Results of Proficiency Test
Gasoline - EN (winter)
October 2019

Organised by: Institute for Interlaboratory Studies
Spijkenisse, the Netherlands

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1 INTRODUCTION

Since 1995 the Institute for Interlaboratory Studies (iis) organizes proficiency tests for Gasoline. And every year two proficiency tests are organized since 2004, one for summer and one for winter quality. In 2010 it was decided to use either the ASTM D4814 or EN228 specification for evaluation for one of the proficiency tests. During the annual proficiency testing program 2019/2020 it was decided to continue the proficiency test for the analyzis of Gasoline in accordance with the latest applicable version of EN228 specification. The interlaboratory study on Gasoline contains also PTs for the determination of Dry Vapour Pressure Equivalent (DVPE) and RON/MON in Gasoline.

In the PT for the regular analyzes 158 laboratories in 60 different countries registered for participation. In the PT on Dry Vapour Pressure Equivalent 129 laboratories in 48 different countries registered for participation and in the PT for RON/MON 88 laboratories in 50 different countries registered for participation. In total 168 laboratories in 62 different countries registered for at least one of the three PTs. See appendix 4 for the number of participants per country.
In this report, the results of the 2019 Gasoline proficiency test are presented and discussed.
This report is also available as PDF file from 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: 1 liter bottle with Gasoline labelled #19200 for the round with regular analyzes and/or 1 liter bottle with Gasoline (± 750 mL filled) labelled #19201 for the DVPE round and/or 2x 1 liter bottles with Gasoline labelled #19202 for the RON/MON round. 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

2.4.1 GASOLINE SAMPLES FOR THE ROUND WITH THE REGULAR ANALYZES AND RON/MON DETERMINATIONS

The necessary bulk material of approximately 430 liter of a regular winter grade Gasoline was purchased from the local market. After homogenization 175 glass bottles of 1 L for the round with the regular analyzes were filled and labelled #19200. Immediately after, 205 glass bottles of 1 L for the RON/MON round were filled and labelled #19202.
The homogeneity of the subsamples #19200 and #19202 was checked by determination of Density at 15°C in accordance with test method ASTM D4052 on 5 stratified randomly selected samples taken from the filling for the regular analyzes and 5 stratified randomly selected samples taken from the RON/MON filling.

	Density at 15°C in kg/m^3
Sample #19200-1	724.79
Sample #19200-2	724.89
Sample #19200-3	724.97
Sample #19200-4	724.83
Sample #19200-5	724.91
Sample #19202-1	724.76
Sample #19202-2	724.80
Sample #19202-3	724.75
Sample #19202-4	724.69
Sample #19202-5	724.70

Table 1: homogeneity test results of subsamples #19200 and #19202

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)	0.26
reference test method	ISO12185:96
0.3 x R (reference test method)	0.45

Table 2: evaluation of the repeatability of subsamples #19200 and #19202

The calculated repeatability is in agreement with 0.3 times the reproducibility of the reference test method. Therefore, homogeneity of the subsamples of #19200 and #19202 was assumed.

2.4.2 GASOLINE SAMPLES FOR DVPE DETERMINATION

The necessary bulk material of approximately 200 liter of a regular winter grade Gasoline was purchased from the local market. After homogenization 158 glass bottles of 1 L were filled with approximately 750 mL Gasoline for the DVPE round and labelled #19201. The homogeneity of the subsamples #19201 was checked by determination of DVPE according to EN13016 on 8 stratified randomly selected samples and converted to kPa.

	DVPE in kPa
Sample #19201-1	91.60
Sample #19201-2	91.40
Sample #19201-3	91.60
Sample #19201-4	91.40
Sample #19201-5	91.50
Sample #19201-6	91.70
Sample #19201-7	91.70
Sample #19201-8	91.50

Table 3: homogeneity test results of subsamples #19201

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)	0.33
reference test method	EN13016-1:18
0.3 x R (reference test method)	0.47

Table 4: evaluation of repeatability of subsamples #19201

The calculated repeatability is in agreement with 0.3 times the reproducibility of the reference test method. Therefore, homogeneity of the subsamples of #19201 was assumed.

To each of the participating laboratories, depending on the registration: 1x 1 liter of sample #19200 for the regular round and/or 1x 1 liter (± 750 mL filled) of sample #19201 for DVPE only and/or 2x 1 liter of sample #19202 for RON/MON only was sent on September 25, 2019. 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 #19200: 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, Existent Gum, 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 #19201: Air Saturated Vapour Pressure (ASVP) and Dry Vapour Pressure Equivalent (DVPE) and on sample #19202: 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 appropriate reference test methods that will be used during the evaluation. The detailed report form and the letter of instructions are both made available on the data entry portal www.kpmd.co.uk/sgs-iis/. The participating laboratories are also requested to confirm the sample receipt on this data entry portal. The letter of instructions can also be downloaded from the iis website www.iisnl.com.

3 RESULTS

During five weeks after sample dispatch, the test results of the individual laboratories were gathered via the data entry portal www.kpmd.co.uk/sgs-iis/. The reported test results are tabulated per determination in appendix 1 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 analyzis and the original test results are placed under 'Remarks' in the test result tables in appendix 1 and 2. Test results that came in after the deadline were not taken into account in this screening for suspect data and thus these participants were not requested for checks.

3.1 STATISTICS

The protocol followed in the organization of this proficiency test was the one as described for proficiency testing in the report 'iis Interlaboratory Studies: Protocol for the Organisation, Statistics and Evaluation' of June 2018 (iis-protocol, version 3.5).

For the statistical evaluation the *unrounded* (when available) figures were used instead of the rounded test results. Test results reported as '<…' or '>…' were not used in the statistical evaluation.

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

According to ISO5725 the original test results per determination were submitted to Dixon’s, Grubbs’ and/or Rosner’s outlier tests. Outliers are marked by D(0.01) for the Dixon’s test, by G(0.01) or DG(0.01) for the Grubbs’ test and by R(0.01) for the Rosner’s test. Stragglers are marked by D(0.05) for the Dixon’s test, by G(0.05) or DG(0.05) for the Grubbs’ test and by R(0.05) for the Rosner’s test. Both outliers and stragglers were not included in the calculations of averages and standard deviations.

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

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

3.2 GRAPHICS

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

Furthermore, Kernel Density Graphs were made. This is a method for producing a smooth density approximation to a set of data that avoids some problems associated with histograms. Also a normal Gauss curve was projected over the Kernel Density Graph for reference.

3.3 Z-SCORES

To evaluate the performance of the participating laboratories the z-scores were calculated. As it was decided to evaluate the performance of the participants in this proficiency test (PT) against the literature requirements, e.g. ASTM reproducibilities, the z-scores were calculated using a target standard deviation. This results in an evaluation independent of the variation of 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. In some cases, a reproducibility based on former iis proficiency tests could be used.

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

The z-scores were calculated according to:

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

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

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

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

4 EVALUATION

In this proficiency test, some problems were encountered with sample dispatch. For the round with the regular analyzes, fourteen participants reported the test results after the final reporting date and seven other participants did not report any test results at all.
For the DVPE round eight participants reported the test results after the final reporting date and twelve other participants did not report any test results at all.
For the RON/MON round ten participants reported the test results after the final reporting date and five other participants did not report any test results at all. Not all participants were able to report all analyzes requested.
In total, 161 participants reported in total 2643 numerical test results. Observed were 83 outlying test results, which is 3.1%. In proficiency studies, outlier percentages of 3% - 7.5% are quite normal.

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

4.1 EVALUATION PER SAMPLE AND PER TEST

In this section the 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 listed in appendix 5.

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

Regarding the Aromatics and Olefins determination by FIA only one participant reported a lot number of fluorescent indicator which may not provide accurate measurements, see JIG Bulletin no. 117 issued 30th of November 2018. However, the test results of this participant were in line with the results of the total group.

Sample #19200

API Gravity: This determination was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ASTM D1298:12b(2017).

Appearance: No problems have been observed with this determination. Ninety-two participants agreed on the appearance as Pass or Clear and Bright.

Aromatics by FIA: 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 EN15553:07.
To improve the reproducibility close attention should be paid to the identification of the chromatographic boundaries. EN15553 mentions in §9.4: "With some oxygenate blended fuels another red band may appear several centimetres above the reddish or brown alcohol/aromatic boundary and this shall be ignored."

Aromatics by GC: The determination in %V/V was not problematic. Six statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO22854-A:16. Regretfully for the determination in %M/M no precision data is available. Therefore, no z-scores were calculated. Four statistical outliers were observed in the test results reported in %M/M. The calculated reproducibility after rejection of the statistical outliers is higher than in previous PT iis18B04EN.

Benzene: This determination may be problematic based on the test method used. Eight statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ISO22854-A:16, but is in agreement with the less strict EN12177:00.

Copper Corrosion: No problems have been observed in this determination, all reporting participants agreed on a test result of 1 (1a or 1b).

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

Distillation: The distillation was not problematic for six of the eight reported distillation parameters. In total thirty statistical outliers were observed and three other test results were excluded. Most calculated reproducibilities after rejection of the suspect data are in (full) agreement with the requirements of ISO3405:19 automatic or manual modes, except for % evaporated at 70°C and 100°C and 90% evaporated manual mode.

Doctor Test: No problems have been observed, all reporting participants agreed on the absence of Mercaptans.

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

Lead: Fourty-six participants agreed on a level of <2.5 mg/L. Therefore, no z-scores were calculated.

Manganese: Fourty-five participants agreed on a level of <2 mg/L. Therefore, no z-scores were calculated.

Olefins by FIA: 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 EN15553:07.

Olefins by GC: The determination in %V/V was not problematic. Two statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in full agreement with the requirements of ISO22854-A:16. Regretfully, no precision data is available for the determination in %M/M. Therefore, no z-scores were calculated. No statistical outliers were observed in the test results reported in %M/M. The calculated reproducibility is higher than observed in previous PT iis18B04EN.

Oxidation stability: Sixty-five participants agreed on an Oxidation Stability >360 minutes. Therefore, no z-scores were calculated.

Ethanol: This determination was not problematic. Two statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in full agreement with the requirements of ISO22854-A:16.

Ethers (C5 or more): This determination was not problematic. Two statistical outliers were observed and two other test results were excluded. However, the calculated reproducibility after rejection of the suspect data is in agreement with the requirements of ISO22854-A:16.

ETBE: This determination was not problematic. Four statistical outliers were observed and three other test results were excluded. However, the calculated reproducibility after rejection of the suspect data is in agreement with the requirements of ISO22854-A:16.

MTBE: This determination was not problematic. Four statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO22854-A:16.

Other Oxygenates: All other Oxygenates are below the detection limit and therefore not further evaluated. The reported test results are listed in appendix 2.

Oxygen content: This determination was not problematic. Four statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO22854-A:16.

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 ASTM D5453:19.

Sample #19201

ASVP: 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 EN13016-1:18.

Eightteen 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.

DVPE: The Air Saturated Vapour Pressure (ASVP) can be converted to Dry Vapour Pressure Equivalent (DVPE) according to EN13016-1. This conversion 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.

Sample #19202

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

MON: The determination was not problematic. Two statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in full 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 result, the calculated reproducibility (2.8 * standard deviation) and the reproducibility derived from literature reference test methods (in casu ASTM, EN and ISO reference test methods) are presented in the next tables.

Parameter	unit	n	average	2.8 * sd	R (lit)
API Gravity		58	63.6	0.2	0.3
Appearance		92	Pass	n.a.	n.a.
Aromatics by FIA	%V/V	44	24.3	4.3	3.7
Aromatics by GC	%V/V	62	22.8	1.0	1.2
Aromatics by GC	%M/M	37	27.6	1.8	n.a.
Benzene	%V/V	94	0.85	0.07	0.04

Parameter	unit	n	average	2.8 * sd	R (lit)
Copper Corrosion 3 hrs at 50°C		111	1	n.a.	n.a.
Density at 15°C	kg/m^3	139	725.2	0.9	1.5
Initial Boiling Point	°C	134	27.7	5.2	4.7
Temp. at 10% evaporated	°C	135	42.2	4.0	3.9
Temp. at 50% evaporated	°C	131	84.1	4.3	4.0
Temp. at 90% evaporated	°C	130	134.0	5.7	5.6
Final Boiling Point	°C	134	170.3	5.7	7.1
%volume at 70°C	%V/V	124	41.3	3.4	2.7
%volume at 100°C	%V/V	122	62.7	3.0	2.2
%volume at 150°C	%V/V	109	95.7	1.3	1.3
Doctor Test		61	negative	n.a.	n.a.
Existent Gum (washed)	mg/100mL	72	0.6	1.5	2.2
Lead as Pb	mg/L	46	<2.5	n.a.	n.a.
Manganese as Mn	mg/L	45	<2	n.a.	n.a.
Olefins by FIA	%V/V	43	9.4	2.9	3.1
Olefins by GC	%V/V	62	9.7	1.5	1.7
Olefins by GC	%M/M	37	9.3	1.8	n.a.
Oxidation Stability	minutes	65	>360	n.a.	n.a.
Ethanol	%V/V	89	4.74	0.52	0.47
Ethers (C5 or more C atoms)	%V/V	60	4.07	0.36	0.45
ETBE	%V/V	75	0.94	0.21	0.38
MTBE	%V/V	84	3.12	0.34	0.43
Oxygen content	%M/M	85	2.53	0.26	0.31
Sulfur	mg/kg	128	4.0	1.8	1.7

Table 5: performance evaluation sample #19200

Parameter	unit	n	average	2.8 * sd	R (lit)
ASVP	kPa	85	96.77	2.33	1.58
DVPE acc. to EN13016-1	kPa	114	89.52	2.16	1.58

Table 6: performance evaluation sample #19201

Parameter	unit	n	average	2.8 * sd	R (lit)
RON		80	95.4	0.7	0.7
MON		61	85.8	1.1	0.9

Table 7: performance evaluation sample #19202

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

4.3 COMPARISON OF THE PROFICIENCY TEST OF OCTOBER 2019 WITH PREVIOUS PTS

	October 2019	October 2018	October 2017	October 2016	October 2015
Number of reporting labs	161	143	148	146	146
Number of test results	2643	2587	2694	2570	2836
Number of statistical outliers	83	77	77	54	105
Percentage outliers	3.1%	3.0%	2.9%	2.1%	3.9%

Table 8: comparison with previous proficiency tests

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

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

Determination	October 2019	October 2018	October 2017	October 2016	October 2015
API Gravity	+	+/-	+/-	+/-	+/-
Aromatics by FIA	-	-	+	-	-
Aromatics by GC	+	+/-	+/-	+	-
Benzene	-	+	+/-	+/-	--
Density at 15°C	+	+	++	+	+
Distillation	+/-	+/-	+/-	+/-	+/-
Existent Gum (solvent washed)	+	+	++	+	+
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.	n.e.
MTBE	+	+	+	+/-	+/-
Oxygen content	+	+	+	+	+/-
Sulfur	+/-	+/-	+/-	+/-	-
ASVP	-	+/-	+	+/-	+
DVPE (acc. to EN13016-1)	-	+/-	+	+/-	+
RON	+/-	-	-	+/-	+/-
MON	+/-	-	+/-	+/-	-

Table 9: comparison determinations against the reference test method

The performance of the determinations against the requirements of the reference test methods is listed in the above table. 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

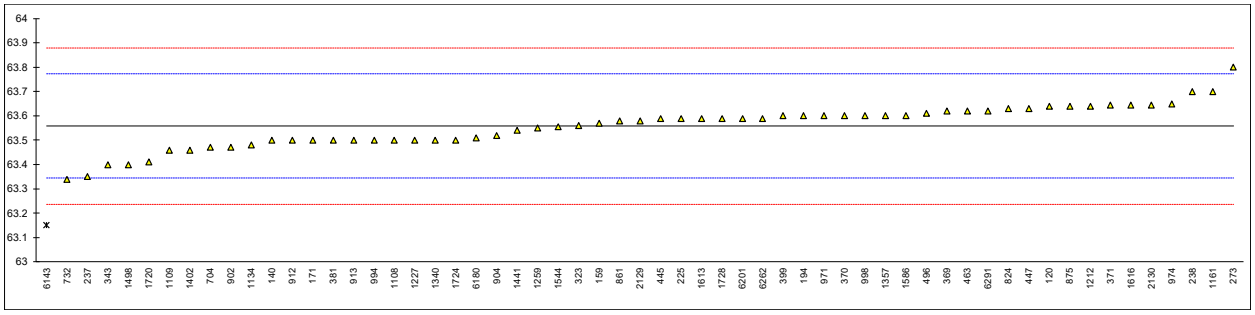
Determination of API Gravity on sample #19200;

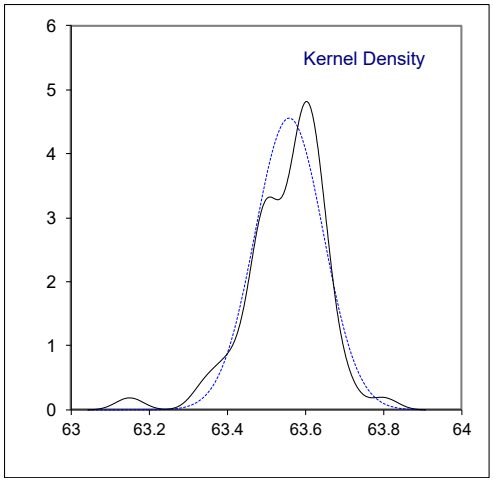
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D4052	63.64		0.76	1194		-----		-----
140	D4052	63.5		-0.54	1199		-----		-----
159	D4052	63.57		0.11	1205		-----		-----
171	D4052	63.50		-0.54	1212	D4052	63.64		0.76
194	D4052	63.6		0.39	1227	D1298	63.5		-0.54
225	D4052	63.59		0.30	1229		-----		-----
237	D4052	63.35		-1.94	1237		-----		-----
238	D4052	63.7		1.32	1259	D1298	63.55		-0.08
273	D4052	63.8	C	2.26	1275		-----		-----
311		-----		-----	1281		-----		-----
312		-----		-----	1299		-----		-----
323	D1298	63.56		0.02	1320		-----		-----
333		-----		-----	1340	D1298	63.5		-0.54
334		-----		-----	1357	D4052	63.6		0.39
335		-----		-----	1389		-----		-----
336		-----		-----	1397		-----		-----
337		-----		-----	1399		-----		-----
338		-----		-----	1402	D4052	63.46		-0.92
343	D1298	63.4		-1.48	1438		-----		-----
344		-----		-----	1441	D1298	63.54		-0.17
352		-----		-----	1457		-----		-----
353		-----		-----	1459		-----		-----
369	D4052	63.62		0.58	1498	D4052	63.4		-1.48
370	ISO12185	63.6		0.39	1544	D4052	63.555		-0.03
371	D4052	63.645		0.81	1556		-----		-----
381	ISO12185	63.5		-0.54	1569		-----		-----
391		-----		-----	1586	D4052	63.6		0.39
399	D1298	63.6		0.39	1611		-----		-----
403		-----		-----	1613	D4052	63.59		0.30
404		-----		-----	1616	Calculation	63.645		0.81
420		-----		-----	1618		-----		-----
431		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
444		-----		-----	1644		-----		-----
445	D1298	63.59		0.30	1650		-----		-----
447	D4052	63.63		0.67	1676		-----		-----
453		-----		-----	1697		-----		-----
463	D4052	63.62		0.58	1698		-----		-----
468		-----		-----	1705		-----		-----
485		-----		-----	1713		-----		-----
496	D4052	63.61		0.48	1720	D4052	63.41		-1.38
631		-----		-----	1724	D4052	63.5		-0.54
633		-----		-----	1725		-----		-----
704	D1298	63.47		-0.82	1728	D4052	63.59		0.30
732	ISO12185	63.34		-2.04	1740		-----		-----
785		-----		-----	1741		-----		-----
798		-----		-----	1742		-----		-----
824	D4052	63.63		0.67	1776		-----		-----
861	D4052	63.58		0.20	1833		-----		-----
875	D1298	63.64		0.76	1849		-----		-----
902	D4052	63.47		-0.82	1856		-----		-----
904	D4052	63.52		-0.36	1881		-----		-----
912	D287	63.5		-0.54	1884		-----		-----
913	D1298	63.5		-0.54	1911		-----		-----
971	D4052	63.60		0.39	1941		-----		-----
974	Calculation	63.65		0.86	1953		-----		-----
994	D1250	63.5		-0.54	2129	Calculation	63.58		0.20
998	D1250	63.6		0.39	2130	D4052	63.645		0.81
1006		-----		-----	2146		-----		-----
1011		-----		-----	6005		-----		-----
1026		-----		-----	6012		-----		-----
1033		-----		-----	6018		-----		-----
1059		-----		-----	6028		-----		-----
1079		-----		-----	6034		-----		-----
1082		-----		-----	6054		-----		-----
1097		-----		-----	6068		-----		-----
1099		-----		-----	6075		-----		-----
1108	ISO12185	63.50		-0.54	6103		-----		-----
1109	D287	63.46		-0.92	6142		-----		-----
1126		-----		-----	6143	D4052	63.15	R(0.01)	-3.81
1134	D4052	63.48		-0.73	6163		-----		-----
1141		-----		-----	6180	D1298	63.51		-0.45
1161	D287	63.7		1.32	6192		-----		-----
1167		-----		-----	6201	D1298	63.59		0.30
1191		-----		-----	6203		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238		-----		-----	6262	D1298	63.59		0.30
6249		-----		-----	6279		-----		-----
6258		-----		-----	6287		-----		-----
6260		-----		-----	6291	D4052	63.62		0.58

normality	OK
n	58
outliers	1
mean (n)	63.558
st.dev. (n)	0.0874
R(calc.)	0.245
st.dev.(D1298:12b)	0.1071
R(D1298:12b)	0.3

Lab 273 first reported 62.5





Determination of Appearance on sample #19200;

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	Visual	Clear & Bright		-----	1194		-----		-----
140	D4176	Clear & Bright		-----	1199		-----		-----
159		-----		-----	1205		-----		-----
171	Visual	Clear & Bright		-----	1212	Visual	Clear & Bright		-----
194	D4176	Pass		-----	1227		-----		-----
225	D4176	Clear & Bright		-----	1229		-----		-----
237	D4176	Clear & Bright		-----	1237		-----		-----
238		-----		-----	1259		-----		-----
273		-----		-----	1275	D4176	Clear & Bright		-----
311		-----		-----	1281		-----		-----
312		-----		-----	1299	Visual	Clear & Bright		-----
323	Visual	Clear & Bright		-----	1320		-----		-----
333		-----		-----	1340	Visual	Clear & Bright		-----
334		-----		-----	1357	Visual	Clear & Bright		-----
335	Visual	Clear & Bright		-----	1389	Visual	Clear & Bright		-----
336	Visual	Clear & Bright		-----	1397		-----		-----
337	Visual	Clear & Bright		-----	1399		-----		-----
338	Visual	Clear & Bright		-----	1402	D4176	Clear & Bright		-----
343	Visual	Clear & Bright		-----	1438		-----		-----
344	D4176	Clear & Bright		-----	1441	D4176	Pass		-----
352	Visual	Clear & Bright		-----	1457	Visual	Clear & Bright		-----
353	D4176	Pass		-----	1459		-----		-----
369	Visual	Clear & Bright		-----	1498	D4176	Clear & Bright		-----
370	D4176	Clear & Bright		-----	1544	Visual	Clear & Bright		-----
371	D4176	Pass		-----	1556		-----		-----
381	Visual	Clear		-----	1569	D4176	Pass		-----
391	Visual	Clear & Bright		-----	1586	Visual	Pass		-----
399	Visual	Clear & Bright		-----	1611	Visual	Clear		-----
403		-----		-----	1613	Visual	Clear & Bright		-----
404		-----		-----	1616	Visual	Clear		-----
420		-----		-----	1618	Visual	Clear, transparent		-----
431		-----		-----	1631		-----		-----
440	Visual	Clear & Bright		-----	1634	Visual	Clear & Bright		-----
444	Visual	Pass		-----	1644		-----		-----
445	D4176	Particles present		-----	1650		-----		-----
447	Visual	Clear & Bright		-----	1676		-----		-----
453	D4176	Pass		-----	1697	Visual	Clear & Bright		-----
463	D4176	Pass		-----	1698		-----		-----
468		-----		-----	1705		-----		-----
485		-----		-----	1713		-----		-----
496	Visual	Clear & Bright		-----	1720		-----		-----
631		-----		-----	1724	Visual	Clear & Bright		-----
633	Visual	Clear & Bright		-----	1725		-----		-----
704	Visual	Pass		-----	1728	Visual	Clear		-----
732	D4176	Pass		-----	1740		-----		-----
785	D4176	Pass		-----	1741	Visual	Clear & Bright yellow		-----
798		-----		-----	1742		-----		-----
824	Visual	Clear & Bright		-----	1776		-----		-----
861	Visual	Clear & Bright		-----	1833	Visual	Clear & Bright		-----
875	Visual	Clear & Bright		-----	1849	In house	Clear & Bright		-----
902	D4176	Pass		-----	1856		-----		-----
904	D4176	Clear & Bright		-----	1881		-----		-----
912	Visual	Clear & Bright		-----	1884	Visual	Clear & Bright		-----
913		-----		-----	1911	Visual	Clear & Bright		-----
971	D4176	Clear & Bright		-----	1941	Visual	Clear & Bright		-----
974	Visual	Clear & Bright		-----	1953	D4176	Clear & Bright		-----
994	D4176	Clear & Bright		-----	2129	Visual	Clear & Bright		-----
998	D4176	Clear & Bright		-----	2130	Visual	Clear & Bright		-----
1006		-----		-----	2146		-----		-----
1011		-----		-----	6005	Visual	Clear & Bright		-----
1026		Clear & Bright		-----	6012		-----		-----
1033		-----		-----	6018	Visual	Clear & Bright		-----
1059	Visual	Clear & Bright		-----	6028		-----		-----
1079	D4176	Pass		-----	6034		-----		-----
1082		-----		-----	6054		-----		-----
1097	Visual	Clear, light yellow		-----	6068	Visual	Clear & Bright		-----
1099	Visual	Clear & Bright		-----	6075		-----		-----
1108	Visual	Clear & Bright		-----	6103		-----		-----
1109	D4176	Pass		-----	6142	Visual	Clear & Bright		-----
1126		-----		-----	6143		-----		-----
1134	D4176	Clear & Bright		-----	6163		-----		-----
1141	Visual	Clear & Bright		-----	6180	D4176	Clear & Bright		-----
1161		-----		-----	6192	Visual	Clear & Bright		-----
1167	Visual	Clear & Bright		-----	6201	Visual	Clear & Bright		-----
1191		-----		-----	6203	Visual	Clear & Bright		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238		-----		-----	6262	Visual	Clear & Bright		-----
6249		-----		-----	6279		-----		-----
6258	Visual	Clear & Bright		-----	6287		-----		-----
6260		-----		-----	6291	Visual	Clear & Bright		-----

n	92
mean (n)	Pass (Clear & Bright)

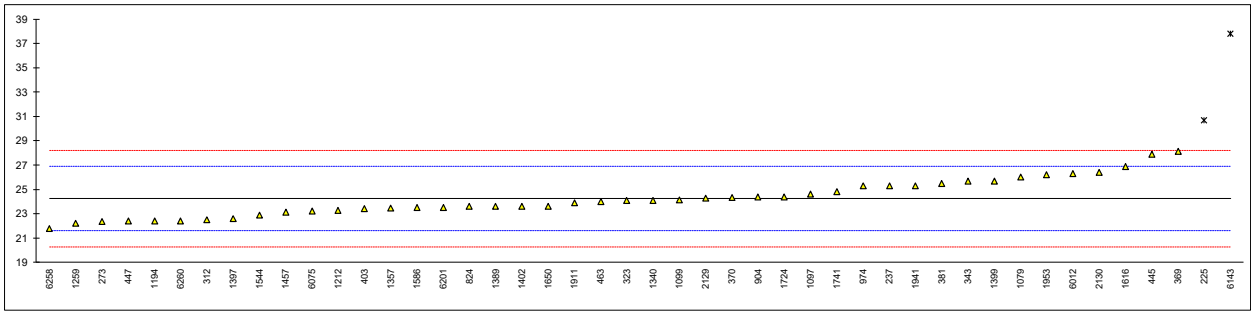
Determination of Aromatics by FIA (without oxygenates correction) on sample #19200; results in %V/V

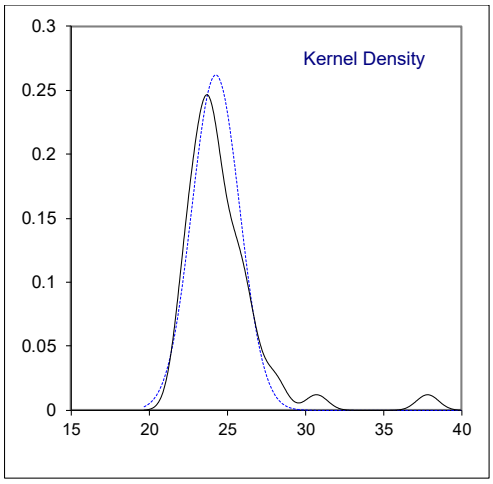
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1194	D1319	22.4		-1.40
140		-----		-----	1199		-----		-----
159		-----		-----	1205		-----		-----
171		-----		-----	1212	EN15553	23.29		-0.73
194		-----		-----	1227		-----		-----
225	D1319	30.7	R(0.01)	4.88	1229		-----		-----
237	D1319	25.3		0.79	1237		-----		-----
238		-----		-----	1259	EN15553	22.2		-1.56
273	D1319	22.38		-1.42	1275		-----		-----
311		-----		-----	1281		-----		-----
312	EN15553	22.5		-1.33	1299		-----		-----
323	D1319	24.1		-0.12	1320		-----		-----
333		-----		-----	1340	D1319	24.11		-0.11
334		-----		-----	1357	D1319	23.45		-0.61
335		-----		-----	1389	D1319	23.6		-0.50
336		-----		-----	1397	EN15553	22.6		-1.25
337		-----		-----	1399	D1319	25.7		1.09
338		-----		-----	1402	D1319	23.6		-0.50
343	D1319	25.7		1.09	1438		-----		-----
344		-----		-----	1441		-----		-----
352		-----		-----	1457	D1319	23.11		-0.87
353		-----		-----	1459		-----		-----
369	EN15553	28.14		2.94	1498		-----		-----
370	D1319	24.33		0.06	1544	EN15553	22.9	C	-1.03
371		-----		-----	1556		-----		-----
381	EN15553	25.5		0.94	1569		-----		-----
391		-----		-----	1586	D1319	23.5		-0.57
399		-----		-----	1611		-----		-----
403	EN15553	23.43		-0.62	1613		-----		-----
404		-----		-----	1616	D1319	26.9		2.00
420		-----		-----	1618		-----		-----
431		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
444		-----		-----	1644		-----		-----
445	D1319	27.9		2.76	1650	EN15553	23.62		-0.48
447	D1319	22.4		-1.40	1676		-----		-----
453		-----		-----	1697		-----		-----
463	D1319	24.00		-0.19	1698		-----		-----
468		-----		-----	1705		-----		-----
485		-----		-----	1713		-----		-----
496		-----		-----	1720		-----		-----
631		-----		-----	1724	D1319	24.4		0.11
633		-----		-----	1725		-----		-----
704		-----		-----	1728		-----		-----
732		-----		-----	1740		-----		-----
785		-----		-----	1741	EN15553	24.80		0.41
798		-----		-----	1742		-----		-----
824	D1319	23.6		-0.50	1776		-----		-----
861		-----		-----	1833		-----		-----
875		-----		-----	1849		-----		-----
902		-----		-----	1856		-----		-----
904	D1319	24.4		0.11	1881		-----		-----
912		-----		-----	1884		-----		-----
913		-----		-----	1911	EN15553	23.92		-0.25
971		-----		-----	1941	EN15553	25.3		0.79
974	D1319	25.28		0.78	1953		26.2		1.47
994		-----		-----	2129	EN15553	24.3		0.03
998		-----		-----	2130	D1319	26.4	C	1.62
1006		-----		-----	2146		-----		-----
1011		-----		-----	6005		-----		-----
1026		-----		-----	6012	D1319	26.3		1.55
1033		-----		-----	6018		-----		-----
1059		-----		-----	6028		-----		-----
1079	EN15553	26.0		1.32	6034		-----		-----
1082		-----		-----	6054		-----		-----
1097	D1319	24.61		0.27	6068		-----		-----
1099	EN15553	24.12		-0.10	6075	EN15553	23.25		-0.76
1108		-----		-----	6103		-----		-----
1109		-----		-----	6142		-----		-----
1126		-----		-----	6143	D1319	37.8	R(0.01)	10.25
1134		-----		-----	6163		-----		-----
1141		-----		-----	6180		-----		-----
1161		-----		-----	6192		-----		-----
1167		-----		-----	6201	D1319	23.5		-0.57
1191		-----		-----	6203		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238		-----		-----	6262		-----		-----
6249		-----		-----	6279		-----		-----
6258	D1319	21.8		-1.86	6287		-----		-----
6260	GB/T11132	22.4		-1.40	6291		-----		-----

normality	OK
n	44
outliers	2
mean (n)	24.26
st.dev. (n)	1.524
R(calc.)	4.27
st.dev.(EN15553:07)	1.321
R(EN15553:07)	3.7

Lab 1544 first reported 28.90
Lab 2130 first reported 19.8





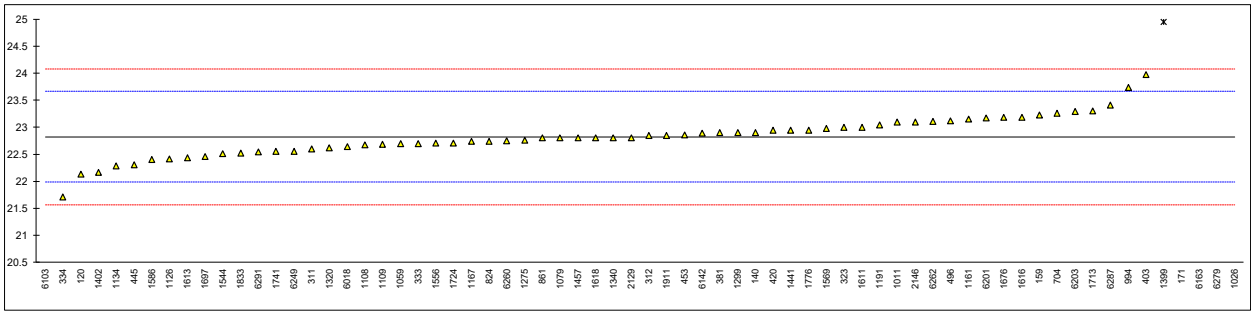
Determination of Aromatics by GC on sample #19200; results in %V/V

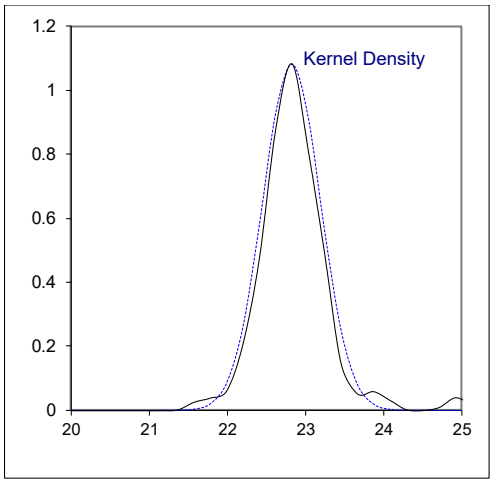
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D5769	22.13		-1.67	1194		-----		-----
140	D5769	22.9		0.18	1199		-----		-----
159	D5769	23.23		0.97	1205		-----		-----
171	ISO22854-A	25.46	R(0.01)	6.33	1212		-----		-----
194		-----		-----	1227		-----		-----
225		-----		-----	1229		-----		-----
237		-----		-----	1237		-----		-----
238		-----		-----	1259		-----		-----
273		-----		-----	1275	ISO22854-A	22.76		-0.15
311	ISO22854-A	22.6		-0.54	1281		-----		-----
312	ISO22854-A	22.85		0.06	1299	ISO22854-A	22.9		0.18
323	ISO22854-A	23.0		0.42	1320	ISO22854-A	22.62		-0.49
333	ISO22854-A	22.7		-0.30	1340	ISO22854	22.802		-0.05
334	ISO22854-A	21.71		-2.68	1357	D6839	-----		-----
335		-----		-----	1389		-----		-----
336		-----		-----	1397		-----		-----
337		-----		-----	1399		24.95	R(0.01)	5.11
338		-----		-----	1402	ISO22854-A	22.17		-1.57
343		-----		-----	1438		-----		-----
344		-----		-----	1441	D6839	22.94		0.28
352		-----		-----	1457	ISO22854-A	22.80		-0.06
353		-----		-----	1459		-----		-----
369		-----		-----	1498		-----		-----
370		-----		-----	1544	ISO22854-A	22.51		-0.76
371		-----		-----	1556	ISO22854-A	22.71		-0.27
381	ISO22854-A	22.9		0.18	1569	ISO22854-A	22.98		0.37
391		-----		-----	1586	ISO22854-A	22.4		-1.02
399		-----		-----	1611	ISO22854-A	23.00		0.42
403	ISO22854-A	23.97		2.75	1613	D6839	22.44		-0.92
404		-----		-----	1616	D6839	23.18		0.85
420	ISO22854-A	22.94		0.28	1618	ISO22854-A	22.8		-0.06
431		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
444		-----		-----	1644		-----		-----
445	ISO22854-A	22.31		-1.24	1650		-----		-----
447		-----		-----	1676	ISO22854-A	23.179		0.85
453	ISO22854-A	22.86		0.09	1697	ISO22854-A	22.46		-0.88
463		-----		-----	1698		-----		-----
468		-----		-----	1705		-----		-----
485		-----		-----	1713	ISO22854-A	23.3		1.14
496	ISO22854-A	23.12		0.71	1720		-----		-----
631		-----		-----	1724	ISO22854-A	22.71		-0.27
633		-----		-----	1725		-----		-----
704	D5580	23.256		1.04	1728		-----		-----
732		-----		-----	1740		-----		-----
785		-----		-----	1741	ISO22854-A	22.55		-0.66
798		-----		-----	1742		-----		-----
824	D5580	22.74		-0.20	1776	ISO22854-A	22.95		0.30
861	D5580	22.8		-0.06	1833	ISO22854-A	22.52		-0.73
875		-----		-----	1849		-----		-----
902		-----		-----	1856		-----		-----
904		-----		-----	1881		-----		-----
912		-----		-----	1884		-----		-----
913		-----		-----	1911	ISO22854-A	22.85		0.06
971		-----		-----	1941		-----		-----
974		-----		-----	1953		-----		-----
994	D6729	23.740		2.20	2129	D6730	22.804	C	-0.05
998		-----		-----	2130		-----		-----
1006		-----		-----	2146	ISO22854-A	23.1		0.66
1011	ISO22854	23.1		0.66	6005		-----		-----
1026	ISO22854-A	57.72	R(0.01)	83.83	6012		-----		-----
1033		-----		-----	6018	ISO22854-A	22.64		-0.44
1059	ISO22854-A	22.7		-0.30	6028		-----		-----
1079	ISO22854-A	22.8		-0.06	6034		-----		-----
1082		-----		-----	6054		-----		-----
1097		-----		-----	6068		-----		-----
1099		-----		-----	6075		-----		-----
1108	ISO22854-A	22.67		-0.37	6103	D6730	5.285	R(0.01)	-42.14
1109	D6839	22.68		-0.35	6142	ISO22854-A	22.89		0.16
1126	ISO22854-A	22.41		-1.00	6143		-----		-----
1134	ISO22854-A	22.28		-1.31	6163	ISO22854-A	26.2	C,R(0.01)	8.11
1141		-----		-----	6180		-----		-----
1161	ISO22854-A	23.15		0.78	6192		-----		-----
1167	ISO22854-A	22.74		-0.20	6201	ISO22854-A	23.17		0.83
1191	ISO22854-A	23.04		0.52	6203	ISO22854-A	23.29		1.12

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238		-----		-----	6262	ISO22854-A	23.11		0.69
6249	ISO22854	22.55		-0.66	6279	ISO22854-A	28.02	R(0.01)	12.48
6258		-----		-----	6287	GB/T30519	23.41		1.41
6260	GB/T28768	22.745		-0.19	6291	ISO22854-A	22.54		-0.68

normality	suspect
n	62
outliers	6
mean (n)	22.824
st.dev. (n)	0.3691
R(calc.)	1.033
st.dev.(ISO22854-A:16)	0.4162
R(ISO22854-A:16)	1.165

Lab 2129 first reported 21.198
Lab 6163 first reported 25.5





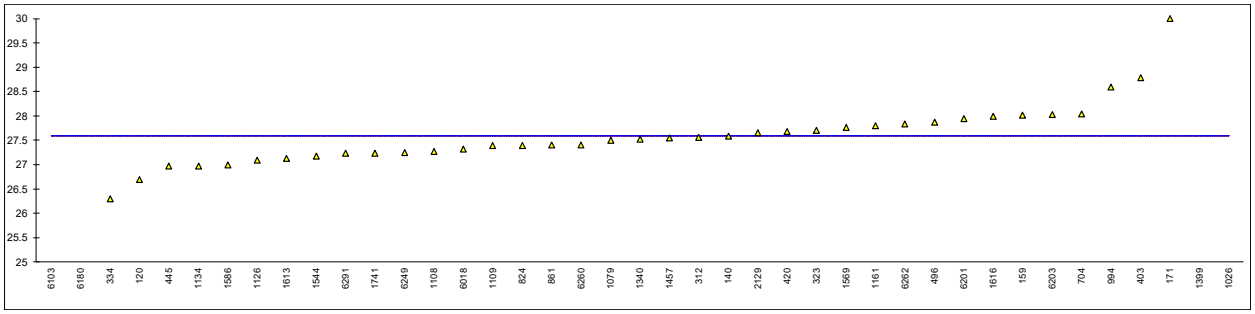
Determination of Aromatics by GC on sample #19200; results in %M/M

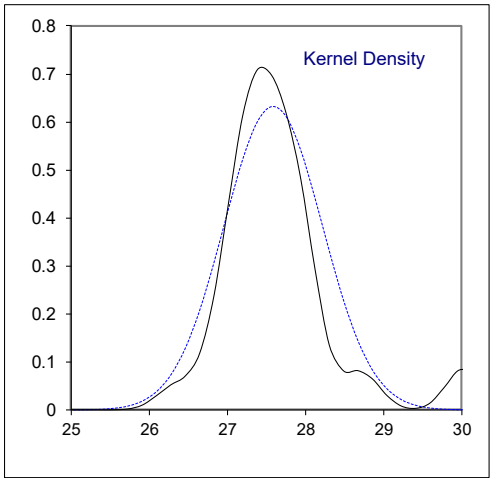
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D5769	26.69		-----	1194		-----		-----
140	D5769	27.59		-----	1199		-----		-----
159	D5769	28.02		-----	1205		-----		-----
171	ISO22854	30.00		-----	1212		-----		-----
194		-----		-----	1227		-----		-----
225		-----		-----	1229		-----		-----
237		-----		-----	1237		-----		-----
238		-----		-----	1259		-----		-----
273		-----		-----	1275		-----		-----
311		-----		-----	1281		-----		-----
312	ISO22854	27.56		-----	1299		-----		-----
323	ISO22854	27.7		-----	1320		-----		-----
333		-----		-----	1340	ISO22854	27.52		-----
334	ISO22854	26.30		-----	1357		-----		-----
335		-----		-----	1389		-----		-----
336		-----		-----	1397		-----		-----
337		-----		-----	1399		30.05	R(0.05)	-----
338		-----		-----	1402		-----		-----
343		-----		-----	1438		-----		-----
344		-----		-----	1441		-----		-----
352		-----		-----	1457	ISO22854	27.55		-----
353		-----		-----	1459		-----		-----
369		-----		-----	1498		-----		-----
370		-----		-----	1544	ISO22854	27.17		-----
371		-----		-----	1556		-----		-----
381		-----		-----	1569	ISO22854	27.76		-----
391		-----		-----	1586	ISO22854	27.0		-----
399		-----		-----	1611		-----		-----
403	ISO22854	28.79		-----	1613	D6839	27.13		-----
404		-----		-----	1616	D6839	27.99		-----
420	ISO22854	27.68		-----	1618		-----		-----
431		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
444		-----		-----	1644		-----		-----
445	ISO22854	26.97		-----	1650		-----		-----
447		-----		-----	1676		-----		-----
453		-----		-----	1697		-----		-----
463		-----		-----	1698		-----		-----
468		-----		-----	1705		-----		-----
485		-----		-----	1713		-----		-----
496	ISO22854	27.87		-----	1720		-----		-----
631		-----		-----	1724		-----		-----
633		-----		-----	1725		-----		-----
704	D5580	28.036		-----	1728		-----		-----
732		-----		-----	1740		-----		-----
785		-----		-----	1741	ISO22854	27.24		-----
798		-----		-----	1742		-----		-----
824	D5580	27.39		-----	1776		-----		-----
861	D5580	27.4		-----	1833		-----		-----
875		-----		-----	1849		-----		-----
902		-----		-----	1856		-----		-----
904		-----		-----	1881		-----		-----
912		-----		-----	1884		-----		-----
913		-----		-----	1911		-----		-----
971		-----		-----	1941		-----		-----
974		-----		-----	1953		-----		-----
994	D6729	28.597		-----	2129	D6730	27.655	C	-----
998		-----		-----	2130		-----		-----
1006		-----		-----	2146		-----		-----
1011		-----		-----	6005		-----		-----
1026	ISO22854	52.87	R(0.01)	-----	6012		-----		-----
1033		-----		-----	6018	ISO22854	27.32		-----
1059		-----		-----	6028		-----		-----
1079	ISO22854	27.5		-----	6034		-----		-----
1082		-----		-----	6054		-----		-----
1097		-----		-----	6068		-----		-----
1099		-----		-----	6075		-----		-----
1108	ISO22854	27.27		-----	6103	D6730	7.236	R(0.01)	-----
1109	D6839	27.39		-----	6142		-----		-----
1126	ISO22854	27.09		-----	6143		-----		-----
1134	ISO22854	26.97		-----	6163		-----		-----
1141		-----		-----	6180	D6730	21.35	R(0.01)	-----
1161	ISO22854	27.8		-----	6192		-----		-----
1167		-----		-----	6201	ISO22854	27.94		-----
1191		-----		-----	6203	ISO22854	28.03		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238		-----		-----	6262	ISO22854	27.84		-----
6249		27.25		-----	6279		-----		-----
6258		-----		-----	6287		-----		-----
6260	GB/T28768	27.405		-----	6291	ISO22854	27.23		-----

	normality	not OK
	n	37
	outliers	4
	mean (n)	27.585
	st.dev. (n)	0.6302
	R(calc.)	1.765
	st.dev.(lit)	unknown
	R(lit)	unknown
Compare		
	R(iis18B04EN)	1.282

Lab 2129 first reported 25.722





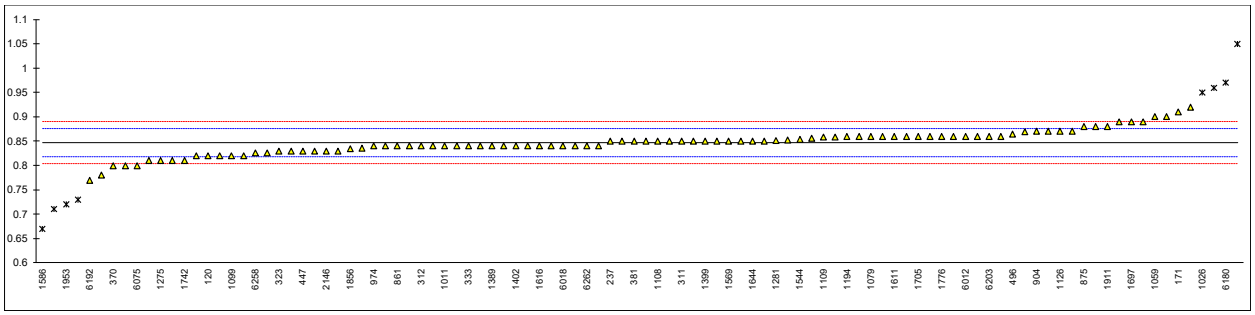
Determination of Benzene on sample #19200; results in %V/V

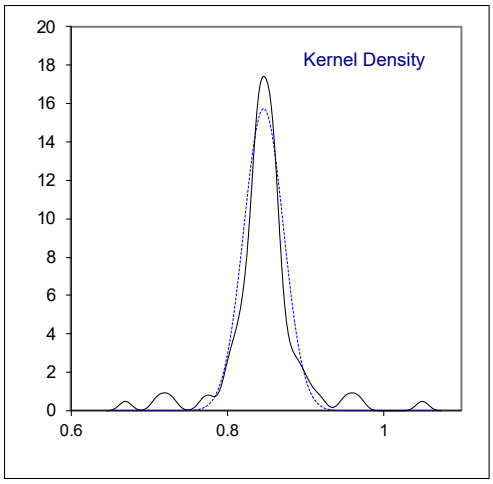
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D3606	0.82		-1.85	1194	D6277	0.86		0.89
140	D3606	0.82		-1.85	1199		-----		-----
159	D3606	0.85	C	0.21	1205		-----		-----
171	ISO22854-A	0.91		4.32	1212		-----		-----
194		-----		-----	1227		-----		-----
225	D6277	0.71	R(0.01)	-9.40	1229		-----		-----
237	D5580	0.85	C	0.21	1237	EN238	0.85		0.21
238		-----		-----	1259	EN12177	0.80		-3.22
273	D6277	1.05	C,R(0.01)	13.93	1275	ISO22854-A	0.81		-2.54
311	ISO22854-A	0.85		0.21	1281	EN238	0.851		0.28
312	ISO22854-A	0.84		-0.48	1299	ISO22854-A	0.86		0.89
323	ISO22854-A	0.83		-1.16	1320	ISO22854-A	0.84		-0.48
333	ISO22854-A	0.84		-0.48	1340	ISO22854	0.856		0.62
334	ISO22854-A	0.84		-0.48	1357	D6839	0.82		-1.85
335		-----		-----	1389	EN12177	0.84		-0.48
336		-----		-----	1397	EN238	0.84		-0.48
337		-----		-----	1399	D5580	0.85		0.21
338		-----		-----	1402	ISO22854-A	0.84		-0.48
343	EN238	0.92	C	5.01	1438		-----		-----
344		-----		-----	1441	D6839	0.84		-0.48
352		-----		-----	1457	ISO22854-A	0.86		0.89
353		-----		-----	1459	EN12177	0.81		-2.54
369	EN238	0.84		-0.48	1498		-----		-----
370	EN238	0.80		-3.22	1544	ISO22854-A	0.853		0.41
371		-----		-----	1556	ISO22854-A	0.85		0.21
381	EN12177	0.85		0.21	1569	ISO22854-A	0.85		0.21
391		-----		-----	1586	ISO22854-A	0.67	R(0.01)	-12.14
399		-----		-----	1611	ISO22854-A	0.86		0.89
403	ISO22854-A	0.88		2.27	1613	D6839	0.86		0.89
404	EN238	0.87	C	1.58	1616	D6839	0.84		-0.48
420	ISO22854-A	0.84		-0.48	1618	ISO22854-A	0.85		0.21
431		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
444		-----		-----	1644	EN12177	0.85		0.21
445	ISO22854-A	0.83		-1.16	1650		-----		-----
447	IP429	0.83		-1.16	1676	ISO22854-A	0.840		-0.48
453	ISO22854-A	0.85		0.21	1697	EN12177	0.89		2.95
463	EN238	0.82		-1.85	1698	EN12177	0.83		-1.16
468		-----		-----	1705	EN12177	0.86		0.89
485		-----		-----	1713	ISO22854-A	0.89		2.95
496	ISO22854-A	0.865		1.24	1720		-----		-----
631		-----		-----	1724	ISO22854-A	0.86		0.89
633		-----		-----	1725		-----		-----
704	D5580	0.87		1.58	1728	EN238	0.90	C	3.64
732		-----		-----	1740		-----		-----
785		-----		-----	1741	EN12177	0.850		0.21
798		-----		-----	1742	EN238	0.81		-2.54
824	D5580	0.836		-0.75	1776	ISO22854-A	0.86		0.89
861	D5580	0.84		-0.48	1833	ISO22854-A	0.86		0.89
875	EN12177	0.88	C	2.27	1849		-----		-----
902		-----		-----	1856	EN12177	0.834		-0.89
904	EN12177	0.87	C	1.58	1881		-----		-----
912		-----		-----	1884		-----		-----
913		-----		-----	1911	ISO22854-A	0.88		2.27
971		-----		-----	1941	EN12177	0.859		0.83
974	D6730	0.84		-0.48	1953		0.72	R(0.01)	-8.71
994	D6729	0.852		0.35	2129	D6730	0.869		1.51
998		-----		-----	2130		-----		-----
1006	D5580	0.81		-2.54	2146	ISO22854-A	0.83		-1.16
1011	ISO22854	0.84		-0.48	6005		-----		-----
1026	ISO22854-A	0.95	R(0.05)	7.07	6012	D6277	0.86		0.89
1033		-----		-----	6018	ISO22854-A	0.84		-0.48
1059	ISO22854-A	0.90		3.64	6028		-----		-----
1079	ISO22854-A	0.86		0.89	6034		-----		-----
1082		-----		-----	6054		-----		-----
1097		-----		-----	6068		-----		-----
1099	EN238	0.82		-1.85	6075	EN238	0.80		-3.22
1108	ISO22854-A	0.85		0.21	6103	EN238	0.73	R(0.01)	-8.03
1109	D3606	0.858		0.76	6142	ISO22854-A	0.86		0.89
1126	ISO22854-A	0.87		1.58	6143		-----		-----
1134	ISO22854-A	0.89		2.95	6163	ISO22854-A	0.96	C,R(0.01)	7.76
1141		-----		-----	6180	D6730	0.97	R(0.01)	8.44
1161		-----		-----	6192	D6277	0.77		-5.28
1167	ISO22854-A	0.84		-0.48	6201	ISO22854-A	0.84		-0.48
1191	ISO22854-A	0.85		0.21	6203	ISO22854-A	0.86		0.89

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238		-----		-----	6262	ISO22854-A	0.84		-0.48
6249	ISO22854	0.86		0.89	6279	ISO22854-A	0.78		-4.59
6258	EN12177	0.826		-1.44	6287	SH/T0693	0.8262	C	-1.43
6260	GB/T28768	0.83		-1.16	6291	ISO22854-A	0.84		-0.48

	normality	suspect
	n	94
	outliers	8
	mean (n)	0.8470
	st.dev. (n)	0.02532
	R(calc.)	0.0709
	st.dev.(ISO22854-A:16)	0.01457
	R(ISO22854-A:16)	0.0408
Compare		
	R(EN12177:00)	0.10

Lab 159 first reported 0.61
Lab 237 first reported 0.93
Lab 273 first reported 0.93
Lab 343 first reported 0.9
Lab 404 first reported 0.77
Lab 875 first reported 0.76
Lab 904 first reported 0.78
Lab 1728 first reported 0.79
Lab 6163 first reported 1.03
Lab 6287 first reported 0.7514





Determination of Copper Corrosion 3hrs at 50°C on sample #19200;

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D130	1A		-----	1194		-----		-----
140	D130	1a		-----	1199		-----		-----
159	D130	1A		-----	1205		-----		-----
171	D130	1a		-----	1212	ISO2160	1A		-----
194	D130	1A		-----	1227	D130	1A		-----
225	D130	1a		-----	1229		-----		-----
237	D130	1A		-----	1237		-----		-----
238	D130	1A		-----	1259		-----		-----
273	D130	1a		-----	1275	IP154	1a		-----
311	ISO2160	1a		-----	1281	ISO2160	1a		-----
312	ISO2160	1a		-----	1299	D130	1A		-----
323	D130	1A		-----	1320		-----		-----
333		-----		-----	1340	ISO2160	1		-----
334	ISO2160	1		-----	1357	D130	1a		-----
335	D130	1a		-----	1389	D130	1A		-----
336	D130	1		-----	1397	ISO2160	1		-----
337		-----		-----	1399	D130	1A		-----
338		-----		-----	1402	IP154	1A		-----
343	D130	1a		-----	1438		-----		-----
344	D130	1a		-----	1441		-----		-----
352	ISO2160	1a		-----	1457	ISO2160	1A		-----
353	IP154	1a		-----	1459		-----		-----
369	ISO2160	1A		-----	1498		-----		-----
370	ISO2160	1A		-----	1544	ISO2160	1A		-----
371	ISO2160	1a		-----	1556	ISO2160	Class 1		-----
381	ISO2160	1		-----	1569	ISO2160	1A		-----
391	D130	1a		-----	1586	D130	1a		-----
399	D130	1A		-----	1611	ISO2160	1		-----
403	ISO2160	cls 1a		-----	1613	D130	1a		-----
404	ISO2160	clasa 1		-----	1616	D130	1a		-----
420	ISO2160	Class 1		-----	1618	ISO2160	class 1a		-----
431		-----		-----	1631		-----		-----
440		-----		-----	1634	ISO2160	1a		-----
444		-----		-----	1644	ISO2160	klasa 1		-----
445	D130	1A		-----	1650	ISO2160	1a		-----
447	D130	1a		-----	1676		-----		-----
453	IP154	1A		-----	1697	ISO2160	1		-----
463	ISO2160	1A		-----	1698		-----		-----
468		-----		-----	1705	ISO2160	1		-----
485		-----		-----	1713	ISO2160	1		-----
496	ISO2160	1a		-----	1720		-----		-----
631		-----		-----	1724	D130	No.1a		-----
633	D130	1a		-----	1725		-----		-----
704	ISO2160	1		-----	1728	D130	1a		-----
732		-----		-----	1740	D130	1a		-----
785	D130	1a		-----	1741	ISO2160	Class 1a		-----
798		-----		-----	1742		-----		-----
824	D130	1a		-----	1776		-----		-----
861	D130	1A		-----	1833	ISO2160	No.1		-----
875	D130	1a		-----	1849	ISO2160	1A		-----
902	ISO2160	1a		-----	1856		-----		-----
904	ISO2160	1a		-----	1881		-----		-----
912	D130	1A		-----	1884	D130	1a		-----
913	D130	1a		-----	1911	ISO2160	1		-----
971	ISO2160	1a		-----	1941	ISO2160	class 1		-----
974	D130	1a		-----	1953		-----		-----
994	D130	1a		-----	2129	D130	1a		-----
998	D130	1A		-----	2130	D130	1b		-----
1006	D130	1a		-----	2146		-----		-----
1011	ISO2160	1a		-----	6005	ISO2160	1a		-----
1026	ISO2160	1A		-----	6012	D130	1A		-----
1033	IP154	1a		-----	6018	ISO2160	1a		-----
1059	ISO2160	1a		-----	6028		-----		-----
1079	ISO2160	1A		-----	6034		-----		-----
1082		-----		-----	6054		-----		-----
1097	ISO2160	1a		-----	6068	ISO2160	1a		-----
1099	ISO2160	1		-----	6075	ISO2160	1a		-----
1108	ISO2160	1		-----	6103		-----		-----
1109	D130	1a		-----	6142		-----		-----
1126		-----		-----	6143		-----		-----
1134	D130	1a		-----	6163		-----		-----
1141	ISO2160	class 1		-----	6180	D130	1a		-----
1161	ISO2160	1a		-----	6192		-----		-----
1167	ISO2160	1a		-----	6201	D130	1A		-----
1191		-----		-----	6203	ISO2160	1A		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238	D130	1a		-----	6262	D130	1A		-----
6249		-----		-----	6279		-----		-----
6258	D130	1a		-----	6287		-----		-----
6260	GB/T5096	1A		-----	6291	D130	1A		-----
	n	111							
	mean (n)	1 (1a/1b)							

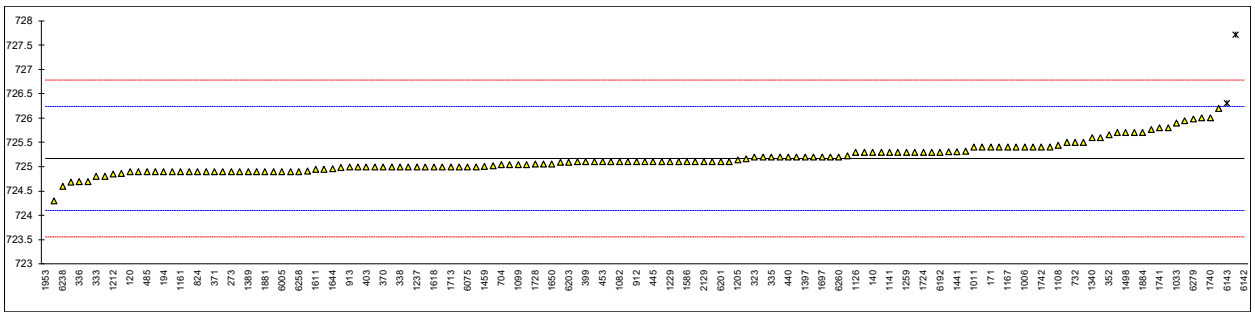
Determination of Density at 15°C on sample #19200; results in kg/m^3

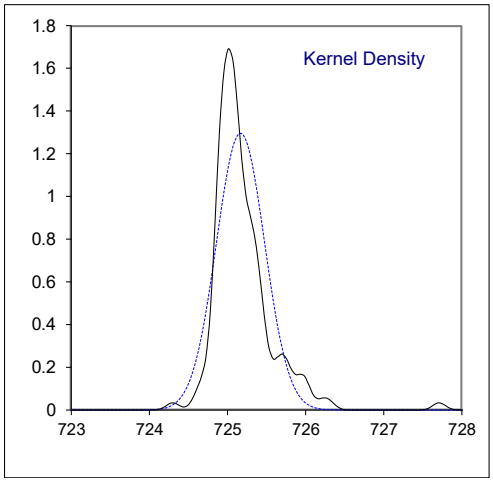
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D4052	724.9		-0.50	1194		-----		-----
140	D4052	725.3		0.25	1199		-----		-----
159	D4052	725.4	C	0.43	1205	ISO12185	725.14		-0.05
171	D4052	725.4		0.43	1212	ISO12185	724.85		-0.59
194	D4052	724.9		-0.50	1227	D4052	725.2		0.06
225	D4052	725.1		-0.13	1229	ISO12185	725.1		-0.13
237	D4052	725.5		0.62	1237	ISO12185	725.0		-0.31
238	D4052	724.68		-0.91	1259	ISO12185	725.3		0.25
273	D4052	724.9		-0.50	1275	IP365	725.22		0.10
311	ISO12185	725.0		-0.31	1281	ISO12185	725.77		1.12
312	ISO12185	724.9		-0.50	1299	D4052	725.1		-0.13
323	ISO12185	725.2		0.06	1320		-----		-----
333	ISO12185	724.8		-0.69	1340	ISO12185	725.6		0.81
334	ISO12185	725.2		0.06	1357	D4052	725.0		-0.31
335	ISO12185	725.2		0.06	1389	D4052	724.9		-0.50
336	ISO12185	724.7		-0.87	1397	ISO12185	725.2		0.06
337	ISO12185	725.3		0.25	1399	D4052	725.4		0.43
338	ISO12185	725.0		-0.31	1402	IP365	725.6		0.81
343	ISO12185	725.2		0.06	1438		-----		-----
344	D4052	725.7		0.99	1441	D4052	725.31		0.27
352	ISO12185	725.66		0.92	1457	ISO12185	724.9		-0.50
353	IP365	725.0		-0.31	1459	ISO12185	725.01		-0.29
369	ISO12185	725.1		-0.13	1498	D4052	725.7		0.99
370	ISO12185	725.0		-0.31	1544	ISO12185	724.8		-0.69
371	ISO12185	724.9		-0.50	1556	ISO12185	724.98		-0.35
381	ISO12185	726.0		1.55	1569	ISO12185	725.7		0.99
391	ISO12185	724.7		-0.87	1586	D4052	725.1		-0.13
399	D4052	725.1		-0.13	1611	ISO12185	724.95		-0.41
403	ISO3675	725.0		-0.31	1613	D4052	725.04		-0.24
404	ISO12185	725.1		-0.13	1616	D4052	724.86		-0.57
420	ISO12185	725.0		-0.31	1618	ISO12185	725.0		-0.31
431	ISO12185	725.32		0.28	1631		-----		-----
440	D4052	725.2		0.06	1634	ISO12185	725.2		0.06
444	D4052	725.3		0.25	1644	ISO12185	724.96		-0.39
445	D4052	725.1		-0.13	1650	ISO12185	725.06		-0.20
447	IP365	724.9		-0.50	1676	ISO12185	727.71	R(0.01)	4.75
453	IP365	725.1		-0.13	1697	ISO12185	725.2		0.06
463	ISO12185	725.04		-0.24	1698	ISO12185	725.0		-0.31
468		-----		-----	1705	ISO12185	724.95		-0.41
485	ISO12185	724.9		-0.50	1713	ISO12185	725.0		-0.31
496	ISO12185	725.16		-0.01	1720	D4052	725.3		0.25
631		-----		-----	1724	D4052	725.3		0.25
633		-----		-----	1725	ISO12185	725.1		-0.13
704	ISO12185	725.04		-0.24	1728	D4052	725.05		-0.22
732	ISO12185	725.5		0.62	1740	D1298	726.0		1.55
785	D4052	724.9		-0.50	1741	ISO12185	725.80		1.18
798		-----		-----	1742	ISO12185	725.4		0.43
824	ISO12185	724.9		-0.50	1776	ISO12185	724.91		-0.48
861	D4052	725.06		-0.20	1833	ISO12185	725.3		0.25
875	D4052	724.9		-0.50	1849	ISO12185	725.2		0.06
902	D4052	725.1		-0.13	1856		-----		-----
904	ISO12185	724.9		-0.50	1881	ISO12185	724.9		-0.50
912	D4052	725.1		-0.13	1884	D4052	725.7		0.99
913	D4052	725.0	C	-0.31	1911	ISO12185	725.02		-0.28
971	ISO12185	725.1		-0.13	1941	ISO12185	725.4		0.43
974	D1298	724.9		-0.50	1953		722.1	R(0.01)	-5.73
994	ISO12185	725.4		0.43	2129	D4052	725.1		-0.13
998	D4052	725.3		0.25	2130	D4052	724.9	C	-0.50
1006	D4052	725.4	C	0.43	2146	ISO12185	725.1		-0.13
1011	ISO12185	725.4		0.43	6005	ISO12185	724.9		-0.50
1026	D4052	725.1		-0.13	6012	ISO3675	724.3		-1.62
1033	IP365	725.9		1.37	6018	ISO12185	725.0		-0.31
1059	ISO12185	725.4		0.43	6028		-----		-----
1079	ISO12185	724.9		-0.50	6034		-----		-----
1082	ISO12185	725.1		-0.13	6054		-----		-----
1097	ISO12185	725.31		0.27	6068	ISO12185	726.2		1.93
1099	ISO12185	725.04		-0.24	6075	ISO12185	725.00		-0.31
1108	ISO12185	725.44		0.51	6103	ISO12185	725.95		1.46
1109	D4052	725.09		-0.15	6142	ISO12185	736.25	R(0.01)	20.69
1126	ISO12185	725.29		0.23	6143	D4052	726.3	C,R(0.05)	2.11
1134	D4052	725.5		0.62	6163	ISO12185	725.8		1.18
1141	ISO12185	725.3		0.25	6180	ISO12185	724.9		-0.50
1161	ISO12185	724.9		-0.50	6192	D1298	725.3		0.25
1167	ISO12185	725.4		0.43	6201	D1298	725.1		-0.13
1191	ISO12185	725.0		-0.31	6203	ISO12185	725.09		-0.15

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238	ISO12185	724.6		-1.06	6262	D4052	725.1		-0.13
6249		-----		-----	6279	ISO12185	725.98		1.52
6258	D4052	724.9		-0.50	6287		-----		-----
6260	GB/T1884	725.2		0.06	6291	D4052	725.0		-0.31

normality	suspect
n	139
outliers	4
mean (n)	725.168
st.dev. (n)	0.3074
R(calc.)	0.861
st.dev.(ISO12185:96)	0.5357
R(ISO12185:96)	1.5

Lab 159 first reported 7.254 kg/m^3
Lab 913 reported 0.7250 kg/m^3
Lab 1006 first reported 0.7254 without unit
Lab 2130 first reported 724.9 kg/L
Lab 6143 reported 0.7263 kg/m^3





Determination of Distillation at 760 mmHg on sample #19200; results in °C

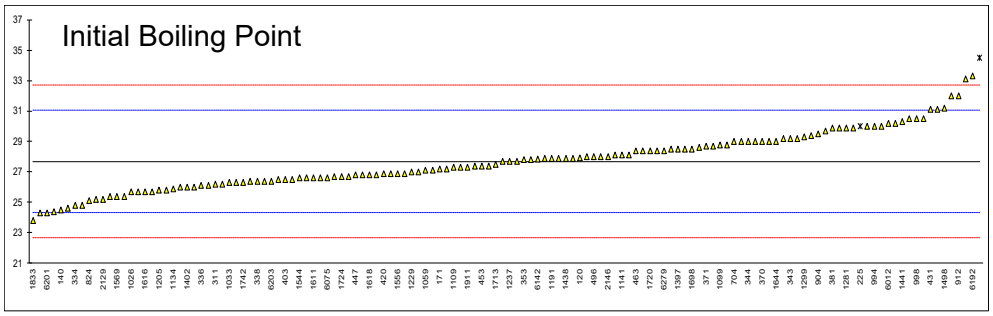
lab	method	IBP	mark	10% eva	mark	50% eva	mark	90% eva	mark	FBP	mark
120	D86-automated	27.94		42.11		84.33		133.0		171.6	
140	D86-automated	24.5		40.5		83.4		133.1		170.8	
159	D86-automated	26.3	C	43.6	C	87.6	C	138.9	C	174.4	C
171	D86-automated	27.2		42.2		83.9		133.4		170.8	
194	D86-automated	28.1		41.8		84.0		133.3		171.3	
225	D86-manual	30.0	ex	46.5	ex	90.5	G(0.05)	147.5	R(0.01)	167.0	ex
237	D86-manual	29.0		44.0		86.0		134.0		172.0	
238	D86-manual	32.0		44.5		86.5		135.5		174.0	
273	D86-automated	29.0		43.6		85.2	C	138.4		168.8	
311	D86-automated	26.2		41.3		83.9		133.0		170.8	
312	ISO3405-automated	27.7		41.1		83.3		133.0		171.5	
323	ISO3405-automated	29.2		41.1		83.2		133.1		169.7	
333	ISO3405-automated	25.4		41.4		83.1		132.5		169.6	
334	D86-automated	24.8		41.3		83.1		132.3		165.0	
335	ISO3405-automated	29.2		42.1		84.4		133.7		170.1	
336	D86-automated	26.1		42.0		84.3		133.7		171.9	
337		-----		-----		-----		-----		-----	
338	ISO3405-automated	26.4		43.0		84.6		134.4		169.0	
343	ISO3405-automated	29.2		40.6		84.6		-----		167.6	
344	D86-automated	29.0		44.3		88.2		138.9		167.3	
352		-----		-----		-----		-----		-----	
353	IP123-automated	27.8		41.6		84.8		134.2		171.7	
369	ISO3405-automated	29.9		45.2		84.9		135.5		170.2	
370	ISO3405-automated	29.0		41.4		82.0		133.3		169.4	
371	ISO3405-automated	28.7		42.5		81.3		133.6		170.0	
381	ISO3405-automated	29.9	C	42.2		82.2		133.4		169.0	
391		-----		-----		-----		-----		-----	
399	D86-automated	33.1	C	43.6		83.4		131.1		170.2	
403	ISO3405-automated	26.5		41.2		83.0		133.3		170.7	
404	ISO3405	26.5		42.0		82.7		132.1		169.5	
420	ISO3405-automated	26.9		42.6		86.6		139.2		170.5	
431	ISO3405-automated	31.1		42.1		86.7		142.5	R(0.01)	171.6	
440	D86-automated	30.0		42.7		84.3		133.5		174.4	
444	D86-automated	26.8		41.6		83.0		132.6		171.4	
445	IP123-automated	26.0		42.2		83.3		132.3		168.9	
447	D86-automated	26.8		44.0		80.2		131.7		168.5	
453	IP123	27.4		40.9		83.1		132.6		166.2	
463	ISO3405-automated	28.4		41.3		83.9		132.8		172.8	
468		-----		-----		-----		-----		-----	
485	ISO3405-automated	28.75		41.10		83.45		133.10		171.5	
496	ISO3405-automated	28.0		41.9		84.5		133.6		170.6	
631		-----		-----		-----		-----		-----	
633	D86-automated	34.5	R(0.05)	45.8		89.2	DG(0.05)	138.0		169.3	
704	ISO3405-manual	29.0		44.0		86.0		135.5		168.5	
732	ISO3405-manual	30.5		45.0		86.0		135.5		169.5	
785	D86-manual	28.0		43.5		86.0		136.0		170.5	
798		-----		-----		-----		-----		-----	
824	ISO3405-automated	25.1		40.4		82.5		132.1		169.0	
861	D86-automated	26.4		41.5		84.0		133.2		170.4	
875	D86-automated	28.1		43.4		86.5		137.2		170.9	
902	ISO3405-automated	26.7		41.6		83.7		132.9		169.5	
904	ISO3405-automated	29.5		40.5		81.8		132.5		168.9	
912	D86-manual	32.0		45.0		85.0		135.0		168.0	
913		-----		-----		-----		-----		-----	
971	ISO3405-automated	28.0		41.4		83.6		132.8		170.8	
974	D86-automated	27.9		41.4		83.7		134.3		172.8	
994	D86-manual	30.0		45.5		86.0		136.0		169.5	
998	D86	30.5		46.0		85.0		137.0		170.0	
1006	D86-automated	27.4		42.3		84.1		133.1		170.4	
1011	ISO3405-automated	28.6		41.8		84.3		133.0		177.0	
1026	ISO3405-automated	25.7		41.3		83.3		133.2		171.3	
1033	IP123-automated	26.3		43.0		87.5		140.2		172.9	
1059	ISO3405-automated	27.1		40.3	C	83.6	C	133.1	C	171.2	
1079	ISO3405-automated	25.7		40.9		84.0		133.1		171.6	
1082	ISO3405-automated	24.3		40.6		83.2		132.5		172.0	
1097	ISO3405-automated	25.2		42.4		84.7		134.0		172.2	
1099	ISO3405-automated	28.75		41.30		84.70		133.60		170.7	
1108	ISO3405-automated	27.3		40.2		82.6		132.5		170.8	
1109	D86-automated	27.3		41.2		83.6		133.2		172.1	
1126		-----		-----		-----		-----		-----	
1134	IP123-automated	25.9		42.0		84.1		133.4		171.1	
1141	ISO3405-automated	28.1		41.9		83.1		132.3		170.6	
1161	ISO3405-automated	27.1		42.2		83.7		133.4		167.0	
1167	ISO3405-automated	29.0		40.0		82.2		131.4		165.3	
1191	ISO3405-automated	27.9		41.0		82.7		132.5		171.5	

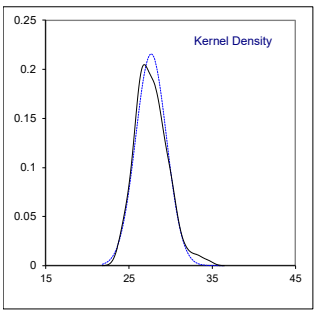
lab	method	IBP	mark	10% eva	mark	50% eva	mark	90% eva	mark	FBP	mark
1194		-----		-----		-----		-----		-----	
1199		-----		-----		-----		-----		-----	
1205		25.8		41.3		83.9		133.6		171.9	
1212	ISO3405-automated	27.2		40.9		83.6		133.3		173.9	
1227	D86-automated	28.5		42.9		84.2		131.8		168.3	
1229	ISO3405-automated	27.0		40.4		82.4		132.2		170.3	
1237	ISO3405-automated	27.7		40.7		82.8		132.7		170.5	
1259	ISO3405-automated	24.4		43.5		85.3		134.5		169.9	
1275	IP123-automated	26.1		43.5		86.6		137.3		165.6	
1281	ISO3405	29.90		42.92		84.47		133.04		171.5	
1299	D86-manual	29.3		41.0		82.5		133.2		170.8	
1320		-----		-----		-----		-----		-----	
1340	ISO3405-automated	26.5		41.7		81.5		139.3		170.3	
1357	D86-automated	27.9		42.6		85.2		134.3		167.8	
1389		-----	W	-----	W	-----	W	-----	W	-----	W
1397	ISO3405-automated	28.5		43.5		87.5		139.3		167.6	
1399		30.0		40.4		82.5		133.2		172.5	
1402	ISO3405-automated	26.0		41.4		83.6		133.2		172.1	
1438		27.9		41.1		82.5		132.5		167.6	
1441	D86-automated	30.3		45.0		-----		134.0		170.5	
1457	ISO3405-automated	24.8		41.1		83.4		132.4		166.6	
1459	ISO3405-automated	26.9		40.5		82.7		132.3		166.1	
1498	D86	31.2		41.3		83.4		133.6		171.3	
1544	D86-automated	26.60		42.30		83.25		133.10		168.3	
1556	ISO3405-automated	26.9		41.2		83.4		133.3		172.0	
1569	ISO3405-automated	25.4		39.2		81.6		131.6		168.8	
1586	D86-automated	26.6		43.5		86.9		137.5		171.8	
1611	ISO3405-automated	26.6		42.6		83.9		133.0		169.5	
1613	D86-automated	28.5		43.5		84.9		132.7		172.5	
1616	D86-automated	25.7		41.9		83.6		132.3		171.6	
1618		26.8		43.1		84.5		133.6		168.1	
1631		-----		-----		-----		-----		-----	
1634	ISO3405-automated	26.8		41.8		84.5		134.1		171.6	
1644	ISO3405-automated	29.0		43.6		86.7		137.5		171.7	
1650		25.7		41.2		83.6		132.8		170.8	
1676		-----		-----		-----		-----		-----	
1697	ISO3405-automated	28.4		41.8		83.9		133.8		172.5	
1698	ISO3405-automated	28.5		42.1		84.8		133.4		173.0	
1705	ISO3405-automated	27.7		41.0		83.3		133.5		171.6	
1713	ISO3405-automated	27.5		41.1		83.5		133.1		168.5	
1720	D86-automated	28.4		42.5		83.4		133.4		166.4	
1724	D86-automated	26.7		41.4		83.3		132.9		171.3	
1725	ISO3405-automated	28.4		41.5		83.4		133.0		169.1	
1728	ISO3405-manual	28.7		41		83.5		135		171	
1740	ISO3405-automated	31.1		42.8		82.0		132.3		166.1	
1741		27.4		41.1		83.3		132.5		169.7	
1742	ISO3405-automated	26.3		40.4		82.9		133.3		172.3	
1776	ISO3405-automated	26.0		41.0		82.9		132.6		169.8	
1833	D86-automated	23.8		41.4		83.5		132.5		170.9	
1849	ISO3405-automated	26.7		41.3		83.6		133.1		171.1	
1856		-----		-----		-----		-----		-----	
1881		-----		-----		-----		-----		-----	
1884	ISO3405-automated	27.8		43.1		83.6		136.1		172.1	
1911	ISO3405-automated	27.30		40.15		82.05		132.55		164.5	
1941	ISO3405-automated	27.9		42.0		83.2		132.7		170.7	
1953		26.6		38		85.3		137.1		184.1	R(0.01)
2129	ISO3405-automated	25.2		41.6		83.5		132.2		170.2	
2130	D86-automated	27.0		42.1		83.8		133.1		172.5	
2146		28.0		42.4		85.0		134.4		171.9	
6005	ISO3405-automated	24.6		43.9		87.0		138.0		168.5	
6012	D86-manual	30.2		44.7		93.1	C,G(0.01)	146.7	C,R(0.01)	175.2	
6018	ISO3405-automated	26.4		43.7		87.7		139.5		169.7	
6028		-----		-----		-----		-----		-----	
6034		-----		-----		-----		-----		-----	
6054		-----		-----		-----		-----		-----	
6068	ISO3405-automated	29.7		41.9		83.6		133.2		169.9	
6075	ISO3405-automated	26.6		41.2		83.9		132.6		171.3	
6103	ISO3405-automated	29.9		43.85		87.55		139.45		171.7	
6142	ISO3405-automated	27.85		41.2		83.15		132.15		169.9	
6143		-----		-----		-----		-----		-----	
6163	ISO3405-automated	30.5		43.8		89.6	C,DG(0.05)	145.2	C,R(0.01)	171.9	
6180	D86-automated	29.4		44.9		83.4		133.0		169.6	
6192	D86-automated	33.3		45.9		89.0		144.1	R(0.01)	169.8	
6201	D86-automated	24.3		40.9		83.4		132.8		171.4	
6203	ISO3405-automated	26.4		42.0		83.5		132.7		168.1	

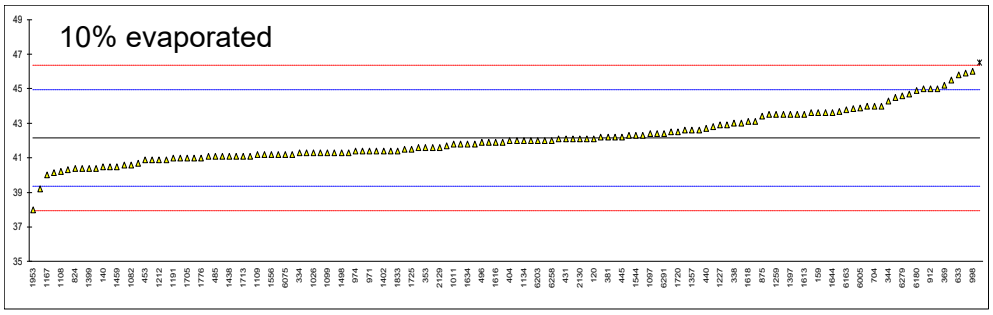
lab	method	IBP	mark	10% eva	mark	50% eva	mark	90% eva	mark	FBP	mark
6238	ISO3405-automated	25.4		42.0		84.3		132.5		169.0	
6249		-----		-----		-----		-----		-----	
6258	D86-automated	26.9		42.0	C	83.7	C	133.8	C	171.3	
6260	GB/T6536	30.2		42.1		83.6		134.2		167.9	
6262	D86-automated	26.2		42.3		84.2		133.7		170.1	
6279		28.40		44.59		86.54		139.10		169.93	
6287		-----		-----		-----		-----		-----	
6291	D86-automated	25.8		42.4		84.4		133.7		169.4	
	normality	OK		OK		OK		not OK		OK	
	n	134		135		131		130		134	
	outliers	1 +1ex		0 +1ex		4		5		1 +1ex	
	mean (n)	27.69		42.15		84.09		133.96		170.30	
	st.dev. (n)	1.847		1.429		1.527		2.038		2.043	
	R(calc.)	5.17		4.00		4.28		5.71		5.72	
	st.dev.(ISO3405-A:19)	1.679		1.404		1.412		1.981		2.536	
	R(ISO3405-A:19)	4.7		3.93		3.95		5.55		7.1	
Compare											
	R(ISO3405-M:19)	5.6		3.95		3.99		3.77		7.2	

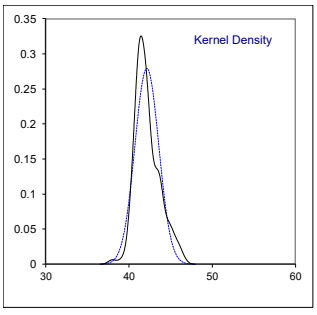
ex = test result excluded due to observed statistical outliers in other related distillation parameters

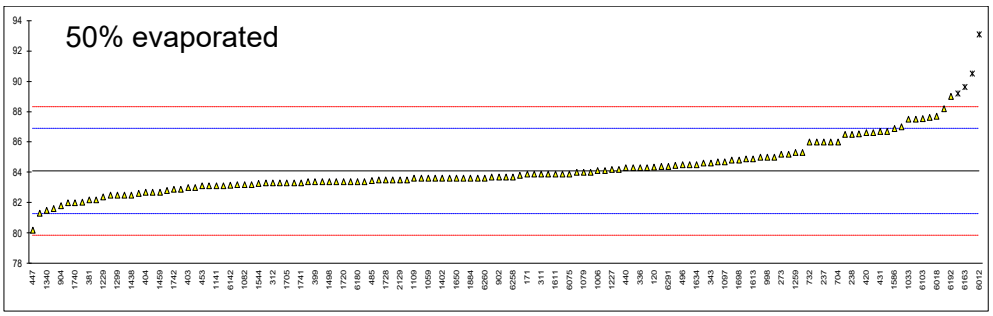
Lab 159 first reported 39.1 for IBP / 43.7 for 10% eva / 88.3 for 50% eva / 141.6 for 90% eva / 174.6 for FBP
Lab 273 first reported 88.2 for 50% eva
Lab 381 first reported 32.3 for IBP
Lab 399 first reported 34.6 for IBP
Lab 1059 first reported 42.7 for 10% eva / 87.6 for 50% eva / 140.6 for 90% eva
Lab 1389 withdraw test results; first reported 27.1 for IBP / 43.3 for 10% eva / 87.4 for 50% eva / 140.6 for 90% eva / 169.7 for FBP
Lab 6012 first reported 89.2 for 50% eva / 140.2 for 90% eva
Lab 6163 first reported 88.5 for 50% eva / 143.6 for 90% eva
Lab 6258 first reported 44.3 for 10% eva / 87.7 for 50% eva / 141.0 for 90% eva

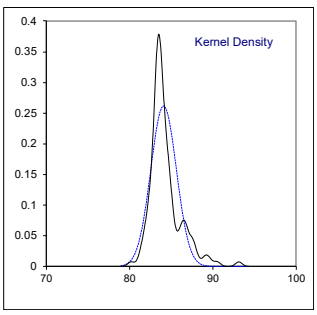

Initial Boiling Point

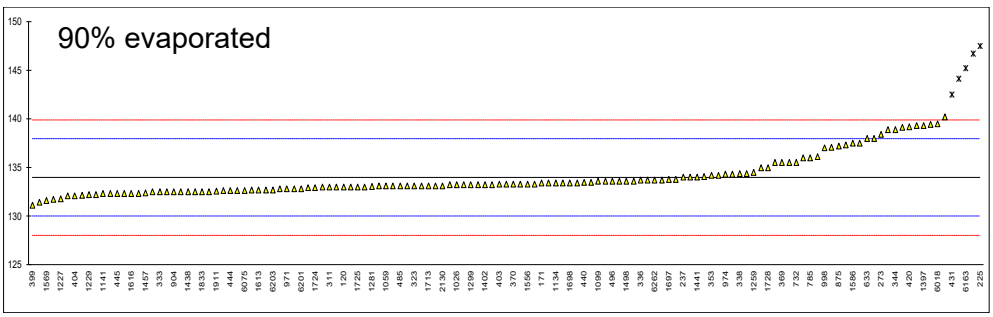

Kernel Density

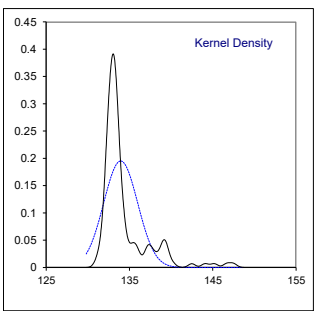

10% evaporated

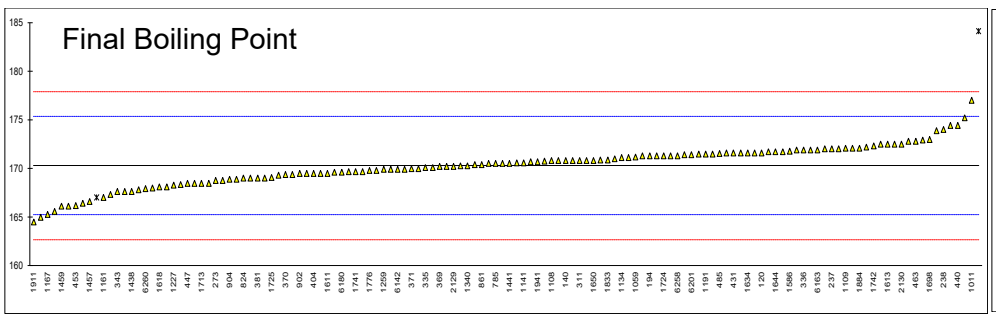

Kernel Density

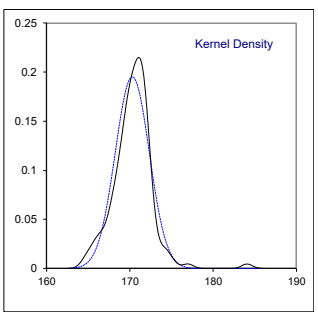

50% evaporated


Kernel Density


90% evaporated


Kernel Density


Final Boiling Point


Kernel Density

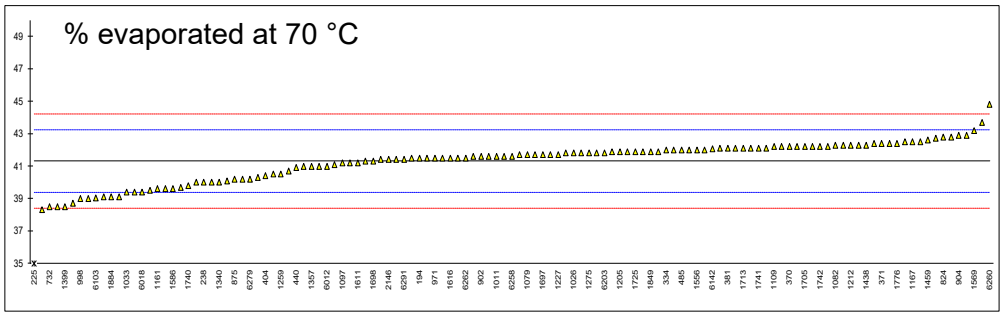
Determination of Distillation at 760 mmHg on sample #19200; results in %V/V ---continued---

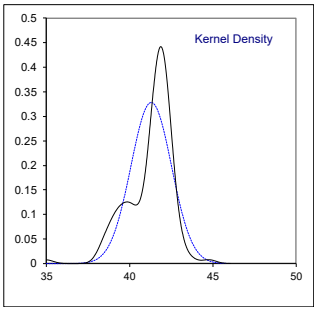
lab	method	%E70°C	mark	%E100°C	mark	%E150°C	mark	%residue	mark	%loss	mark
120		-----		-----		-----		1.0		1.2	
140	D86-automated	42.1		63.1		95.1		1.0		2.9	
159		-----		-----		-----		1.0	C	1.9	C
171	D86-automated	41.5		63.2		95.6		1.3		1.4	
194	D86-automated	41.5		63.2		-----		1.0		2.7	
225	D86-manual	35.0	R(0.01)	59.0	DG(0.05)	91.0	R(0.01)	1.0		4.5	
237	D86-manual	40.0		61.0		96.0		1.0		0.5	
238	D86-manual	40.0		62.5		95.5		0.5		0.5	
273		-----		-----		-----		-----		1.0	
311	D86-automated	41.8		62.7		95.9		0.9		1.4	
312	ISO3405-automated	42.2		62.9		96.0		1.0		2.7	
323	ISO3405-automated	42.1		63.2		95.8		1.0		2.7	
333		-----		-----		-----		-----		-----	
334	D86-automated	42.0		63.7		96.1		0.8		1.0	
335	ISO3405-automated	41.5		62.5		95.8		0.9		1.3	
336	D86-automated	41.4		62.6		95.5		1.2		1.4	
337		-----		-----		-----		-----		-----	
338	ISO3405-automated	41.3		63.0		95.8		1.1		0.7	
343	ISO3405-automated	40.7		63.8		95.8		1.0		-----	
344	D86-automated	39.6		60.1		94.2		1.0		1.2	
352		-----		-----		-----		-----		-----	
353	IP123-automated	41.6		62.5		95.3		1.4		1.2	
369	ISO3405-automated	40.1		62.1		95.4		1.2		1.4	
370	ISO3405-automated	42.2		63.8		95.9		1.0		2.0	
371	ISO3405-automated	42.4		64.4		95.6		1.0		1.5	
381	ISO3405-automated	42.1		64.4		95.7		1		1.5	
391		-----		-----		-----		-----		-----	
399	D86-automated	38.5		61.3		94.6		0.2		0.2	
403	ISO3405-automated	42.0		63.3		95.6		1.0		2.8	
404	ISO3405	40.4		61.8		95.2	C	0.9		2.8	
420	ISO3405-automated	42.7		63.9		96.3		1.0		2.8	
431	ISO3405-automated	43.7		64.3		95.5		1.0		2.6	
440	D86-automated	40.9		62.2		95.3		0.8		1.8	
444		-----		-----		-----		-----		-----	
445	IP123-automated	41.6		63.8		96.1		1.0		0.9	
447	D86-automated	41.2		64.4		96.0		1.0		2.0	
453	IP123	42.4		63.2		95.8		0.9		2.3	
463	ISO3405-automated	41.9		63.3		95.9		0.9		2.3	
468		-----		-----		-----		-----		-----	
485	ISO3405-automated	42.00		62.95		95.75		1.00		2.00	
496	ISO3405-automated	41.6		62.7		95.4		1.3		1.8	
631		-----		-----		-----		-----		-----	
633		-----		-----		-----		1.0		1.1	
704	ISO3405-manual	40.0		62.0		95.5	C	1.0		1.0	
732	ISO3405-manual	38.5		62.0		94.5		1.0		0.5	
785	D86-manual	40.5		61.5		94.5		1.0		1.2	
798		-----		-----		-----		-----		-----	
824	ISO3405-automated	42.8		63.8		96.5		0.7		2.5	
861	D86-automated	41.7		62.8		95.2		1		2.4	
875	D86-automated	40.2		61.1		94.6	C	1.1		1.4	
902	ISO3405-automated	41.6		63.0		95.8		1.1		1.6	
904	ISO3405-automated	42.9		63.8		95.8		1.0		-----	
912	D86-manual	39		62		95		1.0		1.0	
913		-----		-----		-----		-----		-----	
971	ISO3405-automated	41.5		63.1		95.8		1.1		2.1	
974	D86-automated	41.5		63.1		95.1		1.0		1.4	
994	D86-manual	39.5		62.0		94.5		1.0		1.0	
998	D86	39.0		62.0		94.5	C	1.0		1.0	
1006		-----		-----		-----		1.0		1.4	
1011	ISO3405-automated	41.6		62.8		95.7		1.0		1.5	
1026	ISO3405-automated	41.8		63.4		95.7		1.2		1.4	
1033	IP123-automated	39.4		60.4		93.3	R(0.05)	1.0		2.6	
1059	ISO3405-automated	42.3		63.2		96.0		1.0		2.9	
1079	ISO3405-automated	41.7		62.6		95.8		1.0		2.1	
1082	ISO3405-automated	42.3		63.1		96.2		0.9		2.0	
1097	ISO3405-automated	41.2		62.3		95.4		1.3		1.0	
1099	ISO3405-automated	41.80		62.60		95.70		1.2		0.85	
1108	ISO3405-automated	42.5		63.6		95.8		1.0		3.3	
1109	D86-automated	42.2		62.9		96.1		0.9		2.5	
1126		-----		-----		-----		-----		-----	
1134	IP123-automated	41.0		63.1		95.7		1.0		1.6	
1141	ISO3405-automated	41.7		63.1		96.1		0.5		2.6	
1161	ISO3405-automated	39.6		60.0	C	92.6	C,R(0.01)	1.0		-----	
1167	ISO3405-automated	42.5		63.4		96.0		1.5		3.9	
1191	ISO3405-automated	42.4		63.5		95.9		0.9		2.7	

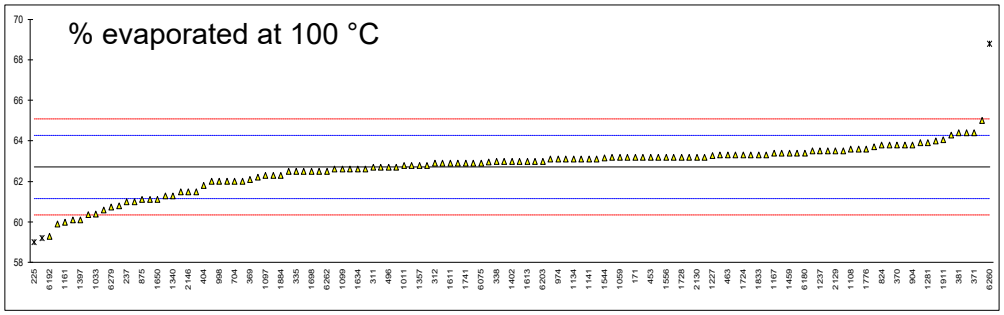
lab	method	%E70°C	mark	%E100°C	mark	%E150°C	mark	%residue	mark	%loss	mark
1194		-----		-----		-----		-----		-----	
1199		-----		-----		-----		-----		-----	
1205		41.9		62.7		95.7		1.0		1.9	
1212	ISO3405-automated	42.3		63.2		95.6		1.0		2.5	
1227	D86-automated	41.72		63.27		96.73		0.31		1.73	
1229	ISO3405-automated	42.8		63.6		96.0		0.8		3.3	
1237	ISO3405-automated	42.3		63.5		95.7		1.0		3.5	
1259	ISO3405-automated	40.5		62.3		95.2		1.0		0.6	
1275	IP123-automated	41.8		63.3		96.0		1.0		2.1	
1281	ISO3405	39.1		63.9		95.8		1.0		0.0	
1299	D86-manual	42.5		63.5		95.8		1.2		2.0	
1320		-----		-----		-----		-----		-----	
1340	ISO3405-automated	40.0		61.3		90.6	R(0.01)	1.0		2.8	
1357	D86-automated	41.0	C	62.8	C	95.6	C	1.0		1.8	
1389		-----	W	-----	W	-----	W	-----	W	-----	W
1397	ISO3405-automated	39.4		60.1		93.5	R(0.05)	1.0		2.3	
1399		38.5		59.2	DG(0.05)	91.3	R(0.01)	1.0		1.8	
1402	ISO3405-automated	41.8		63.0		96.0		1.0		1.9	
1438		42.3		64.0		95.9		1.0		3.5	
1441		-----		-----		-----		-----		-----	
1457	ISO3405-automated	42.2		63.2		96.0		1.0		1.7	
1459	ISO3405-automated	42.6		63.4		95.9		1		3.8	
1498	D86	42		63		95		1.0		1.8	
1544	D86-automated	41.90		63.15		95.20		0.90		2.6	
1556	ISO3405-automated	42.0		63.2		95.7		1.0		3.3	
1569	ISO3405-automated	43.2		65.0		96.2		1		3	
1586	D86-automated	39.6		61.1		93.9	R(0.05)	0.9		1.8	
1611	ISO3405-automated	41.2		62.9		95.7		1.0		1.2	
1613	D86-automated	40.3		63		95.7		1.0		2.3	
1616	D86-automated	41.5		63.4		96.2		1.3		0.4	
1618		41.1		62.8		95.9		1.0		-----	
1631		-----		-----		-----		-----		-----	
1634	ISO3405-automated	41.0		62.6		95.6		1.1		1.2	
1644	ISO3405-automated	41.5		62.9		95.8		0.9	C	1.0	
1650		40.2		61.1		92.8	C,R(0.05)	0.9		1.6	
1676		-----		-----		-----		-----		-----	
1697	ISO3405-automated	41.7		62.6		95.7		1.0		2.7	
1698	ISO3405-automated	41.3		62.5		95.6		1.0		1.4	
1705	ISO3405-automated	42.2		63.1		96.0		1.0		2.6	
1713	ISO3405-automated	42.1		63.0		95.8		1.0		2.6	
1720		-----		-----		-----		-----		-----	
1724	D86-automated	42.1		63.3		96.2		1.3		1.0	
1725	ISO3405-automated	41.9		63.2		95.6		1.0		2.7	
1728	ISO3405-manual	42.2		63.2		94.6		1.3		1.7	
1740	ISO3405-automated	39.8		61.0		93.6	R(0.05)	1.1		3.1	
1741		42.1		62.9		96.6		0.6		2.9	
1742	ISO3405-automated	42.2		63.3		95.4		1.0		3.4	
1776	ISO3405-automated	42.4		63.6		95.9		1.0		2.4	
1833	D86-automated	41.9		63.3		96.0		1.0		1.5	
1849	ISO3405-automated	41.9		63.2		95.8		1.0		-----	
1856		-----		-----		-----		-----		-----	
1881		-----		-----		-----		-----		-----	
1884	ISO3405-automated	39.1		62.3		95.3	C	0.9		1.3	
1911	ISO3405-automated	42.90		64.05		96.10		1.00		3.25	
1941	ISO3405-automated	41.9		63.3		96.2		0.7		2.7	
1953		-----		-----		-----		-----		-----	
2129	ISO3405-automated	42.1		63.5		96.1		1.00		1.50	
2130	D86-automated	41.7		63.2		95.7		1.0		1.7	
2146		41.4		61.5		95.4		1.0		1.8	
6005	ISO3405-automated	39.7		60.8		93.7	R(0.05)	0.9		2.4	
6012	D86-manual	41		61.5		94.5		1		1.4	
6018	ISO3405-automated	39.4		59.9		93.5	R(0.05)	0.9		2.7	
6028		-----		-----		-----		-----		-----	
6034		-----		-----		-----		-----		-----	
6054		-----		-----		-----		-----		-----	
6068	ISO3405-automated	42.0		62.9		95.7		1.0		2.4	
6075	ISO3405-automated	41.4		62.9		96.2		1.0		1.6	
6103	ISO3405-automated	39.05		60.35		93.6	R(0.05)	1.0		2.5	
6142	ISO3405-automated	42.05		63.5		96.0		1		2.9	
6143		-----		-----		-----		-----		-----	
6163	ISO3405-automated	38.7		60.6	C	92.8	C,R(0.05)	1		4.0	
6180	D86-automated	39.1		63.4		95.8		1.0		0.5	
6192	D86-automated	38.3		59.3		92.6	R(0.01)	0.69		4	
6201	D86-automated	42.2		63.2		95.9		1.0		1.4	
6203	ISO3405-automated	41.8		63.0		95.8		1.0		1.8	

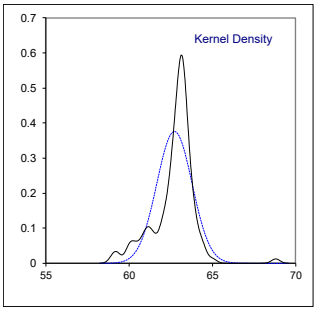
lab	method	%E70°C	mark	%E100°C	mark	%E150°C	mark	%residue	mark	%loss	mark
6238		-----		-----		-----		1.0		0.7	
6249		-----		-----		-----		-----		-----	
6258	D86-automated	41.6	C	62.5	C	95.5	C	1.0		2.3	
6260	GB/T6536	44.8		68.8	G(0.01)	96.3		1.0		2.8	
6262	D86-automated	41.5		62.5		95.7		1.0		1.6	
6279		40.20		60.75		94.00	R(0.05)	1.00		1.82	
6287		-----		-----		-----		-----		-----	
6291	D86-automated	41.4		62.7		96.1		1.0		0.6	
	normality	OK		suspect		suspect					
	n	124		122		109					
	outliers	1		3		15					
	mean (n)	41.315		62.714		95.672					
	st.dev. (n)	1.2172		1.0587		0.4750					
	R(calc.)	3.408		2.964		1.330					
	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					

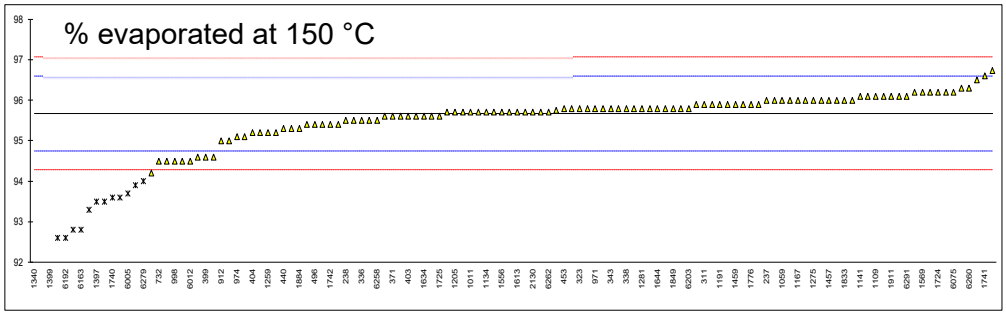
Lab 159 first reported 3.0 for %residue / 1.0 for %loss
Lab 404 first reported 94.2 for %E150°C
Lab 704 first reported 94.0 for %E150°C
Lab 875 first reported 94.2 for %E150°C
Lab 998 first reported 94.0 for %E150°C
Lab 1161 first reported 60.6 for %E100°C / 93.5 for %E150°C
Lab 1357 first reported 40.8 for %E70°C / 59.8 for %E100°C / 93.6 for %E150°C
Lab 1389 withdrawn test results; first reported 39.8 for %E70°C / 61.4 for %E100°C / 93.2 for %E150°C / 1.0 %residue / 0.7 %loss
Lab 1644 first reported 177.1 for %residue
Lab 1650 first reported 93.8 for %E150°C
Lab 1884 first reported 94.0 for %E150°C
Lab 6163 first reported 59.4 for %E100°C / 92.1 for %E150°C
Lab 6258 first reported 39.0 for %E70°C / 59.9 for %E100°C / 92.9 for %E150°C

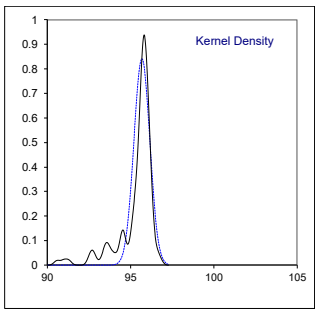












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Determination of Doctor Test on sample #19200;

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D4952	Negative		-----	1194		-----		-----
140	D4952	Negative		-----	1199		-----		-----
159		-----		-----	1205		-----		-----
171	D4952	Negative		-----	1212	D4952	Negative		-----
194		-----		-----	1227		-----		-----
225	D4952	Negative		-----	1229		-----		-----
237	D4952	NEGATIVE		-----	1237		-----		-----
238	D4952	Negative		-----	1259		-----		-----
273	IP30	Negative		-----	1275	IP30	negative mercaptans [thiols]		-----
311	IP30	neg		-----	1281		-----		-----
312	IP30	negative		-----	1299		-----		-----
323	IP30	negative		-----	1320		-----		-----
333		-----		-----	1340	D4952	Negative		-----
334	D4952	NEGATIVE		-----	1357	D4952	Negative		-----
335		-----		-----	1389	IP30	Negativo		-----
336	D4952	NEGATIVE		-----	1397		-----		-----
337		-----		-----	1399	IP30	Negative		-----
338		-----		-----	1402	IP30	Negative		-----
343		-----		-----	1438		-----		-----
344		-----		-----	1441		-----		-----
352		-----		-----	1457	IP30	Negative		-----
353		-----		-----	1459		-----		-----
369	IP30	negative		-----	1498		-----		-----
370		-----		-----	1544	D4952	Negative		-----
371	D4952	Negative		-----	1556	D4952	Negative		-----
381		-----		-----	1569		-----		-----
391		-----		-----	1586	IP30	Negative		-----
399		-----		-----	1611		-----		-----
403		-----		-----	1613	D4952	Negative		-----
404		-----		-----	1616	D4952	Negative		-----
420		-----		-----	1618		-----		-----
431		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
444		-----		-----	1644		-----		-----
445	IP30	Negative		-----	1650		-----		-----
447	D4952	Negative [Sweet]		-----	1676		-----		-----
453		-----		-----	1697		-----		-----
463	IP30	Negative		-----	1698		-----		-----
468		-----		-----	1705		-----		-----
485		-----		-----	1713		-----		-----
496		-----		-----	1720	D4952	negative		-----
631		-----		-----	1724	IP30	Negative		-----
633		-----		-----	1725		-----		-----
704	D4952	negative		-----	1728	D4952	NEGATIVE		-----
732		-----		-----	1740	IP30	Negative		-----
785		-----		-----	1741	D4952	negative		-----
798		-----		-----	1742		-----		-----
824	D4952	Negative		-----	1776		-----		-----
861	D4952	PASS		-----	1833		-----		-----
875		-----		-----	1849	D4952	Negative		-----
902		-----		-----	1856		-----		-----
904	D4952	negative		-----	1881		-----		-----
912	IP30	Negative		-----	1884		-----		-----
913		-----		-----	1911		-----		-----
971	ISO5275	Negative		-----	1941		-----		-----
974	D4952	Negative		-----	1953		-----		-----
994	D4952	negative		-----	2129	IP30	Negative		-----
998		-----		-----	2130	IP30	Negative		-----
1006		-----		-----	2146		-----		-----
1011		-----		-----	6005		-----		-----
1026	D4952	Negative		-----	6012		-----		-----
1033		-----		-----	6018		-----		-----
1059	ISO5275	negative		-----	6028		-----		-----
1079	IP30	negative		-----	6034		-----		-----
1082		-----		-----	6054		-----		-----
1097		-----		-----	6068		-----		-----
1099		-----		-----	6075		-----		-----
1108		-----		-----	6103		-----		-----
1109	IP30	Negative		-----	6142	ISO5275	Neg		-----
1126		-----		-----	6143		-----		-----
1134	IP30	Neg/Neg		-----	6163		-----		-----
1141	ISO5275	negative		-----	6180	IP30	negative		-----
1161		-----		-----	6192		-----		-----
1167		-----		-----	6201	D4952	negative		-----
1191		-----		-----	6203	D4952	negative		-----

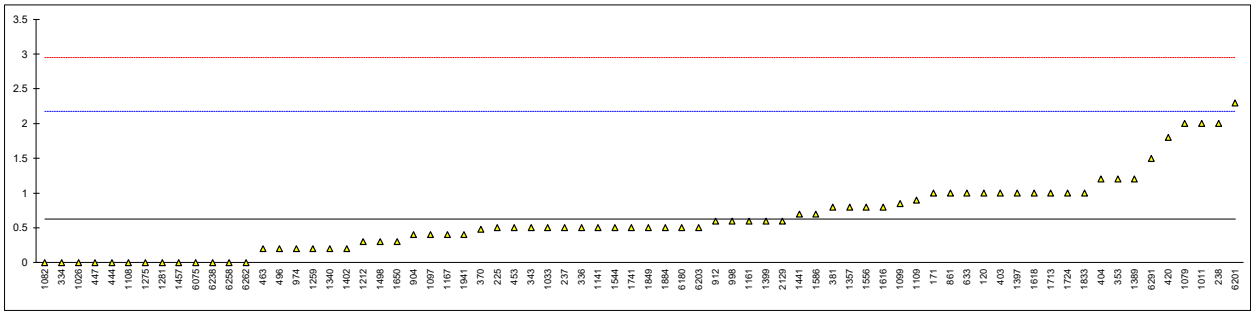
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238		N		-----	6262	D4952	negative		-----
6249		-----		-----	6279		-----		-----
6258	IP30	Negative		-----	6287		-----		-----
6260	NB/SH/T0714	PASS		-----	6291	D4952	negative		-----
	n	61							
	mean (n)	negative							

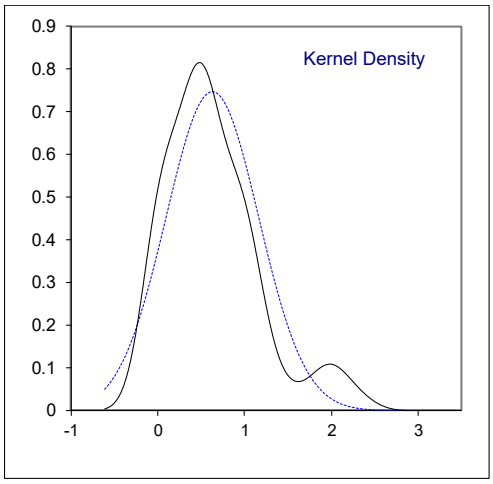
Determination of Existent Gum (solvent washed) on sample #19200; results in mg/100mL

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D381	1.0		0.48	1194		-----		-----
140	D381	<0.5		-----	1199		-----		-----
159		-----		-----	1205		-----		-----
171	D381	1.0		0.48	1212	ISO6246	0.30		-0.42
194	D381	<0.5		-----	1227		-----		-----
225	D381	0.5		-0.17	1229	ISO6246	<1		-----
237	D381	0.5		-0.17	1237		-----		-----
238	D381	2.0		1.77	1259	ISO6246	0.2		-0.55
273	D381	<1		-----	1275	IP131	0.0		-0.81
311	ISO6246	<1		-----	1281	ISO6246	0.0		-0.81
312	ISO6246	<0.5		-----	1299	D381	<0.5		-----
323	ISO6246	<0.5		-----	1320		-----		-----
333		-----		-----	1340	ISO6246	0.2		-0.55
334	ISO6246	0		-0.81	1357	D381	0.8		0.22
335		-----		-----	1389	D381	1.2		0.74
336	ISO6246	0.5		-0.17	1397	ISO6246	1.0		0.48
337		-----		-----	1399	D381	0.6		-0.04
338		-----		-----	1402	ISO6246	0.2		-0.55
343	D381	0.5		-0.17	1438		-----		-----
344		-----		-----	1441	D381	0.7		0.09
352		-----		-----	1457	ISO6246	0		-0.81
353	IP131	1.2		0.74	1459		-----		-----
369	ISO6246	<0.5		-----	1498	D389	0.3		-0.42
370	ISO6246	0.48		-0.19	1544	ISO6246	0.50		-0.17
371		-----		-----	1556	ISO6246	0.8		0.22
381	ISO6246	0.8		0.22	1569	ISO6246	<1		-----
391		-----		-----	1586	D381	0.7		0.09
399		-----		-----	1611		-----		-----
403	ISO6246	1.0		0.48	1613	D381	<0.5		-----
404	ISO6246	1.2		0.74	1616	D381	0.8		0.22
420	ISO6246	1.8		1.51	1618	ISO6246	1.0		0.48
431		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
444	D381	0.0		-0.81	1644		-----		-----
445	ISO6246	< 0.5		-----	1650	ISO6246	0.3		-0.42
447	D381	0.0		-0.81	1676		-----		-----
453	IP131	0.5		-0.17	1697		-----		-----
463	D381	0.2		-0.55	1698		-----		-----
468		-----		-----	1705		-----		-----
485		-----		-----	1713	ISO6246	1.0		0.48
496	ISO6246	0.2		-0.55	1720		-----		-----
631		-----		-----	1724	D381	1.0		0.48
633	D381	1		0.48	1725		-----		-----
704	ISO6246	< 1		-----	1728		-----		-----
732		-----		-----	1740		-----		-----
785		-----		-----	1741	D381/ISO6246	0.50		-0.17
798		-----		-----	1742		-----		-----
824	ISO6246	<0.5		-----	1776		-----		-----
861	D381	1.0		0.48	1833	ISO6246	1.0		0.48
875		-----		-----	1849	ISO6246	0.5		-0.17
902		-----		-----	1856		-----		-----
904	D381	0.4		-0.29	1881		-----		-----
912	D381	0.60		-0.04	1884	ISO6246	0.50		-0.17
913		-----		-----	1911		-----		-----
971		-----		-----	1941	ISO6246	0.4		-0.29
974	D381	0.2		-0.55	1953		-----		-----
994		-----		-----	2129	ISO6246	0.6		-0.04
998	D381	0.6		-0.04	2130	D381	<1		-----
1006	D381	<0.5		-----	2146		-----		-----
1011	ISO6246	2		1.77	6005		-----		-----
1026	ISO6246	0		-0.81	6012		-----		-----
1033	IP131	0.5		-0.17	6018		-----		-----
1059		<0,5		-----	6028		-----		-----
1079	ISO6246	2.0		1.77	6034		-----		-----
1082	ISO6246	0		-0.81	6054		-----		-----
1097	ISO6246	0.4		-0.29	6068	ISO6246	<0.5		-----
1099	ISO6246	0.85		0.29	6075	ISO6246	0.0		-0.81
1108		0		-0.81	6103		-----		-----
1109	D381	0.9		0.35	6142		-----		-----
1126		-----		-----	6143		-----		-----
1134		-----		-----	6163		-----		-----
1141	D381	0.5		-0.17	6180	D381	0.5		-0.17
1161	ISO6246	0.6		-0.04	6192		-----		-----
1167	ISO6246	0.4		-0.29	6201	D381	2.3		2.16
1191		-----		-----	6203	ISO6246	0.5		-0.17

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238	ISO6246	0		-0.81	6262	D381	0		-0.81
6249		-----		-----	6279		-----		-----
6258	D381	0.0		-0.81	6287		-----		-----
6260	GB/T8019	<0.5		-----	6291	D381	1.5		1.13

normality	not OK
n	72
outliers	0
mean (n)	0.628
st.dev. (n)	0.5333
R(calc.)	1.493
st.dev.(ISO6246:17)	0.7748
R(ISO6246:17)	2.169





Determination of Lead as Pb on sample #19200; results in mg/L

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D3237	0.000		-----	1194		-----		-----
140	D3237	1.275		-----	1199		-----		-----
159		-----		-----	1205		-----		-----
171		-----		-----	1212	EN237	<2.5		-----
194		-----		-----	1227		-----		-----
225		-----		-----	1229	EN237	<2		-----
237	IP352	<2.5		-----	1237		-----		-----
238		-----		-----	1259		-----		-----
273		-----		-----	1275		-----		-----
311		-----		-----	1281		-----		-----
312	EN237	<2.5		-----	1299	EN237	<2.5		-----
323	EN237	<2.5		-----	1320	EN237	< 2.00		-----
333		-----		-----	1340	EN237	<2.5		-----
334		-----		-----	1357		-----		-----
335		-----		-----	1389	D3237	<0.0025		-----
336		-----		-----	1397		-----		-----
337		-----		-----	1399	IP352	<0.3		-----
338		-----		-----	1402	EN237	0.210		-----
343		-----		-----	1438		-----		-----
344		-----		-----	1441		-----		-----
352		-----		-----	1457	EN237	0		-----
353		-----		-----	1459		-----		-----
369		-----		-----	1498		-----		-----
370		-----		-----	1544	EN237	0.00		-----
371	EN237	<2.5		-----	1556		-----		-----
381	EN237	<2.5		-----	1569		<1		-----
391		-----		-----	1586	EN237	<2.5		-----
399		-----		-----	1611	EN237	<2.5		-----
403	EN237	<2.5		-----	1613	D3237	<2.5		-----
404		-----		-----	1616		-----		-----
420	EN237	<2,5		-----	1618		-----		-----
431		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
444		-----		-----	1644		-----		-----
445		-----		-----	1650		-----		-----
447	IP428	0.04		-----	1676		-----		-----
453		-----		-----	1697		-----		-----
463		-----		-----	1698		-----		-----
468		-----		-----	1705		-----		-----
485		-----		-----	1713		-----		-----
496		-----		-----	1720		-----		-----
631		-----		-----	1724	IP428	<3.0		-----
633		-----		-----	1725		-----		-----
704	EN237	< 2.5		-----	1728	EN237	<2.5		-----
732		-----		-----	1740		-----		-----
785		-----		-----	1741	EN237	<2.5		-----
798		-----		-----	1742		-----		-----
824	D3237	<2.5		-----	1776		-----		-----
861	D3237	<2.5		-----	1833	EN237	<3.0		-----
875		-----		-----	1849		-----		-----
902		-----		-----	1856		-----		-----
904	D3237	<2.5	C	-----	1881		-----		-----
912		-----		-----	1884		-----		-----
913		-----		-----	1911		-----		-----
971	D3237	<2.5		-----	1941	EN237	< 2.5		-----
974		-----		-----	1953		-----		-----
994		-----		-----	2129	EN237	0.05		-----
998		-----		-----	2130		-----		-----
1006	D3237	< 2.5		-----	2146	In house	<2		-----
1011	EN237	<3.0		-----	6005		-----		-----
1026		-----		-----	6012	D3237	<2.5		-----
1033		-----		-----	6018		-----		-----
1059	EN13723	<2.5		-----	6028		-----		-----
1079	EN237	0.3		-----	6034		-----		-----
1082		-----		-----	6054		-----		-----
1097		-----		-----	6068		-----		-----
1099		-----		-----	6075		-----		-----
1108		-----		-----	6103	D5059-C	< 0.1		-----
1109		-----		-----	6142		-----		-----
1126		-----		-----	6143		-----		-----
1134		-----		-----	6163		-----		-----
1141		-----		-----	6180		-----		-----
1161	EN237	<2.5		-----	6192		-----		-----
1167	EN237	<2.5		-----	6201	D3237	0.3976		-----
1191	In house	0.3		-----	6203	EN237	<2.5		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238		-----		-----	6262		-----		-----
6249		-----		-----	6279		-----		-----
6258	D3237	0.08		-----	6287		-----		-----
6260	GB/T8020	<2.5		-----	6291		-----		-----
	n	46							
	mean (n)	<2.5							

Lab 904 first reported 4
Lab 1389 reported possibly in another unit?

Determination of Manganese as Mn on sample #19200; results in mg/L

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1194		-----		-----
140	D3831	0.5		-----	1199		-----		-----
159		-----		-----	1205		-----		-----
171		-----		-----	1212	EN16136	<2		-----
194		-----		-----	1227		-----		-----
225		-----		-----	1229		-----		-----
237	EN16136	<0.5	C	-----	1237		-----		-----
238		-----		-----	1259		-----		-----
273	D3831	<1		-----	1275		-----		-----
311		-----		-----	1281		-----		-----
312	EN16136	<0.5		-----	1299	EN16135	<2.0		-----
323	EN16135	<0.50		-----	1320	EN16135	< 2.00		-----
333	EN16135	<2.0		-----	1340	EN16135	<2.0		-----
334	EN16136	0.20		-----	1357		-----		-----
335		-----		-----	1389	D3831	<0.25		-----
336		-----		-----	1397		-----		-----
337		-----		-----	1399		<0.2		-----
338		-----		-----	1402	EN16135	0.1361		-----
343		-----		-----	1438		-----		-----
344		-----		-----	1441		-----		-----
352		-----		-----	1457	EN16136	0		-----
353		-----		-----	1459		-----		-----
369	EN16136	<0.5		-----	1498		-----		-----
370		-----		-----	1544	EN16136	0.00		-----
371	EN16135	<2.0		-----	1556		-----		-----
381	EN16136	<2.0		-----	1569		<0.1		-----
391		-----		-----	1586	EN16135	<2		-----
399		-----		-----	1611	EN16135	<2,0		-----
403	EN16136	<0.5		-----	1613	D3831	<0.25		-----
404		-----		-----	1616		-----		-----
420	EN16135	<1.0		-----	1618		-----		-----
431		-----		-----	1631	EN16136	<0.5		-----
440		-----		-----	1634		-----		-----
444		-----		-----	1644		-----		-----
445	EN16135	< 0.2		-----	1650		-----		-----
447	EN16135	0.2		-----	1676		-----		-----
453		-----		-----	1697		-----		-----
463		-----		-----	1698		-----		-----
468		-----		-----	1705		-----		-----
485		-----		-----	1713		-----		-----
496		-----		-----	1720		-----		-----
631		-----		-----	1724	EN16135	<0.5		-----
633		-----		-----	1725		-----		-----
704	EN16135	< 2		-----	1728		-----		-----
732		-----		-----	1740		-----		-----
785		-----		-----	1741	EN16135	<2.0		-----
798		-----		-----	1742		-----		-----
824		-----		-----	1776		-----		-----
861	D3831	<0.25		-----	1833	EN16135	<2.0		-----
875		-----		-----	1849		-----		-----
902		-----		-----	1856		-----		-----
904	D3831	3.2	C, f+?	-----	1881		-----		-----
912		-----		-----	1884		-----		-----
913		-----		-----	1911		-----		-----
971	D3831	<0.25		-----	1941	EN16135	<2.0		-----
974		-----		-----	1953		-----		-----
994		-----		-----	2129	D3831	0.0		-----
998		-----		-----	2130		-----		-----
1006		-----		-----	2146	In house	<1		-----
1011		-----		-----	6005		-----		-----
1026		-----		-----	6012		-----		-----
1033		-----		-----	6018		-----		-----
1059		-----		-----	6028		-----		-----
1079	EN16136	<0.1		-----	6034		-----		-----
1082		-----		-----	6054		-----		-----
1097		-----		-----	6068		-----		-----
1099		-----		-----	6075		-----		-----
1108		-----		-----	6103	EN16135	0.8		-----
1109		-----		-----	6142		-----		-----
1126		-----		-----	6143		-----		-----
1134		-----		-----	6163		-----		-----
1141		-----		-----	6180		-----		-----
1161	EN16135	<2		-----	6192		-----		-----
1167	EN16135	<2		-----	6201	EN16135	<0.5		-----
1191		-----		-----	6203	EN16135	<2		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238		-----		-----	6262		-----		-----
6249		-----		-----	6279		-----		-----
6258	EN16136	0.36		-----	6287		-----		-----
6260	NB/SH/T0711	<0.2		-----	6291		-----		-----
	n	45							
	mean (n)	<2							

f+? = possibly a false positive test result?

Lab 237 first reported 2.26
Lab 904 first reported 4.7

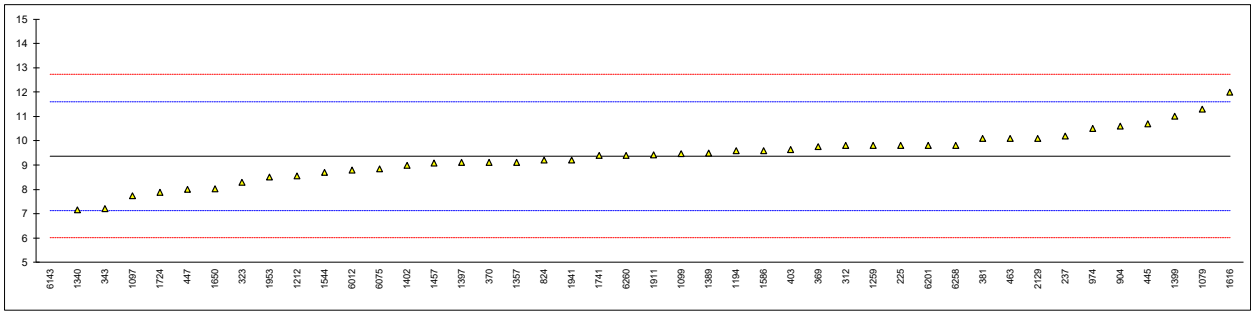
Determination of Olefins by FIA (without oxygenates correction) on sample #19200; results in %V/V

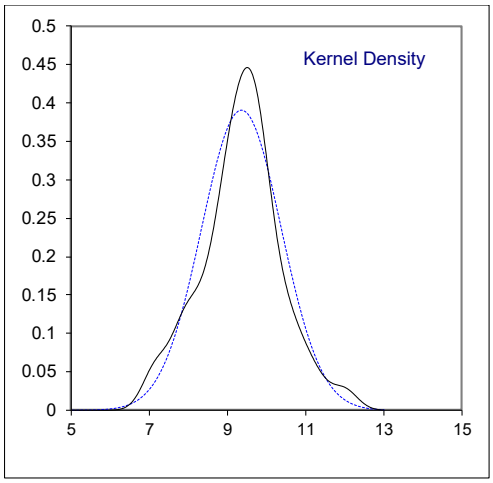
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1194	D1319	9.6		0.20
140		-----		-----	1199		-----		-----
159		-----		-----	1205		-----		-----
171		-----		-----	1212	EN15553	8.56		-0.72
194		-----		-----	1227		-----		-----
225	D1319	9.8		0.38	1229		-----		-----
237	D1319	10.2		0.74	1237		-----		-----
238		-----		-----	1259	EN15553	9.8		0.38
273		-----		-----	1275		-----		-----
311		-----		-----	1281		-----		-----
312	EN15553	9.8		0.38	1299		-----		-----
323	EN15553	8.3		-0.96	1320		-----		-----
333		-----		-----	1340	D1319	7.16		-1.98
334		-----		-----	1357	D1319	9.12		-0.22
335		-----		-----	1389	D1319	9.5		0.12
336		-----		-----	1397	EN15553	9.1		-0.24
337		-----		-----	1399	D1319	11.0		1.46
338		-----		-----	1402	D1319	9.0		-0.33
343	D1319	7.2		-1.94	1438		-----		-----
344		-----		-----	1441		-----		-----
352		-----		-----	1457	D1319	9.08		-0.26
353		-----		-----	1459		-----		-----
369	EN15553	9.77		0.36	1498		-----		-----
370	D1319	9.12		-0.22	1544	EN15553	8.7		-0.60
371		-----		-----	1556		-----		-----
381	EN15553	10.1		0.65	1569		-----		-----
391		-----		-----	1586	D1319	9.6		0.20
399		-----		-----	1611		-----		-----
403	EN15553	9.64		0.24	1613		-----		-----
404		-----		-----	1616	D1319	12.0	C	2.35
420		-----		-----	1618		-----		-----
431		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
444		-----		-----	1644		-----		-----
445	EN15553	10.7		1.19	1650	EN15553	8.03		-1.20
447	D1319	8.0		-1.22	1676		-----		-----
453		-----		-----	1697		-----		-----
463	D1319	10.10		0.65	1698		-----		-----
468		-----		-----	1705		-----		-----
485		-----		-----	1713		-----		-----
496		-----		-----	1720		-----		-----
631		-----		-----	1724	D1319	7.88		-1.33
633		-----		-----	1725		-----		-----
704		-----		-----	1728		-----		-----
732		-----		-----	1740		-----		-----
785		-----		-----	1741	EN15553	9.40		0.03
798		-----		-----	1742		-----		-----
824	D1319	9.2		-0.15	1776		-----		-----
861		-----		-----	1833		-----		-----
875		-----		-----	1849		-----		-----
902		-----		-----	1856		-----		-----
904	D1319	10.6		1.10	1881		-----		-----
912		-----		-----	1884		-----		-----
913		-----		-----	1911	EN15553	9.43		0.05
971		-----		-----	1941	EN15553	9.2		-0.15
974	D1319	10.50		1.01	1953		8.5		-0.78
994		-----		-----	2129	EN15553	10.1		0.65
998		-----		-----	2130		-----		-----
1006		-----		-----	2146		-----		-----
1011		-----		-----	6005		-----		-----
1026		-----		-----	6012	D1319	8.8	C	-0.51
1033		-----		-----	6018		-----		-----
1059		-----		-----	6028		-----		-----
1079	EN15553	11.3		1.72	6034		-----		-----
1082		-----		-----	6054		-----		-----
1097	D1319	7.73		-1.47	6068		-----		-----
1099	EN15553	9.48		0.10	6075	EN15553	8.85		-0.47
1108		-----		-----	6103		-----		-----
1109		-----		-----	6142		-----		-----
1126		-----		-----	6143	D1319	2.22	R(0.01)	-6.39
1134		-----		-----	6163		-----		-----
1141		-----		-----	6180		-----		-----
1161		-----		-----	6192		-----		-----
1167		-----		-----	6201	D1319	9.8		0.38
1191		-----		-----	6203		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238		-----		-----	6262		-----		-----
6249		-----		-----	6279		-----		-----
6258	D1319	9.8		0.38	6287		-----		-----
6260	GB/T11132	9.4		0.03	6291		-----		-----

normality	OK
n	43
outliers	1
mean (n)	9.371
st.dev. (n)	1.0200
R(calc.)	2.856
st.dev.(EN15553:07)	1.1193
R(EN15553:07)	3.134

Lab 1616 first reported 14.0
Lab 6012 first reported 12.9



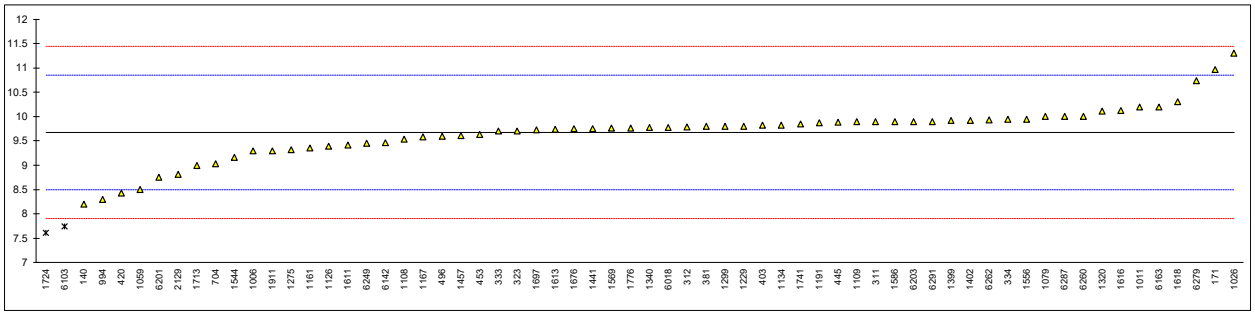


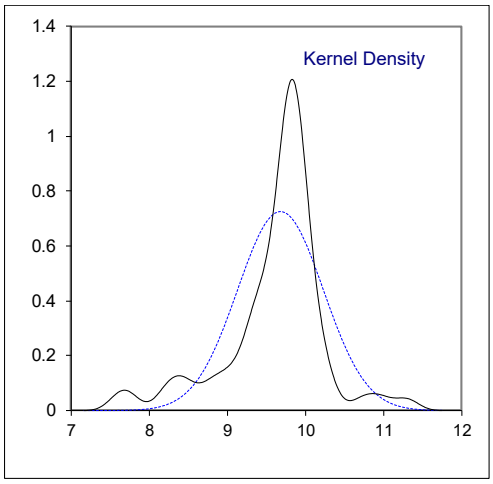
Determination of Olefins by GC on sample #19200; results in %V/V

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1194		-----		-----
140	D6550	8.2		-2.51	1199		-----		-----
159		-----		-----	1205		-----		-----
171	ISO22854-A	10.97		2.19	1212		-----		-----
194		-----		-----	1227		-----		-----
225		-----		-----	1229	ISO22854-A	9.8		0.20
237		-----		-----	1237		-----		-----
238		-----		-----	1259		-----		-----
273		-----		-----	1275	ISO22854-A	9.32		-0.61
311	ISO22854-A	9.9		0.37	1281		-----		-----
312	ISO22854-A	9.79		0.19	1299	ISO22854-A	9.8		0.20
323	ISO22854-A	9.7		0.03	1320	ISO22854-A	10.11		0.73
333	ISO22854-A	9.7		0.03	1340	ISO22854	9.778		0.17
334	ISO22854-A	9.94		0.44	1357		-----		-----
335		-----		-----	1389		-----		-----
336		-----		-----	1397		-----		-----
337		-----		-----	1399		9.92		0.41
338		-----		-----	1402	ISO22854-A	9.92		0.41
343		-----		-----	1438		-----		-----
344		-----		-----	1441	D6839	9.75		0.12
352		-----		-----	1457	ISO22854-A	9.61		-0.12
353		-----		-----	1459		-----		-----
369		-----		-----	1498		-----		-----
370		-----		-----	1544	ISO22854-A	9.16		-0.88
371		-----		-----	1556	ISO22854-A	9.95		0.46
381	ISO22854-A	9.8		0.20	1569	ISO22854-A	9.76		0.14
391		-----		-----	1586	ISO22854-A	9.9		0.37
399		-----		-----	1611	ISO22854-A	9.42		-0.44
403	ISO22854-A	9.82		0.24	1613	D6839	9.74		0.10
404		-----		-----	1616	D6839	10.13		0.76
420	ISO22854-A	8.43		-2.12	1618	ISO22854-A	10.3		1.05
431		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
444		-----		-----	1644		-----		-----
445	ISO22854-A	9.89		0.36	1650		-----		-----
447		-----		-----	1676	ISO22854-A	9.749		0.12
453	ISO22854-A	9.63		-0.08	1697	ISO22854-A	9.73		0.08
463		-----		-----	1698		-----		-----
468		-----		-----	1705		-----		-----
485		-----		-----	1713	ISO22854-A	9.0		-1.15
496	ISO22854-A	9.60		-0.14	1720		-----		-----
631		-----		-----	1724	ISO22854-A	7.61	DG(0.01)	-3.51
633		-----		-----	1725		-----		-----
704	D6730	9.026		-1.11	1728		-----		-----
732		-----		-----	1740		-----		-----
785		-----		-----	1741	ISO22854-A	9.85		0.29
798		-----		-----	1742		-----		-----
824		-----		-----	1776	ISO22854-A	9.76		0.14
861		-----		-----	1833		-----		-----
875		-----		-----	1849		-----		-----
902		-----		-----	1856		-----		-----
904		-----		-----	1881		-----		-----
912		-----		-----	1884		-----		-----
913		-----		-----	1911	ISO22854-A	9.30		-0.64
971		-----		-----	1941		-----		-----
974		-----		-----	1953		-----		-----
994	D6729	8.299		-2.34	2129	D6730	8.816		-1.47
998		-----		-----	2130		-----		-----
1006	D6730	9.3		-0.64	2146		-----		-----
1011	ISO22854	10.2		0.88	6005		-----		-----
1026	ISO22854-A	11.30		2.75	6012		-----		-----
1033		-----		-----	6018	ISO22854-A	9.78		0.17
1059	ISO22854-A	8.5		-2.00	6028		-----		-----
1079	ISO22854-A	10.0		0.54	6034		-----		-----
1082		-----		-----	6054		-----		-----
1097		-----		-----	6068		-----		-----
1099		-----		-----	6075		-----		-----
1108	ISO22854-A	9.54		-0.24	6103	D6730	7.744	DG(0.01)	-3.28
1109	D6839	9.90		0.37	6142	ISO22854-A	9.46		-0.37
1126	ISO22854-A	9.39		-0.49	6143		-----		-----
1134	ISO22854-A	9.83		0.25	6163	ISO22854-A	10.2		0.88
1141		-----		-----	6180		-----		-----
1161	ISO22854-A	9.35		-0.56	6192		-----		-----
1167	ISO22854-A	9.58		-0.17	6201	ISO22854-A	8.76		-1.56
1191	ISO22854-A	9.87		0.32	6203	ISO22854-A	9.90		0.37

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238		-----		-----	6262	ISO22854-A	9.93		0.42
6249	ISO22854	9.45		-0.39	6279	ISO22854-A	10.74		1.80
6258		-----		-----	6287	GB/T30519	10.00		0.54
6260	GB/T28768	10.01		0.56	6291	ISO22854-A	9.90		0.37

normality	suspect
n	62
outliers	2
mean (n)	9.680
st.dev. (n)	0.5505
R(calc.)	1.541
st.dev.(ISO22854-A:16)	0.5893
R(ISO22854-A:16)	1.650



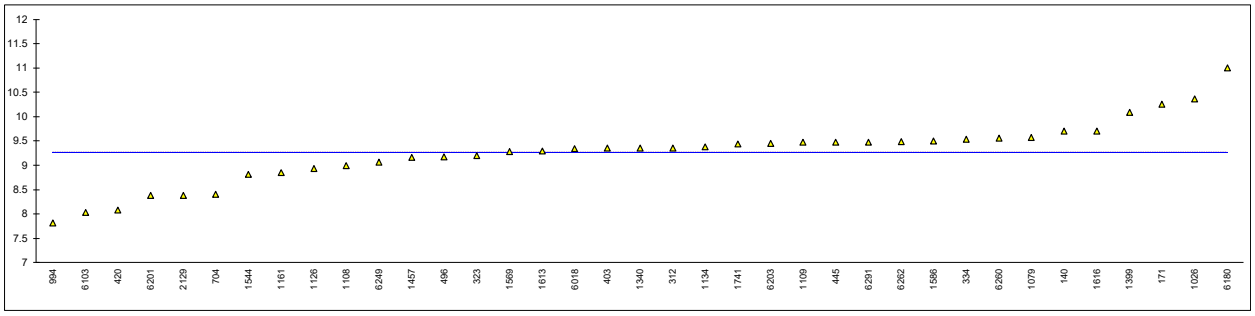


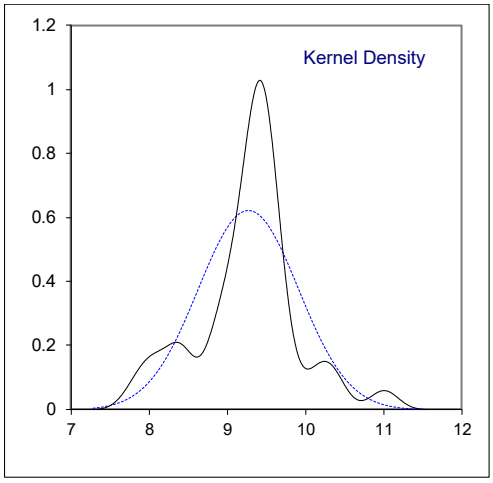
Determination of Olefins by GC on sample #19200; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1194		-----		-----
140	D6550	9.7		-----	1199		-----		-----
159		-----		-----	1205		-----		-----
171	ISO22854	10.26		-----	1212		-----		-----
194		-----		-----	1227		-----		-----
225		-----		-----	1229		-----		-----
237		-----		-----	1237		-----		-----
238		-----		-----	1259		-----		-----
273		-----		-----	1275		-----		-----
311		-----		-----	1281		-----		-----
312	ISO22854	9.35		-----	1299		-----		-----
323	ISO22854	9.2		-----	1320		-----		-----
333		-----		-----	1340	ISO22854	9.35		-----
334	ISO22854	9.54		-----	1357		-----		-----
335		-----		-----	1389		-----		-----
336		-----		-----	1397		-----		-----
337		-----		-----	1399		10.09		-----
338		-----		-----	1402		-----		-----
343		-----		-----	1438		-----		-----
344		-----		-----	1441		-----		-----
352		-----		-----	1457	ISO22854	9.16		-----
353		-----		-----	1459		-----		-----
369		-----		-----	1498		-----		-----
370		-----		-----	1544	ISO22854	8.82		-----
371		-----		-----	1556		-----		-----
381		-----		-----	1569	ISO22854	9.28		-----
391		-----		-----	1586	ISO22854	9.5		-----
399		-----		-----	1611		-----		-----
403	ISO22854	9.35		-----	1613	D6839	9.30		-----
404		-----		-----	1616	D6839	9.70		-----
420	ISO22854	8.08		-----	1618		-----		-----
431		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
444		-----		-----	1644		-----		-----
445	ISO22854	9.47		-----	1650		-----		-----
447		-----		-----	1676		-----		-----
453		-----		-----	1697		-----		-----
463		-----		-----	1698		-----		-----
468		-----		-----	1705		-----		-----
485		-----		-----	1713		-----		-----
496	ISO22854	9.17		-----	1720		-----		-----
631		-----		-----	1724		-----		-----
633		-----		-----	1725		-----		-----
704	D6730	8.408		-----	1728		-----		-----
732		-----		-----	1740		-----		-----
785		-----		-----	1741	ISO22854	9.44		-----
798		-----		-----	1742		-----		-----
824		-----		-----	1776		-----		-----
861		-----		-----	1833		-----		-----
875		-----		-----	1849		-----		-----
902		-----		-----	1856		-----		-----
904		-----		-----	1881		-----		-----
912		-----		-----	1884		-----		-----
913		-----		-----	1911		-----		-----
971		-----		-----	1941		-----		-----
974		-----		-----	1953		-----		-----
994	D6729	7.819		-----	2129	D6730	8.384		-----
998		-----		-----	2130		-----		-----
1006		-----		-----	2146		-----		-----
1011		-----		-----	6005		-----		-----
1026	ISO22854	10.36		-----	6012		-----		-----
1033		-----		-----	6018	ISO22854	9.34		-----
1059		-----		-----	6028		-----		-----
1079	ISO22854	9.57		-----	6034		-----		-----
1082		-----		-----	6054		-----		-----
1097		-----		-----	6068		-----		-----
1099		-----		-----	6075		-----		-----
1108	ISO22854	9.00		-----	6103	D6730	8.028		-----
1109	D6839	9.47		-----	6142		-----		-----
1126	ISO22854	8.93		-----	6143		-----		-----
1134	ISO22854	9.38		-----	6163		-----		-----
1141		-----		-----	6180	D6730	11.00		-----
1161	ISO22854	8.85		-----	6192		-----		-----
1167		-----		-----	6201	ISO22854	8.38		-----
1191		-----		-----	6203	D6839	9.45		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238		-----		-----	6262	ISO22854	9.49		-----
6249		9.07		-----	6279		-----		-----
6258		-----		-----	6287		-----		-----
6260	GB/T28768	9.565		-----	6291	ISO22854	9.47		-----

	normality	suspect
	n	37
	outliers	0
	mean (n)	9.263
	st.dev. (n)	0.6410
	R(calc.)	1.795
	st.dev.(lit)	unknown
	R(lit)	unknown
Compare		
	R(iis18B04EN)	1.120





Determination of Oxidation Stability on sample #19200; results in minutes

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D525	>720		-----	1194		-----		-----
140	D525	>900		-----	1199		-----		-----
159		-----		-----	1205		-----		-----
171	D525	>900		-----	1212	ISO7536	>900		-----
194		-----		-----	1227		-----		-----
225		-----		-----	1229		-----		-----
237	D525	>900		-----	1237		-----		-----
238		-----		-----	1259		-----		-----
273		-----		-----	1275	IP40	>900		-----
311	D525	>360		-----	1281		-----		-----
312	ISO7536	>900		-----	1299	D525	>960		-----
323		-----		-----	1320		-----		-----
333		-----		-----	1340	ISO7536	>900		-----
334	ISO7536	>900		-----	1357	D525	>900		-----
335		-----		-----	1389	D525	>900		-----
336	ISO7536	>900		-----	1397		-----		-----
337	ISO7536	>360		-----	1399	ISO7536	>360		-----
338		-----		-----	1402	D525	>900		-----
343	D525	>360		-----	1438		-----		-----
344		-----		-----	1441		-----		-----
352		-----		-----	1457	ISO7536	>900		-----
353		-----		-----	1459		-----		-----
369		-----		-----	1498		-----		-----
370		-----		-----	1544	ISO7536	>900		-----
371	ISO7536	>900		-----	1556	ISO7536	>900		-----
381	ISO7536	776		-----	1569	ISO7536	>500		-----
391		-----		-----	1586	D525	>900		-----
399		-----		-----	1611	ISO7536	>900		-----
403	ISO7536	>900		-----	1613	D525	>360		-----
404		-----		-----	1616	D525	>900		-----
420	ISO7536	>600		-----	1618		-----		-----
431		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
444		-----		-----	1644		-----		-----
445		-----		-----	1650		-----		-----
447	D525	>900		-----	1676		-----		-----
453	IP40	>900		-----	1697		-----		-----
463	D525	>900		-----	1698		-----		-----
468		-----		-----	1705		-----		-----
485		-----		-----	1713	ISO7536	>900		-----
496	ISO7536	>480		-----	1720		-----		-----
631		-----		-----	1724	D525	>900		-----
633		-----		-----	1725		-----		-----
704		-----		-----	1728	D525	>900		-----
732		-----		-----	1740		-----		-----
785		-----		-----	1741	D525/ISO7536	>900		-----
798		-----		-----	1742		-----		-----
824	D525	>900		-----	1776		-----		-----
861	D525	>900		-----	1833	ISO7536	>900		-----
875		-----		-----	1849	ISO7536	>900		-----
902		-----		-----	1856	ISO7536	>900		-----
904	ISO7536	360+		-----	1881		-----		-----
912		-----		-----	1884		-----		-----
913		-----		-----	1911		-----		-----
971		-----		-----	1941	ISO7536	> 900		-----
974	D525	>900		-----	1953		-----		-----
994		-----		-----	2129	ISO7536	>900		-----
998		-----		-----	2130	D525	>360		-----
1006		-----		-----	2146		-----		-----
1011	ISO7536	>400		-----	6005		-----		-----
1026		-----		-----	6012		-----		-----
1033	IP40	>900		-----	6018		-----		-----
1059	ISO7536	>900		-----	6028		-----		-----
1079	ISO7536	>900		-----	6034		-----		-----
1082		-----		-----	6054		-----		-----
1097		-----		-----	6068	ISO7536	>900		-----
1099	ISO7536	>900		-----	6075		-----		-----
1108	ISO7536	>900		-----	6103	D7525	106	f+?	-----
1109	D525	>900		-----	6142		-----		-----
1126		-----		-----	6143		-----		-----
1134		-----		-----	6163		-----		-----
1141		-----		-----	6180	D525	over 900		-----
1161	ISO7536	>900		-----	6192		-----		-----
1167	ISO7536	>900		-----	6201	D525	>900		-----
1191		-----		-----	6203	ISO7536	>900		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238		-----		-----	6262	D525	>900		-----
6249		-----		-----	6279		-----		-----
6258	D525	>900		-----	6287		-----		-----
6260	GB/T8018	>900		-----	6291	D525	>900		-----
	n	65							
	mean (n)	>360							

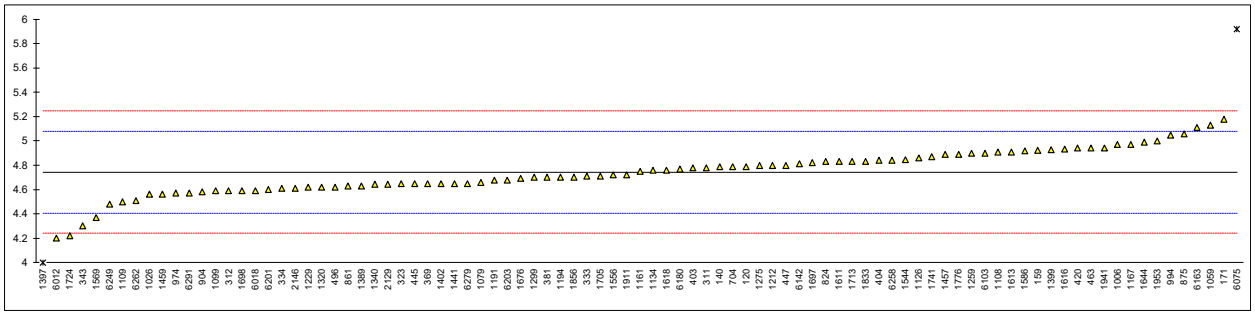
f+? = possibly a false positive test result?

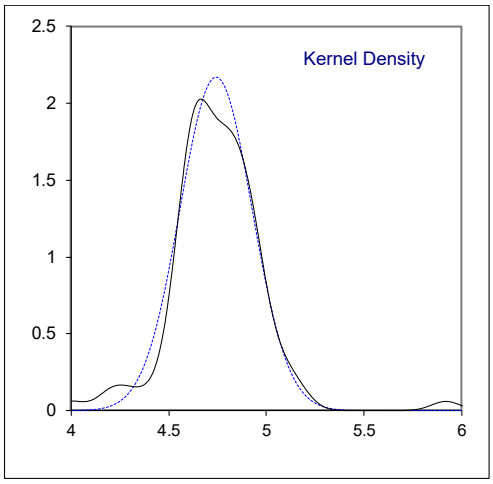
Determination of Ethanol on sample #19200; results in %V/V

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D5599	4.79		0.27	1194	D5845	4.7		-0.26
140	D5599	4.79		0.27	1199		-----		-----
159	D5599	4.921		1.05	1205		-----		-----
171	ISO22854-A	5.18		2.59	1212	EN13132	4.8		0.33
194		-----		-----	1227		-----		-----
225		-----		-----	1229	ISO22854-A	4.62		-0.74
237		-----		-----	1237		-----		-----
238		-----		-----	1259	EN13132	4.9		0.93
273		-----		-----	1275	ISO22854-A	4.80		0.33
311	ISO22854	4.78		0.21	1281		-----		-----
312	ISO22854-A	4.59		-0.92	1299	ISO22854-A	4.70		-0.26
323	ISO22854-A	4.65		-0.56	1320		4.62		-0.74
333	ISO22854-A	4.71		-0.20	1340	ISO22854	4.642		-0.61
334	ISO22854-A	4.61		-0.80	1357		-----		-----
335		-----		-----	1389	EN13132	4.63		-0.68
336		-----		-----	1397	EN13132	4.0	R(0.05)	-4.43
337		-----		-----	1399	D4815	4.93		1.11
338		-----		-----	1402	ISO22854-A	4.65		-0.56
343	EN13132	4.3		-2.64	1438		-----		-----
344		-----		-----	1441	D6839	4.65		-0.56
352		-----		-----	1457	ISO22854-A	4.89		0.87
353		-----		-----	1459	IP466	4.56		-1.10
369	EN13132	4.65		-0.56	1498		-----		-----
370		-----		-----	1544	ISO22854-A	4.848		0.62
371		-----		-----	1556	ISO22854-A	4.72		-0.14
381	EN13132	4.7		-0.26	1569		4.37		-2.23
391		-----		-----	1586	ISO22854-A	4.92		1.05
399		-----		-----	1611	ISO22854-A	4.83		0.51
403	ISO22854	4.78		0.21	1613	D6839	4.91		0.99
404	D5845	4.84		0.57	1616	D4815	4.932		1.12
420	ISO22854-A	4.94		1.16	1618	ISO22854-A	4.76		0.09
431		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
444		-----		-----	1644	EN13132	4.99		1.46
445	ISO22854-A	4.65		-0.56	1650		-----		-----
447	IP466	4.80		0.33	1676		4.691		-0.32
453		-----		-----	1697	EN13132	4.82		0.45
463	EN13132	4.94		1.16	1698	EN13132	4.59		-0.92
468		-----		-----	1705	EN13132	4.71		-0.20
485		-----		-----	1713	ISO22854-A	4.83		0.51
496	ISO22854-A	4.620		-0.74	1720		-----		-----
631		-----		-----	1724	ISO22854-A	4.22		-3.12
633		-----		-----	1725		-----		-----
704	D4815	4.79		0.27	1728		-----		-----
732		-----		-----	1740		-----		-----
785		-----		-----	1741	EN13132	4.868		0.74
798		-----		-----	1742		-----		-----
824	D4815	4.83		0.51	1776		4.89		0.87
861	D4815	4.63		-0.68	1833	ISO22854-A	4.83		0.51
875	EN13132	5.06		1.88	1849		-----		-----
902		-----		-----	1856	EN13132	4.70		-0.26
904	D4815	4.58		-0.98	1881		-----		-----
912		-----		-----	1884		-----		-----
913		-----		-----	1911	ISO22854-A	4.72		-0.14
971		-----		-----	1941	EN13132	4.94		1.16
974	D4815	4.57		-1.04	1953		5		1.52
994	D6729	5.049		1.81	2129	D6730	4.644		-0.60
998		-----		-----	2130		-----		-----
1006	D4815	4.97		1.34	2146		4.61		-0.80
1011		-----		-----	6005		-----		-----
1026	ISO22854-A	4.56		-1.10	6012	D5845	4.2		-3.24
1033		-----		-----	6018		4.59		-0.92
1059	ISO22854-A	5.13		2.30	6028		-----		-----
1079	ISO22854-A	4.66		-0.50	6034		-----		-----
1082		-----		-----	6054		-----		-----
1097		-----		-----	6068		-----		-----
1099	EN13132	4.59		-0.92	6075	EN13132	5.92	R(0.01)	7.00
1108	ISO22854-A	4.91		0.99	6103	D5845	4.9		0.93
1109	D6839	4.50		-1.45	6142	ISO22854-A	4.81		0.39
1126		4.86		0.69	6143		-----		-----
1134	ISO22854-A	4.76		0.09	6163	EN13132	5.11		2.18
1141		-----		-----	6180	D4815	4.77		0.15
1161	ISO22854-A	4.75		0.03	6192		-----		-----
1167	EN13132	4.97		1.34	6201	ISO22854-A	4.60		-0.86
1191	ISO22854-A	4.68		-0.38	6203	ISO22854-A	4.68		-0.38

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238		-----		-----	6262	ISO22854-A	4.51		-1.39
6249	ISO22854	4.48		-1.57	6279	ISO22854-A	4.65		-0.56
6258	EN13132	4.841		0.58	6287		-----		-----
6260		-----		-----	6291	ISO22854-A	4.57		-1.04

normality	OK
n	89
outliers	2
mean (n)	4.7442
st.dev. (n)	0.18398
R(calc.)	0.5151
st.dev.(ISO22854-A:16)	0.16806
R(ISO22854-A:16)	0.4706





Determination of Ethers (C5 or more C atoms) on sample #19200; results in %V/V

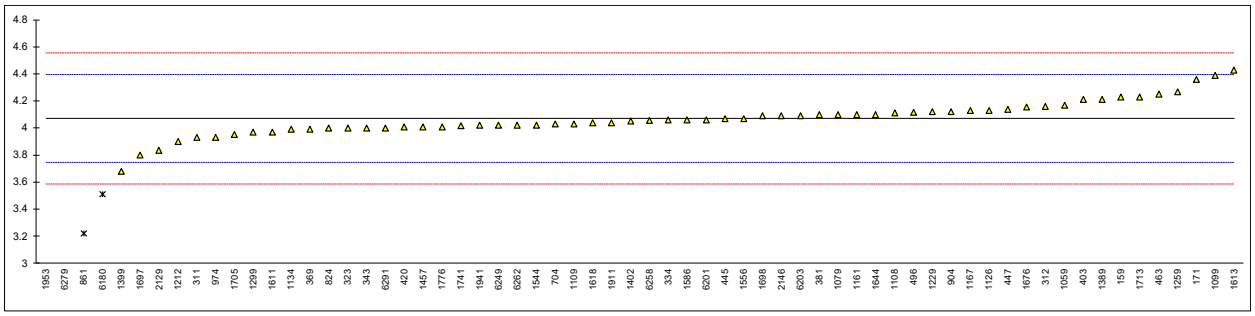
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120		-----		-----	1194		-----		-----
140		-----		-----	1199		-----		-----
159	D5599	4.230	C	0.98	1205		-----		-----
171	ISO22854-A	4.36		1.79	1212	EN13132	3.9		-1.05
194		-----		-----	1227		-----		-----
225		-----		-----	1229	ISO22854-A	4.12		0.30
237		-----		-----	1237		-----		-----
238		-----		-----	1259	EN13132	4.27		1.23
273		-----		-----	1275		-----		-----
311	ISO22854	3.93	C	-0.87	1281		-----		-----
312	ISO22854-A	4.16		0.55	1299	ISO22854-A	3.97		-0.62
323	ISO22854-A	4.00		-0.44	1320		-----		-----
333		-----		-----	1340		-----		-----
334	ISO22854-A	4.06		-0.07	1357		-----		-----
335		-----		-----	1389	EN13132	4.21		0.86
336		-----		-----	1397		-----		-----
337		-----		-----	1399	D4815	3.68		-2.41
338		-----		-----	1402	ISO22854-A	4.05	C	-0.13
343	EN13132	4.0		-0.44	1438		-----		-----
344		-----		-----	1441	D6839	<0.2	f-?	<-23.89
352		-----		-----	1457	ISO22854-A	4.01		-0.37
353		-----		-----	1459		-----		-----
369	EN13132	3.99		-0.50	1498		-----		-----
370		-----		-----	1544	ISO22854-A	4.021		-0.31
371		-----		-----	1556	ISO22854-A	4.07		0.00
381	EN13132	4.1		0.18	1569		-----		-----
391		-----		-----	1586	ISO22854-A	4.06		-0.07
399		-----		-----	1611	ISO22854-A	3.97		-0.62
403	ISO22854	4.21		0.86	1613	D6839	4.43		2.22
404		-----		-----	1616		-----		-----
420	ISO22854-A	4.01		-0.37	1618	ISO22854-A	4.04		-0.19
431		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
444		-----		-----	1644	EN13132	4.1		0.18
445	ISO22854-A	4.07		0.00	1650		-----		-----
447	IP466	4.14		0.43	1676		4.155		0.52
453		-----		-----	1697	EN13132	3.8		-1.67
463	EN13132	4.25		1.11	1698	EN13132	4.09		0.12
468		-----		-----	1705	EN13132	3.95		-0.74
485		-----		-----	1713	ISO22854-A	4.23		0.98
496	ISO22854-A	4.115		0.27	1720		-----		-----
631		-----		-----	1724		-----		-----
633		-----		-----	1725		-----		-----
704	D4815	4.03		-0.25	1728		-----		-----
732		-----		-----	1740		-----		-----
785		-----		-----	1741	EN13132	4.017		-0.33
798		-----		-----	1742		-----		-----
824	D4815	4.0		-0.44	1776		4.01		-0.37
861	D4815	3.22	R(0.01)	-5.25	1833		-----		-----
875		-----		-----	1849		-----		-----
902		-----		-----	1856		-----		-----
904	D4815	4.12		0.30	1881		-----		-----
912		-----		-----	1884		-----		-----
913		-----		-----	1911	ISO22854-A	4.04		-0.19
971		-----		-----	1941	EN13132	4.02		-0.31
974	D4815	3.93		-0.87	1953		0	ex	-25.12
994		-----		-----	2129	D6730	3.834	C	-1.46
998		-----		-----	2130		-----		-----
1006		-----		-----	2146		4.09		0.12
1011		-----		-----	6005		-----		-----
1026	ISO22854-A	<0.1	f-?	<-24.51	6012		-----		-----
1033		-----		-----	6018		<0.01	f-?	<-25.06
1059	ISO22854-A	4.17		0.61	6028		-----		-----
1079	ISO22854-A	4.10		0.18	6034		-----		-----
1082		-----		-----	6054		-----		-----
1097		-----		-----	6068		-----		-----
1099	EN13132	4.39	C	1.97	6075		-----		-----
1108	ISO22854-A	4.11		0.24	6103		-----		-----
1109	D6839	4.03	C	-0.25	6142		-----		-----
1126		4.13		0.37	6143		-----		-----
1134	ISO22854-A	3.99		-0.50	6163		-----		-----
1141		-----		-----	6180	D4815	3.51	R(0.01)	-3.46
1161	ISO22854-A	4.1		0.18	6192		-----		-----
1167	EN13132	4.13		0.37	6201	ISO22854-A	4.06		-0.07
1191		-----		-----	6203	ISO22854-A	4.09		0.12

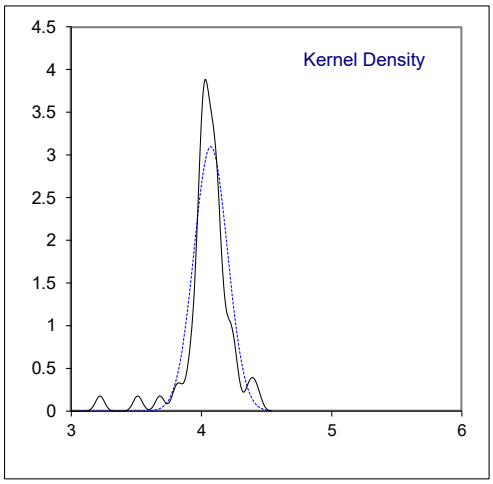
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238		-----		-----	6262	ISO22854-A	4.02		-0.31
6249	ISO22854	4.02		-0.31	6279	ISO22854-A	0	ex	-25.12
6258	EN13132	4.054		-0.10	6287		-----		-----
6260		-----		-----	6291	ISO22854-A	4.00		-0.44

normality	suspect
n	60
outliers	2 +2ex
mean (n)	4.0706
st.dev. (n)	0.12854
R(calc.)	0.3599
st.dev.(ISO22854-A:16)	0.16203
R(ISO22854-A:16)	0.4537

ex = test result excluded as zero is not a real test result
f-? = possibly a false negative test result?

Lab 159 first reported 0.00
Lab 311 first reported 0.02
Lab 1099 first reported 5.24
Lab 1109 first reported 0.00
Lab 1402 first reported 0.02
Lab 2129 first reported 2.929





Determination of ETBE on sample #19200; results in %V/V

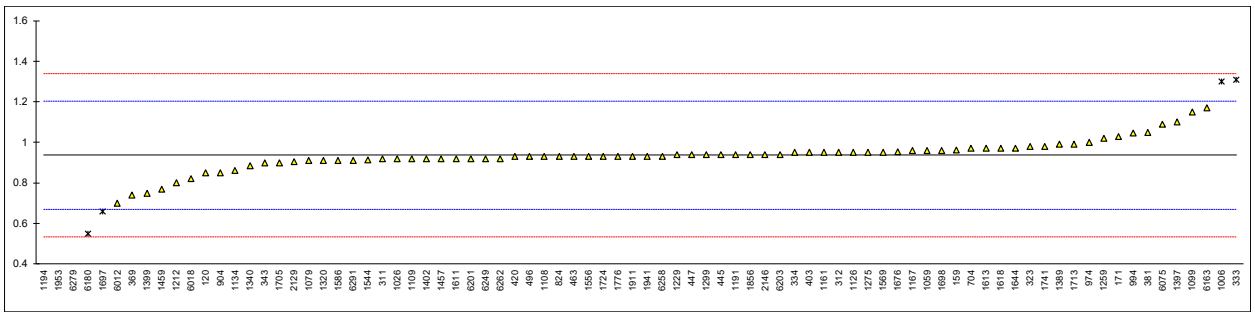
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D5599	0.85		-0.65	1194	D5845	0	ex	-6.99
140		-----		-----	1199		-----		-----
159	D5599	0.962		0.19	1205		-----		-----
171	ISO22854-A	1.03		0.70	1212	EN13132	0.8		-1.02
194		-----		-----	1227		-----		-----
225		-----		-----	1229	ISO22854-A	0.94		0.03
237		-----		-----	1237		-----		-----
238		-----		-----	1259	EN13132	1.02		0.62
273		-----		-----	1275	ISO22854-A	0.95		0.10
311	ISO22854	0.92		-0.12	1281		-----		-----
312	ISO22854-A	0.95		0.10	1299	ISO22854-A	0.94		0.03
323	ISO22854-A	0.98		0.32	1320		0.91		-0.20
333	ISO22854-A	1.31	R(0.01)	2.79	1340	ISO22854	0.884		-0.39
334	ISO22854-A	0.95		0.10	1357		-----		-----
335		-----		-----	1389	EN13132	0.99		0.40
336		-----		-----	1397	EN13132	1.1		1.22
337		-----		-----	1399	D4815	0.75		-1.39
338		-----		-----	1402	ISO22854-A	0.92		-0.12
343	EN13132	0.9		-0.27	1438		-----		-----
344		-----		-----	1441	D6839	<0.2	f-?	<-5.50
352		-----		-----	1457	ISO22854-A	0.92		-0.12
353		-----		-----	1459	IP466	0.77		-1.24
369	EN13132	0.74		-1.47	1498		-----		-----
370		-----		-----	1544	ISO22854-A	0.913		-0.18
371		-----		-----	1556	ISO22854-A	0.93		-0.05
381	EN13132	1.05		0.85	1569		0.95		0.10
391		-----		-----	1586	ISO22854-A	0.91		-0.20
399		-----		-----	1611	ISO22854-A	0.92		-0.12
403	ISO22854	0.95		0.10	1613	D6839	0.97		0.25
404		-----		-----	1616		-----		-----
420	ISO22854-A	0.93		-0.05	1618	ISO22854-A	0.97		0.25
431		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
444		-----		-----	1644	EN13132	0.97		0.25
445	ISO22854-A	0.94		0.03	1650		-----		-----
447	IP466	0.94		0.03	1676		0.954		0.13
453		-----		-----	1697	EN13132	0.66	R(0.05)	-2.06
463	EN13132	0.93		-0.05	1698	EN13132	0.96		0.18
468		-----		-----	1705	EN13132	0.90		-0.27
485		-----		-----	1713	ISO22854-A	0.99		0.40
496	ISO22854-A	0.930		-0.05	1720		-----		-----
631		-----		-----	1724	ISO22854-A	0.93		-0.05
633		-----		-----	1725		-----		-----
704	D4815	0.97		0.25	1728		-----		-----
732		-----		-----	1740		-----		-----
785		-----		-----	1741	EN13132	0.981		0.33
798		-----		-----	1742		-----		-----
824	D4815	0.93		-0.05	1776		0.93		-0.05
861	D4815	<0.2	f-?	<-5.50	1833		-----		-----
875		-----		-----	1849		-----		-----
902		-----		-----	1856	EN13132	0.94		0.03
904	D4815	0.85		-0.65	1881		-----		-----
912		-----		-----	1884		-----		-----
913		-----		-----	1911	ISO22854-A	0.93		-0.05
971		-----		-----	1941	EN13132	0.93		-0.05
974	D4815	1.00		0.47	1953		0	ex	-6.99
994	D6729	1.046		0.82	2129	D6730	0.905	C	-0.24
998		-----		-----	2130		-----		-----
1006	D4815	1.3	R(0.01)	2.71	2146		0.94		0.03
1011		-----		-----	6005		-----		-----
1026	ISO22854-A	0.92		-0.12	6012	D5845	0.7		-1.77
1033		-----		-----	6018		0.82		-0.87
1059	ISO22854-A	0.96		0.18	6028		-----		-----
1079	ISO22854-A	0.91		-0.20	6034		-----		-----
1082		-----		-----	6054		-----		-----
1097		-----		-----	6068		-----		-----
1099	EN13132	1.15	C	1.59	6075	EN13132	1.09		1.15
1108	ISO22854-A	0.93		-0.05	6103		-----		-----
1109	D6839	0.92		-0.12	6142		-----		-----
1126		0.95		0.10	6143		-----		-----
1134	ISO22854-A	0.86		-0.57	6163	EN13132	1.17		1.74
1141		-----		-----	6180	D4815	0.55	R(0.01)	-2.89
1161	ISO22854-A	0.95		0.10	6192		-----		-----
1167	EN13132	0.96		0.18	6201	ISO22854-A	0.92		-0.12
1191	ISO22854-A	0.94		0.03	6203	ISO22854-A	0.94		0.03

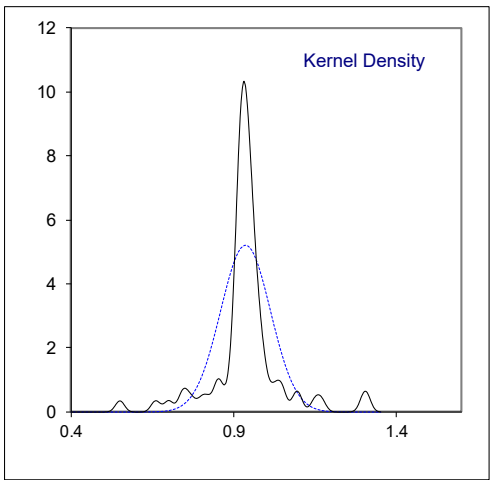
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238		-----		-----	6262	ISO22854-A	0.92		-0.12
6249	ISO22854	0.92		-0.12	6279	ISO22854-A	0	ex	-6.99
6258	EN13132	0.932		-0.03	6287		-----		-----
6260		-----		-----	6291	ISO22854-A	0.91		-0.20

normality	not OK
n	75
outliers	4 +3ex
mean (n)	0.9365
st.dev. (n)	0.07674
R(calc.)	0.2149
st.dev.(ISO22854-A:16)	0.13393
R(ISO22854-A:16)	0.3750

ex = test result excluded as zero is not a real test result
f-? = possibly a false negative test result?

Lab 1099 first reported 2.04
Lab 2129 first reported 0





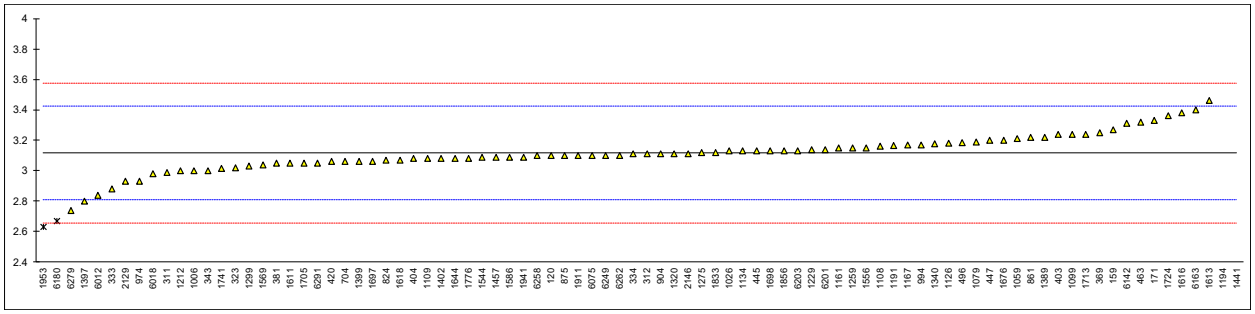
Determination of MTBE on sample #19200; results in %V/V

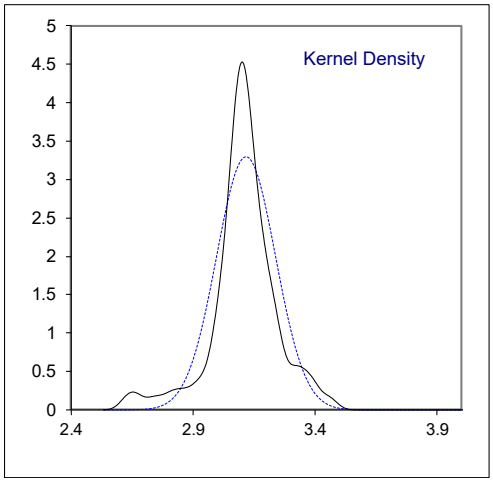
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D5599	3.10		-0.11	1194	D5845	4.1	R(0.01)	6.41
140		-----		-----	1199		-----		-----
159	D5599	3.268		0.99	1205		-----		-----
171	ISO22854-A	3.33		1.39	1212	EN13132	3.0		-0.76
194		-----		-----	1227		-----		-----
225		-----		-----	1229	ISO22854-A	3.14		0.15
237		-----		-----	1237		-----		-----
238		-----		-----	1259	EN13132	3.15		0.22
273		-----		-----	1275	ISO22854-A	3.12		0.02
311	ISO22854	2.99		-0.82	1281		-----		-----
312	ISO22854-A	3.11		-0.04	1299	ISO22854-A	3.03		-0.56
323	ISO22854-A	3.02		-0.63	1320		3.11		-0.04
333	ISO22854-A	2.88		-1.54	1340	ISO22854	3.178		0.40
334	ISO22854-A	3.11		-0.04	1357		-----		-----
335		-----		-----	1389	EN13132	3.22		0.67
336		-----		-----	1397	EN13132	2.8		-2.06
337		-----		-----	1399	D4815	3.06		-0.37
338		-----		-----	1402	ISO22854-A	3.08		-0.24
343	EN13132	3.0		-0.76	1438		-----		-----
344		-----		-----	1441	D6839	4.16	R(0.01)	6.80
352		-----		-----	1457	ISO22854-A	3.09		-0.17
353		-----		-----	1459		-----		-----
369	EN13132	3.25		0.87	1498		-----		-----
370		-----		-----	1544	ISO22854-A	3.088		-0.19
371		-----		-----	1556	ISO22854-A	3.15		0.22
381	EN13132	3.05		-0.43	1569		3.04		-0.50
391		-----		-----	1586	ISO22854-A	3.09		-0.17
399		-----		-----	1611	ISO22854-A	3.05		-0.43
403	ISO22854	3.24		0.81	1613	D6839	3.46		2.24
404	D5845	3.08		-0.24	1616	D4815	3.38	C	1.72
420	ISO22854-A	3.06		-0.37	1618	ISO22854-A	3.07		-0.30
431		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
444		-----		-----	1644	EN13132	3.08		-0.24
445	ISO22854-A	3.13		0.09	1650		-----		-----
447	IP466	3.20		0.54	1676		3.201		0.55
453		-----		-----	1697	EN13132	3.06		-0.37
463	EN13132	3.32		1.33	1698	EN13132	3.13		0.09
468		-----		-----	1705	EN13132	3.05		-0.43
485		-----		-----	1713	ISO22854-A	3.24		0.81
496	ISO22854-A	3.185		0.45	1720		-----		-----
631		-----		-----	1724	ISO22854-A	3.36		1.59
633		-----		-----	1725		-----		-----
704	D4815	3.06		-0.37	1728		-----		-----
732		-----		-----	1740		-----		-----
785		-----		-----	1741	EN13132	3.016		-0.65
798		-----		-----	1742		-----		-----
824	D4815	3.07		-0.30	1776		3.08		-0.24
861	D4815	3.22		0.67	1833	ISO22854-A	3.12		0.02
875	EN13132	3.10		-0.11	1849		-----		-----
902		-----		-----	1856	EN13132	3.13		0.09
904	D4815	3.11		-0.04	1881		-----		-----
912		-----		-----	1884		-----		-----
913		-----		-----	1911	ISO22854-A	3.10		-0.11
971		-----		-----	1941	EN13132	3.09		-0.17
974	D4815	2.93		-1.21	1953		2.63	R(0.05)	-3.17
994	D6729	3.171		0.36	2129	D6730	2.929		-1.22
998		-----		-----	2130		-----		-----
1006	D4815	3.0		-0.76	2146		3.11		-0.04
1011		-----		-----	6005		-----		-----
1026	ISO22854-A	3.13		0.09	6012	D5845	2.84	C	-1.80
1033		-----		-----	6018		2.98		-0.89
1059	ISO22854-A	3.21		0.61	6028		-----		-----
1079	ISO22854-A	3.19		0.48	6034		-----		-----
1082		-----		-----	6054		-----		-----
1097		-----		-----	6068		-----		-----
1099	EN13132	3.24	C	0.81	6075	EN13132	3.10		-0.11
1108	ISO22854-A	3.16		0.28	6103		-----		-----
1109	D6839	3.08		-0.24	6142	ISO22854-A	3.31		1.26
1126		3.18		0.41	6143		-----		-----
1134	ISO22854-A	3.13		0.09	6163	EN13132	3.40		1.85
1141		-----		-----	6180	D4815	2.67	R(0.05)	-2.91
1161	ISO22854-A	3.15		0.22	6192		-----		-----
1167	EN13132	3.17		0.35	6201	ISO22854-A	3.14		0.15
1191	ISO22854-A	3.165		0.32	6203	ISO22854-A	3.13		0.09

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238		-----		-----	6262	ISO22854-A	3.10		-0.11
6249	ISO22854	3.10		-0.11	6279	ISO22854-A	2.74		-2.45
6258	EN13132	3.098		-0.12	6287		-----		-----
6260		-----		-----	6291	ISO22854-A	3.05		-0.43

normality	suspect
n	84
outliers	4
mean (n)	3.1164
st.dev. (n)	0.12098
R(calc.)	0.3387
st.dev.(ISO22854-A:16)	0.15347
R(ISO22854-A:16)	0.4297

Lab 1099 first reported 3.20
Lab 1616 first reported 3.752
Lab 6012 first reported 3.6





Determination of Oxygen content on sample #19200; results in %M/M

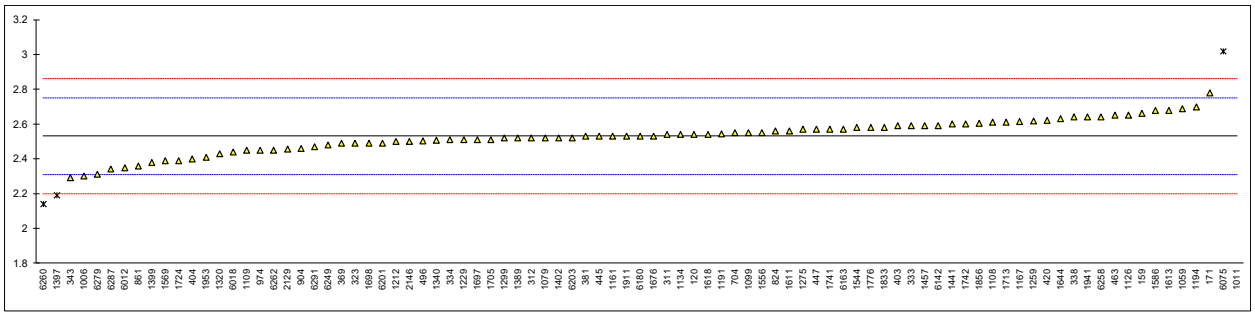
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D5599	2.54		0.09	1194	D5845	2.7		1.53
140		-----		-----	1199		-----		-----
159	D5599	2.66		1.17	1205		-----		-----
171		2.78		2.25	1212	EN13132	2.5		-0.28
194		-----		-----	1227		-----		-----
225		-----		-----	1229	ISO22854	2.51		-0.19
237		-----		-----	1237		-----		-----
238		-----		-----	1259	EN13132	2.619		0.80
273		-----		-----	1275	ISO22854	2.57		0.36
311	ISO22854	2.54		0.09	1281		-----		-----
312	EN22854	2.52		-0.10	1299	EN22854	2.52		-0.10
323	ISO22854	2.49		-0.37	1320	EN22854	2.43		-0.91
333	EN22854	2.59		0.54	1340	ISO22854	2.508		-0.20
334	ISO22854	2.51		-0.19	1357		-----		-----
335		-----		-----	1389	EN13132	2.52		-0.10
336		-----		-----	1397	EN13132	2.19	R(0.05)	-3.08
337		-----		-----	1399	D4815	2.38		-1.36
338	EN15552	2.64	C	0.99	1402	ISO22854	2.52		-0.10
343	EN13132	2.29		-2.17	1438		-----		-----
344		-----		-----	1441	D6839	2.6		0.63
352		-----		-----	1457	ISO22854	2.59		0.54
353		-----		-----	1459		-----		-----
369	EN13132	2.49		-0.37	1498		-----		-----
370		-----		-----	1544	EN22854	2.580		0.45
371		-----		-----	1556	ISO22854	2.55		0.18
381	EN13132	2.53		0.00	1569	EN22854	2.39		-1.27
391		-----		-----	1586	ISO22854	2.68		1.35
399		-----		-----	1611	EN22854	2.56		0.27
403	ISO22854	2.59		0.54	1613	D6839	2.68		1.35
404	D5845	2.4		-1.18	1616		-----		-----
420	EN22854	2.62		0.81	1618	ISO22854	2.54		0.09
431		-----		-----	1631		-----		-----
440		-----		-----	1634		-----		-----
444		-----		-----	1644	EN13132	2.63		0.90
445	ISO22854	2.53	C	0.00	1650		-----		-----
447	IP466	2.57		0.36	1676	EN22854	2.531		0.00
453		-----		-----	1697	EN13132	2.51		-0.19
463	EN13132	2.65		1.08	1698	EN13132	2.49		-0.37
468		-----		-----	1705	EN13132	2.51		-0.19
485		-----		-----	1713	EN22854	2.61		0.72
496	ISO22854	2.505		-0.23	1720		-----		-----
631		-----		-----	1724	ISO22854	2.39		-1.27
633		-----		-----	1725		-----		-----
704	D4815	2.55		0.18	1728		-----		-----
732		-----		-----	1740		-----		-----
785		-----		-----	1741	EN13132	2.57		0.36
798		-----		-----	1742	D5622	2.60		0.63
824	D4815	2.56		0.27	1776	ISO22854	2.58		0.45
861	D4815	2.36		-1.54	1833	ISO22854	2.58		0.45
875		-----		-----	1849		-----		-----
902		-----		-----	1856	EN13132	2.604		0.66
904	EN22854	2.46		-0.64	1881		-----		-----
912		-----		-----	1884		-----		-----
913		-----		-----	1911	EN22854	2.53		0.00
971		-----		-----	1941	EN13132	2.64		0.99
974	D4815	2.45		-0.73	1953		2.41		-1.09
994		-----		-----	2129	D6730	2.457	C	-0.66
998		-----		-----	2130		-----		-----
1006	D4815	2.3		-2.08	2146	ISO22854	2.50		-0.28
1011	ISO22854	8.97	R(0.01)	58.16	6005		-----		-----
1026	ISO22854	<0.1	f-?	<-21.95	6012	D5845	2.35		-1.63
1033		-----		-----	6018	ISO22854	2.44		-0.82
1059	EN22854	2.69		1.44	6028		-----		-----
1079	ISO22854	2.52		-0.10	6034		-----		-----
1082		-----		-----	6054		-----		-----
1097		-----		-----	6068		-----		-----
1099	EN13132	2.55	C	0.18	6075	EN13132	3.02	R(0.01)	4.42
1108	EN22854	2.61		0.72	6103		-----		-----
1109	D6839	2.45		-0.73	6142	ISO22854	2.59		0.54
1126	ISO22854	2.65		1.08	6143		-----		-----
1134	ISO22854	2.54		0.09	6163	EN13132	2.57	C	0.36
1141		-----		-----	6180	D4815	2.53		0.00
1161	ISO22854	2.53		0.00	6192		-----		-----
1167	EN13132	2.616		0.77	6201	EN22854	2.49		-0.37
1191	EN22854	2.545		0.13	6203	ISO22854	2.52		-0.10

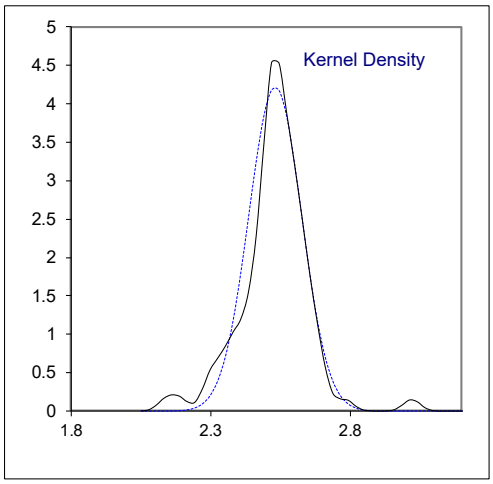
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238		-----		-----	6262	ISO22854	2.45		-0.73
6249	ISO22854	2.48		-0.46	6279	ISO22854	2.31		-1.99
6258	EN13132	2.64		0.99	6287	SH/T0663	2.3410		-1.71
6260	NB/SH/T0663	2.14	R(0.01)	-3.53	6291	ISO22854	2.47		-0.55

normality	OK
n	85
outliers	4
mean (n)	2.5305
st.dev. (n)	0.09458
R(calc.)	0.2648
st.dev.(ISO22854-A:16)	0.11071
R(ISO22854-A:16)	0.31

f-? = possibly a false negative test result?

Lab 338 first reported 2.1
Lab 445 first reported 1.77
Lab 1099 first reported 2.668
Lab 2129 first reported 2.335
Lab 6163 first reported 2.02



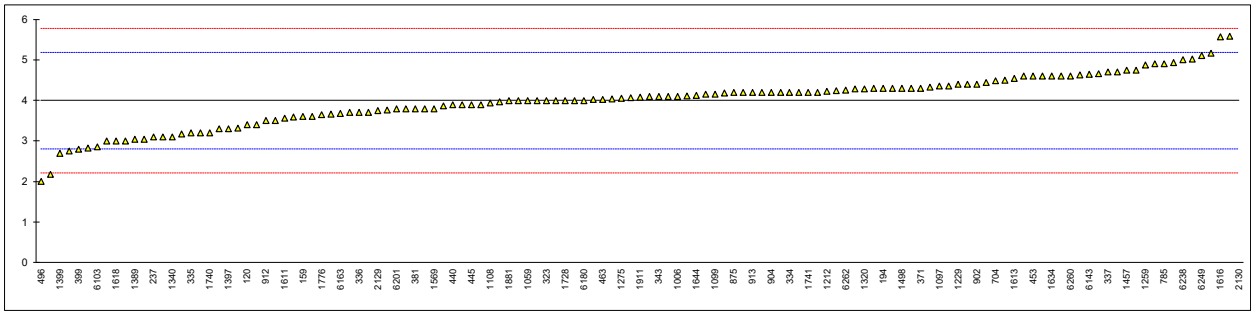


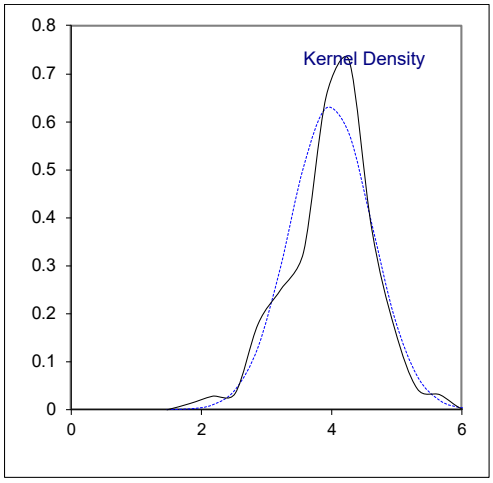
Determination of Sulfur on sample #19200; results in mg/kg

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
120	D2622	3.4		-1.01	1194		-----		-----
140	D5453	3.8		-0.33	1199		-----		-----
159	D5453	3.6		-0.67	1205	ISO20846	4.02		0.04
171	D5453	4.28		0.48	1212	ISO20846	4.22		0.38
194	D7039	4.3		0.51	1227	D5453	3.8		-0.33
225		-----		-----	1229	ISO20846	4.4		0.68
237	D5453	3.1		-1.51	1237	ISO20846	3.90		-0.16
238		-----		-----	1259	ISO20846	4.87		1.48
273		-----		-----	1275	IP490	4.06		0.11
311	ISO20846	4.5		0.85	1281	ISO20846	3.76		-0.40
312	ISO20846	4.3		0.51	1299		-----		-----
323	ISO20846	4.0		0.01	1320	ISO20846	4.28		0.48
333	ISO20846	4.3		0.51	1340	ISO20846	3.1		-1.51
334	ISO20846	4.2		0.34	1357	D5453	3.30		-1.17
335	ISO20846	3.2		-1.34	1389	ISO20846	3.04		-1.61
336	ISO20846	3.7		-0.50	1397	ISO20846	3.3		-1.17
337	ISO20846	4.7		1.19	1399	D5453	2.7		-2.19
338	ISO20846	4.6		1.02	1402	IP490	2.76		-2.09
343	ISO20846	4.1		0.18	1438		-----		-----
344	D5453	4.33		0.56	1441	D7039	4.6		1.02
352	ISO20846	4.15		0.26	1457	ISO20846	4.74		1.26
353	IP490	3.2		-1.34	1459	ISO20884	<5		-----
369	ISO20846	3.7		-0.50	1498	D5453	4.3		0.51
370	ISO20846	4.2		0.34	1544	ISO20846	4.93		1.58
371	ISO20846	4.305		0.52	1556	ISO20846	4.3		0.51
381	ISO20846	3.8		-0.33	1569	ISO20846	3.8		-0.33
391	ISO20846	4.9		1.53	1586	D5453	4.0		0.01
399	D5453	2.8		-2.02	1611	ISO20846	3.56		-0.74
403	ISO20846	3.17		-1.39	1613	D5453	4.54		0.92
404	ISO20846	3.1		-1.51	1616	D5453	5.57		2.66
420	ISO20846	4.44		0.75	1618	ISO20846	3.0		-1.68
431		-----		-----	1631		-----		-----
440	D5453	3.89		-0.18	1634	ISO20846	4.6		1.02
444	D5453	3.999		0.01	1644	ISO20846	4.13		0.23
445	D2622	3.9		-0.16	1650	ISO20846	3.50		-0.84
447	IP490	4.63		1.07	1676		-----		-----
453	ISO20846	4.6		1.02	1697	ISO20846	4.18		0.31
463	ISO20846	4.03		0.06	1698	ISO20846	3.97		-0.04
468		-----		-----	1705	ISO20846	3.66		-0.57
485		-----		-----	1713	ISO20846	3.4		-1.01
496	ISO20846	2.0		-3.37	1720	D5453	2.82		-1.98
631		-----		-----	1724	D5453	4.2		0.34
633		-----		-----	1725	ISO20846	4.6		1.02
704	ISO20846	4.48		0.82	1728	D5453	4		0.01
732	D4294	<17		-----	1740	ISO20846	3.2		-1.34
785	ISO20846	4.9		1.53	1741	ISO20846/D5453	4.20		0.34
798		-----		-----	1742	ISO20846	4.0		0.01
824	D5453	4.4		0.68	1776	ISO20846	3.65		-0.58
861	D5453	4.0		0.01	1833	ISO20846	4.2		0.34
875	ISO20846	4.2		0.34	1849	ISO20846	3.9		-0.16
902	ISO20846	4.4		0.68	1856		-----		-----
904	ISO20846	4.2		0.34	1881	ISO20846	3.99		-0.01
912	D5453	3.5		-0.84	1884	D5453	3.0		-1.68
913	D5453	4.2		0.34	1911	ISO20846	4.08		0.14
971	ISO20846	3.86		-0.23	1941	ISO20846	4.04		0.07
974		-----		-----	1953	D4294	<20		-----
994	D5453	4.75		1.27	2129	ISO20846	3.75		-0.41
998		-----		-----	2130	D4294	90	R(0.01)	145.17
1006	D5453	4.1		0.18	2146	ISO20846	4.7		1.19
1011	ISO20846	4.2		0.34	6005	ISO20846	4.36		0.61
1026	ISO20846	3.0		-1.68	6012	ISO20846	3.7		-0.50
1033		-----		-----	6018		-----		-----
1059	ISO20846	4.0		0.01	6028		-----		-----
1079	ISO20884	4.2		0.34	6034		-----		-----
1082		-----		-----	6054		-----		-----
1097	D5453	4.35		0.60	6068	ISO20884	3.6		-0.67
1099	ISO20846	4.16		0.28	6075	ISO20846	2.18		-3.06
1108	ISO20846	3.94		-0.09	6103	D4294	2.86		-1.92
1109	D7039	4.66		1.12	6142		3.585		-0.69
1126	ISO20846	4.10		0.18	6143	D2622	4.64		1.09
1134	IP490	4.07		0.13	6163	ISO20846	3.68		-0.53
1141	ISO20846	4.1		0.18	6180	ISO20846	4.0		0.01
1161	ISO20846	3.32		-1.14	6192	ISO20884	5.17		1.98
1167		-----		-----	6201	ISO20846	3.79		-0.35
1191	ISO20846	4.11		0.19	6203	D5453	3.04		-1.61

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6238	ISO20846	5		1.70	6262	D5453	4.249		0.43
6249	ISO20884	5.11		1.88	6279	ISO20884	5.59		2.69
6258	ISO20846	5.02		1.73	6287		-----		-----
6260	SH/T0689	4.60		1.02	6291	D5453	4.243		0.42

	normality	OK
	n	128
	outliers	1
	mean (n)	3.996
	st.dev. (n)	0.6307
	R(calc.)	1.766
	st.dev.(ISO20846:19)	0.5925
	R(ISO20846:19)	1.659
Compare		
	R(D5453:19)	1.638



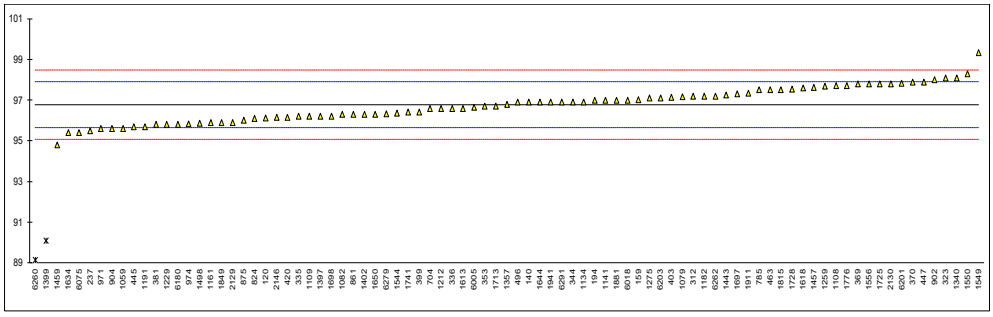


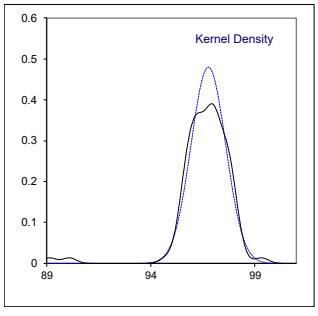
Determination of ASVP on sample #19201; results in kPa

lab	method	value	mark	z(targ)	remarks
120	EN13016-1	96.12		-1.16	
140	D5191	96.9		0.22	
159	D5191	97.0092		0.42	
171		-----		-----	
194	D5191	97.0		0.40	
225		-----		-----	
237	D5191	95.5		-2.26	
238		-----		-----	
311		-----		-----	
312	EN13016-1	97.2		0.76	
323	EN13016-1	98.1		2.35	
333		-----		-----	
334		-----		-----	
335	EN13016-1	96.2		-1.02	
336	EN13016-1	96.6		-0.31	
337		-----		-----	
338		-----		-----	
343		-----		-----	
344	EN13016-1	96.91		0.24	
353	D5191	96.7		-0.13	
369	EN13016-1	97.8		1.82	
370	EN13016-1	97.9		2.00	
371		-----		-----	
381	EN13016-1	95.8		-1.72	
391		-----		-----	
399	EN13016-1	96.41		-0.64	
403	EN13016-1	97.15		0.67	
420	EN13016-1	96.16		-1.09	
440		-----		-----	
444		-----		-----	
445	EN13016-1	95.7		-1.90	
447	D5191	97.9		2.00	
453		-----		-----	
463	EN13016-1	97.5	C	1.29	first reported 101.02
468		-----		-----	
485		-----		-----	
496	EN13016-1	96.9		0.22	
631		-----		-----	
633		-----		-----	
704	EN13016-1	96.58		-0.34	
785	EN13016-1	97.5		1.29	
798		-----		-----	
824	D5191	96.1		-1.19	
861	D5191	96.3		-0.84	
875	D5191	96.0		-1.37	
902	EN13016-1	98.0		2.17	
904	EN13016-1	95.6		-2.08	
971	EN13016-1	95.60		-2.08	
974	D5191	95.83		-1.67	
1006		-----		-----	
1011		-----		-----	
1033		-----		-----	
1059	EN13016-1	95.6		-2.08	
1079	EN13016-1	97.16	C	0.69	first reported 91.16
1082	EN13016-1	96.3		-0.84	
1099		-----		-----	
1108	EN13016-1	97.70		1.64	
1109	D5191	96.20		-1.02	
1134	EN13016-1	96.91		0.24	
1141	EN13016-1	97.0		0.40	
1161	EN13016-1	95.9		-1.55	
1167		-----		-----	
1182	D5191	97.2		0.76	
1191	EN13016-1	95.7		-1.90	
1194		-----		-----	
1212	EN13016-1	96.6		-0.31	
1229	EN13016-1	95.8		-1.72	
1259	EN13016-1	97.69		1.62	
1275	EN13016-1	97.1		0.58	
1299		-----		-----	
1340	EN13016-1	98.1		2.35	
1357	D5191	96.8		0.05	
1389		-----		-----	
1397	EN13016-1	96.2		-1.02	
1399	D5191	90.1	R(0.01)	-11.83	

lab	method	value	mark	z(targ)	remarks
1402	EN13016-1	96.3		-0.84	
1443	EN13016-1	97.25		0.84	
1457	EN13016-1	97.64		1.54	
1459	EN13016-1	94.8		-3.50	
1498	D5191	95.88		-1.58	
1544	EN13016-1	96.35		-0.75	
1549	EN13016-1	99.333		4.54	
1550	EN13016-1	98.3		2.71	
1556	EN13016-1	97.8		1.82	
1586		-----		-----	
1611		-----		-----	
1613	EN13016-1	96.6		-0.31	
1618	EN13016-1	97.6		1.46	
1631		-----		-----	
1634	EN13016-1	95.4		-2.43	
1644	EN13016-1	96.9		0.22	
1650	EN13016-1	96.3		-0.84	
1676		-----		-----	
1697	EN13016-1	97.3		0.93	
1698	EN13016-1	96.2	C	-1.02	first reported 89.1
1705		-----		-----	
1713	EN13016-1	96.7		-0.13	
1724		-----		-----	
1725	EN13016-1	97.8		1.82	
1728	EN13016-1	97.55		1.38	
1730		-----		-----	
1741	EN13016-1	96.40		-0.66	
1776	EN13016-1	97.7		1.64	
1815	EN13016-1	97.50		1.29	
1833		-----		-----	
1849	EN13016-1	95.9		-1.55	
1881	EN13016-1	97.0		0.40	
1911	EN13016-1	97.35		1.02	
1941	EN13016-1	96.9		0.22	
1953		-----		-----	
1968		-----		-----	
2129	EN13016-1	95.90		-1.55	
2130	D5191	97.8		1.82	
2146	EN13016-1	96.15		-1.10	
6005	EN13016-1	96.65		-0.22	
6018	EN13016-1	97.0		0.40	
6028		-----		-----	
6034		-----		-----	
6054		-----		-----	
6075	EN13016-1	95.40		-2.43	
6142		-----		-----	
6180	D5191	95.8		-1.72	
6201	EN13016-1	97.83		1.87	
6203	EN13016-1	97.1		0.58	
6238		-----		-----	
6260	GB/T8017	89.13	R(0.01)	-13.55	
6262	D5191	97.2		0.76	
6279	EN13016-1	96.32		-0.80	
6291	EN13016-1	96.9		0.22	

			without ASTM D5191, see §4.1:
	normality	OK	OK
	n	85	68
	outliers	2	1
	mean (n)	96.773	96.818
	st.dev. (n)	0.8312	0.8571
	R(calc.)	2.327	2.400
	st.dev.(EN13016-1:18)	0.5643	0.5643
	R(EN13016-1:18)	1.58	1.58



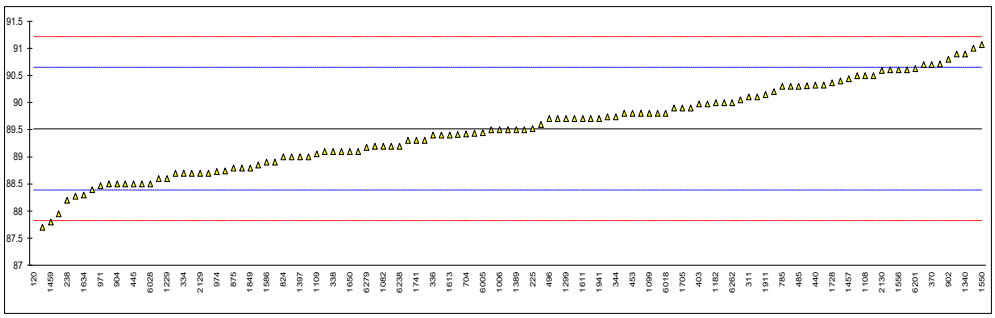


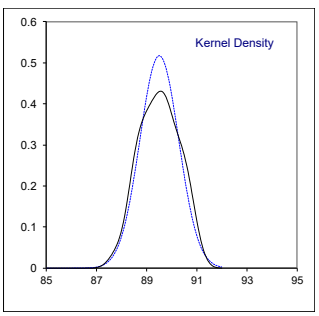
Determination of DVPE (acc. to EN13016-1) on sample #19201; results in kPa

lab	method	value	mark	z(targ)	remarks
120	EN13016-1	66.67	R(0.01),E	-40.49	iis calculated for DVPE 88.98
140	D5191	89.7		0.32	
159	D5191	90.3213		1.42	
171	D5191	89.43		-0.16	
194	D5191	89.8		0.50	
225	D5191	89.52		0.00	
237	D5191	88.4		-1.98	
238	D5191	88.2		-2.34	
311	D5191	90.1		1.03	
312	EN13016-1	90.0		0.85	
323	EN13016-1	90.9		2.45	
333	EN13016-1	87.7		-3.22	
334	EN13016-1	88.7		-1.45	
335	EN13016-1	89.0		-0.92	
336	EN13016-1	89.4		-0.21	
337	EN13016-1	89.2		-0.56	
338	EN13016-1	89.1		-0.74	
343	EN13016-1	91		2.63	
344	EN13016-1	89.74		0.39	
353	D5191	89.5		-0.03	
369	EN13016-1	90.6		1.92	
370	EN13016-1	90.7		2.09	
371		-----		-----	
381	EN13016-1	88.7		-1.45	
391	EN13016-1	88.6		-1.63	
399	EN13016-1	89.41		-0.19	
403	EN13016-1	89.97		0.80	
420	EN13016-1	89.3		-0.39	
440	D5191	90.32		1.42	
444	D5191	88.85		-1.18	
445	EN13016-1	88.5		-1.80	
447	D5191	90.7		2.09	
453	IP394	89.8		0.50	
463	EN13016-1	90.3	C	1.39	first reported 93.7
468		-----		-----	
485	EN13016-1	90.3		1.39	
496	EN13016-1	89.7		0.32	
631		-----		-----	
633		-----		-----	
704	EN13016-1	89.42		-0.17	
785	EN13016-1	90.3		1.39	
798		-----		-----	
824	D5191	89.0		-0.92	
861	D5191	89.1		-0.74	
875	D5191	88.8		-1.27	
902	EN13016-1	90.8		2.27	
904	EN13016-1	88.5		-1.80	
971	EN13016-1	88.47		-1.86	
974	D5191	88.73		-1.40	
1006	D5191	89.5		-0.03	
1011		-----		-----	
1033		-----		-----	
1059	EN13016-1	88.5		-1.80	
1079	EN13016-1	89.98		0.82	
1082	EN13016-1	89.2		-0.56	
1099	EN13016-1	89.8		0.50	
1108	EN13016-1	90.50		1.74	
1109	D5191	89.05		-0.83	
1134	EN13016-1	89.73815		0.39	
1141	EN13016-1	89.8		0.50	
1161	EN13016-1	88.8		-1.27	
1167		-----		-----	
1182	D5191	90		0.85	
1191	EN13016-1	88.5		-1.80	
1194	EN13016-1	89.4		-0.21	
1212	EN13016-1	89.5		-0.03	
1229	EN13016-1	88.6		-1.63	
1259	EN13016-1	90.49		1.72	
1275	EN13016-1	89.9		0.68	
1299	D5191	89.7		0.32	
1340	EN13016-1	90.9		2.45	
1357	D5191	89.7		0.32	
1389	EN13016-1	89.5		-0.03	
1397	EN13016-1	89.0		-0.92	
1399		-----		-----	

lab	method	value	mark	z(targ)	remarks
1402	EN13016-1	89.1		-0.74	
1443	EN13016-1	90.05		0.94	
1457	EN13016-1	90.44		1.63	
1459	EN13016-1	87.8		-3.04	
1498	D5191	88.74		-1.38	
1544	EN13016-1	89.20		-0.56	
1549	EN13016-1	90.716	C,E	2.12	first reported 92.033 / iis calculated for DVPE 92.08
1550	EN13016-1	91.066		2.74	
1556	EN13016-1	90.6		1.92	
1586	EN13016-1	88.9		-1.10	
1611	EN13016-1	89.7		0.32	
1613	EN13016-1	89.4		-0.21	
1618	EN13016-1	90.4		1.56	
1631		-----		-----	
1634	EN13016-1	88.3		-2.16	
1644	EN13016-1	89.7		0.32	
1650	EN13016-1	89.1		-0.74	
1676	EN13016-1	87.950		-2.78	
1697	EN13016-1	90.1		1.03	
1698	EN13016-1	89.1	C	-0.74	first reported 96.2
1705	EN13016-1	89.9		0.68	
1713	EN13016-1	89.5		-0.03	
1724	EN13016-1	89.6		0.15	
1725	EN13016-1	90.6		1.92	
1728	EN13016-1	90.36		1.49	
1730	EN13016-1	88.5		-1.80	
1741	EN13016-1	89.3		-0.39	
1776	EN13016-1	90.5		1.74	
1815	EN13016-1	90.31		1.40	
1833	EN13016-1	88.7		-1.45	
1849	EN13016-1	88.8		-1.27	
1881	EN13016-1	89.8		0.50	
1911	EN13016-1	90.15		1.12	
1941	EN13016-1	89.7		0.32	
1953	EN13016-1	88.9		-1.10	
1968		-----		-----	
2129	EN13016-1	88.70		-1.45	
2130	D5191	90.597		1.91	
2146	EN13016-1	89.0		-0.92	
6005	EN13016-1	89.45		-0.12	
6018	EN13016-1	89.8		0.50	
6028	EN13016-1	88.5		-1.80	
6034		-----		-----	
6054		-----		-----	
6075	EN13016-1	88.28		-2.19	
6142	EN13016-1	89.3		-0.39	
6180	D5191	88.7		-1.45	
6201	EN13016-1	90.63		1.97	
6203	EN13016-1	89.9		0.68	
6238	EN13016-1	89.2		-0.56	
6260		-----		-----	
6262	D5191	90.0		0.85	
6279	EN13016-1	89.17		-0.62	
6291	EN13016-1	90.2		1.21	

normality	OK
n	114
outliers	1
mean (n)	89.518
st.dev. (n)	0.7718
R(calc.)	2.161
st.dev.(EN13016-1:18)	0.5643
R(EN13016-1:18)	1.58



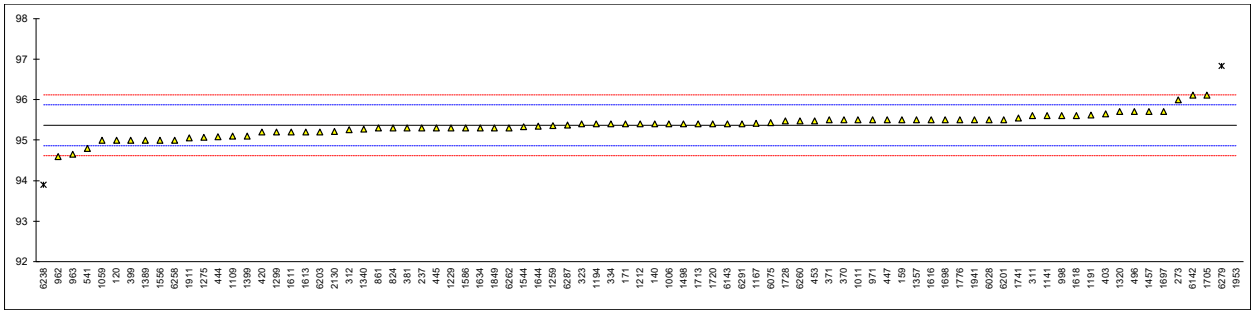


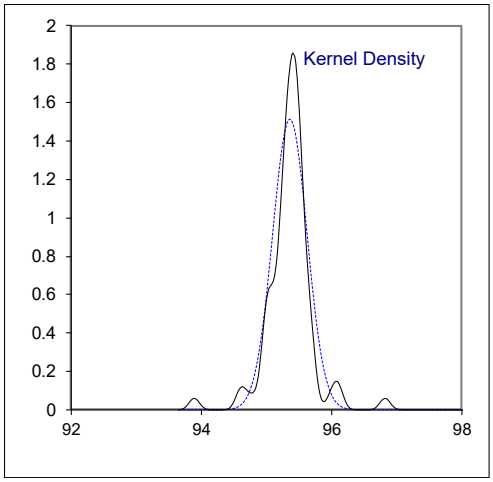
Determination of RON on sample #19202;

lab	method	value	mark	z(targ)	remarks
120	D2699	95.0		-1.47	
140	D2699	95.4		0.13	
159	D2699	95.5		0.53	
171	D2699	95.4		0.13	
237	D2699	95.3		-0.27	
273	D2699	96.0		2.53	
311	ISO5164	95.6		0.93	
312	ISO5164	95.26		-0.43	
323	ISO5164	95.4		0.13	
334	ISO5164	95.4		0.13	
370	ISO5164	95.5		0.53	
371	ISO5164	95.5		0.53	
381	ISO5164	95.3		-0.27	
399	ISO5164	95		-1.47	
403	ISO5164	95.65		1.13	
420	ISO5164	95.2		-0.67	
444	D2699	95.09		-1.11	
445	ISO5164	95.3		-0.27	
447	D2699	95.5		0.53	
453	D2699	95.48		0.45	
496	ISO5164	95.7		1.33	
541	D2699	94.8		-2.27	
631		-----		-----	
824	D2699	95.3		-0.27	
861	D2699	95.3		-0.27	
962	D2699	94.6		-3.07	
963	D2699	94.65		-2.87	
971	D2699	95.5		0.53	
998	GOST8226	95.6		0.93	
1006	D2699	95.4		0.13	
1011	ISO5164	95.5		0.53	
1059	ISO5164	95.0		-1.47	
1082		-----		-----	
1109	D2699	95.1		-1.07	
1141	In house	95.6		0.93	
1161		-----		-----	
1167	ISO5164	95.42		0.21	
1191	ISO5164	95.62		1.01	
1194	D2699	95.4		0.13	
1212	ISO5164	95.4		0.13	
1229	ISO5164	95.3		-0.27	
1259	ISO5164	95.36		-0.03	
1275	IP237	95.07		-1.19	
1299	D2699	95.2		-0.67	
1320	ISO5164	95.7		1.33	
1340	ISO5164	95.27		-0.39	
1357	D2699	95.5		0.53	
1389	D2699	95.0		-1.47	
1399	D2699	95.1		-1.07	
1457	ISO5164	95.7		1.33	
1498	D2699	95.4		0.13	
1544	ISO5164	95.33		-0.15	
1556	ISO5164	95.0		-1.47	
1586	D2699	95.3		-0.27	
1611	ISO5164	95.2		-0.67	
1613	D2699	95.2		-0.67	
1616	D2699	95.5		0.53	
1618	ISO5164	95.6		0.93	
1634		95.3		-0.27	
1644	ISO5164	95.34		-0.11	
1650		-----		-----	
1697	PN-C-04112	95.7		1.33	
1698	PN-C-04112	95.5		0.53	
1705	PN-C-04112	96.11		2.97	
1713	ISO5164	95.4		0.13	
1720	D2699	95.4		0.13	
1728	D2699	95.47		0.41	
1741	ISO5164	95.55		0.73	
1776	ISO5164	95.5		0.53	
1849	ISO5164	95.3		-0.27	
1911	ISO5164	95.06		-1.23	
1941	ISO5164	95.5		0.53	
1953		103.8	R(0.01)	33.73	
2130	D2699	95.21		-0.63	
6028	ISO5164	95.5		0.53	
6054		-----		-----	

lab	method	value	mark	z(targ)	remarks
6075	ISO5164	95.43		0.25	
6142	ISO5164	96.105		2.95	
6143	D2699	95.4		0.13	
6201	ISO5164	95.5		0.53	
6203	ISO5164	95.2		-0.67	
6238	ISO5164	93.9	R(0.01)	-5.87	
6258	D2699	95.0		-1.47	
6260	GB/T5487	95.475		0.43	
6262	D2699	95.3		-0.27	
6279	ISO5164	96.83	R(0.01)	5.85	
6287	GB/T5487	95.375		0.03	
6291	D2699	95.4		0.13	

normality	suspect
n	80
outliers	3
mean (n)	95.37
st.dev. (n)	0.264
R(calc.)	0.74
st.dev.(ISO5164:14)	0.250
R(ISO5164:14)	0.7



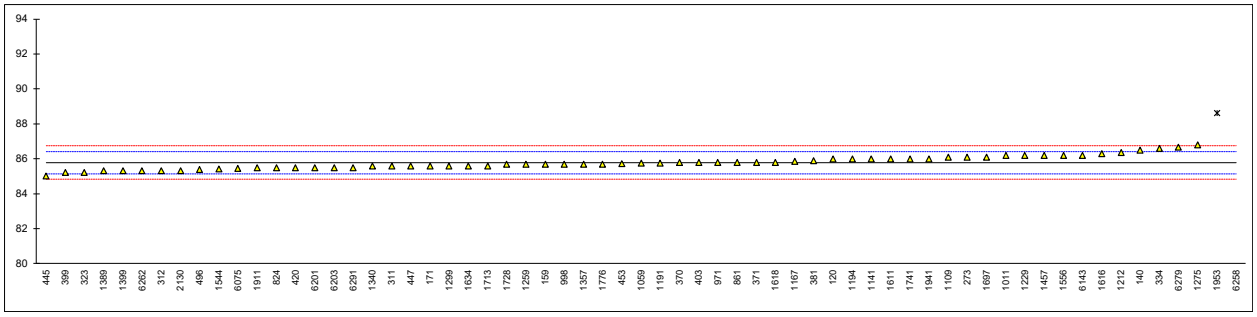


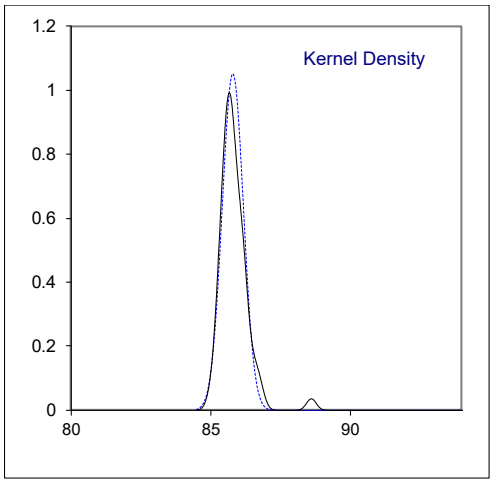
Determination of MON on sample #19202;

lab	method	value	mark	z(targ)	remarks
120	D2700	86.0		0.67	
140	D2700	86.5		2.23	
159	D2700	85.7		-0.26	
171	D2700	85.6		-0.57	
237		-----		-----	
273	D2700	86.1		0.98	
311	ISO5163	85.6		-0.57	
312	ISO5163	85.32		-1.44	
323	ISO5163	85.2		-1.82	
334	ISO5163	86.6		2.54	
370	ISO5163	85.8		0.05	
371	ISO5163	85.8		0.05	
381	ISO5163	85.9		0.36	
399	ISO5163	85.2		-1.82	
403	ISO5163	85.8		0.05	
420	ISO5163	85.5		-0.88	
444		-----		-----	
445	ISO5163	85.0		-2.44	
447	D2700	85.6		-0.57	
453	D2700	85.71		-0.23	
496	ISO5163	85.4		-1.20	
541		-----		-----	
631		-----		-----	
824	D2700	85.5		-0.88	
861	D2700	85.8		0.05	
962		-----		-----	
963		-----		-----	
971	D2700	85.8		0.05	
998	GOST511	85.7		-0.26	
1006		-----		-----	
1011	ISO5163	86.2		1.29	
1059	ISO5163	85.74		-0.14	
1082		-----		-----	
1109	D2700	86.1		0.98	
1141	In house	86.0		0.67	
1161		-----		-----	
1167	ISO5163	85.86		0.24	
1191	ISO5163	85.74		-0.14	
1194	D2700	86		0.67	
1212	ISO5163	86.35		1.76	
1229	ISO5163	86.2		1.29	
1259	ISO5163	85.69		-0.29	
1275	IP236	86.8		3.16	
1299	D2700	85.6		-0.57	
1320		-----		-----	
1340	ISO5163	85.58		-0.64	
1357	D2700	85.7		-0.26	
1389	D2700	85.3		-1.51	
1399	D2700	85.3		-1.51	
1457	ISO5163	86.2		1.29	
1498		-----		-----	
1544	ISO5163	85.43		-1.10	
1556	ISO5163	86.2		1.29	
1586		-----		-----	
1611	ISO5163	86.0		0.67	
1613		-----		-----	
1616	D2700	86.3		1.60	
1618	ISO5163	85.8		0.05	
1634		85.6		-0.57	
1644		-----		-----	
1650		-----		-----	
1697	PN-C-04033	86.1		0.98	
1698		-----		-----	
1705		-----		-----	
1713	ISO5163	85.6		-0.57	
1720		-----		-----	
1728	D2700	85.68		-0.32	
1741	ISO5163	86.00		0.67	
1776	ISO5163	85.7		-0.26	
1849		-----		-----	
1911	ISO5163	85.48		-0.95	
1941	ISO5163	86.0		0.67	
1953		88.6	R(0.01)	8.76	
2130	D2700	85.33		-1.41	
6028		-----		-----	
6054		-----		-----	

lab	method	value	mark	z(targ)	remarks
6075	ISO5163	85.46		-1.01	
6142		-----		-----	
6143	D2700	86.2		1.29	
6201	ISO5163	85.5		-0.88	
6203	ISO5163	85.5		-0.88	
6238		-----		-----	
6258	D2700	95.9	R(0.01)	31.47	
6260		-----		-----	
6262	D2700	85.3		-1.51	
6279	ISO5163	86.66		2.72	
6287		-----		-----	
6291	D2700	85.5		-0.88	

normality	OK
n	61
outliers	2
mean (n)	85.78
st.dev. (n)	0.379
R(calc.)	1.06
st.dev.(ISO5163:14)	0.321
R(ISO5163:14)	0.9





APPENDIX 2: Determination of Other Oxygenates on sample #19200; results in %V/V

lab	method	MeOH	i-PrOH	i-BuOH	t-buOH	DIPE	TAME	Sum of Other Oxygenates
120	D5599	0.01	0.00	0.00	0.00	0.00	0.00	-----
140		-----	-----	-----	-----	-----	-----	-----
159	D5599	0.04	0.00	0.00	0.00	0.00	0.00	0.00
171	ISO22854-A	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.03
194		-----	-----	-----	-----	-----	-----	-----
225		-----	-----	-----	-----	-----	-----	-----
237		-----	-----	-----	-----	-----	-----	-----
238		-----	-----	-----	-----	-----	-----	-----
273		-----	-----	-----	-----	-----	-----	-----
311	ISO22854	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01
312	ISO22854-A	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.1
323	ISO22854-A	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
333		-----	-----	-----	-----	-----	-----	-----
334	ISO22854-A	0	0	0	0	0.02	0	8.77
335		-----	-----	-----	-----	-----	-----	-----
336		-----	-----	-----	-----	-----	-----	-----
337		-----	-----	-----	-----	-----	-----	-----
338		-----	-----	-----	-----	-----	-----	-----
343	EN13132	<0.2	<0.2	<0.2	<0.2	-----	<0.2	<0.2
344		-----	-----	-----	-----	-----	-----	-----
352		-----	-----	-----	-----	-----	-----	-----
353		-----	-----	-----	-----	-----	-----	-----
369	EN13132	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
370		-----	-----	-----	-----	-----	-----	-----
371		-----	-----	-----	-----	-----	-----	-----
381	EN13132	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
391		-----	-----	-----	-----	-----	-----	-----
399		-----	-----	-----	-----	-----	-----	-----
403		0.03	-----	-----	-----	-----	0.02	-----
404		-----	-----	-----	-----	-----	<0,1	-----
420	ISO22854-A	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
431		-----	-----	-----	-----	-----	-----	-----
440		-----	-----	-----	-----	-----	-----	-----
444		-----	-----	-----	-----	-----	-----	-----
445	ISO22854-A	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
447	IP466	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
453		-----	-----	-----	-----	-----	-----	-----
463	EN13132	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-----
468		-----	-----	-----	-----	-----	-----	-----
485		-----	-----	-----	-----	-----	-----	-----
496	ISO22854-A	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
631		-----	-----	-----	-----	-----	-----	-----
633		-----	-----	-----	-----	-----	-----	-----
704	D4815	N/D	N/D	N/D	N/D	N/D	N/D	N/D
732		-----	-----	-----	-----	-----	-----	-----
785		-----	-----	-----	-----	-----	-----	-----
798		-----	-----	-----	-----	-----	-----	-----
824	D4815	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-----
861	D4815	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
875		-----	-----	-----	-----	-----	-----	-----
902		-----	-----	-----	-----	-----	-----	-----
904	D4815	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
912		-----	-----	-----	-----	-----	-----	-----
913		-----	-----	-----	-----	-----	-----	-----
971		-----	-----	-----	-----	-----	-----	-----
974	D4815	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	8.50
994	D6729	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-----
998		-----	-----	-----	-----	-----	-----	-----
1006		ND	-----	-----	-----	ND	ND	-----
1011		-----	-----	-----	-----	-----	-----	-----
1026	ISO22854-A	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1033		-----	-----	-----	-----	-----	-----	-----
1059	ISO22854-A	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1079	ISO22854-A	0	0	0	0	0	0	0
1082		-----	-----	-----	-----	-----	-----	-----
1097		-----	-----	-----	-----	-----	-----	-----
1099	EN13132	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
1108		-----	-----	-----	-----	-----	0.02	-----
1109	D6839	0.00	0.00	0.00	0.00	0.01	0.00	0.02
1126		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	9.19
1134	ISO22854-A	0.00	0.00	0.00	0.00	0.00	0.00	8.75
1141		-----	-----	-----	-----	-----	-----	-----
1161	ISO22854-A	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1167	EN13132	<0.2	<0.2	<02	<0.2	-----	-----	<0.2
1191	ISO22854-A	0	0	0	0	-----	0.03	-----

lab	method	MeOH	i-PrOH	i-BuOH	t-buOH	DIPE	TAME	Sum of Other Oxygenates
1194		0	-----	0	-----	0.5	1.1	-----
1199		-----	-----	-----	-----	-----	-----	-----
1205		-----	-----	-----	-----	-----	-----	-----
1212	EN13132	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1227		-----	-----	-----	-----	-----	-----	-----
1229	ISO22854-A	0	0	0	0	-----	0.02	-----
1237		-----	-----	-----	-----	-----	-----	-----
1259	EN13132	-----	<0.2	<0.2	<0.2	<0.2	<0.2	-----
1275		-----	-----	-----	-----	-----	-----	-----
1281		-----	-----	-----	-----	-----	-----	-----
1299	ISO22854-A	<0.8	<0.8	<0.8	<0.8	-----	-----	<0.8
1320		-----	-----	-----	-----	-----	-----	-----
1340		-----	-----	-----	-----	-----	-----	0.0
1357		-----	-----	-----	-----	-----	-----	-----
1389	EN13132	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1397		-----	-----	-----	-----	-----	-----	-----
1399	D4815	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1402	ISO22854-A	0.02	0.00	0.00	0.02	0.01	0.02	8.73
1438		-----	-----	-----	-----	-----	-----	-----
1441	D6839	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-----
1457	ISO22854-A	0	0	0	0	0	0	0
1459		-----	-----	-----	-----	-----	-----	-----
1498		-----	-----	-----	-----	-----	-----	-----
1544	ISO22854-A	0.00	0.00	0.00	0.00	0.00	0.020	0.00
1556	ISO22854-A	0	0	0.02	0	0	0	0
1569		Not detected	Not detected	Not detected	Not detected	-----	-----	-----
1586		-----	-----	-----	-----	-----	-----	-----
1611	ISO22854-A	<0.80	<0.80	<0.80	<0.80	-----	-----	-----
1613	D6839	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1616		-----	-----	-----	<0.20	-----	-----	-----
1618	ISO22854-A	<0.80	<0.80	<0.80	-----	-----	-----	-----
1631		-----	-----	-----	-----	-----	-----	-----
1634		-----	-----	-----	-----	-----	-----	-----
1644	EN13132	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
1650		-----	-----	-----	-----	-----	-----	-----
1676		n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
1697		-----	-----	-----	-----	-----	-----	-----
1698	EN13132	0.0	0.0	0.0	0.0	-----	0.0	0.0
1705	EN13132	0.00	0.00	0.00	0.00	-----	0.00	0.00
1713		-----	-----	-----	-----	-----	-----	-----
1720		-----	-----	-----	-----	-----	-----	-----
1724		-----	-----	-----	-----	-----	-----	8.52
1725		-----	-----	-----	-----	-----	-----	-----
1728		-----	-----	-----	-----	-----	-----	-----
1740		-----	-----	-----	-----	-----	-----	-----
1741		-----	-----	-----	-----	-----	0.02	-----
1742		-----	-----	-----	-----	-----	-----	-----
1776		-----	-----	-----	-----	-----	-----	-----
1833		-----	-----	-----	-----	0.96	-----	-----
1849		-----	-----	-----	-----	-----	-----	-----
1856		<0.2	-----	-----	0.18	-----	-----	-----
1881		-----	-----	-----	-----	-----	-----	-----
1884		-----	-----	-----	-----	-----	-----	-----
1911	ISO22854-A	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80
1941	EN13132	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-----
1953		0	0	0	0	-----	-----	7.63
2129	D6730	0	0	0	0	0	0	0
2130		-----	-----	-----	-----	-----	-----	-----
2146		<0.10	-----	-----	-----	-----	-----	-----
6005		-----	-----	-----	-----	-----	-----	-----
6012		-----	-----	-----	-----	-----	0.9 C	-----
6018		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.04
6028		-----	-----	-----	-----	-----	-----	-----
6034		-----	-----	-----	-----	-----	-----	-----
6054		-----	-----	-----	-----	-----	-----	-----
6068		-----	-----	-----	-----	-----	-----	-----
6075		-----	-----	-----	-----	-----	-----	10.11
6103		0.00	-----	-----	-----	-----	-----	-----
6142		-----	-----	-----	-----	-----	-----	8.92
6143		-----	-----	-----	-----	-----	-----	-----
6163	EN13132	0.02	0.03	0	0.05	-----	-----	0
6180	D4815	0.06	0.11	0.08	0	0.29	0.07	-----
6192		-----	-----	-----	-----	-----	-----	-----
6201	ISO22854-A	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
6203		-----	-----	-----	0.02	-----	0.02	-----

lab	method	MeOH	i-PrOH	i-BuOH	t-buOH	DIPE	TAME	Sum of Other Oxygenates
6238		-----	-----	-----	-----	-----	-----	-----
6249	ISO22854	ND	0.11	ND	ND	ND	ND	-----
6258	EN13132	0.122	0.00	0.00	0.00	-----	0.024	0.00
6260		ND	-----	-----	-----	-----	-----	-----
6262	ISO22854-A	0	0	0	0	0	0	0
6279	ISO22854-A	0	0	0	0	0	0	7.39
6287		-----	-----	-----	-----	-----	-----	-----
6291	ISO22854-A	0.00	0.00	0.02	0.02	0.00	0.00	0.00

Lab 6012 first reported 1.3 for TAME

APPENDIX 3: z-scores distillation

lab	IBP	10% eva	50% eva	90% eva	FBP	E70%V/V	E100%V/V	E150%V/V
120	0.15	-0.03	0.17	-0.48	0.52	-----	-----	-----
140	-1.90	-1.18	-0.49	-0.43	0.20	0.81	0.49	-1.23
159	-0.83	1.03	2.49	2.49	1.62	-----	-----	-----
171	-0.29	0.03	-0.13	-0.28	0.20	0.19	0.62	-0.16
194	0.25	-0.25	-0.06	-0.33	0.39	0.19	0.62	-----
225	1.38	3.10	4.54	6.83	-1.30	-6.55	-4.73	-10.06
237	0.78	1.32	1.35	0.02	0.67	-1.36	-2.18	0.71
238	2.57	1.67	1.71	0.78	1.46	-1.36	-0.27	-0.37
273	0.78	1.03	0.79	2.24	-0.59	-----	-----	-----
311	-0.89	-0.61	-0.13	-0.48	0.20	0.50	-0.02	0.49
312	0.01	-0.75	-0.56	-0.48	0.47	0.92	0.24	0.71
323	0.90	-0.75	-0.63	-0.43	-0.24	0.81	0.62	0.28
333	-1.36	-0.54	-0.70	-0.74	-0.28	-----	-----	-----
334	-1.72	-0.61	-0.70	-0.84	-2.09	0.71	1.25	0.92
335	0.90	-0.04	0.22	-0.13	-0.08	0.19	-0.27	0.28
336	-0.95	-0.11	0.15	-0.13	0.63	0.09	-0.15	-0.37
337	-----	-----	-----	-----	-----	-----	-----	-----
338	-0.77	0.60	0.36	0.22	-0.51	-0.02	0.36	0.28
343	0.90	-1.11	0.36	-----	-1.07	-0.64	1.38	0.28
344	0.78	1.53	2.91	2.49	-1.18	-1.78	-3.33	-3.17
352	-----	-----	-----	-----	-----	-----	-----	-----
353	0.07	-0.39	0.50	0.12	0.55	0.30	-0.27	-0.80
369	1.32	2.17	0.57	0.78	-0.04	-1.26	-0.78	-0.59
370	0.78	-0.54	-1.48	-0.33	-0.36	0.92	1.38	0.49
371	0.60	0.25	-1.98	-0.18	-0.12	1.13	2.15	-0.16
381	1.32	0.03	-1.34	-0.28	-0.51	0.81	2.15	0.06
391	-----	-----	-----	-----	-----	-----	-----	-----
399	3.22	1.03	-0.49	-1.44	-0.04	-2.92	-1.80	-2.31
403	-0.71	-0.68	-0.77	-0.33	0.16	0.71	0.75	-0.16
404	-0.71	-0.11	-0.98	-0.94	-0.32	-0.95	-1.16	-1.02
420	-0.47	0.32	1.78	2.64	0.08	1.44	1.51	1.35
431	2.03	-0.04	1.85	4.31	0.51	2.47	2.02	-0.37
440	1.38	0.39	0.15	-0.23	1.62	-0.43	-0.65	-0.80
444	-0.53	-0.39	-0.77	-0.69	0.43	-----	-----	-----
445	-1.01	0.03	-0.56	-0.84	-0.55	0.30	1.38	0.92
447	-0.53	1.32	-2.75	-1.14	-0.71	-0.12	2.15	0.71
453	-0.17	-0.89	-0.70	-0.69	-1.62	1.13	0.62	0.28
463	0.42	-0.61	-0.13	-0.59	0.99	0.61	0.75	0.49
468	-----	-----	-----	-----	-----	-----	-----	-----
485	0.63	-0.75	-0.45	-0.43	0.49	0.71	0.30	0.17
496	0.19	-0.18	0.29	-0.18	0.12	0.30	-0.02	-0.59
631	-----	-----	-----	-----	-----	-----	-----	-----
633	4.06	2.60	3.62	2.04	-0.40	-----	-----	-----
704	0.78	1.32	1.35	0.78	-0.71	-1.36	-0.91	-0.37
732	1.68	2.03	1.35	0.78	-0.32	-2.92	-0.91	-2.52
785	0.19	0.96	1.35	1.03	0.08	-0.84	-1.55	-2.52
798	-----	-----	-----	-----	-----	-----	-----	-----
824	-1.54	-1.25	-1.13	-0.94	-0.51	1.54	1.38	1.78
861	-0.77	-0.47	-0.06	-0.38	0.04	0.40	0.11	-1.02
875	0.25	0.89	1.71	1.64	0.24	-1.16	-2.05	-2.31
902	-0.59	-0.39	-0.28	-0.53	-0.32	0.30	0.36	0.28
904	1.08	-1.18	-1.62	-0.74	-0.55	1.64	1.38	0.28
912	2.57	2.03	0.64	0.52	-0.91	-2.40	-0.91	-1.45
913	-----	-----	-----	-----	-----	-----	-----	-----
971	0.19	-0.54	-0.35	-0.59	0.20	0.19	0.49	0.28
974	0.13	-0.54	-0.28	0.17	0.99	0.19	0.49	-1.23
994	1.38	2.38	1.35	1.03	-0.32	-1.88	-0.91	-2.52
998	1.68	2.74	0.64	1.53	-0.12	-2.40	-0.91	-2.52
1006	-0.17	0.10	0.01	-0.43	0.04	-----	-----	-----
1011	0.54	-0.25	0.15	-0.48	2.64	0.30	0.11	0.06
1026	-1.18	-0.61	-0.56	-0.38	0.39	0.50	0.87	0.06
1033	-0.83	0.60	2.41	3.15	1.02	-1.99	-2.95	-5.11
1059	-0.35	-1.32	-0.35	-0.43	0.35	1.02	0.62	0.71
1079	-1.18	-0.89	-0.06	-0.43	0.51	0.40	-0.15	0.28
1082	-2.02	-1.11	-0.63	-0.74	0.67	1.02	0.49	1.14
1097	-1.48	0.18	0.43	0.02	0.75	-0.12	-0.53	-0.59
1099	0.63	-0.61	0.43	-0.18	0.19	0.50	-0.15	0.06
1108	-0.23	-1.39	-1.06	-0.74	0.20	1.23	1.13	0.28
1109	-0.23	-0.68	-0.35	-0.38	0.71	0.92	0.24	0.92
1126	-----	-----	-----	-----	-----	-----	-----	-----
1134	-1.06	-0.11	0.01	-0.28	0.31	-0.33	0.49	0.06
1141	0.25	-0.18	-0.70	-0.84	0.12	0.40	0.49	0.92
1161	-0.35	0.03	-0.28	-0.28	-1.30	-1.78	-3.45	-6.62
1167	0.78	-1.53	-1.34	-1.29	-1.97	1.23	0.87	0.71
1191	0.13	-0.82	-0.98	-0.74	0.47	1.13	1.00	0.49

lab	IBP	10% eva	50% eva	90% eva	FBP	E70%V/V	E100%V/V	E150%V/V
1194	-----	-----	-----	-----	-----	-----	-----	-----
1199	-----	-----	-----	-----	-----	-----	-----	-----
1205	-1.12	-0.61	-0.13	-0.18	0.63	0.61	-0.02	0.06
1212	-0.29	-0.89	-0.35	-0.33	1.42	1.02	0.62	-0.16
1227	0.48	0.53	0.08	-1.09	-0.79	0.42	0.71	2.28
1229	-0.41	-1.25	-1.20	-0.89	0.00	1.54	1.13	0.71
1237	0.01	-1.04	-0.91	-0.64	0.08	1.02	1.00	0.06
1259	-1.96	0.96	0.86	0.27	-0.16	-0.84	-0.53	-1.02
1275	-0.95	0.96	1.78	1.69	-1.85	0.50	0.75	0.71
1281	1.32	0.55	0.27	-0.46	0.47	-2.30	1.51	0.28
1299	0.96	-0.82	-1.13	-0.38	0.20	1.23	1.00	0.28
1320	-----	-----	-----	-----	-----	-----	-----	-----
1340	-0.71	-0.32	-1.83	2.70	0.00	-1.36	-1.80	-10.92
1357	0.13	0.32	0.79	0.17	-0.99	-0.33	0.11	-0.16
1389	-----	-----	-----	-----	-----	-----	-----	-----
1397	0.48	0.96	2.41	2.70	-1.07	-1.99	-3.33	-4.68
1399	1.38	-1.25	-1.13	-0.38	0.87	-2.92	-4.47	-9.42
1402	-1.01	-0.54	-0.35	-0.38	0.71	0.50	0.36	0.71
1438	0.13	-0.75	-1.13	-0.74	-1.07	1.02	1.64	0.49
1441	1.56	2.03	-----	0.02	0.08	-----	-----	-----
1457	-1.72	-0.75	-0.49	-0.79	-1.46	0.92	0.62	0.71
1459	-0.47	-1.18	-0.98	-0.84	-1.66	1.33	0.87	0.49
1498	2.09	-0.61	-0.49	-0.18	0.39	0.71	0.36	-1.45
1544	-0.65	0.10	-0.59	-0.43	-0.77	0.61	0.55	-1.02
1556	-0.47	-0.68	-0.49	-0.33	0.67	0.71	0.62	0.06
1569	-1.36	-2.10	-1.76	-1.19	-0.59	1.96	2.91	1.14
1586	-0.65	0.96	1.99	1.79	0.59	-1.78	-2.05	-3.82
1611	-0.65	0.32	-0.13	-0.48	-0.32	-0.12	0.24	0.06
1613	0.48	0.96	0.57	-0.64	0.87	-1.05	0.36	0.06
1616	-1.18	-0.18	-0.35	-0.84	0.51	0.19	0.87	1.14
1618	-0.53	0.67	0.29	-0.18	-0.87	-0.22	0.11	0.49
1631	-----	-----	-----	-----	-----	-----	-----	-----
1634	-0.53	-0.25	0.29	0.07	0.51	-0.33	-0.15	-0.16
1644	0.78	1.03	1.85	1.79	0.55	0.19	0.24	0.28
1650	-1.18	-0.68	-0.35	-0.59	0.20	-1.16	-2.05	-6.19
1676	-----	-----	-----	-----	-----	-----	-----	-----
1697	0.42	-0.25	-0.13	-0.08	0.87	0.40	-0.15	0.06
1698	0.48	-0.04	0.50	-0.28	1.06	-0.02	-0.27	-0.16
1705	0.01	-0.82	-0.56	-0.23	0.51	0.92	0.49	0.71
1713	-0.11	-0.75	-0.42	-0.43	-0.71	0.81	0.36	0.28
1720	0.42	0.25	-0.49	-0.28	-1.54	-----	-----	-----
1724	-0.59	-0.54	-0.56	-0.53	0.39	0.81	0.75	1.14
1725	0.42	-0.47	-0.49	-0.48	-0.47	0.61	0.62	-0.16
1728	0.60	-0.82	-0.42	0.52	0.28	0.92	0.62	-2.31
1740	2.03	0.46	-1.48	-0.84	-1.66	-1.57	-2.18	-4.46
1741	-0.17	-0.75	-0.56	-0.74	-0.24	0.81	0.24	2.00
1742	-0.83	-1.25	-0.84	-0.33	0.79	0.92	0.75	-0.59
1776	-1.01	-0.82	-0.84	-0.69	-0.20	1.13	1.13	0.49
1833	-2.32	-0.54	-0.42	-0.74	0.24	0.61	0.75	0.71
1849	-0.59	-0.61	-0.35	-0.43	0.31	0.61	0.62	0.28
1856	-----	-----	-----	-----	-----	-----	-----	-----
1881	-----	-----	-----	-----	-----	-----	-----	-----
1884	0.07	0.67	-0.35	1.08	0.71	-2.30	-0.53	-0.80
1911	-0.23	-1.43	-1.44	-0.71	-2.29	1.64	1.70	0.92
1941	0.13	-0.11	-0.63	-0.64	0.16	0.61	0.75	1.14
1953	-0.65	-2.96	0.86	1.58	5.44	-----	-----	-----
2129	-1.48	-0.39	-0.42	-0.89	-0.04	0.81	1.00	0.92
2130	-0.41	-0.04	-0.21	-0.43	0.87	0.40	0.62	0.06
2146	0.19	0.18	0.64	0.22	0.63	0.09	-1.55	-0.59
6005	-1.84	1.24	2.06	2.04	-0.71	-1.67	-2.44	-4.25
6012	1.50	1.81	6.38	6.43	1.93	-0.33	-1.55	-2.52
6018	-0.77	1.10	2.56	2.80	-0.24	-1.99	-3.58	-4.68
6028	-----	-----	-----	-----	-----	-----	-----	-----
6034	-----	-----	-----	-----	-----	-----	-----	-----
6054	-----	-----	-----	-----	-----	-----	-----	-----
6068	1.20	-0.18	-0.35	-0.38	-0.16	0.71	0.24	0.06
6075	-0.65	-0.68	-0.13	-0.69	0.39	0.09	0.24	1.14
6103	1.32	1.21	2.45	2.77	0.55	-2.35	-3.01	-4.46
6142	0.10	-0.68	-0.67	-0.91	-0.16	0.76	1.00	0.71
6143	-----	-----	-----	-----	-----	-----	-----	-----
6163	1.68	1.17	3.90	5.67	0.63	-2.71	-2.69	-6.19
6180	1.02	1.96	-0.49	-0.48	-0.28	-2.30	0.87	0.28
6192	3.34	2.67	3.48	5.12	-0.20	-3.13	-4.35	-6.62
6201	-2.02	-0.89	-0.49	-0.59	0.43	0.92	0.62	0.49
6203	-0.77	-0.11	-0.42	-0.64	-0.87	0.50	0.36	0.28

lab	IBP	10% eva	50% eva	90% eva	FBP	E70%V/V	E100%V/V	E150%V/V
6238	-1.36	-0.11	0.15	-0.74	-0.51	-----	-----	-----
6249	-----	-----	-----	-----	-----	-----	-----	-----
6258	-0.47	-0.11	-0.28	-0.08	0.39	0.30	-0.27	-0.37
6260	1.50	-0.04	-0.35	0.12	-0.95	3.61	7.75	1.35
6262	-0.89	0.10	0.08	-0.13	-0.08	0.19	-0.27	0.06
6279	0.42	1.74	1.74	2.59	-0.15	-1.16	-2.50	-3.60
6287	-----	-----	-----	-----	-----	-----	-----	-----
6291	-1.12	0.18	0.22	-0.13	-0.36	0.09	-0.02	0.92

APPENDIX 4

Number of participants per country

1 lab in	AFGHANISTAN
1 lab in	ARGENTINA
1 lab in	AUSTRALIA
2 labs in	AUSTRIA
1 lab in	AZERBAIJAN
4 labs in	BELGIUM
3 labs in	BOSNIA and HERZEGOVINA
4 labs in	BULGARIA
1 lab in	CHILE
2 labs in	CHINA, People's Republic
1 lab in	CONGO Brazzaville
2 labs in	COTE D'IVOIRE
3 labs in	CROATIA
1 lab in	CYPRUS
1 lab in	CZECH REPUBLIC
2 labs in	ESTONIA
5 labs in	FINLAND
8 labs in	FRANCE
1 lab in	GEORGIA
1 lab in	GERMANY
6 labs in	GREECE
1 lab in	HONG KONG
2 labs in	INDIA
1 lab in	IRAQ
2 labs in	IRELAND
1 lab in	ISRAEL
2 labs in	ITALY
1 lab in	JORDAN
1 lab in	KAZAKHSTAN
2 labs in	LATVIA
3 labs in	LITHUANIA
1 lab in	MACEDONIA
1 lab in	MALTA
1 lab in	MARTINIQUE
1 lab in	MOROCCO
7 labs in	NETHERLANDS
2 labs in	NIGERIA
1 lab in	NORTH MACEDONIA
1 lab in	OMAN
2 labs in	P.R. of CHINA
2 labs in	PHILIPPINES
14 labs in	POLAND
5 labs in	PORTUGAL
1 lab in	QATAR
4 labs in	ROMANIA
3 labs in	RUSSIAN FEDERATION
2 labs in	SAUDI ARABIA
4 labs in	SERBIA
1 lab in	SLOVAKIA
2 labs in	SLOVENIA
2 labs in	SOUTH AFRICA
1 lab in	SOUTH KOREA
6 labs in	SPAIN
1 lab in	SUDAN
5 labs in	SWEDEN
1 lab in	TAIWAN
1 lab in	TUNISIA
9 labs in	TURKEY
1 lab in	UKRAINE
2 labs in	UNITED ARAB EMIRATES
12 labs in	UNITED KINGDOM
5 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	= possibly an error in calculations
W	= test result withdrawn on request of participant
ex	= test result excluded from statistical evaluation
n.a.	= not applicable
n.e.	= not evaluated
n.d.	= not detected
fr.	= first reported
f+?	= possibly false positive test result?
f-?	= possibly false negative test result?
SDS	= Safety Data Sheet

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