30	Negative		-----
333		-----		-----	1459		-----		-----
334	D4952	negative		-----	1476		-----		-----
335		-----		-----	1488		-----		-----
337		-----		-----	1498		-----		-----
338		-----		-----	1510		-----		-----
343		-----		-----	1538		-----		-----
344		-----		-----	1546		-----		-----
352		-----		-----	1554		-----		-----
365		-----		-----	1557		-----		-----
369		-----		-----	1569		-----		-----
370		-----		-----	1586	IP30	NEGATIVE		-----
371		-----		-----	1602		-----		-----
381		-----		-----	1613	D4952	Negative		-----
391	D4952	Negative		-----	1616	D4952	Negative		-----
399	IP30	Negative		-----	1631		-----		-----
403		-----		-----	1634		-----		-----
404		-----		-----	1650		-----		-----
420		-----		-----	1676		-----		-----
431		-----		-----	1710	ISO5275	Negative	C	-----
440		-----		-----	1720		-----		-----
444		-----		-----	1724	IP30	neg		-----
445	IP30	Negative		-----	1728	D4952	NEGATIVE		-----
447	D4952	Negative		-----	1740	D4952	Negative		-----
467		-----		-----	1741	D4952	negative		-----
480		-----		-----	1742		-----		-----
496		-----		-----	1746		-----		-----
631		-----		-----	1753		-----		-----
734		-----		-----	1776		-----		-----
751		-----		-----	1811		-----		-----
752		-----		-----	1833		-----		-----
759		-----		-----	1936		-----		-----
779		-----		-----	1937		-----		-----
781	D4952	sweet		-----	1938		-----		-----
782		-----		-----	1953		-----		-----
785	D4952	negative		-----	1977		-----		-----
798		-----		-----	1980		-----		-----
846		-----		-----	2129	IP30	Negative		-----
873	D4952	sweet		-----	2130		Negative		-----
875	D4952	Negative		-----	2146		-----		-----
902		-----		-----	6012		-----		-----
912	D4952	Negative		-----	6018		-----		-----
913		-----		-----	6028		-----		-----
914	D4952	-ve		-----	6045	D4952	Negative		-----
963	D4952	Negative		-----	6046	D4952	neg.		-----
971	IP30	-ve		-----	6049	D4952	Negative		-----
974	D4952	Negative		-----	6054		-----		-----
994	D4952	negative		-----	6068		-----		-----
1006		-----		-----	6075		-----		-----
1011		-----		-----	6103		-----		-----
1033		-----		-----	6142	IP30	Negative		-----
1059	ISO5275	negative		-----	6143		-----		-----
1080		-----		-----	6192		-----		-----
1082		-----		-----	6201	D4952	negative		-----
1095		-----		-----	6203		-----		-----
1097		-----		-----	6240	D4952	Negative		-----
1108		-----		-----	6249		-----		-----
1109	IP30	Negative		-----	6258	IP30	Negative		-----
1126		-----		-----	6262	D4952	Neg		-----
1134	IP30	Negative/Negative		-----	6291	IP30	Negative		-----
1155	D4952	nagative		-----	6299		-----		-----
1191		-----		-----	6321		-----		-----
1194		-----		-----	6359	D4952	negative		-----

lab	method	value	mark	z(targ)
6404		-----		-----
6410		-----		-----
6416		-----		-----
	n	53		
	mean (n)	negative		

Lab 1710 first reported positive

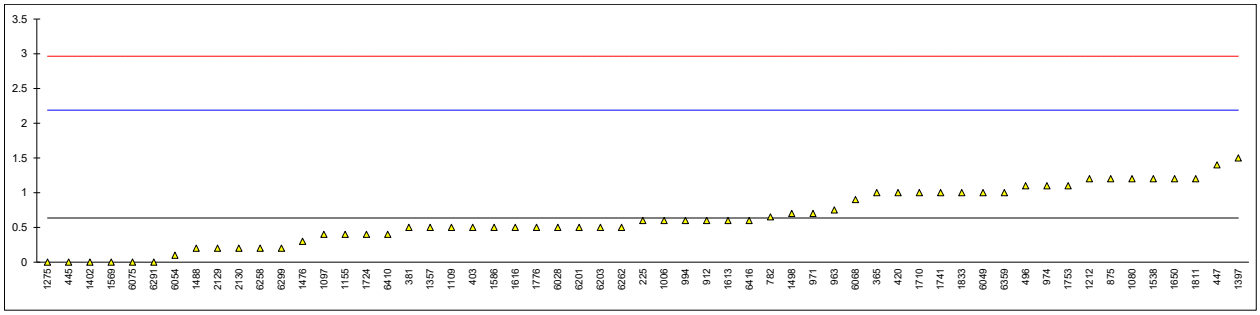
Determination of Gum (solvent washed) on sample #21185; results in mg/100mL

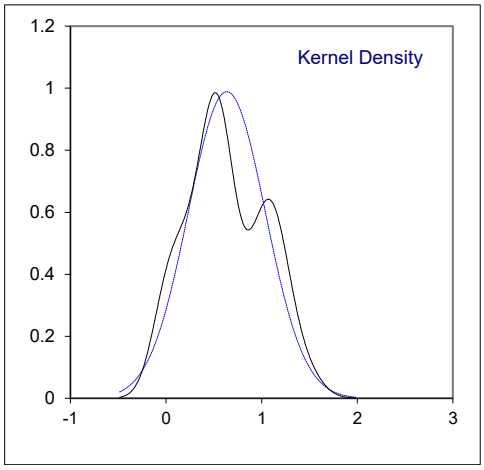
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1199		-----		-----
140	D381	<0.5		-----	1205		-----		-----
171	D381	<0.5		-----	1212	ISO6246	1.2		0.73
225	D381	0.6		-0.05	1237		-----		-----
237	D381	<0.5		-----	1272		-----		-----
238		-----		-----	1275	IP131	0.0		-0.82
273	D381	<0.5		-----	1357	D381	0.5		-0.17
311	D381	<0.5		-----	1397	ISO6246	1.5		1.11
312	ISO6246	<0.5		-----	1399		-----		-----
323	ISO6246	<0.5		-----	1402	ISO6246	0.0		-0.82
328		-----		-----	1455	D381	<0.5	C	-----
333		-----		-----	1459		-----		-----
334	ISO6246	<0.5		-----	1476	ISO6246	0.3		-0.43
335		-----		-----	1488	ISO6246	0.2		-0.56
337		-----		-----	1498	D381	0.7		0.08
338		-----		-----	1510		-----		-----
343	D381	<0,5		-----	1538	ISO6246	1.2		0.73
344		-----		-----	1546		-----		-----
352		-----		-----	1554		-----		-----
365	IP131	1.0		0.47	1557		-----		-----
369	ISO6246	<0.5		-----	1569	ISO6246	0		-0.82
370	ISO6246	<0.5		-----	1586	D381	0.5		-0.17
371		-----		-----	1602		-----		-----
381	ISO6246	0.5		-0.17	1613	D381	0.6		-0.05
391		-----		-----	1616	D381	0.5		-0.17
399		-----		-----	1631		-----		-----
403	ISO6246	0.5		-0.17	1634		-----		-----
404		-----		-----	1650	ISO6246	1.2		0.73
420	ISO6246	1		0.47	1676		-----		-----
431		-----		-----	1710	ISO6246	1.0		0.47
440		-----		-----	1720		-----		-----
444		-----		-----	1724	D381	0.4		-0.30
445	ISO6246	0.0		-0.82	1728		-----		-----
447	D381	1.4		0.98	1740		-----		-----
467		-----		-----	1741	ISO6246	1		0.47
480		-----		-----	1742		-----		-----
496	D381	1.1		0.60	1746		-----		-----
631	D381	<0.5		-----	1753	ISO6246	1.1		0.60
734		-----		-----	1776	ISO6246	0.5		-0.17
751		-----		-----	1811	ISO6246	1.2		0.73
752		-----		-----	1833	ISO6246	1.0		0.47
759		-----		-----	1936		-----		-----
779		-----		-----	1937		-----		-----
781		-----		-----	1938		-----		-----
782	D381	0.65		0.02	1953		-----		-----
785		-----		-----	1977		-----		-----
798		-----		-----	1980	ISO6246	<0,5		-----
846		-----		-----	2129	IP131	0.2		-0.56
873		-----		-----	2130	IP131	0.2		-0.56
875	D381	1.2		0.73	2146		-----		-----
902		-----		-----	6012		-----		-----
912	ISO6246	0.6		-0.05	6018		-----		-----
913		-----		-----	6028	ISO6246	0.5		-0.17
914		<0.5		-----	6045		-----		-----
963	D381	0.75		0.15	6046		-----		-----
971	ISO6246	0.7		0.08	6049	ISO6246	1		0.47
974	D381	1.1		0.60	6054	D381	0.1		-0.69
994	D381	0.6		-0.05	6068	ISO6246	0.9		0.34
1006	D381	0.6		-0.05	6075	ISO6246	0		-0.82
1011	ISO6246	<1		-----	6103		-----		-----
1033		-----		-----	6142		-----		-----
1059	ISO6246	<0,5		-----	6143		-----		-----
1080	ISO6246	1.2		0.73	6192		-----		-----
1082		-----		-----	6201	ISO6246	0.5	C	-0.17
1095	ISO6246	<0.5		-----	6203	ISO6246	0.5		-0.17
1097	ISO6246	0.4		-0.30	6240	D381	<0.05		-----
1108		-----		-----	6249		-----		-----
1109	D381	0.5		-0.17	6258	D381	0.2		-0.56
1126		-----		-----	6262	D381	0.5		-0.17
1134		-----		-----	6291	ISO6246	0		-0.82
1155	ISO6246	0.4		-0.30	6299	ISO6246	0.2		-0.56
1191		-----		-----	6321	IP131	<0.5		-----
1194		-----		-----	6359	ISO6246	1.0		0.47

lab	method	value	mark	z(targ)
6404		-----		-----
6410	ISO6246	0.4		-0.30
6416	D381	0.6000		-0.05

normality	OK
n	57
outliers	0
mean (n)	0.635
st.dev. (n)	0.4034
R(calc.)	1.130
st.dev.(ISO6246:17)	0.7773
R(ISO6246:17)	2.176

Lab 1455 first reported 24.5
Lab 6201 first reported 3.5





Determination of Lead as Pb on sample #21185; results in mg/L

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1199		-----		-----
140	D3237	<2.5		-----	1205		-----		-----
171	D3237	<2.5		-----	1212	EN237	<2,5		-----
225		-----		-----	1237		-----		-----
237		-----		-----	1272		-----		-----
238		-----		-----	1275		-----		-----
273		-----		-----	1357		-----		-----
311		-----		-----	1397	EN13723	<0,4		-----
312	EN237	<2.5		-----	1399		-----		-----
323	EN237	<2.5		-----	1402	EN237	0.298		-----
328		-----		-----	1455	EN237	<2.5		-----
333		-----		-----	1459	EN13723	0.000		-----
334	EN237	<2.5		-----	1476	EN237	<2,5		-----
335		-----		-----	1488		-----		-----
337		-----		-----	1498		-----		-----
338		-----		-----	1510		-----		-----
343		-----		-----	1538	EN237	<2,5		-----
344		-----		-----	1546		-----		-----
352		-----		-----	1554		-----		-----
365		-----		-----	1557		-----		-----
369		-----		-----	1569	In house	<1,0		-----
370		-----		-----	1586	EN237	<2.5		-----
371	EN237	<2.5		-----	1602	EN237	<1		-----
381	EN237	<2,5		-----	1613	D3237	<2.5		-----
391		-----		-----	1616		-----		-----
399		-----		-----	1631		-----		-----
403	EN237	<2.5		-----	1634		-----		-----
404	EN237	<2.5		-----	1650		-----		-----
420	EN237	<3,0		-----	1676		-----		-----
431		-----		-----	1710	In house	<0,5		-----
440		-----		-----	1720		-----		-----
444		-----		-----	1724	IP428	<3,0		-----
445		-----		-----	1728	EN237	<2.5	C	-----
447	IP428	0.02		-----	1740	EN237	0.3		-----
467		-----		-----	1741	EN237	<2,5		-----
480		-----		-----	1742		-----		-----
496	EN237	<2.5		-----	1746		-----		-----
631		-----		-----	1753	EN237	<2.5	C	-----
734		-----		-----	1776		-----		-----
751		-----		-----	1811		-----		-----
752		-----		-----	1833	EN237	<3.0		-----
759		-----		-----	1936		-----		-----
779		-----		-----	1937		-----		-----
781	EN237	<2.5		-----	1938		-----		-----
782		-----		-----	1953		-----		-----
785		-----		-----	1977		-----		-----
798		-----		-----	1980	EN237	<2,5		-----
846		-----		-----	2129	EN237	0.09		-----
873		-----		-----	2130	IP352	0.000		-----
875		-----		-----	2146	In house	<2		-----
902		-----		-----	6012	D3237	<2,5		-----
912		-----		-----	6018		-----		-----
913		-----		-----	6028		-----		-----
914		-----		-----	6045	D3237	<2.5		-----
963		-----		-----	6046	D3237	0.4		-----
971	D3237	<2.5		-----	6049	EN237	<2.5		-----
974		-----		-----	6054		-----		-----
994	D3237	<2.5		-----	6068		-----		-----
1006	D3237	<0.0025		-----	6075		-----		-----
1011	EN237	<3.0		-----	6103	D5059-A	0.1		-----
1033		-----		-----	6142		-----		-----
1059	EN13723	<2,5		-----	6143		-----		-----
1080		-----		-----	6192		-----		-----
1082		-----		-----	6201	EN237	0.00		-----
1095		-----		-----	6203	EN237	0.79		-----
1097		-----		-----	6240	EN237	<2.5		-----
1108		-----		-----	6249		-----		-----
1109		-----		-----	6258		-----		-----
1126		-----		-----	6262	EN237	1.3034		-----
1134		-----		-----	6291	EN237	0		-----
1155		-----		-----	6299		-----		-----
1191	D8110	0.0065718		-----	6321		-----		-----
1194		13.13	f+?	-----	6359		-----		-----

lab	method	value	mark	z(targ)
6404		-----		-----
6410	EN237	0		-----
6416		-----		-----
	n	52		
	mean (n)	<3		

Lab 1194 possibly a false positive test result?
Lab 1728 first reported 4.7
Lab 1753 first reported 4.7

Determination of Manganese as Mn on sample #21185; results in mg/L

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1199		-----		-----
140		-----		-----	1205		-----		-----
171	D3831	<0.25		-----	1212	EN16136	<0,5		-----
225		-----		-----	1237		-----		-----
237	EN16136	<0.50		-----	1272		-----		-----
238		-----		-----	1275		-----		-----
273	D3831	<0.1		-----	1357		-----		-----
311		-----		-----	1397		-----		-----
312	EN16136	<0.5		-----	1399		-----		-----
323	EN16136	<0.50		-----	1402	EN16135	0.9148		-----
328		-----		-----	1455	EN16135	<2		-----
333	EN16135	<2.0		-----	1459		-----		-----
334	EN16135	<2.0		-----	1476		-----		-----
335		-----		-----	1488		-----		-----
337		-----		-----	1498		-----		-----
338		-----		-----	1510		-----		-----
343		-----		-----	1538	EN16135	<2,0		-----
344		-----		-----	1546		-----		-----
352		-----		-----	1554		-----		-----
365		-----		-----	1557		-----		-----
369	EN16136	<0.5		-----	1569	In house	<0,1		-----
370		-----		-----	1586	EN16135	0.02		-----
371	EN16135	<2.0		-----	1602		-----		-----
381	EN16135	<2,0		-----	1613	EN16136	<0.5		-----
391		-----		-----	1616		-----		-----
399		-----		-----	1631	EN16136	<2.0		-----
403	EN16136	<0.5		-----	1634		-----		-----
404	EN16135	<0.5		-----	1650		-----		-----
420	EN16135	<0,5		-----	1676		-----		-----
431		-----		-----	1710	EN16136	<0.5		-----
440		-----		-----	1720		-----		-----
444		-----		-----	1724	EN16135	<2,0		-----
445	EN16135	0.05		-----	1728		-----		-----
447	EN16135	0.0		-----	1740		-----		-----
467		-----		-----	1741	EN16135	<2,0		-----
480		-----		-----	1742		-----		-----
496		-----		-----	1746		-----		-----
631		-----		-----	1753		-----		-----
734		-----		-----	1776		-----		-----
751		-----		-----	1811		-----		-----
752		-----		-----	1833	EN16135	<2.0		-----
759		-----		-----	1936		-----		-----
779		-----		-----	1937		-----		-----
781	EN16136	<0.5		-----	1938		-----		-----
782		-----		-----	1953		-----		-----
785		-----		-----	1977		-----		-----
798		-----		-----	1980	EN16136	<0,5		-----
846		-----		-----	2129	D3831	0.08		-----
873		-----		-----	2130		-----		-----
875	GOST51925	<0.25		-----	2146	In house	<1		-----
902		-----		-----	6012		-----		-----
912		-----		-----	6018		-----		-----
913		-----		-----	6028	EN16135	<0.2		-----
914		-----		-----	6045	D3831	<0.25		-----
963		-----		-----	6046		-----		-----
971	D3831	0.76		-----	6049	EN16135	0.02		-----
974		-----		-----	6054		-----		-----
994		-----		-----	6068		-----		-----
1006		-----		-----	6075		-----		-----
1011		-----		-----	6103	EN16135	0.8		-----
1033		-----		-----	6142		-----		-----
1059		-----		-----	6143		-----		-----
1080		-----		-----	6192		-----		-----
1082		-----		-----	6201	EN16136	0.7		-----
1095		-----		-----	6203	EN16135	0.4		-----
1097		-----		-----	6240	EN16135	<2		-----
1108		-----		-----	6249		-----		-----
1109		-----		-----	6258		-----		-----
1126		-----		-----	6262	D3831	0.22		-----
1134		-----		-----	6291	EN16136	0.1		-----
1155		-----		-----	6299		-----		-----
1191	D8110	0		-----	6321		-----		-----
1194		-----		-----	6359		-----		-----

lab	method	value	mark	z(targ)
6404		-----		-----
6410	EN16136	0		-----
6416		-----		-----
	n	44		
	mean (n)	<2		

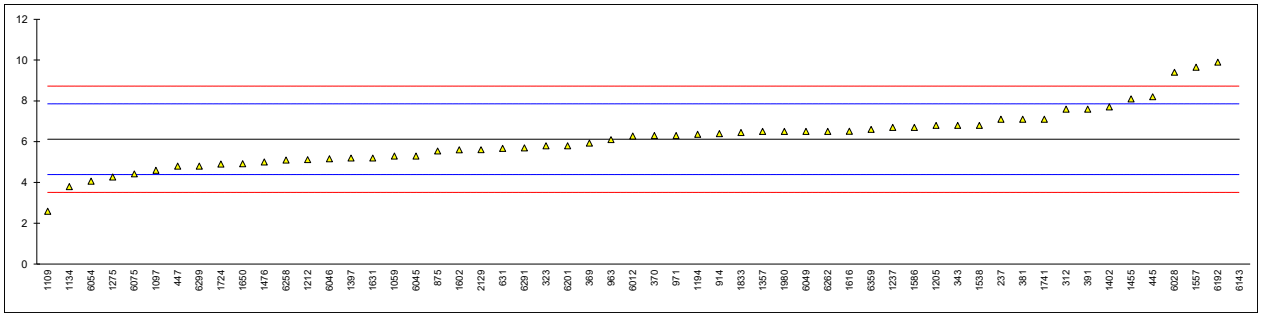
Determination of Olefins by FIA (without oxygenates correction) on sample #21185; results in %V/V

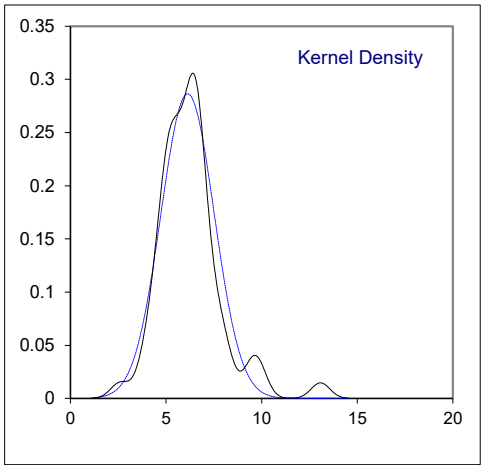
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1199		-----		-----
140		-----		-----	1205	D1319	6.799		0.78
171		-----		-----	1212	EN15553	5.12		-1.16
225		-----		-----	1237	EN15553	6.7		0.67
237	D1319	7.1		1.13	1272		-----		-----
238		-----		-----	1275	IP156	4.27		-2.14
273		-----		-----	1357	D1319	6.5		0.44
311		-----		-----	1397	EN15553	5.2		-1.06
312	EN15553	7.6		1.70	1399		-----		-----
323	EN15553	5.8		-0.37	1402	D1319	7.7		1.82
328		-----		-----	1455	D1319	8.1	C	2.28
333		-----		-----	1459		-----		-----
334		-----		-----	1476	EN15553	5.0098		-1.28
335		-----		-----	1488		-----		-----
337		-----		-----	1498		-----		-----
338		-----		-----	1510		-----		-----
343	D1319	6.8	C	0.78	1538	EN15553	6.8		0.78
344		-----		-----	1546		-----		-----
352		-----		-----	1554		-----		-----
365		-----		-----	1557	In house	9.65	C	4.07
369	EN15553	5.93		-0.22	1569		-----		-----
370	D1319	6.3		0.20	1586	D1319	6.7		0.67
371		-----		-----	1602	EN15553	5.6		-0.60
381	EN15553	7.1		1.13	1613		-----		-----
391	EN15553	7.6		1.70	1616	D1319	6.51		0.45
399		-----		-----	1631	EN15553	5.2		-1.06
403		-----		-----	1634		-----		-----
404		-----		-----	1650	EN15553	4.92		-1.39
420		-----		-----	1676		-----		-----
431		-----		-----	1710		-----		-----
440		-----		-----	1720		-----		-----
444		-----		-----	1724	D1319	4.9		-1.41
445	EN15553	8.2		2.40	1728		-----		-----
447	D1319	4.8		-1.53	1740		-----		-----
467		-----		-----	1741	EN15553	7.10		1.13
480		-----		-----	1742		-----		-----
496		-----		-----	1746		-----		-----
631	D1319	5.67		-0.52	1753		-----		-----
734		-----		-----	1776		-----		-----
751		-----		-----	1811		-----		-----
752		-----		-----	1833	D1319	6.45		0.38
759		-----		-----	1936		-----		-----
779		-----		-----	1937		-----		-----
781		-----		-----	1938		-----		-----
782		-----		-----	1953		-----		-----
785		-----		-----	1977		-----		-----
798		-----		-----	1980	EN15553	6.5	C	0.44
846		-----		-----	2129	D1319	5.61		-0.59
873		-----		-----	2130		-----		-----
875	EN15553	5.545		-0.67	2146		-----		-----
902		-----		-----	6012	D1319	6.28		0.18
912		-----		-----	6018		-----		-----
913		-----		-----	6028	D1319	9.4		3.78
914	D1319	6.4		0.32	6045	D1319	5.3		-0.95
963	D1319	6.1		-0.03	6046	D1319	5.16		-1.11
971	D1319	6.30		0.20	6049	EN15553	6.5		0.44
974		-----		-----	6054	D1319	4.06		-2.38
994		-----		-----	6068		-----		-----
1006		-----		-----	6075	EN15553	4.42		-1.96
1011		-----		-----	6103		-----		-----
1033		-----		-----	6142		-----		-----
1059	EN15553	5.3		-0.95	6143	D1319	13.07	R(0.01)	8.01
1080		-----		-----	6192	EN15553	9.9		4.36
1082		-----		-----	6201	D1319	5.8		-0.37
1095		-----		-----	6203		-----		-----
1097	D1319	4.60		-1.76	6240		-----		-----
1108		-----		-----	6249		-----		-----
1109	D1319	2.59		-4.07	6258	D1319	5.1		-1.18
1126		-----		-----	6262	D1319	6.5		0.44
1134	IP156	3.8		-2.68	6291	D1319	5.7		-0.49
1155		-----		-----	6299	EN15553	4.8		-1.53
1191		-----		-----	6321		-----		-----
1194	D1319	6.36		0.27	6359	EN15553	6.6		0.55

lab	method	value	mark	z(targ)
6404		-----		-----
6410		-----		-----
6416		-----		-----

normality	suspect
n	55
outliers	1
mean (n)	6.123
st.dev. (n)	1.3925
R(calc.)	3.899
st.dev.(EN15553:07)	0.8670
R(EN15553:07)	2.428

Lab 343 first reported 11.4
Lab 1455 first reported 2.1
Lab 1557 first reported 10.7
Lab 1980 first reported 5.0





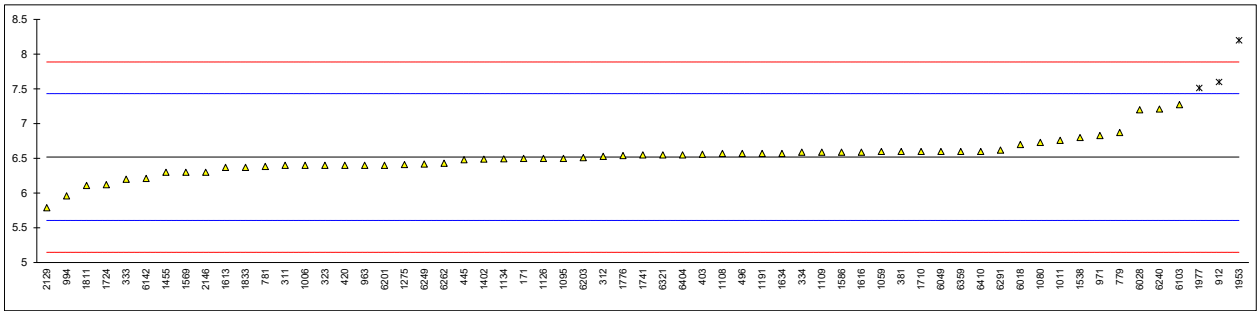
Determination of Olefins by GC on sample #21185; results in %V/V

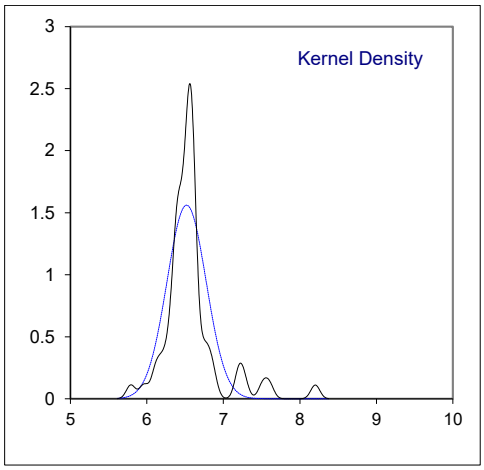
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1199		-----		-----
140		-----		-----	1205		-----		-----
171	ISO22854-A	6.5		-0.04	1212		-----		-----
225		-----		-----	1237		-----		-----
237		-----		-----	1272		-----		-----
238		-----		-----	1275	ISO22854-A	6.41		-0.24
273		-----		-----	1357		-----		-----
311	ISO22854-A	6.4		-0.26	1397		-----		-----
312	ISO22854-A	6.53		0.03	1399		-----		-----
323	ISO22854-A	6.4		-0.26	1402	ISO22854-A	6.49		-0.06
328		-----		-----	1455	ISO22854-A	6.3		-0.48
333	ISO22854-A	6.2		-0.70	1459		-----		-----
334	ISO22854-A	6.59		0.16	1476		-----		-----
335		-----		-----	1488		-----		-----
337		-----		-----	1498		-----		-----
338		-----		-----	1510		-----		-----
343		-----		-----	1538	ISO22854-A	6.8		0.62
344		-----		-----	1546		-----		-----
352		-----		-----	1554		-----		-----
365		-----		-----	1557		-----		-----
369		-----		-----	1569	D6839	6.30		-0.48
370		-----		-----	1586	ISO22854-A	6.59		0.16
371		-----		-----	1602		-----		-----
381	ISO22854-A	6.6		0.18	1613	D6839	6.37		-0.32
391		-----		-----	1616	D6839	6.59		0.16
399		-----		-----	1631		-----		-----
403	ISO22854-A	6.56		0.09	1634	ISO22854-A	6.57		0.11
404		-----		-----	1650		-----		-----
420	ISO22854-A	6.4		-0.26	1676		-----		-----
431		-----		-----	1710	ISO22854-A	6.6		0.18
440		-----		-----	1720		-----		-----
444		-----		-----	1724	ISO22854-A	6.12		-0.87
445	ISO22854-A	6.48		-0.08	1728		-----		-----
447		-----		-----	1740		-----		-----
467		-----		-----	1741	ISO22854-A	6.55		0.07
480		-----		-----	1742		-----		-----
496	ISO22854-A	6.57		0.11	1746		-----		-----
631		-----		-----	1753		-----		-----
734		-----		-----	1776	ISO22854-A	6.54		0.05
751		-----		-----	1811	ISO22854-A	6.11		-0.89
752		-----		-----	1833	ISO22854-A	6.37		-0.32
759		-----		-----	1936		-----		-----
779	D6729	6.873		0.78	1937		-----		-----
781	D6729	6.384		-0.29	1938		-----		-----
782		-----		-----	1953	In house	8.2	R(0.01)	3.68
785		-----		-----	1977	D6730	7.5130	R(0.05)	2.18
798		-----		-----	1980		-----		-----
846		-----		-----	2129	D6730	5.79		-1.60
873		-----		-----	2130		-----		-----
875		-----		-----	2146	ISO22854-A	6.3		-0.48
902		-----		-----	6012		-----		-----
912	D6730	7.6	C,R(0.05)	2.37	6018	ISO22854-A	6.70		0.40
913		-----		-----	6028	ISO22854-A	7.2		1.49
914		-----		-----	6045		-----		-----
963	D6839	6.4		-0.26	6046		-----		-----
971	D6839	6.83		0.68	6049	ISO22854-A	6.60		0.18
974		-----		-----	6054		-----		-----
994	D6729	5.960		-1.22	6068		-----		-----
1006	D6730	6.4		-0.26	6075		-----		-----
1011	ISO22854-A	6.76		0.53	6103	D6730	7.274		1.66
1033		-----		-----	6142	ISO22854-A	6.21		-0.68
1059	ISO22854-A	6.6		0.18	6143		-----		-----
1080	ISO22854-A	6.73		0.46	6192		-----		-----
1082		-----		-----	6201	ISO22854-A	6.40		-0.26
1095	ISO22854-A	6.5		-0.04	6203	ISO22854-A	6.51		-0.02
1097		-----		-----	6240	ISO22854-A	7.21		1.51
1108	ISO22854-A	6.57		0.11	6249	ISO22854-A	6.42		-0.22
1109	D6839	6.59		0.16	6258		-----		-----
1126	ISO22854-A	6.50		-0.04	6262	ISO22854-A	6.43		-0.19
1134	ISO22854-A	6.493		-0.06	6291	ISO22854-A	6.62		0.22
1155		-----		-----	6299		-----		-----
1191	ISO22854-A	6.57		0.11	6321	ISO22854-A	6.55		0.07
1194		-----		-----	6359	ISO22854-A	6.6		0.18

lab	method	value	mark	z(targ)
6404	ISO22854-A	6.55		0.07
6410	ISO22854-A	6.6		0.18
6416		-----		-----

normality	not OK
n	58
outliers	3
mean (n)	6.518
st.dev. (n)	0.2557
R(calc.)	0.716
st.dev.(ISO22854-A:21)	0.4566
R(ISO22854-A:21)	1.278

Lab 912 first reported 10.25





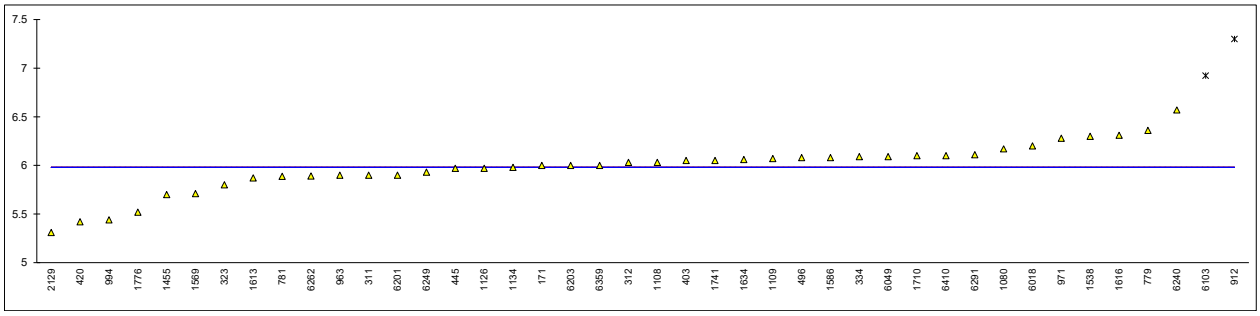
Determination of Olefins by GC on sample #21185; results in %M/M

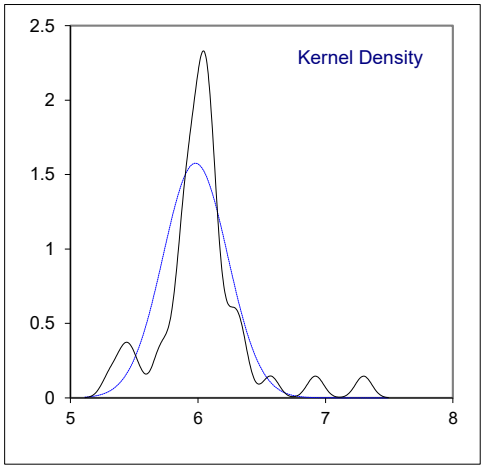
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1199		-----		-----
140		-----		-----	1205		-----		-----
171	ISO22854-A	6.0		-----	1212		-----		-----
225		-----		-----	1237		-----		-----
237		-----		-----	1272		-----		-----
238		-----		-----	1275		-----		-----
273		-----		-----	1357		-----		-----
311	ISO22854-A	5.9		-----	1397		-----		-----
312	ISO22854-A	6.03		-----	1399		-----		-----
323	ISO22854-A	5.8		-----	1402		-----		-----
328		-----		-----	1455	ISO22854-A	5.7		-----
333		-----		-----	1459		-----		-----
334	ISO22854-A	6.09		-----	1476		-----		-----
335		-----		-----	1488		-----		-----
337		-----		-----	1498		-----		-----
338		-----		-----	1510		-----		-----
343		-----		-----	1538	ISO22854-A	6.3		-----
344		-----		-----	1546		-----		-----
352		-----		-----	1554		-----		-----
365		-----		-----	1557		-----		-----
369		-----		-----	1569	D6839	5.71		-----
370		-----		-----	1586	ISO22854-A	6.08		-----
371		-----		-----	1602		-----		-----
381		-----		-----	1613	D6839	5.87		-----
391		-----		-----	1616	D6839	6.31		-----
399		-----		-----	1631		-----		-----
403	ISO22854-A	6.05		-----	1634	ISO22854-A	6.06		-----
404		-----		-----	1650		-----		-----
420	ISO22854-A	5.42		-----	1676		-----		-----
431		-----		-----	1710	ISO22854-A	6.1		-----
440		-----		-----	1720		-----		-----
444		-----		-----	1724		-----		-----
445	ISO22854-A	5.97		-----	1728		-----		-----
447		-----		-----	1740		-----		-----
467		-----		-----	1741	ISO22854-A	6.05		-----
480		-----		-----	1742		-----		-----
496	ISO22854-A	6.08		-----	1746		-----		-----
631		-----		-----	1753		-----		-----
734		-----		-----	1776	ISO22854-A	5.52		-----
751		-----		-----	1811		-----		-----
752		-----		-----	1833		-----		-----
759		-----		-----	1936		-----		-----
779	D6729	6.360		-----	1937		-----		-----
781	D6729	5.888		-----	1938		-----		-----
782		-----		-----	1953		-----		-----
785		-----		-----	1977		-----		-----
798		-----		-----	1980		-----		-----
846		-----		-----	2129	D6730	5.31		-----
873		-----		-----	2130		-----		-----
875		-----		-----	2146		-----		-----
902		-----		-----	6012		-----		-----
912	D6730	7.3	C,R(0.01)	-----	6018	ISO22854-A	6.20		-----
913		-----		-----	6028		-----		-----
914		-----		-----	6045		-----		-----
963	D6839	5.9		-----	6046		-----		-----
971	D6839	6.28		-----	6049	ISO22854-A	6.09		-----
974		-----		-----	6054		-----		-----
994	D6729	5.440		-----	6068		-----		-----
1006		-----		-----	6075		-----		-----
1011		-----		-----	6103	D6730	6.922	R(0.05)	-----
1033		-----		-----	6142		-----		-----
1059		-----		-----	6143		-----		-----
1080	ISO22854-A	6.17		-----	6192		-----		-----
1082		-----		-----	6201	ISO22854-A	5.9		-----
1095		-----		-----	6203	ISO22854-A	6.00		-----
1097		-----		-----	6240	ISO22854-A	6.57		-----
1108	ISO22854-A	6.03		-----	6249	ISO22854-A	5.93		-----
1109	D6839	6.07		-----	6258		-----		-----
1126	ISO22854-A	5.97		-----	6262	ISO22854-A	5.89		-----
1134	ISO22854-A	5.98		-----	6291	ISO22854-A	6.11		-----
1155		-----		-----	6299		-----		-----
1191		-----		-----	6321		-----		-----
1194		-----		-----	6359	ISO22854-A	6.0		-----

lab	method	value	mark	z(targ)
6404		-----		-----
6410	ISO22854-A	6.1		-----
6416		-----		-----

	normality	suspect
	n	40
	outliers	2
	mean (n)	5.981
	st.dev. (n)	0.2531
	R(calc.)	0.709
	st.dev.(lit)	unknown
	R(lit)	unknown
Compare		
	R(iis20B06EN)	1.389

Lab 912 first reported 9.74





Determination of Oxidation Stability on sample #21185; results in minutes

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1199		-----		-----
140	D525	>900		-----	1205		-----		-----
171	D525	>240		-----	1212	ISO7536	>2000		-----
225	D525	>900		-----	1237		-----		-----
237	D525	>900		-----	1272		-----		-----
238		-----		-----	1275	IP40	>900		-----
273		-----		-----	1357	D525	>360		-----
311	D525	>900		-----	1397		-----		-----
312	ISO7536	>900		-----	1399		-----		-----
323	ISO7536	>900		-----	1402	D525	>900		-----
328	ISO7536	>900		-----	1455	D525	>360		-----
333		-----		-----	1459		-----		-----
334	ISO7536	>960		-----	1476		-----		-----
335		-----		-----	1488	ISO7536	> 900		-----
337		-----		-----	1498		-----		-----
338		-----		-----	1510		-----		-----
343		-----		-----	1538	ISO7536	>900		-----
344		-----		-----	1546		-----		-----
352		-----		-----	1554		-----		-----
365		-----		-----	1557		-----		-----
369		-----		-----	1569	ISO7536	>900		-----
370		-----		-----	1586	D525	>900		-----
371	ISO7536	>900		-----	1602	ISO7536	>480		-----
381		-----		-----	1613	D525	>360		-----
391	ISO7536	>900		-----	1616	D525	>900		-----
399		-----		-----	1631		-----		-----
403		-----		-----	1634		-----		-----
404		-----		-----	1650		-----		-----
420	ISO7536	>600		-----	1676		-----		-----
431		-----		-----	1710	ISO7536	>900		-----
440		-----		-----	1720		-----		-----
444		-----		-----	1724	D525	>1440		-----
445		-----		-----	1728	D525	>900		-----
447	D525	>900		-----	1740		-----		-----
467		-----		-----	1741	ISO7536	>985		-----
480		-----		-----	1742		-----		-----
496	ISO7536	>1200		-----	1746		-----		-----
631		-----		-----	1753		-----		-----
734		-----		-----	1776		-----		-----
751		-----		-----	1811		-----		-----
752		-----		-----	1833	D525	>900		-----
759		-----		-----	1936		-----		-----
779		-----		-----	1937		-----		-----
781	ISO7536	>900		-----	1938		-----		-----
782		-----		-----	1953		-----		-----
785		-----		-----	1977	ISO7536	>900		-----
798		-----		-----	1980	ISO7536	>500		-----
846		-----		-----	2129	D525	>900		-----
873		-----		-----	2130	IP40	>900		-----
875		-----		-----	2146		-----		-----
902		-----		-----	6012		-----		-----
912	D525	>1000		-----	6018		-----		-----
913		-----		-----	6028		-----		-----
914		-----		-----	6045	D525	>360		-----
963	D525	>900		-----	6046		-----		-----
971	D525	>900		-----	6049	ISO7536	>900		-----
974		-----		-----	6054		-----		-----
994		-----		-----	6068	ISO7536	>900		-----
1006		-----		-----	6075		-----		-----
1011	ISO7536	>400		-----	6103	D7525	1619.8		-----
1033		-----		-----	6142		-----		-----
1059	ISO7536	>900		-----	6143		-----		-----
1080		-----		-----	6192		-----		-----
1082	ISO7536	1500		-----	6201	D525	>900		-----
1095		-----		-----	6203	ISO7536	> 900		-----
1097		-----		-----	6240	D525	>900		-----
1108	ISO7536	>900		-----	6249		-----		-----
1109	D381	>900		-----	6258	D525	>900		-----
1126		-----		-----	6262	ISO7536	>360		-----
1134		-----		-----	6291	ISO7536	3000		-----
1155	ISO7536	>900		-----	6299		-----		-----
1191	ISO7536	1500		-----	6321	IP40	>1000		-----
1194		-----		-----	6359		-----		-----

lab	method	value	mark	z(targ)
6404		-----		-----
6410	ISO7536	>900		-----
6416		-----		-----
	n	57		
	mean (n)	>360		

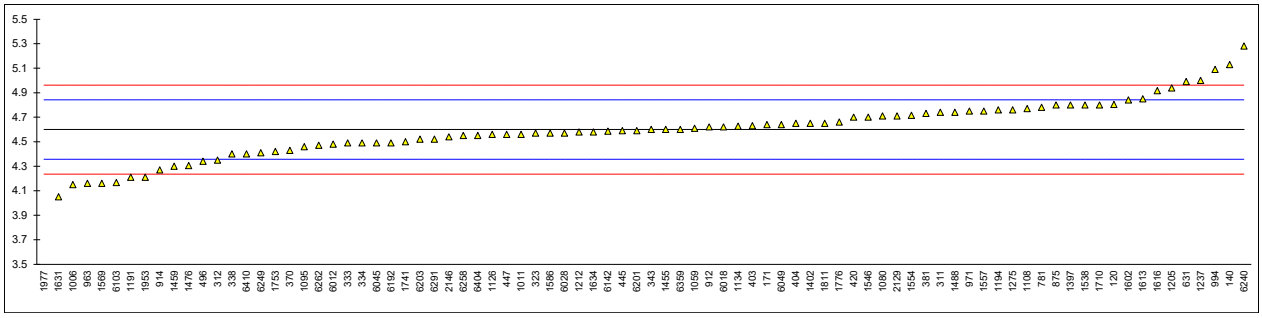
Determination of Ethanol on sample #21185; results in %V/V

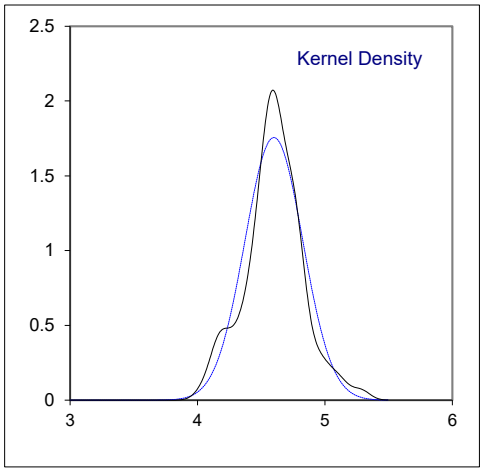
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D5599	4.804		1.69	1199		-----		-----
140	D5599	5.13		4.38	1205		4.938		2.79
171	ISO22854-A	4.64		0.34	1212	EN13132	4.58		-0.16
225		-----		-----	1237	In house	5.0		3.31
237		-----		-----	1272		-----		-----
238		-----		-----	1275	ISO22854-A	4.76		1.33
273		-----		-----	1357		-----		-----
311	ISO22854-A	4.74		1.16	1397	EN13132	4.8		1.66
312	ISO22854-A	4.35		-2.06	1399		-----		-----
323	ISO22854-A	4.57		-0.24	1402	ISO22854-A	4.65		0.42
328		-----		-----	1455	ISO22854-A	4.6		0.01
333	ISO22854-A	4.49		-0.90	1459	In house	4.3		-2.47
334	ISO22854-A	4.49		-0.90	1476	EN13132	4.305	C	-2.43
335		-----		-----	1488	EN13132	4.74		1.16
337		-----		-----	1498		-----		-----
338		4.4		-1.65	1510		-----		-----
343	EN13132	4.6		0.01	1538		4.80		1.66
344		-----		-----	1546	EN1601	4.7		0.83
352		-----		-----	1554	EN13132	4.7152		0.96
365		-----		-----	1557	D5845	4.75		1.24
369		-----		-----	1569	D6839	4.16		-3.63
370	EN13132	4.43		-1.40	1586	ISO22854-A	4.57		-0.24
371		-----		-----	1602	EN13132	4.84		1.99
381	ISO22854-A	4.73		1.08	1613	D6839	4.85		2.07
391		-----		-----	1616	D4815	4.917		2.62
399		-----		-----	1631	EN13132	4.05		-4.53
403	ISO22854-A	4.63		0.25	1634	ISO22854-A	4.58		-0.16
404	D5845	4.65		0.42	1650		-----		-----
420	ISO22854-A	4.7		0.83	1676		-----		-----
431		-----		-----	1710	ISO22854-A	4.8		1.66
440		-----		-----	1720		-----		-----
444		-----		-----	1724		-----	W	-----
445	ISO22854-A	4.59		-0.08	1728		-----		-----
447	IP466	4.56		-0.32	1740		-----		-----
467		-----		-----	1741	EN13132	4.50		-0.82
480		-----		-----	1742		-----		-----
496	ISO22854-A	4.34		-2.14	1746		-----		-----
631	D5845	4.99		3.22	1753	EN13132	4.42		-1.48
734		-----		-----	1776	ISO22854-A	4.66		0.50
751		-----		-----	1811	ISO22854-A	4.65		0.42
752		-----		-----	1833		-----		-----
759		-----		-----	1936		-----		-----
779		-----		-----	1937		-----		-----
781	EN13132	4.78		1.49	1938		-----		-----
782		-----		-----	1953		4.21		-3.21
785		-----		-----	1977	D6730	1.589	R(0.01)	-24.84
798		-----		-----	1980		-----		-----
846		-----		-----	2129	D6730	4.71		0.91
873		-----		-----	2130		-----		-----
875	EN13132	4.8		1.66	2146	ISO22854-A	4.54		-0.49
902		-----		-----	6012	D5845	4.48		-0.99
912	D4815	4.62		0.17	6018	ISO22854-A	4.62		0.17
913		-----		-----	6028	D7423	4.57		-0.24
914	D4815	4.27		-2.72	6045	D4815	4.49		-0.90
963	D4815	4.16		-3.63	6046		-----	W	-----
971	D4815	4.75		1.24	6049	ISO22854-A	4.64		0.34
974		-----		-----	6054		-----		-----
994	D6729	5.09	C	4.05	6068		-----		-----
1006	D4815	4.15		-3.71	6075		-----		-----
1011	ISO22854-A	4.56		-0.32	6103	D6730	4.1675		-3.56
1033		-----		-----	6142	ISO22854-A	4.585		-0.12
1059	ISO22854-A	4.61		0.09	6143		-----		-----
1080		4.71		0.91	6192	ISO22854	4.49		-0.90
1082		-----		-----	6201	ISO22854-A	4.59		-0.08
1095	ISO22854-A	4.46		-1.15	6203	ISO22854-A	4.52		-0.66
1097		-----		-----	6240	ISO22854-A	5.28		5.62
1108	ISO22854-A	4.77		1.41	6249	ISO22854-A	4.41		-1.56
1109		-----		-----	6258	EN13132	4.55		-0.41
1126		4.56		-0.32	6262	D4815	4.47		-1.07
1134	ISO22854-A	4.62667		0.23	6291	ISO22854-A	4.52		-0.66
1155		-----		-----	6299		-----		-----
1191	ISO22854-A	4.21		-3.21	6321		-----		-----
1194	D5845	4.76		1.33	6359	EN13132	4.6		0.01

lab	method	value	mark	z(targ)
6404		4.55		-0.41
6410	ISO22854-A	4.4		-1.65
6416		-----		-----

normality	OK
n	83
outliers	1
mean (n)	4.5994
st.dev. (n)	0.22729
R(calc.)	0.6364
st.dev.(ISO22854-A:21)	0.12117
R(ISO22854-A:21)	0.3393

Lab 994 first reported 5.19
Lab 1476 first reported 5.45
Lab 1724 test result withdrawn, reported 3.96
Lab 6046 test result withdrawn, reported 2.78





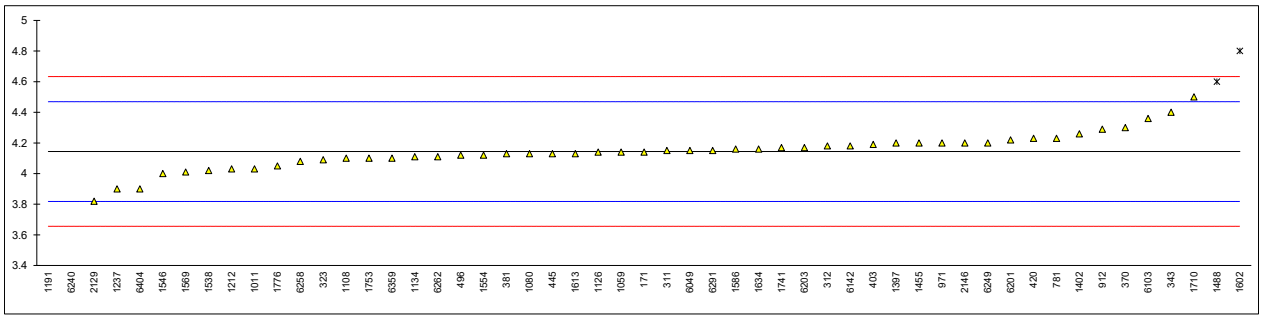
Determination of Ethers (C5 or more C atoms) on sample #21185; results in %V/V

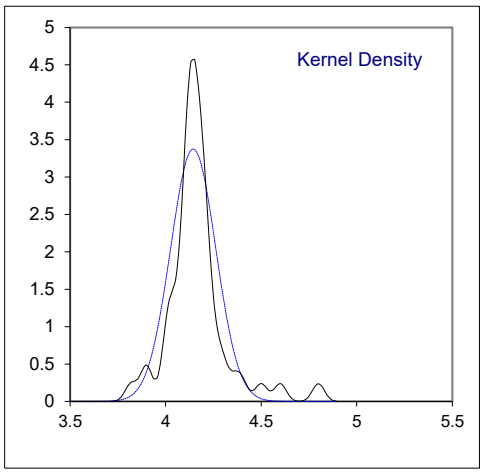
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1199		-----		-----
140		-----		-----	1205		-----		-----
171	ISO22854-A	4.14		-0.03	1212	EN13132	4.03		-0.70
225		-----		-----	1237	In house	3.9		-1.50
237		-----		-----	1272		-----		-----
238		-----		-----	1275		-----		-----
273		-----		-----	1357		-----		-----
311	ISO22854-A	4.15		0.03	1397	EN13132	4.2		0.34
312	ISO22854-A	4.18		0.22	1399		-----		-----
323	ISO22854-A	4.09		-0.33	1402	ISO22854-A	4.26		0.71
328		-----		-----	1455	ISO22854-A	4.2		0.34
333		-----		-----	1459		-----		-----
334		-----		-----	1476		-----		-----
335		-----		-----	1488	EN13132	4.60	R(0.05)	2.80
337		-----		-----	1498		-----		-----
338		-----		-----	1510		-----		-----
343	EN13132	4.4		1.57	1538		4.02		-0.77
344		-----		-----	1546	EN1601	4.0		-0.89
352		-----		-----	1554	EN13132	4.1206		-0.15
365		-----		-----	1557		-----		-----
369		-----		-----	1569	D6839	4.01		-0.83
370	EN13132	4.3		0.96	1586	ISO22854-A	4.16		0.10
371		-----		-----	1602	EN13132	4.8	R(0.01)	4.03
381	ISO22854-A	4.13		-0.09	1613	D6839	4.13		-0.09
391		-----		-----	1616		-----		-----
399		-----		-----	1631		-----	W	-----
403	ISO22854-A	4.19		0.28	1634	ISO22854-A	4.16		0.10
404		-----		-----	1650		-----		-----
420	ISO22854-A	4.23		0.53	1676		-----		-----
431		-----		-----	1710	ISO22854-A	4.5		2.19
440		-----		-----	1720		-----		-----
444		-----		-----	1724		-----		-----
445	ISO22854-A	4.13		-0.09	1728		-----		-----
447		-----		-----	1740		-----		-----
467		-----		-----	1741	EN13132	4.17		0.16
480		-----		-----	1742		-----		-----
496	ISO22854-A	4.12		-0.15	1746		-----		-----
631		-----		-----	1753	EN13132	4.10		-0.27
734		-----		-----	1776	ISO22854-A	4.05		-0.58
751		-----		-----	1811		-----		-----
752		-----		-----	1833		-----		-----
759		-----		-----	1936		-----		-----
779		-----		-----	1937		-----		-----
781	EN13132	4.23		0.53	1938		-----		-----
782		-----		-----	1953		-----		-----
785		-----		-----	1977		-----		-----
798		-----		-----	1980		-----		-----
846		-----		-----	2129	D6730	3.82		-1.99
873		-----		-----	2130		-----		-----
875		-----		-----	2146	ISO22854-A	4.20		0.34
902		-----		-----	6012		-----		-----
912	D4815	4.29	C	0.89	6018	ISO22854-A	<0.01	f-?	<-25.41
913		-----		-----	6028		-----		-----
914		-----		-----	6045		-----		-----
963	D4815	<0.2	f-?	<-24.25	6046		-----		-----
971	D4815	4.20		0.34	6049	ISO22854-A	4.15		0.03
974		-----		-----	6054		-----		-----
994	D6729	<1	C	-----	6068		-----		-----
1006	D4815	Not tested		-----	6075		-----		-----
1011	ISO22854-A	4.03		-0.70	6103	D6730	4.3596		1.32
1033		-----		-----	6142	ISO22854-A	4.18		0.22
1059	ISO22854-A	4.14		-0.03	6143		-----		-----
1080		4.13	C	-0.09	6192		-----		-----
1082		-----		-----	6201	ISO22854-A	4.22		0.46
1095	ISO22854-A	<0.80	f-?	<-20.56	6203	ISO22854-A	4.17		0.16
1097		-----		-----	6240	ISO22854-A	0.92	R(0.01)	-19.82
1108	ISO22854-A	4.10		-0.27	6249	ISO22854-A	4.20		0.34
1109		-----		-----	6258	EN13132	4.08		-0.40
1126		4.14		-0.03	6262	D4815	4.11	C	-0.21
1134	ISO22854-A	4.11	C	-0.21	6291	ISO22854-A	4.15		0.03
1155		-----		-----	6299		-----		-----
1191	ISO22854-A	0	R(0.01)	-25.48	6321		-----		-----
1194		-----		-----	6359	EN13132	4.1		-0.27

lab	method	value	mark	z(targ)
6404		3.90	C	-1.50
6410		-----		-----
6416		-----		-----

normality	not OK
n	49
outliers	4
mean (n)	4.1445
st.dev. (n)	0.11822
R(calc.)	0.3310
st.dev.(ISO22854-A:21)	0.16269
R(ISO22854-A:21)	0.4555

Lab 912 first reported <0.2
Lab 963 possibly a false negative test result?
Lab 994 test result was reported by mistake, should be the test result for the DIPE determination
Lab 1080 first reported 0.03
Lab 1095 possibly a false negative test result?
Lab 1134 first reported 2.7613433
Lab 1631 test result withdrawn, reported <0.17
Lab 6018 possibly a false negative test result?
Lab 6262 first reported 0.17
Lab 6404 first reported 0.03





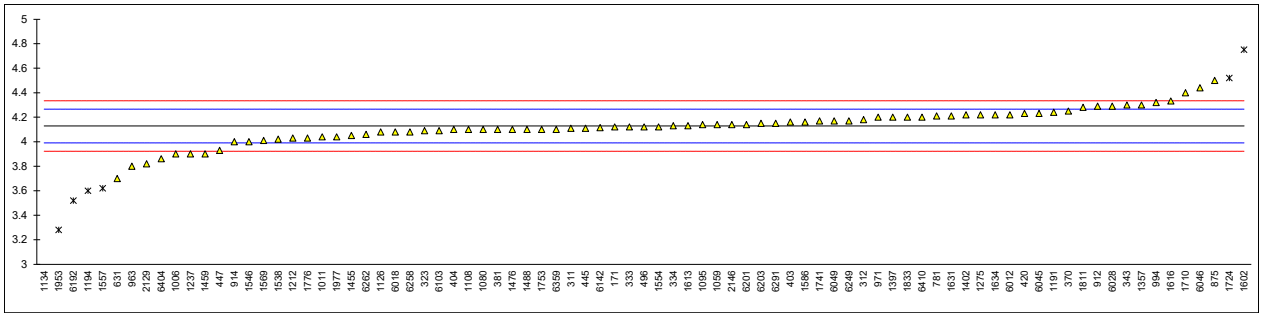
Determination of MTBE on sample #21185; results in %V/V

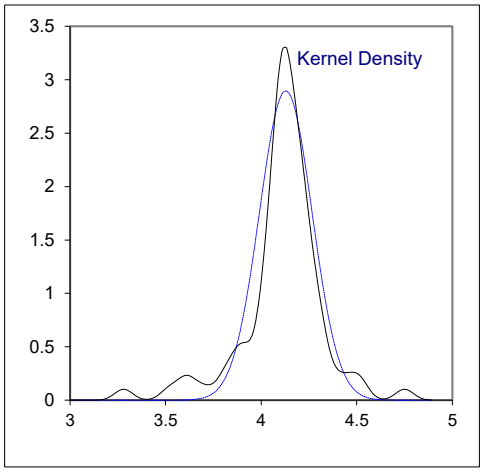
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1199		-----		-----
140		-----		-----	1205		-----		-----
171	ISO22854-A	4.12		-0.12	1212	EN13132	4.03		-1.43
225		-----		-----	1237	In house	3.9		-3.32
237		-----		-----	1272		-----		-----
238		-----		-----	1275	ISO22854-A	4.22		1.33
273		-----		-----	1357	D6839	4.3		2.49
311	ISO22854-A	4.11		-0.27	1397	EN13132	4.2		1.04
312	ISO22854-A	4.18		0.75	1399		-----		-----
323	ISO22854-A	4.09		-0.56	1402	ISO22854-A	4.22		1.33
328		-----		-----	1455	ISO22854-A	4.05		-1.14
333	ISO22854-A	4.12		-0.12	1459	In house	3.9		-3.32
334	ISO22854-A	4.13		0.02	1476	EN13132	4.10		-0.41
335		-----		-----	1488	EN13132	4.10		-0.41
337		-----		-----	1498		-----		-----
338		-----		-----	1510		-----		-----
343	EN13132	4.3		2.49	1538		4.02		-1.57
344		-----		-----	1546	EN1601	4.0		-1.86
352		-----		-----	1554	EN13132	4.1206		-0.11
365		-----		-----	1557	D5845	3.62	C,R(0.05)	-7.38
369		-----		-----	1569	D6839	4.01		-1.72
370	EN13132	4.25		1.77	1586	ISO22854-A	4.16		0.46
371		-----		-----	1602	EN13132	4.75	R(0.05)	9.02
381	ISO22854-A	4.10		-0.41	1613	D6839	4.13		0.02
391		-----		-----	1616	D4815	4.332		2.96
399		-----		-----	1631	EN13132	4.21		1.18
403	ISO22854-A	4.16		0.46	1634	ISO22854-A	4.22	C	1.33
404	D5845	4.10		-0.41	1650		-----		-----
420	ISO22854-A	4.23		1.48	1676		-----		-----
431		-----		-----	1710	ISO22854-A	4.4		3.94
440		-----		-----	1720		-----		-----
444		-----		-----	1724	ISO22854-A	4.52	R(0.05)	5.69
445	ISO22854-A	4.11		-0.27	1728		-----		-----
447	IP466	3.93		-2.88	1740		-----		-----
467		-----		-----	1741	EN13132	4.17		0.60
480		-----		-----	1742		-----		-----
496	ISO22854-A	4.12		-0.12	1746		-----		-----
631	D5845	3.7		-6.22	1753	EN13132	4.10		-0.41
734		-----		-----	1776	ISO22854-A	4.03		-1.43
751		-----		-----	1811	ISO22854-A	4.28		2.20
752		-----		-----	1833		4.20		1.04
759		-----		-----	1936		-----		-----
779		-----		-----	1937		-----		-----
781	EN13132	4.21		1.18	1938		-----		-----
782		-----		-----	1953		3.28	R(0.01)	-12.32
785		-----		-----	1977	D6730	4.040		-1.28
798		-----		-----	1980		-----		-----
846		-----		-----	2129	D6730	3.82		-4.48
873		-----		-----	2130		-----		-----
875	EN13132	4.5		5.40	2146	ISO22854-A	4.14		0.17
902		-----		-----	6012	D5845	4.22		1.33
912	D4815	4.29		2.35	6018	ISO22854-A	4.08		-0.70
913		-----		-----	6028	D7423	4.29		2.35
914	D4815	4.00		-1.86	6045	D4815	4.23		1.48
963	D4815	3.80		-4.77	6046	D5845	4.44		4.52
971	D4815	4.20		1.04	6049	ISO22854-A	4.17		0.60
974		-----		-----	6054		-----		-----
994	D6729	4.32		2.78	6068		-----		-----
1006	D4815	3.90		-3.32	6075		-----		-----
1011	ISO22854-A	4.04		-1.28	6103	D6730	4.0906		-0.55
1033		-----		-----	6142	ISO22854-A	4.115		-0.19
1059	ISO22854-A	4.14		0.17	6143		-----		-----
1080		4.10		-0.41	6192	ISO22854	3.52	R(0.05)	-8.83
1082		-----		-----	6201	ISO22854-A	4.14		0.17
1095	ISO22854-A	4.14		0.17	6203	ISO22854-A	4.15		0.31
1097		-----		-----	6240	ISO22854-A	<0.8	f-?	<-48.32
1108	ISO22854-A	4.10		-0.41	6249	ISO22854-A	4.17		0.60
1109		-----		-----	6258	EN13132	4.08		-0.70
1126		4.08		-0.70	6262	D4815	4.06	C	-0.99
1134	ISO22854-A	0.0667	R(0.01)	-58.97	6291	ISO22854-A	4.15		0.31
1155		-----		-----	6299		-----		-----
1191	ISO22854-A	4.24		1.62	6321		-----		-----
1194	D5845	3.6	R(0.05)	-7.67	6359	EN13132	4.1		-0.41

lab	method	value	mark	z(targ)
6404		3.86		-3.90
6410	ISO22854-A	4.2		1.04
6416		-----		-----

normality	suspect
n	76
outliers	7
mean (n)	4.1284
st.dev. (n)	0.13781
R(calc.)	0.3859
st.dev.(ISO22854-A:21)	0.06888
R(ISO22854-A:21)	0.1929

Lab 1557 first reported 3.31
Lab 1634 first reported 0
Lab 6240 possibly a false negative test result?
Lab 6262 first reported 0.12





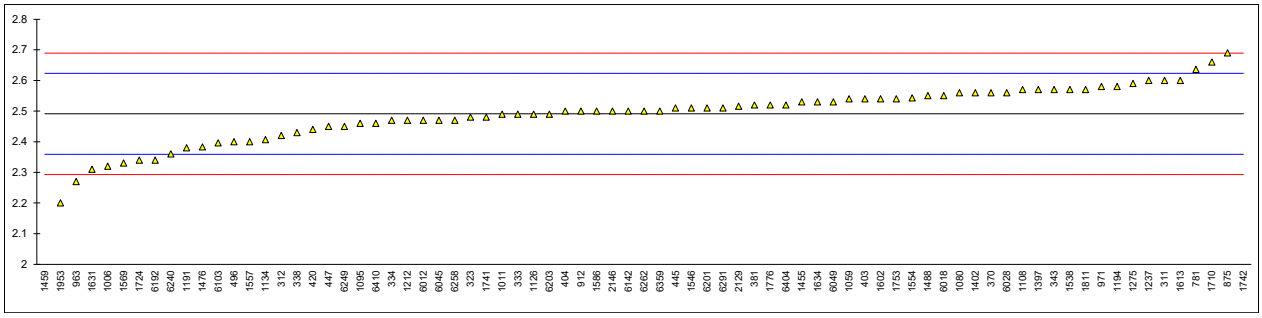
Determination of Oxygen content on sample #21185; results in %M/M

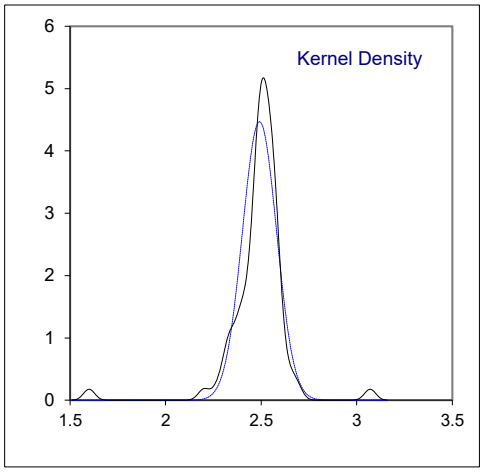
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1199		-----		-----
140		-----		-----	1205		-----		-----
171		-----		-----	1212	EN13132	2.47		-0.32
225		-----		-----	1237	In house	2.6		1.65
237		-----		-----	1272		-----		-----
238		-----		-----	1275	ISO22854-A	2.59		1.49
273		-----		-----	1357		-----		-----
311	ISO22854-A	2.60		1.65	1397	EN13132	2.57		1.19
312	ISO22854-A	2.42		-1.08	1399		-----		-----
323	EN22854	2.48		-0.17	1402	ISO22854-A	2.56		1.04
328		-----		-----	1455	ISO22854-A	2.53		0.59
333	ISO22854-A	2.49		-0.02	1459	In house	1.6	R(0.01)	-13.49
334	ISO22854-A	2.47		-0.32	1476	EN13132	2.383	C	-1.64
335		-----		-----	1488	EN13132	2.55		0.89
337		-----		-----	1498		-----		-----
338	EN1601	2.43		-0.93	1510		-----		-----
343	EN13132	2.57		1.19	1538	ISO22854-A	2.57		1.19
344		-----		-----	1546	EN1601	2.51		0.28
352		-----		-----	1554	EN13132	2.543		0.78
365		-----		-----	1557	In house	2.40		-1.38
369		-----		-----	1569	D6839	2.33		-2.44
370	EN13132	2.56		1.04	1586	ISO22854-A	2.50		0.13
371		-----		-----	1602	EN13132	2.54		0.74
381	ISO22854-A	2.52		0.43	1613	D6839	2.60		1.65
391		-----		-----	1616		-----		-----
399		-----		-----	1631		2.31		-2.75
403	ISO22854-A	2.54		0.74	1634	ISO22854-A	2.53		0.59
404	D5845	2.5		0.13	1650		-----		-----
420	EN13132	2.44		-0.78	1676		-----		-----
431		-----		-----	1710	ISO22854-A	2.66		2.55
440		-----		-----	1720		-----		-----
444		-----		-----	1724	ISO22854-A	2.34		-2.29
445	EN22854	2.51		0.28	1728		-----		-----
447	IP466	2.45		-0.63	1740		-----		-----
467		-----		-----	1741	EN13132	2.48		-0.17
480		-----		-----	1742	D5622	3.07	R(0.01)	8.76
496	ISO22854-A	2.40		-1.38	1746		-----		-----
631		-----		-----	1753	EN13132	2.54		0.74
734		-----		-----	1776	EN22854	2.52		0.43
751		-----		-----	1811	ISO22854-A	2.57		1.19
752		-----		-----	1833		-----		-----
759		-----		-----	1936		-----		-----
779		-----		-----	1937		-----		-----
781	EN13132	2.636		2.19	1938		-----		-----
782		-----		-----	1953	In house	2.2		-4.41
785		-----		-----	1977		-----		-----
798		-----		-----	1980		-----		-----
846		-----		-----	2129	D6730	2.516	C	0.37
873		-----		-----	2130		-----		-----
875	EN13132	2.69		3.01	2146	ISO22854-A	2.50		0.13
902		-----		-----	6012	D5845	2.47		-0.32
912	D4815	2.50		0.13	6018	ISO22854-A	2.55		0.89
913		-----		-----	6028	D7423	2.56		1.04
914		-----		-----	6045	D4815	2.47		-0.32
963	D4815	2.27		-3.35	6046		-----	W	-----
971	D4815	2.580		1.34	6049	ISO22854-A	2.53		0.59
974		-----		-----	6054		-----		-----
994		-----		-----	6068		-----		-----
1006	D4815	2.32		-2.59	6075		-----		-----
1011	ISO22854-A	2.49		-0.02	6103	D6730	2.396		-1.44
1033		-----		-----	6142	ISO22854-A	2.5		0.13
1059	ISO22854-A	2.54		0.74	6143		-----		-----
1080	ISO22854-A	2.56		1.04	6192	ISO22854	2.34		-2.29
1082		-----		-----	6201	ISO22854-A	2.51		0.28
1095	ISO22854-A	2.46		-0.47	6203	ISO22854-A	2.49		-0.02
1097		-----		-----	6240	ISO22854-A	2.36		-1.99
1108	ISO22854-A	2.57		1.19	6249	ISO22854-A	2.45		-0.63
1109		-----		-----	6258	EN13132	2.47		-0.32
1126	ISO22854-A	2.49		-0.02	6262	ISO22854-A	2.50	C	0.13
1134	ISO22854-A	2.40667		-1.28	6291	ISO22854-A	2.51		0.28
1155		-----		-----	6299		-----		-----
1191	EN22854	2.38		-1.69	6321		-----		-----
1194	D5845	2.58		1.34	6359	EN13132	2.50		0.13

lab	method	value	mark	z(targ)
6404	ISO22854-A	2.52		0.43
6410	ISO22854-A	2.46		-0.47
6416		-----		-----

normality	suspect
n	75
outliers	2
mean (n)	2.4913
st.dev. (n)	0.08927
R(calc.)	0.2500
st.dev.(ISO22854-A:21)	0.06605
R(ISO22854-A:21)	0.1849

Lab 1476 first reported 2.83
Lab 2129 first reported 2.156
Lab 6046 test result withdrawn, reported 1.88
Lab 6262 first reported 3.15





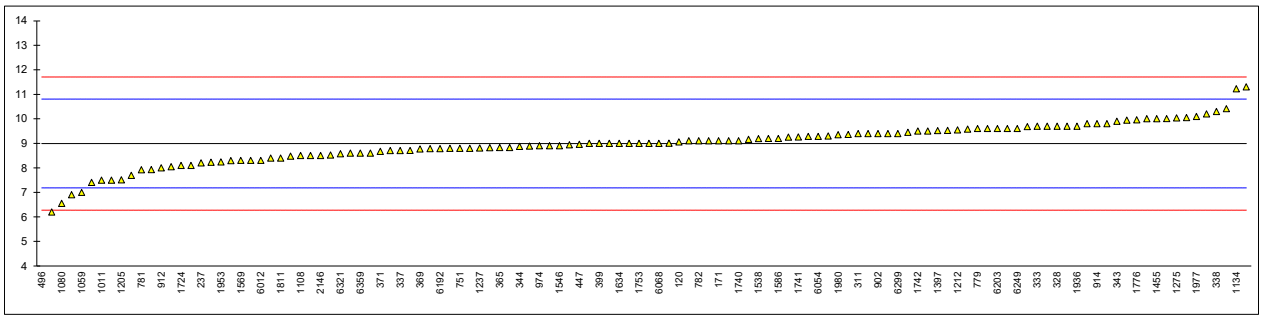
Determination of Sulfur on sample #21185; results in mg/kg

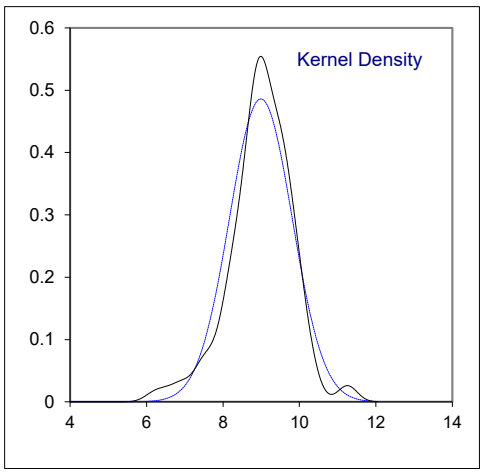
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D5453	9.06		0.07	1199		-----		-----
140	D2622	9.7		0.78	1205	ISO20846	7.51		-1.64
171	D5453	9.1		0.12	1212	ISO20846	9.55		0.62
225		-----		-----	1237	ISO20846	8.81		-0.20
237	D5453	8.2		-0.88	1272		-----		-----
238		-----		-----	1275	IP490	10.04		1.16
273	D5453	7.4	C	-1.76	1357	D5453	8.8		-0.21
311	ISO20846	9.4		0.45	1397	ISO20846	9.52		0.58
312	ISO20846	7.69		-1.44	1399		-----		-----
323	ISO20846	8.9		-0.10	1402	IP490	8.48		-0.57
328	ISO20846	9.7		0.78	1455	ISO20846	10	C	1.11
333	ISO20846	9.7		0.78	1459	ISO20884	10.2		1.33
334	ISO20846	9.1		0.12	1476	ISO20884	9.25		0.28
335		-----		-----	1488		-----		-----
337	ISO20846	8.7		-0.32	1498	D5453	9.2		0.23
338	ISO20846	10.3		1.44	1510		-----		-----
343	ISO20846	9.9		1.00	1538	ISO20846	9.19		0.22
344	D5453	8.8766		-0.13	1546	ISO20846	8.9		-0.10
352	ISO20846	8.89		-0.11	1554	ISO20846	8.83		-0.18
365	IP490	8.83		-0.18	1557	ISO20846	6.9		-2.31
369	ISO20846	8.77		-0.25	1569	ISO20846	8.3		-0.77
370	ISO20846	8.7		-0.32	1586	ISO13032	9.2		0.23
371	ISO20846	8.67		-0.36	1602	ISO20846	8.78		-0.24
381	ISO20846	8.71		-0.31	1613	D5453	8.4		-0.66
391	ISO20846	10.0		1.11	1616	D5453	9.58		0.65
399	D5453	9.0		0.01	1631	ISO13032	8.3		-0.77
403	ISO20846	9.45		0.50	1634	ISO20846	9.0		0.01
404	ISO20846	9.0		0.01	1650	ISO20846	8.82		-0.19
420	ISO20846	9.36		0.41	1676	ISO20846	9.004		0.01
431		-----		-----	1710	ISO20846	9.3		0.34
440		-----		-----	1720		-----		-----
444		-----		-----	1724	D5453	8.1		-0.99
445	ISO20846	8.80		-0.21	1728	D5453	9		0.01
447	IP490	8.961		-0.04	1740	ISO20846	9.1		0.12
467		-----		-----	1741	ISO20846	9.26		0.29
480		-----		-----	1742	ISO20846	9.5		0.56
496	ISO20846	2.10	R(0.01)	-7.62	1746		-----		-----
631		-----		-----	1753	ISO20846	9.0		0.01
734	D5453	8.23		-0.84	1776	ISO20846	9.96		1.07
751	ISO20884	8.8		-0.21	1811	ISO20846	8.4		-0.66
752		-----		-----	1833		-----		-----
759		-----		-----	1936	ISO20846	9.7		0.78
779	ISO20884	9.6		0.67	1937	ISO20846	9.6		0.67
781	ISO20846	7.92		-1.19	1938	ISO20846	9.5		0.56
782	ISO20884	9.10		0.12	1953	D4294	8.24		-0.83
785	ISO20884	9.8		0.89	1977	D5453	10.1		1.22
798		-----		-----	1980	ISO20846	9.35		0.39
846		-----		-----	2129	IP490	10.05		1.17
873	ISO20846	9.7		0.78	2130	IP490	8.5		-0.55
875	ISO20846	9.1		0.12	2146	ISO20846	8.5		-0.55
902	D5453	9.4		0.45	6012	ISO20846	8.3		-0.77
912	ISO20846	8.0		-1.10	6018	ISO20846	8.04		-1.05
913		-----		-----	6028	ISO20846	8.52		-0.52
914	D5453	9.8		0.89	6045	D5453	9.4		0.45
963	D5453	9.1		0.12	6046	ISO20846	7.93		-1.18
971	ISO20846	9.16		0.18	6049	ISO20846	9.0		0.01
974	D5453	8.9		-0.10	6054	D7039	9.28		0.32
994	D5453	7.5		-1.65	6068	ISO20884	9.0		0.01
1006	D5453	9.0		0.01	6075	ISO20846	8.29		-0.78
1011	ISO20846	7.5		-1.65	6103	ISO13032	8.1		-0.99
1033		-----		-----	6142	ISO20846	10.005		1.12
1059	ISO20846	7.0		-2.20	6143	D7039	10.414		1.57
1080	ISO20846	6.55		-2.70	6192	ISO20846	8.78		-0.24
1082		-----		-----	6201	ISO20846	9.95		1.06
1095	ISO20846	9.4		0.45	6203	D5453	9.6		0.67
1097	D5453	9.53		0.59	6240	ISO20846	9.6		0.67
1108	ISO20846	8.5	C	-0.55	6249	ISO20884	9.60		0.67
1109	D7039	9.28		0.32	6258	ISO20846	9.68		0.76
1126	ISO20846	8.94		-0.06	6262	ISO20846	6.2	C	-3.09
1134	IP490	11.2207		2.46	6291	ISO20846	8.6	C	-0.43
1155		-----		-----	6299	ISO20846	9.4		0.45
1191	ISO20846	9.8		0.89	6321	ISO20846	8.576		-0.46
1194	D7220/IP532	11.3		2.55	6359	ISO20846	8.6		-0.43

lab	method	value	mark	z(targ)
6404		-----		-----
6410	ISO20846	8.6		-0.43
6416		-----		-----

	normality	suspect
	n	121
	outliers	1
	mean (n)	8.993
	st.dev. (n)	0.8210
	R(calc.)	2.299
	st.dev.(ISO20846:19)	0.9046
	R(ISO20846:19)	2.533
Compare		
	R(D5453:19a)	3.011

Lab 273 first reported 6.4
Lab 1108 first reported 6.1
Lab 1455 first reported 5.7
Lab 6262 first reported 4.126
Lab 6291 first reported 6.2





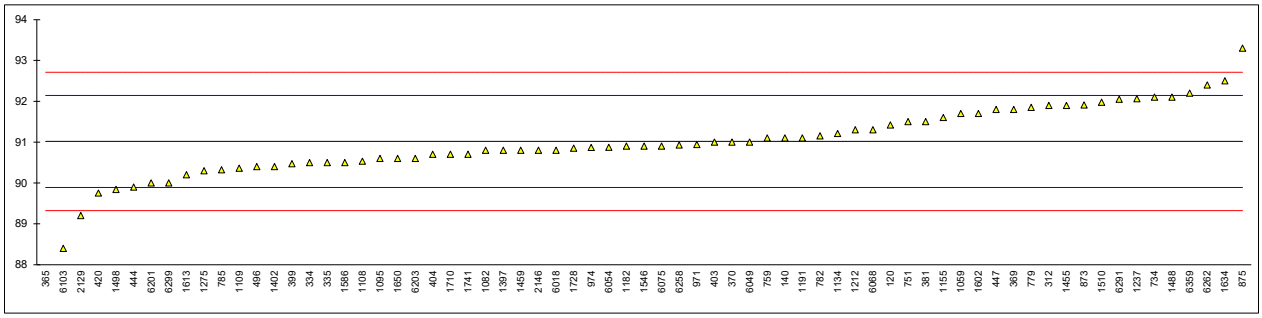
Determination of ASVP on sample #21186; results in kPa

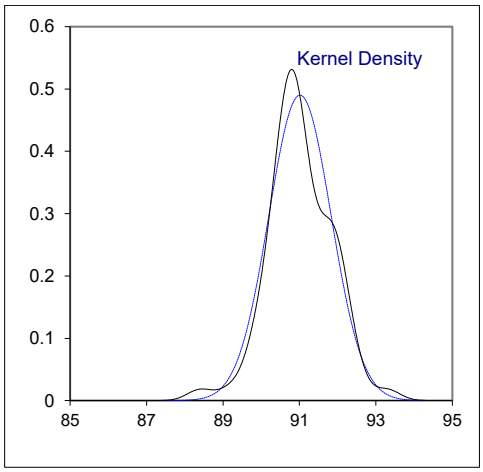
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D5191	91.42		0.71	1510	D5191	91.976		1.70
140	D5191	91.10		0.15	1538		-----		-----
171		-----		-----	1546	EN13016-1	90.9		-0.21
225		-----		-----	1554		-----		-----
237		-----		-----	1586	EN13016-1	90.5		-0.92
238		-----		-----	1602	EN13016-1	91.7		1.21
311		-----		-----	1613	EN13016-1	90.2		-1.45
312	EN13016-1	91.9		1.56	1631		-----		-----
323		-----		-----	1634	EN13016-1	92.5		2.63
328		-----		-----	1650	EN13016-1	90.6		-0.74
333		-----		-----	1676		-----		-----
334	EN13016-1	90.5		-0.92	1710	EN13016-1	90.7		-0.56
335	EN13016-1	90.5		-0.92	1724		-----		-----
337		-----		-----	1728	EN13016-1	90.85		-0.30
338		-----		-----	1730		-----		-----
344		-----		-----	1741	EN13016-1	90.7		-0.56
365	D5191	83.7	R(0.01)	-12.97	1746		-----		-----
369	EN13016-1	91.8		1.39	1776		-----		-----
370	EN13016-1	91.0		-0.03	1833		-----		-----
381	EN13016-1	91.5		0.86	1936		-----		-----
391		-----		-----	1937		-----		-----
399	EN13016-1	90.47		-0.97	1938		-----		-----
403	EN13016-1	91.0		-0.03	1953		-----		-----
404	EN13016-1	90.7		-0.56	1980		-----		-----
420	EN13016-1	89.75		-2.25	2129	D5191	89.2	C	-3.22
440		-----		-----	2130		-----		-----
444	D5191	89.90	C	-1.98	2146	EN13016-1	90.8		-0.38
445		-----		-----	6018	EN13016-1	90.8		-0.38
447	D5191	91.8		1.39	6028		-----		-----
467		-----		-----	6049	EN13016-1	91.0		-0.03
480		-----		-----	6054	D5191	90.873464		-0.25
496	EN13016-1	90.4		-1.09	6068	EN13016-1	91.3		0.50
631		-----		-----	6075	EN13016-1	90.9		-0.21
734	D5191	92.1		1.92	6103	EN13016-1	88.4		-4.64
751	EN13016-1	91.5		0.86	6142		-----		-----
752		-----		-----	6201	D5191	90		-1.80
759	EN13016-1	91.1		0.15	6203	EN13016-1	90.6		-0.74
779	D5191	91.85		1.48	6258	EN13016-1	90.93		-0.15
782	EN13016-1	91.15		0.24	6262	EN13016-1	92.4		2.45
785	EN13016-1	90.32		-1.24	6291	EN13016-1	92.05		1.83
798		-----		-----	6299	EN13016-1	90.0		-1.80
846		-----		-----	6321		-----		-----
873	EN13016-1	91.91		1.58	6359	EN13016-1	92.2		2.10
875	EN13016-1	93.3		4.05	6410		-----		-----
902		-----		-----	6416		-----		-----
963		-----		-----					
971	EN13016-1	90.94		-0.14					
974	D5191	90.87		-0.26					
1006		-----		-----					
1011		-----		-----					
1033		-----		-----					
1059	EN13016-1	91.7		1.21					
1082	EN13016-1	90.8		-0.38					
1095	EN13016-1	90.6		-0.74					
1108	EN13016-1	90.53	C	-0.86					
1109	D5191	90.36		-1.16					
1134	IP391	91.21		0.34					
1155	EN13016-1	91.6		1.03					
1182	D5191	90.9		-0.21					
1191	EN13016-1	91.1		0.15					
1194		-----		-----					
1212	EN13016-1	91.3		0.50					
1237	EN13016-1	92.06		1.85					
1272		-----		-----					
1275	EN13016-1	90.3		-1.27					
1357		-----		-----					
1397	EN13016-1	90.8		-0.38					
1399		-----		-----					
1402	EN13016-1	90.4		-1.09					
1455	D5191	91.9		1.56					
1459	EN13016-1	90.8		-0.38					
1488	EN13016-1	92.1		1.92					
1498	D5191	89.84		-2.09					

lab	method	value	mark	z(targ)

		without ASTM D5191, see §4.1:
normality	suspect	not OK
n	68	53
outliers	1	0
mean (n)	91.017	91.039
st.dev. (n)	0.8140	0.7914
R(calc.)	2.279	2.216
st.dev.(EN13016-1:18)	0.5643	0.5643
R(EN13016-1:18)	1.58	1.58

Lab 444 first reported 82.98
Lab 1108 first reported 98.73
Lab 2129 first reported 82.3



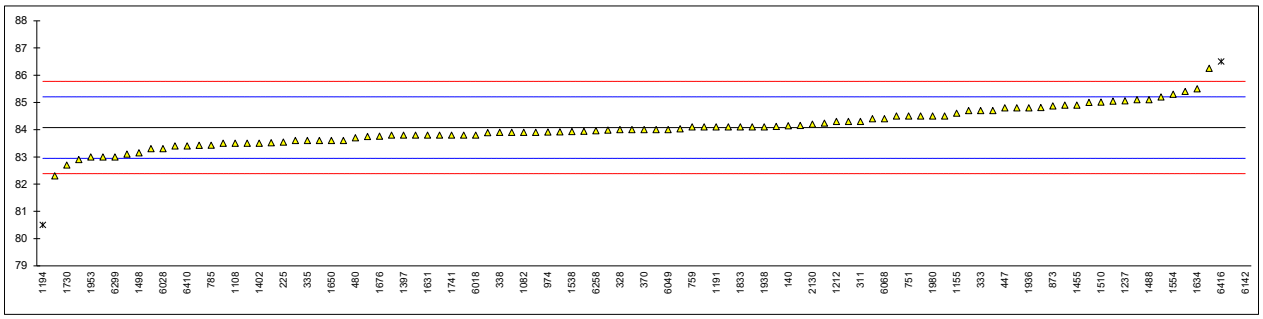


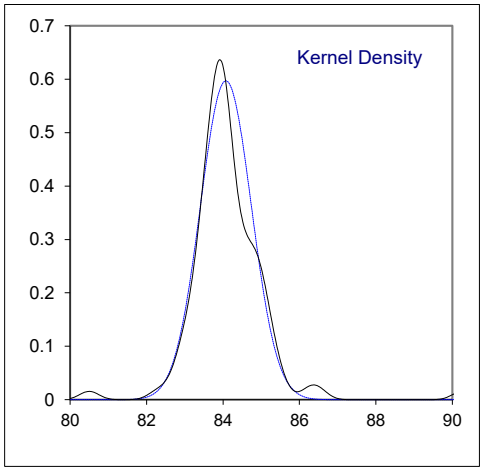
Determination of DVPE acc. to EN13016-1 on sample #21186; results in kPa

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1510	D5191	85.012		1.66
140	D5191	84.14		0.11	1538	EN13016-1	83.93		-0.26
171		-----		-----	1546	EN13016-1	83.94		-0.24
225	D5191	83.54		-0.95	1554	EN13016-1	85.3		2.17
237		-----		-----	1586	EN13016-1	84.1	E	0.04
238	D5191	90.26	C,R(0.01)	10.96	1602	EN13016-1	84.7		1.10
311	D5191	84.3		0.39	1613	EN13016-1	83.3		-1.38
312	EN13016-1	84.9		1.46	1631	EN13016-1	83.8		-0.49
323	EN13016-1	85.0		1.63	1634	EN13016-1	85.5		2.52
328	EN13016-1	84.0		-0.14	1650	EN13016-1	83.6		-0.85
333	EN13016-1	84.7		1.10	1676	EN13016-1	83.76		-0.56
334	EN13016-1	83.6		-0.85	1710	EN13016-1	83.8		-0.49
335	EN13016-1	83.6		-0.85	1724	IP394	82.9		-2.09
337	EN13016-1	84.4		0.57	1728	EN13016-1	83.89		-0.33
338	EN13016-1	83.9		-0.31	1730	EN13016-1	82.7		-2.44
344		-----		-----	1741	EN13016-1	83.8		-0.49
365		-----		-----	1746		-----		-----
369	EN13016-1	84.81		1.30	1776	EN13016-1	84.5		0.75
370	EN13016-1	84.0		-0.14	1833	EN13016-1	84.1		0.04
381	EN13016-1	84.5		0.75	1936	EN13016-1	84.8		1.28
391	EN13016-1	83.75		-0.58	1937	EN13016-1	84.1		0.04
399	EN13016-1	83.52		-0.99	1938	EN13016-1	84.1		0.04
403	EN13016-1	84.03		-0.08	1953	EN13016-1	83		-1.91
404	EN13016-1	83.8		-0.49	1980	EN13016-1	84.5		0.75
420	EN13016-1	83.1	E	-1.73	2129	D5191	82.3	C	-3.15
440		-----		-----	2130	D5191	84.2		0.22
444		-----		-----	2146	EN13016-1	83.8		-0.49
445		-----		-----	6018	EN13016-1	83.8		-0.49
447	D5191	84.8		1.28	6028	EN13016-1	83.3		-1.38
467		-----		-----	6049	EN13016-1	84.0		-0.14
480	EN13016-1	83.7		-0.67	6054	D5191	83.9145		-0.29
496	EN13016-1	83.5		-1.02	6068	EN13016-1	84.4		0.57
631		-----		-----	6075	EN13016-1	83.9		-0.31
734	D5191	85.1		1.81	6103		-----		-----
751	EN13016-1	84.5		0.75	6142	EN13016-1	92.45	R(0.01)	14.84
752	D5191	84.3		0.39	6201	D5191	83.0		-1.91
759	EN13016-1	84.1		0.04	6203	EN13016-1	83.6		-0.85
779	D5191	84.8		1.28	6258	EN13016-1	83.96		-0.21
782	EN13016-1	84.15		0.13	6262	D5191	85.4		2.34
785	EN13016-1	83.43		-1.15	6291	EN13016-1	85.05		1.72
798		-----		-----	6299	EN13016-1	83.0		-1.91
846		-----		-----	6321	IP394	84.5		0.75
873	EN13016-1	84.87		1.40	6359	EN13016-1	85.2		1.99
875	EN13016-1	86.25		3.85	6410	EN13016-1	83.4		-1.20
902	D5191	83.5		-1.02	6416	D4953	86.5	R(0.05)	4.29
963	D5191	84.12		0.08					
971	EN13016-1	83.98		-0.17					
974	D5191	83.91		-0.30					
1006	D5191	84.1		0.04					
1011	EN13016-1	83.9		-0.31					
1033		-----		-----					
1059	EN13016-1	84.7		1.10					
1082	EN13016-1	83.9		-0.31					
1095	EN13016-1	83.6		-0.85					
1108	EN13016-1	83.50	C	-1.02					
1109	D5191	83.42		-1.17					
1134	IP394	84.23765		0.28					
1155	EN13016-1	84.6		0.93					
1182	D5191	84		-0.14					
1191	EN13016-1	84.1		0.04					
1194	EN13016-1	80.5	R(0.01)	-6.34					
1212	EN13016-1	84.3		0.39					
1237	EN13016-1	85.06		1.74					
1272		-----		-----					
1275	EN13016-1	83.4		-1.20					
1357	D5191	84.0		-0.14					
1397	EN13016-1	83.8		-0.49					
1399		-----		-----					
1402	EN13016-1	83.5		-1.02					
1455	D5191	84.9		1.46					
1459	EN13016-1	83.8		-0.49					
1488	EN13016-1	85.1		1.81					
1498	D5191	83.15	E	-1.64					

lab	method	value	mark	z(targ)
	normality	OK		
	n	97		
	outliers	4		
	mean (n)	84.078		
	st.dev. (n)	0.6683		
	R(calc.)	1.871		
	st.dev.(EN13016-1:18)	0.5643		
	R(EN13016-1:18)	1.58		
Compare				
	R(EN13016-1:07)	2.47		

Lab 238 first reported 88.22
Lab 420 iis calculated 82.8
Lab 1108 first reported 91.42
Lab 1498 iis calculated 82.92
Lab 1586 iis calculated 83.6
Lab 2129 first reported 75.64



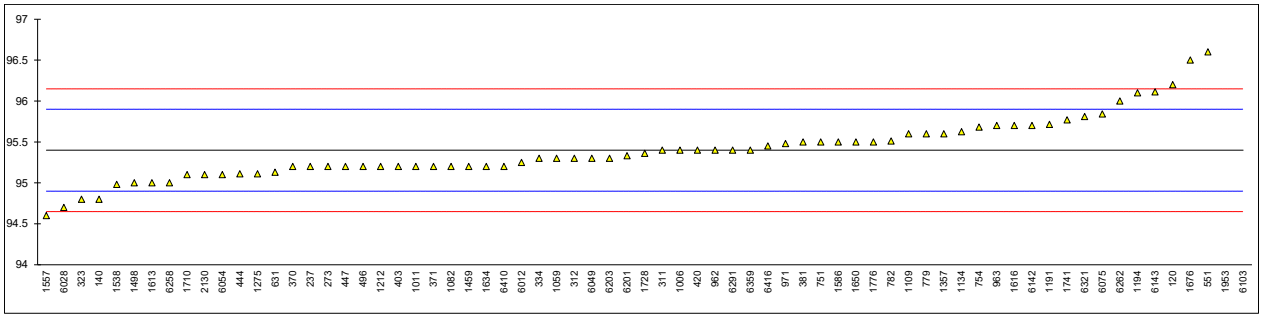


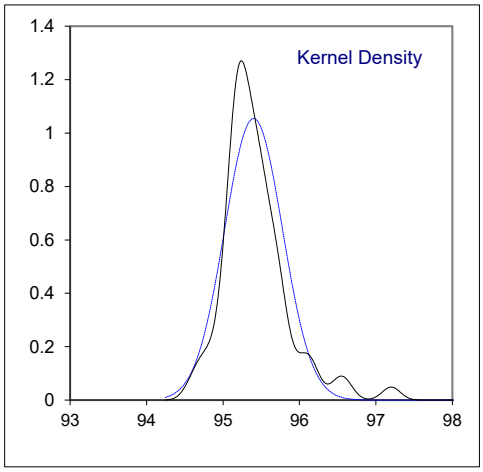
Determination of RON on sample #21187;

lab	method	value	mark	z(targ)	remarks
120	D2699	96.2		3.20	
140	D2699	94.8		-2.40	
171		-----		-----	
237	D2699	95.2		-0.80	
273	D2699	95.2		-0.80	
311	D2699	95.4		0.00	
312	ISO5164	95.3		-0.40	
323	ISO5164	94.8		-2.40	
334	ISO5164	95.3		-0.40	
370	ISO5164	95.2		-0.80	
371	ISO5164	95.2		-0.80	
381	ISO5164	95.5		0.40	
399		-----		-----	
403	ISO5164	95.2		-0.80	
420	ISO5164	95.4		0.00	
444	D2699	95.11		-1.16	
445		-----		-----	
447	D2699	95.2		-0.80	
496	ISO5164	95.2		-0.80	
551	D2699	96.6		4.80	
631	D2699	95.13		-1.08	
751	GOST8226	95.5		0.40	
754	ISO5164	95.68		1.12	
779	GOST8226	95.6		0.80	
782	ISO5164	95.51		0.44	
798		-----		-----	
846		-----		-----	
962	D2699	95.4		0.00	
963	ISO5164	95.7		1.20	
971	D2699	95.48		0.32	
1006	D2699	95.4		0.00	
1011	ISO5164	95.2		-0.80	
1059	ISO5164	95.3		-0.40	
1082	ISO5164	95.2		-0.80	
1109	D2699	95.6		0.80	
1134	IP237	95.625		0.90	
1191	ISO5164	95.71428		1.26	
1194	D2699	96.1		2.80	
1212	ISO5164	95.2		-0.80	
1272		-----		-----	
1275	IP237	95.11		-1.16	
1357	D2699	95.6		0.80	
1399		-----		-----	
1459	In house	95.2		-0.80	
1498	D2699	95.0		-1.60	
1538	ISO5164	94.98		-1.68	
1557	In house	94.6	C	-3.20	first reported 96.9
1586	D2699	95.5		0.40	
1613	D2699	95.0		-1.60	
1616	D2699	95.7		1.20	
1634		95.2		-0.80	
1650	D2699Mod.	95.5		0.40	
1676	E1655	96.5		4.40	
1710	ISO5164	95.1		-1.20	
1728	D2699	95.36		-0.16	
1741	ISO5164	95.77		1.48	
1746		-----		-----	
1776	ISO5164	95.5		0.40	
1953	In house	97.2	R(0.01)	7.20	
2130	IP237	95.1		-1.20	
6012	D2699	95.25		-0.60	
6028	ISO5164	94.7		-2.80	
6049	D2699	95.3		-0.40	
6054	D2699	95.1		-1.20	
6075	ISO5164	95.84	C	1.76	first reported 96.9
6103	In house	100.7	R(0.01)	21.20	
6142	ISO5164	95.7		1.20	
6143	D2699	96.11		2.84	
6201	ISO5164	95.33		-0.28	
6203	ISO5164	95.3		-0.40	
6258	D2699	95.0		-1.60	
6262	D2699	96.0		2.40	
6291	ISO5164	95.4		0.00	
6321	D2699	95.81		1.64	
6359	ISO5164	95.4		0.00	

lab	method	value	mark	z(targ)	remarks
6410	D2699	95.2		-0.80	
6416	D2699	95.45		0.20	

normality	suspect
n	67
outliers	2
mean (n)	95.40
st.dev. (n)	0.378
R(calc.)	1.06
st.dev.(ISO5164:14)	0.250
R(ISO5164:14)	0.7



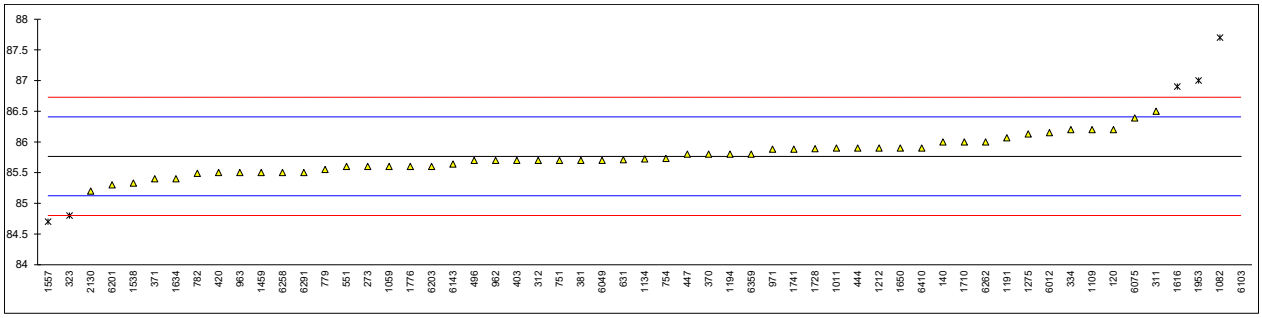


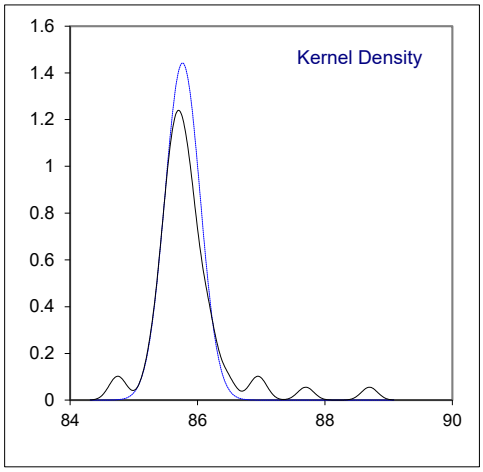
Determination of MON on sample #21187;

lab	method	value	mark	z(targ)	remarks
120	D2700	86.2		1.35	
140	D2700	86.0		0.73	
171		-----		-----	
237		-----		-----	
273	D2700	85.6		-0.52	
311	D2700	86.5		2.28	
312	ISO5163	85.7		-0.20	
323	ISO5163	84.8	R(0.01)	-3.00	
334	ISO5163	86.2		1.35	
370	ISO5163	85.8		0.11	
371	ISO5163	85.4		-1.14	
381	ISO5163	85.7		-0.20	
399		-----		-----	
403	ISO5163	85.7		-0.20	
420	ISO5163	85.5		-0.83	
444	D2700	85.90		0.42	
445		-----		-----	
447	D2700	85.8		0.11	
496	ISO5163	85.7		-0.20	
551	D2700	85.6		-0.52	
631	D2700	85.71		-0.17	
751	GOST511	85.7		-0.20	
754	ISO5163	85.73		-0.11	
779	GOST511	85.55		-0.67	
782	ISO5163	85.49		-0.86	
798		-----		-----	
846		-----		-----	
962	D2700	85.7		-0.20	
963	ISO5163	85.5		-0.83	
971	D2700	85.88		0.36	
1006		-----		-----	
1011	ISO5163	85.9		0.42	
1059	ISO5163	85.6		-0.52	
1082	ISO5163	87.7	R(0.01)	6.02	
1109	D2700	86.2		1.35	
1134	IP236	85.724		-0.13	
1191	ISO5163	86.06666		0.94	
1194	D2700	85.8		0.11	
1212	ISO5163	85.9		0.42	
1272		-----		-----	
1275	IP236	86.13		1.13	
1357		-----		-----	
1399		-----		-----	
1459	In house	85.5		-0.83	
1498		-----		-----	
1538	ISO5163	85.33		-1.36	
1557	In house	84.7	C,R(0.01)	-3.32	first reported 87.2
1586		-----		-----	
1613		-----		-----	
1616	D2700	86.9	R(0.01)	3.53	
1634		85.4		-1.14	
1650	D2700Mod.	85.9		0.42	
1676		-----		-----	
1710	ISO5163	86.0		0.73	
1728	D2700	85.89		0.39	
1741	ISO5163	85.88		0.36	
1746		-----		-----	
1776	ISO5163	85.6		-0.52	
1953	In house	87	C,R(0.01)	3.84	first reported 83
2130	IP236	85.2		-1.76	
6012	D2700	86.15		1.20	
6028		-----		-----	
6049	D2700	85.7		-0.20	
6054		-----		-----	
6075	ISO5163	86.39	C	1.94	first reported 86.95
6103	In house	88.7	R(0.01)	9.13	
6142		-----		-----	
6143	D2700	85.64		-0.39	
6201	ISO5163	85.30		-1.45	
6203	ISO5163	85.6		-0.52	
6258	D2700	85.5		-0.83	
6262	D2700	86.0		0.73	
6291	ISO5163	85.5		-0.83	
6321		-----		-----	
6359	ISO5163	85.8		0.11	

lab	method	value	mark	z(targ)	remarks
6410	D2700	85.9		0.42	
6416		-----		-----	

normality	OK
n	51
outliers	6
mean (n)	85.77
st.dev. (n)	0.277
R(calc.)	0.77
st.dev.(ISO5163:14)	0.321
R(ISO5163:14)	0.9





APPENDIX 2: Determination of Other Oxygenates on sample #21185; results in %V/V

lab	MeOH	i-PrOH	i-BuOH	t-BuOH	DIPE		ETBE	TAME	Oxygenates
120	-----	-----	-----	-----	-----		-----	-----	-----
140	-----	-----	-----	-----	-----		-----	-----	-----
171	<0.01	<0.01	<0.01	<0.01	0.02		<0.01	<0.01	<0.01
225	-----	-----	-----	-----	-----		-----	-----	-----
237	-----	-----	-----	-----	-----		-----	-----	-----
238	-----	-----	-----	-----	-----		-----	-----	-----
273	-----	-----	-----	-----	-----		-----	-----	-----
311	0.05	<0.01	<0.01	<0.01	0.02		<0.01	<0.01	<0.01
312	<0.10	<0.10	<0.10	<0.10	<0.10		<0.10	<0.10	<0.10
323	<0.10	<0.10	<0.10	<0.10	<0.10		<0.10	<0.10	<0.10
328	-----	-----	-----	-----	-----		-----	-----	-----
333	-----	-----	-----	-----	-----		-----	-----	-----
334	<0.80	<0.80	<0.80	<0.80	<0.80		<0.80	<0.80	<0.80
335	-----	-----	-----	-----	-----		-----	-----	-----
337	-----	-----	-----	-----	-----		-----	-----	-----
338	4.2	-----	-----	-----	-----		-----	-----	-----
343	<0,2	<0,2	<0,2	<0,2	<0,2		<0,2	<0,2	<0,2
344	-----	-----	-----	-----	-----		-----	-----	-----
352	-----	-----	-----	-----	-----		-----	-----	-----
365	-----	-----	-----	-----	-----		-----	-----	-----
369	-----	-----	-----	-----	-----		-----	-----	-----
370	<0.17	<0.17	<0.17	<0.17	-----		<0.17	<0.17	<0.17
371	-----	-----	-----	-----	-----		-----	-----	-----
381	<0,8	<0,8	<0,8	<0,8	<0,8		<0,8	<0,8	<0,8
391	-----	-----	-----	-----	-----		-----	-----	-----
399	-----	-----	-----	-----	-----		-----	-----	-----
403	0.04	-----	-----	-----	-----		0.03	-----	-----
404	-----	-----	-----	-----	-----		0.03	-----	-----
420	<0,1	<0,1	<0,1	<0,1	<0,1		<0,1	<0,1	<0,1
431	-----	-----	-----	-----	-----		-----	-----	-----
440	-----	-----	-----	-----	-----		-----	-----	-----
444	-----	-----	-----	-----	-----		-----	-----	-----
445	<0.8	<0.8	<0.8	0.02	<0.8		0.02	<0.8	<0.8
447	-----	-----	-----	-----	-----		-----	-----	-----
467	-----	-----	-----	-----	-----		-----	-----	-----
480	-----	-----	-----	-----	-----		-----	-----	-----
496	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010	<0.010	<0.010
631	<0.1	-----	-----	<0.1	-----		-----	-----	-----
734	-----	-----	-----	-----	-----		-----	-----	-----
751	-----	-----	-----	-----	-----		-----	-----	-----
752	-----	-----	-----	-----	-----		-----	-----	-----
759	-----	-----	-----	-----	-----		-----	-----	-----
779	-----	-----	-----	-----	-----		-----	-----	-----
781	<0.17	<0.17	<0.17	<0.17	<0.17		<0.17	<0.17	<0.17
782	-----	-----	-----	-----	-----		-----	-----	-----
785	-----	-----	-----	-----	-----		-----	-----	-----
798	-----	-----	-----	-----	-----		-----	-----	-----
846	-----	-----	-----	-----	-----		-----	-----	-----
873	-----	-----	-----	-----	-----		-----	-----	-----
875	-----	-----	-----	-----	-----		-----	-----	-----
902	-----	-----	-----	-----	-----		-----	-----	-----
912	<0.2	<0.2	<0.2	<0.2	<0.2		<0.2	<0.2	-----
913	-----	-----	-----	-----	-----		-----	-----	-----
914	-----	-----	-----	-----	-----		-----	-----	-----
963	<0.2	<0.2	<0.2	<0.2	<0.2		<0.2	<0.2	-----
971	<0.2	<0.2	<0.2	<0.2	<0.2		<0.2	<0.2	<0.2
974	-----	-----	-----	-----	-----		-----	-----	-----
994	<1	<1	<1	<1	<1		<1	<1	<1
1006	ND	ND	ND	ND	ND		ND	ND	-----
1011	-----	-----	-----	-----	-----		-----	-----	-----
1033	-----	-----	-----	-----	-----		-----	-----	-----
1059	<0,20	<0,20	<0,20	<0,20	<0,20		<0,20	<0,20	<0,20
1080	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01
1082	-----	-----	-----	-----	-----		-----	-----	-----
1095	<0.80	<0.80	<0.80	<0.80	<0.80		<0.80	<0.80	8.64
1097	-----	-----	-----	-----	-----		-----	-----	-----
1108	0.00	0.00	0.00	0.03	0.00		0.00	0.00	0.00
1109	-----	-----	-----	-----	-----		-----	-----	-----
1126	<0,02	<0,02	<0,02	0.01	0.02		0.04	<0,02	<0,05
1134	<0.01	<0.01	<0.01	<0.01	3.9267	C	<0.01	0.11333	0.04
1155	-----	-----	-----	-----	-----		-----	-----	-----
1191	0	0	0	0	-----		0.03	0	-----
1194	0	-----	-----	0	0.63		0	0.43	-----
1199	-----	-----	-----	-----	-----		-----	-----	-----
1205	-----	-----	-----	-----	-----		-----	-----	-----
1212	<0,1	<0,1	<0,1	<0,1	<0,1		<0,1	<0,1	<0,1

lab	MeOH	i-PrOH	i-BuOH	t-BuOH	DIPE	ETBE	TAME	Oxygenates
1237	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1
1272	-----	-----	-----	-----	-----	-----	-----	-----
1275	-----	0.03	-----	-----	-----	-----	-----	-----
1357	-----	-----	-----	-----	-----	-----	-----	-----
1397	<0,2	<0,2	<0,2	<0,2	-----	<0,2	-----	<0,2
1399	-----	-----	-----	-----	-----	-----	-----	-----
1402	0.02	0.00	0.00	0.00	0.00	0.04	0.00	0.00
1455	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1459	-----	-----	-----	-----	-----	0.0	-----	-----
1476	-----	-----	-----	-----	-----	-----	-----	-----
1488	0.29	0.0	0.0	0.59	-----	0.92 C	0.0	-----
1498	-----	-----	-----	-----	-----	-----	-----	-----
1510	-----	-----	-----	-----	-----	-----	-----	-----
1538	-----	-----	-----	-----	-----	-----	-----	-----
1546	-----	-----	-----	-----	-----	-----	-----	-----
1554	less than 0.17	less than 0.17	less than 0.17	less than 0.17	-----	-----	-----	-----
1557	-----	-----	-----	-----	-----	-----	-----	-----
1569	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	0.04
1586	0	0	0	0	0	0	0	0.03
1602	<0,17	<0,17	<0,17	<0,17	-----	<0,17	<0,17	<0,17
1613	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1616	-----	-----	-----	-----	-----	-----	-----	-----
1631	<0,17	<0,17	<0,17	<0,17	<0,17	<0,17	<0,17	-----
1634	0.04	0	0	0	0	0	0	0.05
1650	-----	-----	-----	-----	-----	-----	-----	-----
1676	-----	-----	-----	-----	-----	-----	-----	-----
1710	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
1720	-----	-----	-----	-----	-----	-----	-----	-----
1724	<0,8	<0,8	<0,8	<0,8	<0,8	<0,8	<0,8	-----
1728	-----	-----	-----	-----	-----	-----	-----	-----
1740	-----	-----	-----	-----	-----	-----	-----	-----
1741	-----	-----	-----	-----	-----	-----	-----	-----
1742	-----	-----	-----	-----	-----	-----	-----	-----
1746	-----	-----	-----	-----	-----	-----	-----	-----
1753	-----	-----	-----	-----	-----	-----	-----	-----
1776	<0,1	-----	-----	-----	-----	0.02	-----	0.03
1811	-----	-----	-----	-----	-----	-----	-----	0.03 C
1833	-----	-----	-----	-----	-----	-----	-----	-----
1936	-----	-----	-----	-----	-----	-----	-----	-----
1937	-----	-----	-----	-----	-----	-----	-----	-----
1938	-----	-----	-----	-----	-----	-----	-----	-----
1953	0	-----	-----	-----	-----	0	-----	-----
1977	-----	-----	-----	-----	-----	-----	-----	-----
1980	-----	-----	-----	-----	-----	-----	-----	-----
2129	0.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2130	-----	-----	-----	-----	-----	-----	-----	-----
2146	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1
6012	-----	-----	-----	-----	-----	-----	-----	-----
6018	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
6028	-----	-----	-----	-----	-----	-----	-----	-----
6045	<0.20	<0.20	<0.20	<0.20	<0.20	-----	<0.20	-----
6046	-----	-----	-----	-----	-----	-----	-----	-----
6049	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
6054	-----	-----	-----	-----	-----	-----	-----	-----
6068	-----	-----	-----	-----	-----	-----	-----	-----
6075	-----	-----	-----	-----	-----	-----	-----	-----
6103	0.0	0.0	0.0	0.0	0.0	0.2690	0.0	0.0
6142	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	8.725
6143	-----	-----	-----	-----	-----	-----	-----	-----
6192	0	-----	-----	-----	-----	-----	0	-----
6201	<0,1	<0,1	<0,1	<0,1	<0,8	<0,8	<0,8	<0,1
6203	0.03	0	0	0	0	0.02	0	12.89
6240	<0.8	<0.8	<0.8	<0.8	<0.8	0.92	<0.8	<0.8
6249	-----	-----	-----	-----	-----	0.03	-----	0.02
6258	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
6262	0.05	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80
6291	0	0	0	0	0	0	0	0
6299	-----	-----	-----	-----	-----	-----	-----	-----
6321	-----	-----	-----	-----	-----	-----	-----	-----
6359	<0,17	<0,17	<0,17	<0,17	<0,17	<0,17	<0,17	0
6404	0.05	<0.01	<0.01	0.20	<0.01	0.03	<0.01	<0.01
6410	0	0	0	-----	0	0	0	0
6416	-----	-----	-----	-----	-----	-----	-----	-----

Lab 1134 first reported 4.14667
Lab 1488 first reported 0.5
Lab 1811 first reported 8.93

APPENDIX 3: z-scores of the determination of distillation at 760 mmHg

lab	IBP	10% eva	50% eva	90% eva	FBP	E70%V/V	E100%V/V	E150%V/V
120	-0.46	0.01	-0.26	-0.19	-0.03	-----	-----	-----
140	-1.95	-0.54	-0.05	-0.24	0.21	-----	-----	-----
171	-0.34	0.70	-0.12	-0.14	0.01	-0.61	0.11	-0.17
225	1.15	1.05	2.69	4.82	-0.19	-4.65	-2.82	-11.37
237	2.94	2.09	2.76	1.55	0.60	-1.02	0.37	0.47
238	-----	-----	-----	-----	-----	-----	-----	-----
273	0.73	0.84	2.07	1.50	1.86	-----	-----	-----
311	-0.94	-0.68	-0.47	-0.39	-0.23	0.74	-0.02	1.34
312	-0.94	-0.68	-0.60	-0.24	0.40	0.85	0.37	1.12
323	1.86	-0.06	-0.54	-0.09	-0.31	0.12	-0.14	-0.82
328	-1.00	-0.61	-0.67	-0.45	0.60	0.85	0.37	0.69
333	-0.34	-2.07	0.49	-0.04	0.01	-----	-----	-----
334	-0.52	0.29	0.36	0.27	-0.82	0.54	-0.40	-1.46
335	1.45	0.36	-0.26	-0.34	-0.19	0.02	0.24	0.90
337	-----	-----	-----	-----	-----	-----	-----	-----
338	0.14	-0.34	-0.12	4.41	-0.07	0.12	-0.02	1.55
343	-----	-----	-----	-----	-----	-----	-----	-----
344	-----	-----	-----	-----	-----	-----	-----	-----
352	-----	-----	-----	-----	-----	-----	-----	-----
365	2.34	0.15	-1.02	0.27	-0.39	0.54	2.15	0.26
369	-0.22	0.63	0.01	1.04	-0.35	-1.02	-0.02	-2.11
370	-0.04	0.77	1.87	2.16	-0.11	0.54	0.24	0.47
371	-0.04	-0.20	-0.67	1.29	0.36	0.33	0.62	-0.39
381	1.27	0.36	0.08	0.98	1.31	0.43	-1.03	-2.76
391	1.09	1.40	-0.05	-0.60	0.36	-0.92	0.24	0.90
399	-----	-----	-----	-----	-----	-----	-----	-----
403	0.55	-0.34	-1.63	-0.75	0.64	0.74	1.38	1.12
404	0.67	-0.61	-1.57	-0.39	1.43	0.54	1.38	1.34
420	-1.59	0.08	1.42	0.86	-0.70	0.64	0.49	1.77
431	2.04	0.49	2.97	3.08	1.98	-2.26	-3.45	-6.63
440	-----	-----	-----	-----	-----	-----	-----	-----
444	1.03	-1.03	-1.50	-0.65	0.60	0.95	1.13	0.26
445	-0.76	0.08	-0.26	-0.24	-0.43	0.33	0.37	0.26
447	0.67	-1.10	-1.63	-0.34	-0.19	1.68	1.26	0.04
467	-----	-----	-----	-----	-----	-----	-----	-----
480	0.70	0.01	0.39	0.09	0.64	-0.24	-0.72	-0.93
496	0.85	0.22	0.08	0.12	0.21	-0.09	-0.14	-0.82
631	-0.64	0.01	-0.40	-1.06	0.60	0.02	0.37	1.55
734	-1.93	0.35	0.12	-0.23	-0.47	-0.24	-0.08	0.04
751	0.55	0.36	0.29	-0.04	-0.39	0.54	1.00	0.47
752	1.45	0.70	0.29	0.22	0.80	-1.02	-0.91	-2.76
759	0.85	0.36	-0.05	0.22	0.21	0.02	2.91	0.47
779	-0.04	0.49	0.08	-0.39	0.40	0.22	0.11	-0.60
781	-1.35	-0.27	-0.12	0.22	-0.31	-1.12	-2.18	-4.05
782	0.43	-0.09	-0.09	0.35	-0.05	0.17	-0.46	-1.14
785	-1.23	1.05	1.66	1.24	-0.78	-2.06	-2.82	-4.91
798	-----	-----	-----	-----	-----	-----	-----	-----
846	-----	-----	-----	-----	-----	-----	-----	-----
873	-0.64	1.05	1.66	1.24	-0.58	-2.06	-2.82	-4.48
875	-0.64	0.63	1.25	0.47	-0.54	-2.06	-2.18	-4.91
902	-0.76	-1.03	-0.67	-0.50	0.24	0.85	0.49	0.90
912	1.92	1.26	1.32	0.73	0.01	-2.06	-0.91	-0.60
913	-----	-----	-----	-----	-----	-----	-----	-----
914	-0.64	-0.13	0.29	0.07	-0.98	0.02	-1.03	0.04
963	0.02	-0.20	0.01	-0.14	0.80	0.12	-1.03	-0.60
971	-0.16	-0.34	-0.33	-0.09	0.32	0.22	0.11	-0.17
974	-0.64	-0.61	-0.19	0.32	0.32	0.16	0.26	-1.83
994	-0.34	-0.34	-0.05	-0.29	0.21	0.02	0.37	-1.68
1006	1.15	-0.13	-0.19	-0.04	-0.19	-----	-----	-----
1011	0.02	2.16	0.29	-0.14	0.36	-0.29	-0.65	0.90
1033	-----	-----	-----	-----	-----	-----	-----	-----
1059	-0.58	-0.82	-0.60	-0.50	0.05	0.43	0.37	0.69
1080	-----	-----	-----	-----	-----	-----	-----	-----
1082	-1.53	-0.48	0.01	-0.14	0.60	1.16	-0.40	0.69
1095	0.14	0.01	-0.26	-0.19	0.24	-0.19	-0.27	0.26
1097	-0.52	0.15	1.25	0.47	-0.15	-0.19	-1.54	-1.46
1108	1.15	0.15	-0.54	-0.29	0.24	0.02	0.49	1.34
1109	-1.89	-0.89	-0.54	-0.34	-0.03	0.95	0.11	0.26
1126	-0.70	-1.31	-0.67	-0.34	0.32	-0.40	-2.94	-4.26
1134	-1.18	-0.75	-0.54	-0.19	0.60	0.74	0.11	1.12
1155	-0.94	0.43	0.77	0.07	-1.17	-0.19	-1.03	-0.39
1191	-1.29	-1.38	-1.50	-0.50	0.28	1.47	1.13	1.55
1194	-----	-----	-----	-----	-----	-----	-----	-----
1199	-----	-----	-----	-----	-----	-----	-----	-----
1205	0.49	-0.27	-0.05	0.22	2.41	-0.09	-0.65	-1.03
1212	-1.35	-1.03	-1.08	-0.34	-0.03	1.05	0.87	1.55

lab	IBP	10% eva	50% eva	90% eva	FBP	E70%V/V	E100%V/V	E150%V/V
1237	-0.28	-0.68	-0.54	-0.39	-0.15	0.95	0.24	0.04
1272	-----	-----	-----	-----	-----	-----	-----	-----
1275	-0.82	1.12	2.21	1.85	0.01	0.12	0.37	0.04
1357	-----	-1.72	-0.88	-0.70	-0.31	-----	-----	-----
1397	0.37	-0.41	-0.47	-0.29	0.09	0.43	0.62	1.12
1399	-----	-----	-----	-----	-----	-----	-----	-----
1402	-0.58	-0.27	0.01	0.12	0.24	0.12	-0.14	-0.39
1455	-2.19	-1.51	-2.18	-0.60	-1.10	1.78	1.77	1.12
1459	-1.89	-0.82	-0.26	-0.34	-0.90	0.64	0.24	0.26
1476	-0.94	-0.82	-0.26	-0.19	-1.77	-2.16	-----	-----
1488	2.04	0.29	-0.60	0.73	0.84	0.22	0.37	-2.33
1498	0.67	-0.54	-0.67	-0.04	0.21	1.05	0.37	-0.60
1510	-0.82	-2.14	-1.91	-0.39	2.81	1.78	1.51	0.26
1538	-0.34	-0.48	-0.05	-0.14	-0.58	-----	-----	-----
1546	-0.16	-0.75	-1.02	-0.50	-0.74	0.85	1.13	0.26
1554	-----	-----	-----	-----	0.56	0.85	1.77	3.49
1557	1.09	1.81	2.55	1.09	-0.46	0.74	0.87	0.47
1569	0.02	-0.96	-0.19	0.22	-0.15	-2.37	-0.02	-0.82
1586	-0.58	1.05	0.56	-0.50	-0.31	-1.02	-0.02	0.47
1602	1.74	0.08	0.43	-0.09	-0.54	-0.09	-0.40	-0.60
1613	0.49	0.56	0.22	0.07	0.92	-1.02	-0.91	-0.60
1616	-1.47	-0.61	-0.19	-0.70	-0.66	0.33	0.87	0.26
1631	0.19	-0.41	-0.54	-0.14	0.13	0.43	0.37	-0.39
1634	-0.40	-0.61	-0.95	-0.34	-0.62	-0.09	1.26	-1.03
1650	2.10	0.08	0.29	0.12	0.28	-0.40	-0.14	0.04
1676	-0.02	0.21	0.80	0.01	-0.57	0.74	-0.97	-0.65
1710	-0.76	0.15	-0.05	-0.60	-0.62	0.74	0.11	1.55
1720	-----	-----	-----	-----	-----	-----	-----	-----
1724	-0.10	-0.13	-0.33	-0.09	-0.07	0.12	-0.02	0.69
1728	0.55	-0.34	-0.74	-0.04	0.01	0.54	1.00	-0.60
1740	0.67	1.67	-0.05	-0.55	-0.11	-0.92	0.49	0.26
1741	-2.25	-0.34	-0.47	-0.29	-0.03	0.54	0.37	1.55
1742	1.06	-1.15	-1.54	-0.21	-0.28	0.94	1.03	0.13
1746	-----	-----	-----	-----	-----	-----	-----	-----
1753	0.43	2.30	1.18	1.14	-0.19	-1.64	-1.54	-3.19
1776	-1.18	-0.41	-0.67	-0.50	-1.17	1.47	0.62	0.26
1811	-1.12	1.33	0.49	-0.14	-0.11	-1.54	-0.53	0.26
1833	-----	-----	-----	-----	-0.39	0.22	-0.40	-0.17
1936	-----	-----	-----	-----	-0.31	0.43	0.62	0.90
1937	-----	-----	-----	-----	-0.19	0.12	1.00	0.90
1938	-----	-----	-----	-----	-0.46	0.74	1.38	0.90
1953	1.51	-0.20	-2.25	-0.34	-0.27	0.95	2.02	-0.82
1977	2.15	2.07	4.00	3.29	-0.29	-----	-----	-----
1980	2.04	-0.54	-0.88	-0.39	0.44	0.64	1.00	0.26
2129	0.31	0.36	-0.81	-0.60	-0.15	0.02	0.75	0.47
2130	-0.88	0.43	-0.26	-0.34	-0.07	0.12	0.24	-0.17
2146	0.43	-0.20	-0.26	-0.04	0.36	0.64	-0.14	0.04
6012	1.27	0.49	1.80	2.11	0.48	-0.81	-1.93	-2.33
6018	-0.64	0.08	0.15	-0.14	0.09	0.02	-0.53	0.26
6028	0.19	0.29	1.73	0.98	1.07	-1.02	-2.43	-2.11
6045	-----	0.36	-0.05	0.01	-----	-----	-----	-----
6046	1.21	0.77	2.14	2.62	1.07	0.54	-0.91	-1.68
6049	1.27	1.67	0.70	0.37	0.68	-2.78	-0.78	-0.82
6054	-1.53	1.12	2.55	1.90	0.01	-2.06	-2.82	-4.70
6068	0.31	-0.20	-0.47	-0.39	-0.11	0.43	0.24	0.26
6075	-0.76	-0.41	0.08	-0.29	-0.43	0.22	-0.40	0.69
6103	0.97	1.15	3.48	3.16	0.68	-2.83	-3.96	-6.85
6142	-0.34	0.22	-0.09	-0.37	0.01	0.28	0.05	0.37
6143	-----	-----	-----	-----	-----	-----	-----	-----
6192	1.51	-----	-----	-----	-0.58	-1.54	-1.67	-2.97
6201	-1.12	-0.13	-0.26	-0.14	0.13	0.12	0.24	-0.17
6203	0.08	0.84	-0.26	1.14	1.51	0.02	3.55	0.69
6240	-0.58	-1.10	-0.67	-0.34	-0.03	0.95	0.87	0.69
6249	-----	-----	-----	-----	-----	-----	-----	-----
6258	-0.58	-0.68	-0.47	-0.24	0.01	0.74	0.11	1.12
6262	-0.94	-0.41	-0.33	-0.45	-0.62	0.54	-0.02	0.47
6291	-1.18	-0.48	-0.40	-0.29	-1.29	0.33	0.62	1.55
6299	-1.41	-1.03	0.08	-0.24	-0.90	-0.81	-2.69	-4.26
6321	1.09	1.60	-2.32	-2.49	-0.90	-1.12	2.15	3.70
6359	-0.40	-1.58	-1.43	-0.50	-0.19	1.05	1.26	1.12
6404	-----	-----	-----	-----	-----	-----	-----	-----
6410	0.08	-0.61	-0.47	-0.09	0.64	0.74	-0.02	0.69
6416	0.91	0.22	-0.40	0.27	2.41	-1.02	0.37	-0.60

APPENDIX 4

Number of participants per country

1 lab in	AUSTRALIA
3 labs in	AUSTRIA
1 lab in	AZERBAIJAN
3 labs in	BELGIUM
3 labs in	BOSNIA and HERZEGOVINA
1 lab in	BRAZIL
3 labs in	BULGARIA
2 labs in	CHILE
2 labs in	CHINA, People's Republic
2 labs in	COTE D'IVOIRE
1 lab in	CROATIA
2 labs in	CYPRUS
2 labs in	CZECH REPUBLIC
4 labs in	FINLAND
9 labs in	FRANCE
1 lab in	GERMANY
5 labs in	GREECE
1 lab in	HONG KONG
2 labs in	HUNGARY
3 labs in	INDIA
1 lab in	IRAQ
2 labs in	IRELAND
2 labs in	ITALY
1 lab in	JORDAN
1 lab in	KAZAKHSTAN
2 labs in	LATVIA
1 lab in	LITHUANIA
1 lab in	MACEDONIA
1 lab in	MALTA
1 lab in	MARTINIQUE
1 lab in	MOROCCO
6 labs in	NETHERLANDS
1 lab in	NIGER
2 labs in	NIGERIA
1 lab in	OMAN
1 lab in	PHILIPPINES
7 labs in	POLAND
5 labs in	PORTUGAL
1 lab in	QATAR
5 labs in	ROMANIA
11 labs in	RUSSIAN FEDERATION
2 labs in	SAUDI ARABIA
6 labs in	SERBIA
2 labs in	SLOVENIA
2 labs in	SOUTH AFRICA
6 labs in	SPAIN
1 lab in	SUDAN
3 labs in	SWEDEN
1 lab in	TAIWAN
1 lab in	TUNISIA
7 labs in	TURKEY
2 labs in	UNITED ARAB EMIRATES
13 labs in	UNITED KINGDOM
3 labs in	UNITED STATES OF AMERICA

APPENDIX 5

Abbreviations

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

Literature

1 iis Interlaboratory Studies, Protocol for the Organisation, Statistics & Evaluation, June 2018
2 ISO5725:86
3 ISO5725 parts 1-6:94
4 ISO13528:05
5 M. Thompson and R. Wood, J. AOAC Int, 76, 926, (1993)
6 W.J. Youden and E.H. Steiner, Statistical Manual of the AOAC, (1975)
7 P.L. Davies, Fr. Z. Anal. Chem, 331, 513, (1988)
8 J.N. Miller, Analyst, 118, 455, (1993)
9 Analytical Methods Committee, Technical Brief, No 4, January 2001
10 P.J. Lowthian and M. Thompson, The Royal Society of Chemistry, Analyst, 127, 1359-1364, (2002)
11 W. Horwitz and R. Albert, J. AOAC Int, 79.3, 589-621, (1996)
12 Bernard Rosner, Percentage Points for a Generalized ESD Many-Outlier Procedure, Technometrics, 25(2), 165-172, (1983)