Results of Proficiency Test
Gasoline (EN specification)
October 2017

Organised by: Institute for Interlaboratory Studies (iis)
Spijkenisse, the Netherlands

Author: ing. R.J. Starink
Correctors: dr. R.G. Visser & ing. A.S. Noordman-de Neef
Report: iis17B04EN

December 2017

--- empty page ---

CONTENTS

1 INTRODUCTION

Since 1995, the Institute for Interlaboratory Studies (iis) organizes every year proficiency tests for Gasoline. During the annual proficiency testing program 2017/2018, it was decided to continue the proficiency test for the analysis of Gasoline in accordance with the latest applicable version of EN228 specification. The interlaboratory study on Gasoline was extended with PTs for the determination of RON/MON and Dry Vapour Pressure Equivalent (DVPE).

In the main PT 146 laboratories in 61 different countries registered for participation. In the PT for RON/MON, 83 laboratories in 51 different countries registered for participation and in the PT on Dry Vapour Pressure Equivalent, 124 laboratories in 50 different countries registered for participation. In total 152 laboratories (62 countries) registered for the three PTs, see appendix 3 for the number of participants per country. In this report, the results of the 2017 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 organiser of this proficiency test (PT). Sample analyses for fit-for-use and homogeneity testing were subcontracted to an ISO/IEC 17025 accredited laboratory. In this proficiency test the participants received depending on the registration; 1 litre bottle (labelled #17200) containing regular Gasoline for the main round and/or 1 litre bottle (± 750 mL filled) with regular Gasoline (labelled #17201) for the DVPE round and/or 2 x 1 litre bottle (labelled #17202), with regular Gasoline, 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/IEC 17043:2010 (R007), since January 2000, by the Dutch Accreditation Council (Raad voor Accreditatie). This PT falls under the accredited scope. The accreditation 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 organisation of this proficiency test was the one as described for proficiency testing in the report 'iis Interlaboratory Studies: Protocol for the Organisation, Statistics and Evaluation' of March 2017 (iis-protocol, version 3.4). 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 MAIN ROUND AND FOR RON/MON

The necessary bulk material of approx. 400 litre of regular Gasoline was purchased from the local market. After homogenization in a mixing vessel, out of this batch, 160 bottles of 1 L amber glass bottles for the main round were filled and labelled #17200 and 200 bottles of 1 L amber glass bottles for the RON/MON round were filled and labelled #17202.
The homogeneity of the subsamples #17200 and #17202 was checked by determination of Density at 15°C in accordance with ASTM D4052 on 10 stratified randomly selected samples.

	Density at 15°C in kg/m^3
Sample -1	728.37
Sample -2	728.21
Sample -3	728.40
Sample -4	728.25
Sample -5	728.39
Sample -6	728.22
Sample -7	728.37
Sample -8	728.28
Sample -9	728.38
Sample -10	728.25

Table 1: homogeneity test results of subsamples #17200 and #17202

From the above test results, the repeatability (r) was calculated and compared with 0.3 times the reproducibility (R) of the reference test method mentioned in EN228 specification in agreement with the procedure of ISO13528, Annex B2 in the next table:

	Density at 15°C in kg/m^3
r (observed)	0.21
reference test method	ISO12185:96
0.3 x R (ref. test method)	0.45

Table 2: evaluation of repeatability of subsamples #17200 and #17202

The calculated repeatability is less than 0.3 times the reproducibility of the reference test method. Therefore, homogeneity of the subsamples of #17200 and #17202 was assumed.

2.4.2 GASOLINE – SAMPLE FOR DVPE

The necessary bulk material of approx. 150 litre of regular Gasoline was purchased from the local market. After homogenization in a mixing vessel, out of this batch, 150 amber glass bottles of 1 L were filled with approx. 750 ml for the DVPE round and labelled #17201
The homogeneity of the subsamples #17201 was checked by determination of DVPE according to ASTM D5191 on 8 stratified randomly selected samples.

	DVPE in kPa
Sample #17201-1	90.4
Sample #17201-2	90.5
Sample #17201-3	90.3
Sample #17201-4	90.4
Sample #17201-5	90.5
Sample #17201-6	90.4
Sample #17201-7	90.8
Sample #17201-8	90.4

Table 3: homogeneity test results of subsamples #17201

From the above test results the repeatability (r) was calculated and compared with 0.3 times the reproducibility (R) of the reference test method mentioned in EN228 in agreement with the procedure of ISO 13528, Annex B2 in the next table:

	DVPE in kPa
r (observed)	0.4
reference test method	EN13016-1:07
0.3 x R (ref. test method)	0.8

Table 4: evaluation of repeatability of subsamples #17201

The calculated repeatability is less than 0.3 times the reproducibility of the reference test method. Therefore, homogeneity of the subsamples of #17201 was assumed.

To each of the participating laboratories (depending on the registration): 1 x 1 litre of sample #17200 for the main round and/or 2 x 1 litre of sample #17202 for RON/MON only and/or 1 x 1 litre (± 750 ml filled) of sample #17201 for DVPE only was sent on September 27, 2017. A SDS was added to the sample package.

2.5 STABILITY OF THE SAMPLES

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

2.6 ANALYSES

The participants were requested to determine on sample #17200: API Gravity, Appearance, Aromatics by FIA and by GC, (%V/V and %M/M), Benzene, Copper Strip Corrosion, Density at 15°C, Distillation at 760 mm Hg, Doctor Test, Existent gum, Lead, Manganese, Olefins by FIA and by GC (%V/V and %M/M), Oxidation Stability, Oxygenates: Methanol, Ethanol, Iso-

Propanol, Iso-Butanol, t-Butanol, Ethers (C5 or more C atoms), DIPE, ETBE, MTBE, TAME, sum of other oxygenates, Oxygen content and Sulphur.
The participants were requested to determine Air Saturated Vapour Pressure (DVPE) and Dry Vapour Pressure Equivalent (DVPE) according to EN13016-1 on sample #17201 and on sample #17202, the participants were requested to determine RON and MON.

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

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

3 RESULTS

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

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

3.1 STATISTICS

The protocol followed in the organisation of this proficiency test was the one as described for proficiency testing in the report 'iis Interlaboratory Studies: Protocol for the Organisation, Statistics and Evaluation' of March 2017 (iis-protocol, version 3.4).
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 ISO 5725 the original test results per determination were submitted to Dixon’s and/or Grubbs' and/or Rosner’s outlier tests. Outliers are marked by D(0.01) for the Dixon’s test, by G(0.01) or DG(0.01) for the Grubbs’ test and by R(0.01) for the Rosner’s test. Stragglers are marked by D(0.05) for the Dixon’s test, by G(0.05) or DG(0.05) for the Grubbs’ test and by R(0.05) for the Rosner’s test. Both outliers and stragglers were not included in the calculations of averages and standard deviations.

For each assigned value, the uncertainty was determined in accordance with ISO13528. Subsequently the calculated uncertainty was evaluated against the respective requirement based on the target reproducibility in accordance with ISO13528. When the uncertainty passed the evaluation, no remarks are made in the report. However, when the uncertainty failed the evaluation it is mentioned in the report and it will have consequences for the evaluation of the test results.

Finally, the reproducibilities were calculated from the standard deviations by multiplying these 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 analysis 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 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. The Kernel Density Graph 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. ISO reproducibilities, the z-scores were calculated using a target standard deviation. This results in an evaluation independent of the variation in this interlaboratory study.
The target standard deviation was calculated from the literature reproducibility by division with 2.8. In case no literature reproducibility was available, other target values were used. In some cases, a reproducibility based on former iis proficiency tests could be used.

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

The z-scores were calculated according to:

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

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

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

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

4 EVALUATION

In this proficiency test, problems were encountered with the despatch of the samples.
Participants in Iraq, Macedonia, Portugal, Russia, Serbia and Turkey received the samples late or not at all due to a number of different reasons.
For the main round, eight participants reported the test results after the final reporting date and five other participants did not report any test results at all.
For the RON/MON round five participants reported the test results after the final reporting date and four other participants did not report any test results at all.
For the DVPE round seven participants reported the test results after the final reporting date and eight other participants did not report any test results at all.
In total, 148 participants (combination of the main, RON/MON and the DVPE rounds) reported in total 2694 numerical test results. Observed were 77 outlying test results, which is 2.9%. In proficiency studies, outlier percentages of 3% - 7.5% are quite normal.

4.1 EVALUATION PER TEST AND PER SAMPLE

In this section, the results are discussed per test and per sample.

In the iis PT reports, 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.

The reference test methods for the analyses of Gasoline were selected according to the scope of the latest version of EN228. In case no precision data was mentioned, the calculated

reproducibility was compared against the estimated requirements based on the Horwitz equation.

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.

Sample #17200 (Main round)

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

Appearance: No problems have been observed with this determination. Eigthy-eight participants agreed on the appearance as Pass (or Clear and Bright).

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

Aromatics by GC: The determination in %V/V was not problematic. Only one statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ISO22854-A:16.

No statistical outliers were observed in the test results reported in %M/M. Regretfully for the determination in %M/M no precision data is available. Therefore, no significant conclusions were drawn.

Benzene: This determination was problematic depending on the test method used. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of EN12177:00 and with the requirements of EN238:96+A1:03 and ASTM D5590:15. However, the calculated reproducibility is not at all in agreement with the strict requirements of ISO22854-a:16.

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

Density at 15°C: This determination was problematic for a number of participants. Six statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with the requirements of ISO12185:96. The test results are not normal distributed and small shoulder at the higher densities of the Kernel Density graph is visible. A possible cause may be that in these cases volatiles did evaporate before the density was determined.

Distillation: The distillation was problematic for two of the eight reported distillation parameters. In total twenty-six statistical outliers were observed.

All calculated reproducibilities after rejection of the statistical outliers are in agreement with the requirements of ISO3405-A:11 (A=automatic), except for 50% and 90% evaporated.
In general, the reproducibility at 50% evaporated should be the smallest based on the theoretical distillation behaviour. This is also expressed by the requirements of ISO3405-A:11. The Kernel Density graph of T/°C at 50% evaporated clearly shows a shoulder at the right side of the curve. The cause may be that a number of participants did report $T_{recovered}$ in stead of $T_{evaporated}$.
This problem in reporting was observed in a previous PT on Gasoline (iis14B01ASTM) in 2014 when an extensive study has been done on the distillation parameters after the finish of the PT.
Another explanation could be that the presence of Ethanol may interfere with the Temperature of 50% evaporated as this parameter is close to the boiling point of Ethanol (78.37°C).

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

Existent Gum: This determination was not problematic. Two statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO6246:17.

Lead: No problems have been observed. All participants, except one, agreed on the absence of Lead (<2.5 mg/L). Therefore, no significant conclusions were drawn.

Manganese No problems have been observed. All participants agreed on the absence of Manganese (<2 mg/L). Therefore, no significant conclusions were drawn.

Olefins by FIA: 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 EN15553:07.

Olefins by GC: The determination in %V/V was not problematic. Only one statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in full agreement with the requirements of ISO22854-A:16. It is remarkably that participants that have used ASTM D6729 or ASTM D6730 reported a significantly lower value.

Two statistical outliers were observed in the test results reported in %M/M. Regretfully, no precision data is available for the determination in %M/M. Therefore, no significant conclusions were drawn.

Oxidation stability: Most participants agreed on an Oxidation Stability >360 minutes. Therefore, no significant conclusions were drawn.

Methanol: This determination was problematic for a number of laboratories at the low level of 0.21%V/V. No statistical outliers were observed, but five test results were excluded (zero is not a real result). However, the calculated reproducibility after rejection of the suspect data is in agreement of ISO22854:16.

Ethanol: This determination was problematic depending on the test method used. Four statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ISO22854:16 and EN13132:00. However, the calculated reproducibility is in agreement with the requirements of ASTM D4815:15b and ASTM D5845:01.

Ethers (C5 and more): This determination was problematic for a number of laboratories. Two statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO22854:16 and EN13132:00.

MTBE: This determination was problematic depending on the test method used. Eight(!) statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO22854:16 and with the requirements of EN13132:00 and ASTM D5845:01, but not with the strict requirements of ASTM D4815:15b.

Other Oxygenates: The concentrations of other oxygenates were all near or below the detection limit of the test method used. Most of the participants reported a “less then” test result. Therefore, no significant conclusions were drawn.

Oxygen content: This determination was problematic for a number of laboartories. Five statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO22854:16 and with the requirements of EN13132:00 and ASTM D4815:15b.

Sulphur: This 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 ISO20846:11 and ASTM D5453:16e1.

Sample #17201

ASVP: 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 EN13016-1:07.

DVPE: The Air Saturated Vapour Pressure (ASVP) can be converted to Dry Vapour Pressure Equivalent (DVPE) according to EN13016-1. This conversion was not problematic. Two statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in

agreement with the requirements of EN13016-1:07. Two calculation errors were noticed.

Sample #17202

RON: The determination was problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in 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 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 target reproducibilities derived from reference test methods and the calculated reproducibilities of samples #17200, #17201, #17202 are compared in the next tables.

Parameter		unit	n	mean	2.8 * sd	R (lit)
API Gravity			61	62.6	0.3	0.3
Appearance			88	Pass	n.a.	n.a.
Aromatics by FIA		%V/V	55	26.5	3.3	3.7
Aromatics by GC		%V/V	71	25.7	1.2	1.3
Aromatics by GC		%M/M	43	31.0	1.2	n.a.
Benzene		%V/V	94	0.82	0.10	0.10
Copper Strip 3 hrs at 50°C			105	1	n.a.	n.a.
Density at 15°C		kg/m^3	132	728.7	0.8	1.5
Distillation	IBP	ºC	131	27.6	5.0	4.7
	10%-evap.	ºC	129	41.1	3.4	3.2
	50%-evap.	ºC	128	79.7	4.6	1.9
	90%-evap.	ºC	125	142.0	5.0	3.8
	FBP	ºC	132	182.3	6.4	6.8
	%vol at 70ºC	%V/V	120	44.9	2.6	2.7
	%vol at 100ºC	%V/V	120	63.1	2.3	2.2
	%vol at 150ºC	%V/V	112	92.7	1.2	1.3
Doctor Test			64	Negative	n.a.	n.a.
Existent gum (washed)		mg/100mL	56	0.5	0.9	2.0
Lead as Pb		mg/L	52	<2.5	n.a.	n.a.
Manganese as Mn		mg/L	42	<2	n.a.	n.a.
Olefins by FIA		%V/V	54	9.6	3.1	3.2
Olefins by GC		%V/V	65	9.7	1.8	1.7
Olefins by GC		%M/M	39	8.9	1.8	n.a.
Oxidation Stability		min	63	>360	n.a.	n.a.
Methanol		%V/V	43	0.21	0.28	0.36
Ethanol		%V/V	80	4.96	0.55	0.48
Ethers C5 or more C atoms		%V/V	48	2.79	0.24	0.42
MTBE		%V/V	74	2.77	0.29	0.42
Oxygen content		%M/M	74	2.47	0.28	0.31
Sulphur		mg/kg	117	3.9	1.7	1.6

Table 5: performance evaluation sample #17200

Parameter	Unit	n	mean	2.8 * sd	R (lit)
ASVP	kPa	78	96.99	2.12	2.61
DVPE acc. to EN13016-1	kPa	114	89.84	2.23	2.53

Table 6: performance evaluation sample #17201

Parameter	unit	n	mean	2.8 * sd	R (lit)
RON		76	95.9	0.9	0.7
MON		61	85.7	1.0	0.9

Table 7: performance evaluation sample #17202

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 2017 WITH PREVIOUS PTS

	October 2017	*October 2016*	*October 2015*	*October 2014*	*October 2013*
Number of rep. participants	148	146	146	128	126
Number of results reported	2694	2570	2836	2945	2425
Statistical outliers	77	54	105	92	74
Percentage outliers	2.9%	2.1%	3.9%	3.1%	3.1%

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 respective reference test methods. The conclusions are given the following table:

Determination	*October 2017*	*October 2016*	*October 2015*	*October 2014*	*October 2013*
API Gravity	+/-	+/-	+/-	+	+/-
Aromatics by FIA	+	-	-	-	-
Aromatics by GC	+/-	+	-	+/-	-
Benzene	+/-	+/-	--	--	--
Density at 15°C	++	+	+	-	--
Distillation	+/-	+/-	+/-	+/-	+
Existent gum (washed)	++	+	+	+	+/-
Lead as Pb	n.e.	n.e.	n.e.	--	(+)
Manganese as Mn	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	+	+/-	+/-	-	-
MTBE	+	+/-	+/-	+/-	--
Oxygen content	+	+	+/-	+/-	+
Sulphur	+/-	+/-	-	-	+/-

Determination	*October 2017*	*October 2016*	*October 2015*	*October 2014*	*October 2013*
ASVP	+	+/-	+	+	-
DVPE acc. to EN13016-1	+	+/-	+	+	-
RON	-	+/-	+/-	+	+/-
MON	+/-	+/-	-	-	-

Table 9: comparison determinations against the reference test methods

* Results between brackets do not meet the application range of the test method.

The following performance categories in above table 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

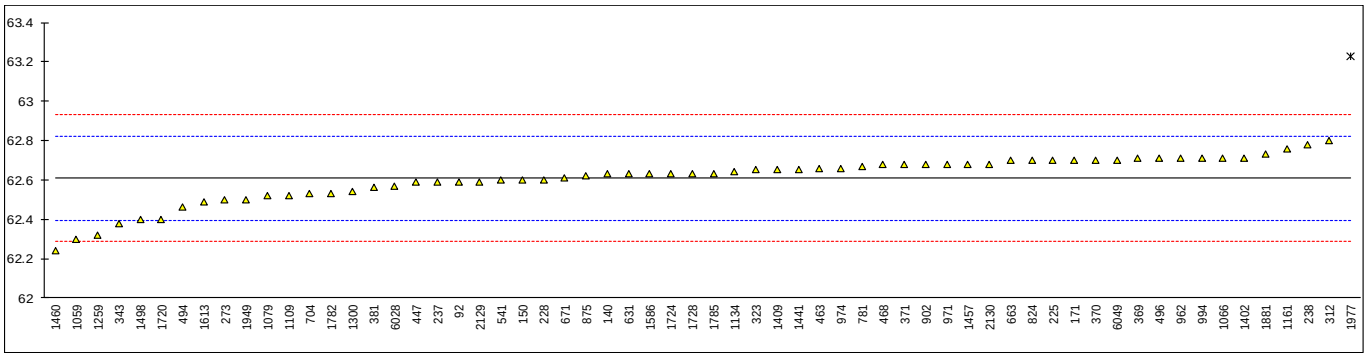
APPENDIX 1;

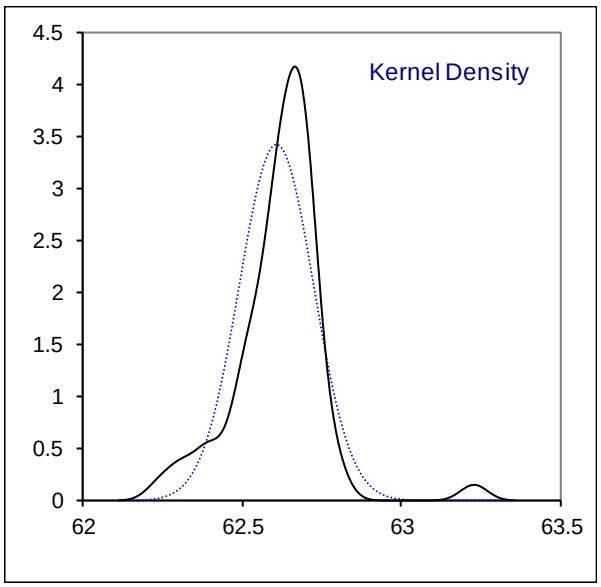
Determination of API Gravity on sample #17200;

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92	D4052	62.59		-0.17	1167		-----		-----
140	D4052	62.63		0.20	1171		-----		-----
150	D4052	62.6		-0.08	1186		-----		-----
171	D4052	62.7		0.85	1191		-----		-----
225	D4052	62.7		0.85	1194		-----		-----
228	D4052	62.60		-0.08	1199		-----		-----
230		-----		-----	1201		-----		-----
237	D4052	62.59		-0.17	1205		-----		-----
238	D4052	62.78		1.60	1229		-----		-----
273	D4052	62.5		-1.01	1237		-----		-----
311		-----		-----	1259	D1298	62.32		-2.69
312	D4052	62.8		1.79	1272		-----		-----
323	ISO12185	62.65		0.39	1299		-----		-----
333		-----		-----	1300	ISO12185	62.54		-0.64
334		-----		-----	1320		-----		-----
335		-----		-----	1389		-----		-----
336		-----		-----	1397		-----		-----
337		-----		-----	1402	D4052	62.71		0.95
338		-----		-----	1409	D1298	62.65		0.39
343	D1298	62.380		-2.13	1441	D4052	62.65		0.39
344		-----		-----	1457	D4052	62.68		0.67
353		-----		-----	1459		-----		-----
369	D4052	62.71		0.95	1460	D4052	62.24		-3.44
370	D4052	62.7		0.85	1468		-----		-----
371	D4052	62.68		0.67	1498	D4052	62.4		-1.95
381	ISO12185	62.56		-0.45	1556		-----		-----
391		-----		-----	1557		-----		-----
399		-----		-----	1569		-----		-----
402		-----		-----	1586	D1298	62.63		0.20
403		-----		-----	1613	D4052	62.49		-1.11
420		-----		-----	1631		-----		-----
431		-----		-----	1634		-----		-----
440		-----		-----	1650		-----		-----
444		-----		-----	1676		-----		-----
445		-----		-----	1689		-----		-----
447	D4052	62.59		-0.17	1710		-----		-----
453		-----		-----	1720	D4052	62.4		-1.95
463	D4052	62.66		0.48	1724	D4052	62.63		0.20
468	D1298	62.68		0.67	1728	D4052	62.63		0.20
485		-----		-----	1740		-----		-----
494	D4052	62.46		-1.39	1741		-----		-----
496	D1298	62.71		0.95	1742		-----		-----
541	D4052	62.60		-0.08	1776		-----		-----
631	D4052	62.63		0.20	1782	D4052	62.53		-0.73
663	D4052	62.7		0.85	1785	D1250	62.63		0.20
671	D4052	62.61		0.01	1807		-----		-----
704	D1298	62.53		-0.73	1810		-----		-----
754		-----		-----	1811		-----		-----
781	D4052	62.67		0.57	1849		-----		-----
782		-----		-----	1881	ISO12185	62.73		1.13
785		-----		-----	1911		-----		-----
798		-----		-----	1936		-----		-----
824	D4052	62.7		0.85	1937		-----		-----
861		-----		-----	1938		-----		-----
875	D4052	62.62		0.11	1948		-----		-----
902	D4052	62.68		0.67	1949	ISO12185	62.500	C	-1.01
962	D4052	62.71		0.95	1953		-----		-----
971	D4052	62.68		0.67	1977	ISO3675	63.23	C,R(0.01)	5.80
974	Calculated	62.66		0.48	1992		-----		-----
994	D1250	62.71		0.95	1995		-----		-----
1006		-----		-----	2129	Conversion	62.59		-0.17
1011		-----		-----	2130	ISO12185	62.681		0.68
1026		-----		-----	2146		-----		-----
1033		-----		-----	6005		-----		-----
1059	D4052	62.30		-2.88	6016		-----		-----
1066	D4052	62.71		0.95	6028	D1298	62.57		-0.36
1079	ISO12185	62.52		-0.83	6034		-----		-----
1082		-----		-----	6049	Calculated	62.702		0.87
1108		-----		-----	6054		-----		-----
1109	D287	62.52		-0.83	6075		-----		-----
1126		-----		-----	6102		-----		-----
1134	D1298	62.64		0.29	6142		-----		-----
1161	D287	62.76		1.41	6143		-----		-----

normality	suspect
n	61
outliers	1
mean (n)	62.609
st.dev. (n)	0.1166
R(calc.)	0.327
st.dev.(D1298:12b)	0.1071
R(D1298:12b)	0.300

Lab 1949: first reported 0.7294
Lab 1977: first reported 63.00





Determination of Appearance on sample #17200;

lab	method	value	mark	z(targ)	lab	method	Value	mark	z(targ)
92	D4176	Pass		-----	1167	Visual	C&B		-----
140		-----		-----	1171		-----		-----
150	D4176	Pass		-----	1186		-----		-----
171	Visual	C&B		-----	1191	D4176	1		-----
225	Visual	C&B		-----	1194		-----		-----
228	Visual	C&B		-----	1199		-----		-----
230	Visual	C&B		-----	1201	Visual	Br&Cl		-----
237	Visual	C&B		-----	1205		-----		-----
238	Visual	C & B		-----	1229	D4176	1		-----
273	Visual	Pass		-----	1237		-----		-----
311		-----		-----	1259		-----		-----
312	Visual	Br&Cl		-----	1272	Visual	C&B		-----
323	EN15769	C&B		-----	1299	Visual	OK		-----
333		-----		-----	1300	D4176	pass		-----
334		-----		-----	1320	D4176	pass		-----
335	Visual	C&B		-----	1389	Visual	C&B		-----
336	Visual	C&B		-----	1397		-----		-----
337		-----		-----	1402	D4176	C & B		-----
338	Visual	C&B		-----	1409		-----		-----
343	Visual	C&B		-----	1441	Visual	light yellow		-----
344	D4176	C&B		-----	1457	Visual	C&B		-----
353	D4176	Pass		-----	1459		-----		-----
369	Visual	C & B		-----	1460	Visual	C&B		-----
370	D4176	C&B		-----	1468	D4176	C&B		-----
371	D4176	Pass		-----	1498		-----		-----
381		-----		-----	1556	Visual	C&B		-----
391	E2680	pass		-----	1557	INH-1200	C&B		-----
399		-----		-----	1569	D4176	PASS		-----
402		-----		-----	1586	Visual	C&B		-----
403		-----		-----	1613	Visual	B&C		-----
420		-----		-----	1631		-----		-----
431		-----		-----	1634		-----		-----
440	Visual	C+B		-----	1650		-----		-----
444	E2680	Pass		-----	1676		-----		-----
445	Visual	C & B		-----	1689		-----		-----
447	Visual	C&B		-----	1710	Visual	C&B		-----
453	D4176	C&B		-----	1720		-----		-----
463	D4176	pass		-----	1724	Visual	C&B		-----
468	D4176	Pass		-----	1728	Visual	clear		-----
485		-----		-----	1740		-----		-----
494	Visual	C&B		-----	1741		-----		-----
496	Visual	c+b		-----	1742		-----		-----
541	D4176	Pass		-----	1776		-----		-----
631	Visual	C&B		-----	1782	D4176	C&B		-----
663	Visual	C&B		-----	1785	Visual	light yellow		-----
671	Visual	C/B		-----	1807		-----		-----
704	Visual	C&B		-----	1810		-----		-----
754	D4176	C&B		-----	1811		-----		-----
781	D4176	Pass		-----	1849		-----		-----
782	D4176	C&B		-----	1881	D4176	pass		-----
785	D4176	C&B		-----	1911	Visual	C&B		-----
798		-----		-----	1936	D4176	B&P		-----
824	Visual	C&B		-----	1937		-----		-----
861		-----		-----	1938		C&B		-----
875	Visual	C&B		-----	1948		-----		-----
902	D4176	Pass		-----	1949	D4176	pass / 1		-----
962	D4176	C&B		-----	1953	D4176	C&B		-----
971	Visual	C&B		-----	1977		-----		-----
974	Visual	C & B		-----	1992		-----		-----
994	D4176	C&B		-----	1995		-----		-----
1006		-----		-----	2129	Visual	C&B		-----
1011		-----		-----	2130	Visual	C & B		-----
1026		C&B		-----	2146		-----		-----
1033	Visual	C&B		-----	6005	Visual	C&B		-----
1059	Visual	C&B		-----	6016		-----		-----
1066		-----		-----	6028		-----		-----
1079	D4176	C&B		-----	6034		-----		-----
1082	D4176	1		-----	6049	D4176	C&B		-----
1108		-----		-----	6054		-----		-----
1109	D4176	Pass		-----	6075		-----		-----
1126		-----		-----	6102		-----		-----
1134	D4176	C&B		-----	6142		-----		-----
1161	D4176	C&B		-----	6143		-----		-----

normality	n.a.
n	88
outliers	n.a.
mean (n)	Pass (Clear&Bright)
st.dev. (n)	n.a.
R(calc.)	n.a.
st.dev.(lit)	n.a.
R(lit)	n.a.

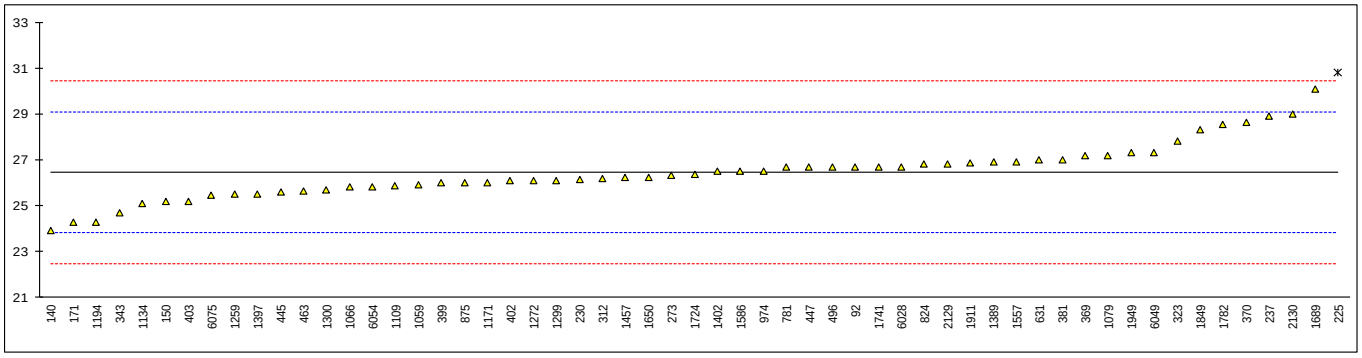
C&B: Clear and Bright

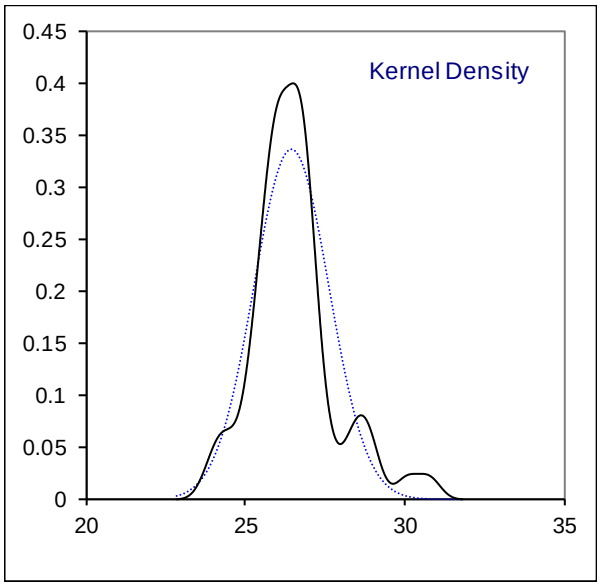
Determination of Aromatics by FIA without oxygenates correction on sample #17200; results in %V/V

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92	D1319	26.7		0.19	1167		-----		-----
140	D1319	23.9		-1.93	1171	D1319Mod.	26.02		-0.33
150	D1319	25.2		-0.95	1186		-----		-----
171	D1319	24.3		-1.63	1191		-----		-----
225	D1319	30.8	R(0.05)	3.29	1194	D1319	24.3		-1.63
228		-----		-----	1199		-----		-----
230	EN15553	26.127		-0.25	1201		-----		-----
237	D1319	28.9		1.85	1205		-----		-----
238		-----		-----	1229		-----		-----
273	D1319	26.3	C	-0.12	1237		-----		-----
311		-----		-----	1259	EN15553	25.486		-0.73
312	EN15553	26.2		-0.19	1272	INH-401	26.1		-0.27
323	EN15553	27.8		1.02	1299	D1319	26.1		-0.27
333		-----		-----	1300	EN15553	25.68		-0.59
334		-----		-----	1320		-----		-----
335		-----		-----	1389	D1319	26.9		0.34
336		-----		-----	1397	EN15553	25.5		-0.72
337		-----		-----	1402	D1319	26.5		0.03
338		-----		-----	1409		-----		-----
343	EN15553	24.7		-1.33	1441		-----		-----
344		-----		-----	1457	D1319	26.22		-0.18
353		-----		-----	1459		-----		-----
369	EN15553	27.2		0.56	1460		-----		-----
370	EN15553	28.63		1.65	1468		-----		-----
371		-----		-----	1498		-----		-----
381	EN15553	27.01		0.42	1556		-----		-----
391		-----		-----	1557	INH-1200	26.9		0.34
399	D1319	26.0		-0.34	1569		-----		-----
402	D1319	26.10		-0.27	1586	D1319	26.5		0.03
403	EN15553	25.2		-0.95	1613		-----		-----
420		-----		-----	1631		-----		-----
431		-----		-----	1634		-----		-----
440		-----		-----	1650	EN15553	26.23		-0.17
444		-----		-----	1676		-----		-----
445	D1319	25.6		-0.65	1689	NB/SH/T0741	30.10	C	2.76
447	D1319	26.7		0.19	1710		-----		-----
453		-----		-----	1720		-----		-----
463	D1319	25.65		-0.61	1724	D1319	26.38		-0.06
468		-----		-----	1728		-----		-----
485		-----		-----	1740		-----		-----
494		-----		-----	1741	D1319/EN15553	26.70		0.19
496	D1319	26.70		0.19	1742		-----		-----
541		-----		-----	1776		-----		-----
631	D1319	26.997		0.41	1782	D1319	28.52		1.56
663		-----		-----	1785		-----		-----
671		-----		-----	1807		-----		-----
704		-----		-----	1810		-----		-----
754		-----		-----	1811		-----		-----
781	D1319	26.69		0.18	1849	EN15553	28.3		1.40
782		-----		-----	1881		-----		-----
785		-----		-----	1911	EN15553	26.87		0.31
798		-----		-----	1936		-----		-----
824	D1319	26.8		0.26	1937		-----		-----
861		-----		-----	1938		-----		-----
875	D1319	26.0		-0.34	1948		-----		-----
902		-----		-----	1949	EN15553	27.3		0.64
962		-----		-----	1953		-----		-----
971		-----		-----	1977		-----		-----
974	D1319	26.52		0.05	1992		-----		-----
994		-----		-----	1995		-----		-----
1006		-----		-----	2129	EN15553	26.8		0.26
1011		-----		-----	2130	EN15553	29.0		1.93
1026		-----		-----	2146		-----		-----
1033		-----		-----	6005		-----		-----
1059	EN15553	25.9		-0.42	6016		-----		-----
1066	D1319	25.8		-0.50	6028	EN15553	26.7		0.19
1079	D1319	27.2		0.56	6034		-----		-----
1082		-----		-----	6049	D1319	27.30		0.64
1108		-----		-----	6054	D1319	25.8182		-0.48
1109	D1319	25.88		-0.44	6075	EN15553	25.47		-0.75
1126		-----		-----	6102		-----		-----
1134	D1319	25.1		-1.03	6142		-----		-----
1161		-----		-----	6143		-----		-----

normality	suspect
n	55
outliers	1
mean (n)	26.46
st.dev. (n)	1.184
R(calc.)	3.31
st.dev.(EN15553:07)	1.321
R(EN15553:07)	3.7

Lab 273: first reported 30.57
Lab1689: first reported 30.43





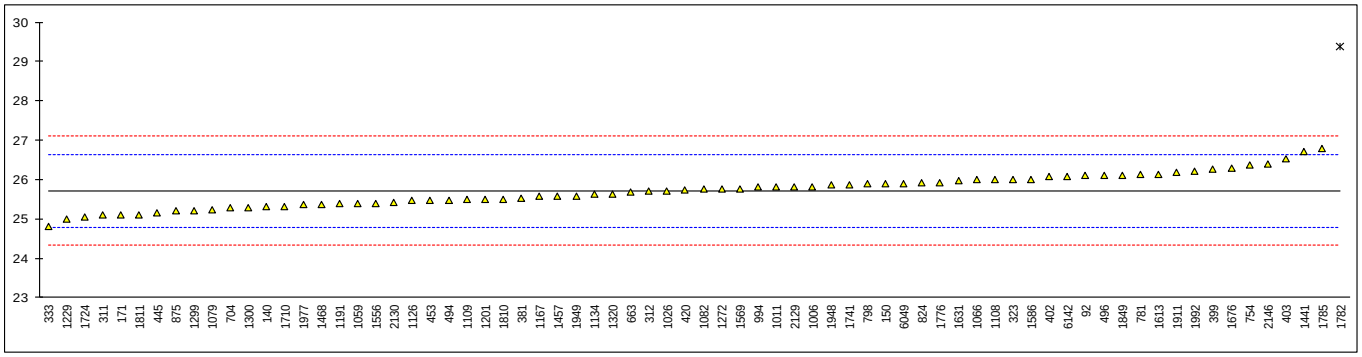
Determination of Aromatics by GC on sample #17200; results in %V/V

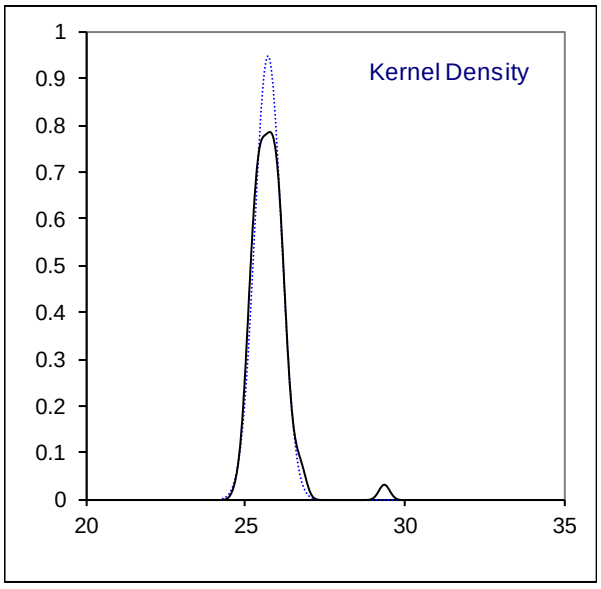
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92	INH-3.0/14.3	26.1		0.83	1167	ISO22854	25.57		-0.32
140	D5769	25.3		-0.90	1171		-----		-----
150	D5769	25.9		0.40	1186		-----		-----
171	D5769	25.1		-1.33	1191	ISO22854	25.39		-0.70
225		-----		-----	1194		-----		-----
228		-----		-----	1199		-----		-----
230		-----		-----	1201	ISO22854	25.5		-0.47
237		-----		-----	1205		-----		-----
238		-----		-----	1229	ISO22854	25.0		-1.55
273		-----		-----	1237		-----		-----
311	ISO22854	25.1		-1.33	1259		-----		-----
312	ISO22854	25.7		-0.03	1272	ISO22854	25.75		0.07
323	ISO22854	26.0		0.61	1299	ISO22854	25.2		-1.11
333	ISO22854	24.8		-1.98	1300	D6730	25.293		-0.91
334		-----		-----	1320	ISO22854	25.64		-0.16
335		-----		-----	1389		-----		-----
336		-----		-----	1397		-----		-----
337		-----		-----	1402		-----		-----
338		-----		-----	1409		-----		-----
343		-----		-----	1441	D6839	26.7		2.13
344		-----		-----	1457	ISO22854	25.58		-0.29
353		-----		-----	1459		-----		-----
369		-----		-----	1460		-----		-----
370		-----		-----	1468	ISO22854	25.37		-0.75
371		-----		-----	1498		-----		-----
381	ISO22854	25.52		-0.42	1556	ISO22854	25.40		-0.68
391		-----		-----	1557		-----		-----
399	ISO22854	26.27		1.20	1569	ISO22854	25.75		0.07
402	ISO22854	26.08		0.79	1586	ISO22854	26.0		0.61
403	ISO22854	26.52		1.74	1613	D6839	26.14		0.92
420	ISO22854	25.73		0.03	1631	ISO22854	25.98		0.57
431		-----		-----	1634		-----		-----
440		-----		-----	1650		-----		-----
444		-----		-----	1676	ISO22854	26.30		1.26
445	ISO22854	25.16		-1.20	1689		-----		-----
447		-----		-----	1710	ISO22854	25.3		-0.90
453	ISO22854	25.47		-0.53	1720		-----		-----
463		-----		-----	1724	ISO22854	25.06		-1.42
468		-----		-----	1728		-----		-----
485		-----		-----	1740		-----		-----
494	ISO22854	25.48		-0.51	1741	ISO22854	25.87		0.33
496	ISO22854	26.10		0.83	1742		-----		-----
541		-----		-----	1776	ISO22854	25.91		0.42
631		-----		-----	1782	D5580	29.38	R(0.01)	7.92
663	D5580	25.675		-0.09	1785	BG/T30519	26.8		2.34
671		-----		-----	1807		-----		-----
704	D5580	25.290		-0.92	1810	ISO22854	25.5		-0.47
754	D6729	26.357		1.39	1811	ISO22854	25.10		-1.33
781	ISO22854	26.13		0.89	1849	ISO22854	26.1		0.83
782		-----		-----	1881		-----		-----
785		-----		-----	1911	ISO22854	26.17		0.98
798	D6730	25.880		0.35	1936		-----		-----
824	D5580	25.91		0.42	1937		-----		-----
861		-----		-----	1938		-----		-----
875	D6729	25.196		-1.12	1948	ISO22854	25.86		0.31
902		-----		-----	1949	ISO22854	25.585		-0.28
962		-----		-----	1953		-----		-----
971		-----		-----	1977	D6730	25.361		-0.77
974		-----		-----	1992	D5580	26.2		1.05
994	D6729	25.8		0.18	1995		-----		-----
1006	D5580	25.81		0.20	2129	D6730	25.8	C	0.18
1011	ISO22854	25.8		0.18	2130	D6730	25.41		-0.66
1026	ISO22854	25.7		-0.03	2146	ISO22854	26.4		1.48
1033		-----		-----	6005		-----		-----
1059	ISO22854	25.4		-0.68	6016		-----		-----
1066	ISO22854	26.0		0.61	6028		-----		-----
1079	ISO22854	25.23		-1.05	6034		-----		-----
1082	ISO22854	25.75		0.07	6049	ISO22854	25.90		0.40
1108	ISO22854	26.0		0.61	6054		-----		-----
1109	D6839	25.50		-0.47	6075		-----		-----
1126	EN14517	25.46		-0.55	6102		-----		-----
1134	ISO22854	25.63		-0.19	6142	ISO22854	26.09	C	0.81
1161		-----		-----	6143		-----		-----

Only ISO22854

normality	OK	OK
n	71	49
outliers	1	0
mean (n)	25.716	25.691
st.dev. (n)	0.4183	0.3944
R(calc.)	1.171	1.104
st.dev.(ISO22854-A:16)	0.4627	0.4621
R(ISO22854-A:16)	1.296	1.294

Lab 2129: first reported 22.2
Lab 6142: first reportee 28.27



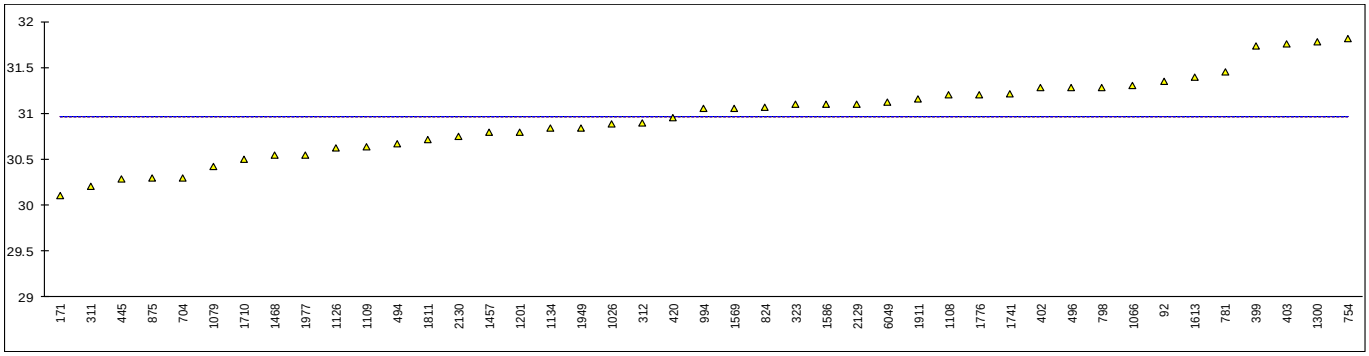


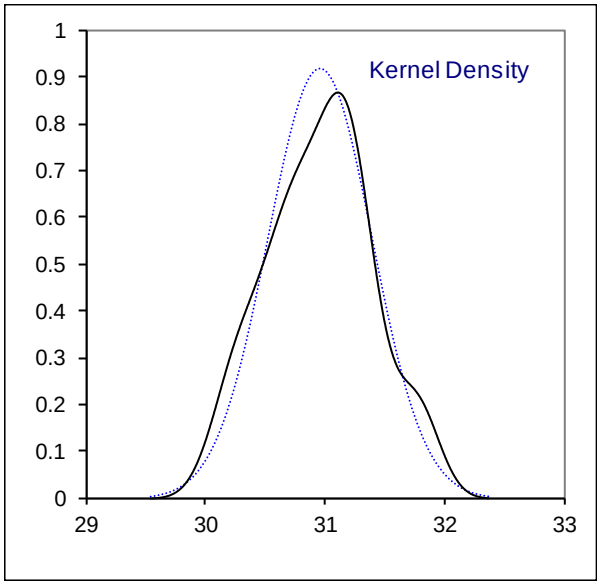
Determination of Aromatics by GC on sample #17200; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92	INH-3.0/14.3	31.35		-----	1167		-----		-----
140		-----		-----	1171		-----		-----
150		-----		-----	1186		-----		-----
171	D5769	30.1		-----	1191		-----		-----
225		-----		-----	1194		-----		-----
228		-----		-----	1199		-----		-----
230		-----		-----	1201	ISO22854	30.8		-----
237		-----		-----	1205		-----		-----
238		-----		-----	1229		-----		-----
273		-----		-----	1237		-----		-----
311	ISO22854	30.21		-----	1259		-----		-----
312	ISO22854	30.9		-----	1272		-----		-----
323	ISO22854	31.1		-----	1299		-----		-----
333		-----		-----	1300	D6730	31.775	C	-----
334		-----		-----	1320		-----		-----
335		-----		-----	1389		-----		-----
336		-----		-----	1397		-----		-----
337		-----		-----	1402		-----		-----
338		-----		-----	1409		-----		-----
343		-----		-----	1441		-----		-----
344		-----		-----	1457	ISO22854	30.79		-----
353		-----		-----	1459		-----		-----
369		-----		-----	1460		-----		-----
370		-----		-----	1468	ISO22854	30.54		-----
371		-----		-----	1498		-----		-----
381		-----		-----	1556		-----		-----
391		-----		-----	1557		-----		-----
399	ISO22854	31.73		-----	1569	ISO22854	31.06		-----
402	ISO22854	31.28		-----	1586	ISO22854	31.1		-----
403	ISO22854	31.76		-----	1613	D6839	31.39		-----
420	ISO22854	30.95		-----	1631		-----		-----
431		-----		-----	1634		-----		-----
440		-----		-----	1650		-----		-----
444		-----		-----	1676		-----		-----
445	ISO22854	30.28		-----	1689		-----		-----
447		-----		-----	1710	ISO22854	30.5		-----
453		-----		-----	1720		-----		-----
463		-----		-----	1724		-----		-----
468		-----		-----	1728		-----		-----
485		-----		-----	1740		-----		-----
494	ISO22854	30.67		-----	1741	ISO22854	31.21		-----
496	ISO22854	31.28		-----	1742		-----		-----
541		-----		-----	1776	ISO22854	31.20		-----
631		-----		-----	1782		-----		-----
663		-----		-----	1785		-----		-----
671		-----		-----	1807		-----		-----
704	D5580	30.301		-----	1810		-----		-----
754	D6729	31.819		-----	1811	ISO22854	30.71		-----
781	ISO22854	31.45		-----	1849		-----		-----
782		-----		-----	1881		-----		-----
785		-----		-----	1911	ISO22854	31.16		-----
798	D6730	31.282		-----	1936		-----		-----
824	D5580	31.07		-----	1937		-----		-----
861		-----		-----	1938		-----		-----
875	D6729	30.293		-----	1948		-----		-----
902		-----		-----	1949	ISO22854	30.845		-----
962		-----		-----	1953		-----		-----
971		-----		-----	1977	D6730	30.546		-----
974		-----		-----	1992		-----		-----
994	D6729	31.05		-----	1995		-----		-----
1006		-----		-----	2129	D6730	31.1	C	-----
1011		-----		-----	2130	D6730	30.747		-----
1026	ISO22854	30.89		-----	2146		-----		-----
1033		-----		-----	6005		-----		-----
1059		-----		-----	6016		-----		-----
1066	ISO22854	31.3		-----	6028		-----		-----
1079	ISO22854	30.42		-----	6034		-----		-----
1082		-----		-----	6049	ISO22854	31.12		-----
1108	ISO22854	31.2		-----	6054		-----		-----
1109	D6839	30.64		-----	6075		-----		-----
1126	EN14517	30.63		-----	6102		-----		-----
1134	ISO22854	30.84		-----	6142		-----		-----
1161		-----		-----	6143		-----		-----

		Only ISO22854
normality	OK	OK
n	43	28
outliers	0	0
mean (n)	30.963	30.975
st.dev. (n)	0.4353	0.3859
R(calc.)	1.219	1.081
st.dev.(lit)	unknown	unknown
R(lit)	unknown	unknown

Lab 1300: first reported 29.065
Lab 2129: first reported 26.92



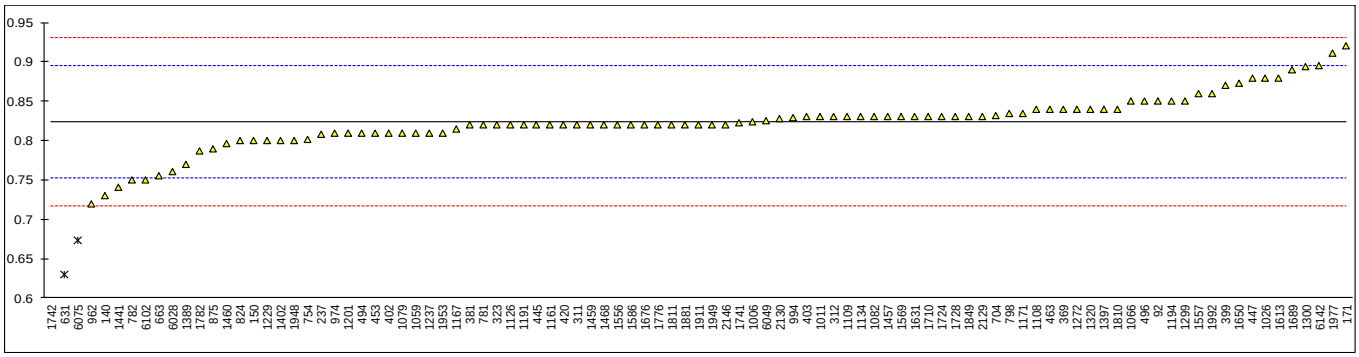


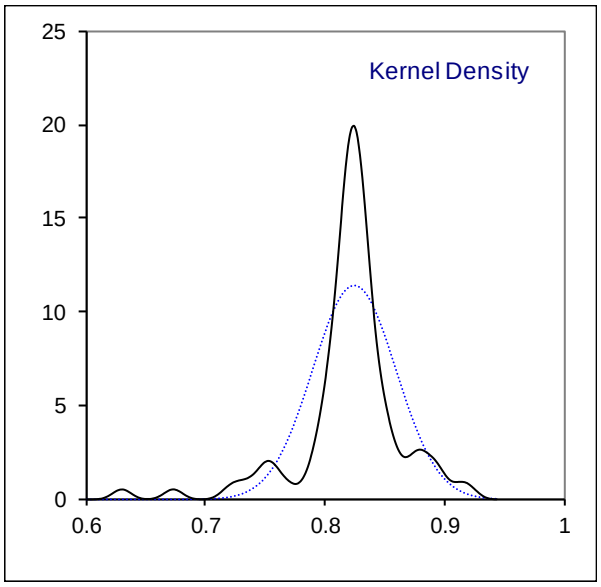
Determination of Benzene on sample #17200; results in %V/V

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92	INH-3.0/14.3	0.85		0.73	1167	ISO22854	0.815		-0.25
140	D3606	0.73		-2.63	1171	D6277	0.835		0.31
150	D3606	0.80		-0.67	1186		-----		-----
171	D3606	0.92		2.69	1191	ISO22854	0.82		-0.11
225		-----		-----	1194	D6277	0.85		0.73
228		-----		-----	1199		-----		-----
230		-----		-----	1201	ISO22854	0.81		-0.39
237	D5580	0.808		-0.45	1205		-----		-----
238		-----		-----	1229	ISO22854	0.80		-0.67
273		-----		-----	1237	EN238	0.81		-0.39
311	ISO22854	0.82		-0.11	1259		-----		-----
312	D5580	0.83		0.17	1272	ISO22854	0.84		0.45
323	ISO22854	0.82		-0.11	1299	ISO22854	0.85		0.73
333		-----		-----	1300	EN12177	0.894		1.96
334		-----		-----	1320	ISO22854	0.84		0.45
335		-----		-----	1389	EN238	0.77	C	-1.51
336		-----		-----	1397	EN238	0.84		0.45
337		-----		-----	1402	EN238	0.8		-0.67
338		-----		-----	1409		-----		-----
343		-----		-----	1441	D6839	0.74		-2.35
344		-----		-----	1457	ISO22854	0.83		0.17
353		-----		-----	1459	In house	0.82		-0.11
369	EN238	0.84		0.45	1460	D6277	0.796		-0.78
370		-----		-----	1468	ISO22854	0.82		-0.11
371		-----		-----	1498		-----		-----
381	ISO22854	0.82		-0.11	1556	ISO22854	0.82		-0.11
391		-----		-----	1557	EN238	0.86		1.01
399	ISO22854	0.87		1.29	1569	ISO22854	0.83		0.17
402	ISO22854	0.81		-0.39	1586	ISO22854	0.82		-0.11
403	ISO22854	0.83		0.17	1613	D6839	0.88		1.57
420	ISO22854	0.82		-0.11	1631	ISO22854	0.83		0.17
431		-----		-----	1634		-----		-----
440		-----		-----	1650	EN238	0.873		1.37
444		-----		-----	1676	ISO22854	0.82		-0.11
445	ISO22854	0.82		-0.11	1689	SH/T0693	0.89		1.85
447	IP429	0.88		1.57	1710	EN12177	0.83		0.17
453	ISO22854	0.81		-0.39	1720		-----		-----
463	EN238	0.84		0.45	1724	ISO22854	0.83		0.17
468		-----		-----	1728	EN238	0.83		0.17
485		-----		-----	1740		-----		-----
494	ISO22854	0.81		-0.39	1741	EN12177	0.823		-0.03
496	ISO22854	0.850		0.73	1742	EN238	0.46	R(0.01)	-10.19
541		-----		-----	1776	ISO22854	0.82		-0.11
631	D6277	0.63	R(0.01)	-5.43	1782	D3606	0.7866		-1.05
663	D5580	0.755		-1.93	1785		-----		-----
671		-----		-----	1807		-----		-----
704	D5580	0.832		0.22	1810	ISO22854	0.84		0.45
754	D6729	0.801		-0.64	1811	ISO22854	0.82		-0.11
781	ISO22854	0.82		-0.11	1849	ISO22854	0.83		0.17
782	D6277	0.75		-2.07	1881	IP429	0.82		-0.11
785		-----		-----	1911	ISO22854	0.82		-0.11
798	D6730	0.834		0.28	1936		-----		-----
824	D5580	0.80		-0.67	1937		-----		-----
861		-----		-----	1938		-----		-----
875	EN12177	0.79		-0.95	1948	EN12177	0.80		-0.67
902		-----		-----	1949	ISO22854	0.82		-0.11
962	D5580	0.72		-2.91	1953	In house	0.81		-0.39
971		-----		-----	1977	D6730	0.911		2.44
974	D5580	0.81		-0.39	1992	D5580	0.86	C	1.01
994	D6729	0.829		0.14	1995		-----		-----
1006	D5580	0.824		0.00	2129	D6730	0.83		0.17
1011	ISO22854	0.83		0.17	2130	D6730	0.828		0.11
1026		0.88		1.57	2146	ISO22854	0.82		-0.11
1033		-----		-----	6005		-----		-----
1059	ISO22854	0.81		-0.39	6016		-----		-----
1066	ISO22854	0.85		0.73	6028	EN238	0.76		-1.79
1079	ISO22854	0.81		-0.39	6034		-----		-----
1082	ISO22854	0.83		0.17	6049	ISO22854	0.825		0.03
1108	ISO22854	0.84		0.45	6054		-----		-----
1109	D3606	0.830		0.17	6075	EN238	0.673	R(0.01)	-4.23
1126	EN14517	0.82		-0.11	6102	EN12177	0.75		-2.07
1134	ISO22854	0.83		0.17	6142	EN12177	0.895		1.99
1161	EN12177	0.82	C	-0.11	6143		-----		-----

normality	suspect
n	94
outliers	3
mean (n)	0.8240
st.dev. (n)	0.03473
R(calc.)	0.0973
st.dev.(EN12177:00)	0.03571
R(EN12177:00)	0.10
Compare	
R(ISO22854-A:16)	0.04
R(EN238:96+A1:03)	0.3
R(D5580:15)	0.1084

Lab 1161: first reported 0.94
Lab 1389: first reported 0.7
Lab 1992: first reported 0.68





Determination of Copper strip 3hrs/50°C on sample #17200;

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92	D130	1a		-----	1167	ISO2160	1A		-----
140	D130	1a		-----	1171	ISO2160	1A		-----
150	D130	1a		-----	1186	D130	1A		-----
171	D130	1a		-----	1191		-----		-----
225	D130	1a		-----	1194		-----		-----
228	D130	1a		-----	1199		-----		-----
230	D130	1a		-----	1201	ISO2160	1A		-----
237	D130	1		-----	1205		-----		-----
238	D130	1A		-----	1229		-----		-----
273	D130	1a		-----	1237		-----		-----
311	ISO2160	1A		-----	1259	D130	1A		-----
312		-----		-----	1272	ISO2160	1a		-----
323	ISO2160	1A		-----	1299	D130	1A		-----
333		-----		-----	1300	ISO2160	1A		-----
334		-----		-----	1320	D130	1a		-----
335	D130	1b		-----	1389	D130	1A		-----
336	ISO2160	1		-----	1397	ISO2160	1		-----
337	D130	1b		-----	1402	IP154	1a		-----
338		-----		-----	1409	D130	1a		-----
343	D130	1a		-----	1441	D130	1a		-----
344	D130	1a		-----	1457	ISO2160	1A		-----
353	IP154	1a		-----	1459		-----		-----
369	ISO2160	1A		-----	1460	D130	1a		-----
370	ISO2160	1A		-----	1468	ISO2160	1A		-----
371	ISO2160	1a		-----	1498		-----		-----
381	ISO2160	1		-----	1556	ISO2160	Class 1		-----
391		-----		-----	1557	ISO2160	1A		-----
399		-----		-----	1569	ISO2160	1a		-----
402	ISO2160	1a		-----	1586	D130	1a		-----
403	ISO2160	1a		-----	1613	D130	1A		-----
420	ISO2160	Class 1		-----	1631	ISO2160	1a		-----
431		-----		-----	1634	D130	1a		-----
440	IP154	1A		-----	1650	ISO2160	1a		-----
444		-----		-----	1676		-----		-----
445	IP154	1A		-----	1689	GB/T5096	1a		-----
447	D130	1a		-----	1710	ISO2160	1A		-----
453	IP154	1A		-----	1720		-----		-----
463	ISO2160	1A		-----	1724	D130	1a		-----
468	D130	1A		-----	1728	D130	1a		-----
485		-----		-----	1740	D130	1A		-----
494	ISO2160	1a		-----	1741	ISO2160	1a		-----
496	ISO2160	1a		-----	1742		-----		-----
541	D130	1A		-----	1776		-----		-----
631	D130	1A		-----	1782	D130	1a		-----
663	D130	1a		-----	1785	D130	1a		-----
671	D130	1A		-----	1807	D130	1a		-----
704	IP154	1A		-----	1810		-----		-----
754	D130	1a		-----	1811		-----		-----
781	ISO2160	1A		-----	1849	ISO2160	1A		-----
782		-----		-----	1881	D130	1a		-----
785		-----		-----	1911		-----		-----
798	D130	1a		-----	1936		-----		-----
824	D130	1a		-----	1937		-----		-----
861		-----		-----	1938		-----		-----
875	D130	1a		-----	1948	D130	1A		-----
902	ISO2160	1a		-----	1949	D130	1a		-----
962	D130	1A		-----	1953	ISO2160	1 A		-----
971	D130	1a		-----	1977	ISO2160	1A		-----
974	D130	1a		-----	1992		-----		-----
994	D130	1a		-----	1995		-----		-----
1006	D130	1a		-----	2129	D130	1a		-----
1011	ISO2160	1a		-----	2130	ISO2160	1a		-----
1026	ISO2160	1A		-----	2146		-----		-----
1033		-----		-----	6005	ISO2160	1a		-----
1059	ISO2160	1a		-----	6016		-----		-----
1066	D130	1A		-----	6028	D130	1		-----
1079	ISO2160	1A		-----	6034		-----		-----
1082		-----		-----	6049	ISO2160	1a		-----
1108	ISO2160	1		-----	6054	D130	1a		-----
1109	D130	1a		-----	6075	ISO2160	1a		-----
1126		-----		-----	6102		-----		-----
1134	D130	1a		-----	6142		-----		-----
1161	ISO2160	1A		-----	6143		-----		-----

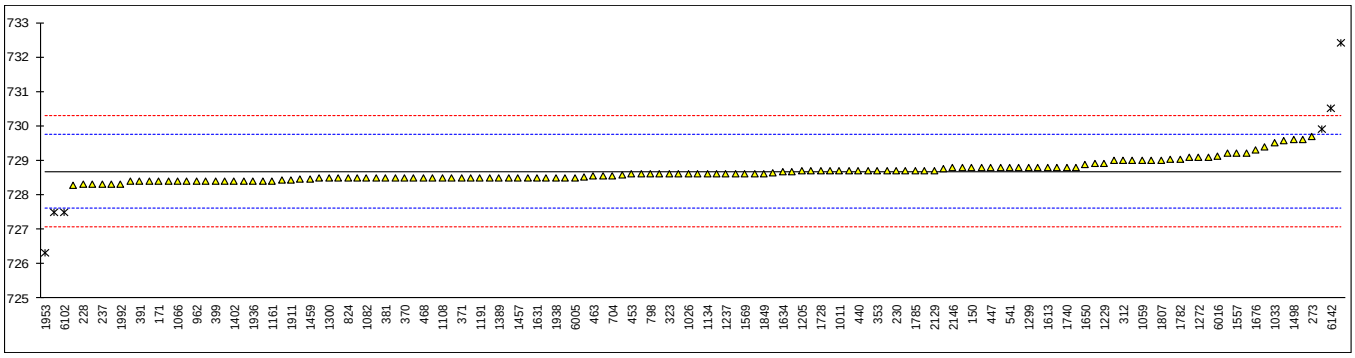
normality	n.a.
n	105
outliers	n.a.
mean (n)	1 (1a/1b)
st.dev. (n)	n.a.
R(calc.)	n.a.
st.dev.(lit)	n.a.
R(lit)	n.a.

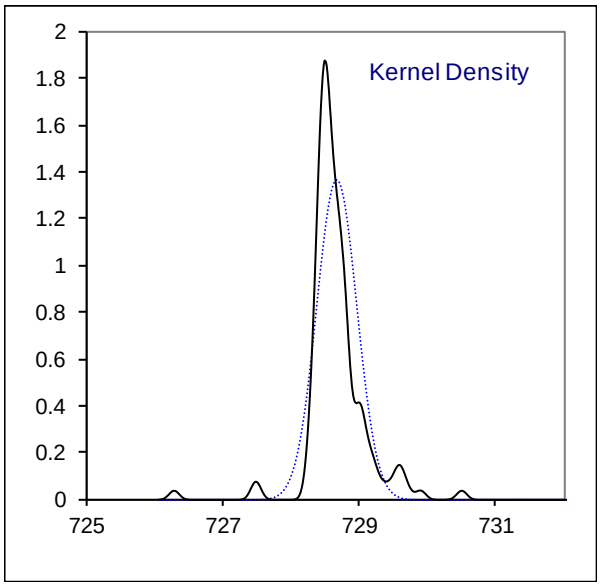
Determination of Density at 15°C on sample #17200; results in kg/m^3

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92	D4052	728.8		0.23	1167	ISO12185	728.6		-0.15
140	D4052	728.7		0.04	1171	D4052	729.02		0.64
150	D4052	728.8		0.23	1186	D1298	728.5		-0.33
171	D4052	728.4		-0.52	1191	ISO12185	728.5		-0.33
225	D4052	728.4		-0.52	1194		-----		-----
228	D4052	728.3	C	-0.71	1199		-----		-----
230	D4052	728.70		0.04	1201	D1298	728.4		-0.52
237	D4052	728.3		-0.71	1205	ISO12185	728.69		0.02
238	D4052	728.29	C	-0.72	1229	ISO12185	728.9		0.41
273	D4052	729.7		1.91	1237	ISO12185	728.6		-0.15
311	ISO12185	728.3		-0.71	1259	ISO12185	729.9	R(0.05)	2.28
312	ISO12185	729.0		0.60	1272	ISO3675	729.1		0.79
323	ISO12185	728.6		-0.15	1299	D4052	728.8		0.23
333	ISO12185	728.5		-0.33	1300	ISO12185	728.49		-0.35
334	ISO12185	728.6		-0.15	1320	ISO12185	728.5		-0.33
335	ISO12185	728.9		0.41	1389	D4052	728.5		-0.33
336	ISO12185	728.7		0.04	1397	ISO12185	728.5		-0.33
337	ISO12185	729.0		0.60	1402	IP365	728.4		-0.52
338	ISO12185	729.4		1.35	1409	ISO12185	728.8		0.23
343	ISO12185	729.2		0.97	1441	D4052	728.6		-0.15
344	D4052	728.6		-0.15	1457	ISO12185	728.5		-0.33
353	IP365	728.7		0.04	1459	ISO12185	728.47		-0.39
369	ISO12185	728.5		-0.33	1460	D4052	728.69		0.02
370	ISO12185	728.5		-0.33	1468	ISO12185	728.5		-0.33
371	ISO12185	728.5		-0.33	1498	D4052	729.6		1.72
381	ISO12185	728.5		-0.33	1556	ISO12185	729.09		0.77
391	ISO12185	728.4		-0.52	1557	ISO3675	729.2		0.97
399	ISO12185	728.4		-0.52	1569	ISO12185	728.6		-0.15
402	ISO12185	729.0		0.60	1586	D4052	728.4		-0.52
403	ISO12185	728.8		0.23	1613	D4052	728.8		0.23
420	ISO12185	728.75		0.13	1631	ISO12185	728.5		-0.33
431	ISO12185	728.60		-0.15	1634	ISO12185	728.657		-0.04
440	D4052	728.7		0.04	1650	ISO12185	728.89		0.40
444	D4052	728.4		-0.52	1676	ISO12185	729.30		1.16
445	D4052	728.4		-0.52	1689		-----		-----
447	D4052	728.8		0.23	1710	ISO12185	728.8		0.23
453	IP365	728.6		-0.15	1720	D4052	729.6		1.72
463	ISO12185	728.55		-0.24	1724	D4052	728.7		0.04
468	D4052	728.5		-0.33	1728	D4052	728.69		0.02
485	ISO12185	728.5		-0.33	1740	ISO12185	728.8		0.23
494	ISO12185	728.4		-0.52	1741	ISO12185	728.50		-0.33
496	ISO12185	728.42		-0.48	1742	ISO12185	728.6		-0.15
541	ISO12185	728.80		0.23	1776	ISO12185	728.55		-0.24
631	D4052	728.67		-0.02	1782	D4052	729.04		0.68
663	D4052	728.48		-0.37	1785	D4052	728.7		0.04
671	D4052	728.8		0.23	1807	ISO12185	729.0		0.60
704	ISO12185	728.56		-0.22	1810		-----		-----
754	D4052	728.5		-0.33	1811	ISO12185	728.7		0.04
781	ISO12185	728.5		-0.33	1849	ISO12185	728.6		-0.15
782	ISO12185	728.7		0.04	1881	ISO12185	728.3		-0.71
785	D4052	728.8		0.23	1911	ISO12185	728.42		-0.48
798	D4052	728.6		-0.15	1936	ISO12185	728.4		-0.52
824	ISO12185	728.5		-0.33	1937	ISO12185	728.45		-0.43
861		-----		-----	1938	ISO12185	728.5		-0.33
875	D4052	728.7		0.04	1948	ISO12185	729.1		0.79
902	ISO12185	728.5		-0.33	1949	ISO12185	729.2		0.97
962	D4052	728.4		-0.52	1953	ISO12185	726.3	C,R(0.01)	-4.44
971	D4052	728.5		-0.33	1977	ISO3675	727.49	R(0.05)	-2.22
974	D1298	728.6		-0.15	1992	D1298	728.3		-0.71
994	ISO12185	728.4		-0.52	1995		-----		-----
1006	D4052	729.0		0.60	2129	D4052	728.7		0.04
1011	ISO12185	728.7		0.04	2130	ISO12185	728.5		-0.33
1026	D4052	728.6		-0.15	2146	ISO12185	728.79		0.21
1033	IP365	729.5		1.53	6005	ISO12185	728.5		-0.33
1059	ISO12185	729.0		0.60	6016	D4052	729.11		0.81
1066	D4052	728.4		-0.52	6028	ISO3675	728.8		0.23
1079	ISO12185	728.58		-0.18	6034		-----		-----
1082	ISO12185	728.5		-0.33	6049	ISO12185	728.4		-0.52
1108	ISO12185	728.5		-0.33	6054	D4052	728.53		-0.28
1109	D4052	728.65		-0.05	6075	ISO12185	732.42	R(0.01)	6.98
1126	ISO12185	729.58		1.68	6102	D777	727.5	R(0.05)	-2.20
1134	D4052	728.6	C	-0.15	6142	IP365	730.5	C,R(0.01)	3.40
1161	ISO12185	728.41		-0.50	6143		-----		-----

normality	not OK
n	132
outliers	6
mean (n)	728.678
st.dev. (n)	0.2937
R(calc.)	0.822
st.dev.(ISO12185:96)	0.5357
R(ISO12185:96)	1.5

Lab 228: reported 0.7283 kg/m3 (unit error?)
Lab 238: first reported 728.29 kg/l (unit error?)
Lab 1134: first reported 0.7286 kg/m3 (unit error?)
Lab 1953: first reported 0.7435 kg/l
Lab 6142: first reported 736.2





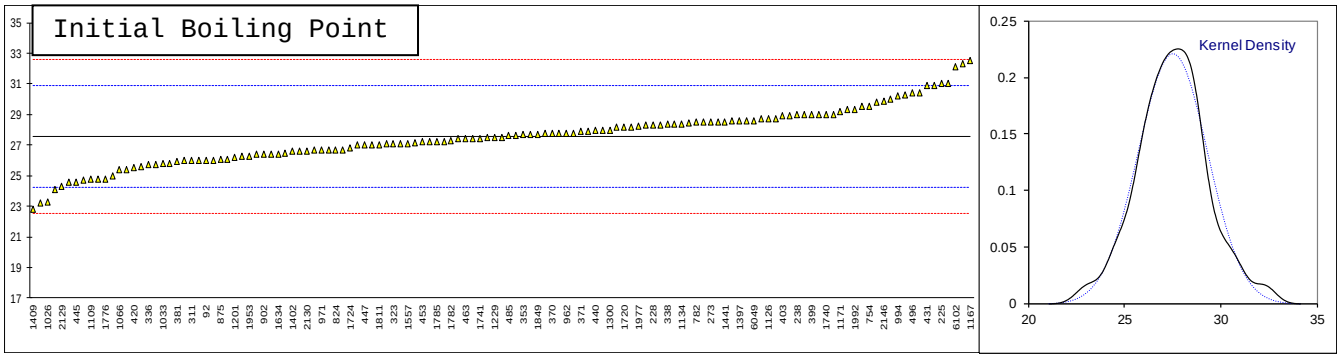
Determination of Distillation at 760 mmHg on sample #17200; results in °C

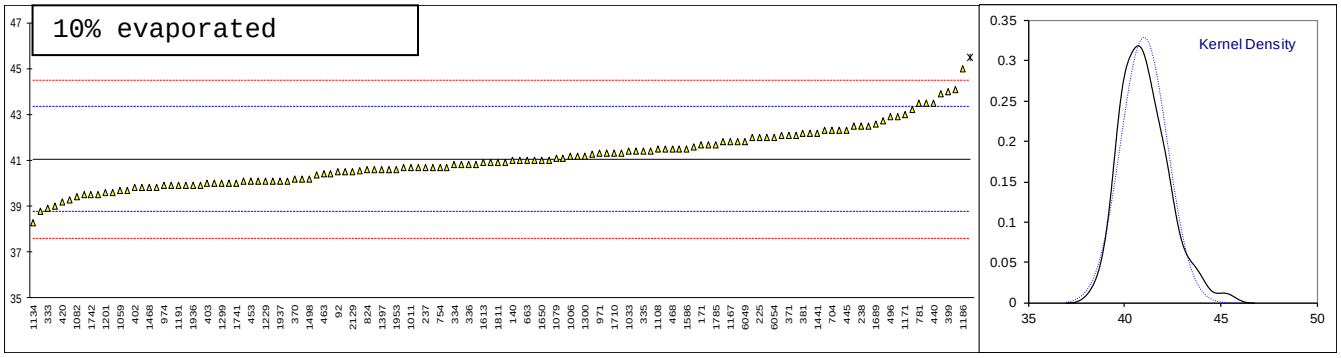
lab	method	IBP	mark	10% eva	mark	50% eva	mark	90% eva	mark	FBP	mark
92	D86-automated	26.0		40.5		78.8		139.9		184.8	
140	D86-automated	25.8		41.0		78.5		140.5		182.2	
150	D86-automated	27.8		41.8		79.8		141.0		184.3	
171	D86-automated	27.0		41.7		79.8		141.1		180.4	
225	D86-manual	31.0		42.0		78.0		142.0		183.0	
228	D86-manual	28.3		41.4		79.7		140.1		180.0	
230	D86-manual	26.0		41.5		80.5		142.5	C	183.5	
237	D86-manual	29.0		40.7		79.2		140.0		181.0	
238	D86-manual	29.0		42.5		81.0		143.0		183.5	
273	D86-automated	28.5		42.3		82.5		142.1		183.8	
311	D86-automated	26.0		39.9		78.1		141.1		182.6	
312	ISO3405-automated	26.7		40.6		80.0		141.5		182.0	
323	ISO3405-automated	27.1		40.7		79.1		141.2		182.8	
333	D86-automated	26.7		38.9		77.7		141.0		181.7	
334	-----	26.5		40.8		79.6		141.7		181.2	
335	ISO3405-automated	29.5		41.4		80.0		140.4		181.2	
336	ISO3405-automated	25.7		40.8		80.9		142.4		185.4	
337	-----	-----		-----		-----		-----		-----	
338	ISO3405-automated	28.4		42.1		81.4		145.4		184.8	
343	ISO3405-automated	30.3		43.5		81.0		143.5		183.5	
344	D86-automated	27.2		41.5		80.7		144.8		178.6	
353	D86-automated	27.7		38.8		79.0		140.7		184.7	
369	ISO3405-automated	27.8		39.5		77.5		142.3		180.0	
370	ISO3405-automated	27.8		40.2		78.8		142.1		179.7	
371	ISO3405-automated	27.9		42.1		78.4		142.7		179.6	
381	ISO3405-automated	25.9		42.2		80.9		143.0		187.0	
391	-----	-----		-----		-----		-----		-----	
399	D86-manual	29.0		44.0		79.64	C	140.33	C	181.38	C
402	ISO3405-automated	28.4		39.8		76.6		141.3		182.1	
403	ISO3405-automated	28.9		40.0		77.7		140.3		181.5	
420	ISO3405-automated	25.5		39.2		77.9		140.0		176.6	
431	-----	30.9		40.7		80.4		146.7		183.7	
440	IP123-manual	28.0		43.5		83.5		151.5	C,R(1)	184.5	
444	D86-automated	27.1		42.0		79.2		140.4		182.5	
445	D86-automated	24.6		42.3		84.2		151.3	R(1)	183.1	
447	D86-automated	27.0		40.8		79.4		141.8		184.2	
453	IP123-automated	27.2		40.1		78.3		140.4		182.3	
463	ISO3405-automated	27.4		40.4		79.5		141.7		182.2	
468	D86-automated	27.4		41.5		83.9		146.9	C	183.6	
485	ISO3405-automated	27.6		40.35		78.35		140.6		179.35	
494	ISO3405-automated	28.5		41.4		79.3		141.4		181.7	
496	ISO3405-automated	30.4		42.9		79.4		141.3		184.5	
541	ISO3405-automated	24.70		40.00		79.07		140.53		181.53	
631	D86-automated	32.3		42.5		81.0		141.8		187.5	
663	D86-automated	28.70		41.00		79.35		139.90		184.35	
671	-----	-----		-----		-----		-----		-----	
704	ISO3405-manual	28.3		42.3		82.5		142.0	C	180.8	
754	D86-manual	29.55		40.7	C	79.7	C	144.4	C	182.15	
781	ISO3405-manual	28.0		43.5		82.0		142.0		185.0	
782	D86-manual	28.5		41.6		80.1		143.4		183.0	
785	D86-manual	26.0		41.0		82.0		146.5		179.0	
798	D86-automated	28.2		42.3		81.4		145.1		182.7	
824	D86-automated	26.7		40.6		79.4		141.8		181.5	
861	-----	-----		-----		-----		-----		-----	
875	D86-automated	26.1		42.1		82.4		146.2		183.0	
902	ISO3405-automated	26.4		39.8		78.4		140.8		183.1	
962	D86-automated	27.8		40.1	C	78.5	C	140.6	C	176.9	
971	D86-automated	26.7		41.3		80.0		141.7		183.1	
974	D86-automated	26.4		39.9		78.1		141.2		180.5	
994	D86-manual	30.2		44.1		82.5		141.5	C	180.5	
1006	D86-automated	29.3		41.2		79.4		141.0		179.7	
1011	ISO3405-automated	26.4		40.7		79.9		141.1		182.1	
1026	-----	23.3		40.7		79.4		140.9		181.8	
1033	IP123-automated	25.8		41.4		81.7		145.3		183.2	
1059	ISO3405-automated	27.4		39.7		79.0		141.4		181.2	
1066	D86-automated	25.4		40.1		77.9		141.4		181.8	
1079	ISO3405-automated	25.0		41.1		79.9		141.9		185.2	
1082	ISO3405-automated	24.6		39.4		77.8		140.9		180.3	
1108	ISO3405-automated	29.8		41.5		79.6		141.1	C	188.2	
1109	D86-automated	24.8		39.3		77.4		139.9		179.1	
1126	ISO3405-automated	28.7		39.0		77.8		142.9		183.3	
1134	D86-automated	28.4		38.3		78.0		141.5		181.0	
1161	ISO3405-automated	30.4		41.7		80.1		146		182.6	
1167	ISO3405-automated	32.5		41.8		79.8		140.8		180.0	
1171	ISO3405-manual	29.19		43.00		80.75		145.50		187.29	
1186	D86-manual	31.0		45.0		86.0	R(5)	152.0	R(1)	187.0	
1191	ISO3405-automated	27.5		39.9		78.4		141.5		182.1	

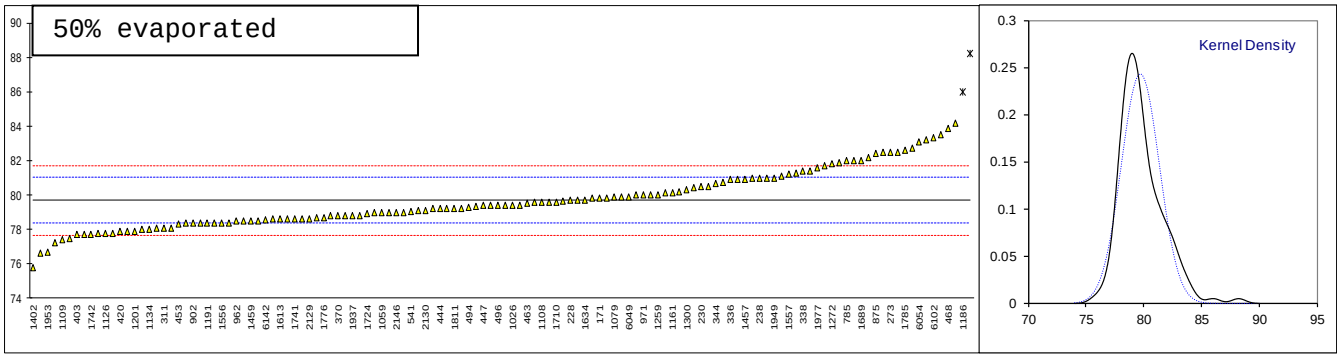
lab	method	IBP	mark	10% eva	mark	50% eva	mark	90% eva	mark	FBP	mark
1194	-----	-----		-----		-----		-----		-----	
1199	-----	-----		-----		-----		-----		-----	
1201	ISO3405-automated	26.2		39.6		77.9		141.0		180.0	
1205	D86-automated	28.3		40.7		79.2		142.1		184.0	
1229	ISO3405-automated	27.5		40.1		77.8		140.2		181.8	
1237	ISO3405-manual	30.9		42.2		81.9		141.8		179.9	
1259	ISO3405-automated	27.5		41.2		80.0		142.0		184.5	
1272	ISO3405-automated	28.5		42.7		81.8		141.9	C	182.8	
1299	D86-automated	28.6		40.0		78.4		142.0		180.6	
1300	ISO3405-automated	28.0		41.2		80.3		142.6		185.6	
1320	-----	27.1		41.1		79.0		140.7		179.5	
1389	D86-automated	-----	W	-----	W	-----	W	-----	W	-----	W
1397	ISO3405-automated	28.6		40.6		80.2		142.4		188.2	
1402	ISO3405-automated	26.6		39.7		75.8		140.7		182.3	
1409	-----	22.8		41.0		78.8		140.6		182.4	
1441	D86-automated	28.5		42.2		82.2		146.1		182.0	
1457	ISO3405-automated	23.2		41.3		80.9		142.0		183.5	
1459	ISO3405-automated	27.8		39.9		78.5		141.0		179.7	
1460	D86-automated	27.6		40.2		78.6		141.3		179.6	
1468	ISO3405-automated	29.0		39.8		78.1		141.0		181.4	
1498	D86-automated	28.9		40.2		78.7		141.7		181.8	
1556	-----	25.6		39.6		78.4		141.1		175.5	
1557	-----	27.1		42.9		81.2		144.2		180.4	
1569	D86-automated	-----		-----		-----		-----		-----	
1586	D86-automated	25.7		41.5		81.1		142.8		185.1	
1613	D86-automated	27.7		40.9	C	78.6	C	141.7	C	184.1	
1631	ISO3405-automated	-----		-----		-----		-----		183.4	
1634	-----	26.4		40.0		79.7		142.4		182.0	
1650	ISO3405-automated	24.8		41.0		79.6		142.3		182.0	
1676	-----	-----		-----		-----		-----		-----	
1689	GB/T6536	26.1		42.6		82.0		144.8		183.9	
1710	ISO3405-automated	27.0		41.3		79.6		140.8		182.0	
1720	D86-automated	28.2		43.9		83.2		140.7	C	180.6	
1724	D86-automated	26.8		40.6		78.9		141.3		183	
1728	ISO3405-manual	27.9		40.84		79.22		144.7		182.1	
1740	ISO3405-automated	29		41.3		78.6		140.4		182.9	
1741	-----	27.40		40.00		78.60		140.70		183.50	
1742	ISO3405-automated	28.6		39.5		77.7		141.1		182.8	
1776	ISO3405-automated	24.8		40.9		78.7		140.4		180.0	
1782	D86-automated	27.3		43.2		88.2	R(1)	156.4	C,R(1)	182.4	
1785	D86-automated	27.2		41.7		82.6		146.0		184.4	
1807	ISO3405-automated	28.7		39.5		77.2		141.2		181.0	
1810	ISO3405-manual	24.1		41.0		79.4		141.7		182.5	
1811	ISO3405-automated	27		40.9		79.2		141.3		182.1	
1849	ISO3405-automated	27.7		-----		-----		-----		183.3	
1881	-----	-----		-----		-----		-----		-----	
1911	ISO3405-automated	28.45		40.10		78.60		141.40		179.15	
1936	ISO3405-automated	25.4		39.9		78.4		140.6		179.9	
1937	ISO3405-automated	26.3		40.1		78.8		141.2		181.6	
1938	ISO3405-automated	26.7		39.9		78.5		140.7		180.5	
1948	ISO3405	26.6		40.5		78.8		141.4		184.5	
1949	ISO3405-manual	29.0		42.5		81.0		145.0	C	184.0	
1953	ISO3405-automated	26.3		40.6	C	76.7		139.7		183.9	C
1977	ISO3405-automated	28.23		41.26		81.58		145.77		181.51	
1992	D86-manual	29.3		42		80.5		141.7		183.5	
1995	-----	-----		-----		-----		-----		-----	
2129	ISO3405-automated	24.3		40.5		78.6		140.9		182.7	
2130	ISO3405-automated	26.6		40.4		79.1		141.6		186.2	
2146	-----	29.9		40.1		79.0		140.6		183.1	
6005	ISO3405-automated	26.0		41.8		82.7		147.1		183.7	
6016	-----	-----		-----		-----		-----		-----	
6028	D86-automated	27.2		40.9		81.3		143.6		182.0	
6034	-----	-----		-----		-----		-----		-----	
6049	ISO3405-automated	28.6		41.8		79.9		141.4		183.9	
6054	D86-automated	30.0		42.0		83.1		149.4	R(1)	181.0	
6075	ISO3405-automated	28.2		39.8		79.0		141.3		180.5	
6102	D86-manual	32.1		45.5	R(5)	83.3	C	145.6		185.7	
6142	D86-automated	27.15		40.55		78.55		142.25		175.10	
6143	-----	-----		-----		-----		-----		-----	

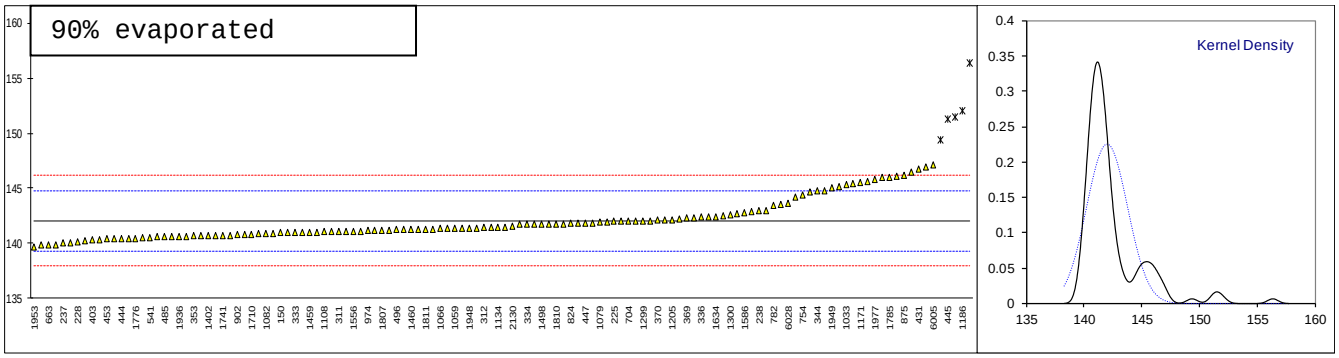
	IBP	10% eva	50% eva	90% eva	FBP
normality	OK	OK	OK	suspect	suspect
n	131	129	128	125	132
outliers	0	1	2	5	0
mean (n)	27.55	41.05	79.69	142.03	182.32
st.dev. (n)	1.801	1.211	1.641	1.772	2.274
R(calc.)	5.04	3.39	4.60	4.96	6.380
st.dev.(ISO3405-A:11)	1.673	1.143	0.671	1.369	2.42
R(ISO3405-A:11)	4.68	3.20	1.88	3.83	6.78
Compare					
R(ISO3405-M;11)	5.6	3.80	4.18	4.34	7.2

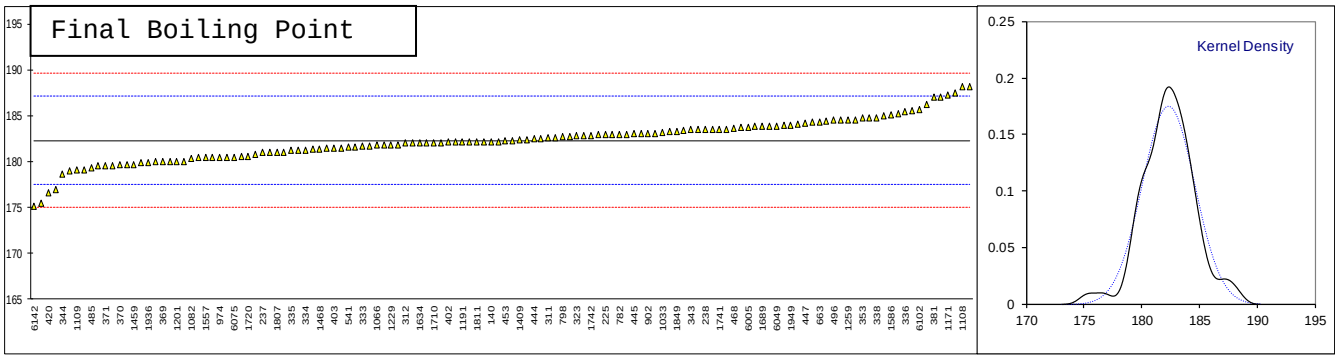
Lab 230: first reported 149.5
Lab 399: first reported 87.0, 151.0, 184.0
Lab 440: first reported 148.0
Lab 468; first reported 150.8
Lab 704: first reported 149.3
Lab 754: first reported 37.3, 82.05,148.4
Lab 962: first reported 42.0, 83.0, 148.4
Lab 994: first reported 151.5
Lab 1108: first reported 157.6
Lab 1272: first reported 146.9
Lab 1389: results withdrawn 27.0, 43.7, 82.4, 147.7, 182.9
Lab 1631: first reported 42.6, 82.6, 148.5
Lab 1720: first reported 150.9
Lab 1782: first reported 157.6
Lab 1949: first reported 147.5
Lab 1953: first reported 36.0, 166.1
Lab 6102: first reported 73.3


Initial Boiling Point
Kernel Density


10% evaporated
Kernel Density


50% evaporated
Kernel Density


90% evaporated
Kernel Density


Final Boiling Point
Kernel Density

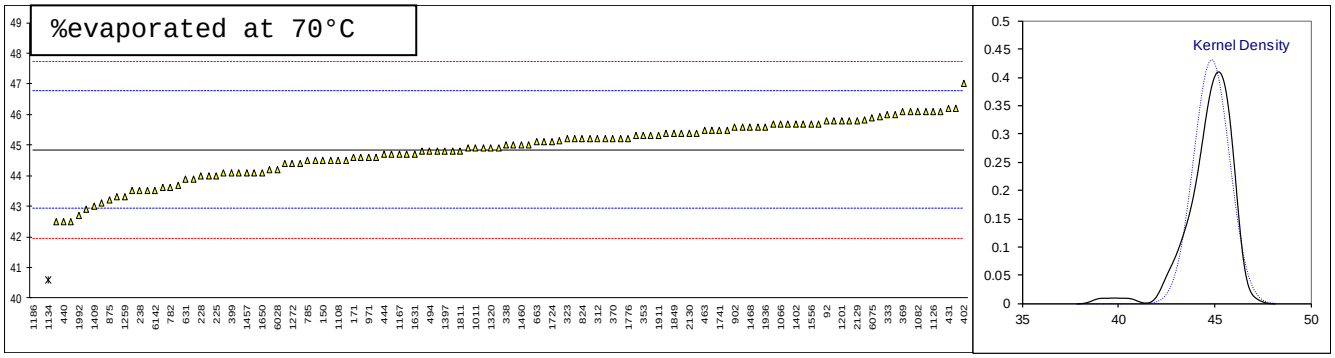
Determination of Distillation at 760 mmHg on sample #17200; results in %V/V ---continued---

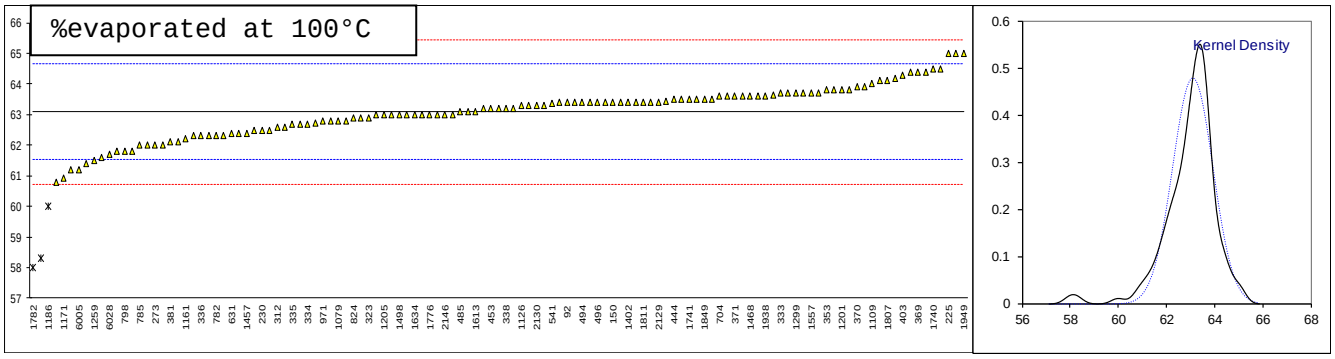
Lab	method	%E70°C	mark	%E100°C	mark	%E150°C	mark	%residue	mark	% loss	mark
92	D86-automated	45.8		63.4		92.9		1.1		1.5	
140	D86-automated	-----		-----		-----		1.0		2.3	
150	D86-automated	44.5		63.4		92.7		0.9		2.2	
171	D86-automated	44.6		63.4		92.9		1.0		0.6	
225	D86-manual	44.0		65.0		90.0	R(1)	1.0		1.0	
228	D86-manual	44.0		65.0		92.5		1.3		0.7	
230	D86-manual	44.8	C	62.5		90.0	R(1)	1.0		1.0	
237	D86-manual	45.0		63.0		93.0		1.0		0.5	
238	D86-manual	43.5		62.5		92.0		1.0		0.5	
273	D86-automated	44.0		62.0		92.5		1.1		0.1	
311	D86-automated	45.7		63.4		92.9		1.0		2.5	
312	ISO3405-automated	45.2		62.6		92.9		1.0		2.0	
323	ISO3405-automated	45.2		62.9		92.8		1.0		1.4	
333	D86-automated	46.0		63.7		92.9		-----		-----	
334	-----	44.8		62.7		92.7		1.0		1.4	
335	ISO3405-automated	44.7		62.7		93.2		0.9		0.5	
336	ISO3405-automated	44.6		62.3		93.0		1.3		1.2	
337	-----	-----		-----		-----		-----		-----	
338	ISO3405-automated	45.0		63.2		92.9		1.0		1.4	
343	ISO3405-automated	43.5		63.8		92.4		1.0		1.6	
344	D86-automated	44.5		61.8		91.6		1.0		-----	
353	D86-automated	45.3		63.8		92.9		1.0		4.1	
369	ISO3405-automated	46.1		64.4		93.1		1.0		3.3	
370	ISO3405-automated	45.2		63.9		92.5		1.0		2.0	
371	ISO3405-automated	44.9		63.6		92.4		1.2		1.4	
381	ISO3405-automated	44.1		62.1		92.7		1.2		0.8	
391	-----	-----		-----		-----		-----		-----	
399	D86-manual	44.1	C	62.3	C	92.3	C	1.0		3.0	
402	ISO3405-automated	47.0		63.6		92.6		1.0		-----	
403	ISO3405-automated	45.6		64.3		92.9		1.0		2.6	
420	ISO3405-automated	45.8		64.1		93.9		1.0		2.0	
431	-----	46.2		64.4		92.9		1.0		1.7	
440	IP123-manual	42.5		62.0		89	C,R(1)	1.1		0.9	
444	D86-automated	44.7		63.5		92.9		1.0		1.9	
445	D86-automated	46.1		64.2		93.2		0.9		3.6	
447	D86-automated	45.2		62.9		92.6		1.0		2.1	
453	IP123-automated	45.7		63.2		93.2		0.9		2.1	
463	ISO3405-automated	45.5		62.4		92.6		1.0		2.0	
468	D86-automated	43.3		61.6	C	90.8	C,R(5)	1.1		2.0	
485	ISO3405-automated	45.15		63.1		93.1		1.0		2.1	
494	ISO3405-automated	44.8		63.4		92.8		1.0		2.4	
496	ISO3405-automated	44.5		63.4		92.9		0.9		2.6	
541	ISO3405-automated	44.60		63.37		93.1		1.00		1.10	
631	D86-automated	43.9		62.4		92.6		0.8		0.9	
663	D86-automated	45.10		63.65		93.10		1.05		1.75	
671	-----	-----		-----		-----		-----		-----	
704	ISO3405-manual	45.4		63.6		93.2		1.0		2.0	
754	D86-manual	43.6	C	62.3	C	92.1	C	1.5		1.4	
781	ISO3405-manual	42.5		62.5		92.5		1.0		2.0	
782	D86-manual	43.6		62.3		92.1		1.0		2.0	
785	D86-manual	44.5		62.0		92.0		1.2		1.4	
798	D86-automated	43.5		61.8		91.7		1.0		1.3	
824	D86-automated	45.2		62.9		92.6		1.0		1.6	
861	-----	-----		-----		-----		-----		-----	
875	D86-automated	43.2		61.4		91.9	C	1.0		1.4	
902	ISO3405-automated	45.6		63.4		93.1		1.0		1.4	
962	D86-automated	45.3		63.2		92.8		1.0		1.0	
971	D86-automated	44.6		62.8		92.7		1.0		1.0	
974	D86-automated	45.1		63.9		92.8		1.0		1.5	
994	D86-manual	45.2		62.8		93.0		1.0		3.0	
1006	D86-automated	-----		-----		-----		0.9		1.9	
1011	ISO3405-automated	44.9		62.7		92.8		1.0		0.7	
1026	-----	44.9		63.2		93.0		1.0		0.7	
1033	IP123-automated	43.7		61.8		91.4		1.0		1.5	
1059	ISO3405-automated	45.2		63.1		92.6		1.0		2.1	
1066	D86-automated	45.7		63.4		92.8		1.1		1.8	
1079	ISO3405-automated	44.4		62.8		92.6		1.0		1.4	
1082	ISO3405-automated	46.1		63.7		93.0		0.9		2.9	
1108	ISO3405-automated	44.5	C	62.1	C	92.8	C	1		2.6	
1109	D86-automated	46.1		64.0		93.2		0.8		2.2	
1126	ISO3405-automated	46.1		63.3		92.2		0.9		3.5	
1134	D86-automated	40.6	R(1)	58.3	R(1)	87.6	R(1)	1.1		5.2	
1161	ISO3405-automated	44.1		62.2		92.9	C	0.9		-----	
1167	ISO3405-automated	44.7		62.3		93.0		1.0		1.2	
1171	ISO3405-manual	45.91		60.91		94.60	R(5)	1.00		2.34	
1186	D86-manual	39	R(1)	60	R(5)	89	R(1)	1.0		-----	
1191	ISO3405-automated	46.1		63.5		92.8		1.0		2.4	

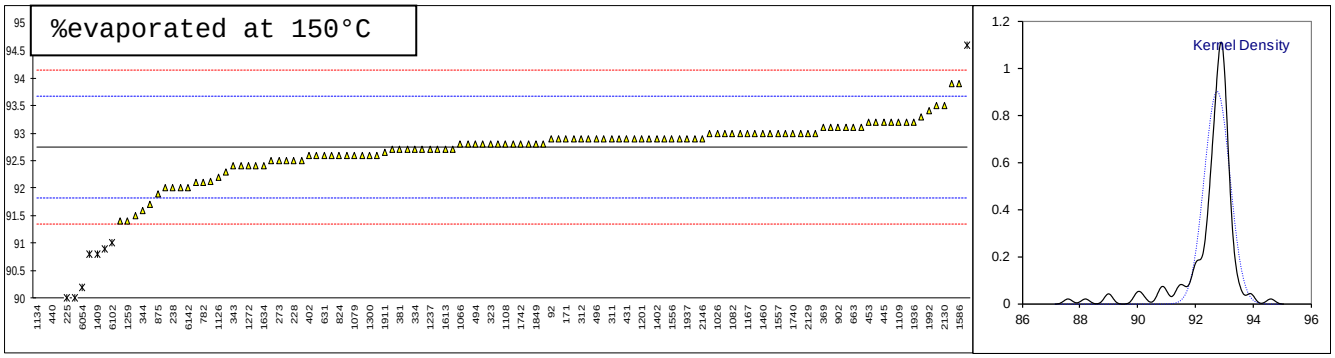
Lab	method	%E70°C	mark	%E100°C	mark	%E150°C	mark	%residue	mark	% loss	mark
1194	-----	-----		-----		-----		-----		-----	
1199	-----	-----		-----		-----		-----		-----	
1201	ISO3405-automated	45.8		63.8		92.9		1.0		2.7	
1205	D86-automated	45.2		63.0		92.7		1.0		2.0	
1229	ISO3405-automated	45.8		63.8		92.9		1.0		2.0	
1237	ISO3405-manual	-----	W	-----	W	92.7		1.2		1.8	
1259	ISO3405-automated	43.3		61.5		91.4		1.0		1.4	
1272	ISO3405-automated	44.4		62.8		92.4		0.9		1.6	
1299	D86-automated	45.3		63.7		92.6		1.4		1.6	
1300	ISO3405-automated	44.2		63.4		92.6		1.0		0.9	
1320	-----	44.9		63.6		93.0		-----		-----	
1389	D86-automated	-----	W	-----	W	-----	W	-----		-----	
1397	ISO3405-automated	44.8		62.6		92.4		0.8		1.4	
1402	ISO3405-automated	45.7		63.4		92.9		1.1		2.3	
1409	-----	43.0		61.2		90.8	R(5)	1.0		2.1	
1441	D86-automated	-----		-----		-----		1.5		2.0	
1457	ISO3405-automated	44.1		62.4		92.6		1.0		0.9	
1459	ISO3405-automated	45.7		63.4		92.7		1.0		3.4	
1460	D86-automated	45		63		93		1.0		3.4	
1468	ISO3405-automated	45.6		63.6		92.9		1.0		2.9	
1498	D86-automated	46		63		93		1.0		1.8	
1556	-----	45.7		63.7		92.9		1.0		2.6	
1557	-----	44.7		63.7		93.0		1.0		1.2	
1569	D86-automated	-----		-----		-----		-----		-----	
1586	D86-automated	45.6		63.6		93.9		1.0		0.2	
1613	D86-automated	45.5		63.1		92.7		1.0		2.2	
1631	ISO3405-automated	44.7		63.0		92.5		1.0		-----	
1634	-----	44.1		63.0		92.4		1.0		1.9	
1650	ISO3405-automated	44.1		62.0		91.5		1.2		0.9	
1676	-----	-----		-----		-----		-----		-----	
1689	GB/T6536	-----		-----		-----		-----		-----	
1710	ISO3405-automated	44.8		63.0		93.0		0.7		1.2	
1720	D86-automated	-----		-----		-----		-----		-----	
1724	D86-automated	45.1		63.2		92.9		1		1.9	
1728	ISO3405-manual	45.82		62.73		92.12		1.4		1.6	
1740	ISO3405-automated	43.9		64.5		93		1.1		1.8	
1741	-----	45.50		63.50		93.20		-----		-----	
1742	ISO3405-automated	45.7		63.5		92.8		1.0		3.6	
1776	ISO3405-automated	45.2		63.		93.0		1.0		1.1	
1782	D86-automated	39.8	C,R(1)	58.0	R(1)	88.2	C,R(1)	0.90		4.8	
1785	D86-automated	-----		-----		-----		1.0		1.6	
1807	ISO3405-automated	46.2		64.1		93.1		1.2		3.6	
1810	ISO3405-manual	45.0		63.0		92.7		1.0		1.6	
1811	ISO3405-automated	44.8		63.4		92.8		1		1.5	
1849	ISO3405-automated	45.4		63.5		92.8		1.0		-----	
1881	-----	-----		-----		-----		-----		-----	
1911	ISO3405-automated	45.30		63.45		92.65		1.00		3.00	
1936	ISO3405-automated	45.6		63.7		93.2		1.0		2.2	
1937	ISO3405-automated	45.4		63.4		92.9		1.0		1.9	
1938	ISO3405-automated	45.5		63.6		92.9		1.0		1.4	
1948	ISO3405	44.9		63.3		92.8		0.9		2.7	
1949	ISO3405-manual	44.5		65.0		93.5		1.0		2.0	
1953	ISO3405-automated	-----		-----		-----		1		4.9	
1977	ISO3405-automated	-----		-----		-----		1		2	
1992	D86-manual	42.7	C	64.5		93.4		0.9		1.3	
1995	-----	-----		-----		-----		-----		-----	
2129	ISO3405-automated	45.8		63.4		93.0		1.0		1.5	
2130	ISO3405-automated	45.4		63.3		93.5		0.8		2.1	
2146	-----	45.4		63.0		92.9		1.0		1.9	
6005	ISO3405-automated	43.1		61.2		90.9	R(5)	1.0		2.1	
6016	-----	-----		-----		-----		-----		-----	
6028	D86-automated	44.2		61.7		92.0		1.0		1.4	
6034	-----	-----		-----		-----		-----		-----	
6049	ISO3405-automated	44.4		63.3		93.0		0.8		0.5	
6054	D86-automated	42.9		60.8		90.2	R(1)	0.9		2.9	
6075	ISO3405-automated	45.9		63.5		93.3		1.6		2.2	
6102	D86-manual	42.5	C	63.0		91.0	R(5)	1.1		0.9	
6142	D86-automated	43.50		64.40	C	92.00		1.0		1.95	
6143	-----	-----		-----		-----		-----		-----	

	%E70°C	%E100°C	%E150°C
normality	OK	OK	suspect
n	120	120	112
outliers	3	3	12
mean (n)	44.851	63.093	92.748
st.dev. (n)	0.9258	0.8326	0.4413
R(calc.)	2.592	2.331	1.236
st.dev.(ISO3405-A:11)	0.9643	0.786	0.4643
R(ISO3405-A:11)	2.7	2.2	1.3
Compare			
R(ISO3405-M;11)	unknown	unknown	unknown

Lab 230: first reported 41.0
Lab 399: first reported 40.0, 59.5, 89.5
Lab 440: first reported 91.0
Lab 468; first reported 60.3, 89.7
Lab 754: first reported 43.0, 61.5, 90.5
Lab 875: first reported 91.3
Lab 1108: first reported 41.9, 59.5, 90.2
Lab 1161: first reported 91.3
Lab 1237: results withdrawn, reported 39.6, 65.4
Lab 1389: results withdrawn, reported 42.3, 60.9, 90.7
Lab 1782: first reported 40.0, 87.7
Lab 1992: first reported 40.8
Lab 6102: first reported 48.5
Lab 6142: first reported 60.10


%evaporated at 70°C
Kernel Density


%evaporated at 100°C
Kernel Density


%evaporated at 150°C
Kernel Density

Determination of Doctor Test on sample #17200;

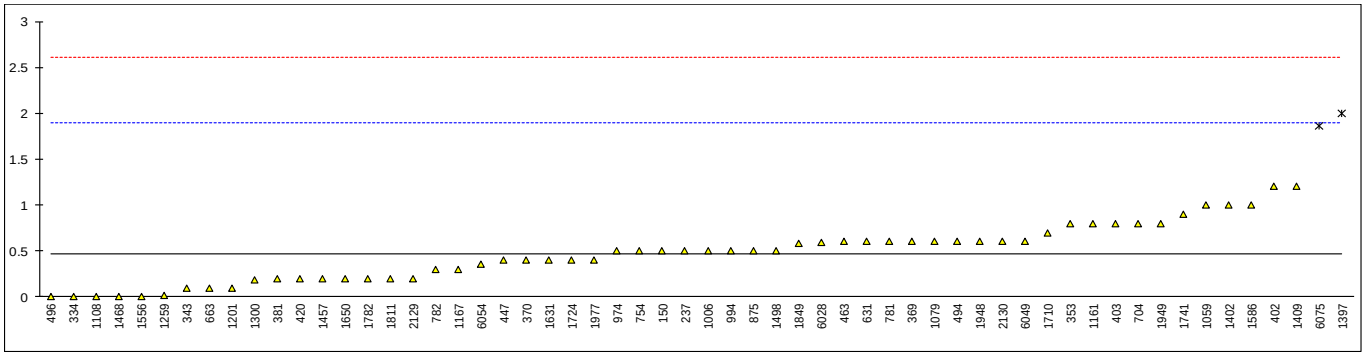
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92	D4952	Neg		-----	1167		-----		-----
140	D4952	Negative		-----	1171		-----		-----
150	D4952	Neg		-----	1186		-----		-----
171	D4952	Negative		-----	1191		-----		-----
225	D4952	Negative		-----	1194		-----		-----
228		-----		-----	1199		-----		-----
230	D4952	Negative		-----	1201	IP30	neg		-----
237	D4952	Negative		-----	1205		-----		-----
238	D4952	Negative		-----	1229		-----		-----
273	D4952	Negative		-----	1237		-----		-----
311	D4952	negative		-----	1259	ISO5275	negative		-----
312	IP30	Negative		-----	1272		-----		-----
323	D4952	negative		-----	1299		-----		-----
333		-----		-----	1300	ISO5275	negative		-----
334		-----		-----	1320	D4952	negative		-----
335		-----		-----	1389	IP30	Negative		-----
336	D4952	Negative		-----	1397		-----		-----
337		-----		-----	1402	IP30	negative		-----
338		-----		-----	1409		-----		-----
343		-----		-----	1441	D4952	negative		-----
344		-----		-----	1457	IP30	Negative		-----
353		-----		-----	1459		-----		-----
369	IP30	negative		-----	1460		-----		-----
370	D4952	negative		-----	1468		-----		-----
371	D4952	Negative		-----	1498		-----		-----
381		-----		-----	1556	D4952	negative		-----
391	IP30	Negative		-----	1557		-----		-----
399		-----		-----	1569		-----		-----
402		-----		-----	1586	D4952	Negative		-----
403		-----		-----	1613	IP30	Neg.		-----
420		-----		-----	1631		-----		-----
431		-----		-----	1634		-----		-----
440		-----		-----	1650		-----		-----
444		-----		-----	1676		-----		-----
445	IP30	Negative		-----	1689		-----		-----
447	D4952	Negative		-----	1710	ISO5275	negative		-----
453		-----		-----	1720	D4952	Negative		-----
463	IP30	neg		-----	1724		-----		-----
468		-----		-----	1728	D4952	negative		-----
485		-----		-----	1740	IP30	negative		-----
494	D4952	negativ		-----	1741	D4952	negative		-----
496		-----		-----	1742		-----		-----
541	IP30	Negative		-----	1776		-----		-----
631		-----		-----	1782	D4952	negative		-----
663	D4952	Negative		-----	1785	D4952	negative		-----
671		-----		-----	1807	D4952	negative		-----
704	D4952	negative		-----	1810		0.6		-----
754	D4952	negative		-----	1811		-----		-----
781	D4952	Sweet		-----	1849	INH-2884	Negative		-----
782		-----		-----	1881		-----		-----
785		-----		-----	1911		-----		-----
798		-----		-----	1936		-----		-----
824	D4952	negative		-----	1937		-----		-----
861		-----		-----	1938		-----		-----
875	D4952	negative		-----	1948		-----		-----
902		-----		-----	1949	D4952	Sweet		-----
962	D4952	Negative		-----	1953		-----		-----
971	D4952	Negative		-----	1977		-----		-----
974	IP30	Negative		-----	1992		-----		-----
994	D4952	negative		-----	1995		-----		-----
1006		-----		-----	2129	IP30	Negative		-----
1011		-----		-----	2130	IP30	Negative		-----
1026	D4952	Negative		-----	2146		-----		-----
1033		-----		-----	6005		-----		-----
1059	ISO5275	negative		-----	6016		-----		-----
1066	D4952	negative		-----	6028		-----		-----
1079	IP30	negative		-----	6034		-----		-----
1082		-----		-----	6049	IP30	Negative		-----
1108		-----		-----	6054	D4952	négative		-----
1109	IP30	Negative		-----	6075		-----		-----
1126		-----		-----	6102		-----		-----
1134	D4952	Negative		-----	6142	IP30	Negative		-----
1161		-----		-----	6143		-----		-----

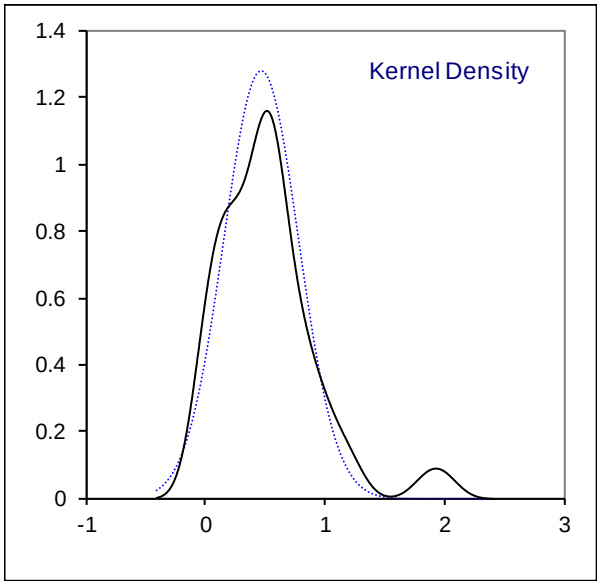
normality	n.a.
n	64
outliers	n.a..
mean (n)	negative
st.dev. (n)	n.a.
R(calc.)	n.a.
st.dev.(lit)	n.a.
R(lit)	n.a.

Determination of Existent Gum (solvent washed) on sample #17200; results in mg/100mL

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92		-----		-----	1167	ISO6246	0.3		-0.24
140	D381	<0.5		-----	1171		-----		-----
150	D381	0.5		0.04	1186		-----		-----
171	D381	<0.5		-----	1191		-----		-----
225		-----		-----	1194		-----		-----
228		-----		-----	1199		-----		-----
230	D381	<0.5		-----	1201	ISO6246	0.1		-0.52
237	D381	0.5		0.04	1205		-----		-----
238		-----		-----	1229		-----		-----
273	D381	<0.5		-----	1237		-----		-----
311	D381	<1		-----	1259	ISO6246	0.02		-0.64
312	D381	<0.5		-----	1272		-----		-----
323	ISO6246	< 0.5		-----	1299	D381	<0.5		-----
333		-----		-----	1300	ISO6246	0.183		-0.41
334	ISO6246	0		-0.66	1320	ISO6246	<1		-----
335		-----		-----	1389	D381	<0.5		-----
336		-----		-----	1397	ISO6246	2.0	R(0.01)	2.15
337		-----		-----	1402	IP131	1.0		0.74
338		-----		-----	1409	ISO6246	1.2		1.02
343	D381	0.1		-0.52	1441		-----		-----
344		-----		-----	1457	ISO6246	0.2		-0.38
353	IP131	0.8		0.46	1459		-----		-----
369	ISO6246	0.6		0.18	1460	D381	<0.5		-----
370	ISO6246	0.4		-0.10	1468	ISO6246	0.0		-0.66
371		-----		-----	1498	D381	0.5		0.04
381	ISO6246	0.2		-0.38	1556	ISO6246	0		-0.66
391		-----		-----	1557		-----		-----
399		-----		-----	1569	ISO6246	<1		-----
402	ISO6246	1.2		1.02	1586	D381	1		0.74
403	ISO6246	0.8		0.46	1613	D381	<0.5		-----
420	ISO6246	0.2		-0.38	1631	ISO6246	0.4		-0.10
431		-----		-----	1634		-----		-----
440		-----		-----	1650	ISO6246i	0.2		-0.38
444	D381	<0.5		-----	1676		-----		-----
445	IP131	<1		-----	1689		-----		-----
447	D381	0.4		-0.10	1710	ISO6246	0.7		0.32
453	IP131	<0.5		-----	1720		-----		-----
463	ISO6246	0.6		0.18	1724	D381	0.4		-0.10
468	ISO6246	<1,0		-----	1728		-----		-----
485		-----		-----	1740		-----		-----
494	ISO6246	0.6		0.18	1741	ISO6246/D381	0.9		0.60
496	ISO6246	0		-0.66	1742		-----		-----
541	D381	<0.5		-----	1776		-----		-----
631	D381	0.6		0.18	1782	D381	0.20		-0.38
663	D381	0.1		-0.52	1785		-----		-----
671	D381	<0.5		-----	1807	ISO6246	<1		-----
704	ISO6246	0.8		0.46	1810		-----		-----
754	D381	0.5		0.04	1811	ISO6246	0.2		-0.38
781	ISO6246	0.6		0.18	1849	ISO6246	0.58		0.15
782	D381	0.3		-0.24	1881		-----		-----
785		-----		-----	1911		-----		-----
798		-----		-----	1936		-----		-----
824	D381	<0.5		-----	1937		-----		-----
861		-----		-----	1938		-----		-----
875	D381	0.50		0.04	1948	ISO6246	0.6		0.18
902		-----		-----	1949	D381	0.8		0.46
962		-----		-----	1953		-----		-----
971		-----		-----	1977	ISO6246	0.4		-0.10
974	D381	0.5		0.04	1992		-----		-----
994	D381	0.5		0.04	1995		-----		-----
1006	D381	0.5		0.04	2129	ISO6246	0.2		-0.38
1011	ISO6246	<1		-----	2130	ISO6246	0.6		0.18
1026	ISO6246	<0.5		-----	2146		-----		-----
1033		-----		-----	6005		-----		-----
1059	ISO6246	1.0		0.74	6016		-----		-----
1066		-----		-----	6028	ISO6246	0.59		0.17
1079	ISO6246	0.6		0.18	6034		-----		-----
1082		-----		-----	6049	ISO6246	0.6		0.18
1108	ISO6246	0		-0.66	6054	D381	0.36		-0.16
1109	D381	<1		-----	6075	ISO6246	1.86	R(0.01)	1.95
1126		-----		-----	6102		-----		-----
1134	D381	<0.5		-----	6142		-----		-----
1161	ISO6246	0.8		0.46	6143		-----		-----

normality	OK
n	56
outliers	2
mean (n)	0.472
st.dev. (n)	0.3099
R(calc.)	0.868
st.dev.(ISO6246:17)	0.711
R(ISO6246:17)	1.991



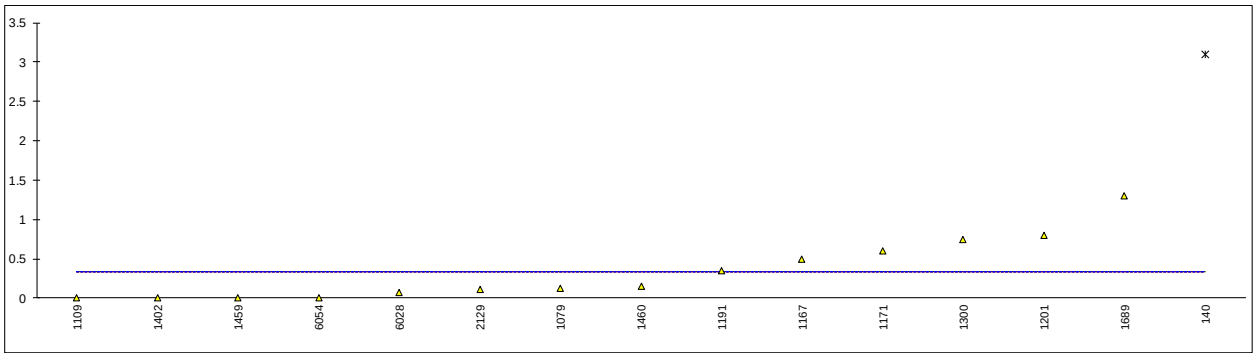


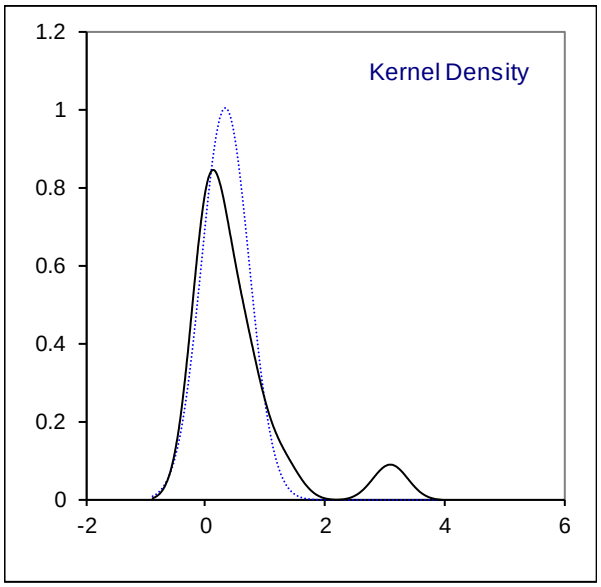
Determination of Lead as Pb on sample #17200; results in mg/L

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92		-----		-----	1167	EN237	0.5		-----
140	D3237	3.1	G(0.01)	-----	1171	D5059	0.6		-----
150		-----		-----	1186		-----		-----
171	D3237	<0.1		-----	1191	INH-101	0.35		-----
225		-----		-----	1194		-----		-----
228		-----		-----	1199		-----		-----
230	D3237	<2.5		-----	1201	EN237	0.8		-----
237		-----		-----	1205		-----		-----
238		-----		-----	1229		<0,025	U	-----
273		-----		-----	1237		-----		-----
311		-----		-----	1259		-----		-----
312	D3237	<2,5		-----	1272	IP352	<2,5		-----
323	EN237	< 2.5		-----	1299	EN237	<0.0025	U	-----
333		-----		-----	1300	EN237	0.75		-----
334		-----		-----	1320	EN237	<2,0		-----
335		-----		-----	1389	D3237	<2.5		-----
336		-----		-----	1397		-----		-----
337		-----		-----	1402	EN237	0		-----
338		-----		-----	1409		-----		-----
343		-----		-----	1441	D3237	<2.5		-----
344		-----		-----	1457	IP428	<0.1		-----
353		-----		-----	1459	In house	0		-----
369		-----		-----	1460	D3237	0.147		-----
370		-----		-----	1468		-----		-----
371	EN237	<2.5		-----	1498		-----		-----
381	EN237	<2,5		-----	1556		-----		-----
391		-----		-----	1557		-----		-----
399		-----		-----	1569		-----		-----
402	EN237	<2.5		-----	1586		-----		-----
403	EN237	<2.5		-----	1613	D3237	<2.5		-----
420	EN237	<2,5		-----	1631	EN237	<3.0		-----
431		-----		-----	1634		-----		-----
440		-----		-----	1650		-----		-----
444		-----		-----	1676		-----		-----
445		-----		-----	1689	GB/T8020	1.30		-----
447	D3237	<2.5		-----	1710		-----		-----
453		-----		-----	1720		-----		-----
463	EN237	<2,5		-----	1724	EN237	<3		-----
468		-----		-----	1728	EN237	<2.5		-----
485		-----		-----	1740		-----		-----
494		-----		-----	1741	EN237	<2,5		-----
496		-----		-----	1742		-----		-----
541	D3237	<2.5		-----	1776		-----		-----
631	D3237	<0.0025	U	-----	1782	EN237	<2.5		-----
663		-----		-----	1785		-----		-----
671		-----		-----	1807		-----		-----
704	EN237	< 2.5		-----	1810		-----		-----
754		-----		-----	1811		-----		-----
781	EN237	<2.5		-----	1849	EN237	< 3,0		-----
782		-----		-----	1881		-----		-----
785		-----		-----	1911		-----		-----
798		-----		-----	1936		-----		-----
824		-----		-----	1937		-----		-----
861		-----		-----	1938		-----		-----
875	EN237	<2.5		-----	1948	EN237	<0.1		-----
902		-----		-----	1949	EN237	<2.5		-----
962	D3237	< 2.5		-----	1953		-----		-----
971	D3237	<2.5		-----	1977		-----		-----
974		-----		-----	1992		-----		-----
994		-----		-----	1995		-----		-----
1006	D3237	<2.5		-----	2129	EN237	0.11		-----
1011	EN237	<3		-----	2130	IP352	<2.5		-----
1026		-----		-----	2146		<1		-----
1033		-----		-----	6005		-----		-----
1059	EN13723	<2,5		-----	6016		-----		-----
1066		-----		-----	6028		0.07		-----
1079	EN237	0.13		-----	6034		-----		-----
1082	D7111	<0.1		-----	6049	EN237	<2.5		-----
1108		-----		-----	6054	D5059-A	0.003		-----
1109	D3237	0.0		-----	6075		-----		-----
1126		-----		-----	6102		-----		-----
1134		-----		-----	6142		-----		-----
1161	EN237	<2,5		-----	6143		-----		-----

normality	unknown
n	52
outliers	1
mean (n)	<2.5
st.dev. (n)	n.a.
R(calc.)	n.a.
st.dev.(EN237:04)	n.a.
R(EN237:04)	n.a.

Lab 631, 1229 and 1299: reported the test results probably in a different unit?





Determination of Manganese as Mn on sample #17200; results in mg/L

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92		-----		-----	1167	EN16135	0.02		-----
140		-----		-----	1171		-----		-----
150		-----		-----	1186		-----		-----
171	D3831	0.28		-----	1191	EN16136	<0.5		-----
225		-----		-----	1194		-----		-----
228		-----		-----	1199		-----		-----
230		-----		-----	1201	EN16136	0.3		-----
237		-----		-----	1205		-----		-----
238		-----		-----	1229		-----		-----
273		-----		-----	1237		-----		-----
311		-----		-----	1259		-----		-----
312	EN16136	<0.5		-----	1272		<2,0		-----
323	EN16135	< 0.25		-----	1299	EN16135	<2.0		-----
333		-----		-----	1300	EN16136	0.0124		-----
334		-----		-----	1320	EN16135	<2,0		-----
335		-----		-----	1389	D3831	<0.25		-----
336		-----		-----	1397		-----		-----
337		-----		-----	1402		-----		-----
338		-----		-----	1409		-----		-----
343		-----		-----	1441	D3831	<0.25		-----
344		-----		-----	1457	EN16135	<0.1		-----
353		-----		-----	1459		-----		-----
369	EN16136	<0.5		-----	1460		-----		-----
370		-----		-----	1468		-----		-----
371	EN16135	<2.0		-----	1498		-----		-----
381	EN16135	<2,0		-----	1556		-----		-----
391		-----		-----	1557		-----		-----
399		-----		-----	1569	D5185	<0.1		-----
402	EN16135	<2.0		-----	1586		-----		-----
403	EN16136	<0.5		-----	1613	D3831	<0.25		-----
420	EN16135	<1,0		-----	1631	EN16136	<3.0		-----
431		-----		-----	1634		-----		-----
440		-----		-----	1650		-----		-----
444		-----		-----	1676		-----		-----
445	EN16135	<0.2		-----	1689		-----		-----
447		<2.0		-----	1710		-----		-----
453		-----		-----	1720		-----		-----
463	EN16135	0.57		-----	1724	EN16135	<2		-----
468		-----		-----	1728		-----		-----
485		-----		-----	1740		-----		-----
494	EN16136	<0.5		-----	1741	EN16135	<2,0		-----
496		-----		-----	1742		-----		-----
541	D3831	<0.25		-----	1776		-----		-----
631	D3831	<0.25		-----	1782	EN16136	0.56		-----
663		-----		-----	1785		-----		-----
671		-----		-----	1807		-----		-----
704	EN16135	<2		-----	1810		-----		-----
754		-----		-----	1811		-----		-----
781	D3831	<0.25		-----	1849		-----		-----
782		-----		-----	1881		-----		-----
785		-----		-----	1911		-----		-----
798		-----		-----	1936		-----		-----
824		-----		-----	1937		-----		-----
861		-----		-----	1938		-----		-----
875		-----		-----	1948	EN16135	<0.1		-----
902		-----		-----	1949	EN16135	<2		-----
962		-----		-----	1953		-----		-----
971	D3831	<0.25		-----	1977		-----		-----
974		-----		-----	1992		-----		-----
994		-----		-----	1995		-----		-----
1006		-----		-----	2129	D3831	0.00		-----
1011		-----		-----	2130		-----		-----
1026		-----		-----	2146		<2		-----
1033		-----		-----	6005		-----		-----
1059		-----		-----	6016		-----		-----
1066		-----		-----	6028	D5185	0.001		-----
1079	EN16135	0.045		-----	6034		-----		-----
1082	D7111	0.07		-----	6049	EN16136	<0.50		-----
1108		-----		-----	6054		-----		-----
1109		-----		-----	6075		-----		-----
1126		-----		-----	6102		-----		-----
1134		-----		-----	6142		-----		-----
1161	D3831	<2		-----	6143		-----		-----

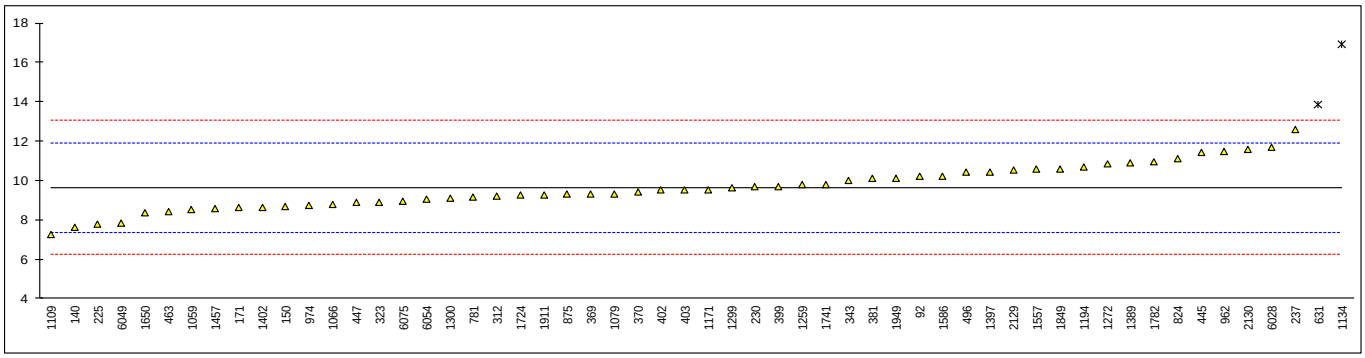
normality	n.a.
n	42
outliers	n.a.
mean (n)	<2
st.dev. (n)	n.a.
R(calc.)	n.a.
st.dev.(lit)	n.a.
R(lit)	n.a.

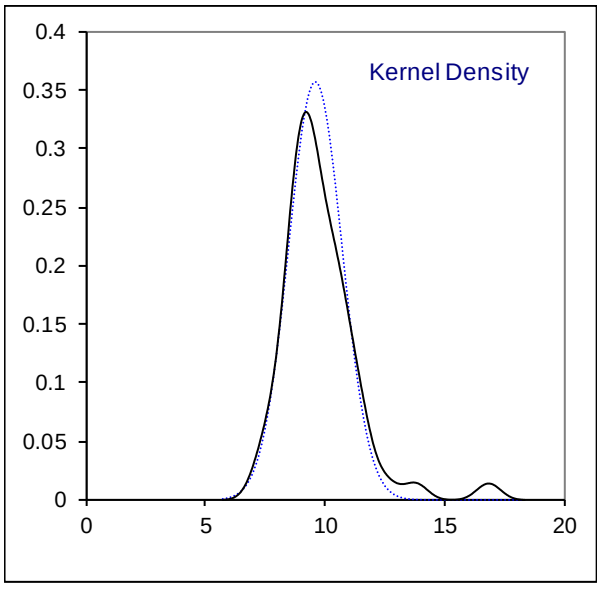
Determination of Olefins by FIA without oxygenates correction on sample #17200; results in %V/V

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92	D1319	10.2		0.50	1167		-----		-----
140	D1319	7.6		-1.79	1171	D1319Mod.	9.52		-0.10
150	D1319	8.7		-0.82	1186		-----		-----
171	D1319	8.6		-0.91	1191		-----		-----
225	D1319	7.8		-1.61	1194	D1319	10.7		0.94
228		-----		-----	1199		-----		-----
230	EN15553	9.680		0.04	1201		-----		-----
237	D1319	12.6		2.61	1205		-----		-----
238		-----		-----	1229		-----		-----
273		-----		-----	1237		-----		-----
311		-----		-----	1259	EN15553	9.767		0.12
312	EN15553	9.2		-0.38	1272	INH-401	10.85		1.07
323	EN15553	8.9		-0.65	1299	D1319	9.6		-0.03
333		-----		-----	1300	EN15553	9.10		-0.47
334		-----		-----	1320		-----		-----
335		-----		-----	1389	D1319	10.9		1.11
336		-----		-----	1397	EN15553	10.4		0.67
337		-----		-----	1402	D1319	8.6		-0.91
338		-----		-----	1409		-----		-----
343	EN15553	10.0		0.32	1441		-----		-----
344		-----		-----	1457	D1319	8.56		-0.94
353		-----		-----	1459		-----		-----
369	EN15553	9.3		-0.29	1460		-----		-----
370	EN15553	9.43		-0.18	1468		-----		-----
371		-----		-----	1498		-----		-----
381	EN15553	10.1		0.41	1556		-----		-----
391		-----		-----	1557	INH-1200	10.6		0.85
399	D1319	9.7		0.06	1569		-----		-----
402	D1319	9.5		-0.12	1586	D1319	10.2		0.50
403	EN15553	9.5		-0.12	1613		-----		-----
420		-----		-----	1631		-----		-----
431		-----		-----	1634		-----		-----
440		-----		-----	1650	EN15553	8.36		-1.12
444		-----		-----	1676		-----		-----
445	D1319	11.4		1.55	1689		-----		-----
447	D1319	8.9		-0.65	1710		-----		-----
453		-----		-----	1720		-----		-----
463	D1319	8.42		-1.07	1724	D1319	9.23		-0.36
468		-----		-----	1728		-----		-----
485		-----		-----	1740		-----		-----
494		-----		-----	1741	D1319/EN15553	9.80		0.15
496	D1319	10.40		0.67	1742		-----		-----
541		-----		-----	1776		-----		-----
631	D1319	13.83	R(0.05)	3.69	1782	D1319	10.94		1.15
663		-----		-----	1785		-----		-----
671		-----		-----	1807		-----		-----
704		-----		-----	1810		-----		-----
754		-----		-----	1811		-----		-----
781	D1319	9.13		-0.44	1849	EN15553	10.6		0.85
782		-----		-----	1881		-----		-----
785		-----		-----	1911	EN15553	9.24		-0.35
798		-----		-----	1936		-----		-----
824	D1319	11.1		1.29	1937		-----		-----
861		-----		-----	1938		-----		-----
875	D1319	9.3		-0.29	1948		-----		-----
902		-----		-----	1949	EN15553	10.1	C	0.41
962	D1319	11.5	C	1.64	1953		-----		-----
971		-----		-----	1977		-----		-----
974	D1319	8.74		-0.79	1992		-----		-----
994		-----		-----	1995		-----		-----
1006		-----		-----	2129	EN15553	10.5		0.76
1011		-----		-----	2130	EN15553	11.6		1.73
1026		-----		-----	2146		-----		-----
1033		-----		-----	6005		-----		-----
1059	EN15553	8.5		-1.00	6016		-----		-----
1066	D1319	8.8		-0.73	6028	EN15553	11.7		1.82
1079	D1319	9.3		-0.29	6034		-----		-----
1082		-----		-----	6049	D1319	7.85		-1.57
1108		-----		-----	6054	D1319	9.0354		-0.53
1109	D1319	7.26		-2.09	6075	EN15553	8.93		-0.62
1126		-----		-----	6102		-----		-----
1134	D1319	16.9	R(0.01)	6.38	6142		-----		-----
1161		-----		-----	6143		-----		-----

normality	OK
n	54
outliers	2
mean (n)	9.634
st.dev. (n)	1.1195
R(calc.)	3.134
st.dev.(EN15553:07)	1.1380
R(EN15553:07)	3.186

Lab 962: first reported 17.9
Lab 1949: first reported 14.6





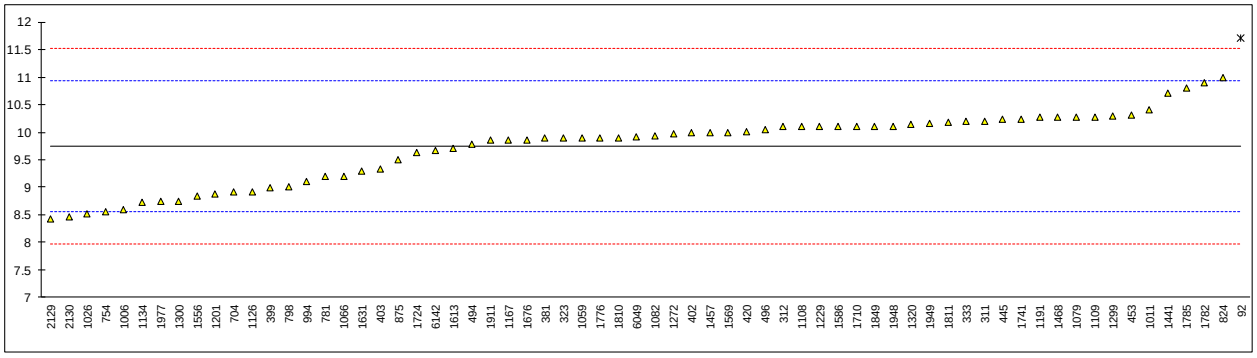
Determination of Olefins by GC on sample #17200; results in %V/V

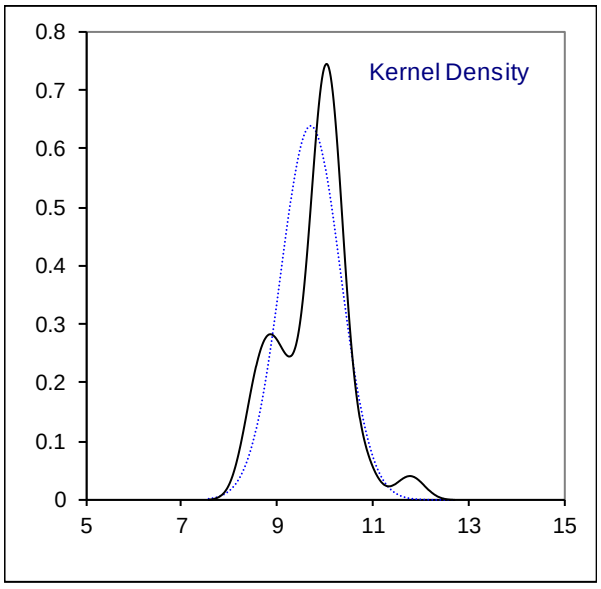
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92	INH-3.0/14.3	11.70	R(0.05)	3.31	1167	ISO22854	9.86		0.20
140		-----		-----	1171		-----		-----
150		-----		-----	1186		-----		-----
171		-----		-----	1191	ISO22854	10.27		0.89
225		-----		-----	1194		-----		-----
228		-----		-----	1199		-----		-----
230		-----		-----	1201	ISO22854	8.88		-1.46
237		-----		-----	1205		-----		-----
238		-----		-----	1229	ISO22854	10.1		0.61
273		-----		-----	1237		-----		-----
311	ISO22854	10.2		0.77	1259		-----		-----
312	ISO22854	10.1		0.61	1272	ISO22854	9.97		0.39
323	ISO22854	9.9		0.27	1299	ISO22854	10.3		0.94
333	ISO22854	10.2		0.77	1300	D6730	8.754		-1.67
334		-----		-----	1320	ISO22854	10.14		0.67
335		-----		-----	1389		-----		-----
336		-----		-----	1397		-----		-----
337		-----		-----	1402		-----		-----
338		-----		-----	1409		-----		-----
343		-----		-----	1441	D6839	10.7		1.62
344		-----		-----	1457	ISO22854	10.00		0.44
353		-----		-----	1459		-----		-----
369		-----		-----	1460		-----		-----
370		-----		-----	1468	ISO22854	10.27		0.89
371		-----		-----	1498		-----		-----
381	ISO22854	9.9		0.27	1556	ISO22854	8.84		-1.52
391		-----		-----	1557		-----		-----
399	ISO22854	8.99		-1.27	1569	ISO22854	10.00		0.44
402	ISO22854	9.99		0.42	1586	ISO22854	10.1		0.61
403	ISO22854	9.33		-0.70	1613	D6839	9.7		-0.07
420	ISO22854	10.01		0.45	1631	ISO22854	9.3		-0.75
431		-----		-----	1634		-----		-----
440		-----		-----	1650		-----		-----
444		-----		-----	1676	ISO22854	9.867		0.21
445	ISO22854	10.23		0.82	1689		-----		-----
447		-----		-----	1710	ISO22854	10.1		0.61
453	ISO22854	10.31		0.96	1720		-----		-----
463		-----		-----	1724	ISO22854	9.64		-0.17
468		-----		-----	1728		-----		-----
485		-----		-----	1740		-----		-----
494	ISO22854	9.78		0.06	1741	ISO22854	10.23		0.82
496	ISO22854	10.05		0.52	1742		-----		-----
541		-----		-----	1776	ISO22854	9.90		0.27
631		-----		-----	1782	ISO22854	10.9		1.96
663		-----		-----	1785	GB/T30519	10.8		1.79
671		-----		-----	1807		-----		-----
704	D6730	8.910		-1.40	1810	ISO22854	9.9		0.27
754	D6729	8.558		-2.00	1811	ISO22854	10.17		0.72
781	ISO22854	9.20		-0.92	1849	ISO22854	10.1		0.61
782		-----		-----	1881		-----		-----
785		-----		-----	1911	ISO22854	9.85		0.18
798	D6730	9.008		-1.24	1936		-----		-----
824	D6839	11.0		2.13	1937		-----		-----
861		-----		-----	1938		-----		-----
875	D6729	9.493		-0.42	1948	ISO22854	10.10		0.61
902		-----		-----	1949	ISO22854	10.16		0.71
962		-----		-----	1953		-----		-----
971		-----		-----	1977	D6730	8.743		-1.69
974		-----		-----	1992		-----		-----
994	D6729	9.11		-1.07	1995		-----		-----
1006	D6730	8.59		-1.95	2129	D6730	8.42		-2.23
1011	ISO22854	10.4		1.11	2130	D6730	8.46		-2.17
1026	ISO22854	8.51		-2.08	2146		-----		-----
1033		-----		-----	6005		-----		-----
1059	ISO22854	9.9		0.27	6016		-----		-----
1066	ISO22854	9.2		-0.92	6028		-----		-----
1079	ISO22854	10.28		0.91	6034		-----		-----
1082	ISO22854	9.94		0.34	6049	ISO22854	9.915		0.29
1108	ISO22854	10.1		0.61	6054		-----		-----
1109	D6839	10.28		0.91	6075		-----		-----
1126	EN14517	8.91		-1.40	6102		-----		-----
1134	ISO22854	8.72		-1.73	6142	EN14517	9.67	C	-0.12
1161		-----		-----	6143		-----		-----

Only ISO22854 Only D6729/D6730

normality	OK	Suspect	OK
n	65	48	10
outliers	1	0	0
mean (n)	9.742	9.877	8.805
st.dev. (n)	0.6405	0.4835	0.3333
R(calc.)	1.793	1.354	0.933
st.dev.(ISO22854-A:16)	0.5919	0.5974	unknown
R(ISO22854-A:16)	1.657	1.673	unknown

Lab 6142: first reported 7.82



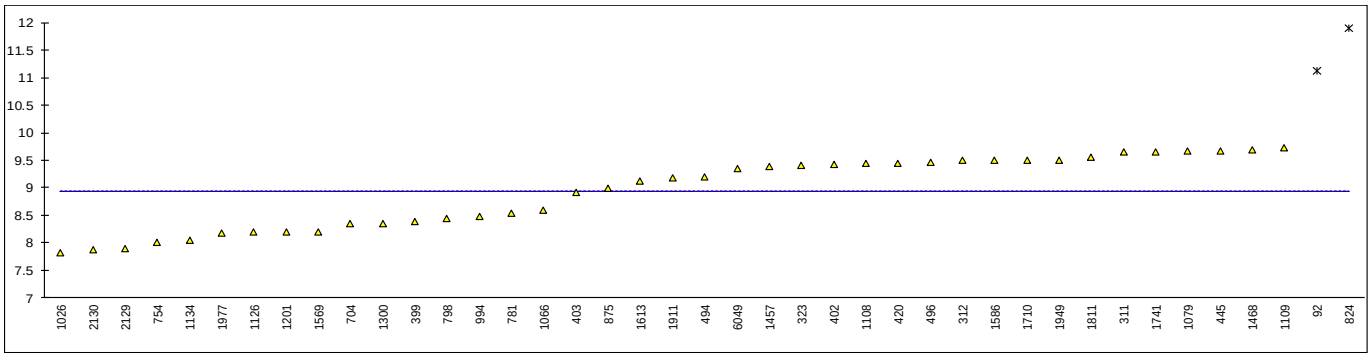


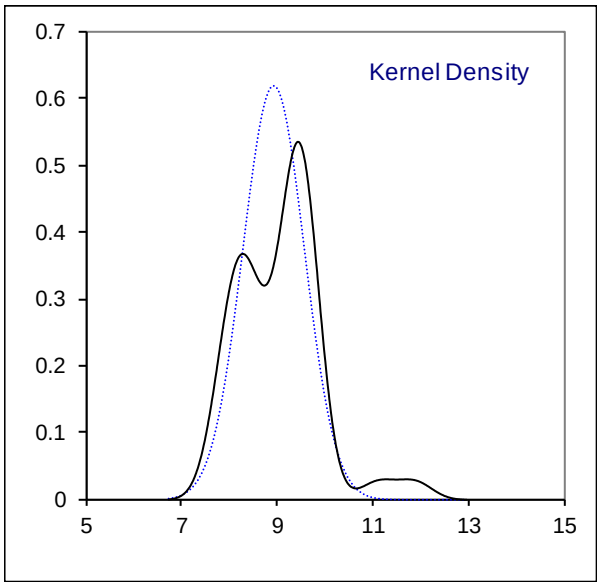
Determination of Olefins by GC on sample #17200; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92	INH-3.0/14.3	11.13	R(0.05)	-----	1167		-----		-----
140		-----		-----	1171		-----		-----
150		-----		-----	1186		-----		-----
171		-----		-----	1191		-----		-----
225		-----		-----	1194		-----		-----
228		-----		-----	1199		-----		-----
230		-----		-----	1201	ISO22854	8.2		-----
237		-----		-----	1205		-----		-----
238		-----		-----	1229		-----		-----
273		-----		-----	1237		-----		-----
311	ISO22854	9.65		-----	1259		-----		-----
312	ISO22854	9.5		-----	1272		-----		-----
323	ISO22854	9.4		-----	1299		-----		-----
333		-----		-----	1300	D6730	8.342		-----
334		-----		-----	1320		-----		-----
335		-----		-----	1389		-----		-----
336		-----		-----	1397		-----		-----
337		-----		-----	1402		-----		-----
338		-----		-----	1409		-----		-----
343		-----		-----	1441		-----		-----
344		-----		-----	1457	ISO22854	9.39		-----
353		-----		-----	1459		-----		-----
369		-----		-----	1460		-----		-----
370		-----		-----	1468	ISO22854	9.69		-----
371		-----		-----	1498		-----		-----
381		-----		-----	1556		-----		-----
391		-----		-----	1557		-----		-----
399	ISO22854	8.39		-----	1569	ISO22854	8.20		-----
402	ISO22854	9.43		-----	1586	ISO22854	9.5		-----
403	ISO22854	8.91		-----	1613	D6839	9.12		-----
420	ISO22854	9.45		-----	1631		-----		-----
431		-----		-----	1634		-----		-----
440		-----		-----	1650		-----		-----
444		-----		-----	1676		-----		-----
445	ISO22854	9.67		-----	1689		-----		-----
447		-----		-----	1710	ISO22854	9.5		-----
453		-----		-----	1720		-----		-----
463		-----		-----	1724		-----		-----
468		-----		-----	1728		-----		-----
485		-----		-----	1740		-----		-----
494	ISO22854	9.20		-----	1741	ISO22854	9.65		-----
496	ISO22854	9.46		-----	1742		-----		-----
541		-----		-----	1776		-----		-----
631		-----		-----	1782		-----		-----
663		-----		-----	1785		-----		-----
671		-----		-----	1807		-----		-----
704	D6730	8.341		-----	1810		-----		-----
754	D6729	8.007		-----	1811	ISO22854	9.56		-----
781	ISO22854	8.54		-----	1849		-----		-----
782		-----		-----	1881		-----		-----
785		-----		-----	1911	ISO22854	9.17		-----
798	D6730	8.446		-----	1936		-----		-----
824	D6839	11.9	R(0.05)	-----	1937		-----		-----
861		-----		-----	1938		-----		-----
875	D6729	8.989		-----	1948		-----		-----
902		-----		-----	1949	ISO22854	9.505		-----
962		-----		-----	1953		-----		-----
971		-----		-----	1977	D6730	8.174		-----
974		-----		-----	1992		-----		-----
994	D6729	8.490		-----	1995		-----		-----
1006		-----		-----	2129	D6730	7.89		-----
1011		-----		-----	2130	D6730	7.87		-----
1026	ISO22854	7.82		-----	2146		-----		-----
1033		-----		-----	6005		-----		-----
1059		-----		-----	6016		-----		-----
1066	ISO22854	8.6		-----	6028		-----		-----
1079	ISO22854	9.67		-----	6034		-----		-----
1082		-----		-----	6049	ISO22854	9.345		-----
1108	ISO22854	9.44		-----	6054		-----		-----
1109	D6839	9.72		-----	6075		-----		-----
1126	EN14517	8.19		-----	6102		-----		-----
1134	ISO22854	8.05		-----	6142		-----		-----
1161		-----		-----	6143		-----		-----

Only ISO22854 Only D6729/D6730

	normality	OK	OK	OK
	n	39	27	9
	outliers	2	0	0
	mean (n)	8.935	9.144	8.283
	st.dev. (n)	0.6447	0.5750	0.3514
	R(calc.)	1.805	1.610	0.984
	st.dev.(lit)	unknown	unknown	unknown
	R(lit)	unknown	unknown	unknown
Compare				
	R(iis16B05EN)	0.983		





Determination of Oxidation Stability on sample #17200; results in minutes

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92		-----		-----	1167	ISO7536	>900		-----
140	D525	>900		-----	1171		-----		-----
150	D525	>900		-----	1186		-----		-----
171	D525	241	false pos?	-----	1191		-----		-----
225	D525	>360		-----	1194		-----		-----
228	D525	454		-----	1199		-----		-----
230		-----		-----	1201	ISO7536	>1440		-----
237	D525	>900		-----	1205		-----		-----
238		-----		-----	1229		-----		-----
273		-----		-----	1237		-----		-----
311	D525	>900		-----	1259		-----		-----
312	D525	>900		-----	1272	ISO7536	>900		-----
323	ISO7536	900		-----	1299	D525	>960		-----
333		-----		-----	1300	ISO7536	1602		-----
334		-----		-----	1320	ISO7536	>900		-----
335		-----		-----	1389	D525	>480		-----
336	ISO7536	>900		-----	1397		-----		-----
337		-----		-----	1402	D525	>900		-----
338		-----		-----	1409		-----		-----
343	D525	>900		-----	1441	D525	>900		-----
344		-----		-----	1457	ISO7536	>900		-----
353		-----		-----	1459		-----		-----
369		-----		-----	1460	D525	>900		-----
370		-----		-----	1468	ISO7536	>900		-----
371	ISO7536	>900		-----	1498		-----		-----
381		-----		-----	1556	ISO7536	>900		-----
391		-----		-----	1557		-----		-----
399		-----		-----	1569	ISO7536	>500		-----
402	ISO7536	>900		-----	1586	D525	>900		-----
403	ISO7536	>900		-----	1613	D525	>360		-----
420	ISO7536	>900		-----	1631	ISO7536	>900		-----
431		-----		-----	1634		-----		-----
440		-----		-----	1650		-----		-----
444		-----		-----	1676		-----		-----
445	IP40	>360		-----	1689	GB/T8018	2381		-----
447	D525	>900		-----	1710	ISO7536	>900		-----
453	IP40	>900		-----	1720	D525	1041		-----
463	D525	>900		-----	1724	D525	>1440		-----
468		-----		-----	1728	D525	>900		-----
485		-----		-----	1740		-----		-----
494	ISO7536	>900		-----	1741	ISO7536/D525	>900		-----
496	ISO7536	>900		-----	1742		-----		-----
541		-----		-----	1776		-----		-----
631	D525	>900		-----	1782	ISO7536	>900		-----
663		-----		-----	1785	D525	>900		-----
671		-----		-----	1807		-----		-----
704		-----		-----	1810		-----		-----
754		-----		-----	1811		-----		-----
781	ISO7536	>900		-----	1849	ISO7536	> 900		-----
782		-----		-----	1881		-----		-----
785		-----		-----	1911		-----		-----
798		-----		-----	1936		-----		-----
824		-----		-----	1937		-----		-----
861		-----		-----	1938		-----		-----
875		-----		-----	1948	ISO7536	>900		-----
902		-----		-----	1949	D525	>900		-----
962	D525	>900		-----	1953		-----		-----
971		-----		-----	1977	ISO7536	>900		-----
974	D525	>900		-----	1992		-----		-----
994		-----		-----	1995		-----		-----
1006		-----		-----	2129	ISO7536	>900		-----
1011		-----		-----	2130	ISO7536	>900		-----
1026	ISO7536	500		-----	2146		-----		-----
1033		-----		-----	6005		-----		-----
1059	ISO7536	>900		-----	6016		-----		-----
1066		-----		-----	6028		12	U	-----
1079	ISO7536	>900		-----	6034		-----		-----
1082		-----		-----	6049	ISO7536	>900		-----
1108	ISO7536	1316		-----	6054		-----		-----
1109	D525	>1260		-----	6075		-----		-----
1126		-----		-----	6102		-----		-----
1134	D525	>900		-----	6142		-----		-----
1161	ISO7536	>900		-----	6143		-----		-----

normality	n.a.
n	63
outliers	n.a.
mean (n)	>360
st.dev. (n)	n.a.
R(calc.)	n.a.
st.dev.(lit)	n.a.
R(lit)	n.a.

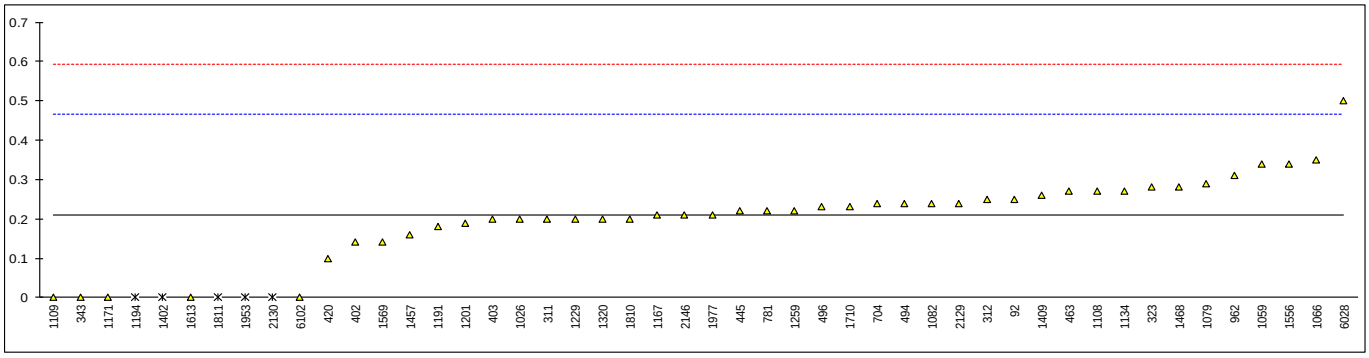
Lab 171: false positive test result?
Lab 6028: probably reported in deviating unit (hrs instead of minutes)

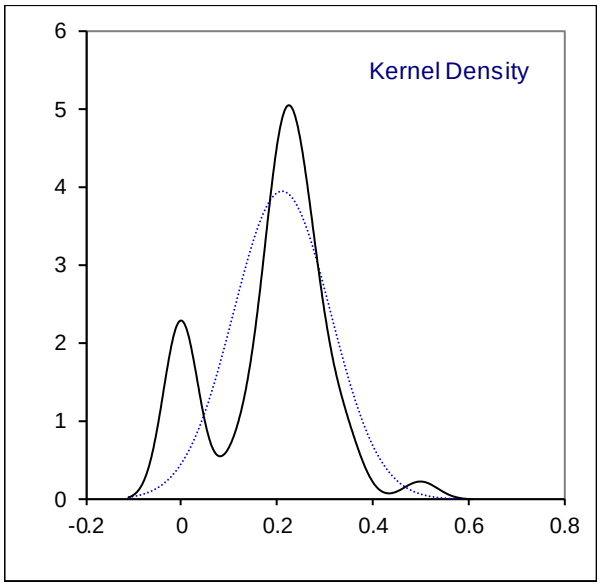
Determination of Methanol on sample #17200; results in %V/V

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92	INH-3.0/14.3	0.25		0.30	1167	EN13132	0.21		-0.01
140		-----		-----	1171	D5845Mod.	0.00		-1.66
150	D5599	<0.10		-----	1186		-----		-----
171	D5599	<0.10		-----	1191	ISO22854	0.18		-0.24
225		-----		-----	1194	D5845	0	ex	-1.66
228		-----		-----	1199		-----		-----
230		-----		-----	1201	ISO22854	0.19		-0.17
237		-----		-----	1205		-----		-----
238		-----		-----	1229	ISO22854	0.20		-0.09
273		-----		-----	1237		-----		-----
311	ISO22854	0.20		-0.09	1259	EN13132	0.22		0.07
312	ISO22854	0.25		0.30	1272	ISO22854	<0,01		-----
323	ISO22854	0.28		0.54	1299	ISO22854	<0.8		-----
333		-----		-----	1300	ISO22854	<0,01		-----
334		-----		-----	1320		0.20		-0.09
335		-----		-----	1389		-----		-----
336		-----		-----	1397		-----		-----
337		-----		-----	1402		0	ex	-1.66
338		-----		-----	1409		0.26		0.38
343	EN13132	0.00		-1.66	1441		-----		-----
344		-----		-----	1457	ISO22854	0.16		-0.40
353		-----		-----	1459		-----		-----
369	EN13132	<0.17		-----	1460		-----		-----
370		-----		-----	1468	ISO22854	0.28		0.54
371		-----		-----	1498		-----		-----
381	ISO22854	<0,2		-----	1556		0.34		1.01
391		-----		-----	1557		-----		-----
399	ISO22854	<0.01		-----	1569	ISO22854	0.14		-0.56
402	ISO22854	0.14		-0.56	1586		<0.1		-----
403	ISO22854	0.20		-0.09	1613	D6839	0.0		-1.66
420	ISO22854	0.1		-0.87	1631		-----		-----
431		-----		-----	1634		-----		-----
440		-----		-----	1650		-----		-----
444		-----		-----	1676		<0,5		-----
445	ISO22854	0.22		0.07	1689		-----		-----
447	IP466	<0.2		-----	1710	ISO22854	0.23		0.15
453		-----		-----	1720		-----		-----
463	EN13132	0.27		0.46	1724	EN13132	<0,17		-----
468		-----		-----	1728		-----		-----
485		-----		-----	1740		-----		-----
494	ISO22854	0.24		0.23	1741		-----		-----
496	EN1601	0.23		0.15	1742		-----		-----
541		-----		-----	1776	ISO22854	<0,2		-----
631		-----		-----	1782	D4815	<0.80		-----
663	D4815	not det.		-----	1785		-----		-----
671		-----		-----	1807		-----		-----
704	D4815	0.240		0.23	1810	ISO22854	0.2		-0.09
754		-----		-----	1811		0	ex	-1.66
781	ISO22854	0.22		0.07	1849		-----		-----
782		-----		-----	1881		-----		-----
785		-----		-----	1911	ISO22854	<0,8		-----
798		-----		-----	1936		-----		-----
824	D4815	<0.20		-----	1937		-----		-----
861		-----		-----	1938		-----		-----
875		-----		-----	1948	ISO22854	<0.01		-----
902		-----		-----	1949		-----		-----
962	D4815	0.31		0.78	1953		0	ex	-1.66
971		-----		-----	1977	D6730	0.211		0.00
974	D4815	<0.20		-----	1992		-----		-----
994		-----		-----	1995		-----		-----
1006	D4815	ND		-----	2129	D6730	0.24		0.23
1011	ISO22854	<0.80		-----	2130	D6730	0	ex	-1.66
1026	ISO22854	0.2		-0.09	2146		0.21		-0.01
1033		-----		-----	6005		-----		-----
1059	ISO22854	0.34		1.01	6016		-----		-----
1066	ISO22854	0.35		1.09	6028		0.5	C	2.27
1079	ISO22854	0.29		0.62	6034		-----		-----
1082		0.24		0.23	6049	ISO22854	<0.80		-----
1108	ISO22854	0.27		0.46	6054		-----		-----
1109	D6839	0.00		-1.66	6075		-----		-----
1126	EN14517	<0.1		-----	6102	D5845	0.0		-1.66
1134	ISO22854	0.27		0.46	6142		-----		-----
1161	EN13132	<0,17		-----	6143		-----		-----

normality	suspect
n	43
outliers	0 (+5 excl)
mean (n)	0.2112
st.dev. (n)	0.10138
R(calc.)	0.2839
st.dev.(ISO22854:16)	0.12743
R(ISO22854:16)	0.3568

Lab 1194,1402,1811,1953,2130: test result was excluded as zero is not a real result



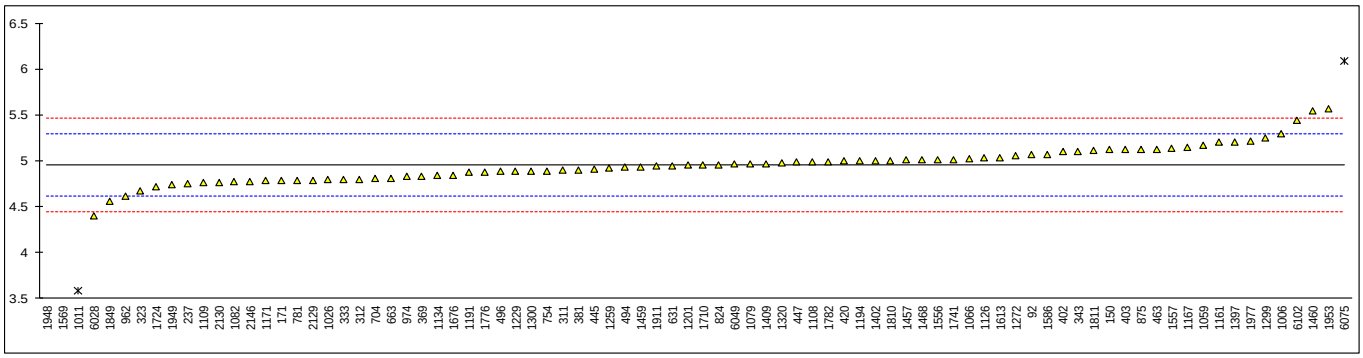


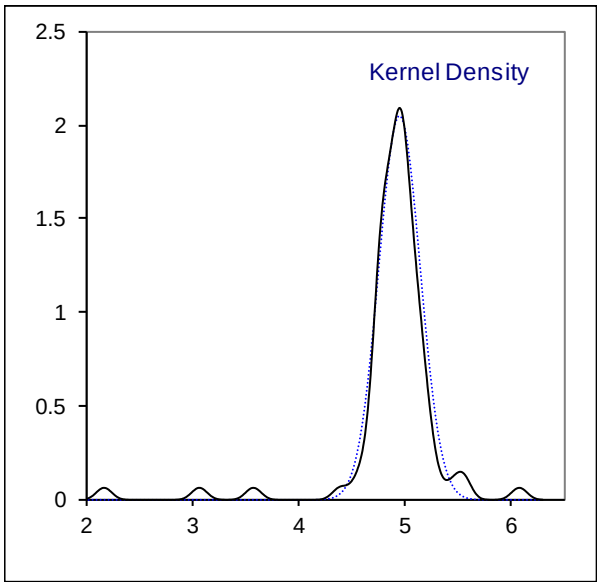
Determination of Ethanol on sample #17200; results in %V/V

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92	INH-3.0/14.3	5.07		0.65	1167	EN13132	5.15		1.12
140		-----		-----	1171	D5845Mod.	4.78		-1.05
150	D5599	5.12		0.95	1186		-----		-----
171	D5599	4.78		-1.05	1191	ISO22854	4.87		-0.52
225		-----		-----	1194	D5845	5		0.24
228		-----		-----	1199		-----		-----
230		-----		-----	1201	ISO22854	4.95		-0.05
237		4.75		-1.23	1205		-----		-----
238		-----		-----	1229	ISO22854	4.89		-0.41
273		-----		-----	1237		-----		-----
311	ISO22854	4.90		-0.35	1259	EN13132	4.92		-0.23
312	ISO22854	4.80		-0.93	1272	ISO22854	5.06		0.59
323	ISO22854	4.67		-1.70	1299	ISO22854	5.25		1.71
333		4.8		-0.93	1300	ISO22854	4.891	C	-0.40
334		-----		-----	1320		4.98		0.12
335		-----		-----	1389		-----		-----
336		-----		-----	1397	EN13132	5.2		1.42
337		-----		-----	1402		5.0		0.24
338		-----		-----	1409		4.97		0.07
343	EN13132	5.1		0.83	1441		-----		-----
344		-----		-----	1457	ISO22854	5.01		0.30
353		-----		-----	1459		4.93		-0.17
369	EN13132	4.83		-0.76	1460	D5845	5.544		3.44
370		-----		-----	1468	ISO22854	5.01		0.30
371		-----		-----	1498		-----		-----
381	ISO22854	4.9		-0.35	1556		5.01		0.30
391		-----		-----	1557	D5845	5.14		1.07
399		-----		-----	1569	ISO22854	3.07	C,R(0.01)	-11.11
402	ISO22854	5.10		0.83	1586		5.07		0.65
403	ISO22854	5.13		1.01	1613	D6839	5.03		0.42
420	ISO22854	5.0		0.24	1631		-----		-----
431		-----		-----	1634		-----		-----
440		-----		-----	1650		-----		-----
444		-----		-----	1676		4.84		-0.70
445	ISO22854	4.91		-0.29	1689		-----		-----
447	IP466	4.99		0.18	1710	ISO22854	4.95		-0.05
453		-----		-----	1720		-----		-----
463	EN13132	5.13		1.01	1724	EN13132	4.72		-1.41
468		-----		-----	1728		-----		-----
485		-----		-----	1740		-----		-----
494	ISO22854	4.93		-0.17	1741	ISO22854	5.010		0.30
496	EN1601	4.89		-0.41	1742		-----		-----
541		-----		-----	1776	ISO22854	4.87		-0.52
631	D5845	4.946		-0.08	1782	D4815	4.99		0.18
663	D4815	4.807		-0.89	1785		-----		-----
671		-----		-----	1807		-----		-----
704	D4815	4.805		-0.91	1810	ISO22854	5.0		0.24
754	D6729	4.892		-0.39	1811		5.11		0.89
781	ISO22854	4.78		-1.05	1849	ISO22854	4.56		-2.35
782		-----		-----	1881		-----		-----
785		-----		-----	1911	ISO22854	4.94		-0.11
798		-----		-----	1936		-----		-----
824	D4815	4.96		0.01	1937		-----		-----
861		-----		-----	1938		-----		-----
875	EN13132	5.13		1.01	1948	ISO22854	2.17	R(0.01)	-16.41
902		-----		-----	1949	ISO22854	4.745		-1.26
962	D4815	4.62		-1.99	1953		5.57	C	3.59
971		-----		-----	1977	D6730	5.218		1.52
974	D4815	4.83		-0.76	1992		-----		-----
994		-----		-----	1995		-----		-----
1006	D4815	5.29		1.95	2129	D6730	4.79		-0.99
1011	ISO22854	3.58	R(0.01)	-8.11	2130	D6730	4.76		-1.17
1026	ISO22854	4.8		-0.93	2146		4.77		-1.11
1033		-----		-----	6005		-----		-----
1059	ISO22854	5.17		1.24	6016		-----		-----
1066	ISO22854	5.02		0.36	6028		4.4	C	-3.29
1079	ISO22854	4.97		0.07	6034		-----		-----
1082		4.77		-1.11	6049	ISO22854	4.965		0.04
1108	ISO22854	4.99		0.18	6054		-----		-----
1109	D6839	4.76		-1.17	6075	EN13132	6.09	R(0.01)	6.65
1126	EN14517	5.03		0.42	6102	D5845	5.44		2.83
1134	ISO22854	4.84		-0.70	6142		-----		-----
1161	EN13132	5.2	C	1.42	6143		-----		-----

normality	suspect
n	80
outliers	4
mean (n)	4.9589
st.dev. (n)	0.19512
R(calc.)	0.5463
st.dev.(ISO22854:16)	0.16999
R(ISO22854:16)	0.4760
Compare	
R(EN13132:00)	0.4
R(D4815:15b)	0.5729
R(D5845:01)	0.59

Lab 1161: first reported 5.6
Lab 1300: first reported 6.764
Lab 1569: first reported 3.49
Lab 1953: first reported 5.51
Lab 6028: first reported 3.9



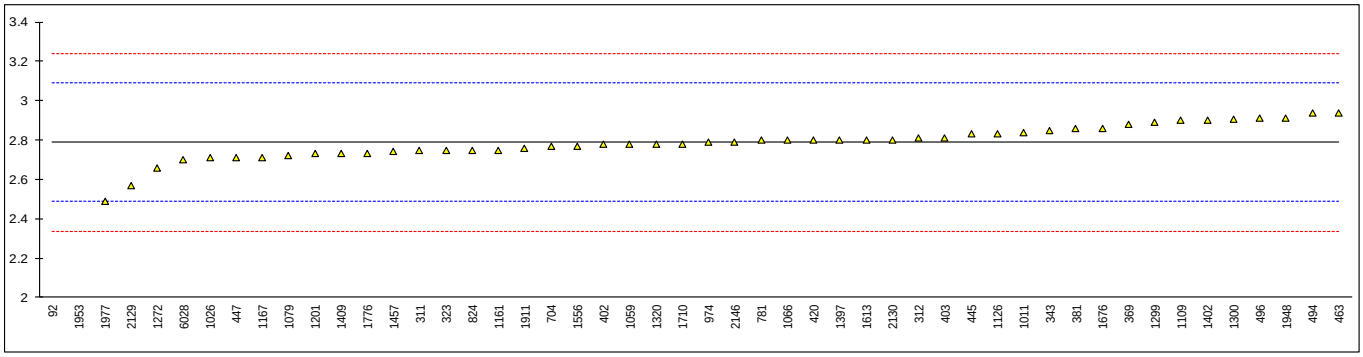


Determination of Ethers (C5 or more C atoms) on sample #17200; results in %V/V

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92	INH-3.0/14.3	0	R(0.01)	-18.53	1167	EN13132	2.71		-0.52
140		-----		-----	1171		-----		-----
150	D5599	-----		-----	1186		-----		-----
171	D5599	<0.10	False neg?	<-17.86	1191		-----		-----
225		-----		-----	1194		-----		-----
228		-----		-----	1199		-----		-----
230		-----		-----	1201	ISO22854	2.73		-0.39
237		-----		-----	1205		-----		-----
238		-----		-----	1229		-----		-----
273		-----		-----	1237		-----		-----
311	ISO22854	2.75		-0.26	1259		-----		-----
312	ISO22854	2.81		0.14	1272	ISO22854	2.66		-0.86
323	ISO22854	2.75		-0.26	1299	ISO22854	2.89		0.67
333		-----		-----	1300	ISO22854	2.905	C	0.77
334		-----		-----	1320		2.78		-0.06
335		-----		-----	1389		-----		-----
336		-----		-----	1397	EN13132	2.8		0.07
337		-----		-----	1402		2.9	C	0.74
338		-----		-----	1409		2.73		-0.39
343	EN13132	2.85		0.41	1441		<0.05	False neg?	<-18.19
344		-----		-----	1457	ISO22854	2.74		-0.32
353		-----		-----	1459		-----		-----
369	EN13132	2.88		0.61	1460		-----		-----
370		-----		-----	1468		-----		-----
371		-----		-----	1498		-----		-----
381	ISO22854	2.86		0.47	1556		2.77		-0.12
391		-----		-----	1557		-----		-----
399		-----		-----	1569		-----		-----
402	ISO22854	2.78		-0.06	1586		<0.1	False neg?	<-17.86
403	ISO22854	2.81		0.14	1613	D6839	2.8		0.07
420	ISO22854	2.8		0.07	1631		-----		-----
431		-----		-----	1634		-----		-----
440		-----		-----	1650		-----		-----
444		-----		-----	1676		2.86		0.47
445	ISO22854	2.83		0.27	1689		-----		-----
447	IP466	2.71		-0.52	1710	ISO22854	2.78		-0.06
453		-----		-----	1720		-----		-----
463	EN13132	2.94		1.00	1724		-----		-----
468		-----		-----	1728		-----		-----
485		-----		-----	1740		-----		-----
494	ISO22854	2.94		1.00	1741		-----		-----
496	EN1601	2.91		0.81	1742		-----		-----
541		-----		-----	1776	ISO22854	2.73		-0.39
631		-----		-----	1782	D4815	<0.80	False neg?	<-13.21
663		-----		-----	1785		-----		-----
671		-----		-----	1807		-----		-----
704	D4815	2.768		-0.14	1810	ISO22854	-----		-----
754		-----		-----	1811		-----		-----
781	ISO22854	2.80		0.07	1849	ISO22854	-----		-----
782		-----		-----	1881		-----		-----
785		-----		-----	1911	ISO22854	2.76		-0.19
798		-----		-----	1936		-----		-----
824	D4815	2.75		-0.26	1937		-----		-----
861		-----		-----	1938		-----		-----
875	EN13132	<0.2	False neg?	<-17.20	1948	ISO22854	2.91		0.81
902		-----		-----	1949		-----		-----
962		-----		-----	1953		0	R(0.01)	-18.53
971		-----		-----	1977	D6730	2.490		-1.98
974	D4815	2.79		0.01	1992		-----		-----
994		-----		-----	1995		-----		-----
1006	D4815	ND	False neg?	-----	2129	D6730	2.57		-1.45
1011	ISO22854	2.84		0.34	2130	D6730	2.8		0.07
1026	ISO22854	2.71		-0.52	2146		2.79		0.01
1033		-----		-----	6005		-----		-----
1059	ISO22854	2.78		-0.06	6016		-----		-----
1066	ISO22854	2.8		0.07	6028		2.7		-0.59
1079	ISO22854	2.72		-0.46	6034		-----		-----
1082		-----		-----	6049	ISO22854	<0.80	False neg?	<-13.21
1108		-----		-----	6054		-----		-----
1109	D6839	2.90		0.74	6075		-----		-----
1126	EN14517	2.83		0.27	6102		-----		-----
1134	ISO22854	<0.01	False neg?	<-18.46	6142		-----		-----
1161	EN13132	2.75		-0.26	6143		-----		-----

	normality	not OK
	n	48
	outliers	2
	mean (n)	2.7888
	st.dev. (n)	0.08741
	R(calc.)	0.2448
	st.dev.(ISO22854:16)	0.15054
	R(ISO22854:16)	0.4215
Compare		
	R(EN13132:00)	0.3

Lab 1300: first reported 3.794
Lab 1402: first reported 0

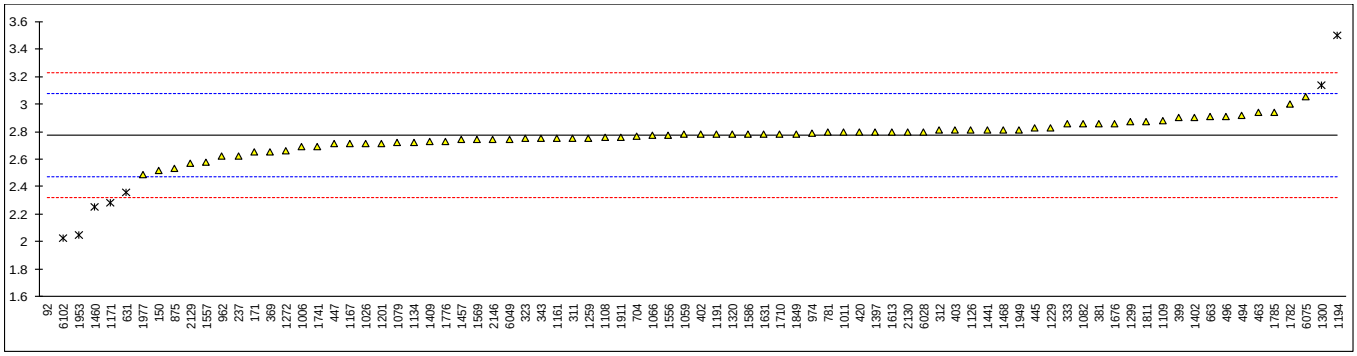


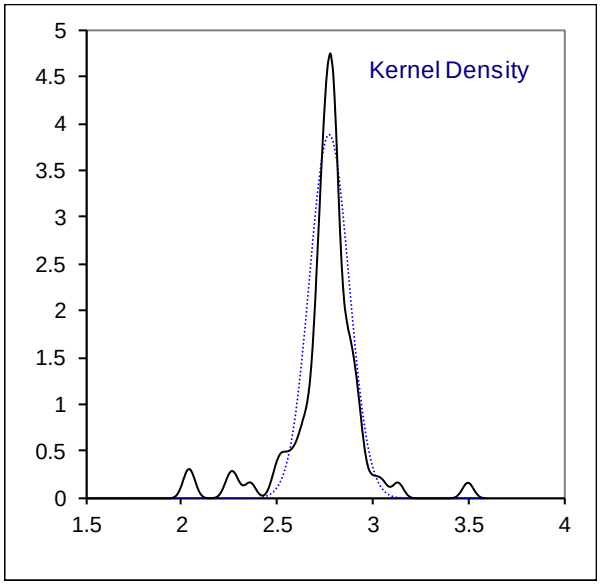
Determination of MTBE on sample #17200; results in %V/V

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92	INH-3.0/14.3	0	R(0.01)	-18.44	1167	EN13132	2.71		-0.42
140		-----		-----	1171	D5845Mod.	2.28	R(0.01)	-3.28
150	D5599	2.52		-1.68	1186		-----		-----
171	D5599	2.65		-0.82	1191	ISO22854	2.78		0.04
225		-----		-----	1194	D5845	3.5	R(0.01)	4.83
228		-----		-----	1199		-----		-----
230		-----		-----	1201	ISO22854	2.71		-0.42
237		2.62		-1.02	1205		-----		-----
238		-----		-----	1229	ISO22854	2.83		0.38
273		-----		-----	1237		-----		-----
311	ISO22854	2.75		-0.16	1259	EN13132	2.75		-0.16
312	ISO22854	2.81		0.24	1272	ISO22854	2.66		-0.75
323	ISO22854	2.75		-0.16	1299	ISO22854	2.87		0.64
333		2.86		0.58	1300	ISO22854	3.133	R(0.05)	2.39
334		-----		-----	1320		2.78		0.04
335		-----		-----	1389		-----		-----
336		-----		-----	1397	EN13132	2.8		0.18
337		-----		-----	1402		2.9		0.84
338		-----		-----	1409		2.73		-0.29
343	EN13132	2.75		-0.16	1441		2.81		0.24
344		-----		-----	1457	ISO22854	2.74		-0.22
353		-----		-----	1459		-----		-----
369	EN13132	2.65		-0.82	1460	D5845	2.25	R(0.01)	-3.48
370		-----		-----	1468	ISO22854	2.81		0.24
371		-----		-----	1498		-----		-----
381	ISO22854	2.86		0.58	1556		2.77		-0.02
391		-----		-----	1557	D5845	2.58		-1.29
399		2.90		0.84	1569	ISO22854	2.74	C	-0.22
402	ISO22854	2.78		0.04	1586		2.78		0.04
403	ISO22854	2.81		0.24	1613	D6839	2.8		0.18
420	ISO22854	2.80		0.18	1631		2.78		0.04
431		-----		-----	1634		-----		-----
440		-----		-----	1650		-----		-----
444		-----		-----	1676		2.86		0.58
445	ISO22854	2.83		0.38	1689		-----		-----
447	IP466	2.71		-0.42	1710	ISO22854	2.78		0.04
453		-----		-----	1720		-----		-----
463	EN13132	2.94		1.11	1724	EN13132	-----		-----
468		-----		-----	1728		-----		-----
485		-----		-----	1740		-----		-----
494	ISO22854	2.92		0.97	1741	ISO22854	2.690		-0.55
496	EN1601	2.91		0.91	1742		-----		-----
541		-----		-----	1776	ISO22854	2.73		-0.29
631	D5845	2.36	R(0.05)	-2.75	1782	D4815	3.00		1.51
663	D4815	2.908		0.90	1785		2.94		1.11
671		-----		-----	1807		-----		-----
704	D4815	2.768		-0.04	1810	ISO22854	-----		-----
754	D6729	-----		-----	1811		2.87		0.64
781	ISO22854	2.80		0.18	1849	ISO22854	2.78		0.04
782		-----		-----	1881		-----		-----
785		-----		-----	1911	ISO22854	2.76		-0.09
798		-----		-----	1936		-----		-----
824	D4815	<0.20	False neg?	<-17.11	1937		-----		-----
861		-----		-----	1938		-----		-----
875	EN13132	2.53		-1.62	1948	ISO22854	-----		-----
902		-----		-----	1949	ISO22854	2.81		0.24
962	D4815	2.62		-1.02	1953		2.05	C,R(0.01)	-4.81
971		-----		-----	1977	D6730	2.490		-1.88
974	D4815	2.79		0.11	1992		-----		-----
994		-----		-----	1995		-----		-----
1006	D4815	2.69		-0.55	2129	D6730	2.57		-1.35
1011	ISO22854	2.80		0.18	2130	D6730	2.8		0.18
1026	ISO22854	2.71		-0.42	2146		2.74		-0.22
1033		-----		-----	6005		-----		-----
1059	ISO22854	2.78		0.04	6016		-----		-----
1066	ISO22854	2.77		-0.02	6028		2.8	C	0.18
1079	ISO22854	2.72		-0.36	6034		-----		-----
1082		2.86		0.58	6049	ISO22854	2.745		-0.19
1108	ISO22854	2.76		-0.09	6054		-----		-----
1109	D6839	2.88		0.71	6075	EN13132	3.05		1.84
1126	EN14517	2.81		0.24	6102	D5845	2.03	R(0.01)	-4.94
1134	ISO22854	2.72		-0.36	6142		-----		-----
1161	EN13132	2.75		-0.16	6143		-----		-----

	normality	suspect
	n	74
	Outliers	8
	mean (n)	2.7734
	st.dev. (n)	0.10293
	R(calc.)	0.2882
	st.dev.(ISO22854:16)	0.1504
	R(ISO22854:16)	0.4211
Compare		
	R(EN13132:00	0.3
	R(D4815:15b)	0.2377
	R(D5845:01)	0.98

Lab 1569: first reported 3.5
Lab 1953: first reported 0
Lab 6028: first reported 0





Determination of other oxygenates on sample #17200; results in %V/V

lab	method	i-PrOH	i-BuOH	t-buOH	DIPE	ETBE	TAME	Other Oxy.
92	INH-3.0/14.3	0	0	0	0	0	0	0
140		-----	-----	-----	-----	-----	-----	-----
150	D5599	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
171	D5599	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
225		-----	-----	-----	-----	-----	-----	-----
228		-----	-----	-----	-----	-----	-----	-----
230		-----	-----	-----	-----	-----	-----	-----
237		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-----
238		-----	-----	-----	-----	-----	-----	-----
273		-----	-----	-----	-----	-----	-----	-----
311	ISO22854	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.1
312	ISO22854	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
323	ISO22854	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
333		-----	-----	-----	-----	<0.1	-----	-----
334		-----	-----	-----	-----	-----	-----	-----
335		-----	-----	-----	-----	-----	-----	-----
336		-----	-----	-----	-----	-----	-----	-----
337		-----	-----	-----	-----	-----	-----	-----
338		-----	-----	-----	-----	-----	-----	-----
343	EN13132	0.0	0.0	0.0	-----	0	0.11	0.0
344		-----	-----	-----	-----	-----	-----	-----
353		-----	-----	-----	-----	-----	-----	-----
369	EN13132	<0.17	<0.17	<0.17	<0.17	<0.17	0.23	<0.17
370		-----	-----	-----	-----	-----	-----	-----
371		-----	-----	-----	-----	-----	-----	-----
381	ISO22854	<0,2	<0,2	<0,2	<0,2	<0,2	<0,2	<0,2
391		-----	-----	-----	-----	-----	-----	-----
399		0.03	<0.01	<0.01	0.03	<0.01	<0.01	<0.01
402	ISO22854	-----	-----	-----	-----	-----	-----	-----
403	ISO22854	-----	-----	-----	-----	-----	-----	-----
420	ISO22854	<0,1	<0,1	<0,1	<0,1	<0,1	0.02	<0,1
431		-----	-----	-----	-----	-----	-----	-----
440		-----	-----	-----	-----	-----	-----	-----
444		-----	-----	-----	-----	-----	-----	-----
445	ISO22854	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
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	<0,2
468		-----	-----	-----	-----	-----	-----	-----
485		-----	-----	-----	-----	-----	-----	-----
494	ISO22854	0.00	0.00	0.00	0.00	0.00	0.03	0.00
496	EN1601	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
541		-----	-----	-----	-----	-----	-----	-----
631	D5845	-----	-----	-----	-----	-----	-----	-----
663	D4815	-----	-----	-----	-----	-----	-----	-----
671		-----	-----	-----	-----	-----	-----	-----
704	D4815	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
754	D6729	-----	-----	-----	-----	-----	-----	-----
781	ISO22854	<0.01	<0.01	<0.01	<0.01	<0.01	<0.10	<0.10
782		-----	-----	-----	-----	-----	-----	-----
785		-----	-----	-----	-----	-----	-----	-----
798		-----	-----	-----	-----	-----	-----	-----
824	D4815	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
861		-----	-----	-----	-----	-----	-----	-----
875	EN13132	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
902		-----	-----	-----	-----	-----	-----	-----
962	D4815	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-----
971		-----	-----	-----	-----	-----	-----	-----
974	D4815	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-----
994		-----	-----	-----	-----	-----	-----	-----
1006	D4815	ND	ND	ND	ND	ND	ND	-----
1011	ISO22854	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80	-----
1026	ISO22854	<0.1	<0.1	<0.1	0	0	0	<0.1
1033		-----	-----	-----	-----	-----	-----	-----
1059	ISO22854	<0,20	<0,20	<0,20	<0,20	<0,20	<0,20	<0,20
1066	ISO22854	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1079	ISO22854	0	0	0	0	0	0	0
1082		-----	-----	-----	-----	0	0.03	-----
1108	ISO22854	-----	-----	0.02	-----	-----	-----	-----
1109	D6839	0.00	0.01	0.00	0.00	0.02	0.00	0.00
1126	EN14517	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1134	ISO22854	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1161	EN13132	<0,17	<0,17	<0,17	<0,17	<0,17	<0,17	<0,17
1167	EN13132	0.12	<0.2	-----	-----	<0.2	-----	<0.2
1171	D5845Mod.	-----	-----	0.00	0.00	0.00	0.48	-----
1186		-----	-----	-----	-----	-----	-----	-----
1191	ISO22854	<0.05	<0.05	<0.05	-----	0	0.03	-----

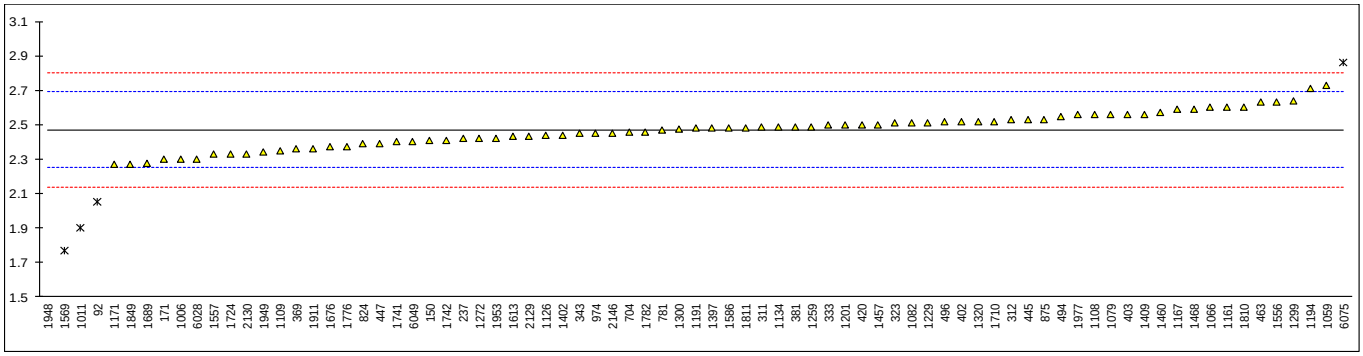
lab	method	i-PrOH	i-BuOH	t-buOH	DIPE	ETBE	TAME	Other Oxy.
1194	D5845	-----	-----	0	0.6	0	0.8	-----
1199		-----	-----	-----	-----	-----	-----	-----
1201	ISO22854	<0.1	<0.1	<0.1	<0.1	<0.1	0.02	<0.1
1205		-----	-----	-----	-----	-----	-----	-----
1229	ISO22854	0	0	0	-----	0	0.03	-----
1237		-----	-----	-----	-----	-----	-----	-----
1259	EN13132	-----	-----	-----	-----	-----	-----	-----
1272	ISO22854	<0,01	<0,01	<0,01	<0,01	<0,01	<0,01	<0,01
1299	ISO22854	<0.8	<0.8	<0.8	-----	0.02	-----	<0.8
1300	ISO22854	0.034	0.014	<0,01	0.134	0.099	0.428	<0,1
1320		-----	-----	-----	-----	-----	-----	-----
1389		-----	-----	-----	-----	-----	-----	-----
1397	EN13132	-----	-----	-----	-----	<0,2	-----	-----
1402		0	0	0	0	0	0	0
1409		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
1441		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-----
1457	ISO22854	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1459		-----	-----	-----	-----	0	-----	-----
1460	D5845	-----	-----	-----	-----	-----	-----	-----
1468	ISO22854	-----	-----	-----	-----	-----	0.02	-----
1498		-----	-----	-----	-----	-----	-----	-----
1556		<0,20	<0,20	<0,20	<0,20	<0,20	<0,20	<0,20
1557	D5845	-----	-----	-----	-----	-----	-----	-----
1569	ISO22854	-----	-----	-----	-----	-----	-----	-----
1586		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8
1613	D6839	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1631		-----	-----	-----	-----	-----	-----	-----
1634		-----	-----	-----	-----	-----	-----	-----
1650		-----	-----	-----	-----	-----	-----	-----
1676		<0,5	<0,5	<0,5	<0,5	<0,5	<0,5	<0,5
1689		-----	-----	-----	-----	-----	-----	-----
1710	ISO22854	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1720		-----	-----	-----	-----	-----	-----	-----
1724	EN13132	<0,17	<0,17	<0,17	<0,15	<0,15	-----	-----
1728		-----	-----	-----	-----	-----	-----	-----
1740		-----	-----	-----	-----	-----	-----	-----
1741	ISO22854	-----	-----	-----	-----	-----	-----	-----
1742		-----	-----	-----	-----	-----	-----	-----
1776	ISO22854	<0,2	<0,2	<0,2	<0,2	<0,2	<0,2	<0,2
1782	D4815	<0.80	<0.80	0.07	<0.80	0	<0.80	<0.80
1785		-----	-----	-----	-----	-----	-----	-----
1807		-----	-----	-----	-----	-----	-----	-----
1810	ISO22854	-----	-----	-----	-----	0.1	-----	-----
1811		-----	-----	-----	-----	0	-----	-----
1849	ISO22854	-----	-----	-----	-----	-----	-----	-----
1881		-----	-----	-----	-----	-----	-----	-----
1911	ISO22854	<0,8	<0,8	<0,8	<0,8	<0,8	<0,8	<0,8
1936		-----	-----	-----	-----	-----	-----	-----
1937		-----	-----	-----	-----	-----	-----	-----
1938		-----	-----	-----	-----	-----	-----	-----
1948	ISO22854	<0.01	<0.01	<0.01	-----	-----	-----	<0.01
1949	ISO22854	-----	-----	-----	0.02	-----	0.02	-----
1953		0	0	0	0	0	0	0
1977	D6730	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0010
1992		-----	-----	-----	-----	-----	-----	-----
1995		-----	-----	-----	-----	-----	-----	-----
2129	D6730	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2130	D6730	0	0	0	0	0	0	0
2146		0	0	0	0	0	0	0
6005		-----	-----	-----	-----	-----	-----	-----
6016		-----	-----	-----	-----	-----	-----	-----
6028		0	0	0	0	0	0	-----
6034		-----	-----	-----	-----	-----	-----	-----
6049	ISO22854	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80	0.05
6054		-----	-----	-----	-----	-----	-----	-----
6075	EN13132	-----	-----	-----	-----	-----	-----	-----
6102	D5845	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6142		-----	-----	-----	-----	-----	-----	-----
6143		-----	-----	-----	-----	-----	-----	-----

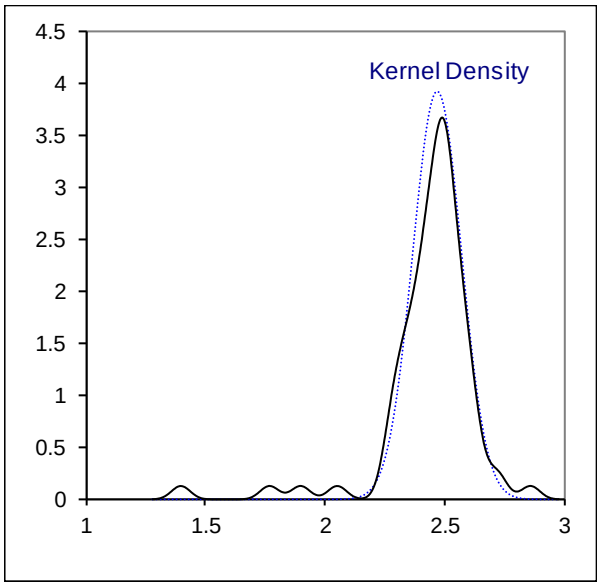
Determination of Oxygen Content on sample #17200; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92	INH-3.0/14.3	2.053	R(0.01)	-3.77	1167	EN13132	2.590		1.08
140		-----		-----	1171	D5845Mod.	2.267		-1.84
150	D5599	2.41		-0.54	1186		-----		-----
171	D5599	2.30		-1.54	1191	ISO22854	2.48		0.09
225		-----		-----	1194	D5845	2.71		2.17
228		-----		-----	1199		-----		-----
230		-----		-----	1201	ISO22854	2.50		0.27
237	D4815	2.42		-0.45	1205		-----		-----
238		-----		-----	1229	ISO22854	2.51		0.36
273		-----		-----	1237		-----		-----
311	ISO22854	2.49		0.18	1259	EN13132	2.49		0.18
312	ISO22854	2.53		0.54	1272	ISO22854	2.42		-0.45
323	ISO22854	2.51		0.36	1299	ISO22854	2.64		1.53
333	EN22854	2.50	C	0.27	1300	ISO22854	2.475	C	0.04
334		-----		-----	1320	ISO22854	2.52		0.45
335		-----		-----	1389		-----		-----
336		-----		-----	1397	EN13132	2.48		0.09
337		-----		-----	1402	IP466	2.44		-0.27
338		-----		-----	1409	ISO22854	2.56		0.81
343	EN13132	2.45		-0.18	1441		-----		-----
344		-----		-----	1457	EN22854	2.50		0.27
353		-----		-----	1459		-----		-----
369	EN13132	2.36		-1.00	1460	In house	2.572		0.92
370		-----		-----	1468	EN22854	2.59		1.08
371		-----		-----	1498		-----		-----
381	EN22854	2.49		0.18	1556	EN22854	2.63		1.44
391		-----		-----	1557	INH-1200	2.33		-1.27
399		-----		-----	1569	ISO22854	1.77	C,R(0.01)	-6.32
402	ISO22854	2.52		0.45	1586	ISO22854	2.48		0.09
403	ISO22854	2.56		0.81	1613	D6839	2.43		-0.36
420	EN22854	2.50		0.27	1631		-----		-----
431		-----		-----	1634		-----		-----
440		-----		-----	1650		-----		-----
444		-----		-----	1676	EN22854	2.37		-0.90
445	ISO22854	2.53		0.54	1689	NB/SH/T0663	2.2769		-1.75
447	IP466	2.39		-0.72	1710	EN22854	2.52		0.45
453		-----		-----	1720		-----		-----
463	EN13132	2.63		1.44	1724	EN22854	2.33		-1.27
468		-----		-----	1728		-----		-----
485		-----		-----	1740		-----		-----
494	EN22854	2.55		0.72	1741	ISO22854	2.400		-0.63
496	EN1601	2.515		0.40	1742	D5622	2.41		-0.54
541		-----		-----	1776	ISO22854	2.37		-0.90
631		-----		-----	1782	D4815	2.46		-0.09
663		-----		-----	1785		-----		-----
671		-----		-----	1807		-----		-----
704	D4815	2.460		-0.09	1810	ISO22854	2.6		1.17
754		-----		-----	1811	EN22854	2.48		0.09
781	ISO22854	2.47		0.00	1849	ISO22854	2.27		-1.81
782		-----		-----	1881		-----		-----
785		-----		-----	1911	ISO22854	2.36		-1.00
798		-----		-----	1936		-----		-----
824	D4815	2.39		-0.72	1937		-----		-----
861		-----		-----	1938		-----		-----
875	EN13132	2.53		0.54	1948	ISO22854	1.40	R(0.01)	-9.67
902		-----		-----	1949	ISO22854	2.34		-1.18
962		-----		-----	1953	In house	2.42		-0.45
971		-----		-----	1977	D6730	2.559		0.80
974	D4815	2.45		-0.18	1992		-----		-----
994		-----		-----	1995		-----		-----
1006	D4815	2.3		-1.54	2129	D6730	2.432		-0.34
1011	ISO22854	1.90	R(0.01)	-5.15	2130	D6730	2.33		-1.27
1026		-----		-----	2146	EN22854	2.45		-0.18
1033		-----		-----	6005		-----		-----
1059	EN22854	2.73		2.35	6016		-----		-----
1066	EN22854	2.6		1.17	6028	ISO22854	2.3		-1.54
1079	EN22854	2.56		0.81	6034		-----		-----
1082	EN22854	2.51		0.36	6049	EN22854	2.405		-0.59
1108	ISO22854	2.56		0.81	6054		-----		-----
1109	D6839	2.35		-1.09	6075	EN13132	2.86	R(0.01)	3.52
1126	EN14517	2.44		-0.27	6102		-----		-----
1134	ISO22854	2.49		0.18	6142		-----		-----
1161	EN13132	2.6		1.17	6143		-----		-----

normality	OK
n	74
outliers	5
mean (n)	2.4702
st.dev. (n)	0.10170
R(calc.)	0.2848
st.dev.(ISO22854:16)	0.11071
R(ISO22854:16)	0.31
Compare	
R(EN13132:00	0.3
R(D4815:15b)	0.2838

Lab 333: first reported 2.74
Lab 1300: first reported 3.263
Lab 1569: first reported 2.06



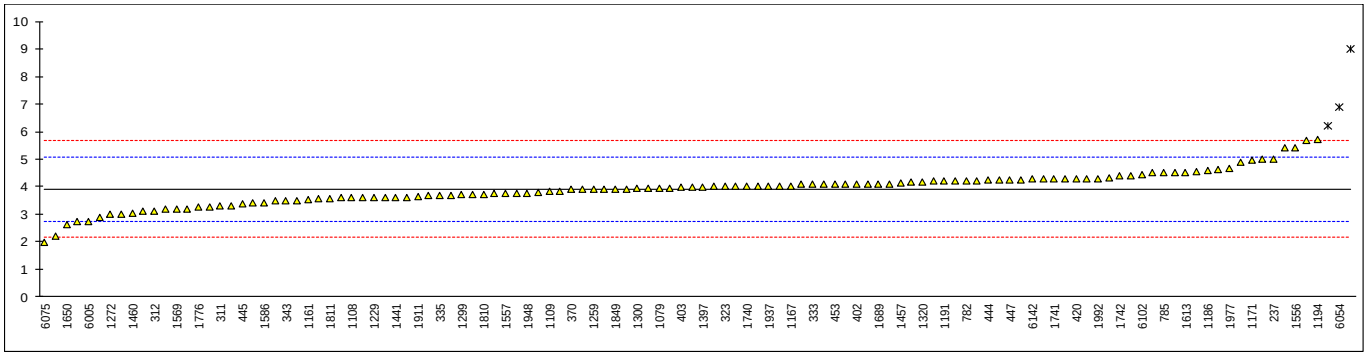


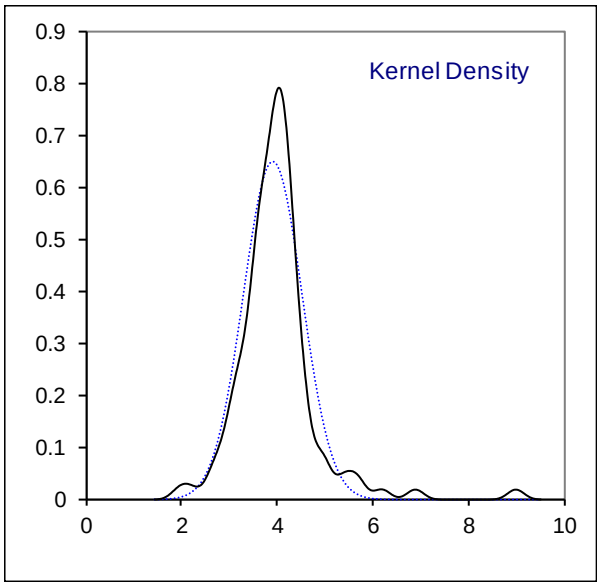
Determination of Sulphur on sample #17200; results in mg/kg

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
92		-----		-----	1167	ISO20846	4.01		0.16
140	D2622	5.0		1.84	1171	ISO20846	4.95		1.76
150	D5453	4.1		0.31	1186	D5453	4.58		1.13
171	D5453	3.4		-0.88	1191	ISO20846	4.19		0.46
225		-----		-----	1194	D7220/IP532	5.7		3.03
228		-----		-----	1199		-----		-----
230		-----		-----	1201	ISO20846	4.5		0.99
237	D5453	5.0		1.84	1205	ISO20846	4.29		0.63
238		-----		-----	1229	ISO20846	3.6		-0.54
273	D5453	3.19		-1.24	1237	ISO20846	3.75		-0.29
311	ISO20846	3.3		-1.05	1259	ISO20846	3.9		-0.03
312	D5453	3.1		-1.39	1272	ISO20846	3.0		-1.56
323	ISO20846	4.0		0.14	1299	ISO20884	3.7		-0.37
333	ISO20846	4.1		0.31	1300	ISO20846	3.936		0.03
334	ISO20846	3.6		-0.54	1320	ISO20846	4.18		0.45
335	ISO20846	3.69		-0.39	1389	ISO20846	<3.0		-----
336	ISO20846	3.3		-1.05	1397	ISO20846	3.99		0.12
337		-----		-----	1402	ISO20846	3.6		-0.54
338	ISO20846	3.82		-0.17	1409	ISO20846	4.1		0.31
343	ISO20846	3.5		-0.71	1441	D7039	3.6		-0.54
344		-----		-----	1457	ISO20846	4.14		0.38
353	IP531	6.2	R(0.05)	3.88	1459	In house	< 10		-----
369	ISO20846	4.0		0.14	1460	D5453	3.05		-1.48
370	ISO20846	3.89		-0.05	1468		-----		-----
371	ISO20846	4.16		0.41	1498	D5453	5.4		2.52
381	ISO20846	3.56		-0.61	1556	ISO20884	5.4		2.52
391	ISO20846	3.8		-0.20	1557	ISO20846	3.75		-0.29
399	D5453	3.6		-0.54	1569	ISO20846	3.2		-1.22
402	ISO20846	4.1		0.31	1586	ISO20846	3.4		-0.88
403	ISO20846	3.97		0.09	1613	D5453	4.51		1.01
420	ISO20846	4.3		0.65	1631	ISO20846	3.69		-0.39
431		-----		-----	1634	ISO20846	3.7		-0.37
440	D5453	4.5	C	0.99	1650	ISO20846	2.61		-2.23
444	D5453	4.233		0.54	1676		-----		-----
445	D5453	3.39		-0.90	1689	SH/T0689	4.1		0.31
447	D5453	4.25		0.56	1710	ISO20846	4.2		0.48
453	ISO20846	4.1		0.31	1720	D5453	3.5		-0.71
463	ISO20846	3.01		-1.55	1724	D5453	2.73		-2.02
468		-----		-----	1728	D5453	3.75		-0.29
485	ISO20846	3.68		-0.41	1740	ISO20846	4		0.14
494	ISO20846	4.08		0.28	1741	ISO20846/D5453	4.29		0.63
496	ISO20846	2.21		-2.91	1742	ISO20846	4.4		0.82
541	ISO20846	<3		-----	1776	ISO20846	3.25		-1.14
631	D5453	4.19		0.46	1782	D5453	5.67		2.98
663	D5453	3.94		0.04	1785	D5453	3.9		-0.03
671		-----		-----	1807	ISO20846	4.3		0.65
704	ISO20846	4.19		0.46	1810	D5453	3.7		-0.37
754	D5453	3.96		0.07	1811	ISO20846	3.56		-0.61
781		-----		-----	1849	ISO20846	3.9		-0.03
782	ISO20884	4.2		0.48	1881	ISO20846	4.1		0.31
785	ISO20846	4.5		0.99	1911	ISO20846	3.65		-0.46
798	ISO20846	3.98		0.11	1936	ISO20846	4.0		0.14
824	D5453	4.0		0.14	1937	ISO20846	4.0		0.14
861		-----		-----	1938	ISO20846	3.2		-1.22
875	ISO20846	4.3		0.65	1948	ISo20846	3.75		-0.29
902	ISO20846	4.1	C	0.31	1949	ISO20846	3.26		-1.12
962		-----		-----	1953	D4294	9	C,R(0.01)	8.65
971	D5453	2.89		-1.75	1977	D5453	4.668		1.28
974		-----		-----	1992	D4294	4.3		0.65
994	D5453	4.64		1.23	1995		-----		-----
1006	D5453	3.9		-0.03	2129	ISO20846	4.33		0.70
1011	ISO20846	4.24		0.55	2130	ISO20846	3.6		-0.54
1026	ISO20846	3.5		-0.71	2146	ISO20846	3.9		-0.03
1033		-----		-----	6005	ISO20846	2.749		-1.99
1059	ISO20846	3.1	C	-1.39	6016		-----		-----
1066	D2622	4.9		1.67	6028	ISO20846	4.4		0.82
1079	ISO20846	3.94		0.04	6034		-----		-----
1082		-----		-----	6049	ISO20846	4.0		0.14
1108	ISO20846	3.6		-0.54	6054	D4294	6.9	R(0.01)	5.07
1109	D7039	3.82		-0.17	6075	ISO20846	1.97		-3.32
1126	ISO20846	4.25	C	0.56	6102	ISO20846	4.436		0.88
1134	IP490	4.56		1.09	6142	D2622	4.280	C	0.62
1161	ISO20846	3.52		-0.68	6143		-----		-----

	normality	suspect
	n	117
	outliers	3
	mean (n)	3.918
	st.dev. (n)	0.6141
	R(calc.)	1.720
	st.dev.(ISO20846:11)	0.5876
	R(ISO20846:11)	1.645
Compare		
	R(D5453:16e1)	1.614

Lab 440: first reported 1.31
Lab 902: first reported 7.3
Lab 1059: first reported 7.2
Lab 1126: first reported 46.7
Lab 1953: first reported 10
Lab 6142: first reported 7.145



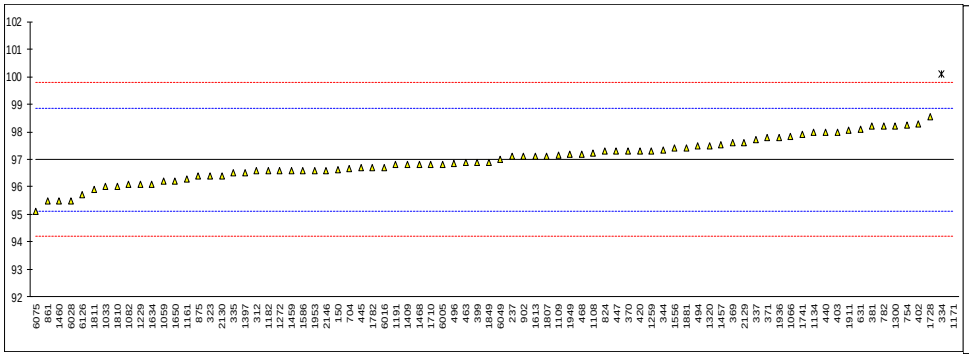


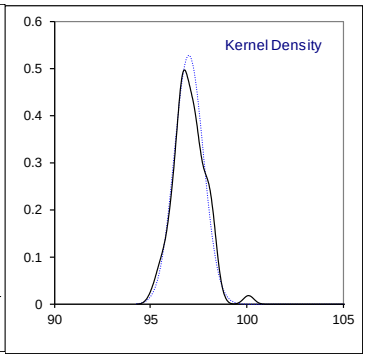
Determination of ASVP on sample #17201; results in kPa

lab	method	value	mark	z(targ)	remarks
92		-----		-----	
140		-----		-----	
150	D5191	96.62		-0.39	
171		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237	D5191	97.1		0.12	
238		-----		-----	
311		-----		-----	
312	EN13016-1	96.6		-0.41	
323	EN13016-1	96.4		-0.63	
333		-----		-----	
334	EN13016-1	100.1	R(0.01)	3.35	
335	EN13016-1	96.5		-0.52	
336		-----		-----	
337	D5191	97.7	C	0.77	First reported 100
338		-----		-----	
343		-----		-----	
344	EN13016-1	97.34		0.38	
353		-----		-----	
369	EN13016-1	97.6		0.66	
370	EN13016-1	97.3		0.34	
371	EN13016-1	97.8		0.87	
381	EN13016-1	98.2		1.30	
391		-----		-----	
399	EN13016-1	96.90		-0.09	
402	EN13016-1	98.3		1.41	
403	EN13016-1	98.0		1.09	
420	EN13016-1	97.3		0.34	
431		-----		-----	
440	D5191	98.0		1.09	
444		-----		-----	
445	EN13016-1	96.7		-0.31	
447	IP391	97.3		0.34	
453		-----		-----	
463	EN13016-1	96.870		-0.12	
468	D5191	97.2		0.23	
485		-----		-----	
494	EN13016-1	97.5	C	0.55	First reported 90.3
496	EN13016-1	96.84		-0.16	
541		-----		-----	
631	D5191	98.10		1.20	
704	EN13016-1	96.66		-0.35	
754	D5191	98.25		1.36	
782	EN13016-1	98.2		1.30	
785		-----		-----	
798		-----		-----	
824	D5191	97.3		0.34	
861	D5191	95.50		-1.60	
875	D5191	96.4		-0.63	
902	EN13016-1	97.1		0.12	
974		-----		-----	
1006		-----		-----	
1011		-----		-----	
1026		-----		-----	
1033	IP391	96.0		-1.06	
1059	EN13016-1	96.2	C	-0.84	First reported 89.1
1066	D5191	97.84	C	0.92	First reported 14.19 (unit error psi instead of kPa)
1082	EN13016-1	96.1		-0.95	
1108	EN13016-1	97.23		0.26	
1109	D5191	97.15		0.18	
1134	D5191	97.99		1.08	
1161	EN13016-1	96.3		-0.74	
1167		-----		-----	
1171	EN13016-1	110.70	R(0.01)	14.74	
1182	D5191	96.6		-0.41	
1191	EN13016-1	96.8		-0.20	
1194		-----		-----	
1201		-----		-----	
1229	EN13016-1	96.1		-0.95	
1259	EN13016-1	97.3		0.34	
1272	EN13016-1	96.6		-0.41	
1299		-----		-----	
1300	EN13016-1	98.2		1.30	
1320	EN13016-1	97.5		0.55	
1389		-----		-----	

lab	method	value	mark	z(targ)	remarks
1397	EN13016-1	96.5		-0.52	
1402		-----		-----	
1409	EN13016-1	96.8		-0.20	
1446		-----		-----	
1457	EN13016-1	97.52		0.57	
1459	EN13016-1	96.6		-0.41	
1460	EN13016-1	95.5	C	-1.60	
1468	EN13016-1	96.8		-0.20	
1510		-----		-----	
1556	EN13016-1	97.4		0.45	
1586	EN13016-1	96.6		-0.41	
1613	D5191	97.1		0.12	
1631		-----		-----	
1634	EN13016-1	96.1		-0.95	
1650	EN13016-1	96.2		-0.84	
1676		-----		-----	
1710	EN13016-1	96.8		-0.20	
1720		-----		-----	
1724		-----		-----	
1728	EN13016-1	98.55		1.68	
1741	EN13016-1	97.9	C	0.98	
1776		-----		-----	
1782	EN13016-1	96.7		-0.31	
1807		97.1		0.12	
1810	EN13016-1	96.0		-1.06	
1811	EN13016-1	95.9		-1.17	
1849	EN13016-1	96.9		-0.09	
1881	D5191	97.4		0.45	
1911	EN13016-1	98.05		1.14	
1936	EN13016-1	97.8		0.87	
1937		-----		-----	
1938		-----		-----	
1948		-----		-----	
1949	EN13016-1	97.181		0.21	
1953	EN13016-1	96.6		-0.41	
2129	EN13016-1	97.6		0.66	
2130	EN13016-1	96.4		-0.63	
2146	EN13016-1	96.6		-0.41	
6005	EN13016-1	96.8		-0.20	
6016	D5191	96.7		-0.31	
6028	EN13016-1	95.5	C	-1.60	
6034		-----		-----	
6049	EN13016-1	97.0		0.02	
6054		-----		-----	
6075	EN13016-1	95.1		-2.03	
6126	EN13016-1	95.7		-1.38	
6142		-----		-----	

normality	OK
n	78
outliers	2
mean (n)	96.986
st.dev. (n)	0.7564
R(calc.)	2.118
st.dev.(EN13016-1:07)	0.9307
R(EN13016-1:07)	2.606



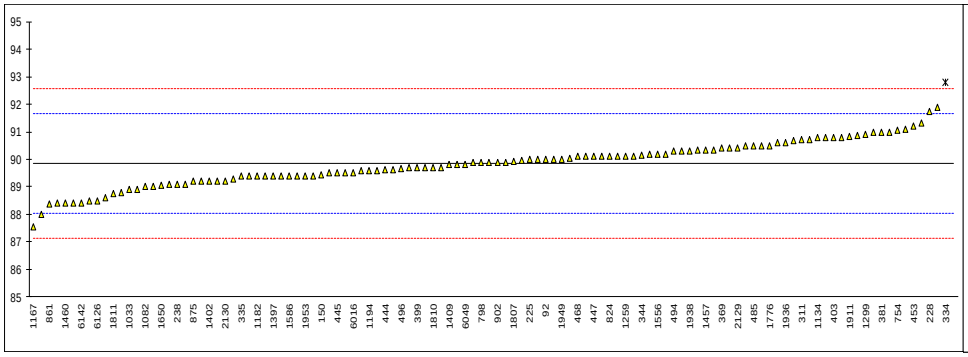


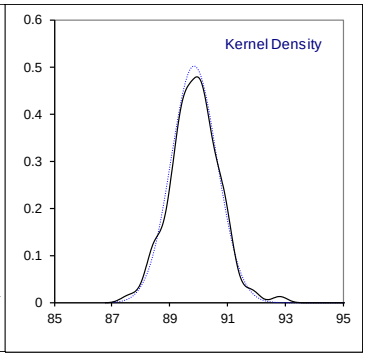
Determination of DVPE (acc. to EN13016-1) on sample #17201; results in kPa

lab	method	value	mark	z(targ)	remarks
92	D5191	90.0	C	0.18	First reported as DVPE
140	D5191	90.33		0.54	
150	D5191	89.45		-0.43	
171	D5191	90.11	C	0.30	First reported as DVPE
225	D5191	89.99		0.17	
228	D5191	91.75		2.11	
230		-----		-----	
237	D5191	89.9		0.07	
238	D5191	89.1		-0.82	
311	D5191	90.7		0.95	
312	EN13016-1	89.4		-0.48	
323	EN13016-1	89.3		-0.60	
333	EN13016-1	90.5		0.73	
334	EN13016-1	92.8	R(0.05)	3.27	
335	EN13016-1	89.4		-0.48	
336	EN13016-1	90.0		0.18	
337	D5191	90.5	C	0.73	First reported 92.7
338	EN13016-1	89.2		-0.71	
343	EN13016-1	91.9		2.28	
344	EN13016-1	90.15		0.34	
353		-----		-----	
369	EN13016-1	90.4		0.62	
370	EN13016-1	90.1		0.29	
371	EN13016-1	90.6		0.84	
381	EN13016-1	91.0		1.28	
391	EN13016-1	90.2		0.40	
399	EN13016-1	89.70		-0.15	
402	EN13016-1	91.0795		1.37	
403	EN13016-1	90.79		1.05	
420	EN13016-1	90.1		0.29	
431	EN13016-1	89.9		0.07	
440	D5191	90.79		1.05	
444	D5191	89.63		-0.23	
445	EN13016-1	89.5		-0.37	
447	D5191	90.1		0.29	
453	IP394	91.2		1.50	
463	EN13016-1	89.70		-0.15	
468	D5191	90.1		0.29	
485	EN13016-1	90.5		0.73	
494	EN13016-1	90.3	C	0.51	First reported 97.5
496	EN13016-1	89.67		-0.19	
541		90.35		0.56	
631	D5191	90.886		1.16	
704	EN13016-1	89.50		-0.37	
754	D5191	91.05		1.34	
782	EN13016-1	91.0		1.28	
785		-----		-----	
798	D5191	89.9		0.07	
824	D5191	90.1		0.29	
861	D5191	88.38		-1.61	
875	D5191	89.2		-0.71	
902	EN13016-1	89.9		0.07	
974		-----		-----	
1006	D5191	88.4		-1.59	
1011	EN13016-1	90.8		1.06	
1026	D5191	88.5		-1.48	
1033	IP394	88.9		-1.04	
1059	EN13016-1	89.1	C	-0.82	First reported 96.2
1066	D5191	90.67	C	0.92	First reported 13.15 (unit error psi instead of kPa)
1082	EN13016-1	89.0		-0.93	
1108	EN13016-1	90.05		0.23	
1109	D5191	89.97		0.14	
1134	D5191	90.78		1.04	
1161	EN13016-1	89.1		-0.82	
1167	EN13016-1	87.55		-2.53	
1171	EN13016-1	103.05	R(0.01)	14.60	
1182	D5191	89.4		-0.48	
1191	EN13016-1	89.6		-0.26	
1194	EN13016-1	89.6		-0.26	
1201	EN13016-1	90.1		0.29	
1229	EN13016-1	88.9		-1.04	
1259	EN13016-1	90.1		0.29	
1272	EN13016-1	89.4		-0.48	
1299	D5191	90.9		1.17	
1300	EN13016-1	90.97		1.25	
1320	EN13016-1	90.3		0.51	
1389	EN13016-1	88.6		-1.37	

lab	method	value	mark	z(targ)	remarks
1397	EN13016-1	89.4		-0.48	
1402	EN13016-1	89.2		-0.71	
1409	EN13016-1	89.8	E	-0.04	iis calculated for DVPE: 89.63
1446	EN13016-1	89.2		-0.71	
1457	EN13016-1	90.33		0.54	
1459	EN13016-1	89.4		-0.48	
1460	D5191	88.4		-1.59	
1468	EN13016-1	89.63		-0.23	
1510	D5191	89.8		-0.04	
1556	EN13016-1	90.2		0.40	
1586	EN13016-1	89.4		-0.48	
1613	D5191	89.9		0.07	
1631		-----		-----	
1634	EN13016-1	89.0		-0.93	
1650	EN13016-1	89.05		-0.87	
1676	EN13016-1	88.8		-1.15	
1710	EN13016-1	89.7		-0.15	
1720		-----		-----	
1724	IP394	89.4		-0.48	
1728	EN13016-1	91.32		1.64	
1741	EN13016-1	90.7	C	0.95	First reported 93.6
1776	EN13016-1	90.5		0.73	
1782	EN13016-1	89.5		-0.37	
1807	EN13016-1	89.91		0.08	
1810	EN13016-1	89.7	E	-0.15	iis calculated for DVPE: 88.86
1811	EN13016-1	88.76		-1.19	
1849	EN13016-1	89.7		-0.15	
1881	D5191	90.2		0.40	
1911	EN13016-1	90.84		1.11	
1936	EN13016-1	90.6		0.84	
1937	EN13016-1	90.0		0.18	
1938	EN13016-1	90.3		0.51	
1948	EN13016-1	90.4		0.62	
1949	EN13016-1	90.00		0.18	
1953	EN13016-1	89.4		-0.48	
2129	EN13016-1	90.4		0.62	
2130	EN13016-1	89.2		-0.71	
2146	EN13016-1	89.4		-0.48	
6005	EN13016-1	89.6		-0.26	
6016	D5191	89.5		-0.37	
6028	EN13016-1	88.4		-1.59	
6034		-----		-----	
6049	EN13016-1	89.8		-0.04	
6054		-----		-----	
6075	EN13016-1	87.99		-2.04	
6126	EN13016-1	88.5		-1.48	
6142	D5191	88.4		-1.59	

normality	OK
n	114
outliers	2
mean (n)	89.839
st.dev. (n)	0.7957
R(calc.)	2.228
st.dev.(EN13016-1:07)	0.9048
R(EN13016-1:07)	2.533



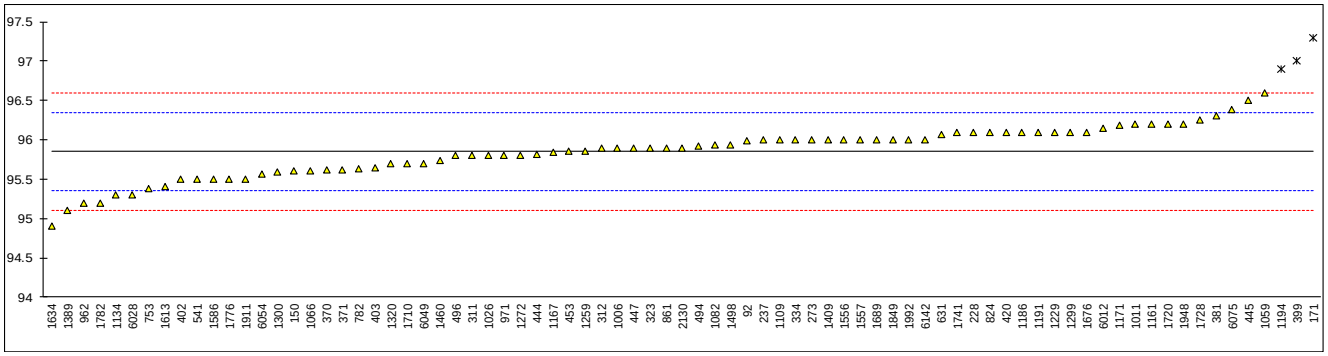


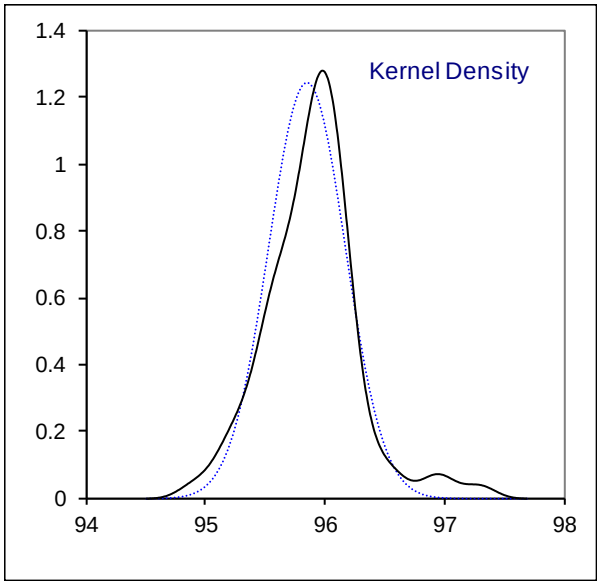
Determination of RON on sample #17202;

lab	method	value	mark	z(targ)	remarks
92	D2699	95.99		0.56	
140		-----		-----	
150	D2699	95.6		-1.00	
171	D2699	97.3	R(0.05)	5.80	
228	D2699	96.1		1.00	
237	D2699	96.0		0.60	
273	D2699	96.0	C	0.60	First reported 97
311	D2699	95.8		-0.20	
312	ISO5164	95.9		0.20	
323	ISO5164	95.9		0.20	
334	ISO5164	96.0		0.60	
370	ISO5164	95.62		-0.92	
371	ISO5164	95.62		-0.92	
381	ISO5164	96.3		1.80	
399	D2699	97.0	R(0.05)	4.60	
402	ISO5164	95.5		-1.40	
403	ISO5164	95.65		-0.80	
420	ISO5164	96.1		1.00	
444	D2699	95.82		-0.12	
445	IP237	96.5		2.60	
447	D2699	95.9		0.20	
453	D2699	95.85		0.00	
494	ISO5164	95.92		0.28	
496	ISO5164	95.8		-0.20	
541	D2699	95.50		-1.40	
631	D2699	96.07		0.88	
753	ISO5164	95.38		-1.88	
754		-----		-----	
782	ISO5164	95.63		-0.88	
824	D2699	96.1		1.00	
861	D2699	95.90		0.20	
962	D2699	95.2		-2.60	
971	D2699	95.8		-0.20	
1006	D2699	95.9		0.20	
1011	ISO5164	96.2		1.40	
1026	ISO5164	95.8		-0.20	
1059	ISO5164	96.6		3.00	
1066	D2699	95.6		-1.00	
1082	ISO5164	95.93		0.32	
1109	D2699	96.0		0.60	
1134	D2699	95.3		-2.20	
1161	ISO5164	96.2		1.40	
1167	ISO5164	95.84		-0.04	
1171	D2699Mod.	96.18		1.32	
1186	D2699	96.1		1.00	
1191	ISO5164	96.10		1.00	
1194	D2699	96.9	R(0.05)	4.20	
1229	ISO5164	96.1		1.00	
1259	ISO5164	95.85		0.00	
1272	INH-401	95.8		-0.20	
1299	D2699	96.1		1.00	
1300	ISO5164	95.59		-1.04	
1320	ISO5164	95.7		-0.60	
1389	D2699	95.1		-3.00	
1409	ISO5164	96.0		0.60	
1460	In house	95.74		-0.44	
1498	D2699	95.94		0.36	
1556	ISO5164	96.0		0.60	
1557	INH-1200	96.0		0.60	
1586	D2699	95.5		-1.40	
1613	D2699	95.4		-1.80	
1634		94.9		-3.80	
1650		-----		-----	
1676	E1655	96.10		1.00	
1689	GB/T5487	96.0		0.60	
1710	ISO5164	95.7		-0.60	
1720	D2699	96.2		1.40	
1728	D2699	96.25		1.60	
1741	D2699	96.09		0.96	
1776	ISO5164	95.5		-1.40	
1782	D2699	95.2		-2.60	
1849	ISO5164	96.0		0.60	
1911	ISO5164	95.50		-1.40	
1948	ISO5164	96.2		1.40	
1992	D2699	96		0.60	
2130	ISO5164	95.9		0.20	
6012	D2699	96.14		1.16	

lab	method	value	mark	z(targ)	remarks
6028	ISO5164	95.3		-2.20	
6049	ISO5164	95.7		-0.60	
6054	D2699	95.5652		-1.14	
6075	ISO5164	96.39		2.16	
6142	ISO5164	96.0		0.60	
6143		-----		-----	

normality	OK
n	76
outliers	3
mean (n)	95.85
st.dev. (n)	0.321
R(calc.)	0.90
st.dev.(ISO5164:14)	0.250
R(ISO5164:14)	0.7



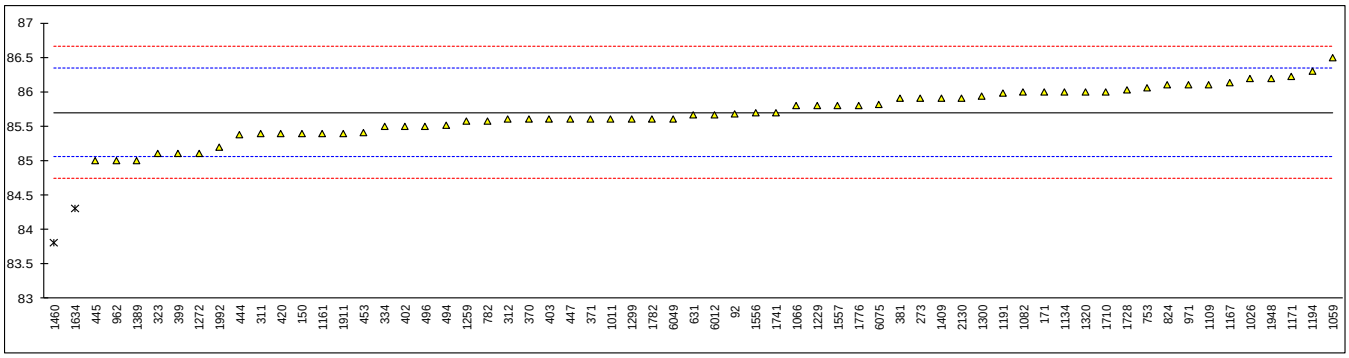


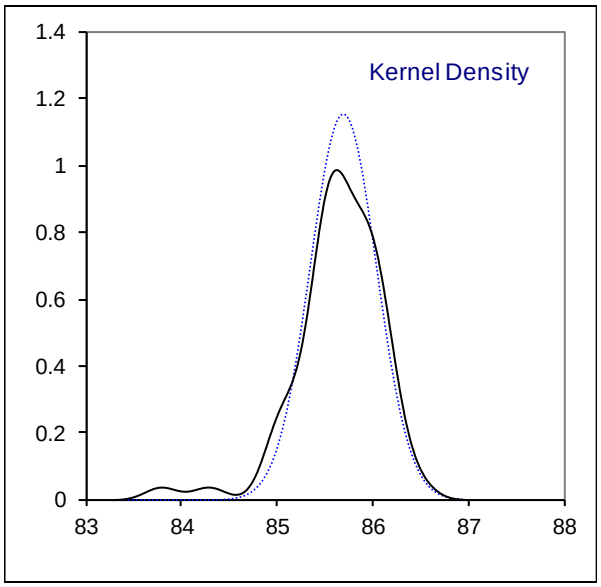
Determination of MON on sample #17202;

lab	method	value	mark	z(targ)	remarks
92	D2700	85.68		-0.06	
140		-----		-----	
150	D2700	85.4		-0.93	
171	D2700	86.0		0.93	
228		-----		-----	
237		-----		-----	
273	D2700	85.9	C	0.62	First reported 88.1
311	D2700	85.4		-0.93	
312	ISO5163	85.6		-0.31	
323	ISO5163	85.1		-1.87	
334	ISO5163	85.5		-0.62	
370	ISO5163	85.60		-0.31	
371	ISO5163	85.6		-0.31	
381	ISO5163	85.9		0.62	
399	D2700	85.1		-1.87	
402	ISO5163	85.5		-0.62	
403	ISO5163	85.6		-0.31	
420	ISO5163	85.4		-0.93	
444	D2700	85.38		-1.00	
445	IP236	85.0		-2.18	
447	D2700	85.6		-0.31	
453	D2700	85.41		-0.90	
494	ISO5163	85.51		-0.59	
496	ISO5163	85.5		-0.62	
541		-----		-----	
631	D2700	85.67		-0.09	
753	ISO5163	86.05		1.09	
754		-----		-----	
782	ISO5163	85.58		-0.37	
824	D2700	86.1		1.24	
861		-----		-----	
962	D2700	85.0		-2.18	
971	D2700	86.1		1.24	
1006		-----		-----	
1011	ISO5163	85.6		-0.31	
1026	ISO5163	86.2		1.55	
1059	ISO5163	86.5		2.49	
1066	D2700	85.8		0.31	
1082	ISO5163	85.99		0.90	
1109	D2700	86.1		1.24	
1134	D2700	86.0		0.93	
1161	ISO5163	85.4		-0.93	
1167	ISO5163	86.13		1.34	
1171	D2700Mod.	86.22		1.62	
1186		-----		-----	
1191	ISO5163	85.98		0.87	
1194	D2700	86.3		1.87	
1229	ISO5163	85.8		0.31	
1259	ISO5163	85.57		-0.41	
1272	INH-401	85.1		-1.87	
1299	D2700	85.6		-0.31	
1300	ISO5163	85.93		0.71	
1320	ISO5163	86.0		0.93	
1389	D2700	85.0		-2.18	
1409	ISO5163	85.9		0.62	
1460	In house	83.8	R(0.01)	-5.91	
1498		-----		-----	
1556	ISO5163	85.7		0.00	
1557	INH-1200	85.8		0.31	
1586		-----		-----	
1613		-----		-----	
1634		84.3	R(0.05)	-4.36	
1650		-----		-----	
1676		-----		-----	
1689		-----		-----	
1710	ISO5163	86.0		0.93	
1720		-----		-----	
1728	D2700	86.03		1.03	
1741	D2700	85.70		0.00	
1776	ISO5163	85.8		0.31	
1782	D2700	85.6		-0.31	
1849		-----		-----	
1911	ISO5163	85.40		-0.93	
1948	ISO5163	86.2		1.55	
1992	D2700	85.2		-1.56	
2130	ISO5163	85.9		0.62	
6012	D2700	85.67		-0.09	

lab	method	value	mark	z(targ)	remarks
6028		-----		-----	
6049	ISO5163	85.6		-0.31	
6054		-----		-----	
6075	ISO5163	85.82		0.37	
6142		-----		-----	
6143		-----		-----	

normality	OK
n	61
outliers	2
mean (n)	85.70
st.dev. (n)	0.346
R(calc.)	0.97
st.dev.(ISO5163:14)	0.321
R(ISO5163:14)	0.9





APPENDIX 2: z-scores distillation

lab	IBP	10% eva	50% eva	90% eva	FBP	E70%V/V	E100%V/V	E150%V/V
92	-0.92	-0.48	-1.33	-1.56	1.02	0.98	0.39	0.33
140	-1.04	-0.04	-1.77	-1.12	-0.05	-----	-----	-----
150	0.15	0.66	0.16	-0.75	0.82	-0.36	0.39	-0.10
171	-0.33	0.57	0.16	-0.68	-0.79	-0.26	0.39	0.33
225	2.06	0.83	-2.52	-0.02	0.28	-0.88	2.43	-5.92
228	0.45	0.31	0.01	-1.41	-0.96	-0.88	2.43	-0.53
230	-0.92	0.39	1.20	0.34	0.49	-0.05	-0.75	-5.92
237	0.87	-0.31	-0.73	-1.48	-0.54	0.15	-0.12	0.54
238	0.87	1.27	1.95	0.71	0.49	-1.40	-0.75	-1.61
273	0.57	1.09	4.18	0.05	0.61	-0.88	-1.39	-0.53
311	-0.92	-1.01	-2.37	-0.68	0.12	0.88	0.39	0.33
312	-0.51	-0.39	0.46	-0.39	-0.13	0.36	-0.63	0.33
323	-0.27	-0.31	-0.88	-0.61	0.20	0.36	-0.25	0.11
333	-0.51	-1.88	-2.97	-0.75	-0.26	1.19	0.77	0.33
334	-0.63	-0.22	-0.14	-0.24	-0.46	-0.05	-0.50	-0.10
335	1.17	0.31	0.46	-1.19	-0.46	-0.16	-0.50	0.97
336	-1.10	-0.22	1.80	0.27	1.27	-0.26	-1.01	0.54
337	-----	-----	-----	-----	-----	-----	-----	-----
338	0.51	0.92	2.54	2.46	1.02	0.15	0.14	0.33
343	1.65	2.14	1.95	1.07	0.49	-1.40	0.90	-0.75
344	-0.21	0.39	1.50	2.02	-1.54	-0.36	-1.65	-2.47
353	0.09	-1.97	-1.03	-0.97	0.98	0.47	0.90	0.33
369	0.15	-1.36	-3.26	0.19	-0.96	1.30	1.66	0.76
370	0.15	-0.74	-1.33	0.05	-1.08	0.36	1.03	-0.53
371	0.21	0.92	-1.92	0.49	-1.12	0.05	0.65	-0.75
381	-0.98	1.01	1.80	0.71	1.93	-0.78	-1.26	-0.10
391	-----	-----	-----	-----	-----	-----	-----	-----
399	0.87	2.58	-0.08	-1.24	-0.39	-0.78	-1.01	-0.96
402	0.51	-1.09	-4.60	-0.54	-0.09	2.23	0.65	-0.32
403	0.81	-0.92	-2.97	-1.27	-0.34	0.78	1.54	0.33
420	-1.22	-1.62	-2.67	-1.48	-2.36	0.98	1.28	2.48
431	2.00	-0.31	1.06	3.41	0.57	1.40	1.66	0.33
440	0.27	2.14	5.67	6.91	0.90	-2.44	-1.39	-8.07
444	-0.27	0.83	-0.73	-1.19	0.07	-0.16	0.52	0.33
445	-1.76	1.09	6.71	6.77	0.32	1.30	1.41	0.97
447	-0.33	-0.22	-0.43	-0.17	0.78	0.36	-0.25	-0.32
453	-0.21	-0.83	-2.07	-1.19	-0.01	0.88	0.14	0.97
463	-0.09	-0.57	-0.29	-0.24	-0.05	0.67	-0.88	-0.32
468	-0.09	0.39	6.27	3.55	0.53	-1.61	-1.90	-4.20
485	0.03	-0.61	-2.00	-1.05	-1.23	0.31	0.01	0.76
494	0.57	0.31	-0.58	-0.46	-0.26	-0.05	0.39	0.11
496	1.71	1.62	-0.43	-0.54	0.90	-0.36	0.39	0.33
541	-1.70	-0.92	-0.93	-1.10	-0.33	-0.26	0.35	0.76
631	2.84	1.27	1.95	-0.17	2.14	-0.99	-0.88	-0.32
663	0.69	-0.04	-0.51	-1.56	0.84	0.26	0.71	0.76
671	-----	-----	-----	-----	-----	-----	-----	-----
704	0.45	1.09	4.18	-0.02	-0.63	0.57	0.65	0.97
754	1.20	-0.31	0.01	1.73	-0.07	-1.30	-1.01	-1.40
781	0.27	2.14	3.44	-0.02	1.11	-2.44	-0.75	-0.53
782	0.57	0.48	0.61	1.00	0.28	-1.30	-1.01	-1.40
785	-0.92	-0.04	3.44	3.26	-1.37	-0.36	-1.39	-1.61
798	0.39	1.09	2.54	2.24	0.16	-1.40	-1.65	-2.26
824	-0.51	-0.39	-0.43	-0.17	-0.34	0.36	-0.25	-0.32
861	-----	-----	-----	-----	-----	-----	-----	-----
875	-0.86	0.92	4.03	3.04	0.28	-1.71	-2.15	-1.83
902	-0.69	-1.09	-1.92	-0.90	0.32	0.78	0.39	0.76
962	0.15	-0.83	-1.77	-1.05	-2.24	0.47	0.14	0.11
971	-0.51	0.22	0.46	-0.24	0.32	-0.26	-0.37	-0.10
974	-0.69	-1.01	-2.37	-0.61	-0.75	0.26	1.03	0.11
994	1.59	2.67	4.18	-0.39	-0.75	0.36	-0.37	0.54
1006	1.05	0.13	-0.43	-0.75	-1.08	-----	-----	-----
1011	-0.69	-0.31	0.31	-0.68	-0.09	0.05	-0.50	0.11
1026	-2.54	-0.31	-0.43	-0.83	-0.21	0.05	0.14	0.54
1033	-1.04	0.31	2.99	2.39	0.36	-1.19	-1.65	-2.90
1059	-0.09	-1.18	-1.03	-0.46	-0.46	0.36	0.01	-0.32
1066	-1.28	-0.83	-2.67	-0.46	-0.21	0.88	0.39	0.11
1079	-1.52	0.04	0.31	-0.10	1.19	-0.47	-0.37	-0.32
1082	-1.76	-1.44	-2.82	-0.83	-0.83	1.30	0.77	0.54
1108	1.35	0.39	-0.14	-0.68	2.43	-0.36	-1.26	0.11
1109	-1.64	-1.53	-3.41	-1.56	-1.33	1.30	1.15	0.97
1126	0.69	-1.79	-2.82	0.63	0.41	1.30	0.26	-1.18
1134	0.51	-2.41	-2.52	-0.39	-0.54	-4.41	-6.10	-11.09
1161	1.71	0.57	0.61	2.90	0.12	-0.78	-1.14	0.33
1167	2.96	0.66	0.16	-0.90	-0.96	-0.16	-1.01	0.54
1171	0.98	1.71	1.58	2.53	2.05	1.10	-2.78	3.99
1186	2.06	3.46	9.40	7.28	1.93	-6.07	-3.94	-8.07
1191	-0.03	-1.01	-1.92	-0.39	-0.09	1.30	0.52	0.11

lab	IBP	10% eva	50% eva	90% eva	FBP	E70%V/V	E100%V/V	E150%V/V
1194	-----	-----	-----	-----	-----	-----	-----	-----
1199	-----	-----	-----	-----	-----	-----	-----	-----
1201	-0.80	-1.27	-2.67	-0.75	-0.96	0.98	0.90	0.33
1205	0.45	-0.31	-0.73	0.05	0.69	0.36	-0.12	-0.10
1229	-0.03	-0.83	-2.82	-1.34	-0.21	0.98	0.90	0.33
1237	2.00	1.01	3.29	-0.17	-1.00	-----	-----	-0.10
1259	-0.03	0.13	0.46	-0.02	0.90	-1.61	-2.03	-2.90
1272	0.57	1.44	3.14	-0.10	0.20	-0.47	-0.37	-0.75
1299	0.63	-0.92	-1.92	-0.02	-0.71	0.47	0.77	-0.32
1300	0.27	0.13	0.91	0.41	1.36	-0.67	0.39	-0.32
1320	-0.27	0.04	-1.03	-0.97	-1.16	0.05	0.65	0.54
1389	-----	-----	-----	-----	-----	-----	-----	-----
1397	0.63	-0.39	0.76	0.27	2.43	-0.05	-0.63	-0.75
1402	-0.57	-1.18	-5.80	-0.97	-0.01	0.88	0.39	0.33
1409	-2.84	-0.04	-1.33	-1.05	0.03	-1.92	-2.41	-4.20
1441	0.57	1.01	3.74	2.97	-0.13	-----	-----	-----
1457	-2.60	0.22	1.80	-0.02	0.49	-0.78	-0.88	-0.32
1459	0.15	-1.01	-1.77	-0.75	-1.08	0.88	0.39	-0.10
1460	0.03	-0.74	-1.63	-0.54	-1.12	0.15	-0.12	0.54
1468	0.87	-1.09	-2.37	-0.75	-0.38	0.78	0.65	0.33
1498	0.81	-0.74	-1.48	-0.24	-0.21	1.19	-0.12	0.54
1556	-1.16	-1.27	-1.92	-0.68	-2.82	0.88	0.77	0.33
1557	-0.27	1.62	2.25	1.58	-0.79	-0.16	0.77	0.54
1569	-----	-----	-----	-----	-----	-----	-----	-----
1586	-1.10	0.39	2.10	0.56	1.15	0.78	0.65	2.48
1613	0.09	-0.13	-1.63	-0.24	0.74	0.67	0.01	-0.10
1631	-----	-----	-----	-----	0.45	-0.16	-0.12	-0.53
1634	-0.69	-0.92	0.01	0.27	-0.13	-0.78	-0.12	-0.75
1650	-1.64	-0.04	-0.14	0.19	-0.13	-0.78	-1.39	-2.69
1676	-----	-----	-----	-----	-----	-----	-----	-----
1689	-0.86	1.36	3.44	2.02	0.65	-----	-----	-----
1710	-0.33	0.22	-0.14	-0.90	-0.13	-0.05	-0.12	0.54
1720	0.39	2.49	5.23	-0.97	-0.71	-----	-----	-----
1724	-0.45	-0.39	-1.18	-0.54	0.28	0.26	0.14	0.33
1728	0.21	-0.18	-0.70	1.95	-0.09	1.01	-0.46	-1.35
1740	0.87	0.22	-1.63	-1.19	0.24	-0.99	1.79	0.54
1741	-0.09	-0.92	-1.63	-0.97	0.49	0.67	0.52	0.97
1742	0.63	-1.36	-2.97	-0.68	0.20	0.88	0.52	0.11
1776	-1.64	-0.13	-1.48	-1.19	-0.96	0.36	-0.12	0.54
1782	-0.15	1.88	12.67	10.49	0.03	-5.24	-6.48	-9.80
1785	-0.21	0.57	4.33	2.90	0.86	-----	-----	-----
1807	0.69	-1.36	-3.71	-0.61	-0.54	1.40	1.28	0.76
1810	-2.06	-0.04	-0.43	-0.24	0.07	0.15	-0.12	-0.10
1811	-0.33	-0.13	-0.73	-0.54	-0.09	-0.05	0.39	0.11
1849	0.09	-----	-----	-----	0.41	0.57	0.52	0.11
1881	-----	-----	-----	-----	-----	-----	-----	-----
1911	0.54	-0.83	-1.63	-0.46	-1.31	0.47	0.45	-0.21
1936	-1.28	-1.01	-1.92	-1.05	-1.00	0.78	0.77	0.97
1937	-0.74	-0.83	-1.33	-0.61	-0.30	0.57	0.39	0.33
1938	-0.51	-1.01	-1.77	-0.97	-0.75	0.67	0.65	0.33
1948	-0.57	-0.48	-1.33	-0.46	0.90	0.05	0.26	0.11
1949	0.87	1.27	1.95	2.17	0.69	-0.36	2.43	1.62
1953	-0.74	-0.39	-4.46	-1.70	0.65	-----	-----	-----
1977	0.41	0.18	2.81	2.73	-0.33	-----	-----	-----
1992	1.05	0.83	1.20	-0.24	0.49	-2.23	1.79	1.40
1995	-----	-----	-----	-----	-----	-----	-----	-----
2129	-1.94	-0.48	-1.63	-0.83	0.16	0.98	0.39	0.54
2130	-0.57	-0.57	-0.88	-0.32	1.60	0.57	0.26	1.62
2146	1.41	-0.83	-1.03	-1.05	0.32	0.57	-0.12	0.33
6005	-0.92	0.66	4.48	3.70	0.57	-1.82	-2.41	-3.98
6016	-----	-----	-----	-----	-----	-----	-----	-----
6028	-0.21	-0.13	2.40	1.14	-0.13	-0.67	-1.77	-1.61
6034	-----	-----	-----	-----	-----	-----	-----	-----
6049	0.63	0.66	0.31	-0.46	0.65	-0.47	0.26	0.54
6054	1.47	0.83	5.08	5.38	-0.54	-2.02	-2.92	-5.49
6075	0.39	-1.09	-1.03	-0.54	-0.75	1.09	0.52	1.19
6102	2.72	3.89	5.37	2.60	1.40	-2.44	-0.12	-3.76
6142	-0.24	-0.44	-1.70	0.16	-2.98	-1.40	1.66	-1.61
6143	-----	-----	-----	-----	-----	-----	-----	-----

APPENDIX 3

Number of participants per country

1 lab in	ALBANIA
1 lab in	ARGENTINA
1 lab in	AUSTRALIA
3 labs in	AUSTRIA
1 lab in	AZERBAIJAN
4 labs in	BELGIUM
1 lab in	BOSNIA and HERZEGOVINA
1 lab in	CANADA
1 lab in	CHILE
5 labs in	CHINA, People's Republic
2 labs in	COTE D'IVOIRE
3 labs in	CROATIA
3 labs in	CYPRUS
4 labs in	CZECH REPUBLIC
1 lab in	EGYPT
1 lab in	ESTONIA
5 labs in	FINLAND
7 labs in	FRANCE
1 lab in	GEORGIA
2 labs in	GERMANY
3 labs in	GREECE
1 lab in	GUAM
1 lab in	HONG KONG
1 lab in	HUNGARY
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
2 labs in	LITHUANIA
1 lab in	MACEDONIA
1 lab in	MALTA
1 lab in	MARTINIQUE
1 lab in	MAURITIUS
7 labs in	NETHERLANDS
2 labs in	NIGERIA
1 lab in	PHILIPPINES
2 labs in	POLAND
3 labs in	PORTUGAL
3 labs in	ROMANIA
8 labs in	RUSSIAN FEDERATION
2 labs in	SAUDI ARABIA
5 labs in	SERBIA
1 lab in	SLOVAKIA
2 labs in	SLOVENIA
1 lab in	SOUTH AFRICA
1 lab in	SOUTH KOREA
6 labs in	SPAIN
1 lab in	SUDAN
4 labs in	SWEDEN
1 lab in	TAIWAN
1 lab in	THAILAND
1 lab in	TOGO
1 lab in	TUNISIA
11 labs in	TURKEY
1 lab in	UKRAINE
2 labs in	UNITED ARAB EMIRATES
12 labs in	UNITED KINGDOM
3 labs in	UNITED STATES OF AMERICA

APPENDIX 4

Abbreviations:

C	= final test result after checking of first reported suspect test result
D(0.01) or D(1)	= outlier in Dixon's outlier test
D(0.05) or D(5)	= straggler in Dixon's outlier test
G(0.01) or G(1)	= outlier in Grubbs' outlier test
G(0.05) or G(5)	= straggler in Grubbs' outlier test
DG(0.01) or DG(1)	= outlier in Double Grubbs' outlier test
DG(0.05) or DG(5)	= straggler in Double Grubbs' outlier test
R(0.01) or R(1)	= outlier in Rosner's outlier test
R(0.05) or R(5)	= straggler in Rosner's outlier test
E	= probably an error in calculations
U	= test result probably reported in a different unit
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
SDS	= Safety Data Sheet

Literature:

1 iis Interlaboratory Studies, Protocol for the Organisation, Statistics & Evaluation, March 2017
2 ASTM E178:16
3 ASTM E1301:95(2003)
4 ISO 5725:86 (1994)
5 ISO 5725, parts 1-6, 1994
6 ISO 13528:05
7 M. Thompson and R. Wood, J. AOAC Int, 76, 926, (1993)
8 W.J. Youden and E.H. Steiner, Statistical Manual of the AOAC, (1975)
9 IP 367:84
10 DIN 38402 T41/42
11 P.L. Davies, Fr. Z. Anal. Chem, 331, 513, (1988)
12 J.N. Miller, Analyst, 118, 455, (1993)
13 Analytical Methods Committee Technical Brief, No 4 January 2001
14 P.J. Lowthian and M. Thompson, The Royal Society of Chemistry, Analyst 2002, 127, 1359-1364, (2002)
15 Bernard Rosner, Percentage Points for a Generalized ESD Many-Outlier Procedure, *Technometrics*, 25(2), 165-172, (1983)
16 Horwitz, W and Albert, R, J. AOAC Int, 79, 3, 589, (1996)
17 H. Verplaetse and M. Lacourt, Accred Qual Assur, 11:, 521-522, (2006)