Results of Proficiency Test
Gasoline (ASTM specification)
February 2011

Organised by: Institute for Interlaboratory Studies
Spijkenisse, the Netherlands

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1 INTRODUCTION

Since 1995, the Institute organizes a proficiency scheme for Gasoline. During the annual proficiency testing program 2010/2011, it was decided to continue the round robin for the analysis of Gasoline in accordance with the latest applicable version of ASTM D4814:10b specification. In this interlaboratory study 114 laboratories in 58 different countries have participated. See appendix 3 for the number of participants per country. In this report, the results of the gasoline proficiency test are presented and discussed.

2 SET UP

The Institute for Interlaboratory Studies (iis) in Spijkenisse, the Netherlands, was the organiser of this proficiency test. Sample analyses for fit-for-use and homogeneity testing were subcontracted. In this proficiency test, the participants received, depending on their registration, two or three samples of Gasoline: 2*1 litre euro 95 Gasoline (labelled #11006) and/or 1*1 litre (± 800 mL filled) euro 95 Gasoline (labelled #11007) for DVPE only. Participants were requested to report rounded and unrounded results. The unrounded results were preferably used for statistical evaluation.

2.1 ACCREDITATION

The Institute for Interlaboratory Studies in Spijkenisse, the Netherlands, is accredited in accordance with ISO guide 43 and ILAC-G13:2007, (R007), since January 2000, by the Dutch Accreditation Council: RvA (Raad voor Accreditatie). This ensures 100% confidentially of participant's data. Feedback from the participants on the reported data is encouraged and customer's satisfaction is measured on regular basis by sending out questionnaires.

2.2 PROTOCOL

The protocol followed in the organisation of this proficiency test was the one as described for proficiency testing in the report 'iis Interlaboratory Studies: 'Protocol for the Organisation, Statistics and Evaluation' of January 2010 (iis-protocol, version 3.2).

2.3 CONFIDENTIALITY STATEMENT

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

2.4 SAMPLES

The necessary sample material of 400 litre of Gasoline Euro 95 was obtained from a local petrol station in the Netherlands. After homogenisation in a 500 L mixing vessel, first 108 amber glass bottles of 1 litre with approx. 800 mL, for Vapour Pressure only, were filled and labelled #11007. The homogeneity of the subsamples #11007 was checked by determination of Dry Vapour Pressure Equivalent in accordance with ASTM D5191:10 on 8 stratified randomly selected samples.

	DVPE in psi
Sample #11007-1	8.47
Sample #11007-2	8.46
Sample #11007-3	8.43
Sample #11007-4	8.45
Sample #11007-5	8.44
Sample #11007-6	8.43
Sample #11007-7	8.43
Sample #11007-8	8.43

Table 1: homogeneity test of subsamples #11007

From the remaining material in the 500L mixing vessel, 264 amber glass bottles of 1 litre were filled and labelled #11006. The homogeneity of the subsamples #11006 was checked by determination of Density @15°C in accordance with ASTM D4052 on 8 stratified randomly selected samples.

	Density @ 15°C in kg/m^3
Sample #11006-1	742.28
Sample #11006-2	742.28
Sample #11006-3	742.29
Sample #11006-4	742.30
Sample #11006-5	742.32
Sample #11006-6	742.32
Sample #11006-7	742.32
Sample #11006-8	742.31

Table 2: homogeneity test of subsamples #11006

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@ 15 °C in kg/m^3	DVPE in psi
r (sample #11006)	0.05	----
r (sample #11007)	----	0.044
reference method	ASTM D4052:09	ASTM D5191:10
0.3 x R (ref. method)	0.65	0.096

Table 3: repeatabilities of subsamples #11006 and #11007

The repeatabilities of the results of homogeneity test for Density and DVPE were in agreement with the respective repeatabilities required by ASTM D4052 and ASTM D5191. Therefore, homogeneity of subsamples #11006 and #11007 was assumed.

To the participants, depending on their registration, 2*1 litre of sample #11006 and/or 1*1 litre (± 800 mL filled) of sample #11007 were sent on February 9, 2011.

2.5 STABILITY OF THE SAMPLES

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

2.6 ANALYSIS

The participants were requested to determine API Gravity, Aromatics by FIA, Benzene, Copper Strip Corrosion, Doctor Test, Density @ 15°C, Distillation (automated and manual), Existent gum, Lead, Phosphorus, Olefins by FIA, DIPE, Ethanol, ETBE, MTBE, Iso-Butanol, TAME, t-Butanol, Methanol, Oxygen, Oxidation Stability, Total Oxygenates, Sulphur, RON and MON on sample #11006.
On sample #11007, the participants were requested to determine Total Vapour Pressure and Dry Vapour Pressure (acc. ASTM D5191 and EPA). To get comparable results, a detailed report form on which the units and the preferred test methods were printed, was sent together with each set of samples. In addition, a letter of instructions and a SDS were added to the package.

3 RESULTS

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

Directly after the deadline, a reminder fax was sent to the laboratories that had not reported results at that moment. Shortly after the deadline, the available results were screened for suspect data. A result was called suspect in case the Huber Elimination Rule (a robust outlier test) found it to be an outlier. The laboratories that produced these suspect data were asked to check the results. Additional or corrected results are used for data analysis and original results are placed under 'Remarks' in the result tables in appendix 1.

3.1 STATISTICS

Statistical calculations were performed as described in the report ‘iis Interlaboratory Studies: Protocol for the Organisation, Statistics and Evaluation’ of January 2010 (iis-protocol, version 3.2). For the statistical evaluation the *unrounded* (when available) figures were used instead of the rounded results. Results reported as ‘<…’ or ‘>…’ were not used in the statistical evaluation.

First, the normality of the distribution of the various data sets per determination was checked by means of the Lilliefors-test. After removal of outliers, this check was repeated. Not all data sets proved to have a normal distribution, in which cases the statistical evaluation of the results should be used with due care.

In accordance to ISO 5725 (1986 and 1994) the original results per determination were submitted subsequently to Dixon and Grubbs outlier tests. Outliers are marked by D(0.01) for the Dixon test, by G(0.01) or DG(0.01) for the Grubbs test. Stragglers are marked by D(0.05) for the Dixon test, by G(0.05) or DG(0.05) for the Grubbs test. Both outliers and stragglers were not included in the calculations of averages and standard deviations.

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 analysis results are plotted. The corresponding laboratory numbers are under the X-axis.
The straight horizontal line presents the consensus value (a trimmed mean). The four striped lines, parallel to the consensus value line, are the +3s, +2s, -2s and -3s target reproducibility limits of the selected standard. Outliers and other data, which were excluded from the calculations, are represented as a cross. Accepted data are represented as a triangle.
Furthermore, Kernel Density Graphs were made. This is a method for producing a smooth density approximation to a set of data that avoids some problems associated with histograms (see appendix 4; nr.13 and 14).

3.3 Z-SCORES

To evaluate the performance of the participating laboratories the z-scores were calculated. As it was decided to evaluate the performance of the participants in this proficiency test (PT) against the literature requirements, e.g. ISO/EN reproducibilities, the z-scores were calculated using a target standard deviation. This result was an evaluation independent of the spread of this interlaboratory study. The target standard deviation was calculated from the literature reproducibility by division with 2.8. The z-scores were calculated in accordance with:

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

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

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

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

4 EVALUATION

In this proficiency test, problems were encountered during the transport of the samples to the laboratories in Australia, Azerbaijan, Bolivia, Brazil, Chile, India, Mozambique, Nigeria, P.R. of China, Peru, Republic of Djibouti, Republic of Guinee, Saudi Arabia, Senegal, St Eustatius, Sultanate of Oman, Tanzania, Togo and Turkmenistan. The samples to these laboratories arrived near of after the final reporting date.
From the 114 participants, 33 participants did report the results after the deadline for reporting and 7 participants did not report any results at all. The 107 reporting laboratories did send in 1990 numerical results. Observed were 84 outlying results, which is 4.2%. In proficiency studies, outlier percentages of 3% - 7.5% are quite normal.

4.1 EVALUATION PER TEST

In this section, the results are discussed per test.

Not all data sets proved to have a normal distribution. Not normal distributions were found for the following determinations for sample #11006: API gravity, Benzene, Density, Distillation (for automated: 90% evaporated and %vol at 100ºC and 150ºC, for manual: 10% and 90% evaporated and %vol at 70ºC), Ethanol, MTBE, Oxygen and Total Oxygenates. For sample #11007: TVP, DVPE (acc. ASTM and EPA). In these cases, the statistical evaluation should be used with care.

API Gravity: This determination was not problematic. Only one statistical outlier was observed and the calculated reproducibility after rejection of the statistical outlier is in full agreement with the requirements of ASTM D1298:05.

Benzene: This determination was problematic for a number of laboratories. Five statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with the requirements of ASTM D3606:10.

Copper strip: No problems have been observed, all participants agreed on a result of 1.

Density @ 15°C: This determination was not problematic. Five statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with the requirements of ASTM D4052:09.

Distillation The automated mode determination was not problematic. In total seventeen statistical outliers were observed. The calculated reproducibilities, after rejection of the statistical outliers, are all in agreement with the requirements of ASTM D86:10a, except for %volume at 150ºC.
The manual mode determination was somewhat problematic. In total eleven statistical outliers were observed. After rejection of the statistical outliers, the calculated reproducibilities for IBP, 10% and 50% evaporated and FBP are in agreement with the requirements of ASTM D86:10a. The calculated

reproducibilities for 90% evaporated and %volume at 70ºC, 100ºC and 150ºC are not in agreement with the requirements of ASTM D86:10a.

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

Existent Gum: This determination was not problematic. Only two statistical outliers were observed and the calculated reproducibility after rejection of the statistical outliers is in good agreement with the requirements of ASTM D381:09.

Olefins by FIA: This determination was not problematic. Only two statistical outliers were observed and the calculated reproducibility after rejection of the statistical outliers is in good agreement with the requirements of ASTM D1319:10.

Aromatics by FIA: This determination was not problematic. Four statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with the requirements of ASTM D1319:10.

Lead: The consensus value of the group was below the application range (2.5 - 25 mg/L) and most participants reported a “less then” result. Therefore, no significant conclusions were drawn.

Phosphorus: The consensus value of the group was below the application range (0.20 - 40 mg/L) and most participants reported a “less then” result. Therefore, no significant conclusions were drawn. Expression of the result showed that several participants reported their results in a different unit than mg/L.

Oxidation stability: The majority of the laboratories agreed that the Oxidation Stability is >360 (or even >900) minutes.

Ethanol: This determination was very problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not at all in agreement with the requirements of ASTM D4815:09.

MTBE: This determination was problematic. Three statistical outliers and two false negative results were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ASTM D4815:09.

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

Oxygen content: This determination was problematic. Five statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ASTM D5599:10.

Total Oxygenates: Regretfully no precison data are available for this determination. Therefore no significant conclusions were drawn. Five statistical outliers and two false negative results were observed.

Sulphur: This determination was problematic at the low level of 5.50 mg/kg for a number of participants. Four statistical outliers were observed. However, the calculated reproducibility, after rejection of the statistical outliers is in full agreement with the requirements of ASTM D5453:09.

RON: This determination was not problematic. No statistical outliers were observed and the calculated reproducibility is in full agreement with the requirements of ASTM D2699:10.

MON: This determination was somewhat problematic. No statistical outliers were observed. However, the calculated reproducibility is not in full, but almost in agreement with the requirements of ASTM D2700:10.

TVP: This determination was problematic for a number of laboratories. Three statistical outliers were observed. However, the calculated reproducibility, after rejection of the statistical outliers, is in agreement with the requirements of ASTM D5191:10.

DVPE: The conversion of the measured Total Vapour Pressure to the corresponding Dry Vapour Pressure Equivalent (DVPE) as described in ASTM D5191 and the U.S. EPA guidelines (40 CFR Part 80, App. E, Method3), showed in total two statistical outliers.
Both calculated reproducibilities of DVPE after rejection of the statistical outliers are in good agreement with the requirements of ASTM D5191 and EPA guidelines. No calculation errors with the conversion of TVP to DVPE were observed.

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 #11006 and #11007, 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		-----	55	59.01	0.29	0.30
Benzene		% V/V	62	0.76	0.09	0.15
Copper Strip 3 hrs @ 50°C		-----	86	1	n.a.	n.a.
Density @ 15 °C		kg/m^3	95	742.41	0.57	2.16
Dist. Auto.	IBP	ºC	71	37.35	5.02	5.27
	10%-evap.	ºC	69	51.96	1.90	3.20
	50%-evap.	ºC	72	94.48	2.81	1.88
	90%-evap.	ºC	69	147.04	2.70	3.93
	FBP	ºC	69	181.33	5.72	6.78
	%vol at 70ºC	%	63	34.17	2.01	2.32
	%vol at 100ºC	%	65	54.03	1.98	1.92
	%vol at 150ºC	%	63	91.51	1.74	1.17
Dist. Man.	IBP	ºC	21	39.14	5.55	5.60
	10%-evap.	ºC	21	52.34	2.46	3.91
	50%-evap.	ºC	20	94.11	3.43	4.06
	90%-evap.	ºC	20	146.99	5.34	3.83
	FBP	ºC	19	181.25	5.31	7.20
	%vol at 70ºC	%	19	33.14	6.69	4.04
	%vol at 100ºC	%	19	54.15	4.62	3.94
	%vol at 150ºC	%	19	91.41	4.15	3.89
Doctor Test		-----	59	negative	n.a.	n.a.
Existent gum (washed)		mg/100mL	40	0.66	0.90	2.20
Olefins by FIA		%V/V	50	9.32	2.71	3.13
Aromatics by FIA		%V/V	50	29.87	3.41	3.70
Lead as Pb		mg/L	8	0.17	0.77	(2.60)
Phosphorus as P		mg/L	6	0.17	0.79	(0.13)
Oxidation Stability		min	6	>300	n.a.	n.a.
Ethanol		%V/V	52	4.66	0.80	0.55
MTBE		%V/V	51	1.17	0.18	0.13
Oxygen content		%M/M	40	1.95	0.28	0.23
Total Oxygenates		%M/M	32	5.78	1.79	unknown
Sulphur		mg/kg	68	5.50	1.89	2.08
RON		-----	55	96.14	0.73	0.70
MON		-----	43	85.69	1.03	0.90

table 4: performance evaluation sample #11006

* results between brackets should be used with care, because the average found was below the application range

Parameter	Unit	n	mean	2.8 * sd	R (lit)
TVP	psi	54	9.43	0.32	0.33
DVPE acc. to ASTM D5191	psi	64	8.54	0.31	0.32
DVPE acc. EPA	psi	50	8.67	0.29	0.32

table 5: performance evaluation sample #11007

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 2011 WITH PREVIOUS PTS

	February 2011	*October 2010*	*February 2010*	*October 2009*
Number of rep. participants	107	91	139	66
Number of results reported	1990	1827	2699	1197
Statistical outliers	84	77	95	58
Percentage outliers	4.2%	4.2%	3.5%	4.8%

Table 6: comparison with previous proficiency tests

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

The performance of the determinations of the proficiency tests was compared against the requirements of the respective standards. The conclusions are given the following table:

Determination	*February 2011*	*October 2010*	*February 2010*	*October 2009*
API Gravity	+	+	+	++
Benzene	++	--	+	++
Density @ 15°C	++	-	++	-
Distillation Automated	++	+	+	++
Distillation Manual	+/-	-	+/-	n.e.
Existent gum (washed)	(++)	(+/-)	(++)	(++)
Olefins by FIA	+	(--)	(--)	--
Aromatics by FIA	+	++	-	--
Lead as Pb	(++)	(++)	(++)	n.e.
Phosphorus as P	(--)	n.e.	n.e.	n.e.
Ethanol	--	--	-	--
MTBE	--	-	--	--
Oxygen content	--	n.e.	n.e.	n.e.
Sulphur	+	+/-	-	++
RON	+/-	+/-	-	--
MON	-	-	--	--
TVP	+	++	n.e.	n.e.
DVPE ASTM D5191	+/-	++	n.e.	n.e.

Table 7: comparison determinations against the standard

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

The performance of the determinations against the requirements of the respective standards is listed in the above table.

The following performance categories were used:

++: group performed much better than the standard
+ : group performed better than the standard
+/-: group performance equals the standard
- : group performed worse than the standard
-- : group performed much worse than the standard
n.e.: not evaluated
n.d.: not determined

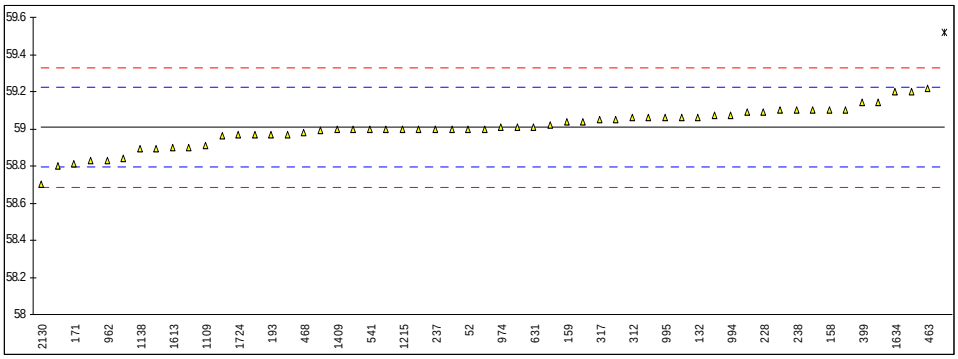
APPENDIX 1

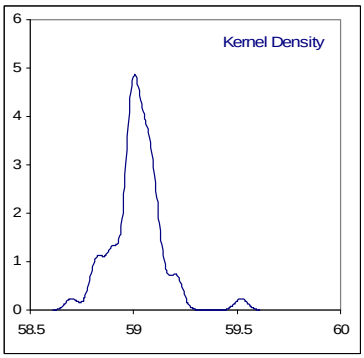
Determination of API Gravity on sample #11006;

lab	method	value	mark	z(targ)	remarks
52	D4052	59.0		-0.06	
62	D4052	59.0		-0.06	
120	D4052	59.0		-0.06	
132	D4052	59.06		0.50	
150	D4052	59.0		-0.06	
158	D4052	59.1		0.87	
159	D4052	59.04		0.31	
169	D4052	59.1		0.87	
171	D4052	58.81		-1.83	
180	D4052	59.201		1.82	
193	D4052	58.97		-0.34	
194	D4052	59.07		0.59	
199		-----		-----	
217		-----		-----	
221		-----		-----	
224	D1298	59.52	C,G(0.01)	4.79	First reported 59.34
225		-----		-----	
228	D1298	59.09		0.78	
230		-----		-----	
237	D1298	59		-0.06	
238	D1298	59.1		0.87	
252		-----		-----	
253	D4052	59.09		0.78	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D4052	59.06		0.50	
317	D4052	59.047	C	0.38	First reported 58.547
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
340		-----		-----	
399	D4052	59.14		1.25	
431		-----		-----	
433		-----		-----	
447		-----		-----	
463	D4052	59.22		1.99	
468	D4052	58.977		-0.28	
511	D4052	58.89		-1.09	
541	D4052	59.0		-0.06	
557		-----		-----	
562	D4052	58.8		-1.93	
592		-----		-----	
631	D4052	59.01		0.03	
657	D4052	59.1		0.87	
663	D4052	59.0		-0.06	
671	D4052	59.01		0.03	
823	D4052	59.06		0.50	
862	D4052	59.04		0.31	
912		-----		-----	
962	D4052	58.83		-1.65	
974	D4052	59.01		0.03	
994	D4052	59.07		0.59	
995	D4052	59.06		0.50	
996		-----		-----	
1006		-----		-----	
1016		-----		-----	
1017		-----		-----	
1033		-----		-----	
1038		-----		-----	
1059	D4052	58.96		-0.43	
1066	D4052	59.14		1.25	
1080		-----		-----	
1081		-----		-----	
1108		-----		-----	
1109	D287	58.91		-0.90	
1126		-----		-----	
1138	D4052	58.89		-1.09	
1140		-----		-----	
1167		-----		-----	
1186		-----		-----	
1205		-----		-----	
1215	D1298	59.0		-0.06	

1218		-----	-----
1231	D4052	59.02	0.13
1237		-----	-----
1264		-----	-----
1310		-----	-----
1347		-----	-----
1348	D4052	58.84	-1.55
1357		-----	-----
1378		-----	-----
1382		-----	-----
1385	D4052	58.99	-0.15
1386	D4052	58.83	-1.65
1395		-----	-----
1409	D4052	59.0	-0.06
1428		-----	-----
1531		-----	-----
1613	D4052	58.9	-0.99
1620	D4052	58.9	-0.99
1631	D4052	59.0	-0.06
1634	D1298	59.2	1.81
1654		-----	-----
1720		-----	-----
1721		-----	-----
1724	D4052	58.97	-0.34
1730		-----	-----
1740		-----	-----
1807	EN12185	59.06	0.50
1810		-----	-----
1811		-----	-----
1826	D4052	59.05	0.41
1833	D4052	58.97	-0.34
1849		-----	-----
1851		-----	-----
1854	D4052	59.1	0.87
1938		-----	-----
1939	D4052	58.97	-0.34
1948		-----	-----
2130	D4052	58.70	-2.86
8010		-----	-----

		Only D1298 data:	Only D4052 data:
normality	not OK	OK	not OK
n	55	6	49
outliers	1	1	0
mean (n)	59.006	59.015	59.001
st.dev. (n)	0.1033	0.1713	0.1033
R(calc.)	0.289	0.480	0.289
R(D1298:05)	0.300	0.300	0.560



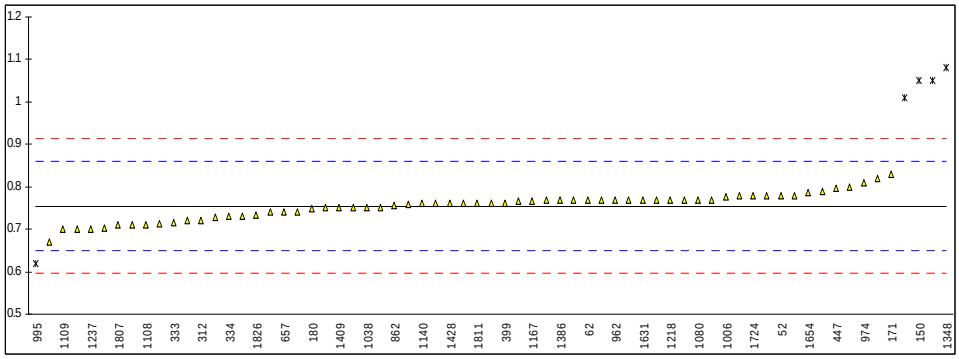


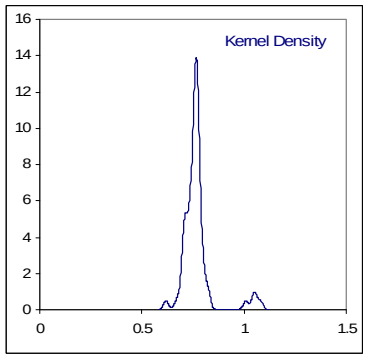
Determination of Benzene on sample #11006; results in %V/V

lab	method	value	mark	z(targ)	remarks
52	INH-14	0.78		0.48	
62	D5580	0.770		0.29	
120	D3606	0.78		0.48	
132	D3606	0.778		0.44	
150	D3606	1.05	G(0.01)	5.58	
158	D3606	0.74		-0.28	
159	D3606	0.712		-0.81	
169	D3606	0.6702		-1.60	
171	D3606	0.829		1.40	
180	D3606	0.749		-0.11	
193	D3606	0.758		0.06	
194		-----		-----	
199		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237	D5580	0.79		0.67	
238		-----		-----	
252		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	EN12177	0.72		-0.66	
317	ISO22854	0.77		0.29	
333	EN238	0.715		-0.75	
334	EN238	0.73		-0.47	
336	EN238	0.7		-1.03	
337		-----		-----	
340	EN238	0.702		-1.00	
399	D3606	0.76		0.10	
431		-----		-----	
433		-----		-----	
447	IP429	0.796		0.78	
463	EN238	0.77		0.29	
468		-----		-----	
511		-----		-----	
541	D6730	0.82		1.23	
557		-----		-----	
562		-----		-----	
592		-----		-----	
631		-----		-----	
657	D5580	0.74		-0.28	
663		-----		-----	
671		-----		-----	
823	D5453	0.727		-0.52	
862	D5580	0.757		0.04	
912		-----		-----	
962	D6839	0.77		0.29	
974	D3606	0.81	C	1.04	First reported 0.925
994		-----		-----	
995	D6729	0.620	G(0.01)	-2.55	
996		-----		-----	
1006	D5580	0.776		0.40	
1016		-----		-----	
1017		-----		-----	
1033		-----		-----	
1038	D3606	0.75		-0.09	
1059	ISO22854	0.75		-0.09	
1066		-----		-----	
1080	REFORM	0.77		0.29	
1081	EN14517	0.76		0.10	
1108	D3606	0.71		-0.85	
1109	D3606	0.700		-1.03	
1126	REFORM	0.77		0.29	
1138	D3606	0.76		0.10	
1140	IP566	0.76		0.10	
1167	ISO22854	0.767		0.23	
1186		-----		-----	
1205	ISO22854	0.77		0.29	
1215		-----		-----	
1218	ISO22854	0.77		0.29	

1231	D5580	0.74		-0.28
1237	EN238	0.7		-1.03
1264	D6730	0.767		0.23
1310		-----		-----
1347	D3606	1.009	G(0.01)	4.81
1348	D3606	1.08	G(0.01)	6.15
1357		-----		-----
1378	D6839	0.77		0.29
1382		-----		-----
1385	D3606	1.050	G(0.01)	5.58
1386	D5580	0.770		0.29
1395	ISO22854	0.80		0.86
1409	ISO22854	0.75		-0.09
1428	EN12177	0.76		0.10
1531		-----		-----
1613	D6839	0.73		-0.47
1620	D5580	0.72		-0.66
1631	EN14517	0.77		0.29
1634		-----		-----
1654	D6729	0.7876		0.62
1720		-----		-----
1721	D6277	0.71		-0.85
1724	EN12177	0.78		0.48
1730		-----		-----
1740		-----		-----
1807	EN12177	0.71		-0.85
1810	EN14517	0.75		-0.09
1811	D3606	0.76		0.10
1826	D3606	0.733		-0.41
1833	EN22854	0.75		-0.09
1849	D3606	0.76		0.10
1851		-----		-----
1854		-----		-----
1938		-----		-----
1939	D6729	0.770		0.29
1948	D3606	0.77		0.29
2130	D6730	0.78		0.48
8010		-----		-----

normality	not OK
n	62
outliers	5
mean (n)	0.755
st.dev. (n)	0.0314
R(calc.)	0.088
R(D3606:10)	0.148





Determination of Copper strip 3hrs/50°C on sample #11006;

lab	method	value	mark	z(targ)	remarks
52	D130	1A		-----	
62	D130	1A		-----	
120	D130	1A		-----	
132	D130	1A		-----	
150	D130	1A		-----	
158	D130	1A		-----	
159	D130	1A		-----	
169	D130	1A		-----	
171	D130	1A		-----	
180	D130	1A		-----	
193	D130	1A		-----	
194	D130	1A		-----	
199		-----		-----	
217	D130	1A		-----	
221	D130	1A		-----	
224		-----		-----	
225		-----		-----	
228	D130	1		-----	
230	D130	1A		-----	
237	D130	1A		-----	
238	D130	1A		-----	
252	D130	1A		-----	
253	D130	1A		-----	
254	D130	1A		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D130	1A		-----	
317	D130	1A		-----	
333		-----		-----	
334	D130	1A		-----	
336		-----		-----	
337		-----		-----	
340	D130	1A		-----	
399	D130	1A		-----	
431		-----		-----	
433		-----		-----	
447	D130	1A		-----	
463	D130	1A		-----	
468	D130	1A		-----	
511	D130	1A		-----	
541	D130	1		-----	
557		-----		-----	
562	D130	1		-----	
592		-----		-----	
631	D130	1A		-----	
657	D130	1A		-----	
663	D130	1A		-----	
671	D130	1A		-----	
823	D130	1		-----	
862	D130	1A		-----	
912	D130	1A		-----	
962	D130	1A		-----	
974	D130	1A		-----	
994	D130	1A		-----	
995	D130	1A		-----	
996		-----		-----	
1006	D130	1A		-----	
1016	D130	1A		-----	
1017	D130	1A		-----	
1033	IP154	1B		-----	
1038	D130	1A		-----	
1059	ISO2160	1A		-----	
1066	D130	1A		-----	
1080	D130	1A		-----	
1081	D130	1A		-----	
1108	D130	1A		-----	
1109	D130	1A		-----	
1126		-----		-----	
1138	D130	1A		-----	
1140	IP154	1A		-----	
1167	ISO2160	1A		-----	
1186	D130	1A		-----	
1205		-----		-----	
1215		-----		-----	
1218		-----		-----	

1231	D130	1A	-----
1237	ISO2160	1A	-----
1264	D130	1A	-----
1310	ISO2160	1	-----
1347	D130	1A	-----
1348	D130	1A	-----
1357		-----	-----
1378	D130	1A	-----
1382		-----	-----
1385	D130	1A	-----
1386	D130	1A	-----
1395	D130	1A	-----
1409	D130	1A	-----
1428	ISO2160	1	-----
1531		-----	-----
1613	D130	1A	-----
1620	D130	1A	-----
1631	ISO2160	1A	-----
1634	D130	1A	-----
1654		-----	-----
1720	D130	1A	-----
1721	D130	1	-----
1724	D130	1A	-----
1730		-----	-----
1740		-----	-----
1807	ISO2160	1A	-----
1810		-----	-----
1811	D130	1	-----
1826	D130	1A	-----
1833	D130	1A	-----
1849	D130	1	-----
1851		-----	-----
1854	D130	1A	-----
1938		-----	-----
1939	D130	1A	-----
1948	D130	1A	-----
2130	D130	1A	-----
8010		-----	-----

normality	n.a.
n	86
outliers	0
mean (n)	1
st.dev. (n)	n.a.
R(calc.)	n.a.
R(D130)	n.a.

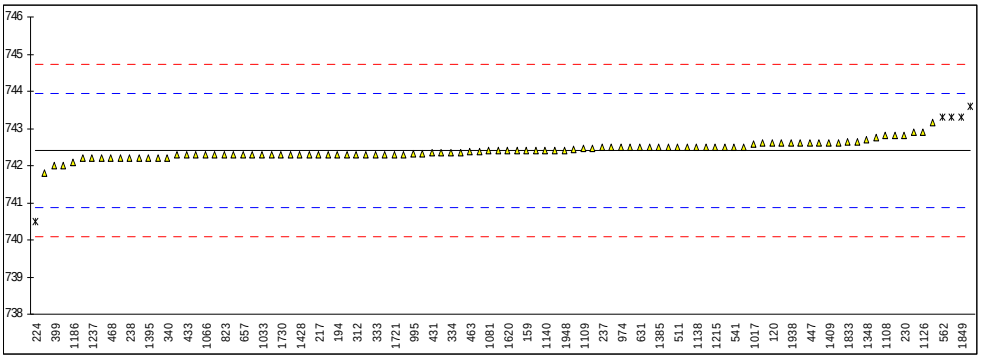
Determination of Density @ 15°C on sample #11006; results in kg/m^3

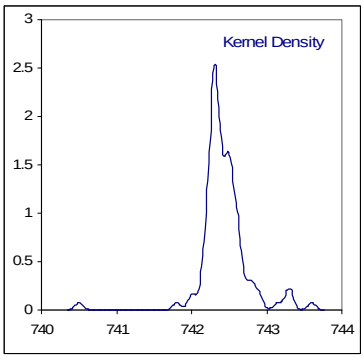
lab	method	value	mark	z(targ)	remarks
52	D4052	742.5		0.11	
62	D4052	742.38		-0.04	
120	D4052	742.6		0.24	
132	D4052	742.32	C	-0.12	First reported 0.74232
150	D4052	742.6		0.24	
158	D4052	742.3		-0.15	
159	D4052	742.4		-0.02	
169	D4052	742.0		-0.53	
171	D4052	743.3	G(0.05)	1.15	
180	D4052	741.8		-0.79	
193	D4052	742.6	C	0.24	First reported 0.7426
194	D4052	742.3		-0.15	
199		-----		-----	
217	D1298	742.3		-0.15	
221	D4052	742.4		-0.02	
224	D1298	740.5	C,G(0.01)	-2.48	First reported 741.2
225		-----		-----	
228	D1298	742.2		-0.28	
230	D1298	742.8		0.50	
237	D1298	742.5		0.11	
238	D1298	742.2		-0.28	
252		-----		-----	
253	D4052	742.2		-0.28	
254	D4052	742.2		-0.28	
256	D4052	742.3		-0.15	
258		-----		-----	
273	D4052	742.3		-0.15	
312	D4052	742.3		-0.15	
317	D4052	742.3		-0.15	
333	D4052	742.3		-0.15	
334	D4052	742.35		-0.08	
336	ISO12185	742.4		-0.02	
337	D4052	742.5	C	0.11	First reported 724.5
340	D4052	742.21		-0.26	
399	D4052	742.0		-0.53	
431	ISO12185	742.34		-0.09	
433	ISO12185	742.3	C	-0.15	First reported 741.6
447	D4052	742.6		0.24	
463	D4052	742.37		-0.06	
468	D4052	742.2		-0.28	
511	D4052	742.5		0.11	
541	D4052	742.5		0.11	
557		-----		-----	
562	D4052	743.3	G(0.01)	1.15	
592		-----		-----	
631	D4052	742.5		0.11	
657	D4052	742.3		-0.15	
663	D4052	742.3		-0.15	
671	D4052	742.5		0.11	
823	D4052	742.3		-0.15	
862	D4052	742.36		-0.07	
912	D4052	742.35		-0.08	
962	D4052	742.8		0.50	
974	D4052	742.5	C	0.11	First reported 0.7425
994	D4052	742.3		-0.15	
995	D4052	742.32		-0.12	
996		-----		-----	
1006	D4052	742.6		0.24	
1016		-----		-----	
1017	D4052	742.57		0.20	
1033	IP365	742.3		-0.15	
1038	D4052	742.3	C	-0.15	First reported 792.3
1059	D4052	742.2		-0.28	
1066	D4052	742.3		-0.15	
1080	ISO12185	742.5		0.11	
1081	ISO12185	742.4		-0.02	
1108	D4052	742.8		0.50	
1109	D4052	742.45		0.05	
1126	D4052	742.9		0.63	
1138	D4052	742.5	C	0.11	First reported 0.7425
1140	IP365	742.4		-0.02	
1167	ISO12185	742.3		-0.15	
1186	D1298	742.1		-0.41	
1205		-----		-----	
1215	D1298	742.5	C	0.11	First reported 0.7425
1218	EN12185	742.46		0.06	

1231	D4052	742.5	C	0.11	First reported 0.7425
1237	ISO12185	742.2		-0.28	
1264	D4052	742.3		-0.15	
1310	ISO12185	742.6		0.24	
1347	D4052	742.74		0.42	
1348	D4052	742.7		0.37	
1357		-----		-----	
1378	D4052	742.3		-0.15	
1382		-----		-----	
1385	D4052	742.50		0.11	
1386	D4052	743.15		0.96	
1395	D4052	742.2		-0.28	
1409	ISO12185	742.6		0.24	
1428	ISO12185	742.3		-0.15	
1531		-----		-----	
1613	D4052	742.5		0.11	
1620	D4052	742.4		-0.02	
1631	ISO12185	742.3		-0.15	
1634	D4052	742.44		0.04	
1654	D4052	742.9	C	0.63	First reported 0.74292
1720	D4052	742.5		0.11	
1721	D4052	742.3		-0.15	
1724	D4052	742.65		0.31	
1730	D4052	742.3		-0.15	
1740	ISO3675	742.5		0.11	
1807	ISO12185	742.3		-0.15	
1810	D4052	742.3		-0.15	
1811	D4052	742.4		-0.02	
1826	D4052	742.4		-0.02	
1833	D4052	742.65		0.31	
1849	D4052	743.3	G(0.05)	1.15	
1851		-----		-----	
1854	D4052	742.2		-0.28	
1938	D4052	742.6		0.24	
1939	D4052	742.6		0.24	
1948	ISO12185	742.4		-0.02	
2130	D4052	743.6	G(0.05)	1.54	
8010		-----		-----	

	normality	not OK
	n	95
	outliers	5
	mean (n)	742.41
	st.dev. (n)	0.203
	R(calc.)	0.57
	R(D4052:09)	2.16

Compare R(D4052:02e1) = 0.50





Determination of Distillation ASTM D86 (automated) on sample #11006; results in °C

lab	method	IBP	Mark	10% eva	Mark	50% eva	Mark	90% eva	Mark	FBP	Mark
52	D86-A	37.2		50.7		93.4		147.0		180.6	
62	D86-A	38.8		52.2		96.0		147.0		180.3	
120	D86-A	35.6		52.0		95.2		146.6		181.2	
132	D86-A	36.1		51.5		94.6		147.1		182.8	
150	D86-A	37.4		51.7		94.5		145.5		184.7	
158	D86-A	36.7		51.9		95.0		147.7		175.1	G(0.05)
159	D86-A	42.4		52.4		95.0		147.3		182.5	
169	D86-A	35.3		48.7	G(0.01)	94.8		147.2		182.5	
171	D86-A	36.8		52.1		94.0		147.1		180.2	
180	D86-A	36.9		52.1		94.7		147.1		181.6	
193	D86-A	37.2		51.2		94.1		147.1		183.1	
194	D86-A	37.88		52.72		94.88		147.22		182.77	
199		-----		-----		-----		-----		-----	
217		-----		-----		-----		-----		-----	
221		-----		-----		-----		-----		-----	
224		-----		-----		-----		-----		-----	
225		-----		-----		-----		-----		-----	
228		-----		-----		-----		-----		-----	
230	D86-A	40.6		52.6		95.8		149.0		183.9	
237		-----		-----		-----		-----		-----	
238		-----		-----		-----		-----		-----	
252		-----		-----		-----		-----		-----	
253		-----		-----		-----		-----		-----	
254		-----		-----		-----		-----		-----	
256		-----		-----		-----		-----		-----	
258		-----		-----		-----		-----		-----	
273	D86-A	37.8		51.7		93.5		147.0		180.5	
312	D86-A	38.3	fr 19.6	51.6		94.9		146.5		183.4	
317	D86-A	34.1		52.3		93.8		144.5		180.2	
333	D86-A	35.3		51.8		94.1		146.4		180.9	
334	D86	37.6		52.5		95.7		147.2		181.1	
336	ISO3405-A	34.3		52.0		95.3		148.1		181.0	
337		-----		-----		-----		-----		-----	
340	D86-A	36.8		52.0		94.3		147.1		180.0	
399		-----		-----		-----		-----		-----	
431		-----		50		95.1		149.2		-----	
433		-----		-----		-----		-----		-----	
447	D86-A	37.2		51.5		94.1		148.0		182.8	
463	D86-A	36.7		51.8		95.9		150.1	DG(0.05)	178.2	
468	D86-A	35.9		52.4		95.7		149.4		181.3	
511		-----		-----		-----		-----		-----	
541		-----		-----		-----		-----		-----	
557		-----		-----		-----		-----		-----	
562	D86-A	39.4		52.2		95.0		147.3		185.7	
592		-----		-----		-----		-----		-----	
631		-----		-----		-----		-----		-----	
657	D86-A	36.6		52.2		95.7		146.9		179.9	
663	D86-A	38.4		52.8		95.0		146.2		179.6	
671	D86-A	38.4		54.1		91.8		146.0		181.3	
823	D86-A	37.4		50.5		94.0		146.4		181.4	
862	D86-A	37.1		51.9		94.8		147.5		180.6	
912		-----		-----		-----		-----		-----	
962		-----		-----		-----		-----		-----	
974	D86-A	39.8		51.8		93.4		145.8		180.6	
994		-----		-----		-----		-----		-----	
995		-----		-----		-----		-----		-----	
996		-----		-----		-----		-----		-----	
1006	D86-A	36.9		51.6		94.6		147.0		180.1	
1016		-----		-----		-----		-----		-----	
1017	D86-A	37.6		51.9		95.8		147.1		183.6	
1033	IP123-A	36.9		51.1		93.6		147.7		181.5	
1038	D86-A	37.1		51.1		92.9		146.4		179.1	
1059	D86-A	38.0		51.1		94.6		148.1		181.9	
1066	D86-A	35.5		51.2		93.4		147.2		181.5	
1080	D86-A	37.6		51.2		93.2		146.9		177.9	
1081	D86-A	40.2		51.2		94.4		145.5		180.2	
1108	D86-A	41.1		54.1	DG(0.05)	93.4		145.2		178.6	
1109	D86-A	39.7		52.2		94.7		146.9		185.5	
1126	In house	38.6	ex	53.0	ex	103.0	G(0.01)	153.4	G(0.01)	185.6	ex
1138	D86-A	35.3		52.7		97.3		151.3	G(0.05)	183.2	
1140	IP123-A	34.3		52.1		95.1		147.4		179.7	
1167	ISO3405-A	37.7		52.15		93.35		147.2		179.55	
1186		-----		-----		-----		-----		-----	
1205		-----		-----		-----		-----		-----	
1215	D86-A	34.80		52.05		95.40		149.10		185.75	
1218	ISO3405-A	37.4		51.4		94.5		147.0		180.5	

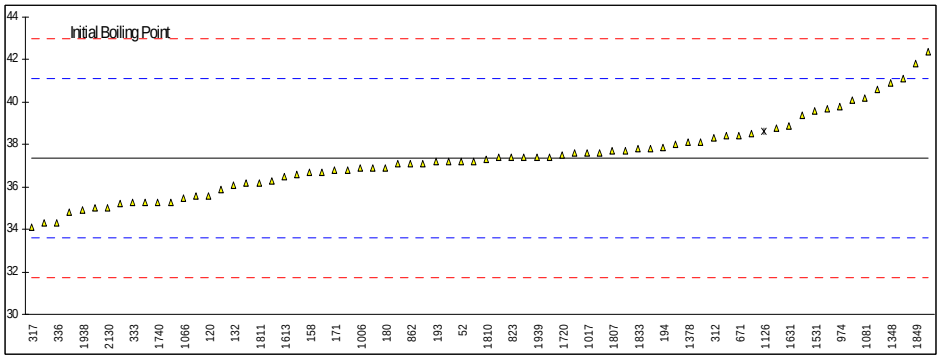
1231	D86-A	36.2	51.6		93.4	146.4		178.1	
1237		-----	-----		-----	-----		-----	
1264		-----	-----		-----	-----		-----	
1310		-----	-----		-----	-----		-----	
1347		-----	-----		-----	-----		-----	
1348	D86-A	40.9	53.6		96.6	150.4	DG(0.05)	185.4	
1357		-----	-----		-----	-----		-----	
1378	D86-A	38.1	52.5		96.5	147.5		184.5	
1382		-----	-----		-----	-----		-----	
1385		-----	-----		-----	-----		-----	
1386	D86-A	37.40	52.75		95.85	148.55		183.50	
1395	D86-A	35.6	52.2		94.1	146.3		180.6	
1409	ISO3405-A	38.5	51.8		94.3	146.2		178.9	
1428	ISO3405-A	37.2	51.5		94.3	146.5		182.8	
1531	D86-A	39.6	54.6	DG(0.05)	94.1	145.8		183.4	
1613	D86-A	36.5	52.7		96.2	149.9		182.9	
1620	D86	37.1	51.2		92.4	146.7		177.4	
1631	ISO3405-A	38.9	52.2		94.5	146.6		187.4	G(0.05)
1634	D86-A	36.3	52.2		94.2	147.4		182.0	
1654	D86-A	40.1	51.7		94.7	147.0		177.2	
1720	D86-A	37.5	51.7		94.0	146.7		179.6	
1721		-----	-----		-----	-----		-----	
1724	D86-A	35.2	52.3		94.4	147.3		181.0	
1730		-----	-----		-----	-----		-----	
1740	ISO3405-A	35.3	51.0		92.9	146.3		180.5	
1807	ISO3405-A	37.7	52.4		93.6	146.9		181.3	
1810	D86-A	37.3	52.3		93.5	146.6		179.8	
1811	D86-A	36.2	52.3		94.0	147.2		182.4	
1826	D86-A	35.0	51.8		93.7	146.9		184.3	
1833	D86-A	37.8	52.6		93.7	146.2		179.1	
1849	D86-A	41.8	53.4		94.1	145.9		182.8	
1851		-----	-----		-----	-----		-----	
1854		-----	-----		-----	-----		-----	
1938	D86-A	34.9	52.0		94.1	147.3		177.8	
1939	D86	37.4	52.3		94.2	146.8		181.4	
1948	D86-A	38.1	52.7		95.0	148.7		180.0	
2130	D86-A	35.0	51.6		93.8	146.9		181.9	
8010		-----	-----		-----	-----		-----	
	normality	OK	OK		OK	not OK		OK	
	n	71	69		72	69		69	
	outliers	0	3		1	4		2	
	mean (n)	37.35	51.96		94.48	147.04		181.33	
	st.dev. (n)	1.794	0.680		1.004	0.964		2.043	
	R(calc.)	5.02	1.90		2.81	2.70		5.72	
	R(D86:10a-A)	5.27	3.20		1.88	3.93		6.78	

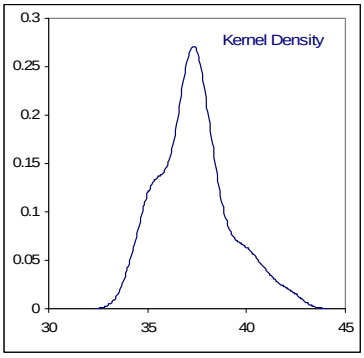
Determination of Distillation ASTM D86 (Automated) on sample #11006; results in °C

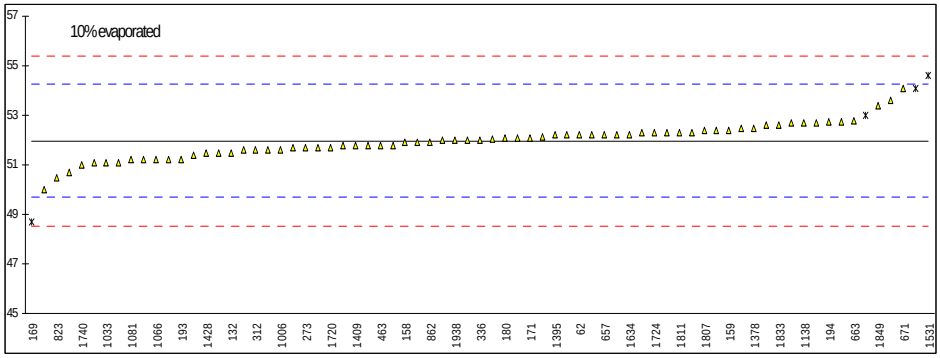
lab	method	%vol 70ºC	Mark	%vol 100ºC	Mark	%vol 150ºC	Mark	%vol Res	Mark
52	D86-A	35.5		-----		-----		0.9	
62	D86-A	32.0	DG(0.05)	52.9		91.6		1.0	
120	D86-A	33.5		53.7		91.7		1.1	
132	D86-A	34.4		54.2		91.3		1.1	
150	D86-A	34.2		54.1		92.1		1.0	
158	D86-A	34.0		53.7		91.2		0.9	
159	D86-A	33.1		53.8		91.3		1.1	
169	D86-A	-----		-----		-----		1.1	
171	D86-A	34.3		54.4		91.5		1.0	
180	D86-A	34.2		54.1		91.6		0.9	
193	D86-A	34.0		53.0		91.0		1.0	
194	D86-A	33.27		53.97		91.42		0.9	
199		-----		-----		-----		-----	
217		-----		-----		-----		-----	
221		-----		-----		-----		-----	
224		-----		-----		-----		-----	
225		-----		-----		-----		-----	
228		-----		-----		-----		-----	
230	D86-A	33.2		52.8		90.7		0.6	
237		-----		-----		-----		-----	
238		-----		-----		-----		-----	
252		-----		-----		-----		-----	
253		-----		-----		-----		-----	
254		-----		-----		-----		-----	
256		-----		-----		-----		-----	
258		-----		-----		-----		-----	
273	D86-A	35		55		92		1.0	
312	D86-A	34.2		53.9		91.8		0.7	
317	D86-A	34.0		54.3		92.8		0.5	G(0.05)
333	D86-A	34.6		54.2		91.9		0.7	
334	D86	32.9		53.1		91.4		1.0	
336	ISO3405-A	33.9		53.4		91.0		1.4	
337		-----		-----		-----		-----	
340	D86-A	34.0		54.2		91.7		1.0	
399		-----		-----		-----		-----	
431		-----		-----		-----		-----	
433		-----		-----		-----		-----	
447	D86-A	34.7		54.0		90.8		1.2	
463	D86-A	36.8	G(0.01)	54.9		91.6		1.3	
468	D86-A	33.6		53.1		90.3		1.1	
511		-----		-----		-----		-----	
541		-----		-----		-----		-----	
557		-----		-----		-----		-----	
562	D86-A	33.9		53.6		90.4		1.1	
592		-----		-----		-----		-----	
631		-----		-----		-----		-----	
657	D86-A	33.3		53.2		91.6		0.9	
663	D86-A	33.2		53.7		92.0		0.8	
671	D86-A	35		55.5		92		1.0	
823	D86-A	35.0		54.5		92.0		1.1	
862	D86-A	34.0		53.7		92.3		0.9	
912		-----		-----		-----		-----	
962		-----		-----		-----		-----	
974	D86-A	34.2		54.6		92.4		0.7	
994		-----		-----		-----		-----	
995		-----		-----		-----		-----	
996		-----		-----		-----		-----	
1006	D86-A	-----		-----		-----		0.6	
1016		-----		-----		-----		-----	
1017	D86-A	33.4		53.5		92.8		1.1	
1033	IP123-A	35.6		54.5		-----		1.4	
1038	D86-A	35.2		55.0		91.9		0.9	
1059	D86-A	33.7		54.1		91.0		1.8	G(0.01)
1066	D86-A	-----		-----		-----		1.0	
1080	D86-A	34.9		54.8		91.3		1.2	
1081	D86-A	34.7		54.3		92.3		0.9	
1108	D86-A	33.5	fr 29.1	55.0		91.5	fr 94.6	0.9	
1109	D86-A	33.7		54.1		91.5		1.0	
1126	INHOUSE-	25.3	G(0.01)	47.8	G(0.01)	88.8	G(0.05)	-----	
1138	D86-A	33.0		52.0		89.3	G(0.05)	1.0	
1140	IP123-A	34.4		54.3		92.0		1.0	
1167	ISO3405-A	33.4		53.15		90.35		1.0	
1186		-----		-----		-----		-----	
1205		-----		-----		-----		-----	
1215	D86-A	33.5		52.4		89.7		1.05	
1218	ISO3405-A	34.4		54.0		91.7		-----	

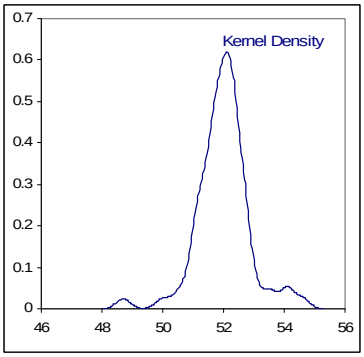
1231	D86-A	-----		-----		-----	1.2	
1237		-----		-----		-----	-----	
1264		-----		-----		-----	-----	
1310		-----		-----		-----	-----	
1347		-----		-----		-----	-----	
1348	D86-A	32	DG(0.05)	52.6	fr. 62.6	90	0.7	
1357		-----		-----		-----	-----	
1378	D86-A	33.3		53.0		91.2	1.2	
1382		-----		-----		-----	-----	
1385		-----		-----		-----	-----	
1386	D86-A	-----		-----		-----	1.0	
1395	D86-A	34.7		54.4		91.9	1.0	
1409	ISO3405-A	34.9		54.2		92.2	0.8	
1428	ISO3405-A	34.4		54.2		91.8	0.8	
1531	D86-A	34.4		54.3		92.3	0.3	G(0.05)
1613	D86-A	35		54		91	1.0	
1620	D86	35.6		55.4		91.5	1.20	
1631	ISO3405-A	33.7	fr. 36.6	54.3		91.3	0.8	
1634	D86-A	33.8		54.4		91.2	0.9	
1654	D86-A	34.2		54.0		92.1	0.6	
1720	D86-A	34.3		54.5		91.5	1.0	
1721		-----		-----		-----	-----	
1724	D86-A	33.8		54.1		91.3	0.8	
1730		-----		-----		-----	-----	
1740	ISO3405-A	35.1		55.3		91.7	1.0	
1807	ISO3405-A	35.0		54.6		91.5	1.0	
1810	D86-A	33.8		54.5		91.6	1.0	
1811	D86-A	33.6		53.6		90.6	1	
1826	D86-A	34.9		54.4		91.5	1.0	
1833	D86-A	34		54		92	1.0	
1849	D86-A	35.1		54.8		92.1	1.0	
1851		-----		-----		-----	-----	
1854		-----		-----		-----	-----	
1938	D86-A	33.7		54.2		91.4	1.2	
1939	D86	34.4		54.3		91.7	1.0	
1948	D86-A	33.0		53.6		90.6	1.4	
2130	D86-A	35.7		54.5		91.7	1.0	
8010		-----		-----		-----	-----	

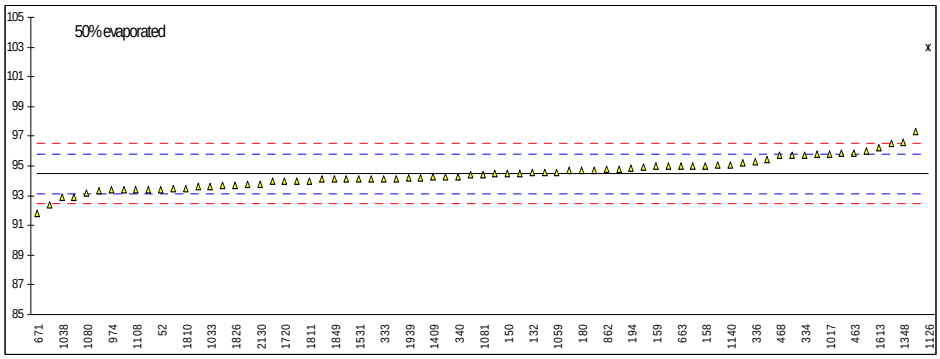
	normality	OK	not OK	not OK
	n	63	65	63
	outliers	4	1	2
	mean (n)	34.17	54.03	91.51
	st.dev. (n)	0.717	0.707	0.620
	R(calc.)	2.01	1.98	1.74
	R(D86:10a-A)	2.32	1.92	1.17

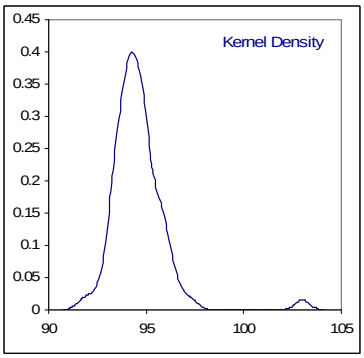

Initial Boiling Point

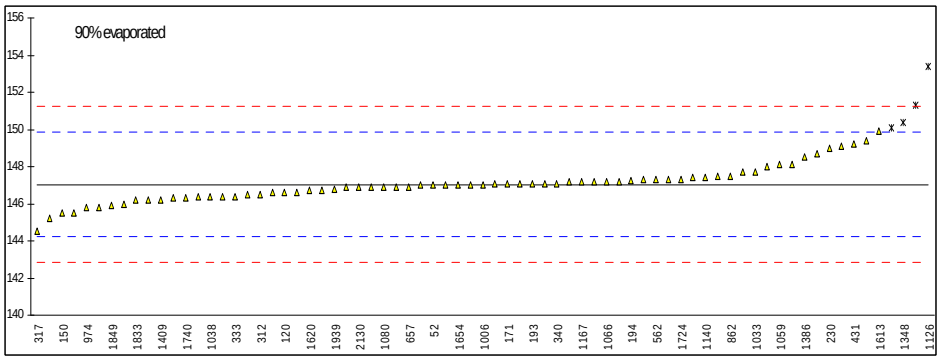

Kernel Density

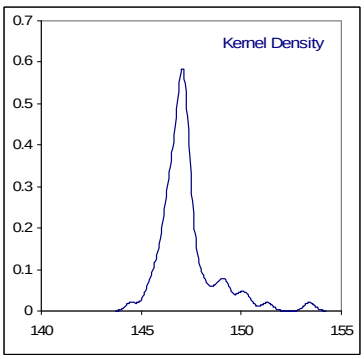

10% evaporated

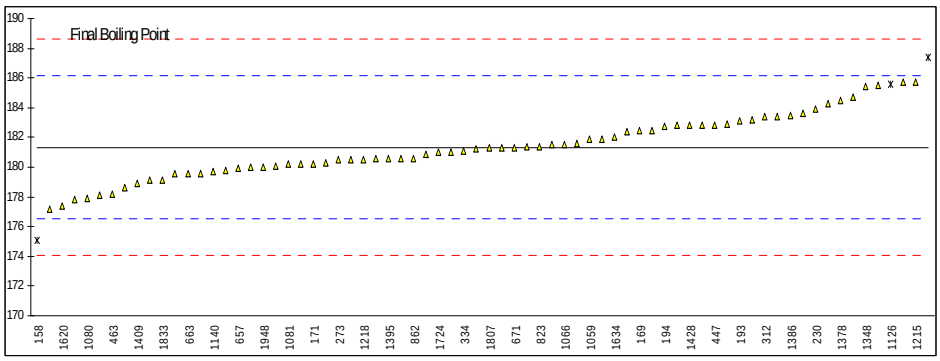

Kernel Density

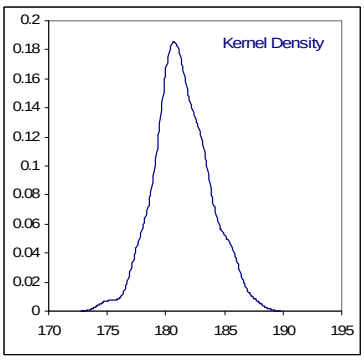

50% evaporated

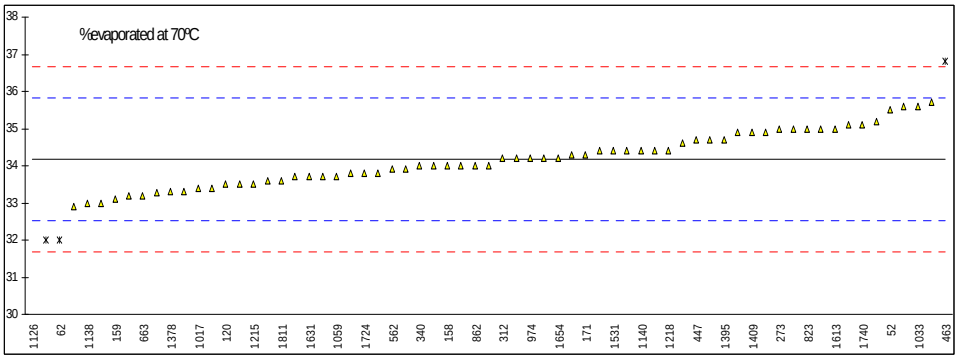

Kernel Density

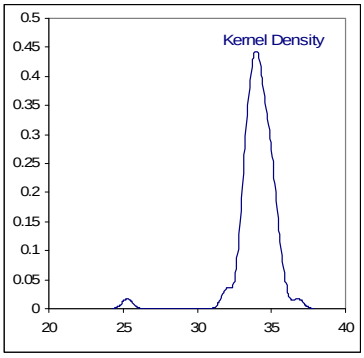

90% evaporated

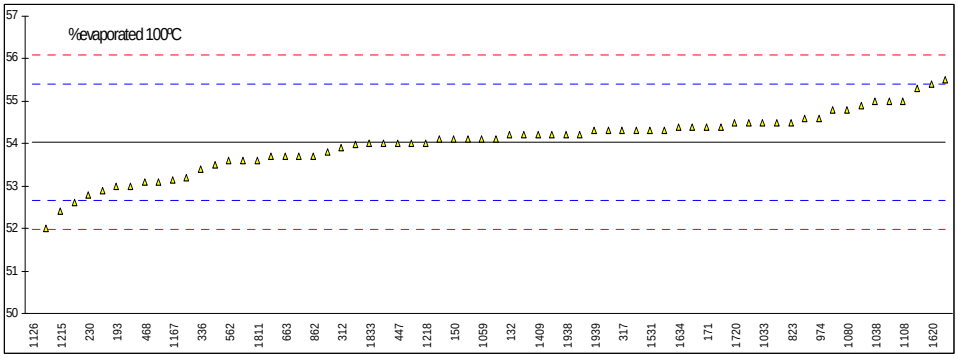

Kernel Density

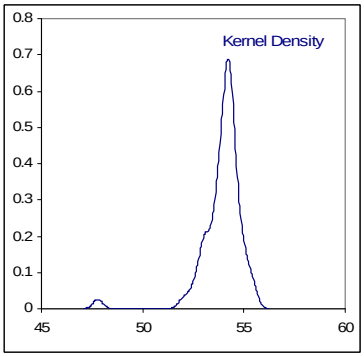

Final Boiling Point

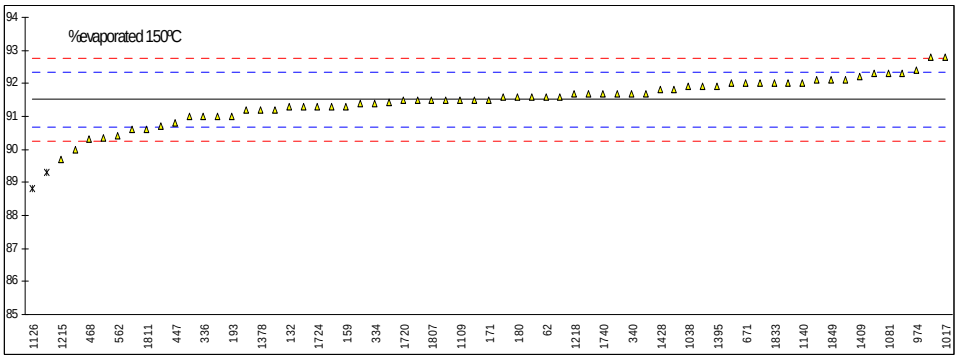

Kernel Density

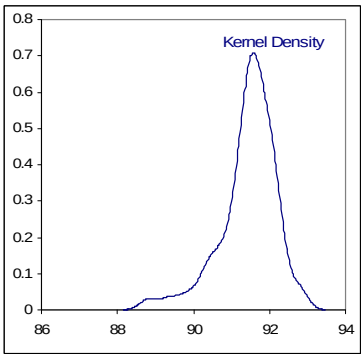

%evaporated at 70ºC


Kernel Density


%evaporated 100ºC


Kernel Density


%evaporated 150ºC


Kernel Density

Determination of Distillation ASTM D86 (manual) on sample #11006; results in °C

lab	method	IBP	Mark	10% eva	Mark	50% eva	Mark	90% eva	Mark	FBP	Mark
52		-----		-----		-----		-----		-----	
62		-----		-----		-----		-----		-----	
120		-----		-----		-----		-----		-----	
132		-----		-----		-----		-----		-----	
150		-----		-----		-----		-----		-----	
158		-----		-----		-----		-----		-----	
159		-----		-----		-----		-----		-----	
169		-----		-----		-----		-----		-----	
171		-----		-----		-----		-----		-----	
180		-----		-----		-----		-----		-----	
193		-----		-----		-----		-----		-----	
194		-----		-----		-----		-----		-----	
199		-----		-----		-----		-----		-----	
217	D86-M	38.7		51.5		92.2		145.8		180.5	
221	D86-M	40.0		54.0		94.0		146.0		180.0	
224	D86-M	42.07		52.27		94.23		148.50		184.09	
225		-----		-----		-----		-----		-----	
228	D86-M	34.0	G(0.05)	48.0	G(0.01)	89.0	G(0.05)	141.0	DG(0.05)	179.0	ex
230		-----		-----		-----		-----		-----	
237	D86-M	41.0		53.05		93.70		146.65		182.0	
238		-----		-----		-----		-----		-----	
252	D86-M	36.5		52.0		93.5		145.0		181.0	
253	D86-M	39.0		51.5		94.0		146.0		178.5	
254	D86-M	38.0		52.0		95.0		145.0		184.0	
256	D86-M	35.8		51.9		95.5		150.4		175.3	G(0.05)
258		-----		-----		-----		-----		-----	
273		-----		-----		-----		-----		-----	
312		-----		-----		-----		-----		-----	
317		-----		-----		-----		-----		-----	
333		-----		-----		-----		-----		-----	
334		-----		-----		-----		-----		-----	
336		-----		-----		-----		-----		-----	
337		-----		-----		-----		-----		-----	
340		-----		-----		-----		-----		-----	
399	D86-M	37.2		53.4		94.4		146.5		182.1	
431		-----		-----		-----		-----		-----	
433		-----		-----		-----		-----		-----	
447		-----		-----		-----		-----		-----	
463		-----		-----		-----		-----		-----	
468		-----		-----		-----		-----		-----	
511	D86-M	40.5		53.9		92.9		147.3		180.8	
541	D86-M	38.0		52.0		94.5		147.0		179.0	
557		-----		-----		-----		-----		-----	
562		-----		-----		-----		-----		-----	
592		-----		-----		-----		-----		-----	
631	D86-M	39.0		52.0		93.0		146.0		181.0	
657		-----		-----		-----		-----		-----	
663		-----		-----		-----		-----		-----	
671		-----		-----		-----		-----		-----	
823		-----		-----		-----		-----		-----	
862		-----		-----		-----		-----		-----	
912	D86-M	36.0		52.0		94.0		146.0		180.0	
962		-----		-----		-----		-----		-----	
974		-----		-----		-----		-----		-----	
994	D86-M	38.5		52.0		92.5		144.5		178.5	
995	D86-M	38.0		52.012		94.19		146.68		182.0	
996		-----		-----		-----		-----		-----	
1006		-----		-----		-----		-----		-----	
1016		-----		-----		-----		-----		-----	
1017		-----		-----		-----		-----		-----	
1033		-----		-----		-----		-----		-----	
1038		-----		-----		-----		-----		-----	
1059		-----		-----		-----		-----		-----	
1066		-----		-----		-----		-----		-----	
1080		-----		-----		-----		-----		-----	
1081		-----		-----		-----		-----		-----	
1108		-----		-----		-----		-----		-----	
1109		-----		-----		-----		-----		-----	
1126		-----		-----		-----		-----		-----	
1138		-----		-----		-----		-----		-----	
1140		-----		-----		-----		-----		-----	
1167		-----		-----		-----		-----		-----	
1186	D86-M	39.0	ex	51.3	ex	89.8	G(0.05)	141.45	DG(0.05)	170.65	G(0.05)
1205		-----		-----		-----		-----		-----	
1215		-----		-----		-----		-----		-----	
1218		-----		-----		-----		-----		-----	

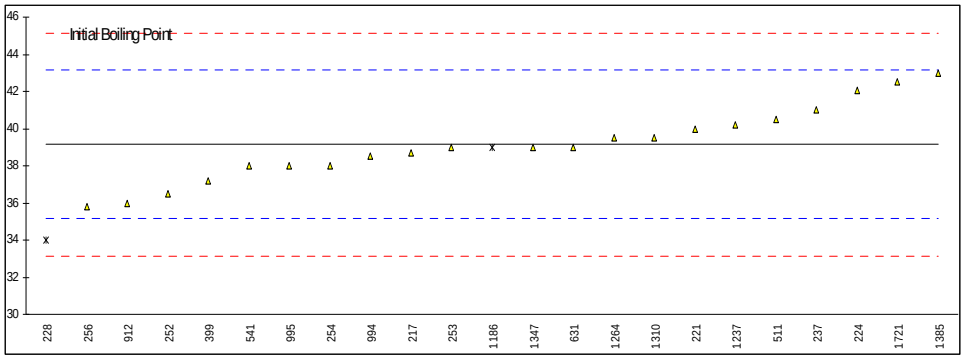
1231		-----		-----		-----		-----		
1237	ISO3405-M	40.2	53.2	fr. 56.2	95.2		150.3		185.3	
1264	D86-M	39.5	51.0		92.4		145.6		180.0	
1310	ISO3405-M	39.5	53		96		150.5	fr. 151	180	
1347	D86-M	39	51		94		146		189	G(0.05)
1348		-----	-----		-----		-----		-----	
1357		-----	-----		-----		-----		-----	
1378		-----	-----		-----		-----		-----	
1382		-----	-----		-----		-----		-----	
1385	D86-M	43	52		99	G(0.05)	152	G(0.05)	183	
1386		-----	-----		-----		-----		-----	
1395		-----	-----		-----		-----		-----	
1409		-----	-----		-----		-----		-----	
1428		-----	-----		-----		-----		-----	
1531		-----	-----		-----		-----		-----	
1613		-----	-----		-----		-----		-----	
1620		-----	-----		-----		-----		-----	
1631		-----	-----		-----		-----		-----	
1634		-----	-----		-----		-----		-----	
1654		-----	-----		-----		-----		-----	
1720		-----	-----		-----		-----		-----	
1721	D86-M	42.5	53.5		97.0		150.0		182.0	
1724		-----	-----		-----		-----		-----	
1730		-----	-----		-----		-----		-----	
1740		-----	-----		-----		-----		-----	
1807		-----	-----		-----		-----		-----	
1810		-----	-----		-----		-----		-----	
1811		-----	-----		-----		-----		-----	
1826		-----	-----		-----		-----		-----	
1833		-----	-----		-----		-----		-----	
1849		-----	-----		-----		-----		-----	
1851		-----	-----		-----		-----		-----	
1854		-----	-----		-----		-----		-----	
1938		-----	-----		-----		-----		-----	
1939		-----	-----		-----		-----		-----	
1948		-----	-----		-----		-----		-----	
2130		-----	-----		-----		-----		-----	
8010		-----	-----		-----		-----		-----	
	normality	OK	not OK		OK		not OK		OK	
	n	21	21		20		20		19	
	outliers	1	1		3		3		3	
	mean (n)	39.14	52.34		94.11		146.99		181.25	
	st.dev. (n)	1.981	0.879		1.226		1.908		1.898	
	R(calc.)	5.55	2.46		3.43		5.34		5.31	
	R(D86:10a-M)	5.60	3.91		4.06		3.83		7.20	

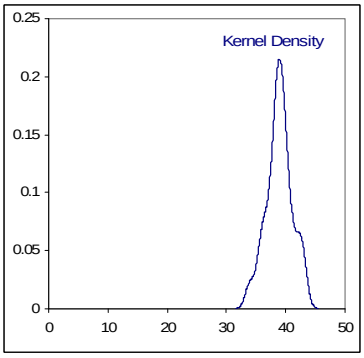
Determination of Distillation ASTM D86 (Manual) on sample #11006; results in °C

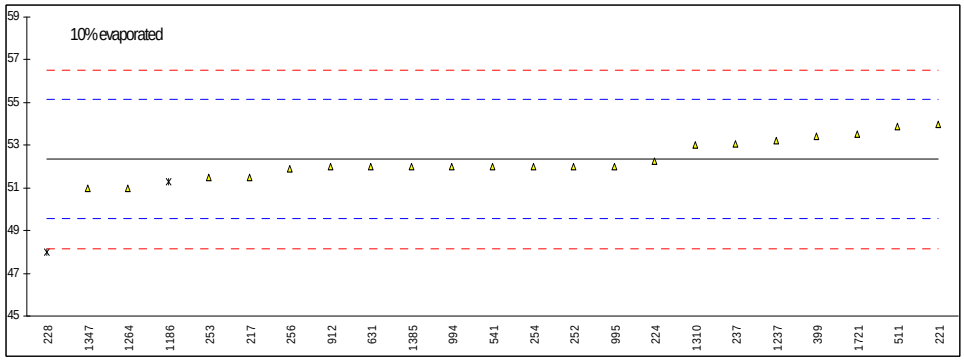
lab	method	%vol 70ºC	Mark	%vol 100ºC	Mark	%vol 150ºC	Mark	%vol Res	Mark
52		-----		-----		-----		-----	
62		-----		-----		-----		-----	
120		-----		-----		-----		-----	
132		-----		-----		-----		-----	
150		-----		-----		-----		-----	
158		-----		-----		-----		-----	
159		-----		-----		-----		-----	
169		-----		-----		-----		-----	
171		-----		-----		-----		-----	
180		-----		-----		-----		-----	
193		-----		-----		-----		-----	
194		-----		-----		-----		-----	
199		-----		-----		-----		-----	
217	D86-M	36.4		55.6		91.8		0.5	
221	D86-M	28		56		92.5		1.2	
224	D86-M	34.12		53.07		90.91		1.2	
225		-----		-----		-----		-----	
228	D86-M	37.0		58.0		94.0		1.2	
230		-----		-----		-----		-----	
237	D86-M	34.0		55.5		92.5		1.0	
238		-----		-----		-----		-----	
252		-----		-----		-----		-----	
253	D86-M	34.0		54.2		92.2		0.8	
254		-----		-----		-----		-----	
256	D86-M	33.0		53.0		90.0	fr 150	1.5	
258		-----		-----		-----		-----	
273		-----		-----		-----		-----	
312		-----		-----		-----		-----	
317		-----		-----		-----		-----	
333		-----		-----		-----		-----	
334		-----		-----		-----		-----	
336		-----		-----		-----		-----	
337		-----		-----		-----		-----	
340		-----		-----		-----		-----	
399	D86-M	28.3		51.1		89.0		0.5	
431		-----		-----		-----		-----	
433		-----		-----		-----		-----	
447		-----		-----		-----		-----	
463		-----		-----		-----		-----	
468		-----		-----		-----		-----	
511	D86-M	29.0	fr. 27.0	55.5		91.0		1.0	
541	D86-M	35.0		53.5		91.5		1.1	
557		-----		-----		-----		-----	
562		-----		-----		-----		-----	
592		-----		-----		-----		-----	
631	D86-M	35		55		93		0.6	
657		-----		-----		-----		-----	
663		-----		-----		-----		-----	
671		-----		-----		-----		-----	
823		-----		-----		-----		-----	
862		-----		-----		-----		-----	
912	D86-M	34.0		54.0		92.0		1.5	
962		-----		-----		-----		-----	
974		-----		-----		-----		-----	
994	D86-M	35.0		55.0		93.0		1.0	
995	D86-M	34.569		55.11		92.685		0.6	
996		-----		-----		-----		-----	
1006		-----		-----		-----		-----	
1016		-----		-----		-----		-----	
1017		-----		-----		-----		-----	
1033		-----		-----		-----		-----	
1038		-----		-----		-----		-----	
1059		-----		-----		-----		-----	
1066		-----		-----		-----		-----	
1080		-----		-----		-----		-----	
1081		-----		-----		-----		-----	
1108		-----		-----		-----		-----	
1109		-----		-----		-----		-----	
1126		-----		-----		-----		-----	
1138		-----		-----		-----		-----	
1140		-----		-----		-----		-----	
1167		-----		-----		-----		-----	
1186	D86-M	31.0		61.0	G(0.05)	94.0		1.0	
1205		-----		-----		-----		-----	
1215		-----		-----		-----		-----	
1218		-----		-----		-----		-----	

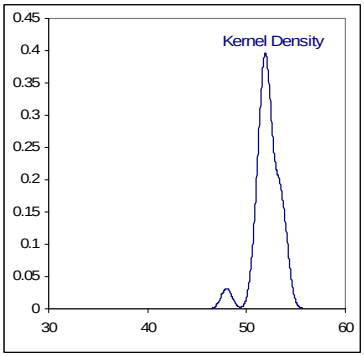
1231		-----		-----	-----	-----
1237	ISO3405-M	31.5	fr. 24.8	54.0	89.9	0.9
1264	D86-M	35.3		55.3	92.3	1.2
1310	ISO3405-M	33.5		53	89.5	0.9
1347	D86-M	34		57	94	0.8
1348		-----		-----	-----	-----
1357		-----		-----	-----	-----
1378		-----		-----	-----	-----
1382		-----		-----	-----	-----
1385	D86-M	32		51	89	1
1386		-----		-----	-----	-----
1395		-----		-----	-----	-----
1409		-----		-----	-----	-----
1428		-----		-----	-----	-----
1531		-----		-----	-----	-----
1613		-----		-----	-----	-----
1620		-----		-----	-----	-----
1631		-----		-----	-----	-----
1634		-----		-----	-----	-----
1654		-----		-----	-----	-----
1720		-----		-----	-----	-----
1721	D86-M	33.0		52.0	90.0	1.0
1724		-----		-----	-----	-----
1730		-----		-----	-----	-----
1740		-----		-----	-----	-----
1807		-----		-----	-----	-----
1810		-----		-----	-----	-----
1811		-----		-----	-----	-----
1826		-----		-----	-----	-----
1833		-----		-----	-----	-----
1849		-----		-----	-----	-----
1851		-----		-----	-----	-----
1854		-----		-----	-----	-----
1938		-----		-----	-----	-----
1939		-----		-----	-----	-----
1948		-----		-----	-----	-----
2130		-----		-----	-----	-----
8010		-----		-----	-----	-----

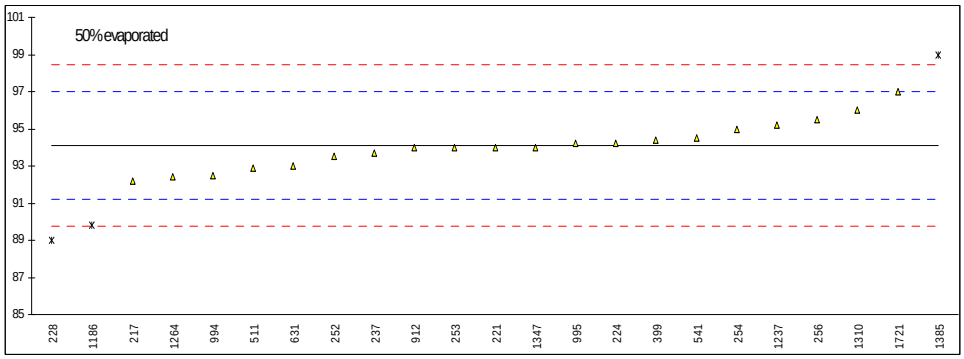
normality	not OK	OK	OK
n	19	19	19
outliers	0	0	0
mean (n)	33.14	54.15	91.41
st.dev. (n)	2.390	1.652	1.484
R(calc.)	6.69	4.62	4.15
R(D86:10a-M)	4.04	3.94	3.89

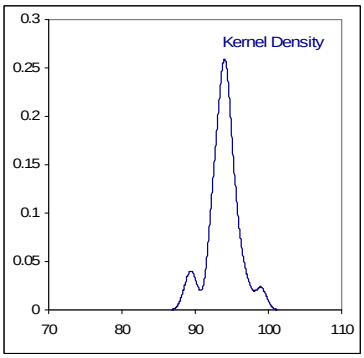

Initial Boiling Point

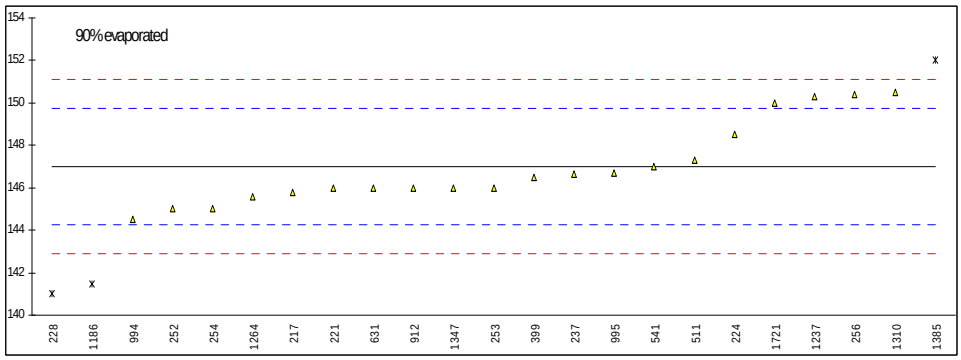

Kernel Density

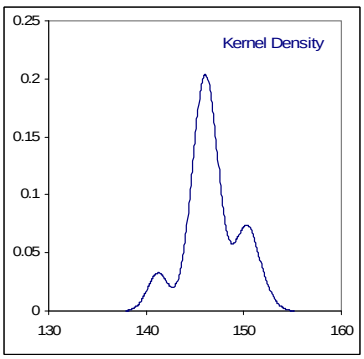

10% evaporated

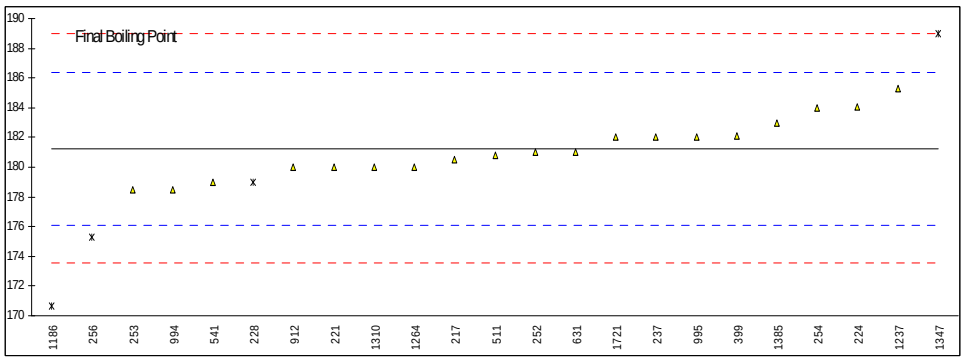

Kernel Density

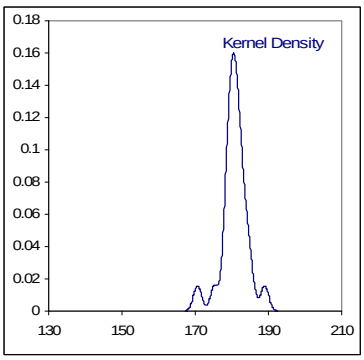

50% evaporated

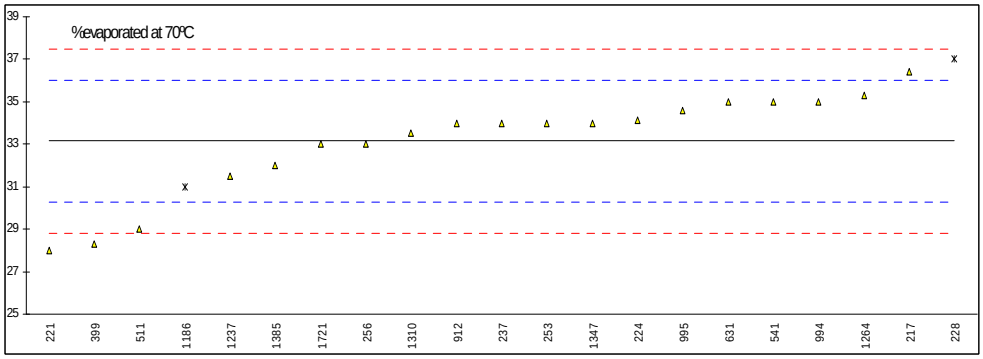

Kernel Density

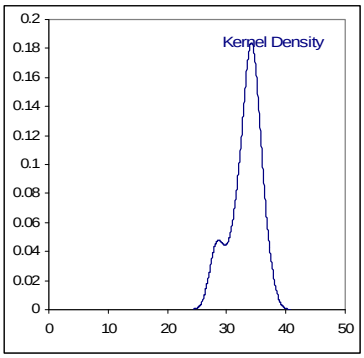

90% evaporated

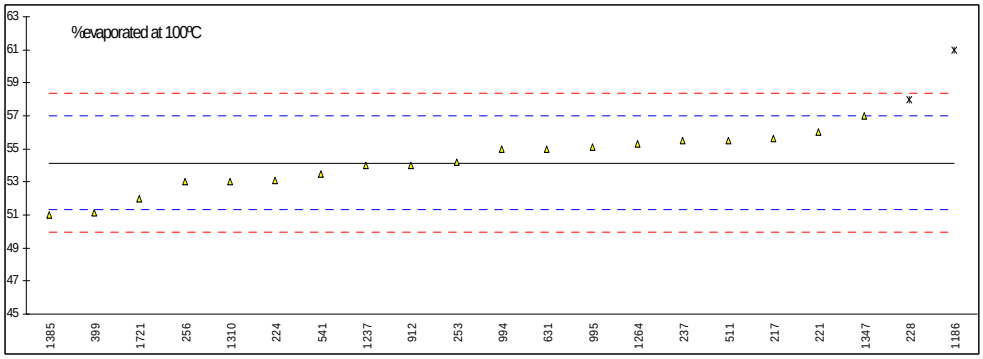

Kernel Density

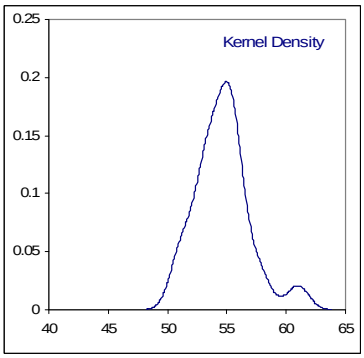

Final Boiling Point

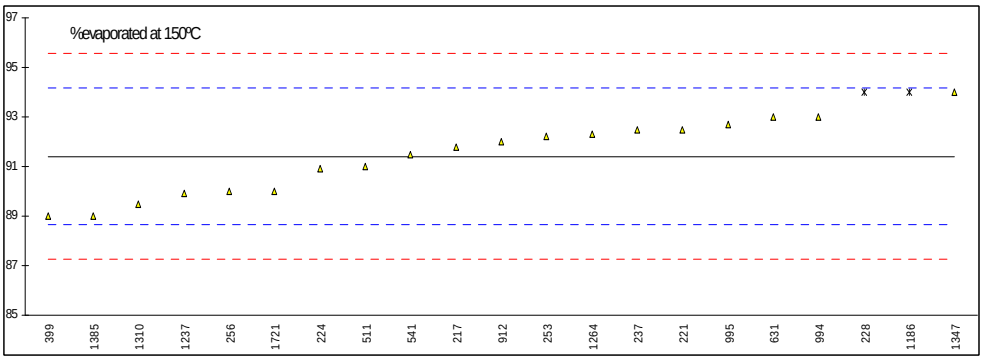

Kernel Density

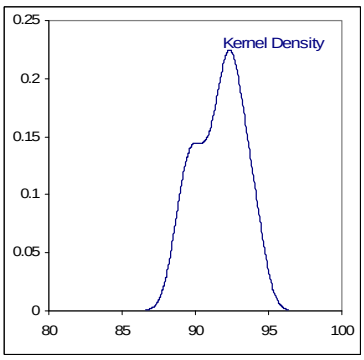

%evaporated at 70ºC
39
37
35
33
31
29
27
25
221 399 511 1186 1237 1385 1721 256 1310 912 237 253 1347 224 995 631 541 994 1264 217 228


Kernel Density
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
0 10 20 30 40 50


%evaporated at 100ºC
63
61
59
57
55
53
51
49
47
45
1385 399 1721 256 1310 224 541 1237 912 253 994 631 995 1264 237 511 217 221 1347 228 1186


Kernel Density
0.25
0.2
0.15
0.1
0.05
0
40 45 50 55 60 65


%evaporated at 150ºC
97
95
93
91
89
87
85
399 1385 1310 1237 256 1721 224 511 541 217 912 253 1264 237 221 995 631 994 228 1186 1347


Kernel Density
0.25
0.2
0.15
0.1
0.05
0
80 85 90 95 100

Determination of Doctor Test on sample #11006;

lab	method	value	mark	z(targ)	remarks
52	D4952	NEG.		-----	
62		-----		-----	
120	D4952	NEG.		-----	
132	D4952	NEG.		-----	
150	D4952	NEG.		-----	
158	D4952	NEG.		-----	
159	D4952	NEG.		-----	
169		-----		-----	
171	D4952	NEG.		-----	
180		-----		-----	
193		-----		-----	
194	D4952	NEG.		-----	
199		-----		-----	
217	D4952	NEG.		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230	D4952	NEG.		-----	
237	D4952	NEG.		-----	
238	D4952	NEG.		-----	
252	D4952	NEG.		-----	
253		-----		-----	
254	D4952	NEG.		-----	
256	D4952	NEG.		-----	
258		-----		-----	
273	IP30	NEG.		-----	
312	IP30	NEG.		-----	
317	IP30	NEG.		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
340	D4952	NEG.		-----	
399	D4952	NEG.		-----	
431		-----		-----	
433		-----		-----	
447		-----		-----	
463	D4952	NEG.		-----	
468		-----		-----	
511		-----		-----	
541	IP30	NEG.		-----	
557		-----		-----	
562		-----		-----	
592		-----		-----	
631	D4952	NEG.		-----	
657	IP30	NEG.		-----	
663	D4952	NEG.		-----	
671	D4952	NEG.		-----	
823	D4952	NEG.		-----	
862	D4952	NEG.		-----	
912		-----		-----	
962	D4952	NEG.		-----	
974	D4952	NEG.		-----	
994	D4952	NEG.		-----	
995	D4952	NEG.		-----	
996		-----		-----	
1006		-----		-----	
1016	D4952	NEG.		-----	
1017		-----		-----	
1033		-----		-----	
1038	IP30	NEG.		-----	
1059	D4952	NEG.		-----	
1066	D4952	NEG.		-----	
1080		-----		-----	
1081	D4952	NEG.		-----	
1108		-----		-----	
1109	IP30	NEG.		-----	
1126		-----		-----	
1138	IP30	NEG.		-----	
1140	IP30	NEG.		-----	
1167		-----		-----	
1186		-----		-----	
1205		-----		-----	
1215		-----		-----	
1218		-----		-----	

1231		-----	-----
1237		-----	-----
1264	IP30	NEG.	-----
1310		-----	-----
1347	D4952	NEG.	-----
1348	D4952	NEG.	-----
1357		-----	-----
1378		-----	-----
1382		-----	-----
1385		-----	-----
1386	D4952	NEG.	-----
1395	D4952	NEG.	-----
1409		-----	-----
1428	D4952	NEG.	-----
1531		-----	-----
1613	D4952	NEG.	-----
1620	D4952	NEG.	-----
1631	D4952	NEG.	-----
1634		-----	-----
1654		-----	-----
1720	D4952	NEG.	-----
1721		-----	-----
1724	IP30	NEG.	-----
1730		-----	-----
1740		-----	-----
1807	D4952	NEG.	-----
1810		-----	-----
1811	D4952	NEG.	-----
1826	D4952	NEG.	-----
1833	D4952	NEG.	-----
1849	D4952	NEG.	-----
1851		-----	-----
1854	D4952	NEG.	-----
1938		-----	-----
1939	IP130	NEG.	-----
1948		-----	-----
2130	IP30	NEG.	-----
8010		-----	-----

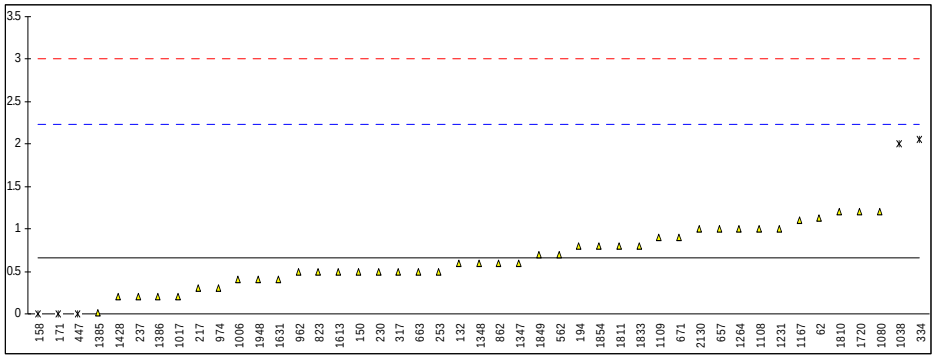
normality	n.a.
n	59
outliers	0
mean (n)	Negative
st.dev. (n)	n.a.
R(calc.)	n.a.
R(D4952:09)	n.a.

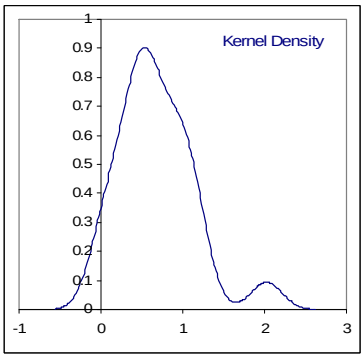
Determination of Existent Gum (washed) on sample #11006; results in mg/100mL

lab	method	value	mark	z(targ)	remarks
52	D381	<0.5		-----	
62	D381	1.13		0.60	
120		-----		-----	
132	D381	0.6		-0.07	
150	D381	0.5		-0.20	
158	D381	0.0	ex	-0.84	Result excluded as zero is not a real result
159		-----		-----	
169	D381	<0.5		-----	
171	D381	0.0	ex	-0.84	Result excluded as zero is not a real result
180		-----		-----	
193		-----		-----	
194	D381	0.8		0.18	
199		-----		-----	
217	D381	0.3		-0.45	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230	D381	0.5		-0.20	
237	D381	0.2		-0.58	
238		-----		-----	
252		-----		-----	
253	D381	0.50		-0.20	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D381	<0.5		-----	
317	D381	0.5		-0.20	
333		-----		-----	
334	D381	2.05	DG(0.01)	1.78	
336		-----		-----	
337		-----		-----	
340	D381	<1		-----	
399	D381	<0.5		-----	
431		-----		-----	
433		-----		-----	
447	D381	0	ex	-0.84	Result excluded as zero is not a real result
463	D381	<0.5		-----	
468		-----		-----	
511		-----		-----	
541		-----		-----	
557		-----		-----	
562	D381	0.7		0.06	
592		-----		-----	
631	D381	<0.5		-----	
657	D381	1.0		0.44	
663	D381	0.5		-0.20	
671	D381	0.9		0.31	
823	D381	0.5		-0.20	
862	D381	0.6		-0.07	
912		-----		-----	
962	D381	0.5		-0.20	
974	D381	0.3		-0.45	
994	D381	<0.5		-----	
995		-----		-----	
996		-----		-----	
1006	D381	0.4		-0.33	
1016		-----		-----	
1017	D381	0.2		-0.58	
1033		-----		-----	
1038	D381	2	DG(0.01)	1.71	
1059	D381	<1		-----	
1066		-----		-----	
1080	ISO6246	1.2		0.69	
1081		-----		-----	
1108	D381	1		0.44	
1109	D381	0.9		0.31	
1126		-----		-----	
1138	D381	<0.5		-----	
1140	IP131	<1		-----	
1167	ISO6246	1.1		0.57	
1186		-----		-----	
1205		-----		-----	
1215		-----		-----	
1218		-----		-----	

1231	D381	1.0	0.44
1237		-----	-----
1264	D381	1.0	0.44
1310		-----	-----
1347	D381	0.60	-0.07
1348	D381	0.6	-0.07
1357		-----	-----
1378	D381	<0.5	-----
1382		-----	-----
1385	D381	0.01	-0.82
1386	D381	0.2	-0.58
1395	D381	<0.5	-----
1409	ISO6246	<1	-----
1428	ISO6246	0.2	-0.58
1531		-----	-----
1613	D381	0.5	-0.20
1620	D381	<0.5	-----
1631	ISO3246	0.4	-0.33
1634		-----	-----
1654		-----	-----
1720	D381	1.2	0.69
1721		-----	-----
1724	D381	<0.5	-----
1730		-----	-----
1740		-----	-----
1807	EN6246	<1	-----
1810	D381	1.2	0.69
1811	D381	0.8	0.18
1826	D381	<0.5	-----
1833	D381	0.8	0.18
1849	D381	0.7	0.06
1851		-----	-----
1854	D381	0.8	0.18
1938		-----	-----
1939	D381	<1.0	-----
1948	D381	0.4	-0.33
2130	D381	1.0	0.44
8010		-----	-----

normality	OK
n	40
outliers	2
mean (n)	0.66
st.dev. (n)	0.321
R(calc.)	0.90
R(D381:09)	2.20



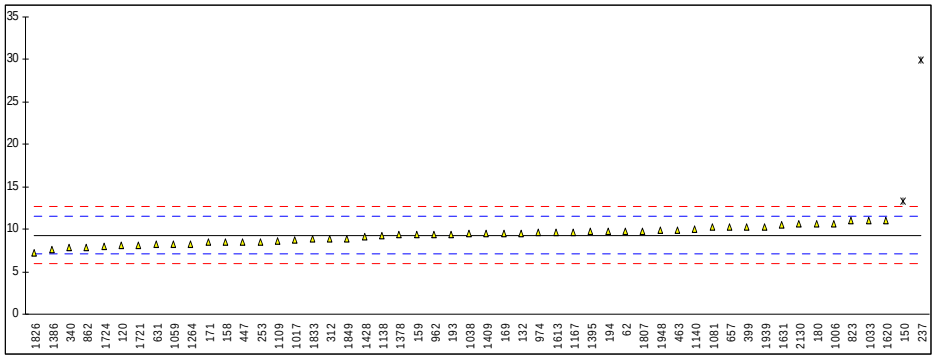


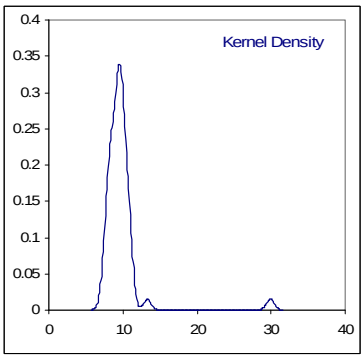
Determination of Olefins by FIA on sample #11006; results in %V/V

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62	D1319	9.75		0.39	
120	D1319	8.1		-1.09	
132	D1319	9.52		0.18	
150	D1319	13.3	G(0.01)	3.56	
158	D1319	8.5		-0.73	
159	D1319	9.4		0.07	
169	D1319	9.5		0.16	
171	D1319	8.494		-0.74	
180	D1319	10.7		1.24	
193	D1319	9.443		0.11	
194	D1319	9.75		0.39	
199		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237	D1319	29.93	C,G(0.01)	18.45	First reported 20.76
238		-----		-----	
252		-----		-----	
253	D1319	8.50		-0.73	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D1319	8.91		-0.36	
317		-----		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
340	D1319	7.8		-1.36	
399	D1319	10.32	C	0.90	First reported 29.03
431		-----		-----	
433		-----		-----	
447	D1319	8.5	C	-0.73	First reported 33.7
463	D1319	9.9		0.52	
468		-----		-----	
511		-----		-----	
541		-----		-----	
557		-----		-----	
562		-----		-----	
592		-----		-----	
631	D1319	8.2		-1.00	
657	D1319	10.3		0.88	
663		-----		-----	
671		-----		-----	
823	D1319	11.00		1.51	
862	D1319	7.8		-1.36	
912		-----		-----	
962	D1319	9.4		0.07	
974	D1319	9.58		0.23	
994		-----		-----	
995		-----		-----	
996		-----		-----	
1006	D6293	10.7		1.24	
1016		-----		-----	
1017	D1319	8.70		-0.55	
1033	IP156	11.0		1.51	
1038	D1319	9.5	C	0.16	First reported 31.5
1059	D1319	8.2		-1.00	
1066		-----		-----	
1080		-----		-----	
1081	EN14517	10.27		0.85	
1108		-----		-----	
1109	D1319	8.64		-0.61	
1126		-----		-----	
1138	IP156	9.3		-0.02	
1140	IP156	10.0		0.61	
1167	ISO22854	9.65		0.30	
1186		-----		-----	
1205		-----		-----	
1215		-----		-----	
1218		-----		-----	

1231		-----	-----
1237		-----	-----
1264	D1319	8.27	-0.94
1310		-----	-----
1347		-----	-----
1348		-----	-----
1357		-----	-----
1378	D6839	9.37	0.05
1382		-----	-----
1385		-----	-----
1386	D1319	7.60	-1.54
1395	ISO22854	9.71	0.35
1409	D1319	9.5	0.16
1428	ISO3837	9.1	-0.19
1531		-----	-----
1613	D6839	9.60	0.25
1620	D1319	11.0	1.51
1631	D1319	10.51	1.07
1634		-----	-----
1654		-----	-----
1720		-----	-----
1721	D1319	8.10	-1.09
1724	D1319	8.00	-1.18
1730		-----	-----
1740		-----	-----
1807	ISO22854	9.8	0.43
1810		-----	-----
1811		-----	-----
1826	D1319	7.27	-1.83
1833	D1319	8.9	-0.37
1849	D1319	8.93	-0.35
1851		-----	-----
1854		-----	-----
1938		-----	-----
1939	D6729	10.326	0.90
1948	D1319	9.87	0.49
2130	D1319	10.7	1.24
8010		-----	-----

			Only ASTM D1319 data:
	normality	OK	OK
	n	50	42
	outliers	2	2
	mean (n)	9.318	9.201
	st.dev. (n)	0.9684	0.9996
	R(calc.)	2.711	2.799
	R(D1319:10)	3.129	3.105

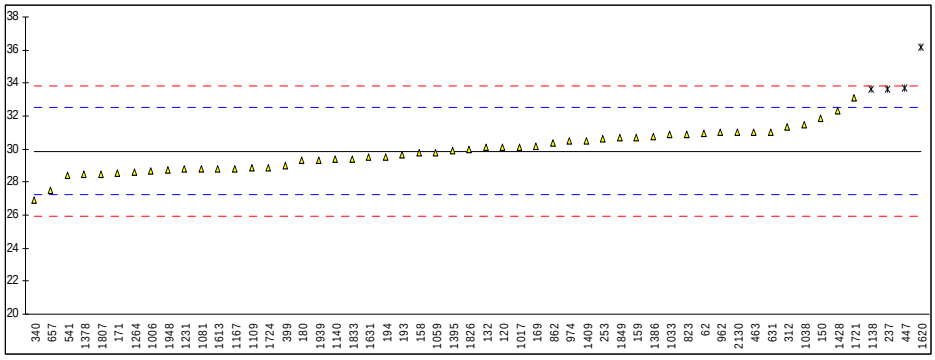


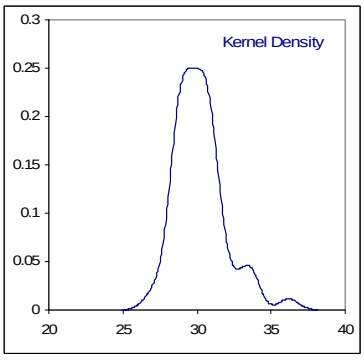


Determination of Aromatics by FIA on sample #11006; results in %V/V

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62	D1319	30.97		0.83	
120	D1319	30.1		0.17	
132	D1319	30.10		0.17	
150	D1319	31.9		1.54	
158	D1319	29.8		-0.05	
159	D1319	30.7		0.63	
169	D1319	30.2		0.25	
171	D1319	28.539		-1.01	
180	D1319	29.3		-0.43	
193	D1319	29.661		-0.16	
194	D1319	29.53		-0.26	
199		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237	D1319	33.61	G(0.05)	2.83	
238		-----		-----	
252		-----		-----	
253	D1319	30.60		0.55	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D1319	31.33		1.10	
317		-----		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
340	D1319	26.9		-2.25	
399	D1319	29.03	C	-0.64	First reported 10.32
431		-----		-----	
433		-----		-----	
447	D1319	33.7	C,G(0.05)	2.90	First reported 8.5
463	D1319	31.0		0.85	
468		-----		-----	
511		-----		-----	
541	D6730	28.44		-1.08	
557		-----		-----	
562		-----		-----	
592		-----		-----	
631	D1319	31.0		0.85	
657	D1319	27.5		-1.79	
663		-----		-----	
671		-----		-----	
823	D1319	30.91		0.79	
862	D1319	30.4		0.40	
912		-----		-----	
962	D1319	31.0		0.85	
974	D1319	30.49		0.47	
994		-----		-----	
995		-----		-----	
996		-----		-----	
1006	D6293	28.65		-0.92	
1016		-----		-----	
1017	D1319	30.11		0.18	
1033	IP156	30.9		0.78	
1038	D1319	31.5	C	1.23	First reported 9.5
1059	D1319	29.8		-0.05	
1066		-----		-----	
1080		-----		-----	
1081	EN14517	28.80		-0.81	
1108		-----		-----	
1109	D1319	28.86		-0.77	
1126		-----		-----	
1138	IP156	33.6	G(0.05)	2.82	
1140	IP156	29.4		-0.36	
1167	ISO22854	28.83		-0.79	
1186		-----		-----	
1205		-----		-----	
1215		-----		-----	
1218		-----		-----	

1231	D5580	28.80		-0.81	
1237		-----		-----	
1264	D1319	28.62		-0.95	
1310		-----		-----	
1347		-----		-----	
1348		-----		-----	
1357		-----		-----	
1378	D6839	28.45		-1.08	
1382		-----		-----	
1385		-----		-----	
1386	D1319	30.78		0.69	
1395	ISO22854	29.89	C	0.01	First reported 29.43
1409	D1319	30.5		0.48	
1428	ISO3837	32.3		1.84	
1531		-----		-----	
1613	D6839	28.82		-0.80	
1620	D1319	36.2	G(0.01)	4.79	
1631	D1319	29.50		-0.28	
1634		-----		-----	
1654		-----		-----	
1720		-----		-----	
1721	D1319	33.10		2.44	
1724	D1319	28.89		-0.74	
1730		-----		-----	
1740		-----		-----	
1807	ISO22854	28.5		-1.04	
1810		-----		-----	
1811		-----		-----	
1826	D1319	29.96		0.07	
1833	D1319	29.4		-0.36	
1849	D1319	30.69		0.62	
1851		-----		-----	
1854		-----		-----	
1938		-----		-----	
1939	D6729	29.346		-0.40	
1948	D1319	28.76		-0.84	
2130	D1319	31.0		0.85	
8010		-----		-----	
					Only ASTM D1319 data:
	normality	OK			OK
	n	50			40
	outliers	4			4
	mean (n)	29.871			30.126
	st.dev. (n)	1.2181			1.2186
	R(calc.)	3.411			3.412
	R(D1319:10)	3.700			3.700





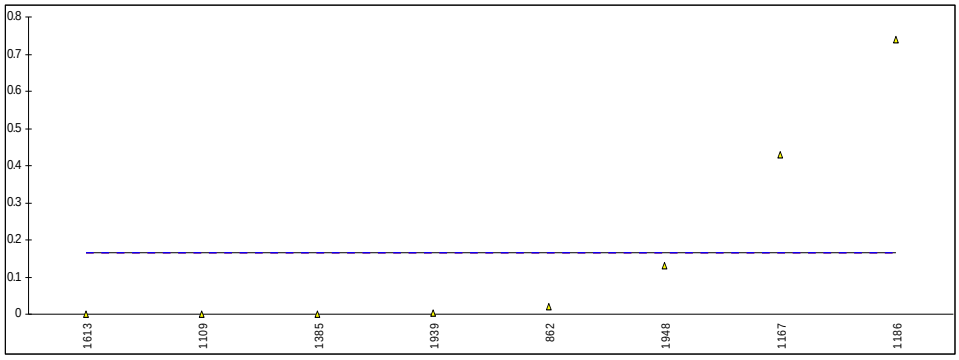
Determination of Lead as Pb on sample #11006; results in mg/L

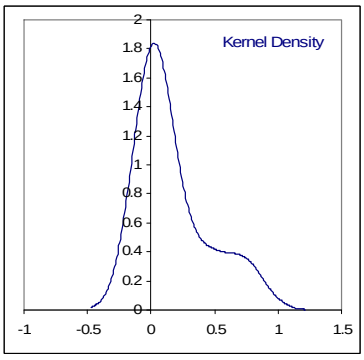
lab	method	value	mark	z(targ)	remarks
52	D3237	<2.5		-----	
62	D3237	<0.1		-----	
120		-----		-----	
132		-----		-----	
150		-----		-----	
158	D3237	<0.004		-----	
159		-----		-----	
169		-----		-----	
171	D3237	<0.004		-----	
180		-----		-----	
193		-----		-----	
194		-----		-----	
199		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230	D3237	<2.5		-----	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	EN237	<2.5		-----	
317		-----		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
340		-----		-----	
399		-----		-----	
431		-----		-----	
433		-----		-----	
447	D3237	<2.5		-----	
463		-----		-----	
468		-----		-----	
511	D3237	<2.5		-----	
541	D3237	<2.5		-----	
557		-----		-----	
562	D3237	<2.5		-----	
592		-----		-----	
631	D3237	<0.0025		-----	
657	D3237	<2.5		-----	
663		-----		-----	
671		-----		-----	
823	D3237	<2.5		-----	
862	D3237	0.02		-----	
912		-----		-----	
962		-----		-----	
974		-----		-----	
994		-----		-----	
995		-----		-----	
996		-----		-----	
1006	D3237	<0.0025		-----	
1016		-----		-----	
1017		-----		-----	
1033		-----		-----	
1038		-----		-----	
1059	EN13723	<1.0		-----	
1066		-----		-----	
1080		-----		-----	
1081	D5059	<1		-----	
1108		-----		-----	
1109	D3237	0.0		-----	
1126		-----		-----	
1138		-----		-----	
1140		-----		-----	
1167	EN237	0.43		-----	
1186	D3237	0.74		-----	
1205		-----		-----	
1215		-----		-----	
1218	XRF	<0.2		-----	

1231		-----	-----
1237		-----	-----
1264		-----	-----
1310		-----	-----
1347		-----	-----
1348	D3237	<0.001	-----
1357		-----	-----
1378		-----	-----
1382		-----	-----
1385	D3237	0.001	-----
1386		-----	-----
1395		-----	-----
1409	EN237	<1	-----
1428	EN237	<2.5	-----
1531		-----	-----
1613	D3237	0.0	-----
1620	D3237	<2.5	-----
1631	EN237	<2.5	-----
1634		-----	-----
1654		-----	-----
1720		-----	-----
1721		-----	-----
1724	E237	<2.5	-----
1730		-----	-----
1740		-----	-----
1807		-----	-----
1810		-----	-----
1811		-----	-----
1826		-----	-----
1833	EN237	<2.5	-----
1849	D3237	<2.5	-----
1851		-----	-----
1854		-----	-----
1938		-----	-----
1939	INH-ICP	0.002	-----
1948	EN237	0.13	-----
2130	IP352	<1	-----
8010		-----	-----

normality	n.a.
n	8
outliers	0
mean (n)	0.17
st.dev. (n)	0.275
R(calc.)	0.77
R(D3237:06e1)	(2.60)

Application Range: 2.5 – 25 mg/L





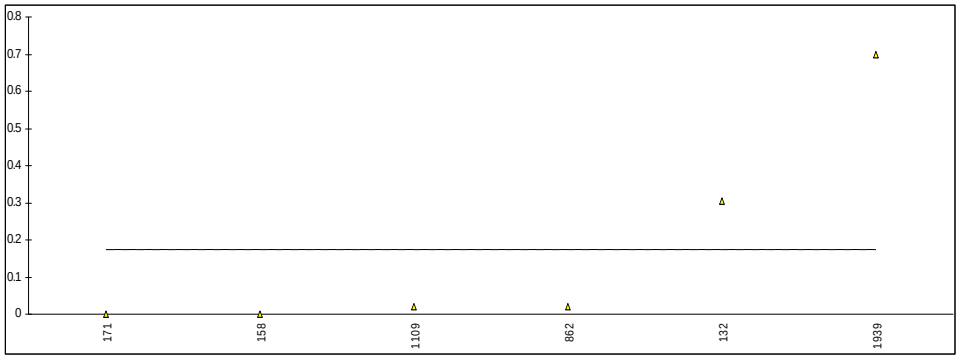
Determination of Phosphorus as P on sample #11006; results in mg/L

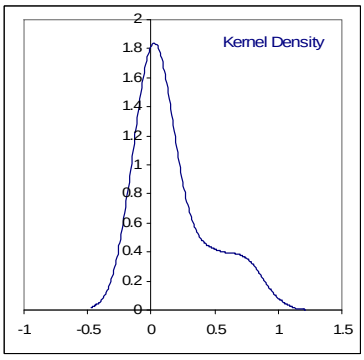
lab	method	value	mark	z(targ)	remarks
52	D3231	<0.2		-----	
62		-----		-----	
120		-----		-----	
132	D3231	0.304		-----	
150		-----		-----	
158	D3231	0.00		-----	
159		-----		-----	
169		-----		-----	
171	D3231	0.0		-----	
180		-----		-----	
193		-----		-----	
194		-----		-----	
199		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D3231	<0.2		-----	
317		-----		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
340		-----		-----	
399		-----		-----	
431		-----		-----	
433		-----		-----	
447		-----		-----	
463		-----		-----	
468		-----		-----	
511		-----		-----	
541	D3231	<0.20		-----	
557		-----		-----	
562		-----		-----	
592		-----		-----	
631		-----		-----	
657	D3231	<0.20		-----	
663		-----		-----	
671		-----		-----	
823	D3231	<0.2		-----	
862	D3231	0.02		-----	
912		-----		-----	
962		-----		-----	
974		-----		-----	
994		-----		-----	
995		-----		-----	
996		-----		-----	
1006		-----		-----	
1016		-----		-----	
1017		-----		-----	
1033		-----		-----	
1038		-----		-----	
1059		-----		-----	
1066		-----		-----	
1080		-----		-----	
1081		-----		-----	
1108		-----		-----	
1109	D3231	0.02		-----	
1126		-----		-----	
1138		-----		-----	
1140		-----		-----	
1167		-----		-----	
1186		-----		-----	
1205		-----		-----	
1215		-----		-----	
1218		-----		-----	

1231		-----	-----
1237		-----	-----
1264		-----	-----
1310		-----	-----
1347		-----	-----
1348		-----	-----
1357		-----	-----
1378		-----	-----
1382		-----	-----
1385		-----	-----
1386		-----	-----
1395		-----	-----
1409		-----	-----
1428		-----	-----
1531		-----	-----
1613		-----	-----
1620	D3231	<0.2	-----
1631		-----	-----
1634		-----	-----
1654		-----	-----
1720		-----	-----
1721		-----	-----
1724		-----	-----
1730		-----	-----
1740		-----	-----
1807		-----	-----
1810		-----	-----
1811		-----	-----
1826		-----	-----
1833		-----	-----
1849		-----	-----
1851		-----	-----
1854		-----	-----
1938		-----	-----
1939	INH-ICP	0.70	-----
1948	D3231	<0.5	-----
2130		-----	-----
8010		-----	-----

normality	n.a.
n	6
outliers	0
mean (n)	0.17
st.dev. (n)	0.283
R(calc.)	0.79
R(D3231:11)	(0.13)

Application range: 0.2 – 40 mg/L





Determination of Oxidation Stability on sample #11006; results in minutes

lab	method	value	mark	z(targ)	remarks
52	D525	>900		-----	
62	D525	>900		-----	
120		-----		-----	
132	D525	>900		-----	
150		-----		-----	
158		-----		-----	
159		-----		-----	
169		-----		-----	
171	D525	>900		-----	
180		-----		-----	
193		-----		-----	
194		-----		-----	
199		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237	D525	>360		-----	
238		-----		-----	
252		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D525	>900		-----	
317		-----		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
340	D525	>360		-----	
399	D525	>900		-----	
431		-----		-----	
433		-----		-----	
447	D525	>900		-----	
463	D525	586		-----	
468		-----		-----	
511		-----		-----	
541	D7525	51	ex	-----	Result excluded as the used test method is no comparable
557		-----		-----	
562		-----		-----	
592		-----		-----	
631	D525	>900		-----	
657	D525	>900		-----	
663		-----		-----	
671		-----		-----	
823		-----		-----	
862	D525	>900		-----	
912		-----		-----	
962		-----		-----	
974	D525	>900		-----	
994		-----		-----	
995		-----		-----	
996		-----		-----	
1006		-----		-----	
1016		-----		-----	
1017		-----		-----	
1033	IP40	>960		-----	
1038		-----		-----	
1059	ISO7536	>360		-----	
1066		-----		-----	
1080	D525	>900		-----	
1081		-----		-----	
1108	D525	645		-----	
1109		-----		-----	
1126		-----		-----	
1138	D525	>900		-----	
1140		-----		-----	
1167	ISO7536	>900		-----	
1186		-----		-----	
1205		-----		-----	
1215		-----		-----	
1218		-----		-----	

1231	D525	330	-----
1237	ISO7536	250	-----
1264		-----	-----
1310	ISO7536	>360	-----
1347		-----	-----
1348	D525	>900	-----
1357		-----	-----
1378		-----	-----
1382		-----	-----
1385		-----	-----
1386		-----	-----
1395	D525	>900	-----
1409	D525	>360	-----
1428	ISO7536	>900	-----
1531		-----	-----
1613	D525	400	-----
1620	D525	>900	-----
1631	ISO7536	>900	-----
1634		-----	-----
1654	D525	>900	-----
1720		-----	-----
1721		-----	-----
1724	D525	>900	-----
1730		-----	-----
1740		-----	-----
1807	D525	>720	-----
1810		-----	-----
1811		-----	-----
1826		-----	-----
1833	D525	<700	-----
1849	D525	>360	-----
1851		-----	-----
1854		-----	-----
1938		-----	-----
1939		-----	-----
1948	D525	>900	-----
2130	D525	450	-----
8010		-----	-----

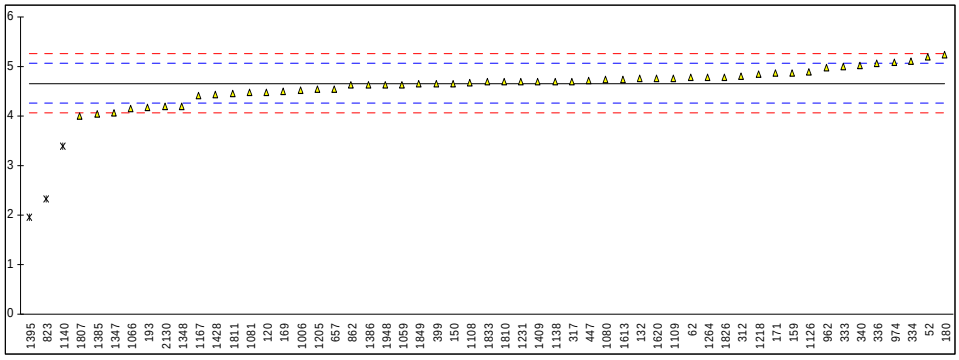
normality	n.a.
n	6
outliers	0
mean (n)	>300
st.dev. (n)	n.a.
R(calc.)	n.a.
R(D525:05)	n.a.

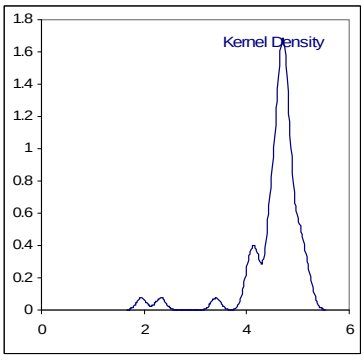
Determination of Ethanol on sample #11006; results in %V/V

lab	method	value	mark	z(targ)	remarks
52	INH-14	5.2		2.73	
62	D4815	4.78		0.60	
120	D4815	4.48		-0.92	
132	D5599	4.76		0.50	
150	D5599	4.66		-0.01	
158		-----		-----	
159	D5599	4.88		1.11	
169	D4815	4.49		-0.87	
171	D4815	4.879	C	1.10	First reported 3.630
180	D4815	5.243		2.95	
193	D5599	4.169		-2.49	
194		-----		-----	
199		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	ISO22854	4.80		0.70	
317	ISO22854	4.70		0.20	
333	EN1601	5.0		1.72	
334	D4815	5.1		2.22	
336	D4815	5.07		2.07	
337		-----		-----	
340	EN1601	5.02		1.82	
399	D4815	4.653		-0.04	
431		-----		-----	
433		-----		-----	
447	D4815	4.71		0.25	
463		-----		-----	
468		-----		-----	
511		-----		-----	
541		-----		-----	
557		-----		-----	
562		-----		-----	
592		-----		-----	
631		-----		-----	
657	D4815	4.55		-0.56	
663		-----		-----	
671		-----		-----	
823	D4815	2.325	C,G(0.01)	-11.83	First reported 1.466
862	D4815	4.62		-0.21	
912		-----		-----	
962	D6839	4.97		1.56	
974	D4815	5.0779		2.11	
994		-----		-----	
995		-----		-----	
996		-----		-----	
1006	D4815	4.52		-0.71	
1016		-----		-----	
1017		-----		-----	
1033		-----		-----	
1038		-----		-----	
1059	ISO22854	4.64		-0.11	
1066	EN22854	4.16		-2.54	
1080	REFORM	4.73		0.35	
1081	EN14517	4.47	C	-0.97	First reported 44.7
1108	EN14517	4.68		0.10	
1109	D6839	4.77		0.55	
1126	REFORM	4.89		1.16	
1138	EN14517	4.70		0.20	
1140	IP566	3.40	C,G(0.01)	-6.38	First reported 3.55
1167	EN13132	4.41		-1.27	
1186		-----		-----	
1205	ISO22854	4.55	C	-0.56	First reported 1.14
1215		-----		-----	
1218	ISO22854	4.85		0.96	

1231	D4815	4.70		0.20	
1237		-----		-----	
1264	D6730	4.79		0.65	
1310		-----		-----	
1347	D4815	4.062		-3.03	
1348	D4815	4.2		-2.33	
1357		-----		-----	
1378		-----	W	-----	Result withdrawn, reported 2.6
1382		-----		-----	
1385	D4815	4.0431		-3.13	
1386	D4815	4.628		-0.17	
1395	ISO22854	1.95	C,G(0.01)	-13.73	First reported 3.60
1409	ISO22854	4.70		0.20	
1428	EN13132	4.44		-1.12	
1531		-----		-----	
1613	D6839	4.74		0.40	
1620	D4815	4.77		0.55	
1631		-----		-----	
1634		-----		-----	
1654		-----		-----	
1720		-----		-----	
1721		-----		-----	
1724		-----		-----	
1730		-----		-----	
1740		-----		-----	
1807	EN13132	4.0		-3.35	
1810	EN14517	4.70		0.20	
1811	D4815	4.46		-1.02	
1826	D6839	4.79		0.65	
1833	EN13132	4.69		0.15	
1849	D4815	4.65		-0.06	
1851		-----		-----	
1854		-----		-----	
1938		-----		-----	
1939		-----		-----	
1948	D4815	4.63		-0.16	
2130	D6730	4.200		-2.33	
8010		-----		-----	

normality	not OK
n	52
outliers	3
mean (n)	4.661
st.dev. (n)	0.2871
R(calc.)	0.804
R(D4815:09)	0.553



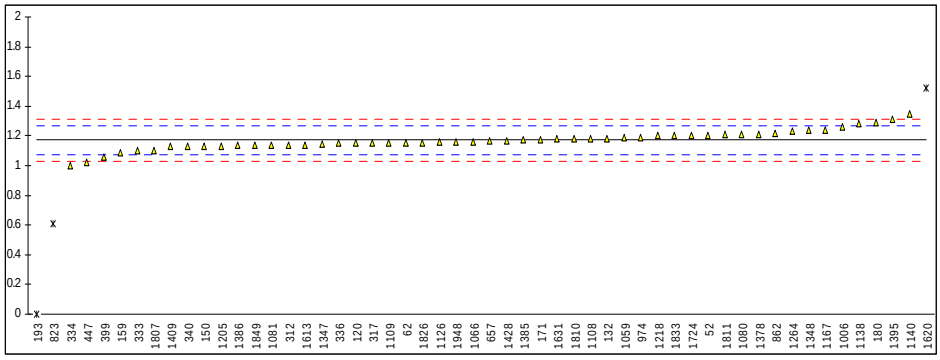


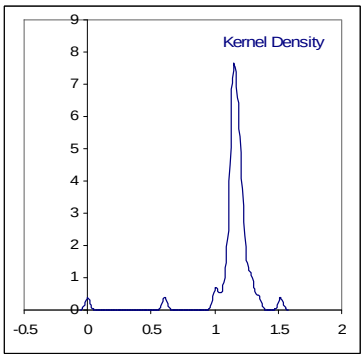
Determination of MTBE on sample #11006; results in %V/V

lab	method	value	mark	z(targ)	remarks
52	INH-14	1.2		0.60	
62	D4815	1.15	C	-0.45	First reported 1.51
120	D4815	1.15		-0.45	
132	D5599	1.18		0.18	
150	D5599	1.13		-0.87	
158		-----		-----	
159	D5599	1.09		-1.71	
169	D4815	n.d.		-----	False negative?
171	D4815	1.175	C	0.08	First reported 0.867
180	D4815	1.287		2.43	
193	D5599	0	G(0.01)	-24.58	
194		-----		-----	
199		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	ISO22854	1.14		-0.66	
317	ISO22854	1.15		-0.45	
333	EN1601	1.1		-1.50	
334	D4815	1.0		-3.60	
336	D4815	1.15		-0.45	
337		-----		-----	
340	EN1601	1.13		-0.87	
399	D4815	1.059		-2.36	
431		-----		-----	
433		-----		-----	
447	D4815	1.02		-3.18	
463		-----		-----	
468		-----		-----	
511		-----		-----	
541		-----		-----	
557		-----		-----	
562		-----		-----	
592		-----		-----	
631		-----		-----	
657	D4815	1.17		-0.03	
663		-----		-----	
671		-----		-----	
823	D4815	0.607	C,G(0.01)	-11.84	First reported 0.469
862	D4815	1.22		1.02	
912		-----		-----	
962		-----		-----	
974	D4815	1.19	C	0.39	First reported 1.4767
994		-----		-----	
995		-----		-----	
996		-----		-----	
1006	D4815	1.26		1.86	
1016		-----		-----	
1017		-----		-----	
1033		-----		-----	
1038		-----		-----	
1059	ISO22854	1.19		0.39	
1066	EN22854	1.16		-0.24	
1080	REFORM	1.21		0.81	
1081	EN14517	1.14		-0.66	
1108	EN14517	1.18		0.18	
1109	D6839	1.15		-0.45	
1126	REFORM	1.16		-0.24	
1138	EN14517	1.28		2.28	
1140	IP566	1.35	C	3.75	First reported 1.29
1167	EN13132	1.24		1.44	
1186		-----		-----	
1205	ISO22854	1.13	C	-0.87	First reported 1.93
1215		-----		-----	
1218	ISO22854	1.2		0.60	

1231		-----		-----	
1237		-----		-----	
1264	D6730	1.23		1.23	
1310		-----		-----	
1347	D4815	1.142		-0.62	
1348	D4815	1.237		1.38	
1357		-----		-----	
1378	D6839	1.21		0.81	
1382		-----		-----	
1385	D4815	1.1734		0.04	
1386	D4815	1.136		-0.74	
1395	ISO22854	1.31		2.91	
1409	ISO22854	1.13		-0.87	
1428	EN13132	1.17		-0.03	
1531		-----		-----	
1613	D6839	1.14		-0.66	
1620	D4815	1.52	G(0.05)	7.32	
1631	EN14517	1.18		0.18	
1634		-----		-----	
1654		-----		-----	
1720		-----		-----	
1721		-----		-----	
1724	EN13132	1.20		0.60	
1730		-----		-----	
1740		-----		-----	
1807	EN13132	1.1		-1.50	
1810	EN14517	1.18		0.18	
1811	D4815	1.21		0.81	
1826	EN14517	1.15		-0.45	
1833	EN13132	1.20		0.60	
1849	D4815	1.14		-0.66	
1851		-----		-----	
1854		-----		-----	
1938		-----		-----	
1939		-----		-----	
1948	D4815	1.16		-0.24	
2130	D6730	<0.1		<-22.48	False negative result?
8010		-----		-----	

normality	not OK
n	51
outliers	3
mean (n)	1.171
st.dev. (n)	0.0641
R(calc.)	0.179
R(D4815:09)	0.133





Determination of other oxygenates on sample #11006; results in %V/V

lab	method	DIPE	ETBE	i-buOH	i-prOH	MeOH	TAME	Tert-buOH
52		-----	-----	-----	-----	-----	-----	-----
62		-----	-----	-----	-----	-----	-----	-----
120		-----	-----	-----	-----	-----	-----	-----
132	D5599	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
150	D5599	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
158		-----	-----	-----	-----	-----	-----	-----
159	D5599	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
169	D4815	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
171	D4815	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
180	D4815	n.d.	***0.278***	n.d.	n.d.	n.d.	n.d.	n.d.
193	D5599	0	0	0	0	0	0	0
194		-----	-----	-----	-----	-----	-----	-----
199		-----	-----	-----	-----	-----	-----	-----
217		-----	-----	-----	-----	-----	-----	-----
221		-----	-----	-----	-----	-----	-----	-----
224		-----	-----	-----	-----	-----	-----	-----
225		-----	-----	-----	-----	-----	-----	-----
228		-----	-----	-----	-----	-----	-----	-----
230		-----	-----	-----	-----	-----	-----	-----
237		-----	-----	-----	-----	-----	-----	-----
238		-----	-----	-----	-----	-----	-----	-----
252		-----	-----	-----	-----	-----	-----	-----
253		-----	-----	-----	-----	-----	-----	-----
254		-----	-----	-----	-----	-----	-----	-----
256		-----	-----	-----	-----	-----	-----	-----
258		-----	-----	-----	-----	-----	-----	-----
273		-----	-----	-----	-----	-----	-----	-----
312	ISO22854	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
317	ISO22854	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80
333	EN1601	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
334		-----	-----	-----	-----	-----	-----	-----
336	D4815	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
337		-----	-----	-----	-----	-----	-----	-----
340	EN1601	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
399	D4815	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.071
431		-----	-----	-----	-----	-----	-----	-----
433		-----	-----	-----	-----	-----	-----	-----
447	D4815	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
463		-----	-----	-----	-----	-----	-----	-----
468		-----	-----	-----	-----	-----	-----	-----
511		-----	-----	-----	-----	-----	-----	-----
541		-----	-----	-----	-----	-----	-----	-----
557		-----	-----	-----	-----	-----	-----	-----
562		-----	-----	-----	-----	-----	-----	-----
592		-----	-----	-----	-----	-----	-----	-----
631		-----	-----	-----	-----	-----	-----	-----
657	D4815	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
663		-----	-----	-----	-----	-----	-----	-----
671		-----	-----	-----	-----	-----	-----	-----
823	D4815	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
862	D4815	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
912		-----	-----	-----	-----	-----	-----	-----
962		-----	-----	-----	-----	-----	-----	-----
974		-----	-----	0.0330	0.0693	-----	0.0886	-----
994		-----	-----	-----	-----	-----	-----	-----
995		-----	-----	-----	-----	-----	-----	-----
996		-----	-----	-----	-----	-----	-----	-----
1006	D4815	<0.2	<0.2	-----	-----	<0.19	<0.19	<0.18
1016		-----	-----	-----	-----	-----	-----	-----
1017		-----	-----	-----	-----	-----	-----	-----
1033		-----	-----	-----	-----	-----	-----	-----
1038		-----	-----	-----	-----	-----	-----	-----
1059	ISO22854	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1066	EN22854	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01
1080	REFORM	0.04	<0.01	0.01	<0.01	0.01	0.01	<0.01
1081		-----	0.00	-----	-----	0.00	-----	-----
1108		-----	0.03	-----	-----	-----	-----	-----
1109	D6839	0.03	0.00	0.00	0.00	0.00	0.00	0.00
1126		-----	<0.05	-----	-----	<0.05	-----	-----
1138	EN14517	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.06
1140	IP566	0.00	0.00	0.00	0.00	0.00	0.00	0.03
1167		-----	n.d.	n.d.	n.d.	0.17	-----	0.053
1186		-----	-----	-----	-----	-----	-----	-----
1205	ISO22854	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
1215		-----	-----	-----	-----	-----	-----	-----
1218		-----	-----	-----	-----	-----	-----	-----

1231		-----	-----	-----	-----	-----	-----	-----
1237		-----	-----	-----	-----	-----	-----	-----
1264	D6730	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01
1310		-----	-----	-----	-----	-----	-----	-----
1347	D4815	0.032	***0.311***	***0.174***	0.046	NIL	0.133	0.019
1348	D4815	<0.1	***0.266***	<0.1	<0.1	<0.1	<0.1	<0.1
1357		-----	-----	-----	-----	-----	-----	-----
1378		-----	-----	-----	-----	-----	-----	-----
1382		-----	-----	-----	-----	-----	-----	-----
1385	D4815	0.0378	***0.4505***	***0.2465***	NIL	NIL	0.1531	0.0182
1386	D4815	0.029	-----	0.027	0.000	0.000	-----	0.000
1395		-----	-----	-----	-----	-----	-----	-----
1409	ISO22854	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
1428		-----	<0.17	<0.16	<0.16	0.20	-----	<0.16
1531		-----	-----	-----	-----	-----	-----	-----
1613		-----	0.00	-----	-----	-----	-----	-----
1620	D4815	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1631		-----	-----	-----	-----	-----	-----	-----
1634		-----	-----	-----	-----	-----	-----	-----
1654		-----	-----	-----	-----	-----	-----	-----
1720		-----	-----	-----	-----	-----	-----	-----
1721		-----	-----	-----	-----	-----	-----	-----
1724		-----	-----	-----	-----	-----	-----	-----
1730		-----	-----	-----	-----	-----	-----	-----
1740		-----	-----	-----	-----	-----	-----	-----
1807		-----	<0.2	<0.2	<0.2	<0.2	-----	<0.2
1810		-----	-----	-----	-----	-----	-----	-----
1811		-----	0	-----	-----	-----	-----	-----
1826	D6839	0.03	0.00	0.03	0.00	0.00	0.00	0.00
1833		-----	-----	0.03	-----	-----	-----	-----
1849		-----	-----	-----	-----	-----	-----	-----
1851		-----	-----	-----	-----	-----	-----	-----
1854		-----	-----	-----	-----	-----	-----	-----
1938		-----	-----	-----	-----	-----	-----	-----
1939		-----	-----	-----	-----	-----	-----	-----
1948	D4815	0.024	<0.01	<0.01	<0.01	0.018	0.095	<0.01
2130	D6730	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8010		-----	-----	-----	-----	-----	-----	-----
	normality	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	n	10	8	10	7	10	9	10
	outliers	0	0	0	0	0	0	0
	mean (n)	0.025	0.004	0.018	0.016	0.040	0.053	0.025
	st.dev. (n)	0.0141	0.0106	0.0141	0.0289	0.0771	0.0638	0.0274
	R(calc.)	0.039	0.030	0.039	0.081	0.216	0.179	0.077
	R(D4815:09)	n.a.	n.a.	n.a.	0.027	n.a.	n.a.	n.a.

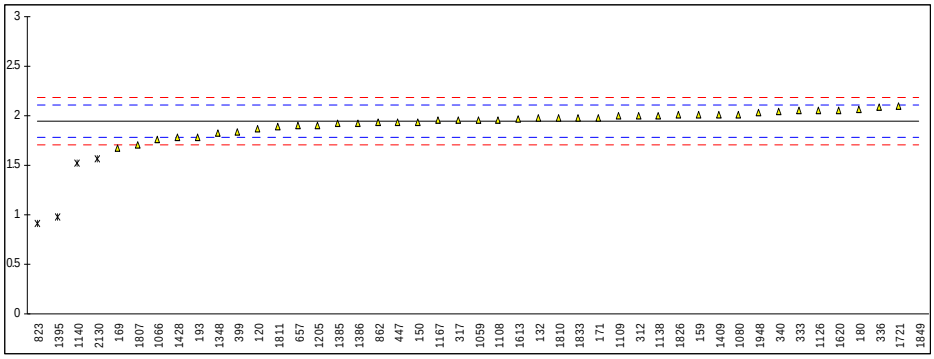
Bold, italic and underlined results were marked as false positive results and therefore excluded for statistical evaluation.

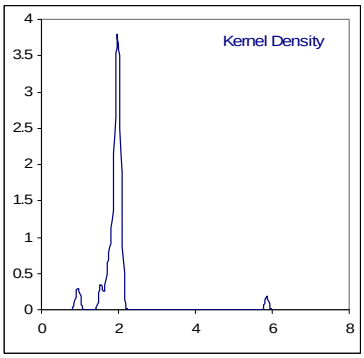
Determination of Oxygen Content on sample #11006; results in %M/M

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62		-----		-----	
120	D5599	1.87		-0.94	
132	D5599	1.98		0.43	
150	D5599	1.94		-0.07	
158		-----		-----	
159	D5599	2.01		0.80	
169	D5599	1.67		-3.42	
171	D5599	1.98		0.43	
180	D5599	2.07		1.54	
193	D5599	1.78		-2.05	
194		-----		-----	
199		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	ISO22854	2.00		0.68	
317	ISO22854	1.96		0.18	
333	EN1601	2.05		1.30	
334		-----		-----	
336	D4815	2.09		1.79	
337		-----		-----	
340	EN1601	2.04		1.17	
399	D4815	1.842		-1.28	
431		-----		-----	
433		-----		-----	
447	D5599	1.93		-0.19	
463		-----		-----	
468		-----		-----	
511		-----		-----	
541		-----		-----	
557		-----		-----	
562		-----		-----	
592		-----		-----	
631		-----		-----	
657	D4815	1.90		-0.56	
663		-----		-----	
671		-----		-----	
823	D4815	0.917	C,G(0.01)	-12.75	First reported 0.594
862	D4815	1.93		-0.19	
912		-----		-----	
962		-----		-----	
974		-----		-----	
994		-----		-----	
995		-----		-----	
996		-----		-----	
1006		-----		-----	
1016		-----		-----	
1017		-----		-----	
1033		-----		-----	
1038		-----		-----	
1059	ISO22854	1.96		0.18	
1066	ISO22854	1.76		-2.30	
1080	REFORM	2.01		0.80	
1081		-----		-----	
1108	EN14517	1.96		0.18	
1109	D6839	2.00		0.68	
1126	REFORM	2.05		1.30	
1138	EN14517	2.00		0.68	
1140	IP566	1.52	G(0.05)	-5.27	
1167	EN13132	1.956		0.13	
1186		-----		-----	
1205	ISO22854	1.9	C	-0.56	First reported 2.4
1215		-----		-----	
1218		-----		-----	

1231		-----		-----	
1237		-----		-----	
1264		-----		-----	
1310		-----		-----	
1347		-----		-----	
1348	D4815	1.83		-1.43	
1357		-----		-----	
1378		-----	W	-----	Result withdrawn, reported 1.31
1382		-----		-----	
1385	D5599	1.92	C	-0.32	First reported as Total oxygenates
1386	D4815	1.922		-0.29	
1395	ISO22854	0.98	C,G(0.01)	-11.97	First reported 1.60
1409	ISO22854	2.01		0.80	
1428	EN13132	1.78		-2.05	
1531		-----		-----	
1613	D6839	1.97		0.30	
1620	D4815	2.05		1.30	
1631		-----		-----	
1634		-----		-----	
1654		-----		-----	
1720		-----		-----	
1721	D5845	2.1		1.92	
1724		-----		-----	
1730		-----		-----	
1740		-----		-----	
1807	EN13132	1.71		-2.92	
1810	EN14517	1.98		0.43	
1811	D5599	1.89		-0.69	
1826	D6839	2.01		0.80	
1833	EN13132	1.98	C	0.43	First reported 5.93
1849	D5599	5.86	G(0.01)	48.53	
1851		-----		-----	
1854		-----		-----	
1938		-----		-----	
1939		-----		-----	
1948	D5599	2.03		1.05	
2130	D6730	1.566	G(0.05)	-4.70	
8010		-----		-----	

normality	not OK
n	40
outliers	5
mean (n)	1.946
st.dev. (n)	0.1013
R(calc.)	0.284
R(D5599:10)	0.226



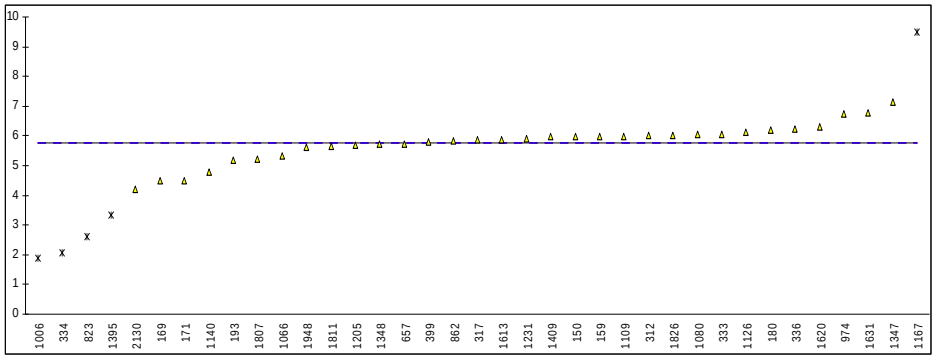


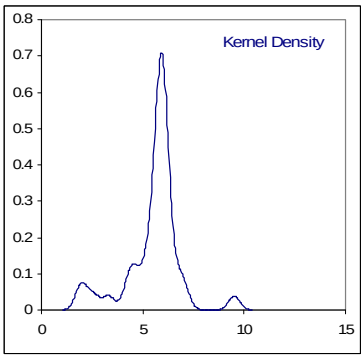
Determination of Total Oxygenates on sample #11006; results in %M/M

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62		-----		-----	
120		-----		-----	
132	D5599	n.d.		-----	False negative result?
150	D5599	5.97		-----	
158		-----		-----	
159	D5599	5.97		-----	
169	D4815	4.49		-----	
171	D4815	4.497		-----	
180	D4815	6.20		-----	
193	D5599	5.17		-----	
194		-----		-----	
199		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	ISO22854	6.00		-----	
317	ISO22854	5.86		-----	
333	EN1601	6.06		-----	
334	D4815	2.08	DG(0.05)	-----	
336	D4815	6.22		-----	
337		-----		-----	
340	EN1601	<0.17		-----	False negative result?
399	D4815	5.783	C	-----	First reported 0.151
431		-----		-----	
433		-----		-----	
447		-----		-----	
463		-----		-----	
468		-----		-----	
511		-----		-----	
541		-----		-----	
557		-----		-----	
562		-----		-----	
592		-----		-----	
631		-----		-----	
657	D4815	5.72		-----	
663		-----		-----	
671		-----		-----	
823	D4815	2.607	C,G(0.05)	-----	First reported 1.935
862	D4815	5.84		-----	
912		-----		-----	
962		-----		-----	
974	D4815	6.7454		-----	
994		-----		-----	
995		-----		-----	
996		-----		-----	
1006	D4815	1.89	DG(0.05)	-----	
1016		-----		-----	
1017		-----		-----	
1033		-----		-----	
1038		-----		-----	
1059	ISO22854	<0.20		-----	False negative result?
1066	EN22854	5.34		-----	
1080	REFORM	6.04		-----	
1081		-----		-----	
1108		-----		-----	
1109	D6839	5.99		-----	
1126	REFORM	6.11		-----	
1138		-----		-----	
1140	IP566	4.78	C	-----	
1167	EN13132	9.51	G(0.01)	-----	
1186		-----		-----	
1205	ISO22854	5.68	C	-----	First reported: not detected
1215		-----		-----	
1218		-----		-----	

1231	D4815	5.91		-----	
1237		-----		-----	
1264		-----		-----	
1310		-----		-----	
1347	D4815	7.124		-----	
1348	D4815	5.71		-----	
1357		-----		-----	
1378		-----		-----	
1382		-----		-----	
1385		-----		-----	
1386		-----		-----	
1395	ISO22854	3.32	C,G(0.05)	-----	First reported 4.99
1409	ISO22854	5.97		-----	
1428		-----		-----	
1531		-----		-----	
1613	D6839	5.87		-----	
1620	D4815	6.29		-----	
1631	EN14517	6.78	C	-----	First reported 2.89
1634		-----		-----	
1654		-----		-----	
1720		-----		-----	
1721		-----		-----	
1724		-----		-----	
1730		-----		-----	
1740		-----		-----	
1807	EN13132	5.2		-----	
1810		-----		-----	
1811	D4815	5.67		-----	
1826	EN14517	6.00		-----	
1833		-----		-----	
1849		-----		-----	
1851		-----		-----	
1854		-----		-----	
1938		-----		-----	
1939		-----		-----	
1948	D4815	5.60		-----	
2130	D6730	4.200		-----	
8010		-----		-----	

normality	not OK
n	32
outliers	5
mean (n)	5.775
st.dev. (n)	0.6395
R(calc.)	1.791
R(lit)	unknown



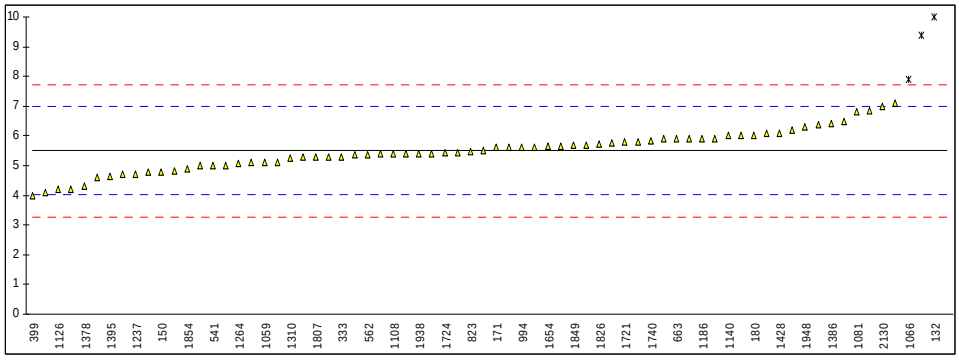


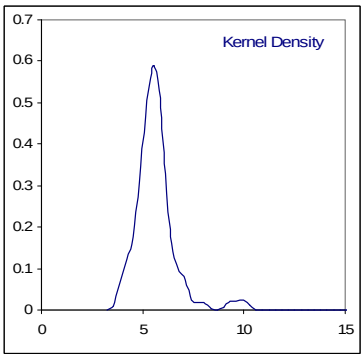
Determination of Sulphur on sample #11006; results in mg/kg

lab	method	value	mark	z(targ)	remarks
52	D5453	6.2		0.95	
62	D5453	5.5		0.01	
120	D2622	6.5		1.35	
132	D2622	10	G(0.01)	6.06	
150	D5453	4.8		-0.94	
158		-----		-----	
159	D5453	5.63		0.18	
169		-----		-----	
171	D5453	5.61		0.16	
180	D2622	6		0.68	
193	D7039	7.1		2.16	
194		-----		-----	
199		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253		-----		-----	
254	D4294	<20		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D5453	5.4		-0.13	
317	ISO20884	5.9		0.55	
333	D5453	5.3		-0.26	
334	D5453	4.8256		-0.90	
336	ISO20846	4.2		-1.74	
337		-----		-----	
340	ISO20846	4.99		-0.68	
399	D5453	4.0		-2.01	
431		-----		-----	
433		-----		-----	
447	D5453	9.39	G(0.01)	5.24	
463		-----		-----	
468	D5453	5.12		-0.50	
511		-----		-----	
541	D5453	5		-0.67	
557		-----		-----	
562	D5453	5.38		-0.15	
592		-----		-----	
631		-----		-----	
657	D5453	5.7		0.28	
663	D5453	5.9		0.55	
671		-----		-----	
823	D5453	5.47		-0.03	
862	D5453	4.1		-1.88	
912	D5453	6.09		0.80	
962		-----		-----	
974		-----		-----	
994	D5453	5.61		0.16	
995	D5453	5.1		-0.53	
996		-----		-----	
1006	D5453	5.4		-0.13	
1016		-----		-----	
1017		-----		-----	
1033		-----		-----	
1038	D2622	4.7		-1.07	
1059	ISO20846	5.1		-0.53	
1066	D2622	7.9	G(0.05)	3.24	
1080	D5453	4.8		-0.94	
1081	ISO20846	6.8		1.76	
1108	D5453	5.4		-0.13	
1109	D5453	5.01		-0.65	
1126	ISO20846	4.19		-1.76	
1138	D5453	5.92		0.57	
1140	D5453	6.0		0.68	
1167	ISO20846	5.67		0.24	
1186	D5453	5.92		0.57	
1205		-----		-----	
1215	D5453	5.75		0.34	
1218	ISO20884	6.85		1.82	

1231		-----		-----	
1237	EN20846	4.7		-1.07	
1264	D5453	5.09		-0.54	
1310	ISO20846	5.26		-0.32	
1347		-----		-----	
1348	D4294	<100		-----	
1357		-----		-----	
1378	D5453	4.3		-1.61	
1382	D5453	6.39		1.20	
1385	D4294	83.98	G(0.01)	105.63	
1386	D5453	6.41		1.23	
1395	D5453	4.65		-1.14	
1409	ISO20846	6.0		0.68	
1428	ISO20846	6.1		0.81	
1531		-----		-----	
1613	D5453	5.45		-0.06	
1620	D5453	5.3		-0.26	
1631	EN20846	4.60		-1.20	
1634		-----		-----	
1654	D5453	5.67		0.24	
1720	D5453	5.8	C	0.41	First reported 8.7
1721	ISO20846	5.8		0.41	
1724	D5453	5.43		-0.09	
1730	EN20884	5.3		-0.26	
1740	ISO20846	5.85		0.48	
1807	EN20846	5.3		-0.26	
1810	D5453	5.9		0.55	
1811	D5453	5.36		-0.18	
1826	D5453	5.71		0.29	
1833		-----		-----	
1849	D5453	5.7		0.28	
1851		-----		-----	
1854	ISO20846	4.9		-0.80	
1938	D5453	5.4		-0.13	
1939	D5453	5.61		0.16	
1948	D5453	6.32		1.11	
2130	D5453	7.01		2.04	
8010	D7220	5.4		-0.13	

normality	OK
n	68
outliers	4
mean (n)	5.495
st.dev. (n)	0.6734
R(calc.)	1.885
R(D5453:09)	2.080



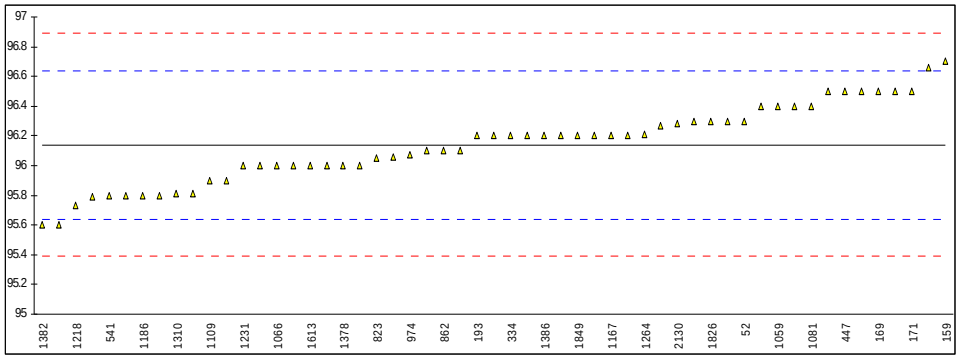


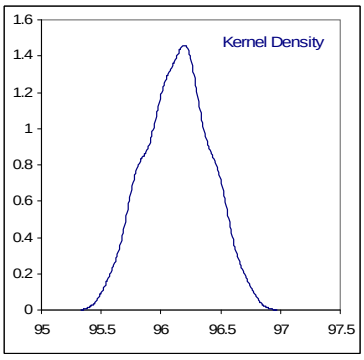
Determination of RON on sample #11006;

lab	method	value	mark	z(targ)	remarks
52	D2699	96.3	C	0.64	First reported 93.3
62	D2699	96.4		1.04	
120	D2699	96.4		1.04	
132	D2699	96.2		0.24	
150	D2699	96.2		0.24	
158		-----		-----	
159	D2699	96.7		2.24	
169	D2699	96.50		1.44	
171	D2699	96.5	C	1.44	First reported 97.1
180		-----		-----	
193	D2700	96.2		0.24	
194		-----		-----	
199		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273	D2699	95.8		-1.36	
312	D2699	96.50		1.44	
317		-----		-----	
333		-----		-----	
334	D2699	96.2		0.24	
336		-----		-----	
337		-----		-----	
340	D2699	96.0		-0.56	
399	D2699	96.20		0.24	
431		-----		-----	
433		-----		-----	
447	D2699	96.5		1.44	
463		-----		-----	
468		-----		-----	
511		-----		-----	
541	D2699	95.8		-1.36	
557		-----		-----	
562	D2699	95.79		-1.40	
592		-----		-----	
631	D2699	95.6		-2.16	
657	D2699	96.1		-0.16	
663		-----		-----	
671		-----		-----	
823	D2699	96.05		-0.36	
862	D2699	96.1		-0.16	
912		-----		-----	
962		-----		-----	
974	D2699	96.07		-0.28	
994		-----		-----	
995	D2699	96.66		2.08	
996		-----		-----	
1006	D2699	96.3		0.64	
1016		-----		-----	
1017		-----		-----	
1033		-----		-----	
1038		-----		-----	
1059	D2699	96.4		1.04	
1066	D2699	96.0		-0.56	
1080		-----		-----	
1081	D2699	96.4		1.04	
1108		-----		-----	
1109	D2699	95.9		-0.96	
1126		-----		-----	
1138		-----		-----	
1140	D2699	96.2		0.24	
1167	ISO5164	96.2		0.24	
1186	D2699	95.80		-1.36	
1205		-----		-----	
1215	D2699	96.0		-0.56	
1218	FTNIR	95.73		-1.64	

1231	D2699	96.0	-0.56
1237		-----	-----
1264	D2699	96.21	0.28
1310	D2699	95.81	-1.32
1347	D2699	96.27	0.52
1348	D2699	96.0	-0.56
1357		-----	-----
1378	D2699	96.0	-0.56
1382	INH-5487	95.6	-2.16
1385	D2699	96.06	-0.32
1386	D2699	96.20	0.24
1395		-----	-----
1409	D2699	95.8	-1.36
1428	ISO5164	96.0	-0.56
1531		-----	-----
1613	D2699	96.0	-0.56
1620	D2699	96.5	1.44
1631	D2699	96.2	0.24
1634		-----	-----
1654		-----	-----
1720	D2699	96.1	-0.16
1721		-----	-----
1724	D2699	95.81	-1.32
1730		-----	-----
1740		-----	-----
1807		-----	-----
1810		-----	-----
1811		-----	-----
1826	D2699	96.3	0.64
1833	D2699	96.5	1.44
1849	D2699	96.2	0.24
1851	D2699	95.9	-0.96
1854		-----	-----
1938		-----	-----
1939		-----	-----
1948	D2699	96.3	0.64
2130	ISO5164	96.28	0.56
8010		-----	-----

normality	OK
n	55
outliers	0
mean (n)	96.14
st.dev. (n)	0.260
R(calc.)	0.73
R(D2699:10)	0.70



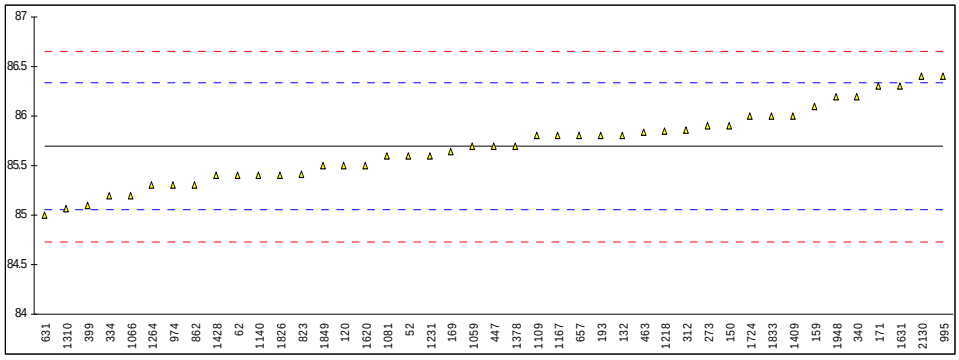


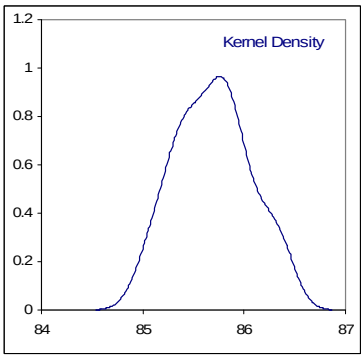
Determination of MON on sample #11006;

lab	method	value	mark	z(targ)	remarks
52	D2700	85.6		-0.29	
62	D2700	85.4		-0.91	
120	D2700	85.5		-0.60	
132	D2700	85.8		0.34	
150	D2700	85.9		0.65	
158		-----		-----	
159	D2700	86.1		1.27	
169	D2700	85.64		-0.16	
171	D2700	86.3		1.89	
180		-----		-----	
193	D2700	85.8		0.34	
194		-----		-----	
199		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
252		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273	D2700	85.9		0.65	
312	D2700	85.86		0.52	
317		-----		-----	
333		-----		-----	
334	D2700	85.2		-1.53	
336		-----		-----	
337		-----		-----	
340	D2700	86.2		1.58	
399	D2700	85.10		-1.84	
431		-----		-----	
433		-----		-----	
447	D2700	85.7		0.02	
463	D2700	85.84		0.46	
468		-----		-----	
511		-----		-----	
541		-----		-----	
557		-----		-----	
562		-----		-----	
592		-----		-----	
631	D2700	85.0		-2.15	
657	D2700	85.8		0.34	
663		-----		-----	
671		-----		-----	
823	D2700	85.41		-0.88	
862	D2700	85.3		-1.22	
912		-----		-----	
962		-----		-----	
974	D2700	85.30		-1.22	
994		-----		-----	
995	D2700	86.4		2.20	
996		-----		-----	
1006		-----		-----	
1016		-----		-----	
1017		-----		-----	
1033		-----		-----	
1038		-----		-----	
1059	D2700	85.7		0.02	
1066	D2700	85.2		-1.53	
1080		-----		-----	
1081	D2700	85.6		-0.29	
1108		-----		-----	
1109	D2700	85.8		0.34	
1126		-----		-----	
1138		-----		-----	
1140	D2700	85.4		-0.91	
1167	ISO5163	85.8		0.34	
1186		-----		-----	
1205		-----		-----	
1215		-----		-----	
1218	FTNIR	85.85		0.49	

1231	D2700	85.6		-0.29	
1237		-----		-----	
1264	D2700	85.3	C	-1.22	First reported 84.88
1310	D2700	85.06	C	-1.97	First reported 84.88
1347		-----		-----	
1348		-----		-----	
1357		-----		-----	
1378	D2700	85.7		0.02	
1382		-----		-----	
1385		-----		-----	
1386		-----		-----	
1395		-----		-----	
1409	D2700	86.0		0.96	
1428	ISO5163	85.4		-0.91	
1531		-----		-----	
1613		-----		-----	
1620	D2700	85.5		-0.60	
1631	D2700	86.3		1.89	
1634		-----		-----	
1654		-----		-----	
1720		-----		-----	
1721		-----		-----	
1724	D2700	86.00		0.96	
1730		-----		-----	
1740		-----		-----	
1807		-----		-----	
1810		-----		-----	
1811		-----		-----	
1826	D2700	85.4		-0.91	
1833	D2700	86.0	C	0.96	First reported 86.6
1849	D2700	85.5		-0.60	
1851		-----		-----	
1854		-----		-----	
1938		-----		-----	
1939		-----		-----	
1948	D2700	86.2		1.58	
2130	ISO5163	86.40		2.20	
8010		-----		-----	

normality	OK
n	43
outliers	0
mean (n)	85.69
st.dev. (n)	0.367
R(calc.)	1.03
R(D2700:10)	0.90

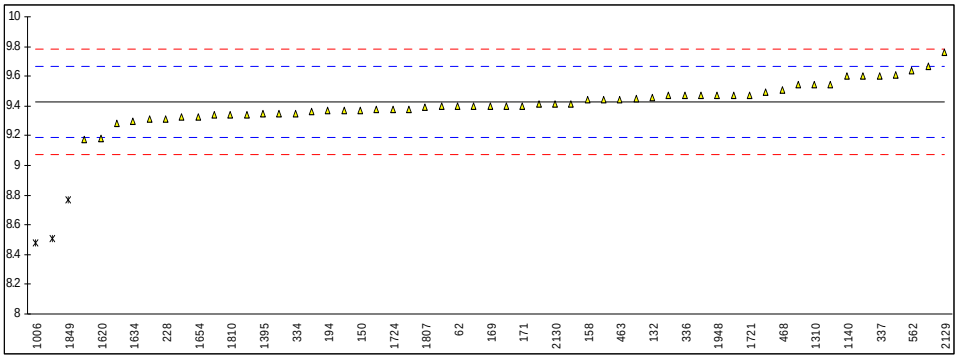


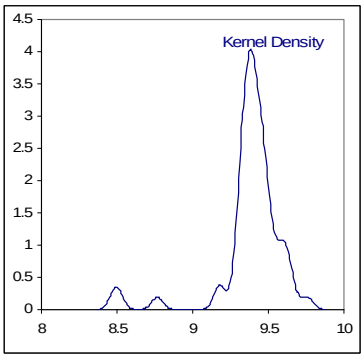


Determination of TVP on sample #11007; results in psi

lab	method	value	mark	z(targ)	remarks
52	D5191	9.4		-0.23	
62	D5191	9.40		-0.23	
120	D5191	9.38		-0.40	
132	D5191	9.46		0.28	
150	D5191	9.37		-0.48	
158	D5191	9.44		0.11	
159	D5191	9.41		-0.14	
169	D5191	9.40		-0.23	
171	D5191	9.40		-0.23	
177		-----		-----	
180	D5191	9.37		-0.48	
193	D5191	9.47		0.37	
194	D5191	9.37		-0.48	
199		-----		-----	
225		-----		-----	
228	D5191	9.314		-0.95	
230		-----		-----	
237	D5191	9.452		0.21	
238		-----		-----	
258		-----		-----	
312	D5191	9.40		-0.23	
317	D5191	9.49		0.54	
333	D5191	9.34		-0.73	
334	D5191	9.35		-0.65	
336	EN13016	9.47		0.37	
337	D5191	9.6	C	1.47	First reported 8.7
340		-----		-----	
399	D5191	9.54		0.96	
431		-----		-----	
433		-----		-----	
447	D5191	8.51	G(0.01)	-7.76	
463	D5191	9.4419		0.13	
468	D5191	9.5083		0.69	
557		-----		-----	
562	D5191	9.635		1.76	
631	D5191	9.38		-0.40	
657	D5191	9.41		-0.14	
862	D5191	9.174		-2.14	
974	D5191	9.6639	C	2.01	First reported 9.83
1006	D5191	8.48	G(0.01)	-8.01	
1017	D5191	9.4400		0.11	
1033	IP394	9.39844		-0.24	
1038		-----		-----	
1059	D5191	9.342		-0.72	
1080	D5191	9.47		0.37	
1081		-----		-----	
1108	D5191	9.36		-0.57	
1109	D5191	9.31		-0.99	
1138	D5191	9.60		1.47	
1140	D5191	9.6		1.47	
1167	EN13016	9.47		0.37	
1218		-----		-----	
1231		-----		-----	
1310	EN13016	9.54		0.96	
1378	D5191	9.61	C	1.55	First reported 8.70
1395	D5191	9.347		-0.68	
1409	D5191	9.28		-1.24	
1428		-----		-----	
1613	D5191	9.3259		-0.85	
1620	D5191	9.18		-2.09	
1631		-----		-----	
1634	EN13016	9.3		-1.07	
1654	D5191	9.326		-0.85	
1721	D5191	9.47		0.37	
1724	EN13016	9.38		-0.40	
1730		-----		-----	
1807	D5191	9.39		-0.31	
1810	D5191	9.34		-0.73	
1811	D5191	9.3477		-0.67	
1833	D5191	9.54		0.96	
1849	D5191	8.766	G(0.01)	-5.59	
1851		-----		-----	
1938		-----		-----	
1948	D5191	9.47		0.37	
2129	D5191	9.76		2.82	
2130	D5191	9.41		-0.14	

normality	not OK
n	54
outliers	3
mean (n)	9.427
st.dev. (n)	0.1128
R(calc.)	0.316
R(D5191:10)	0.331

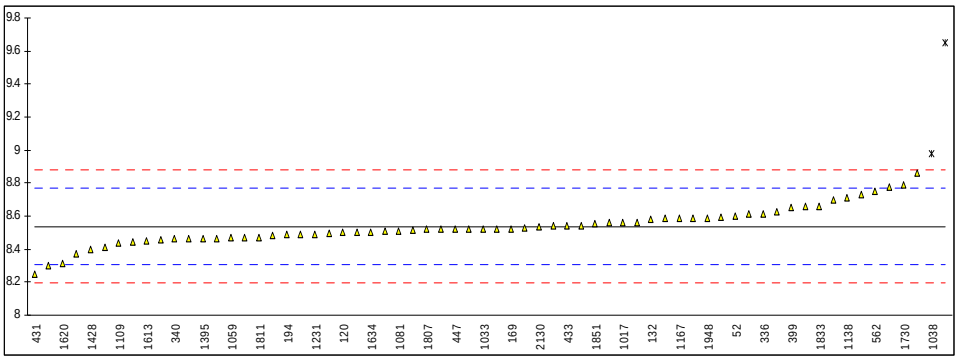


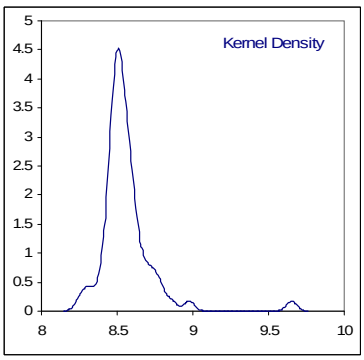


Determination of DVPE (acc. to ASTM D5191) on sample #11007; results in psi

lab	method	value	mark	z(targ)	remarks
52	D5191	8.6		0.54	
62	D5191	8.52		-0.15	
120	D5191	8.50		-0.33	
132	D5191	8.5809		0.38	
150	D5191	8.49		-0.41	
158	D5191	8.56		0.19	
159	D5191	8.53		-0.07	
169	D5191	8.523		-0.13	
171	D5191	8.523		-0.13	
177	D5191	8.37		-1.46	
180	D5191	8.494		-0.38	
193	D5191	8.591		0.46	
194	D5191	8.49		-0.41	
199		-----		-----	
225		-----		-----	
228	D5191	8.441		-0.84	
230		-----		-----	
237	D5191	8.541		0.03	
238		-----		-----	
258		-----		-----	
312	D5191	8.52		-0.15	
317	D5191	8.61		0.63	
333	D5191	8.46		-0.68	
334	D5191	8.48		-0.50	
336	EN13016	8.61		0.63	
337	D5191	8.70	C	1.41	First reported 7.85
340	D5191	8.46		-0.68	
399	D5191	8.65		0.98	
431	D5191	8.25	C	-2.50	First reported 82.5
433	EN13016	8.54		0.02	
447	D5191	8.52	C	-0.15	First reported 7.67
463	D5191	8.5634		0.22	
468	D5191	8.6275		0.78	
557		-----		-----	
562	D5191	8.749		1.84	
631	D5191	8.5		-0.33	
657	D5191	8.54		0.02	
862	D5191	8.303		-2.04	
974	D5191	8.7777	C	2.09	First reported 8.94
1006		-----		-----	
1017	D5191	8.5616		0.21	
1033	IP394	8.52150		-0.14	
1038	D5191	8.976	G(0.05)	3.81	
1059	D5191	8.467		-0.61	
1080	D5191	8.59		0.46	
1081	D5191	8.51		-0.24	
1108	D5191	8.47		-0.59	
1109	D5191	8.44		-0.85	
1138	D5191	8.71		1.50	
1140		-----		-----	
1167	EN13016	8.59		0.46	
1218		-----		-----	
1231	D5191	8.49		-0.41	
1310	EN13016	8.66		1.07	
1378	D5191	8.73	C	1.67	First reported 7.847
1395	D5191	8.463		-0.65	
1409	D5191	8.41		-1.11	
1428	EN13016	8.40		-1.20	
1613	D5191	8.4515		-0.75	
1620	D5191	8.31		-1.98	
1631		-----		-----	
1634	EN13016	8.5		-0.33	
1654	D5191	8.456		-0.71	
1721	D5482	8.59		0.46	
1724	EN13016	8.51		-0.24	
1730	EN13016	8.789		2.19	
1807	D5191	8.52		-0.15	
1810	D5191	8.465		-0.63	
1811	D5191	8.4725		-0.57	
1833	D5191	8.66		1.07	
1849	D5191	9.652	G(0.01)	9.70	
1851	D5191	8.557		0.17	
1938	D5191	8.514		-0.21	
1948	D5191	8.59		0.46	
2129	D5191	8.86		2.81	
2130	D5191	8.533		-0.04	

normality	not OK
n	64
outliers	2
mean (n)	8.538
st.dev. (n)	0.1119
R(calc.)	0.313
R(D5191:10)	0.322

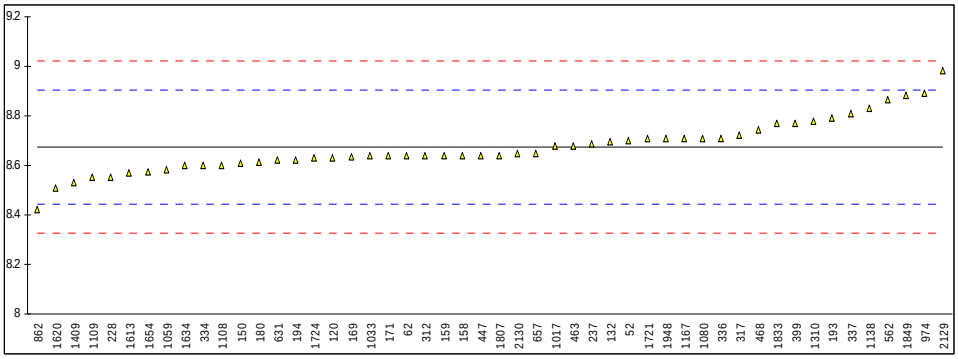


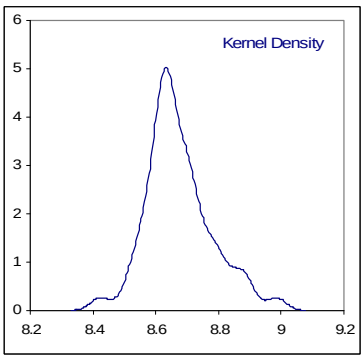


Determination of DVPE (acc. to EPA) on sample #11007; results in pPsi

lab	method	value	mark	z(targ)	remarks
52	D5191	8.7		0.23	
62	D5191	8.64		-0.29	
120	D5191	8.63		-0.38	
132	D5191	8.6968		0.20	
150	D5191	8.61		-0.55	
158	D5191	8.64		-0.29	
159	D5191	8.64		-0.29	
169	D5191	8.634		-0.34	
171	D5191	8.639		-0.30	
177		-----		-----	
180	D5191	8.611		-0.54	
193	D5191	8.791		1.02	
194	D5191	8.62		-0.47	
199		-----		-----	
225		-----		-----	
228	D5191	8.553		-1.05	
230		-----		-----	
237	D5191	8.689		0.13	
238		-----		-----	
258		-----		-----	
312	D5191	8.64		-0.29	
317	D5191	8.72		0.40	
333		-----		-----	
334	D5191	8.60		-0.64	
336	EN13016	8.71		0.31	
337	D5191	8.81	C	1.18	First reported 7.97
340		-----		-----	
399	D5191	8.77		0.83	
431		-----		-----	
433		-----		-----	
447	D5191	8.64	C	-0.29	First reported 7.79
463	D5191	8.6794		0.05	
468	D5191	8.7429		0.60	
557		-----		-----	
562	D5191	8.864		1.65	
631	D5191	8.62		-0.47	
657	D5191	8.65		-0.21	
862	D5191	8.423		-2.17	
974	D5191	8.8917	C	1.89	First reported 9.05
1006		-----		-----	
1017	D5191	8.6776		0.03	
1033	IP394	8.63791		-0.31	
1038		-----		-----	
1059	D5191	8.584		-0.78	
1080	D5191	8.71		0.31	
1081		-----		-----	
1108	D5191	8.60		-0.64	
1109	D5191	8.55		-1.07	
1138	D5191	8.83		1.35	
1140		-----		-----	
1167	D5191	8.71		0.31	
1218		-----		-----	
1231		-----		-----	
1310	EN13016	8.78		0.92	
1378		-----		-----	
1395		-----		-----	
1409	D5191	8.53		-1.25	
1428		-----		-----	
1613	D5191	8.5686		-0.91	
1620	D5191	8.51		-1.42	
1631		-----		-----	
1634	EN13016	8.6		-0.64	
1654	D5191	8.572		-0.88	
1721	D5191	8.71		0.31	
1724	EN13016	8.63		-0.38	
1730		-----		-----	
1807	D5191	8.64		-0.29	
1810		-----		-----	
1811		-----		-----	
1833	D5191	8.77		0.83	
1849	D5191	8.882		1.80	
1851		-----		-----	
1938		-----		-----	
1948	D5191	8.71		0.31	
2129	D5191	8.984		2.69	
2130	D5191	8.649		-0.21	

normality	not OK
n	50
outliers	0
mean (n)	8.674
st.dev. (n)	0.1050
R(calc.)	0.294
R(D5191:10)	0.323





APPENDIX 2

z-scores distillation ASTM D86 (automated mode)

lab	IBP	10%eva	50%eva	90%eva	FBP	%vol70	%vol100	%vol150
52	-0.08	-1.11	-1.61	-0.03	-0.30	1.60	-----	-----
62	0.77	0.21	2.27	-0.03	-0.43	-2.63	-1.65	0.21
120	-0.93	0.03	1.07	-0.31	-0.05	-0.81	-0.48	0.45
132	-0.66	-0.41	0.18	0.04	0.61	0.27	0.25	-0.50
150	0.03	-0.23	0.03	-1.10	1.39	0.03	0.10	1.41
158	-0.34	-0.06	0.78	0.47	-2.57	-0.21	-0.48	-0.74
159	2.69	0.38	0.78	0.19	0.48	-1.30	-0.33	-0.50
169	-1.09	-2.86	0.48	0.11	0.48	-----	-----	-----
171	-0.29	0.12	-0.71	0.04	-0.47	0.15	0.54	-0.03
180	-0.24	0.12	0.33	0.04	0.11	0.03	0.10	0.21
193	-0.08	-0.67	-0.56	0.04	0.73	-0.21	-1.50	-1.22
194	0.28	0.66	0.60	0.13	0.59	-1.09	-0.09	-0.22
199	-----	-----	-----	-----	-----	-----	-----	-----
217	-----	-----	-----	-----	-----	-----	-----	-----
221	-----	-----	-----	-----	-----	-----	-----	-----
224	-----	-----	-----	-----	-----	-----	-----	-----
225	-----	-----	-----	-----	-----	-----	-----	-----
228	-----	-----	-----	-----	-----	-----	-----	-----
230	1.73	0.56	1.97	1.40	1.06	-1.18	-1.79	-1.94
237	-----	-----	-----	-----	-----	-----	-----	-----
238	-----	-----	-----	-----	-----	-----	-----	-----
252	-----	-----	-----	-----	-----	-----	-----	-----
253	-----	-----	-----	-----	-----	-----	-----	-----
254	-----	-----	-----	-----	-----	-----	-----	-----
256	-----	-----	-----	-----	-----	-----	-----	-----
258	-----	-----	-----	-----	-----	-----	-----	-----
273	0.24	-0.23	-1.46	-0.03	-0.34	1.00	1.42	1.17
312	0.51	-0.32	0.63	-0.38	0.85	0.03	-0.19	0.69
317	-1.73	0.29	-1.01	-1.81	-0.47	-0.21	0.39	3.09
333	-1.09	-0.14	-0.56	-0.46	-0.18	0.51	0.25	0.93
334	0.13	0.47	1.82	0.11	-0.10	-1.54	-1.36	-0.26
336	-1.62	0.03	1.22	0.76	-0.14	-0.33	-0.92	-1.22
337	-----	-----	-----	-----	-----	-----	-----	-----
340	-0.29	0.03	-0.27	0.04	-0.55	-0.21	0.25	0.45
399	-----	-----	-----	-----	-----	-----	-----	-----
431	-----	-1.72	0.93	1.54	-----	-----	-----	-----
433	-----	-----	-----	-----	-----	-----	-----	-----
447	-0.08	-0.41	-0.56	0.68	0.61	0.64	-0.04	-1.70
463	-0.34	-0.14	2.12	2.18	-1.29	3.17	1.27	0.21
468	-0.77	0.38	1.82	1.68	-0.01	-0.69	-1.36	-2.90
511	-----	-----	-----	-----	-----	-----	-----	-----
541	-----	-----	-----	-----	-----	-----	-----	-----
557	-----	-----	-----	-----	-----	-----	-----	-----
562	1.09	0.21	0.78	0.19	1.80	-0.33	-0.63	-2.66
592	-----	-----	-----	-----	-----	-----	-----	-----
631	-----	-----	-----	-----	-----	-----	-----	-----
657	-0.40	0.21	1.82	-0.10	-0.59	-1.06	-1.21	0.21
663	0.56	0.73	0.78	-0.60	-0.72	-1.18	-0.48	1.17
671	0.56	1.87	-3.99	-0.74	-0.01	1.00	2.15	1.17
823	0.03	-1.28	-0.71	-0.46	0.03	1.00	0.69	1.17
862	-0.13	-0.06	0.48	0.33	-0.30	-0.21	-0.48	1.89
912	-----	-----	-----	-----	-----	-----	-----	-----
962	-----	-----	-----	-----	-----	-----	-----	-----
974	1.30	-0.14	-1.61	-0.88	-0.30	0.03	0.83	2.13
994	-----	-----	-----	-----	-----	-----	-----	-----
995	-----	-----	-----	-----	-----	-----	-----	-----
996	-----	-----	-----	-----	-----	-----	-----	-----
1006	-0.24	-0.32	0.18	-0.03	-0.51	-----	-----	-----
1016	-----	-----	-----	-----	-----	-----	-----	-----
1017	0.13	-0.06	1.97	0.04	0.94	-0.94	-0.77	3.09
1033	-0.24	-0.76	-1.31	0.47	0.07	1.72	0.69	-----
1038	-0.13	-0.76	-2.35	-0.46	-0.92	1.24	1.42	0.93
1059	0.35	-0.76	0.18	0.76	0.23	-0.57	0.10	-1.22
1066	-0.98	-0.67	-1.61	0.11	0.07	-----	-----	-----
1080	0.13	-0.67	-1.90	-0.10	-1.42	0.88	1.12	-0.50
1081	1.52	-0.67	-0.12	-1.10	-0.47	0.64	0.39	1.89
1108	1.99	1.87	-1.61	-1.31	-1.13	-0.81	1.42	-0.03
1109	1.25	0.21	0.33	-0.10	1.72	-0.57	0.10	-0.03
1126	0.67	0.91	12.69	4.53	1.76	-10.73	-9.09	-6.49
1138	-1.09	0.64	4.20	3.04	0.77	-1.42	-2.96	-5.29
1140	-1.62	0.12	0.93	0.26	-0.67	0.27	0.39	1.17
1167	0.19	0.16	-1.68	0.11	-0.74	-0.94	-1.28	-2.78
1186	-----	-----	-----	-----	-----	-----	-----	-----
1205	-----	-----	-----	-----	-----	-----	-----	-----
1215	-1.35	0.07	1.37	1.47	1.82	-0.81	-2.38	-4.33
1218	0.03	-0.49	0.03	-0.03	-0.34	0.27	-0.04	0.45

1231	-0.61	-0.32	-1.61	-0.46	-1.33	-----	-----	-----
1237	-----	-----	-----	-----	-----	-----	-----	-----
1264	-----	-----	-----	-----	-----	-----	-----	-----
1310	-----	-----	-----	-----	-----	-----	-----	-----
1347	-----	-----	-----	-----	-----	-----	-----	-----
1348	1.89	1.43	3.16	2.40	1.68	-2.63	-2.09	-3.62
1357	-----	-----	-----	-----	-----	-----	-----	-----
1378	0.40	0.47	3.01	0.33	1.31	-1.06	-1.50	-0.74
1382	-----	-----	-----	-----	-----	-----	-----	-----
1385	-----	-----	-----	-----	-----	-----	-----	-----
1386	0.03	0.69	2.04	1.08	0.90	-----	-----	-----
1395	-0.93	0.21	-0.56	-0.53	-0.30	0.64	0.54	0.93
1409	0.61	-0.14	-0.27	-0.60	-1.00	0.88	0.25	1.65
1428	-0.08	-0.41	-0.27	-0.38	0.61	0.27	0.25	0.69
1531	1.20	2.31	-0.56	-0.88	0.85	0.27	0.39	1.89
1613	-0.45	0.64	2.56	2.04	0.65	1.00	-0.04	-1.22
1620	-0.13	-0.67	-3.10	-0.24	-1.62	1.72	2.00	-0.03
1631	0.83	0.21	0.03	-0.31	2.51	-0.57	0.39	-0.50
1634	-0.56	0.21	-0.42	0.26	0.28	-0.45	0.54	-0.74
1654	1.46	-0.23	0.33	-0.03	-1.71	0.03	-0.04	1.41
1720	0.08	-0.23	-0.71	-0.24	-0.72	0.15	0.69	-0.03
1721	-----	-----	-----	-----	-----	-----	-----	-----
1724	-1.14	0.29	-0.12	0.19	-0.14	-0.45	0.10	-0.50
1730	-----	-----	-----	-----	-----	-----	-----	-----
1740	-1.09	-0.84	-2.35	-0.53	-0.34	1.12	1.85	0.45
1807	0.19	0.38	-1.31	-0.10	-0.01	1.00	0.83	-0.03
1810	-0.03	0.29	-1.46	-0.31	-0.63	-0.45	0.69	0.21
1811	-0.61	0.29	-0.71	0.11	0.44	-0.69	-0.63	-2.18
1826	-1.25	-0.14	-1.16	-0.10	1.23	0.88	0.54	-0.03
1833	0.24	0.56	-1.16	-0.60	-0.92	-0.21	-0.04	1.17
1849	2.37	1.26	-0.56	-0.81	0.61	1.12	1.12	1.41
1851	-----	-----	-----	-----	-----	-----	-----	-----
1854	-----	-----	-----	-----	-----	-----	-----	-----
1938	-1.30	0.03	-0.56	0.19	-1.46	-0.57	0.25	-0.26
1939	0.03	0.29	-0.42	-0.17	0.03	0.27	0.39	0.45
1948	0.40	0.64	0.78	1.18	-0.55	-1.42	-0.63	-2.18
2130	-1.25	-0.32	-1.01	-0.10	0.23	1.84	0.69	0.45
8010	-----	-----	-----	-----	-----	-----	-----	-----

z-scores distillation ASTM D86 (manual mode)

lab	IBP	10%eva	50%eva	90%eva	FBP	%vol70	%vol100	%vol150
52	-----	-----	-----	-----	-----	-----	-----	-----
62	-----	-----	-----	-----	-----	-----	-----	-----
120	-----	-----	-----	-----	-----	-----	-----	-----
132	-----	-----	-----	-----	-----	-----	-----	-----
150	-----	-----	-----	-----	-----	-----	-----	-----
158	-----	-----	-----	-----	-----	-----	-----	-----
159	-----	-----	-----	-----	-----	-----	-----	-----
169	-----	-----	-----	-----	-----	-----	-----	-----
171	-----	-----	-----	-----	-----	-----	-----	-----
180	-----	-----	-----	-----	-----	-----	-----	-----
193	-----	-----	-----	-----	-----	-----	-----	-----
194	-----	-----	-----	-----	-----	-----	-----	-----
199	-----	-----	-----	-----	-----	-----	-----	-----
217	-0.22	-0.60	-1.32	-0.87	-0.29	2.26	1.03	0.28
221	0.43	1.18	-0.08	-0.72	-0.49	-3.56	1.31	0.78
224	1.46	-0.05	0.08	1.11	1.10	0.68	-0.77	-0.36
225	-----	-----	-----	-----	-----	-----	-----	-----
228	-2.57	-3.11	-3.53	-4.37	-0.88	2.67	2.73	1.86
230	-----	-----	-----	-----	-----	-----	-----	-----
237	0.93	0.50	-0.28	-0.25	0.29	0.59	0.96	0.78
238	-----	-----	-----	-----	-----	-----	-----	-----
252	-1.32	-0.25	-0.42	-1.45	-0.10	-----	-----	-----
253	-0.07	-0.60	-0.08	-0.72	-1.07	0.59	0.03	0.57
254	-0.57	-0.25	0.61	-1.45	1.07	-----	-----	-----
256	-1.67	-0.32	0.96	2.49	-2.31	-0.10	-0.82	-1.02
258	-----	-----	-----	-----	-----	-----	-----	-----
273	-----	-----	-----	-----	-----	-----	-----	-----
312	-----	-----	-----	-----	-----	-----	-----	-----
317	-----	-----	-----	-----	-----	-----	-----	-----
333	-----	-----	-----	-----	-----	-----	-----	-----
334	-----	-----	-----	-----	-----	-----	-----	-----
336	-----	-----	-----	-----	-----	-----	-----	-----
337	-----	-----	-----	-----	-----	-----	-----	-----
340	-----	-----	-----	-----	-----	-----	-----	-----
399	-0.97	0.76	0.20	-0.36	0.33	-3.35	-2.17	-1.74
431	-----	-----	-----	-----	-----	-----	-----	-----
433	-----	-----	-----	-----	-----	-----	-----	-----
447	-----	-----	-----	-----	-----	-----	-----	-----
463	-----	-----	-----	-----	-----	-----	-----	-----
468	-----	-----	-----	-----	-----	-----	-----	-----
511	0.68	1.11	-0.84	0.23	-0.18	-2.87	0.96	-0.30
541	-0.57	-0.25	0.27	0.01	-0.88	1.29	-0.46	0.06
557	-----	-----	-----	-----	-----	-----	-----	-----
562	-----	-----	-----	-----	-----	-----	-----	-----
592	-----	-----	-----	-----	-----	-----	-----	-----
631	-0.07	-0.25	-0.77	-0.72	-0.10	1.29	0.60	1.14
657	-----	-----	-----	-----	-----	-----	-----	-----
663	-----	-----	-----	-----	-----	-----	-----	-----
671	-----	-----	-----	-----	-----	-----	-----	-----
823	-----	-----	-----	-----	-----	-----	-----	-----
862	-----	-----	-----	-----	-----	-----	-----	-----
912	-1.57	-0.25	-0.08	-0.72	-0.49	0.59	-0.11	0.42
962	-----	-----	-----	-----	-----	-----	-----	-----
974	-----	-----	-----	-----	-----	-----	-----	-----
994	-0.32	-0.25	-1.11	-1.82	-1.07	1.29	0.60	1.14
995	-0.57	-0.24	0.05	-0.22	0.29	0.99	0.68	0.92
996	-----	-----	-----	-----	-----	-----	-----	-----
1006	-----	-----	-----	-----	-----	-----	-----	-----
1016	-----	-----	-----	-----	-----	-----	-----	-----
1017	-----	-----	-----	-----	-----	-----	-----	-----
1033	-----	-----	-----	-----	-----	-----	-----	-----
1038	-----	-----	-----	-----	-----	-----	-----	-----
1059	-----	-----	-----	-----	-----	-----	-----	-----
1066	-----	-----	-----	-----	-----	-----	-----	-----
1080	-----	-----	-----	-----	-----	-----	-----	-----
1081	-----	-----	-----	-----	-----	-----	-----	-----
1108	-----	-----	-----	-----	-----	-----	-----	-----
1109	-----	-----	-----	-----	-----	-----	-----	-----
1126	-----	-----	-----	-----	-----	-----	-----	-----
1138	-----	-----	-----	-----	-----	-----	-----	-----
1140	-----	-----	-----	-----	-----	-----	-----	-----
1167	-----	-----	-----	-----	-----	-----	-----	-----
1186	-0.07	-0.75	-2.97	-4.04	-4.12	-1.48	4.86	1.86
1205	-----	-----	-----	-----	-----	-----	-----	-----
1215	-----	-----	-----	-----	-----	-----	-----	-----
1218	-----	-----	-----	-----	-----	-----	-----	-----
1231	-----	-----	-----	-----	-----	-----	-----	-----

1237	0.53	0.61	0.75	2.42	1.57	-1.14	-0.11	-1.09
1264	0.18	-0.96	-1.18	-1.01	-0.49	1.50	0.82	0.64
1310	0.18	0.47	1.30	2.57	-0.49	0.25	-0.82	-1.38
1347	-0.07	-0.96	-0.08	-0.72	3.01	0.59	2.02	1.86
1348	-----	-----	-----	-----	-----	-----	-----	-----
1357	-----	-----	-----	-----	-----	-----	-----	-----
1378	-----	-----	-----	-----	-----	-----	-----	-----
1382	-----	-----	-----	-----	-----	-----	-----	-----
1385	1.93	-0.25	3.37	3.66	0.68	-0.79	-2.24	-1.74
1386	-----	-----	-----	-----	-----	-----	-----	-----
1395	-----	-----	-----	-----	-----	-----	-----	-----
1409	-----	-----	-----	-----	-----	-----	-----	-----
1428	-----	-----	-----	-----	-----	-----	-----	-----
1531	-----	-----	-----	-----	-----	-----	-----	-----
1613	-----	-----	-----	-----	-----	-----	-----	-----
1620	-----	-----	-----	-----	-----	-----	-----	-----
1631	-----	-----	-----	-----	-----	-----	-----	-----
1634	-----	-----	-----	-----	-----	-----	-----	-----
1654	-----	-----	-----	-----	-----	-----	-----	-----
1720	-----	-----	-----	-----	-----	-----	-----	-----
1721	1.68	0.83	1.99	2.20	0.29	-0.10	-1.53	-1.02
1724	-----	-----	-----	-----	-----	-----	-----	-----
1730	-----	-----	-----	-----	-----	-----	-----	-----
1740	-----	-----	-----	-----	-----	-----	-----	-----
1807	-----	-----	-----	-----	-----	-----	-----	-----
1810	-----	-----	-----	-----	-----	-----	-----	-----
1811	-----	-----	-----	-----	-----	-----	-----	-----
1826	-----	-----	-----	-----	-----	-----	-----	-----
1833	-----	-----	-----	-----	-----	-----	-----	-----
1849	-----	-----	-----	-----	-----	-----	-----	-----
1851	-----	-----	-----	-----	-----	-----	-----	-----
1854	-----	-----	-----	-----	-----	-----	-----	-----
1938	-----	-----	-----	-----	-----	-----	-----	-----
1939	-----	-----	-----	-----	-----	-----	-----	-----
1948	-----	-----	-----	-----	-----	-----	-----	-----
2130	-----	-----	-----	-----	-----	-----	-----	-----
8010	-----	-----	-----	-----	-----	-----	-----	-----

APPENDIX 3

Number of participants per country

1 laboratory in ARGENTINA
2 laboratories in AUSTRALIA
2 laboratories in AUSTRIA
1 laboratory in AZERBAIJAN
3 laboratories in BELGIUM
1 laboratory in BOLIVIA
1 laboratory in BRAZIL
2 laboratories in CANADA
1 laboratory in CHILE
1 laboratory in COSTA RICA
1 laboratory in CÔTE D'IVOIRE
2 laboratories in CZECH REPUBLIC
1 laboratory in ESTONIA
5 laboratories in FRANCE
1 laboratory in GEORGIA
6 laboratories in GREECE
1 laboratory in GUAM
1 laboratory in HUNGARY
2 laboratories in INDIA
1 laboratory in IRELAND
1 laboratory in ISRAEL
1 laboratory in ITALY
1 laboratory in JORDAN
2 laboratories in KENYA
1 laboratory in KOREA
1 laboratory in LATVIA
3 laboratories in LEBANON
1 laboratory in MAURITIUS
1 laboratory in MOZAMBIQUE
1 laboratory in NETHERLANDS ANTILLEN
2 laboratories in NIGERIA
4 laboratories in P.R. of CHINA
1 laboratory in PERU
1 laboratory in PHILIPPINES
1 laboratory in PORTUGAL
1 laboratory in REPUBLIC OF DJIBOUTI
1 laboratory in REPUBLIC OF GUINEE
1 laboratory in SAUDI ARABIA
1 laboratory in SENEGAL
1 laboratory in SINGAPORE
2 laboratories in SLOVENIA
1 laboratory in SOUTH AFRICA
2 laboratories in SPAIN
1 laboratory in SUDAN
1 laboratory in SULTANATE OF OMAN
2 laboratories in SWEDEN
1 laboratory in TAIWAN R.O.C.
1 laboratory in TANZANIA
3 laboratories in THAILAND
7 laboratories in THE NETHERLANDS
1 laboratory in TOGO
1 laboratory in TUNISIA
9 laboratories in TURKEY
1 laboratory in TURKMENISTAN
2 laboratories in U.A.E.
1 laboratory in U.S. VIRGIN ISLANDS
9 laboratories in U.S.A.
5 laboratories in UNITED KINGDOM

APPENDIX 4

Abbreviations:

C	= final result after checking of first reported suspect result
D(0.01)	= outlier in Dixon's outlier test
D(0.05)	= straggler in Dixon's outlier test
G(0.01)	= outlier in Grubbs' outlier test
G(0.05)	= straggler in Grubbs' outlier test
DG(0.01)	= outlier in Double Grubbs' outlier test
DG(0.05)	= straggler in Double Grubbs' outlier test
E	= error in calculations
U	= reported in a different unit
W	= result withdrawn on request of participant
ex	= excluded from calculations
n.a.	= not applicable
n.d.	= not detected
fr.	= first reported
SDS	= Safety Data Sheet

Literature:

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12 Analytical Methods Committee Technical brief, No4 January 2001.

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