Results of Proficiency Test
Gasoline (ASTM specification)
February 2018

Organised by: Institute for Interlaboratory Studies
Spijkenisse, the Netherlands

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1 INTRODUCTION

Since 1995, the Institute for Interlaboratory Studies (iis) organizes a proficiency scheme for Gasoline. During the annual proficiency testing program 2017/2018, it was decided to continue the round robin for the analysis of Gasoline in accordance with the most recent version of the specification ASTM D4814.
In this interlaboratory study, in total 118 laboratories in 64 different countries registered for participation. See appendix 3 for the number of participants per country. In this report, the results of the 2018 proficiency test are presented and discussed. This report is also electronically available through the iis website www.iisnl.com.

2 SET UP

The Institute for Interlaboratory Studies (iis) in Spijkenisse, the Netherlands, was the organizer of this proficiency test (PT). Sample analyzes for fit-for-use and homogeneity testing were subcontracted to an ISO/IEC 17025 accredited laboratory. In this proficiency test, the participants received, depending on their registration, 1*1 liter bottle Gasoline euro 95 (labelled #18010) and/or 1*1 liter bottle (± 75% filled) Gasoline euro 95 (labelled #18011) for DVPE only, and/or 2*1 liter bottle Gasoline euro 95 (labelled #18012) for RON/MON only.
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. This ensures strict adherence to protocols for sample preparation and statistical evaluation and 100% confidentiality of participant's data. Feedback from the participants on the reported data is encouraged and customer's satisfaction is measured on regular basis by sending out questionnaires.

2.2 PROTOCOL

The protocol followed in the organization of this proficiency test was the one as described for proficiency testing in the report 'iis Interlaboratory Studies: Protocol for the Organisation, Statistics and Evaluation' of 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 sample material, approximately 400 liters, Gasoline Euro 95 was obtained from a local petrol station. From this batch, approximately 300 liters of Gasoline were spiked with the elements Phosphorus (from tricresyl phosphate) and Lead (from tetra-ethyl lead). After mixing and homogenisation in a 500 liter mixing vessel, 140 amber glass bottles of 1 liter were filled and labelled #18010 for the main round and 130 amber glass bottles of 1 liter were filled and labelled #18012 for the determination of RON/MON. The homogeneity of the subsamples #18010 and #18012 were checked by determination of Density at 15°C in accordance with ASTM D4052 and Pb in accordance with ASTM D3237 on 10 stratified randomly selected samples.

	Density at 15°C in kg/m^3	Pb in mg/L
Sample #18010/12-1	749.75	5.5
Sample #18010/12-2	749.79	5.5
Sample #18010/12-3	749.74	5.5
Sample #18010/12-4	749.75	5.4
Sample #18010/12-5	749.73	5.4
Sample #18010/12-6	749.80	5.5
Sample #18010/12-7	749.74	5.6
Sample #18010/12-8	749.78	5.5
Sample #18010/12-9	749.72	5.5
Sample #18010/12-10	749.77	5.6

Table 1: homogeneity test results of subsamples #18010 and #18012

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

	Density at 15 °C in kg/m^3	Pb in mg/L
r (observed)	0.07	0.2
reference test method	D4052:16	ASTM D3237:17
0.3 x R (ref. test method)	0.57	0.8

Table 2: evaluation of the repeatabilities of subsamples #18010 and #18012

The calculated repeatabilities of the results of the homogeneity tests for Density and Lead were less than 0.3 times the corresponding reproducibilities of the reference test methods. Therefore, the homogeneity of subsamples #18010 and #18012 was assumed.

2.4.2 GASOLINE – SAMPLE FOR DVPE

From the same Gasoline batch, approximately 100 liters were used to fill 106 bottles of 1 liter with approx. 750 mL and labelled #18011 “for DVPE only”. The homogeneity of the subsamples #18011 was checked by determination of Density at 15°C in accordance with ASTM D4052 and

Dry Vapour Pressure Equivalent in accordance with ASTM D5191 on 8 stratified randomly selected samples.

	Density at 15°C in kg/m^3	DVPE psi
Sample #18011-1	749.72	8.46
Sample #18011-2	749.72	8.47
Sample #18011-3	749.71	8.47
Sample #18011-4	749.68	8.46
Sample #18011-5	749.69	8.47
Sample #18011-6	749.73	8.44
Sample #18011-7	749.70	8.46
Sample #18011-8	749.72	8.46

Table 3: homogeneity test results of subsamples #18011

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

	Density at 15 °C in kg/m^3	DVPE in psi
r (observed)	0.05	0.03
reference test method	D4052:16	ASTM D5191:15
0.3 x R (ref. test method)	0.57	0.10

Table 4: evaluation of the repeatabilities of subsamples #18011

The calculated repeatabilities of the results of the homogeneity tests for Density and DVPE were less than 0.3 times the reproducibilities of the reference test methods. Therefore, the homogeneity of subsamples #18011 were assumed.

To the participants, depending on their registration, 1*1 liter bottle of sample #18010 and/or 1*1 liter bottle (± 750 mL filled) of sample #18011 and/or 2*1 liter bottle of sample #18012 were sent on January 31, 2018. An SDS was added to the sample package.

2.5 STABILITY OF THE SAMPLES

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

2.6 ANALYSES

The participants were requested to determine API Gravity, Aromatics by FIA, Benzene, Copper Corrosion, Silver corrosion, Density at 15°C, Distillation (automated or manual), Doctor Test, Existent gum (solvent washed), Lead, Manganese, Olefins by FIA, Oxidation Stability, Oxygenates (DIPE, ETBE, Ethanol, Methanol, MTBE, TAME, Other Oxygenates), Oxygen content, Phosphorus and Sulphur on sample #18010.
On sample #18011, the participants were requested to determine Total Vapour Pressure and Dry Vapour Pressure (acc. ASTM D5191 and EPA).

On sample #18012, the participants were requested to determine RON and/or MON.

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 letter of instructions can also be downloaded from the iis website www.iisn.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 raw data of reported test results (no reanalyses). Additional or corrected test results are used for data analysis and original test results are placed under “Remarks” 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

Statistical evaluations were performed as described 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) test results 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.

In accordance with ISO 5725 the original test results per determination were submitted subsequently to Dixon’s, Grubbs’ and/or Rosner’s outlier tests. Outliers are marked by D(0.01) for the Dixon’s test, by G(0.01) or DG(0.01) for the Grubbs’ test and by R(0.01) for the Rosner’s test. Stragglers are marked by D(0.05) for the Dixon’s test, by G(0.05) or DG(0.05) for the Grubbs’ test and by R(0.05) for the Rosner’s test. Both outliers and stragglers were not included in the calculations of averages and standard deviations.

For each assigned value, the uncertainty was determined in accordance with ISO13528. Subsequently the calculated uncertainty was evaluated against the respective requirement based on the target reproducibility in accordance with ISO13528. 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 them with a factor of 2.8.

3.2 GRAPHICS

In order to visualise the data against the reproducibilities from literature, Gauss plots were made, using the sorted data for one determination (see appendix 1). On the Y-axis the reported test results are plotted. The corresponding laboratory numbers are on the X-axis.

The straight horizontal line presents the consensus value (a trimmed mean). The four striped lines, parallel to the consensus value line, are the +3s, +2s, -2s and -3s target reproducibility limits of the selected reference test method. Outliers and other data, which were excluded from the calculations, are represented as an “x”. Accepted data are represented as a triangle.

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

3.3 Z-SCORES

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

The target standard deviation was calculated from the literature reproducibility by division with 2.8. In case no literature reproducibility was available, other target values were used. In some cases, a reproducibility based on former iis proficiency tests could be used.

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

The z-scores were calculated in accordance with:

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

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

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

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

4 EVALUATION

In this interlaboratory study, problems were encountered with the dispatch of the samples. Participants in Afghanistan, Argentina, China, Hong Kong, Malaysia, Nigeria, Pakistan, Saudi Arabia, Senegal, Tanzania and United States of America received the samples late or not at all. For the main round (112 participants), 8 participants did not report test results. For the “DVPE” round (82 participants), 8 participants did not report test results. For the “RON/MON” round (53 participants), 6 participants did not report test results.
Finally, in total 110 laboratories reported 1327 numerical test results. Observed were 16 outlying results, which is 1.2%. In proficiency studies, outlier percentages of 3% - 7.5% are quite normal.

4.1 EVALUATION PER SAMPLE AND PER TEST

In this section, the reported test results are discussed per sample and per test. The test methods, which were used by the various laboratories, are taken into account for explaining the observed differences where possible and applicable. These test methods are also in the tables together with the reported test data. The abbreviations, used in these tables, are listed in appendix 4.

In the iis PT reports, ASTM test methods are referred to with a number (e.g. D381) and an added designation for the year that the test method was adopted or revised (e.g. D381:12). If applicable, a designation in parentheses is added to designate the year of reapproval (e.g. D381:12 (2017)). In the test results tables of Appendix 1 only the test method number and year of adoption will be used. The abbreviations, used in these tables, are listed in appendix 4.

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 #18010:

API Gravity: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ASTM D4052:16.

Aromatics by FIA: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in full agreement with the requirements of ASTM D1319:15.

Benzene: This determination was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ASTM D3606:17.

Copper Corrosion: No problems have been observed. All reporting participants agreed on classification 1 or 1a.

Silver Corrosion: No problems have been observed. All reporting participants, except one, agreed on classification 0.

Density at 15°C: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ASTM D4052:16.

Distillation The distillation was not problematic. In total four statistical outliers were observed. For the automated mode, the calculated reproducibilities after rejection of the statistical outliers are in agreement with the requirements of ASTM D86:17 (automated mode). For the manual mode, the calculated reproducibilities, except for Initial and Final Boiling Point, are in agreement with the requirements of ASTM D86:17 (Manual mode).

Doctor Test: All reporting laboratories agreed on the absence of Mercaptans and reported Negative.

Existent Gum: This determination was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ASTM D381:12 (2017)

Lead: The determination was not problematic. Four participants did not detect any lead and reported a false negative test result. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in full agreement with the requirements of ASTM D3237:17.
The average recovery of Lead (theoretical increment of 5.11 mg Lead/L) may be good: “approx. 97%” (the actual blank of Lead content is unknown).

Manganese: The determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ASTM 3831:12 (2017).

Olefins by FIA: This determination was problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not in agreement with the requirements of ASTM D1319:15.

Oxidation stability: Most of the reporting laboratories agreed that the Oxidation Stability is >900 minutes.

Ethanol: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in full agreement with the requirements of ASTM D4815:15b.

MTBE: This determination was problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not in agreement with the requirements of ASTM D4815:15b.

Other Oxygenates: No other oxygenates were observed by the participating laboratories. Therefore, no significant conclusions were drawn.

Oxygen content: This determination was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in full agreement with the requirements of ASTM D4815:15b and D5599:17.

Phosphorus: This determination was problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ASTM D3231:13. The average recovery of Phosphorus (theoretical increment of 1.8 mg Phosphorus/L) may be good: “approx. 108%” (the actual blank of Phosphorus content is unknown).

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 ASTM D5453:16e1.

Sample #18011:

TVP: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in full agreement with the requirements of ASTM D5191:15.

DVPE: The conversions of the measured Total Vapour Pressure to the corresponding Dry Vapour Pressure Equivalent (DVPE) as described in ASTM D5191:15 and to the U.S. EPA guidelines (40 CFR Part 80, App. E, Method 3), show in total one statistical outlier.
Both calculated reproducibilities after rejection of the statistical outlier are in agreement with the respective requirements of ASTM D5191:15 and EPA guidelines. No calculations errors were observed.

Sample #18012:

RON: This determination was problematic. No statistical outliers were observed. However, the calculated reproducibility is not in agreement with the requirements of ASTM D2699:17.

MON: This determination was problematic. No statistical outliers were observed. However, the calculated reproducibility is not in agreement with the requirements of ASTM D2700:17a.

4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES

A comparison has been made between the reproducibility as declared by the relevant standard and the reproducibility as found for the group of participating laboratories. The average results of sample #18010, #18011 and #18012, calculated reproducibilities and reproducibilities, derived from literature standards (in casu ASTM standards) are compared in the next table.

Parameter	Unit	n	mean	2.8 * sd	R (lit)	
API Gravity	-----	56	57.10	0.33	0.48	
Aromatics by FIA	%V/V	47	34.1	3.9	3.7	
Benzene	% V/V	48	0.85	0.11	0.16	
Copper Corrosion 3 hrs at 50°C	-----	78	1a	n.a.	n.a.	
Silver Corrosion 3 hrs at 50°C	-----	19	0	n.a.	n.a.	
Density at 15°C	kg/m^3	102	750.0	1.0	1.9	
Distillation					Auto	Manual
- Initial Boiling Point	°C	94	36.8	5.0	4.7	4.3
- Temp. at 10% evaporated	°C	95	52.3	2.0	4.0	3.4
- Temp. at 50% evaporated	°C	94	96.5	2.7	4.0	3.4
- Temp. at 90% evaporated	°C	93	148.4	2.3	5.4	4.0
- Final Boiling Point	°C	95	178.1	4.6	7.1	3.1
Doctor Test	-----	49	negative	n.a.	n.a.	
Existent Gum (washed)	mg/100mL	48	0.63	0.97	2.17	
Lead as Pb	mg/L	27	5.0	2.7	2.6	
Manganese as Mn	mg/L	11	0.4	0.6	1.1	
Olefins by FIA	%V/V	42	6.1	3.1	2.4	
Oxidation Stability	min.	31	>900	n.a.	n.a.	
-Ethanol	%V/V	46	4.6	0.5	0.5	
-MTBE	%V/V	45	2.1	0.3	0.2	
Oxygen content	%M/M	38	2.1	0.2	0.2	
Phosphorus as P	mg/L	5	1.9	0.3	0.3	
Sulphur	mg/kg	74	6.2	2.1	2.3	

Table 5: performance evaluation sample #18010

Parameter	Unit	n	mean	2.8 * sd	R (lit)
TVP	psi	62	9.3	0.3	0.3
DVPE acc. to ASTM D5191	psi	69	8.4	0.2	0.3
DVPE acc. EPA	psi	43	8.6	0.3	0.3

Table 6: performance evaluation sample #18011

Parameter	Unit	n	mean	2.8 * sd	R (lit)
RON	-----	47	95.7	0.8	0.7
MON	-----	30	85.5	1.1	0.9

Table 7: performance evaluation sample #18012

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 standards. The problematic tests have been discussed in paragraph 4.1.

4.3 COMPARISON OF THE PROFICIENCY TEST OF FEBRUARY 2018 WITH PREVIOUS PTS

	February 2018	*February 2017*	*March 2016*	*February 2015*	*February 2014*
Number of rep. p articipants	110	111	107	123	129
Number of results reported	1327	1489	1435	1639	1930
Statistical outliers	16	39	25	39	73
Percentage outliers	1.2	2.6%	1.7%	2.4%	3.8%

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 standards. The conclusions are given in the following table:

Parameter	*February 2018*	*February 2017*	*March 2016*	*February 2015*	*February 2014*
API Gravity	+	++	++	++	++
Aromatics by FIA	+/-	-	-	-	-
Benzene	+	+	++	+	+
Density at 15°C	++	++	++	++	++
Distillation Automated	+	++	+	+	+
Distillation Manual	+	+	+	+	+
Existent Gum (washed)	++	++	++	++	++
Lead as Pb	+/-	+/-	n.e.	n.e.	n.e.
Manganese as Mn	++	+	n.e.	n.e.	n.e.
Olefins by FIA	-	-	-	-	+
Ethanol	+/-	+/-	+	+/-	+
MTBE	-	-	--	-	-
Oxygen content	+/-	+/-	+/-	+/-	+
Phosphorus as P	-	--	--	--	n.e.
Sulphur	+/-	+/-	+/-	+/-	+/-
TVP	+/-	+/-	+	+	+
DVPE	+	+/-	+	+	+
RON	-	-	-	+	+/-
MON	-	+/-	-	+/-	+/-

table 9: comparison determinations against the reference test method

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

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

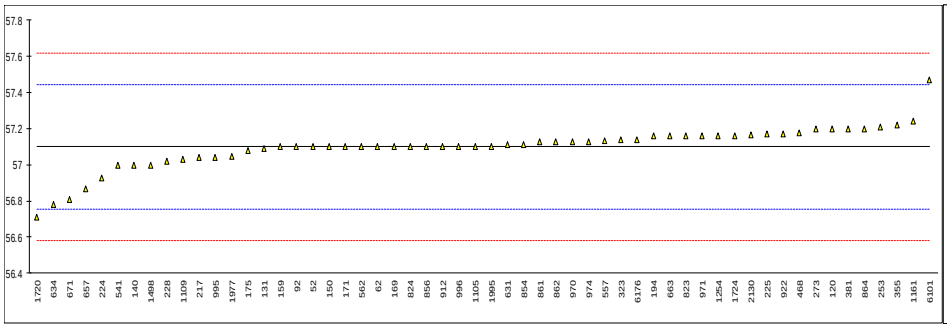
APPENDIX 1

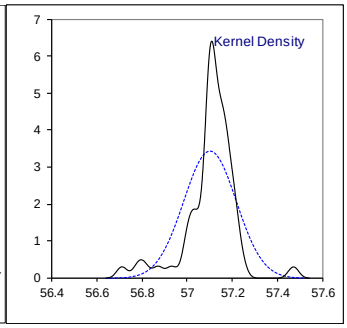
Determination of API Gravity on sample #18010;

lab	method	value	mark	z(targ)	remarks
52	D4052	57.1		0.00	
62	D4052	57.1		0.00	
92	D4052	57.1		0.00	
120	D4052	57.2		0.58	
131	D4052	57.09		-0.06	
140	D4052	57.0		-0.58	
150	D4052	57.1		0.00	
158		-----		-----	
159	D4052	57.1		0.00	
169	D4052	57.1		0.00	
171	D4052	57.1		0.00	
175	D4052	57.08		-0.11	
194	D4052	57.16		0.35	
217	D4052	57.04		-0.35	
221		-----		-----	
224	D1298	56.93		-0.98	
225	D4052	57.17		0.41	
228	D4052	57.02		-0.46	
230		-----		-----	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253	D4052	57.21		0.64	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273	D4052	57.2		0.58	
312		-----		-----	
323	D4052	57.14		0.23	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355	D4052	57.22		0.70	
381	D4052	57.2		0.58	
444		-----		-----	
468	D4052	57.18		0.46	
485		-----		-----	
541	D4052	57.00		-0.58	
557	D4052	57.1333		0.19	
558		-----		-----	
562	D1298	57.1		0.00	
603		-----		-----	
631	D4052	57.11		0.06	
633		-----		-----	
634	D4052	56.78	C	-1.85	first reported: 69.12
657	D4052	56.87		-1.33	
663	D4052	57.16		0.35	
671	D4052	56.81		-1.68	
823	D4052	57.16		0.35	
824	D4052	57.1		0.00	
854	D4052	57.11		0.06	
856	D4052	57.1		0.00	
861	D4052	57.13		0.18	
862	D4052	57.13		0.18	
864	D4052	57.2		0.58	
912	D287	57.1		0.00	
922	D4052	57.17		0.41	
962		-----		-----	
963		-----		-----	
970	D4052	57.13		0.18	
971	D4052	57.16		0.35	
974	Calculation	57.13		0.18	
995	D4052	57.04		-0.35	
996		57.1		0.00	
997		-----		-----	
998		-----		-----	
1006		-----		-----	
1016		-----		-----	
1017		-----		-----	
1033		-----		-----	
1059		-----		-----	
1067		-----		-----	
1080		-----		-----	
1105	D1298	57.1		0.00	
1109	D287	57.03		-0.40	

lab	method	value	mark	z(targ)	remarks
1161	D4052	57.24		0.81	
1186		-----		-----	
1199		-----		-----	
1254	D4052	57.16	C	0.35	first reported: 0.7505
1347		-----		-----	
1348		-----		-----	
1385		-----		-----	
1397		-----		-----	
1498	D4052	57.0		-0.58	
1575		-----		-----	
1634		-----		-----	
1720	D4052	56.71		-2.25	
1724	D4052	57.16		0.35	
1730		-----		-----	
1746		-----		-----	
1783		-----		-----	
1807		-----		-----	
1810		-----		-----	
1811		-----		-----	
1833		-----		-----	
1849		-----		-----	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1977	Calculated	57.0465		-0.31	
1995	D4052	57.1		0.00	
2130	D4052	57.167		0.39	
6005		-----		-----	
6018		-----		-----	
6054		-----		-----	
6101	D4052	57.469		2.14	
6170		-----		-----	
6172		-----		-----	
6173		-----		-----	
6176	D4052	57.14		0.23	
7003		-----		-----	

normality	not OK
n	56
outliers	0
mean (n)	57.100
st.dev. (n)	0.1164
R(calc.)	0.326
st.dev.(D4052:16)	0.1729
R(D4052:16)	0.484



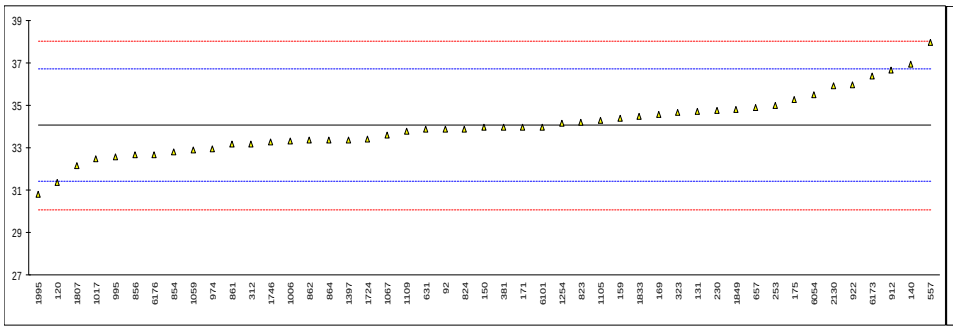


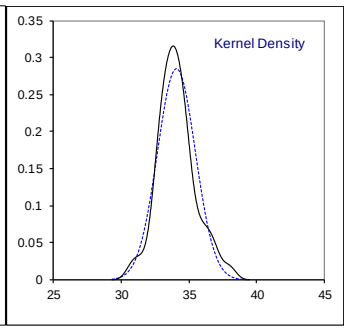
Determination of Aromatics by FIA on sample #18010; results in %V/V

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62		-----		-----	
92	D1319	33.9		-0.13	
120	D1319	31.4		-2.02	
131	D1319	34.74		0.51	
140	D1319	36.987		2.21	
150	D1319	34.0		-0.05	
158		-----		-----	
159	D1319	34.4		0.25	
169	D1319	34.6		0.40	
171	D1319	34.0		-0.05	
175	D1319	35.3		0.93	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230	D1319	34.79		0.54	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253	D1319	35.0		0.70	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D1319	33.2		-0.66	
323	D1319	34.7		0.48	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381	D1319	34.0		-0.05	
444		-----		-----	
468		-----		-----	
485		-----		-----	
541		-----		-----	
557	D1319	37.97545		2.95	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631	D1319	33.898		-0.13	
633		-----		-----	
634		-----		-----	
657	D1319	34.9		0.63	
663		-----		-----	
671		-----		-----	
823	D1319	34.2		0.10	
824	D1319	33.9		-0.13	
854	D1319	32.83		-0.94	
856	D1319	32.7		-1.04	
861	D1319	33.2		-0.66	
862	D1319	33.4		-0.51	
864	D1319	33.4		-0.51	
912	D1319	36.69		1.98	
922	D1319	36.0		1.46	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971		-----		-----	
974	D1319	32.97		-0.83	
995	D1319	32.6		-1.11	
996		-----		-----	
997		-----		-----	
998		-----		-----	
1006	D1319	33.33		-0.56	
1016		-----		-----	
1017	EN22854	32.51		-1.18	
1033		-----		-----	
1059	D1319	32.9		-0.89	
1067	D1319	33.6	C	-0.36	first reported: 40.8
1080		-----		-----	
1105	D1319	34.3		0.17	
1109	D1319	33.80		-0.21	

lab	method	value	mark	z(targ)	remarks
1161		-----		-----	
1186		-----		-----	
1199		-----		-----	
1254	D1319	34.18		0.08	
1347		-----		-----	
1348		-----		-----	
1385		-----		-----	
1397	D1319	33.4		-0.51	
1498		-----		-----	
1575		-----		-----	
1634		-----		-----	
1720		-----		-----	
1724	D1319	33.43		-0.49	
1730		-----		-----	
1746	D1319	33.3		-0.58	
1783		-----		-----	
1807	ISO22854	32.18		-1.43	
1810		-----		-----	
1811		-----		-----	
1833	D1319	34.5		0.32	
1849	EN15553	34.83		0.57	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1977		-----		-----	
1995		30.81		-2.47	
2130	D1319	35.95		1.42	
6005		-----		-----	
6018		-----		-----	
6054	D1319	35.53		1.10	
6101	D1319	34.0		-0.05	
6170		-----		-----	
6172		-----		-----	
6173	D1319	36.43		1.78	
6176	D1319	32.7		-1.04	
7003		-----		-----	

normality	OK
n	47
outliers	0
mean (n)	34.07
st.dev. (n)	1.398
R(calc.)	3.91
st.dev.(D1319:15)	1.321
R(D1319:15)	3.70



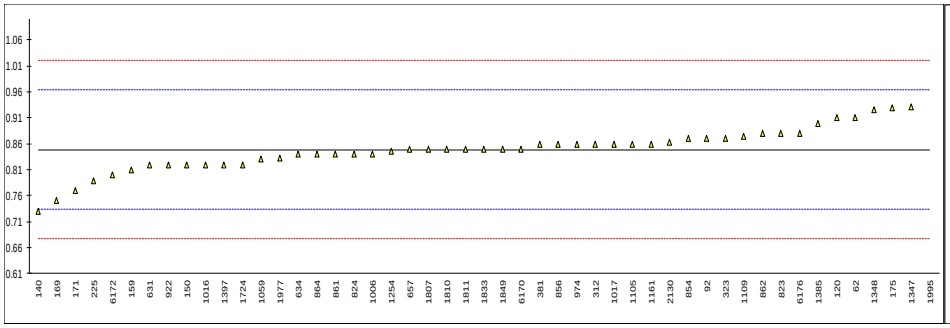


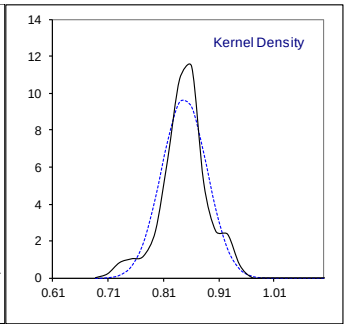
Determination of Benzene on sample #18010; results in %V/V

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62	D5580	0.91		1.07	
92	INH-14.3	0.87		0.37	
120	D3606	0.91		1.07	
131		-----		-----	
140	D3606	0.73		-2.08	
150	D3606	0.82		-0.50	
158		-----		-----	
159	D3606	0.81		-0.68	
169	D3606	0.751		-1.71	
171	D3606	0.77		-1.38	
175	D3606	0.93		1.42	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		0.79		-1.03	
228		-----		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D3606	0.86		0.19	
323	D3606	0.87		0.37	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381	EN22854	0.86		0.19	
444		-----		-----	
468		-----		-----	
485		-----		-----	
541		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631		0.819		-0.52	
633		-----		-----	
634	D6277B	0.84	C	-0.15	first reported: 0.58
657	D5580	0.85		0.02	
663		-----		-----	
671		-----		-----	
823	D5580	0.88	C	0.54	first reported: 0.674
824	D5580	0.84		-0.15	
854	D5580	0.87		0.37	
856	D5580	0.86		0.19	
861	D5580	0.84		-0.15	
862	D5580	0.88		0.54	
864	D5580	0.84		-0.15	
912		-----		-----	
922	D6277B	0.82		-0.50	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971		-----		-----	
974	D5580	0.86		0.19	
995		-----		-----	
996		-----		-----	
997		-----		-----	
998		-----		-----	
1006	D5580	0.84		-0.15	
1016	ISO22854	0.82		-0.50	
1017	EN22854	0.86		0.19	
1033		-----		-----	
1059	ISO22854	0.83		-0.33	
1067		-----		-----	
1080		-----		-----	
1105	D6839	0.86		0.19	
1109	D3606	0.874		0.44	

lab	method	value	mark	z(targ)	remarks
1161	EN22854	0.86		0.19	
1186		-----		-----	
1199		-----		-----	
1254	EN238	0.846		-0.05	
1347	D3606	0.932		1.45	
1348	D5580	0.926		1.35	
1385	D3606	0.9		0.89	
1397	EN238	0.82		-0.50	
1498		-----		-----	
1575		-----		-----	
1634		-----		-----	
1720		-----		-----	
1724	EN22854	0.82		-0.50	
1730		-----		-----	
1746		-----		-----	
1783		-----		-----	
1807	EN22854	0.85		0.02	
1810	ISO22854	0.85		0.02	
1811	EN22854	0.85		0.02	
1833	EN22854	0.85		0.02	
1849	EN22854	0.85		0.02	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1977	D6730	0.833		-0.28	
1995	D6839	6.18	R(0.01)	93.09	
2130	D6730	0.864		0.26	
6005		-----		-----	
6018		-----		-----	
6054		-----		-----	
6101		-----		-----	
6170	EN12177	0.85		0.02	
6172	D6277	0.8		-0.85	
6173		-----		-----	
6176	EN238	0.88		0.54	
7003		-----		-----	

normality	suspect
n	48
outliers	1
mean (n)	0.85
st.dev. (n)	0.041
R(calc.)	0.11
st.dev.(D3606:17)	0.057
R(D3606:17)	0.16





Determination of Copper Corrosion 3hrs at 50°C on sample #18010;

lab	method	value	mark	z(targ)	remarks
52	D130	1a		-----	
62	D130	1a		-----	
92	D130	1a		-----	
120	D130	1a		-----	
131	D130	1a		-----	
140	D130	1a		-----	
150	D130	1a		-----	
158		-----		-----	
159	D130	1a		-----	
169	D130	1a		-----	
171	D130	1a		-----	
175		-----		-----	
194		-----		-----	
217	D130	1a		-----	
221	D130	1a		-----	
224	D130	1a		-----	
225	D130	1a		-----	
228	D130	1A		-----	
230	D130	1a		-----	
237		-----		-----	
238		-----		-----	
252	D130	1a		-----	
253	D130	1A		-----	
254	D130	1A		-----	
256		-----		-----	
258	D130	1a		-----	
273	D130	1a		-----	
312		-----		-----	
323	D130	1A		-----	
335		-----		-----	
336	D130	1		-----	
337		-----		-----	
353	IP154	1a		-----	
355		-----		-----	
381		-----		-----	
444		-----		-----	
468	D130	1A		-----	
485		-----		-----	
541	D130	1a		-----	
557	D130	1a		-----	
558		-----		-----	
562	D130	1a		-----	
603	D130	1A		-----	
631	D130	1a		-----	
633	D130	1a		-----	
634	D130	1a		-----	
657	D130	1a		-----	
663	D130	1a		-----	
671	D130	1A		-----	
823	D130	1a		-----	
824	D130	1a		-----	
854	D130	1a		-----	
856	D130	1a		-----	
861	D130	1a		-----	
862	D130	1a		-----	
864	D130	1a		-----	
912	D130	1[a]		-----	
922	D130	1A		-----	
962		-----		-----	
963		-----		-----	
970	D130	1a		-----	
971	D130	1a		-----	
974	D130	1a		-----	
995	D130	1a		-----	
996	D130	1 a		-----	
997		-----		-----	
998		-----		-----	
1006	D130	1A		-----	
1016	D130	1A		-----	
1017	D130	1a		-----	
1033	IP154	1b		-----	
1059	ISO2160	1a		-----	
1067	D130	1A		-----	
1080	D130	1A		-----	
1105	D130	1A		-----	
1109	D130	1a		-----	

lab	method	value	mark	z(targ)	remarks
1161	ISO2160	1A		-----	
1186	D130	1A		-----	
1199		-----		-----	
1254	D130	1A		-----	
1347		-----		-----	
1348	D130	1A		-----	
1385	D130	1A		-----	
1397	D130	1		-----	
1498		-----		-----	
1575	D130	1A		-----	
1634	D130	1a		-----	
1720		-----		-----	
1724	D130	no 1a		-----	
1730		-----		-----	
1746	D130	1a		-----	
1783		-----		-----	
1807	D130	1a		-----	
1810		-----		-----	
1811		-----		-----	
1833	D130	1		-----	
1849	ISO2160	1A		-----	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1977		-----		-----	
1995	D130	1A		-----	
2130	D130	1a		-----	
6005	ISO2160	1a		-----	
6018	ISO2160	1a		-----	
6054		-----		-----	
6101	D130	1a		-----	
6170		-----		-----	
6172		-----		-----	
6173	D130	1A		-----	
6176	D130	1a		-----	
7003		-----		-----	
	n	78			
	mean (n)	1a			

Determination of Silver Corrosion 3hrs at 50°C on sample #18010;

lab	method	value	mark	z(targ)	remarks
52	D7671-A	0		-----	
62		0		-----	
92		-----		-----	
120	D4184-A	0		-----	
131		-----		-----	
140	D7671-A	0		-----	
150	D7671-A	0		-----	
158		-----		-----	
159	D7671-A	0		-----	
169	D7671-B	0		-----	
171	D7671-A	0		-----	
175		-----		-----	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312		-----		-----	
323	D7671-A	0		-----	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381		-----		-----	
444		-----		-----	
468		-----		-----	
485		-----		-----	
541		-----		-----	
557	D7671-A	0		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631		-----		-----	
633		-----		-----	
634		-----		-----	
657	D7667-A	0		-----	
663	D7671-A	0		-----	
671		-----		-----	
823	D7671-A	0		-----	
824	D7671-A	0		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
912		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971		-----		-----	
974		-----		-----	
995		-----		-----	
996		-----		-----	
997		-----		-----	
998		-----		-----	
1006		-----		-----	
1016		-----		-----	
1017		-----		-----	
1033		-----		-----	
1059		-----		-----	
1067	D7671-A	0		-----	
1080		-----		-----	
1105		-----		-----	
1109	D7671-A	0		-----	

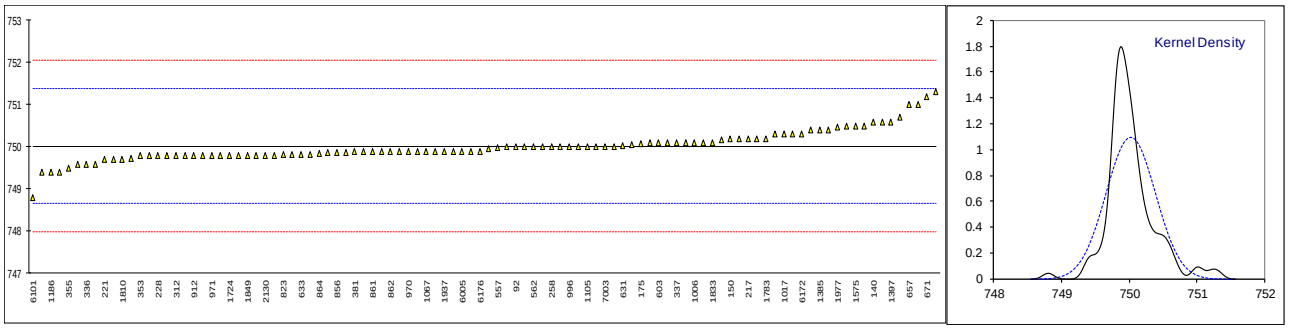
lab	method	value	mark	z(targ)	remarks
1161		-----		-----	
1186		-----		-----	
1199		-----		-----	
1254		-----		-----	
1347		-----		-----	
1348		-----		-----	
1385		-----		-----	
1397		-----		-----	
1498		-----		-----	
1575		-----		-----	
1634		-----		-----	
1720		-----		-----	
1724		-----		-----	
1730		-----		-----	
1746		-----		-----	
1783		-----		-----	
1807		-----		-----	
1810		-----		-----	
1811		-----		-----	
1833		-----		-----	
1849		-----		-----	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1977		-----		-----	
1995		-----		-----	
2130	D7671-A	0		-----	
6005		-----		-----	
6018		-----		-----	
6054		-----		-----	
6101	D7667-A	0		-----	
6170		-----		-----	
6172		-----		-----	
6173		-----		-----	
6176	D7667-A	1		-----	
7003		-----		-----	
	n	19			
	mean (n)	0			

Determination of Density at 15°C on sample #18010; results in kg/m^3

lab	method	value	mark	z(targ)	remarks
52	D4052	750.0		-0.02	
62	D4052	749.8		-0.32	
92	D4052	750.0		-0.02	
120	D4052	749.6		-0.61	
131	D4052	750.06		0.06	
140	D4052	750.6		0.86	
150	D4052	750.2		0.27	
158		-----		-----	
159	D4052	749.9		-0.17	
169	D4052	749.9	C	-0.17	first reported 0.7499 kg/m^3
171	D4052	750.0		-0.02	
175	D4052	750.08		0.09	
194	D4052	749.8		-0.32	
217	D4052	750.2		0.27	
221	D4052	749.7		-0.47	
224	D1298	750.7		1.01	
225	D4052	749.8		-0.32	
228	D4052	749.8		-0.32	
230	ISO12185	749.87		-0.22	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253	D4052	749.6		-0.61	
254	D4052	750.1		0.12	
256		-----		-----	
258	D4052	750.0		-0.02	
273	D4052	749.4		-0.91	
312	D4052	749.8		-0.32	
323	D4052	750.2		0.27	
335	D4052	750.2		0.27	
336	D1298	749.6		-0.61	
337	D4052	750.1		0.12	
353	IP365	749.8		-0.32	
355	D4052	749.5		-0.76	
381	ISO12185	749.89		-0.19	
444	D4052	750.6		0.86	
468	D4052	749.7		-0.47	
485	D4052	750.1		0.12	
541	D4052	750.30		0.42	
557	D4052	749.990333		-0.04	
558	D4052	750.0		-0.02	
562	D1298	750		-0.02	
603	D4052	750.1		0.12	
631	D4052	750.037		0.03	
633	D4052	749.83		-0.27	
634	D4052	751.3	C	1.89	first reported 705.16
657	D4052	751.0		1.45	
663	D4052	749.82		-0.29	
671	D4052	751.2		1.75	
823	D4052	749.81		-0.30	
824	D4052	749.9		-0.17	
854	D4052	749.96		-0.08	
856	D4052	749.87		-0.22	
861	D4052	749.9		-0.17	
862	D4052	749.9		-0.17	
864	D4052	749.84		-0.26	
912	D4052	749.8		-0.32	
922	D4052	749.8		-0.32	
962		-----		-----	
963		-----		-----	
970	D4052	749.9		-0.17	
971	D4052	749.8		-0.32	
974	D4052	749.9		-0.17	
995	D4052	750.1		0.12	
996	D1298	750.0		-0.02	
997	D4052	749.8		-0.32	
998		-----		-----	
1006	D4052	750.1		0.12	
1016		-----		-----	
1017	D4052	750.3		0.42	
1033	IP365	750.3		0.42	
1059	D4052	750.0		-0.02	
1067	D4052	749.9		-0.17	
1080	D4052	749.9		-0.17	
1105	D4052	750.0		-0.02	
1109	D4052	749.87		-0.22	

lab	method	value	mark	z(targ)	remarks
1161	ISO12185	749.73		-0.42	
1186	D4052	749.4		-0.91	
1199		-----		-----	
1254	D4052	749.83		-0.27	
1347	D4052	750.01		-0.01	
1348	D4052	750.4		0.57	
1385	D4052	750.4		0.57	
1397	D4052	750.6		0.86	
1498	D4052	750.5		0.71	
1575	D4052	750.5		0.71	
1634	D4052	749.996		-0.03	
1720	D4052	750.4		0.57	
1724	D4052	749.8		-0.32	
1730	ISO12185	750.18		0.24	
1746	D4052	751.0		1.45	
1783	D4052	750.2		0.27	
1807	ISO12185	750.1		0.12	
1810	D4052	749.7		-0.47	
1811	ISO12185	749.8		-0.32	
1833	ISO12185	750.1		0.12	
1849	ISO12185	749.8		-0.32	
1936	ISO12185	749.8		-0.32	
1937	ISO12185	749.9		-0.17	
1938	ISO12185	750.0		-0.02	
1977	ISO3675	750.478		0.68	
1995	D4052	749.9		-0.17	
2130	D4052	749.8		-0.32	
6005	ISO12185	749.9		-0.17	
6018	ISO12185	749.8		-0.32	
6054	D4052	749.9		-0.17	
6101	D4052	748.8		-1.79	
6170	D1298	749.4		-0.91	
6172	D4052	750.3		0.42	
6173	D1298	750.5		0.71	
6176	D4052	749.9		-0.17	
7003	D4052	750.0	C	-0.02	first reported 752.5

normality	not OK
n	102
outliers	0
mean (n)	750.016
st.dev. (n)	0.3643
R(calc.)	1.020
st.dev.(D4052:16)	0.6784
R(D4052:16)	1.899

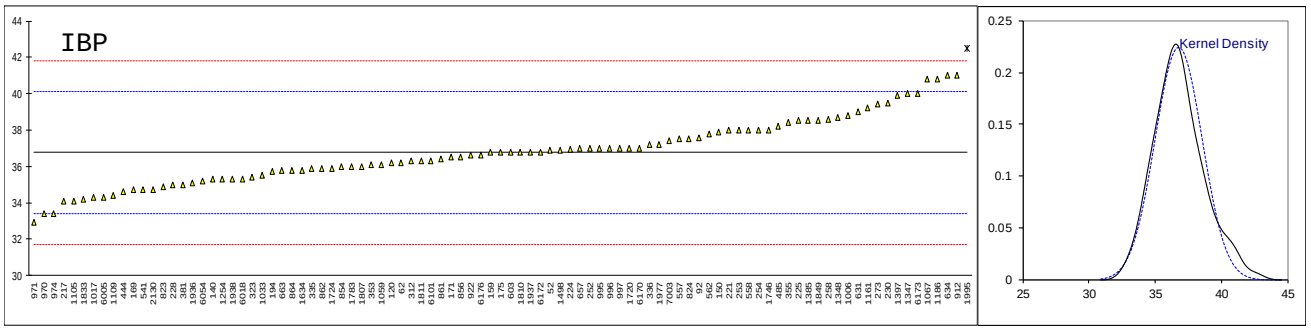


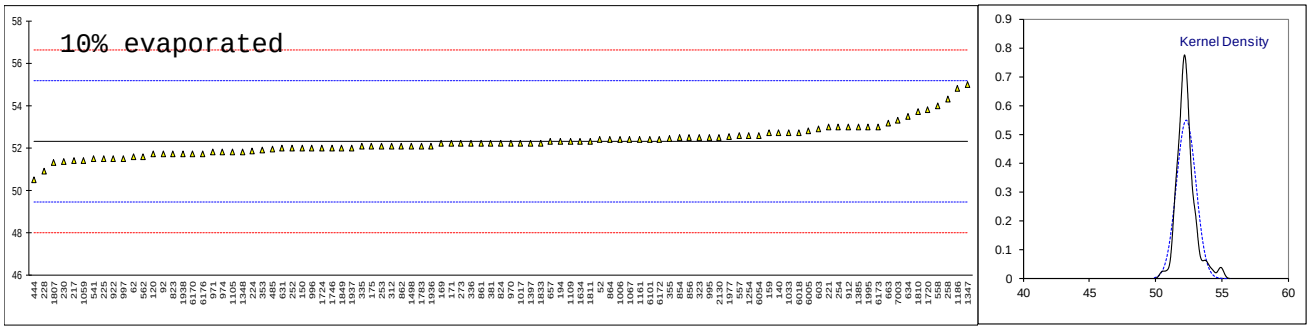
Determination of Distillation at 760 mm Hg ASTM D86 on sample #18010; results in °C

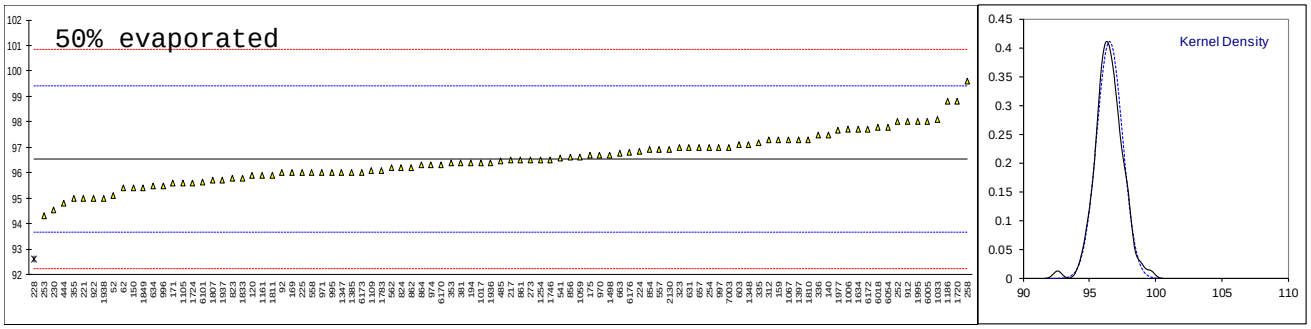
lab	method	IBP	mark	10%	mark	50%	mark	90%	mark	FBP	mark
52	D86-automated	36.9		52.4		95.1		148.6		177.0	
62		36.2		51.6		95.4		147.6		177.2	
92	D86-automated	37.6		51.7		96.0		147.4		177.7	
120		36.2		51.7		95.9		148.6		177.8	
131		-----		-----		-----		-----		-----	
140	D86-automated	35.3		52.7		97.5		148.2		178.9	
150	D86-automated	37.9		52.0		95.4		148.4		175.5	
158		-----		-----		-----		-----		-----	
159	D86-automated	36.8		52.7		97.3		148.8		178.7	
169	D86-automated	34.7		52.2		96.0		148.7		177.6	
171	D86-automated	36.5		52.2		95.6		148.3		177.1	
175	D86-automated	36.8		52.1		96.7		148.6		175.8	
194	D86-automated	35.7		52.3		96.4		149.1		177.9	
217	D86-automated	34.1		51.4		96.5		147.9		179.3	
221		38.0		53.0		95.0		147.0		176.5	
224	D86-manual	36.95		51.85		96.83		147.69		176.25	
225	D86-manual	38.5		51.5		96.0		147.0		179.5	
228	D86-manual	35.0		50.9		92.6	R(5)	143.6	R(1)	179.0	
230	D86-automated	39.5		51.37		94.55		146.68		175.5	
237		-----		-----		-----		-----		-----	
238		-----		-----		-----		-----		-----	
252	D86-manual	37.0		52.0		98.0		148.0		178.0	
253	D86-manual	38.0		52.1		94.3		147.72		175	
254	D86-manual	38.0		53.0		97.0		147.0		179.0	
256		-----		-----		-----		-----		-----	
258	D86-automated	38.6		54.3		99.6		150.1		181.5	
273	D86-automated	39.4		52.2		96.5		147.9		177.4	
312	D86-automated	36.3		52.1		97.3		148.2		178.2	
323	D86-automated	35.4		52.5		97.0		148.8		179.6	
335	D86-automated	35.9		52.1		97.2		148.5		178.4	
336		37.2		52.2		97.5		148.6		179.4	
337		-----		-----		-----		-----		-----	
353	D86-automated	36.1		51.9		96.4		147.1		178.0	
355	D86-manual	38.41		52.43		94.99		149.89		174.59	
381	D86-automated	35.0		52.2		96.4		146.8		177.7	
444	D86-automated	34.6		50.5		94.8		147.2		176.7	
468	D86-automated	-----		-----		-----		-----		-----	
485	D86-automated	38.20		51.95		96.45		147.90		179.65	
541	D86-automated	34.70		51.5		96.58		148.02		182.84	
557	D86-automated	37.5		52.6		96.9		148.8		180.5	
558	NBR9619	38		54		96		147		177	
562	D86-automated	37.8		51.6		96.2		148.6		179.2	
603	D86-automated	36.8		52.9		97.1		148.2		176.2	
631	D86-manual	39.0		52.0		97.0		149.0		180.0	
633		-----		-----		-----		-----		-----	
634	D86-manual	41.0	C	53.5		95.5		148.5		180.0	
657	D86-automated	37.0		52.3		97.0		149.0		178.9	
663	D86-automated	35.80		53.15		96.75		149.25		179.95	
671		-----		-----		-----		-----		-----	
823	D86-automated	34.9		51.7		95.8		147.4		179.9	
824	D86-automated	37.5		52.2		96.2		148.7		179.8	
854	D86-automated	36.0		52.5		96.9		148.3		178.4	
856	D86-automated	36.5		52.5		96.6		148.3		177.4	
861	D86-automated	36.4		52.2		96.5		148.5		177.4	
862	D86-automated	35.9		52.1		96.2		148.2		177.2	
864	D86-automated	35.8		52.4		96.3		148.5		176.8	
912		41.0		53.0		98.0		150.0		180.0	
922	D86-automated	36.6		51.5		95.0		147.6		178.0	
962		-----		-----		-----		-----		-----	
963		-----		-----		-----		-----		-----	
970	D86-automated	33.4		52.2		96.7		149.2		177.9	
971	D86-automated	32.9		51.8		96.0		147.8		178.2	
974	D86-automated	33.4		51.8		96.3		149.4		177.1	
995	D86-manual	37.0		52.5		96.0		148.0		176.0	
996	D86-manual	37.0		52.0		95.5		149.0		177.0	
997	D86-manual	37.0		51.5		97.0		148.5	C	177.0	C
998		-----		-----		-----		-----		-----	
1006	D86-automated	38.8		52.4		97.7		148.5		179.5	
1016		-----		-----		-----		-----		-----	
1017		34.3		52.2		96.4		147.7		178.9	
1033	IP123-automated	35.5		52.7		98.1		150.3		178.4	
1059	D86-automated	36.1		51.4		96.6		148.3		175.7	
1067	D86-automated	40.8		52.4		97.3		148.3		177.2	
1080		-----		-----		-----		-----		-----	
1105	D86-automated	34.1		51.8		95.6		148.2		175.9	
1109	D86-automated	34.4		52.3		96.1		148.2		176.9	

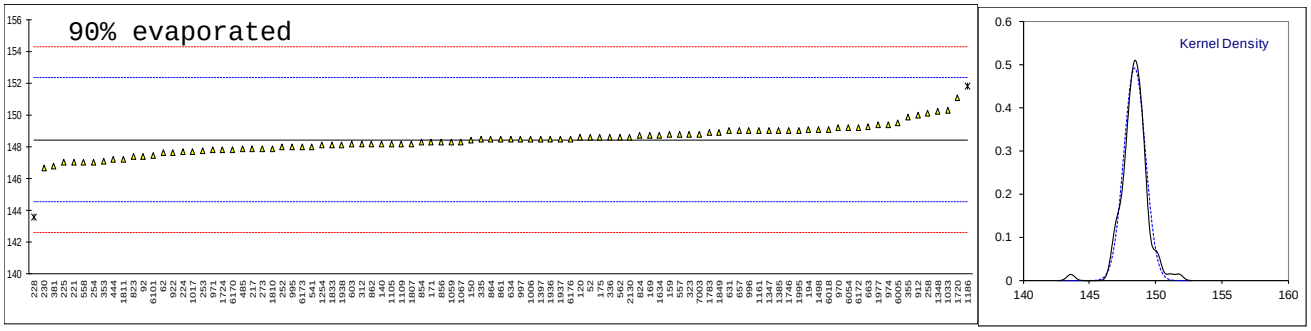
lab	method	IBP	mark	10%	mark	50%	mark	90%	mark	FBP	mark
1161	D86-automated	39.2		52.4		95.9		149.0		181.0	
1186		40.8		54.8		98.8		151.8	R(1)	178.8	
1199		-----		-----		-----		-----		-----	
1254	D86-automated	35.3		52.6		96.5		148.1		173.8	
1347	D86-manual	40		55		96		149		178.5	
1348	D86-automated	38.7		51.8		97.1		150.2		177.5	
1385		38.5		53.0		96.0		149.0		178.0	
1397		39.9		52.2		97.3		148.5		181.3	
1498	D86-automated	36.9		52.1		96.7		149.1		179.6	
1575		-----		-----		-----		-----		-----	
1634	D86-automated	35.8		52.3		97.7		148.7		178.2	
1720	D86-automated	37.0		53.8		98.8		151.1		179.5	
1724	D86-automated	35.9		52		95.6		147.8		176.6	
1730		-----		-----		-----		-----		-----	
1746	D86-manual	38.0		52.0		96.5		149.0		179.0	
1783		36.0		52.1		96.1		148.9		177.1	
1807	ISO3405-automated	36.0		51.3		95.7		148.2		180.5	
1810	D86-automated	36.8		53.7		97.3		147.9		177.6	
1811	D86-automated	36.3		52.3		95.9		147.2		176.6	
1833	D86-automated	34.2		52.2		95.8		148.1		177.6	
1849	ISO3405-automated	38.5		52.0		95.4		148.9		180.4	
1936	ISO3405-automated	35.1		52.1		96.4		148.5		176.3	
1937	ISO3405-automated	36.8		52.0		95.7		148.5		177.7	
1938		35.3		51.7		95.0		148.1		176.9	
1977	ISO3405-automated	37.22		52.53		97.69		149.39		178.16	
1995	D86-automated	42.5	R(1)	53		98		149		179.5	
2130	D86-automated	34.7		52.5		96.9		148.6		178.9	
6005	ISO3405-automated	34.3		52.8		98.0		149.5		177.7	
6018	ISO3405-automated	35.3		52.7		97.8		149.1		178.2	
6054		35.2		52.6		97.8		149.2		178.6	
6101	D86-automated	36.325		52.4		95.625		147.475		179.55	
6170		37.0		51.7		96.3		147.8		181.7	
6172	D86-automated	36.8		52.4		97.7		149.2		176.2	
6173	D86-manual	40.0		53.0		96.0		148.0		180.0	
6176	D86-automated	36.6		51.7		96.8		148.5		177.3	
7003		37.4		53.3		97.0		148.8		179.5	
	normality	OK		not OK		OK		OK		OK	
	n	94		95		94		93		95	
	outliers	1		0		1		2		0	
	mean (n)	36.76		52.31		96.52		148.43		178.14	
	st.dev. (n)	1.777		0.726		0.969		0.811		1.637	
	R(calc.)	4.97		2.03		2.71		2.27		4.58	
	st.dev.(D86-A:17)	1.679		1.433		1.435		1.942		2.536	
	R(D86-A:17)	4.70		4.01		4.02		5.44		7.10	
Compare											
	R(D86-M:17)	4.25		3.39		3.40		3.97		3.10	

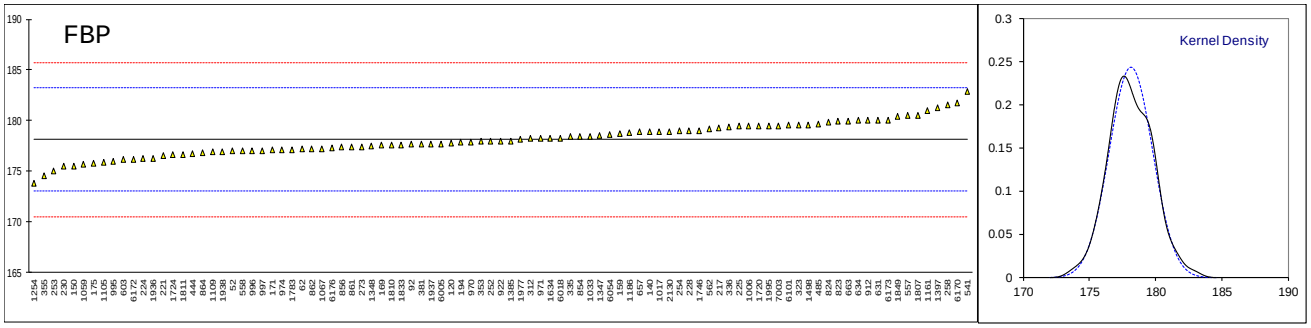
Lab 634 first reported for IBP: 44.0
Lab 997 first reported for temperature at 90% evaporated: 48.5 and for IBP: 77.0


IBP
Kernel Density


10% evaporated
Kernel Density


50% evaporated
Kernel Density


90% evaporated
Kernel Density


FBP
Kernel Density

- empty page -

Determination of Doctor Test on sample #18010;

lab	method	value	mark	z(targ)	remarks
52	D4952	negative		-----	
62		-----		-----	
92	D4952	Neg		-----	
120		negative		-----	
131		-----		-----	
140	D4952	Negative		-----	
150	D4952	Neg		-----	
158		-----		-----	
159	D4952	negative		-----	
169		-----		-----	
171	D4952	negative		-----	
175		-----		-----	
194		-----		-----	
217	D4952	negative		-----	
221		-----		-----	
224		-----		-----	
225	D4952	Negative		-----	
228	D4952	NEGATIVE		-----	
230	D4952	Negative		-----	
237		-----		-----	
238		-----		-----	
252	IP30	Negative		-----	
253		-----		-----	
254	D4952	Negative		-----	
256		-----		-----	
258	D4952	Negative		-----	
273	IP30	Negative		-----	
312		-----		-----	
323	D4952	NEGATIVE		-----	
335		-----		-----	
336	D4952	negative		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381		-----		-----	
444		-----		-----	
468		-----		-----	
485		-----		-----	
541	IP30	negative		-----	
557	D4952	negative		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631		-----		-----	
633		-----		-----	
634		-----		-----	
657	IP30	negative		-----	
663	D4952	Negative		-----	
671		-----		-----	
823	IP30	Negative		-----	
824	IP30	negative		-----	
854	D4952	negative		-----	
856	IP30	Negative		-----	
861	D4952	Negative		-----	
862	D4952	negative		-----	
864	D4952	Netative		-----	
912	D4952	NEGATIVE		-----	
922	D4952	Negative		-----	
962		-----		-----	
963		-----		-----	
970	D4952	Negative		-----	
971	D4952	Negative		-----	
974	IP30	Negative		-----	
995		-----		-----	
996	D4952	negative		-----	
997		-----		-----	
998		-----		-----	
1006		-----		-----	
1016	D4952	neg		-----	
1017		-----		-----	
1033		-----		-----	
1059	D4952	negative		-----	
1067	IP30	Negative		-----	
1080		-----		-----	
1105	D4952	Negative		-----	
1109	IP30	Negative		-----	

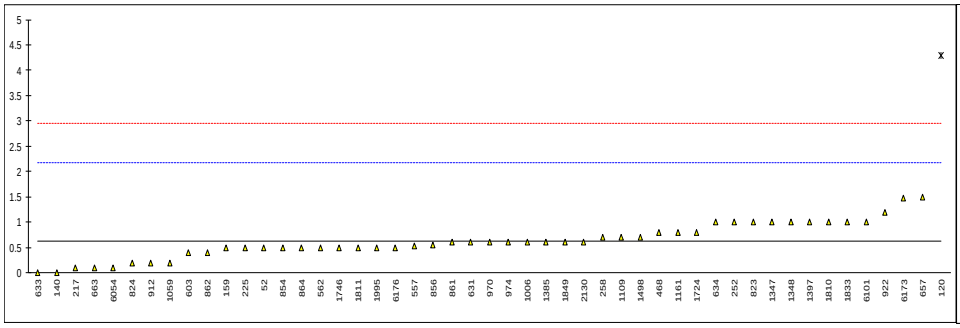
lab	method	value	mark	z(targ)	remarks
1161		-----		-----	
1186		-----		-----	
1199		-----		-----	
1254	D4952	negative		-----	
1347		-----		-----	
1348	D4952	negative		-----	
1385		-----		-----	
1397		-----		-----	
1498		-----		-----	
1575		-----		-----	
1634		-----		-----	
1720	D4952	Negative		-----	
1724		-----		-----	
1730		-----		-----	
1746	D4952	Negative		-----	
1783		-----		-----	
1807		-----		-----	
1810		-----		-----	
1811		-----		-----	
1833	IP30	NEG		-----	
1849	TS2884	Negative		-----	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1977		-----		-----	
1995		-----		-----	
2130	IP30	Negative		-----	
6005		-----		-----	
6018		-----		-----	
6054		-----		-----	
6101	D4952	-ve		-----	
6170		-----		-----	
6172		-----		-----	
6173	D4952	Negative		-----	
6176	IP30	negative		-----	
7003		-----		-----	
	n	49			
	mean (n)	negative			

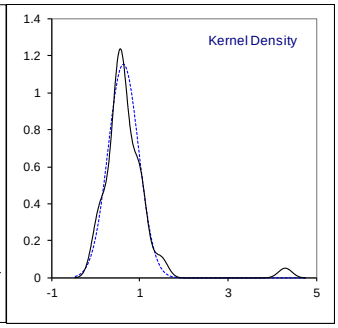
Determination of Existent Gum (solvent washed) on sample #18010; results in mg/100mL

lab	method	value	mark	z(targ)	remarks
52	D381	0.5		-0.17	
62	D381	<0.5		-----	
92	D381	<0.5		-----	
120	D381	4.3	R(0.01)	4.73	possibly an unit error?
131		-----		-----	
140	D381	0		-0.81	
150	D381	<0.5		-----	
158		-----		-----	
159	D381	0.5		-0.17	
169		-----		-----	
171	D381	<0.5		-----	
175	D381	<0.5		-----	
194		-----		-----	
217	D381	0.1		-0.68	
221		-----		-----	
224		-----		-----	
225	D381	0.5		-0.17	
228		-----		-----	
230	D381	<0.5		-----	
237		-----		-----	
238		-----		-----	
252	D381	1.0		0.48	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258	D381	0.7		0.09	
273	D381	<0.5		-----	
312		-----		-----	
323	D381	< 0.5		-----	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353	IP131	<1		-----	
355		-----		-----	
381		-----		-----	
444		-----		-----	
468	D381	0.8		0.22	
485		-----		-----	
541	D381	<0.5		-----	
557	D381	0.53333		-0.13	
558		-----		-----	
562	D381	0.5		-0.17	
603	D381	0.4		-0.30	
631	D381	0.6		-0.04	
633	D381	0		-0.81	
634	D381	1.0		0.48	
657	D381	1.5		1.12	
663	D381	0.1		-0.68	
671	D381	<0.5		-----	
823	D381	1.0		0.48	
824	D381	0.2		-0.56	
854	D381	0.5		-0.17	
856	D381	0.56		-0.09	
861	D381	0.6		-0.04	
862	D381	0.4		-0.30	
864	D381	0.5		-0.17	
912	D381	0.20		-0.56	
922	D381	1.2		0.73	
962		-----		-----	
963		-----		-----	
970	D381	0.6		-0.04	
971		-----		-----	
974	D381	0.6		-0.04	
995		-----		-----	
996		-----		-----	
997		-----		-----	
998		-----		-----	
1006	D381	0.6		-0.04	
1016		-----		-----	
1017		-----		-----	
1033	IP131	<0.001		-----	
1059	D381	0.2		-0.56	
1067	D381	< 1		-----	
1080	ISO6246	<1		-----	
1105	D381	<0.5		-----	
1109	D381	0.7		0.09	

lab	method	value	mark	z(targ)	remarks
1161	ISO6246	0.8		0.22	
1186		-----		-----	
1199		-----		-----	
1254	D381	< 0.5		-----	
1347	D381	1.0		0.48	
1348	D381	1.0		0.48	
1385	D381	0.6		-0.04	
1397	D381	1.0		0.48	
1498	D381	0.7		0.09	
1575		-----		-----	
1634		-----		-----	
1720		-----		-----	
1724	D381	0.8		0.22	
1730		-----		-----	
1746	D381	0.5		-0.17	
1783		-----		-----	
1807	ISO6246	<0,5		-----	
1810	D381	1.0		0.48	
1811	D381	0.5		-0.17	
1833	ISO6246	1		0.48	
1849	ISO6246	0.6		-0.04	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1977		-----		-----	
1995	D381	0.5		-0.17	
2130	D381	0.6		-0.04	
6005		-----		-----	
6018		-----		-----	
6054	D381	0.1		-0.68	
6101	D381	1.0		0.48	
6170		-----		-----	
6172		-----		-----	
6173	D381	1.47		1.08	
6176	D381	0.5		-0.17	
7003	D381	<0.5		-----	

normality	OK
n	48
outliers	1
mean (n)	0.630
st.dev. (n)	0.3454
R(calc.)	0.967
st.dev.(D381:12)	0.7756
R(D381:12)	2.172

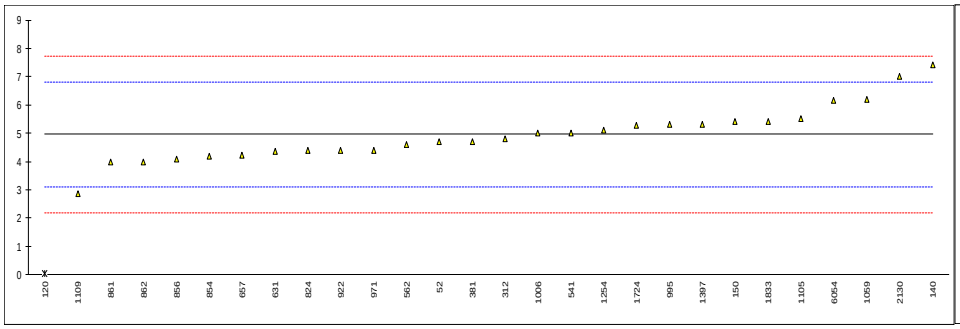


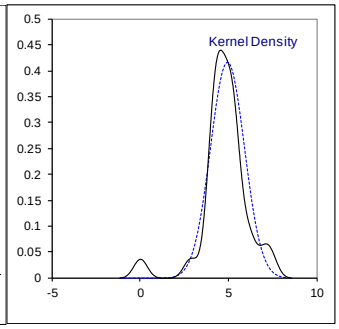


Determination of Lead as Pb on sample #18010; results in mg/L

lab	method	value	mark	z(targ)	remarks
52	D3237	4.7		-0.27	
62		-----		-----	
92		-----		-----	
120	D3237	0.038	R(0.01)	-5.30	
131		-----		-----	
140	D3237	7.413		2.65	
150	D3237	5.4		0.48	
158		-----		-----	
159		-----		-----	
169		-----		-----	
171	D3237	<0.1		<-5.23	possible false negative test result?
175		-----		-----	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D3237	4.8		-0.17	
323	D3237	< 2.5		<-2.64	possible false negative test result?
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381	EN237	4.7		-0.27	
444		-----		-----	
468		-----		-----	
485		-----		-----	
541	D3237	5.00		0.05	
557		-----		-----	
558		-----		-----	
562	D3237	4.59		-0.39	
603		-----		-----	
631	D3237	4.3472		-0.65	
633		-----		-----	
634		-----		-----	
657	D3237	4.214		-0.80	
663		-----		-----	
671		-----		-----	
823		-----		-----	
824	D3237	4.4		-0.60	
854	D3237	4.2		-0.81	
856	D3237	4.1		-0.92	
861	D3237	4.0		-1.03	
862	D3237	4.0		-1.03	
864		-----		-----	
912		-----		-----	
922	D3237	4.4		-0.60	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971	D3237	4.4		-0.60	
974		-----		-----	
995	D3237	5.3		0.37	
996		-----		-----	
997		-----		-----	
998		-----		-----	
1006	D3237	4.99		0.04	
1016		-----		-----	
1017		-----		-----	
1033		-----		-----	
1059	EN13723Mod.	6.2		1.34	
1067		-----		-----	
1080		-----		-----	
1105		5.5	C	0.59	first reported 29
1109	D3237	2.87		-2.25	

lab	method	value	mark	z(targ)	remarks
1161	EN237	<2,5		<-2.64	possible false negative test result?
1186		-----		-----	
1199		-----		-----	
1254	D3237	5.12		0.18	
1347		-----		-----	
1348		-----		-----	
1385		-----		-----	
1397	EN13723	5.3		0.37	
1498		-----		-----	
1575		-----		-----	
1634		-----		-----	
1720		-----		-----	
1724	IP428	5.28		0.35	
1730		-----		-----	
1746		-----		-----	
1783		-----		-----	
1807		-----		-----	
1810		-----		-----	
1811		-----		-----	
1833	EN237	5.4		0.48	
1849		-----		-----	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1977		-----		-----	
1995		-----		-----	
2130	IP352	7		2.20	
6005		-----		-----	
6018		-----		-----	
6054	D5059	6.16		1.30	
6101		-----		-----	
6170		-----		-----	
6172		-----		-----	
6173		-----		-----	
6176		-----		-----	
7003	D3237	<0.005		<-5.33	reported the test result probably in different unit?
	normality	suspect			
	n	27			
	outliers	1	spike:		
	mean (n)	4.955	5.11		recovery: <97%
	st.dev. (n)	0.9587			
	R(calc.)	2.684			
	st.dev.(D3237:17)	0.9286			
	R(D3237:17)	2.600			Compare R(EN237:04) = 0.62





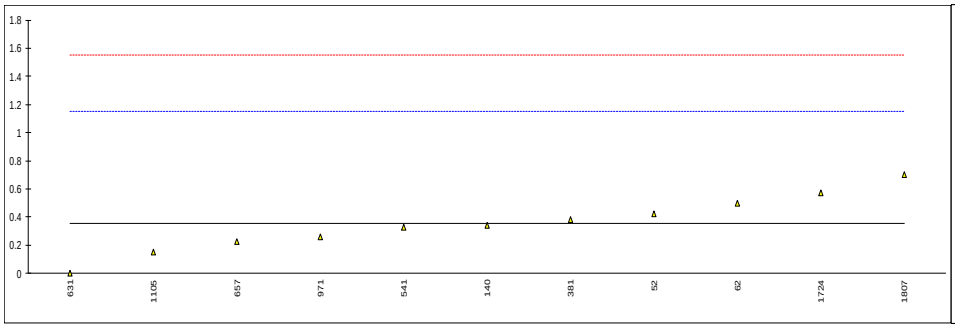
Determination of Manganese as Mn on sample #18010; results in mg/L

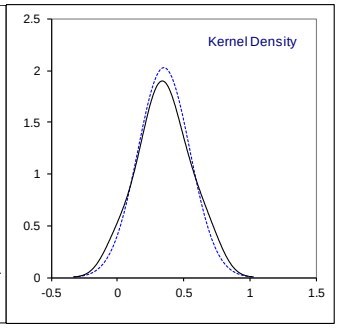
lab	method	value	mark	z(targ)	remarks
52	D3831	0.42		0.17	
62	D3831	0.5		0.37	
92		-----		-----	
120		-----		-----	
131		-----		-----	
140	D3831	0.342		-0.03	
150		-----		-----	
158		-----		-----	
159		-----		-----	
169		-----		-----	
171		-----		-----	
175		-----		-----	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D3831	<1		-----	
323	D3831	< 0.25		-----	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381	EN16136	0.38		0.07	
444		-----		-----	
468		-----		-----	
485		-----		-----	
541	D3831	0.33		-0.06	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631	D3831	0		-0.88	
633		-----		-----	
634		-----		-----	
657	D3831	0.224		-0.32	
663		-----		-----	
671		-----		-----	
823		-----		-----	
824		-----		-----	
854	D3831	<0.25		-----	
856	D3831	<0.25		-----	
861	D3831	<0.25		-----	
862	D3831	<0.25		-----	
864		-----		-----	
912		-----		-----	
922	D3831	<0.25		-----	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971	D3831	0.26		-0.23	
974		-----		-----	
995		-----		-----	
996		-----		-----	
997		-----		-----	
998		-----		-----	
1006		-----		-----	
1016		-----		-----	
1017		-----		-----	
1033		-----		-----	
1059		-----		-----	
1067		-----		-----	
1080		-----		-----	
1105		0.15		-0.51	
1109		-----		-----	

lab	method	value	mark	z(targ)	remarks
1161	D3831	<2,0		-----	
1186		-----		-----	
1199		-----		-----	
1254		-----		-----	
1347		-----		-----	
1348		-----		-----	
1385		-----		-----	
1397		-----		-----	
1498		-----		-----	
1575		-----		-----	
1634		-----		-----	
1720		-----		-----	
1724	EN16135	0.57		0.55	
1730		-----		-----	
1746		-----		-----	
1783		-----		-----	
1807	EN16135	0.7		0.87	
1810		-----		-----	
1811		-----		-----	
1833	EN16135	<2.0		-----	
1849		-----		-----	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1977		-----		-----	
1995		-----		-----	
2130		-----		-----	
6005		-----		-----	
6018		-----		-----	
6054		-----		-----	
6101		-----		-----	
6170		-----		-----	
6172		-----		-----	
6173		-----		-----	
6176		-----		-----	
7003		-----		-----	

normality	OK
n	11
outliers	0
mean (n)	0.352
st.dev. (n)	0.1965
R(calc.)	0.550
st.dev.(D3831:12)	0.3990
R(D3831:12)	1.117

Application range: 0.25 – 40 mg/L



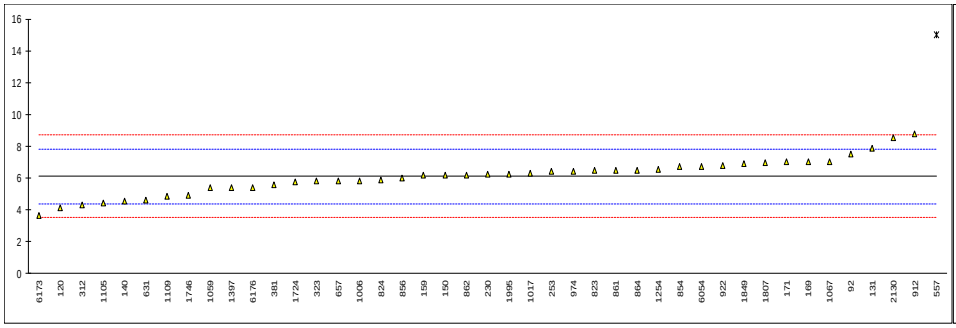


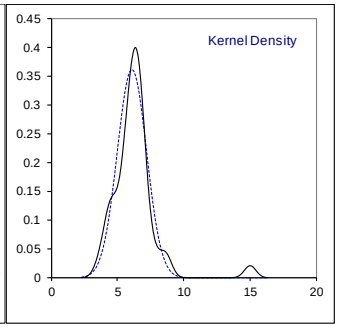
Determination of Olefins by FIA on sample #18010; results in %V/V

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62		-----		-----	
92	D1319	7.5		1.61	
120	D1319	4.1		-2.31	
131	D1319	7.84		2.01	
140	D1319	4.525		-1.82	
150	D1319	6.2		0.11	
158		-----		-----	
159	D1319	6.2		0.11	
169	D1319	7.0		1.04	
171	D1319	7.0		1.04	
175		-----		-----	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230	D1319	6.23		0.15	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253	D1319	6.4		0.35	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D1319	4.3		-2.08	
323	D1319	5.8		-0.35	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381	D1319	5.58		-0.60	
444		-----		-----	
468		-----		-----	
485		-----		-----	
541		-----		-----	
557	D1319	15.02336	R(0.01)	10.30	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631	D1319	4.6		-1.73	
633		-----		-----	
634		-----		-----	
657	D1319	5.8		-0.35	
663		-----		-----	
671		-----		-----	
823	D1319	6.5		0.46	
824	D1319	5.9		-0.23	
854	D1319	6.72		0.71	
856	D1319	6.0		-0.12	
861	D1319	6.5		0.46	
862	D1319	6.2		0.11	
864	D1319	6.5		0.46	
912	D1319	8.77		3.08	
922	D1319	6.8		0.81	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971		-----		-----	
974	D1319	6.43		0.38	
995		-----		-----	
996		-----		-----	
997		-----		-----	
998		-----		-----	
1006	D1319	5.84		-0.30	
1016		-----		-----	
1017	EN22584	6.31		0.24	
1033		-----		-----	
1059	D1319	5.4		-0.81	
1067	D1319	7.0	C	1.04	first reported 1.1
1080		-----		-----	
1105	D1319	4.4		-1.96	
1109	D1319	4.86		-1.43	

lab	method	value	mark	z(targ)	remarks
1161		-----		-----	
1186		-----		-----	
1199		-----		-----	
1254	D1319	6.55		0.52	
1347		-----		-----	
1348		-----		-----	
1385		-----		-----	
1397	D1319	5.4		-0.81	
1498		-----		-----	
1575		-----		-----	
1634		-----		-----	
1720		-----		-----	
1724	D1319	5.76		-0.39	
1730		-----		-----	
1746	D1319	4.9		-1.38	
1783		-----		-----	
1807	ISO22854	6.97		1.00	
1810		-----		-----	
1811		-----		-----	
1833		-----		-----	
1849	EN15553	6.90		0.92	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1977		-----		-----	
1995		6.25		0.17	
2130	D1319	8.51		2.78	
6005		-----		-----	
6018		-----		-----	
6054	D1319	6.74		0.74	
6101		-----		-----	
6170		-----		-----	
6172		-----		-----	
6173	D1319	3.63		-2.85	
6176	D1319	5.4		-0.81	
7003		-----		-----	

normality	OK
n	42
outliers	1
mean (n)	6.100
st.dev. (n)	1.1057
R(calc.)	3.096
st.dev.(D1319:15)	0.8667
R(D1319:15)	2.427





Determination of Oxidation Stability on sample #18010; results in minutes

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62		-----		-----	
92	D525	>900		-----	
120	D525	>900		-----	
131		-----		-----	
140	D525	>900		-----	
150	D525	>900		-----	
158		-----		-----	
159		-----		-----	
169		-----		-----	
171	D525	241		-----	Possibly a false positive test result?
175		-----		-----	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225	D525	> 360		-----	
228	D525	> 600		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
252	D525	>900		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D525	>900		-----	
323	D525	900		-----	
335		-----		-----	
336	D525	>900		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381		-----		-----	
444		-----		-----	
468		-----		-----	
485		-----		-----	
541		-----		-----	
557	D525	1810		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631	D525	>800		-----	
633		-----		-----	
634		-----		-----	
657	D525	>900		-----	
663		-----		-----	
671		-----		-----	
823	D525	>900		-----	
824	D525	>900		-----	
854	D525	>900		-----	
856	D525	>900		-----	
861	D525	>900		-----	
862	D525	>900		-----	
864	D525	>900		-----	
912		-----		-----	
922	D525	>360		-----	
962		-----		-----	
963		-----		-----	
970	D525	>900		-----	
971		-----		-----	
974	D525	>900		-----	
995		-----		-----	
996		-----		-----	
997		-----		-----	
998		-----		-----	
1006		-----		-----	
1016		-----		-----	
1017		-----		-----	
1033	D525	>900		-----	
1059	ISO7536	>360		-----	
1067	D525	1286		-----	
1080		-----		-----	
1105	D525	>900		-----	
1109		-----		-----	

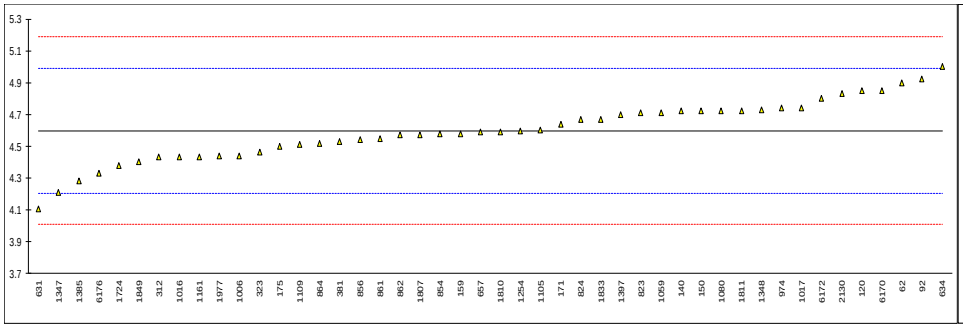
lab	method	value	mark	z(targ)	remarks
1161	ISO7536	>900		-----	
1186		-----		-----	
1199		-----		-----	
1254	D525	> 900		-----	
1347		-----		-----	
1348		-----		-----	
1385	D525	>900		-----	
1397		-----		-----	
1498		-----		-----	
1575		-----		-----	
1634		-----		-----	
1720		-----		-----	
1724	D525	>1440		-----	
1730		-----		-----	
1746	D525	＞900		-----	
1783		-----		-----	
1807	D525	>380		-----	
1810		-----		-----	
1811		-----		-----	
1833	D525	>900		-----	
1849	ISO7536	>900		-----	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1977		-----		-----	
1995	D525	>900		-----	
2130	D525	>900		-----	
6005		-----		-----	
6018		-----		-----	
6054		-----		-----	
6101	D525	>360		-----	
6170		-----		-----	
6172		-----		-----	
6173		-----		-----	
6176	D525	>900		-----	
7003		-----		-----	
	n	31			
	mean (n)	>900			

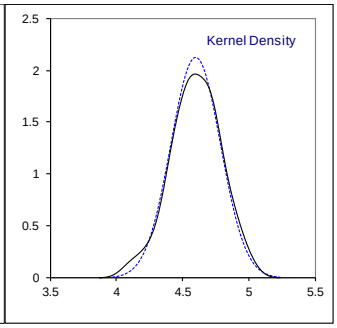
Determination of Ethanol on sample #18010; results in %V/V

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62		4.9		1.54	
92	INH-14.3	4.92		1.64	
120	D5599	4.849		1.28	
131		-----		-----	
140	D5599	4.72		0.62	
150	D5599	4.72		0.62	
158		-----		-----	
159	D5599	4.58		-0.09	
169		-----		-----	
171	D5599	4.64		0.22	
175	D5599	4.5		-0.50	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	ISO22854	4.43		-0.86	
323	D4815	4.46		-0.70	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381	ISO22854	4.53		-0.35	
444		-----		-----	
468		-----		-----	
485		-----		-----	
541		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631	D5845	4.105		-2.51	
633		-----		-----	
634	D5845	5.0		2.05	
657	D4815	4.59		-0.04	
663		-----		-----	
671		-----		-----	
823	D4815	4.71	C	0.57	first reported 3.84
824	D4815	4.67		0.37	
854	D4815	4.58		-0.09	
856	D4815	4.54		-0.29	
861	D4815	4.55		-0.24	
862	D4815	4.57		-0.14	
864	D4815	4.52		-0.40	
912		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971		-----		-----	
974	D4815	4.74		0.73	
995		-----		-----	
996		-----		-----	
997		-----		-----	
998		-----		-----	
1006		4.44		-0.81	
1016	ISO22854	4.43		-0.86	
1017		4.74		0.73	
1033		-----		-----	
1059	ISO22854	4.71		0.57	
1067		-----		-----	
1080	In house	4.72		0.62	
1105	D6839	4.6		0.01	
1109	D6839	4.51		-0.45	

lab	method	value	mark	z(targ)	remarks
1161	ISO22854	4.43		-0.86	
1186		-----		-----	
1199		-----		-----	
1254	D4815	4.594		-0.02	
1347		4.21		-1.98	
1348		4.73		0.67	
1385		4.28		-1.62	
1397	EN13132	4.7		0.52	
1498		-----		-----	
1575	In house	-----		-----	
1634		-----		-----	
1720		-----		-----	
1724	ISO22854	4.38		-1.11	
1730		-----		-----	
1746		-----		-----	
1783		-----		-----	
1807	ISO22854	4.57		-0.14	
1810	ISO22854	4.59		-0.04	
1811		4.72		0.62	
1833	ISO22854	4.67		0.37	
1849	ISO22854	4.40		-1.01	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1977	D6730	4.438		-0.82	
1995	D6839	-----		-----	
2130	D6730	4.833		1.20	
6005		-----		-----	
6018		-----		-----	
6054		-----		-----	
6101		-----		-----	
6170		4.85	C	1.29	first reported 5.28
6172	D5845	4.8		1.03	
6173		-----		-----	
6176	D4815	4.33		-1.37	
7003		-----		-----	

normality	OK
n	46
outliers	0
mean (n)	4.598
st.dev. (n)	0.1878
R(calc.)	0.526
st.dev.(D4815:15b)	0.1960
R(D4815:15b)	0.549



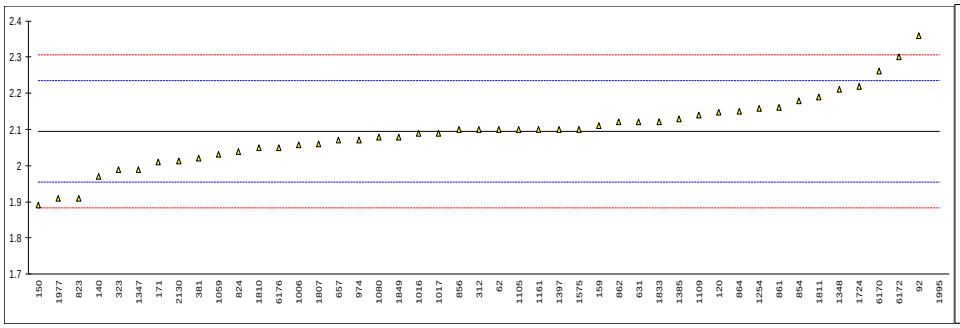


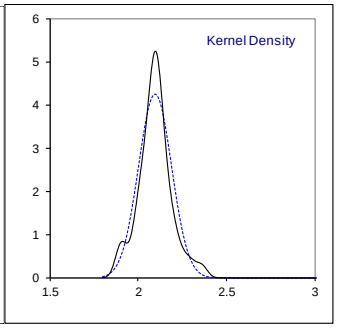
Determination of MTBE on sample #18010; results in %V/V

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62		2.1		0.08	
92	INH-14.3	2.36		3.78	
120	D5599	2.148		0.76	
131		-----		-----	
140	D5599	1.97		-1.77	
150	D5599	1.89		-2.91	
158		-----		-----	
159	D5599	2.11		0.22	
169		-----		-----	
171	D5599	2.01		-1.20	
175	D5599	-----		-----	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	ISO22854	2.10		0.08	
323	D4815	1.99		-1.48	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381	ISO22854	2.02		-1.06	
444		-----		-----	
468		-----		-----	
485		-----		-----	
541		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631	D5845	2.12		0.36	
633		-----		-----	
634	D5845	-----		-----	
657	D4815	2.07		-0.35	
663		-----		-----	
671		-----		-----	
823	D4815	1.91		-2.62	
824	D4815	2.04		-0.77	
854	D4815	2.18		1.22	
856	D4815	2.10		0.08	
861	D4815	2.16		0.93	
862	D4815	2.12		0.36	
864	D4815	2.15		0.79	
912		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971		-----		-----	
974	D4815	2.07		-0.35	
995		-----		-----	
996		-----		-----	
997		-----		-----	
998		-----		-----	
1006		2.058		-0.52	
1016	ISO22854	2.09		-0.06	
1017		2.09		-0.06	
1033		-----		-----	
1059	ISO22854	2.03		-0.91	
1067		-----		-----	
1080	In house	2.08		-0.20	
1105	D6839	2.1		0.08	
1109	D6839	2.14		0.65	

lab	method	value	mark	z(targ)	remarks
1161	ISO22854	2.1		0.08	
1186		-----		-----	
1199		-----		-----	
1254	D4815	2.157		0.89	
1347		1.99		-1.48	
1348		2.21		1.64	
1385		2.13		0.51	
1397	EN13132	2.1		0.08	
1498		-----		-----	
1575	In house	2.1		0.08	
1634		-----		-----	
1720		-----		-----	
1724	ISO22854	2.22		1.79	
1730		-----		-----	
1746		-----		-----	
1783		-----		-----	
1807	ISO22854	2.06	C	-0.49	first reported <0.80
1810	ISO22854	2.05		-0.63	
1811		2.19		1.36	
1833	ISO22854	2.12		0.36	
1849	ISO22854	2.08		-0.20	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1977	D6730	1.909	C	-2.64	first reported 1.819
1995	D6839	3.92	R(0.01)	25.96	
2130	D6730	2.013		-1.16	
6005		-----		-----	
6018		-----		-----	
6054		-----		-----	
6101		-----		-----	
6170		2.26		2.36	
6172	D5845	2.3	C	2.92	first reported 2.4
6173		-----		-----	
6176	D4815	2.05		-0.63	
7003		-----		-----	

normality	suspect
n	45
outliers	1
mean (n)	2.094
st.dev. (n)	0.0939
R(calc.)	0.263
st.dev.(D4815:15b)	0.0703
R(D4815:15b)	0.197





Determination of DIPE, ETBE, Methanol, TAME and other Oxygenates on sample #18010; results in %V/V

lab	method	DIPE	mark	ETBE	mark	Methanol	mark	TAME	mark	Other Oxy	mark
52		-----		-----		-----		-----		-----	
62		-----		-----		-----		-----		-----	
92	INH-14.3	<0.01		<0.01		<0.01		<0.01		<0.01	
120	D5599	0		0		0		0		4.58	
131		-----		-----		-----		-----		-----	
140	D5599	<0.1		<0.1		<0.1		<0.1		<0.1	
150	D5599	<0.10		<0.10		<0.10		<0.10		<0.10	
158		-----		-----		-----		-----		-----	
159	D5599	-----		-----		-----		-----		-----	
169		-----		-----		-----		-----		-----	
171	D5599	<0.10		<0.10		<0.10		<0.10		<0.10	
175		-----		-----		-----		-----		-----	
194		-----		-----		-----		-----		-----	
217		-----		-----		-----		-----		-----	
221		-----		-----		-----		-----		-----	
224		-----		-----		-----		-----		-----	
225		-----		-----		-----		-----		-----	
228		-----		-----		-----		-----		-----	
230		-----		-----		-----		-----		-----	
237		-----		-----		-----		-----		-----	
238		-----		-----		-----		-----		-----	
252		-----		-----		-----		-----		-----	
253		-----		-----		-----		-----		-----	
254		-----		-----		-----		-----		-----	
256		-----		-----		-----		-----		-----	
258		-----		-----		-----		-----		-----	
273		-----		-----		-----		-----		-----	
312	ISO22854	<0.2		<0.2		<0.2		<0.2		<0.2	
323	D4815	< 0.20		< 0.20		< 0.20		< 0.20		< 0.20	
335		-----		-----		-----		-----		-----	
336		-----		-----		-----		-----		-----	
337		-----		-----		-----		-----		-----	
353		-----		-----		-----		-----		-----	
355		-----		-----		-----		-----		-----	
381	ISO22854	<0,2		<0,2		<0,2		<0,2		<0,2	
444		-----		-----		-----		-----		-----	
468		-----		-----		-----		-----		-----	
485		-----		-----		-----		-----		-----	
541		-----		-----		-----		-----		-----	
557		-----		-----		-----		-----		-----	
558		-----		-----		-----		-----		-----	
562		-----		-----		-----		-----		-----	
603		-----		-----		-----		-----		-----	
631	D5845	0		0		0.025		0		ND	
633		-----		-----		-----		-----		-----	
634	D5845	-----		-----		-----		-----		-----	
657	D4815	N.D		N.D		N.D		N.D		N.D	
663		-----		-----		-----		-----		-----	
671		-----		-----		-----		-----		-----	
823	D4815	0		0		0		0		0	
824	D4815	<0.2		<0.2		<0.2		<0.2		<0.2	
854	D4815	<0.20		<0.20		<0.20		<0.20		<0.20	
856	D4815	<0.20		<0.20		<0.20		<0.20		<0.20	
861	D4815	<0.2		<0.2		<0.2		<0.2		<0.2	
862	D4815	<0.2		<0.2		<0.2		<0.2		<0.2	
864	D4815	<0.2		<0.2		<0.2		<0.2		<0.2	
912		-----		-----		-----		-----		-----	
922		-----		-----		-----		-----		-----	
962		-----		-----		-----		-----		-----	
963		-----		-----		-----		-----		-----	
970		-----		-----		-----		-----		-----	
971		-----		-----		-----		-----		-----	
974	D4815	<0.20		<0.20		<0.20		<0.20		-----	
995		-----		-----		-----		-----		-----	
996		-----		-----		-----		-----		-----	
997		-----		-----		-----		-----		-----	
998		-----		-----		-----		-----		-----	
1006		<0.1		<0.1		<0.1		<0.1		-----	
1016	ISO22854	0.05		0.00		0.02		-----		-----	
1017		0.06		0.05		<0.1		<0.10		<0.10	
1033		-----		-----		-----		-----		-----	
1059	ISO22854	<0,20		<0,20		<0,20		<0,20		<0,20	
1067		-----		-----		-----		-----		-----	
1080	In house	0		0		0		0		0.02	
1105		-----		-----		-----		-----		-----	
1109	D6839	0.00		0.03		0.00		0.00		0.05	

lab	method	DIPE	mark	ETBE	mark	Methanol	mark	TAME	mark	Other Oxy	mark
1161	ISO22854	<0,1		<0,1		<0,1		<0,1		<0,1	
1186		-----		-----		-----		-----		-----	
1199		-----		-----		-----		-----		-----	
1254	D4815	< 0.20		< 0.20		< 0.20		< 0.20		< 0.20	
1347		<0.2		<0.2		<0.2		<0.2		<0.2	
1348		<0.1		<0.1		<0.1		0.13		<0.1	
1385		<0.2		<0.2		<0.2		<0.2		<0.2	
1397	EN13132	-----		<0,2		-----		-----		-----	
1498		-----		-----		-----		-----		-----	
1575	In house	0.4		0.0		0.0		0.0		-----	
1634		-----		-----		-----		-----		-----	
1720		-----		-----		-----		-----		-----	
1724	ISO22854	<0.17		<0.17		<0.17		<0.17		<0.17	
1730		-----		-----		-----		-----		-----	
1746		-----		-----		-----		-----		-----	
1783		-----		-----		-----		-----		-----	
1807	ISO22854	<0,80		<0.80	C	<0,80		<0,80		<0,80	
1810	ISO22854	-----		0.07		-----		-----		-----	
1811		-----		-----		-----		-----		-----	
1833	ISO22854	<0.8		<0.8		<0.8		<0.8		<0.8	
1849		-----		-----		-----		-----		-----	
1936		-----		-----		-----		-----		-----	
1937		-----		-----		-----		-----		-----	
1938		-----		-----		-----		-----		-----	
1977	D6730	-----		-----		-----		-----		0.0030	
1995	D6839	-----		-----		4.57		-----		8.16	
2130	D6730	<0.1		<0.1		<0.1		<0.1		<0.1	
6005		-----		-----		-----		-----		-----	
6018		-----		-----		-----		-----		-----	
6054		-----		-----		-----		-----		-----	
6101		-----		-----		-----		-----		-----	
6170		0.0		0.38		0.0		0.0		0.0	
6172	D5845	0.7		-----		0.0		0.0		2.49	
6173		-----		-----		-----		-----		-----	
6176	D4815	<0.20		<0.20		<0.20		<0.20		<0.20	
7003		-----		-----		-----		-----		-----	

Lab 1807 first reported 1.87 for ETBE

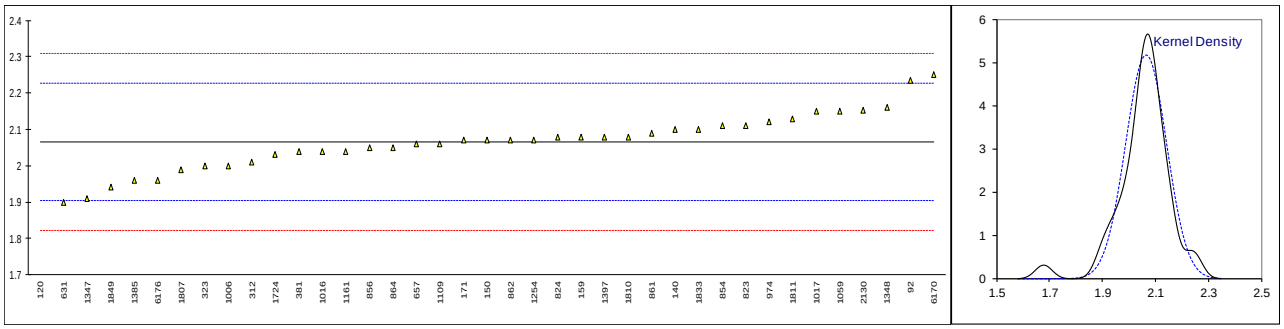
Determination of Oxygen Content on sample #18010; results in %M/M

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62		-----		-----	
92	INH-14.3	2.234		2.08	
120		1.68	R(0.01)	-4.78	
131		-----		-----	
140	D5599	2.1		0.42	
150	D5599	2.07		0.05	
158		-----		-----	
159	D5599	2.08		0.18	
169		-----		-----	
171	D5599	2.07		0.05	
175		-----		-----	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D4815	2.01		-0.69	
323	D4815	2.00		-0.81	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381	ISO22854	2.04		-0.32	
444		-----		-----	
468		-----		-----	
485		-----		-----	
541		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631	D5845	1.90		-2.05	
633		-----		-----	
634		-----		-----	
657	D4815	2.06		-0.07	
663		-----		-----	
671		-----		-----	
823	D4815	2.11	C	0.55	first reported 1.76
824	D4815	2.08		0.18	
854	D4815	2.11		0.55	
856	D4815	2.05		-0.19	
861	D4815	2.09		0.30	
862	D4815	2.07		0.05	
864	D4815	2.05		-0.19	
912		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971		-----		-----	
974	D4815	2.12		0.67	
995		-----		-----	
996		-----		-----	
997		-----		-----	
998		-----		-----	
1006	D4815	2.0		-0.81	
1016	ISO22854	2.04		-0.32	
1017	ISO22854	2.15		1.04	
1033		-----		-----	
1059	ISO22854	2.15		1.04	
1067		-----		-----	
1080		-----		-----	
1105		-----		-----	
1109	D6839	2.06		-0.07	

lab	method	value	mark	z(targ)	remarks
1161	ISO22854	2.04		-0.32	
1186		-----		-----	
1199		-----		-----	
1254	D4815	2.07		0.05	
1347	D4815	1.91		-1.93	
1348	D4815	2.16		1.17	
1385	D4815	1.96		-1.31	
1397	EN13132	2.08		0.18	
1498		-----		-----	
1575		-----		-----	
1634		-----		-----	
1720		-----		-----	
1724	ISO22854	2.03		-0.44	
1730		-----		-----	
1746		-----		-----	
1783		-----		-----	
1807	ISO22854	1.99		-0.94	
1810	ISO22854	2.08		0.18	
1811	ISO22854	2.13		0.80	
1833	ISO22854	2.1		0.42	
1849	ISO22854	1.94		-1.56	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1977		-----		-----	
1995		-----		-----	
2130	D6730	2.153		1.08	
6005		-----		-----	
6018		-----		-----	
6054		-----		-----	
6101		-----		-----	
6170	EN13132	2.25	C	2.28	first reported 2.47
6172		-----		-----	
6173		-----		-----	
6176	D4815	1.96		-1.31	
7003		-----		-----	

	normality	OK
	n	38
	outliers	1
	mean (n)	2.066
	st.dev. (n)	0.0769
	R(calc.)	0.215
	st.dev.(D4815:15b)	0.0808
	R(D4815:15b)	0.226

Compare R(D5559:17) = 0.237

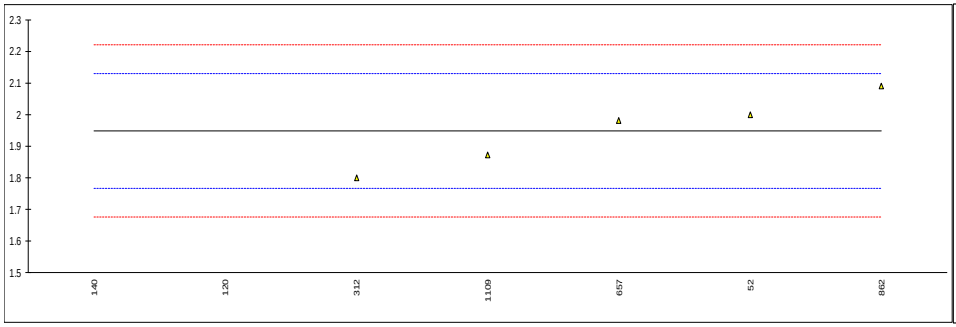


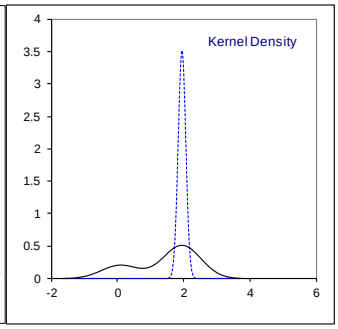
Determination of Phosphorus as P on sample #18010; results in mg/L

lab	method	value	mark	z(targ)	remarks
52	D3231	2.0		0.57	
62		-----		-----	
92		-----		-----	
120	D3231	0.181	DG(0.01)	-19.54	
131		-----		-----	
140	D3231	0.002468	DG(0.01)	-21.51	possibly an unit error?
150	D3231	<0.20		< -19.33	possibly false negative result?
158		-----		-----	
159		-----		-----	
169		-----		-----	
171		-----		-----	
175		-----		-----	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D3231	1.8		-1.64	
323		-----		-----	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381		-----		-----	
444		-----		-----	
468		-----		-----	
485		-----		-----	
541		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631		-----		-----	
633		-----		-----	
634		-----		-----	
657	D3231	1.98		0.35	
663		-----		-----	
671		-----		-----	
823		-----		-----	
824		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862	D3231	2.09		1.56	
864		-----		-----	
912		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971		-----		-----	
974		-----		-----	
995		-----		-----	
996		-----		-----	
997		-----		-----	
998		-----		-----	
1006		-----		-----	
1016		-----		-----	
1017		-----		-----	
1033		-----		-----	
1059		-----		-----	
1067		-----		-----	
1080		-----		-----	
1105		-----		-----	
1109	D3231	1.873		-0.84	

lab	method	value	mark	z(targ)	remarks
1161		-----		-----	
1186		-----		-----	
1199		-----		-----	
1254		-----		-----	
1347		-----		-----	
1348		-----		-----	
1385		-----		-----	
1397		-----		-----	
1498		-----		-----	
1575		-----		-----	
1634		-----		-----	
1720		-----		-----	
1724		-----		-----	
1730		-----		-----	
1746		-----		-----	
1783		-----		-----	
1807		-----		-----	
1810		-----		-----	
1811		-----		-----	
1833		-----		-----	
1849		-----		-----	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1977		-----		-----	
1995		-----		-----	
2130		-----		-----	
6005		-----		-----	
6018		-----		-----	
6054		-----		-----	
6101		-----		-----	
6170		-----		-----	
6172		-----		-----	
6173		-----		-----	
6176		-----		-----	
7003		-----		-----	

normality	unknown		
n	5		
outliers	2	spike:	
mean (n)	1.949	1.8	recovery: < 108%
st.dev. (n)	0.1134		
R(calc.)	0.317		
st.dev.(D3231:13)	0.0905		
R(D3231:13)	0.253		



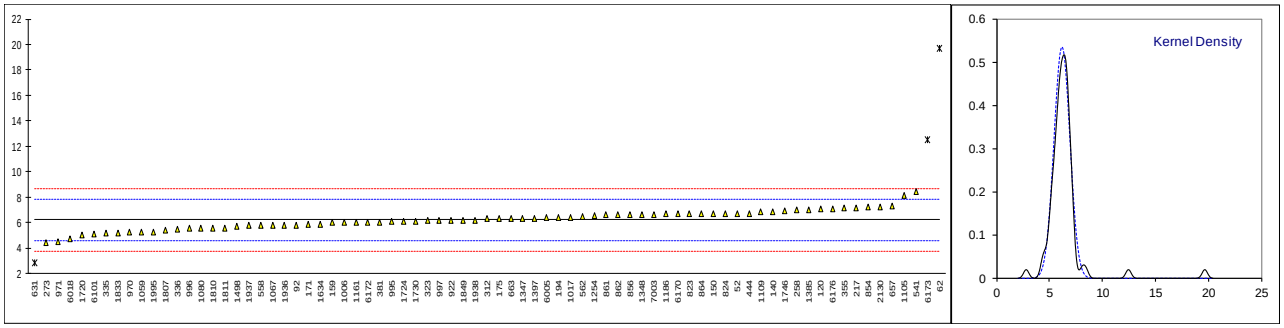


Determination of Sulphur on sample #18010; results in mg/kg

lab	method	value	mark	z(targ)	remarks
52	D5453	6.7		0.58	
62	D5453	19.7	R(0.01)	16.51	
92	D5453	5.82		-0.50	
120	D5453	7.042		1.00	
131		-----		-----	
140	D5453	6.86		0.77	
150	D5453	6.7		0.58	
158		-----		-----	
159	D5453	6.0		-0.28	
169		-----		-----	
171	D5453	5.9		-0.40	
175	D5453	6.3		0.09	
194	D2622	6.4		0.21	
217	D5453	7.16		1.14	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253		-----		-----	
254	D4294	<20		-----	
256		-----		-----	
258	D5453	6.99		0.93	
273	D5453	4.4		-2.24	
312	D5453	6.3		0.09	
323	D5453	6.2		-0.03	
335	ISO20846	5.2		-1.26	
336	D5453	5.5		-0.89	
337		-----		-----	
353		-----		-----	
355	D2622	7.135		1.11	
381	ISO20884	6.04		-0.23	
444	D5453	6.70		0.58	
468		-----		-----	
485		-----		-----	
541	D5453	8.47		2.75	
557		-----		-----	
558	D7039	5.8		-0.52	
562	D5453	6.5		0.33	
603		-----		-----	
631	D5453	2.8541	C,R(0.01)	-4.13	first reported 3.0954
633		-----		-----	
634		-----		-----	
657	D5453	7.322		1.34	
663	D5453	6.33		0.12	
671		-----		-----	
823	D5453	6.68		0.55	
824	D5453	6.7		0.58	
854	D5453	7.2		1.19	
856	D5453	6.6		0.46	
861	D5453	6.6		0.46	
862	D5453	6.6		0.46	
864	D5453	6.7		0.58	
912		-----		-----	
922	D5453	6.2		-0.03	
962		-----		-----	
963		-----		-----	
970	D5453	5.3		-1.14	
971	D5453	4.5		-2.12	
974		-----		-----	
995	D5453	6.1		-0.16	
996	D5453	5.58		-0.79	
997	D5453	6.2		-0.03	
998		-----		-----	
1006	D5453	6.0		-0.28	
1016		-----		-----	
1017	ISO20846	6.412		0.23	
1033		-----		-----	
1059	ISO20846	5.3		-1.14	
1067	D5453	5.8		-0.52	
1080	D5453	5.6		-0.77	
1105	D5453	8.1		2.29	
1109	D7039	6.84		0.75	

lab	method	value	mark	z(targ)	remarks
1161	ISO20846	6.0		-0.28	
1186	D5453	6.67		0.54	
1199		-----		-----	
1254	D5453	6.56		0.41	
1347	D5453	6.33		0.12	
1348	D5453	6.6		0.46	
1385	D5453	6.99		0.93	
1397	D5453	6.35		0.15	
1498	D5453	5.7		-0.65	
1575		-----		-----	
1634	D5453	5.9		-0.40	
1720	D5453	5.0		-1.50	
1724	D5453	6.1		-0.16	
1730	ISO20846	6.11		-0.14	
1746	D5453	6.9		0.82	
1783		-----		-----	
1807	ISO20846	5.4		-1.01	
1810	D5453	5.6		-0.77	
1811	D5453	5.6		-0.77	
1833	ISO20846	5.2		-1.26	
1849	ISO20846	6.2		-0.03	
1936	ISO20846	5.8		-0.52	
1937	ISO20846	5.77		-0.56	
1938	ISO20846	6.2		-0.03	
1977		-----		-----	
1995	D5453	5.3		-1.14	
2130	D5453	7.22		1.22	
6005	ISO20846	6.39		0.20	
6018	ISO20846	4.7		-1.87	
6054		-----		-----	
6101	D4294	5.1		-1.38	
6170	D5453	6.67		0.54	
6172		6.0		-0.28	
6173	D4294	12.5	C,R(0.01)	7.68	first reported 11.6
6176	D5453	7.1		1.07	
7003	D5453	6.63		0.49	

normality	OK
n	74
outliers	3
mean (n)	6.228
st.dev. (n)	0.7455
R(calc.)	2.087
st.dev.(D5453:16e1)	0.8162
R(D5453:16e1)	2.285

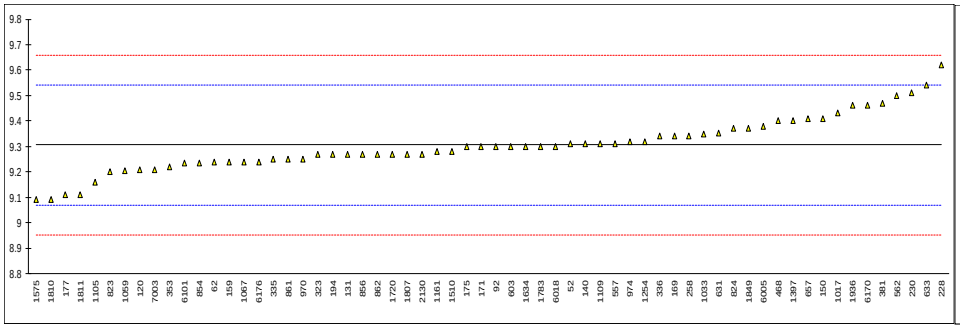


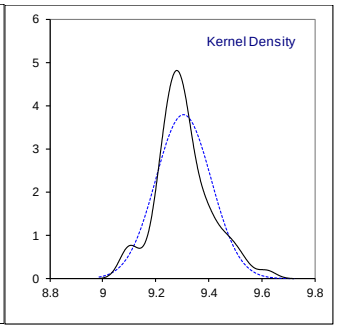
Determination of TVP on sample #18011; results in psi

lab	method	value	mark	z(targ)	remarks
52	D5191	9.31		0.04	
62	D5191	9.238		-0.57	
92	D5191	9.30		-0.05	
120	D5191	9.21		-0.81	
131	D5191	9.27		-0.30	
140	D5191	9.31		0.04	
150	D5191	9.41		0.89	
158		-----		-----	
159	D5191	9.24		-0.56	
169	D5191	9.34		0.29	
171	D5191	9.30		-0.05	
175	D5191	9.30		-0.05	
177	D5191	9.11		-1.66	
194	D5191	9.27		-0.30	
225		-----		-----	
228	D5191	9.62		2.67	
230	D5191	9.51		1.74	
237		-----		-----	
238		-----		-----	
256		-----		-----	
258	D5191	9.34043		0.30	
312		-----		-----	
323	D5191	9.27		-0.30	
335	D5191	9.25		-0.47	
336	D5191	9.34		0.29	
337		-----		-----	
353	D5191	9.22		-0.73	
381	D5191	9.47		1.40	
433		-----		-----	
468	D5191	9.40		0.80	
485		-----		-----	
541		-----		-----	
557	D5191	9.311423		0.05	
562	D5191	9.50		1.65	
603	D5191	9.30		-0.05	
631	D5191	9.354		0.41	
633	D5191	9.54		1.99	
657	D5191	9.41		0.89	
823	D5191	9.20		-0.90	
824	D5191	9.37		0.55	
854	D5191	9.236		-0.59	
856	D5191	9.27		-0.30	
861	D5191	9.25		-0.47	
862	D5191	9.27		-0.30	
922		-----		-----	
963		-----		-----	
970	D5191	9.25		-0.47	
974	D5191	9.32		0.12	
1006		-----		-----	
1017	EN13016-1	9.43		1.06	
1033	EN13016-1	9.35		0.38	
1059	D5191	9.206		-0.85	
1067	D5191	9.24		-0.56	
1105	D5191	9.16		-1.24	
1109	D5191	9.31		0.04	
1161	D5191	9.28		-0.22	
1254	D5191	9.32		0.12	
1397	D5191	9.40		0.80	
1510	D5191	9.28		-0.22	
1575	D5191	9.09		-1.83	
1634	D5191	9.30		-0.05	
1720	D5191	9.27		-0.30	
1724		-----		-----	
1730		-----		-----	
1746		-----		-----	
1783	D5191	9.30		-0.05	
1807	EN13016-1	9.27		-0.30	
1810	EN13016-1	9.09		-1.83	
1811	D5191	9.11		-1.66	
1833		-----		-----	
1849	EN13016-1	9.37		0.55	
1936	EN13016-1	9.46		1.31	
1937		-----		-----	
1938		-----		-----	
2130	D5191	9.27		-0.30	
6005	EN13016-1	9.38		0.63	

lab	method	value	mark	z(targ)	remarks
6018	EN13016-1	9.30		-0.05	
6054		-----		-----	
6101	D5191	9.235		-0.60	
6170	D5191	9.4611		1.32	
6176	D5191	9.24		-0.56	
7003	D6378	9.21		-0.81	

normality	OK
n	62
outliers	0
mean (n)	9.306
st.dev. (n)	0.1049
R(calc.)	0.294
st.dev.(D5191:15)	0.1177
R(D5191:15)	0.330



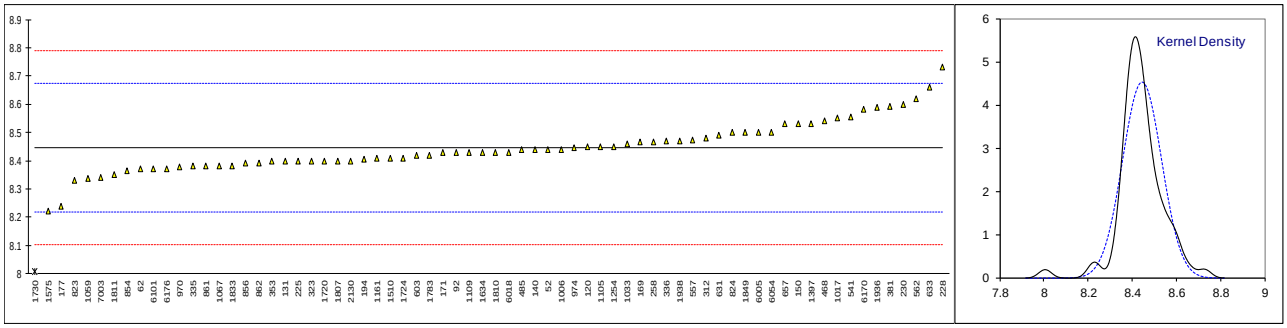


Determination of DVPE (acc. to ASTM D5191) on sample #18011; results in psi

lab	method	value	mark	z(targ)	remarks
52	D5191	8.44		-0.05	
62	D5191	8.37		-0.66	
92	D5191	8.43		-0.14	
120	D5191	8.45		0.04	
131	D5191	8.40		-0.40	
140	D5191	8.44		-0.05	
150	D5191	8.53		0.73	
158		-----		-----	
159		-----		-----	
169	D5191	8.465		0.17	
171	D5191	8.43		-0.14	
175		-----		-----	
177	D5191	8.24		-1.80	
194	D5191	8.406		-0.35	
225	D5191	8.40		-0.40	
228	D5191	8.73		2.48	
230	D5191	8.60		1.34	
237		-----		-----	
238		-----		-----	
256		-----		-----	
258	D5191	8.4655		0.17	
312	D5191	8.48		0.30	
323	D5191	8.40		-0.40	
335	D5191	8.38		-0.57	
336	D5191	8.47		0.21	
337		-----		-----	
353	D5191	8.40		-0.40	
381	D5191	8.591		1.27	
433		-----		-----	
468	D5191	8.54		0.82	
485	D5191	8.44		-0.05	
541	D5191	8.556		0.96	
557		8.47475		0.25	
562	D5191	8.62		1.52	
603	D5191	8.42		-0.23	
631	D5191	8.4891		0.38	
633	D5191	8.66		1.87	
657	D5191	8.53		0.73	
823	D5191	8.33		-1.01	
824	D5191	8.50		0.47	
854	D5191	8.366		-0.70	
856	D5191	8.39		-0.49	
861	D5191	8.38		-0.57	
862	D5191	8.39		-0.49	
922		-----		-----	
963		-----		-----	
970	D5191	8.378		-0.59	
974	D5191	8.446		0.00	
1006	D5191	8.44		-0.05	
1017	EN13016-1	8.55		0.91	
1033	EN13016-1	8.46		0.12	
1059	D5191	8.336		-0.96	
1067	D5191	8.38		-0.57	
1105	D5191	8.45		0.04	
1109	D5191	8.43		-0.14	
1161	D5191	8.41		-0.31	
1254	D5191	8.45		0.04	
1397	D5191	8.53		0.73	
1510	D5191	8.41		-0.31	
1575	D5191	8.22		-1.97	
1634	D5191	8.43		-0.14	
1720	D5191	8.40		-0.40	
1724	EN13016-1	8.41		-0.31	
1730	EN13016-1	8.006	R(0.01)	-3.84	
1746		-----		-----	
1783	D5191	8.42		-0.23	
1807	EN13016-1	8.40		-0.40	
1810	EN13016-1	8.43		-0.14	
1811	D5191	8.35		-0.84	
1833	EN13016-1	8.38		-0.57	
1849	EN13016-1	8.50		0.47	
1936	EN13016-1	8.59		1.26	
1937		-----		-----	
1938	EN13016-1	8.47		0.21	
2130	D5191	8.40		-0.40	
6005	EN13016-1	8.50		0.47	

lab	method	value	mark	z(targ)	remarks
6018	EN13016-1	8.43		-0.14	
6054	D6378	8.50		0.47	
6101	D5191	8.37		-0.66	
6170	D5191	8.5820		1.19	
6176	D5191	8.37		-0.66	
7003	D5191	8.34		-0.92	

normality	suspect
n	69
outliers	1
mean (n)	8.446
st.dev. (n)	0.0880
R(calc.)	0.246
st.dev.(D5191:15)	0.1146
R(D5191:15)	0.321

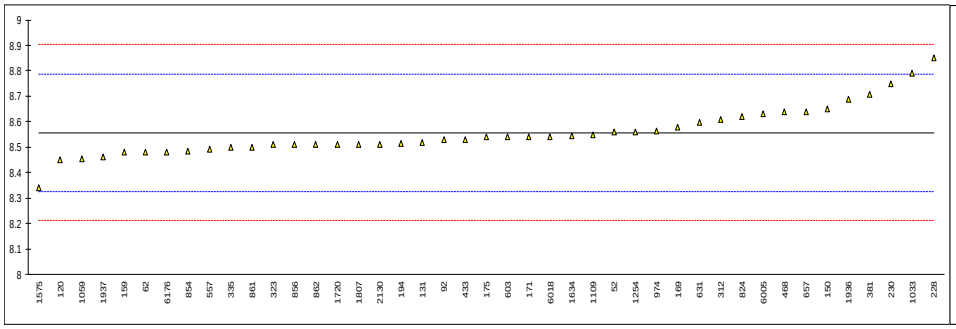


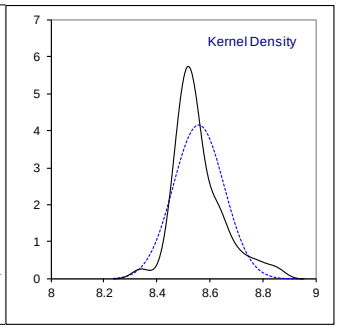
Determination of DVPE (acc. to EPA) on sample #18011; results in psi

lab	method	value	mark	z(targ)	remarks
52	D5191	8.6		0.02	
62	D5191	8.48		-0.67	
92	D5191	8.53		-0.24	
120	D5191	8.45		-0.93	
131	D5191	8.52		-0.32	
140		-----		-----	
150	D5191	8.65		0.81	
158		-----		-----	
159	D5191	8.48		-0.67	
169	D5191	8.58		0.20	
171		8.54		-0.15	
175	D5191	8.54		-0.15	
177		-----		-----	
194	D5191	8.515		-0.37	
225		-----		-----	
228	D5191	8.85		2.55	
230	D5191	8.75		1.68	
237		-----		-----	
238		-----		-----	
256		-----		-----	
258		-----		-----	
312	D5191	8.61		0.46	
323	D5191	8.51		-0.41	
335	D5191	8.50		-0.50	
336		-----		-----	
337		-----		-----	
353		-----		-----	
381	D5191	8.706		1.29	
433	EN13016-1	8.53		-0.24	
468	D5191	8.64		0.72	
485		-----		-----	
541		-----		-----	
557		8.4911		-0.58	
562		-----		-----	
603	D5191	8.54		-0.15	
631	D5191	8.596		0.34	
633		-----		-----	
657	D5191	8.64		0.72	
823		-----		-----	
824	D5191	8.62		0.55	
854	D5191	8.483		-0.65	
856	D5191	8.51		-0.41	
861	D5191	8.50		-0.50	
862	D5191	8.51		-0.41	
922		-----		-----	
963		-----		-----	
970		-----		-----	
974	D5191	8.563		0.05	
1006		-----		-----	
1017		-----		-----	
1033	EN13016-1	8.79		2.02	
1059	D5191	8.454		-0.90	
1067		-----		-----	
1105		-----		-----	
1109	D5191	8.55		-0.06	
1161		-----		-----	
1254	D5191	8.56		0.02	
1397		-----		-----	
1510		-----		-----	
1575	D5191	8.34		-1.89	
1634	D5191	8.544		-0.12	
1720	D5191	8.51		-0.41	
1724		-----		-----	
1730		-----		-----	
1746		-----		-----	
1783		-----		-----	
1807	EN13016-1	8.51		-0.41	
1810		-----		-----	
1811		-----		-----	
1833		-----		-----	
1849		-----		-----	
1936	EN13016-1	8.69		1.15	
1937	EN13016-1	8.46		-0.85	
1938		-----		-----	
2130	D5191	8.51		-0.41	
6005	EN13016-1	8.63		0.63	

lab	method	value	mark	z(targ)	remarks
6018	EN13016-1	8.54		-0.15	
6054		-----		-----	
6101		-----		-----	
6170		-----		-----	
6176	D5191	8.48		-0.67	
7003		-----		-----	

normality	not OK
n	43
outliers	0
mean (n)	8.557
st.dev. (n)	0.0958
R(calc.)	0.268
st.dev.(D5191:15)	0.1150
R(D5191:15)	0.322

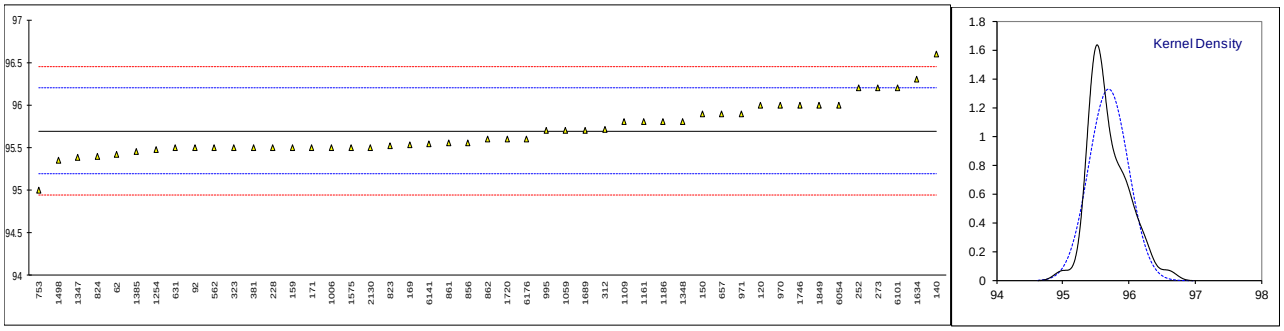




Determination of RON on sample #18012;

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62	D2699	95.42		-1.10	
92	D2699	95.5		-0.78	
120	D2699	96.0		1.22	
140	D2699	96.6		3.62	
150	D2699	95.9		0.82	
159	D2699	95.5		-0.78	
169	D2699	95.53		-0.66	
171	D2699	95.5		-0.78	
228	D2699	95.5		-0.78	
237		-----		-----	
252	D2699	96.2		2.02	
256		-----		-----	
273	D2699	96.2		2.02	
312	D2699	95.71		0.06	
323	D2699	95.5		-0.78	
381	D2699	95.5		-0.78	
562	D2699	95.5		-0.78	
631	D2699	95.50		-0.78	
657	D2699	95.9		0.82	
753	D2699	95.00		-2.78	
823	D2699	95.52		-0.70	
824	D2699	95.4		-1.18	
856	D2699	95.56		-0.54	
861	D2699	95.55		-0.58	
862	D2699	95.6		-0.38	
922		-----		-----	
962		-----		-----	
970	D2699	96.0		1.22	
971	D2699	95.9		0.82	
995	D2699	95.7		0.02	
998		-----		-----	
1006	D2699	95.5		-0.78	
1059	D2699	95.7		0.02	
1109	D2699	95.8		0.42	
1161	ISO5164	95.8		0.42	
1186	D2699	95.8		0.42	
1254	D2699	95.47		-0.90	
1347	D2699	95.39		-1.22	
1348	D2699	95.8		0.42	
1385	D2699	95.45		-0.98	
1498	D2699	95.35		-1.38	
1575	In house	95.5		-0.78	
1634		96.3		2.42	
1689	GB/T5487	95.7		0.02	
1720	D2699	95.6		-0.38	
1746	D2699	96.0		1.22	
1849	ISO5164	96.0		1.22	
2130	D2699	95.5		-0.78	
6054	D2699	96.0		1.22	
6101	D2699	96.2	C	2.02	first reported 97.2
6141	In house	95.54		-0.62	
6176	D2699	95.6		-0.38	

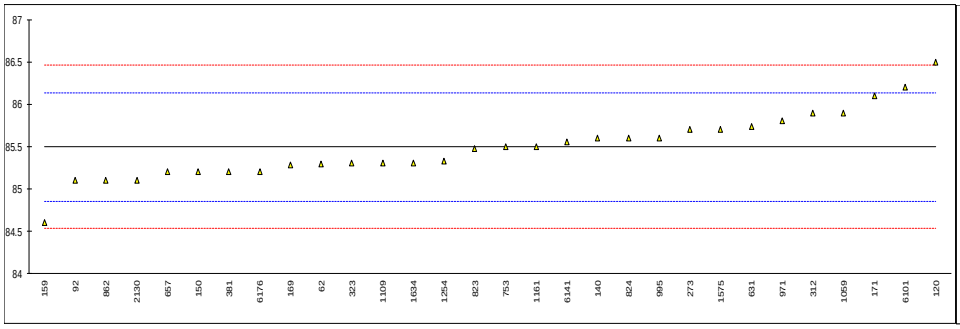
normality	OK
n	47
outliers	0
mean (n)	95.696
st.dev. (n)	0.2993
R(calc.)	0.838
st.dev.(D2699:17)	0.2500
R(D2699:17)	0.700

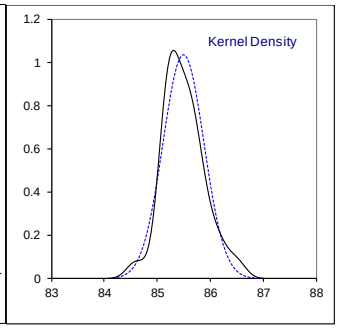


Determination of MON on sample #18012;

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62	D2700	85.29		-0.64	
92	D2700	85.1		-1.23	
120	D2700	86.5		3.13	
140	D2700	85.6		0.33	
150	D2700	85.2		-0.92	
159	D2700	84.6		-2.79	
169	D2700	85.28		-0.67	
171	D2700	86.1		1.88	
228		-----		-----	
237		-----		-----	
252		-----		-----	
256		-----		-----	
273	D2700	85.7		0.64	
312	D2700	85.89		1.23	
323	D2700	85.3		-0.61	
381	D2700	85.2		-0.92	
562		-----		-----	
631	D2700	85.74		0.76	
657	D2700	85.2		-0.92	
753	D2700	85.50		0.01	
823	D2700	85.48		-0.05	
824	D2700	85.6		0.33	
856		-----		-----	
861		-----		-----	
862	D2700	85.1		-1.23	
922		-----		-----	
962		-----		-----	
970		-----		-----	
971	D2700	85.8		0.95	
995	D2700	85.6		0.33	
998		-----		-----	
1006		-----		-----	
1059	D2700	85.9		1.26	
1109	D2700	85.3		-0.61	
1161	ISO5163	85.5		0.01	
1186		-----		-----	
1254	D2700	85.33		-0.51	
1347		-----		-----	
1348		-----		-----	
1385		-----		-----	
1498		-----		-----	
1575	In house	85.7		0.64	
1634		85.3		-0.61	
1689		-----		-----	
1720		-----		-----	
1746		-----		-----	
1849		-----		-----	
2130	D2700	85.1		-1.23	
6054		-----		-----	
6101	D2700	86.2	C	2.19	first reported 87.4875
6141	In house	85.55		0.17	
6176	D2700	85.2		-0.92	

normality	OK
n	30
outliers	0
mean (n)	85.495
st.dev. (n)	0.3857
R(calc.)	1.080
st.dev.(D2700:17a)	0.3214
R(D2700:17a)	0.900





APPENDIX 2

z-scores distillation ASTM D86 (automated and manual mode)

lab	IBP	10%eva	50%eva	90%eva	FBP
52	0.08	0.06	-0.99	0.09	-0.45
62	-0.33	-0.50	-0.78	-0.43	-0.37
92	0.50	-0.43	-0.37	-0.53	-0.17
120	-0.33	-0.43	-0.43	0.09	-0.13
131	-----	-----	-----	-----	-----
140	-0.87	0.27	0.68	-0.12	0.30
150	0.68	-0.22	-0.78	-0.02	-1.04
158	-----	-----	-----	-----	-----
159	0.02	0.27	0.54	0.19	0.22
169	-1.23	-0.08	-0.37	0.14	-0.21
171	-0.16	-0.08	-0.64	-0.07	-0.41
175	0.02	-0.15	0.12	0.09	-0.92
194	-0.63	-0.01	-0.09	0.35	-0.10
217	-1.59	-0.64	-0.02	-0.27	0.46
221	0.74	0.48	-1.06	-0.74	-0.65
224	0.11	-0.32	0.21	-0.38	-0.75
225	1.04	-0.57	-0.37	-0.74	0.54
228	-1.05	-0.99	-2.73	-2.49	0.34
230	1.63	-0.66	-1.38	-0.90	-1.04
237	-----	-----	-----	-----	-----
238	-----	-----	-----	-----	-----
252	0.14	-0.22	1.03	-0.22	-0.06
253	0.74	-0.15	-1.55	-0.37	-1.24
254	0.74	0.48	0.33	-0.74	0.34
256	-----	-----	-----	-----	-----
258	1.10	1.39	2.14	0.86	1.32
273	1.57	-0.08	-0.02	-0.27	-0.29
312	-0.27	-0.15	0.54	-0.12	0.02
323	-0.81	0.13	0.33	0.19	0.58
335	-0.51	-0.15	0.47	0.04	0.10
336	0.26	-0.08	0.68	0.09	0.50
337	-----	-----	-----	-----	-----
353	-0.39	-0.29	-0.09	-0.68	-0.06
355	0.98	0.08	-1.07	0.75	-1.40
381	-1.05	-0.08	-0.09	-0.84	-0.17
444	-1.29	-1.27	-1.20	-0.63	-0.57
468	-----	-----	-----	-----	-----
485	0.86	-0.25	-0.05	-0.27	0.60
541	-1.23	-0.57	0.04	-0.21	1.85
557	0.44	0.20	0.26	0.19	0.93
558	0.74	1.18	-0.37	-0.74	-0.45
562	0.62	-0.50	-0.23	0.09	0.42
603	0.02	0.41	0.40	-0.12	-0.77
631	1.33	-0.22	0.33	0.29	0.73
633	-----	-----	-----	-----	-----
634	2.53	0.83	-0.71	0.04	0.73
657	0.14	-0.01	0.33	0.29	0.30
663	-0.57	0.58	0.16	0.42	0.71
671	-----	-----	-----	-----	-----
823	-1.11	-0.43	-0.50	-0.53	0.69
824	0.44	-0.08	-0.23	0.14	0.65
854	-0.45	0.13	0.26	-0.07	0.10
856	-0.16	0.13	0.05	-0.07	-0.29
861	-0.21	-0.08	-0.02	0.04	-0.29
862	-0.51	-0.15	-0.23	-0.12	-0.37
864	-0.57	0.06	-0.16	0.04	-0.53
912	2.53	0.48	1.03	0.81	0.73
922	-0.10	-0.57	-1.06	-0.43	-0.06
962	-----	-----	-----	-----	-----
963	-----	-----	-----	-----	-----
970	-2.00	-0.08	0.12	0.40	-0.10
971	-2.30	-0.36	-0.37	-0.32	0.02
974	-2.00	-0.36	-0.16	0.50	-0.41
995	0.14	0.13	-0.37	-0.22	-0.84
996	0.14	-0.22	-0.71	0.29	-0.45
997	0.14	-0.57	0.33	0.04	-0.45
998	-----	-----	-----	-----	-----
1006	1.21	0.06	0.82	0.04	0.54
1016	-----	-----	-----	-----	-----
1017	-1.47	-0.08	-0.09	-0.38	0.30
1033	-0.75	0.27	1.10	0.96	0.10
1059	-0.39	-0.64	0.05	-0.07	-0.96
1067	2.41	0.06	0.54	-0.07	-0.37
1080	-----	-----	-----	-----	-----

lab	IBP	10%eva	50%eva	90%eva	FBP
1105	-1.59	-0.36	-0.64	-0.12	-0.88
1109	-1.41	-0.01	-0.30	-0.12	-0.49
1161	1.45	0.06	-0.43	0.29	1.13
1186	2.41	1.74	1.59	1.74	0.26
1199	-----	-----	-----	-----	-----
1254	-0.87	0.20	-0.02	-0.17	-1.71
1347	1.93	1.88	-0.37	0.29	0.14
1348	1.16	-0.36	0.40	0.91	-0.25
1385	1.04	0.48	-0.37	0.29	-0.06
1397	1.87	-0.08	0.54	0.04	1.25
1498	0.08	-0.15	0.12	0.35	0.58
1575	-----	-----	-----	-----	-----
1634	-0.57	-0.01	0.82	0.14	0.02
1720	0.14	1.04	1.59	1.38	0.54
1724	-0.51	-0.22	-0.64	-0.32	-0.61
1730	-----	-----	-----	-----	-----
1746	0.74	-0.22	-0.02	0.29	0.34
1783	-0.45	-0.15	-0.30	0.24	-0.41
1807	-0.45	-0.71	-0.57	-0.12	0.93
1810	0.02	0.97	0.54	-0.27	-0.21
1811	-0.27	-0.01	-0.43	-0.63	-0.61
1833	-1.53	-0.08	-0.50	-0.17	-0.21
1849	1.04	-0.22	-0.78	0.24	0.89
1936	-0.99	-0.15	-0.09	0.04	-0.73
1937	0.02	-0.22	-0.57	0.04	-0.17
1938	-0.87	-0.43	-1.06	-0.17	-0.49
1977	0.27	0.15	0.81	0.49	0.01
1995	3.42	0.48	1.03	0.29	0.54
2130	-1.23	0.13	0.26	0.09	0.30
6005	-1.47	0.34	1.03	0.55	-0.17
6018	-0.87	0.27	0.89	0.35	0.02
6054	-0.93	0.20	0.89	0.40	0.18
6101	-0.26	0.06	-0.63	-0.49	0.56
6170	0.14	-0.43	-0.16	-0.32	1.40
6172	0.02	0.06	0.82	0.40	-0.77
6173	1.93	0.48	-0.37	-0.22	0.73
6176	-0.10	-0.43	0.19	0.04	-0.33
7003	0.38	0.69	0.33	0.19	0.54

APPENDIX 3

Number of participants per country

Regular sample #18010

2 labs in AFGHANISTAN
1 lab in ALBANIA
1 lab in ARGENTINA
2 labs in AUSTRALIA
2 labs in BELGIUM
2 labs in BRAZIL
3 labs in CANADA
2 labs in CHILE
5 labs in CHINA, People's Republic
1 lab in COSTA RICA
2 labs in COTE D'IVOIRE
2 labs in CROATIA
2 labs in CZECH REPUBLIC
1 lab in DJIBOUTI
1 lab in EGYPT
3 labs in FRANCE
3 labs in GEORGIA
1 lab in GREECE
1 lab in GUAM
1 lab in GUINEA REPUBLIC
1 lab in HONG KONG
1 lab in HUNGARY
1 lab in INDIA
1 lab in IRAN, Islamic Republic of
1 lab in IRELAND
1 lab in ISRAEL
2 labs in KENYA
1 lab in LATVIA
3 labs in LEBANON
1 lab in LITHUANIA
1 lab in MALAYSIA
1 lab in MAURITIUS
1 lab in MOZAMBIQUE
1 lab in MYANMAR
3 labs in NETHERLANDS
1 lab in NIGER
2 labs in NIGERIA
1 lab in OMAN
1 lab in PAKISTAN
3 labs in PHILIPPINES
1 lab in POLAND
3 labs in PORTUGAL
2 labs in SAUDI ARABIA
1 lab in SENEGAL
2 labs in SERBIA
1 lab in SINGAPORE
1 lab in SLOVENIA
1 lab in SOUTH AFRICA
2 labs in SOUTH KOREA
1 lab in SPAIN
1 lab in SUDAN
1 lab in SWEDEN
1 lab in TAIWAN
1 lab in TANZANIA
1 lab in THAILAND
1 lab in TOGO
1 lab in TUNISIA
7 labs in TURKEY
1 lab in TURKMENISTAN
3 labs in UNITED ARAB EMIRATES
3 labs in UNITED KINGDOM
10 labs in UNITED STATES OF AMERICA

DVPE sample #18011

1 lab in AFGHANISTAN
1 lab in ARGENTINA
2 labs in AUSTRALIA
1 lab in AUSTRIA
2 labs in BELGIUM
1 lab in BRAZIL
3 labs in CANADA
1 lab in CHILE
4 labs in CHINA, People's Republic
1 lab in COSTA RICA
2 labs in COTE D'IVOIRE
2 labs in CROATIA
2 labs in CZECH REPUBLIC
3 labs in FRANCE
1 lab in GREECE
1 lab in IRAN, Islamic Republic of
1 lab in IRELAND
1 lab in LATVIA
1 lab in LITHUANIA
1 lab in MALAYSIA
1 lab in MAURITIUS
1 lab in MOZAMBIQUE
2 labs in NETHERLANDS
1 lab in NIGER
2 labs in NIGERIA
1 lab in OMAN
1 lab in PAKISTAN
2 labs in PHILIPPINES
1 lab in POLAND
3 labs in PORTUGAL
1 lab in SAUDI ARABIA
1 lab in SERBIA
1 lab in SINGAPORE
1 lab in SLOVENIA
2 labs in SOUTH KOREA
1 lab in SPAIN
1 lab in SUDAN
1 lab in SWEDEN
1 lab in TAIWAN
1 lab in TANZANIA
1 lab in TOGO
7 labs in TURKEY
2 labs in UNITED ARAB EMIRATES
3 labs in UNITED KINGDOM
11 labs in UNITED STATES OF AMERICA

RON/MON sample #18012

2 labs in AFGHANISTAN
1 lab in AUSTRALIA
1 lab in BELGIUM
3 labs in CANADA
2 labs in CHILE
4 labs in CHINA, People's Republic
1 lab in COSTA RICA
1 lab in COTE D'IVOIRE
1 lab in GEORGIA
1 lab in ISRAEL
1 lab in KENYA
1 lab in LATVIA
3 labs in LEBANON
1 lab in LITHUANIA
1 lab in NETHERLANDS
1 lab in NIGER
1 lab in NIGERIA
1 lab in OMAN
1 lab in PAKISTAN
1 lab in PHILIPPINES
1 lab in PORTUGAL
1 lab in RUSSIAN FEDERATION
2 labs in SAUDI ARABIA
1 lab in SERBIA
1 lab in SINGAPORE
1 lab in SLOVENIA
1 lab in SOUTH AFRICA
2 labs in SOUTH KOREA
1 lab in SUDAN
1 lab in TAIWAN
1 lab in TANZANIA
1 lab in TOGO
2 labs in TURKEY
1 lab in UNITED ARAB EMIRATES
1 lab in UNITED KINGDOM
6 labs in UNITED STATES OF AMERICA

APPENDIX 4

Abbreviations:

C	= final result after checking of first reported suspect test result
D(0.01)	= outlier in Dixon's outlier test
D(0.05)	= straggler in Dixon's outlier test
G(0.01)	= outlier in Grubbs' outlier test
G(0.05)	= straggler in Grubbs' outlier test
DG(0.01)	= outlier in Double Grubbs' outlier test
DG(0.05)	= straggler in Double Grubbs' outlier test
R(0.01)/R(1)	= outlier in Rosner's outlier test
R(0.05)/R(5)	= straggler in Rosner's outlier test
E	= probably an error in calculations
W	= test result withdrawn on request of participant
ex	= test result excluded from statistical evaluation
n.a.	= not applicable
n.e.	= not evaluated
n.d.	= not detected
fr.	= first reported
SDS	= Safety Data Sheet

Literature:

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11 P.L. Davies, Fr. Z. Anal. Chem, 331, 513, (1988)
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17 H. Verplaetse and M. Lacourt, Accred Qual Assur, 11:, 521-522, (2006)