Results of Proficiency Test
Gasoline (EN specification)
October 2010

Organised by: Institute for Interlaboratory Studies
Spijkenisse, the Netherlands

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CONTENTS

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 EN228 specification. In this interlaboratory study 94 laboratories in 44 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 #1068) and/or 1*1 litre (± 800 mL filled) euro 95 Gasoline (labelled #1069) 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 local petrolstation in the Netherlands. After homogenisation in a 500 L mixing vessel, 226 amber glass bottles of 1 litre were filled and labelled #1068.
The homogeneity of the subsamples #1068 was checked by determination of Density @15°C in accordance with ISO12185 on 7 stratified randomly selected samples.

	Density @ 15°C in kg/L
Sample #1068-1	0.74005
Sample #1068-2	0.74005
Sample #1068-3	0.74002
Sample #1068-4	0.74003
Sample #1068-5	0.74003
Sample #1068-6	0.74004
Sample #1068-7	0.74002

Table 1: homogeneity test of subsamples #1068

For the second batch, specifically for Vapour Pressure, the necessary sample material of 100 litre of Gasoline Euro 95 was also obtained from a local petrolstation in the Netherlands. After homogenisation, 96 amber glass bottles of 1 litre with approx. 800 mL for Vapour Pressure only and labelled #1069. The homogeneity of the subsamples #1069 was checked by determination of Dry Vapour Pressure Equivalent in accordance with EN13016-1 on 8 stratified randomly selected samples.

	DVPE in kPa
Sample #1069-1	83.43
Sample #1069-2	83.77
Sample #1069-3	83.98
Sample #1069-4	84.18
Sample #1069-5	83.98
Sample #1069-6	83.98
Sample #1069-7	83.91
Sample #1069-8	83.98

Table 2: homogeneity test of subsamples #1069

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/L	DVPE in kPa
r (sample #1068)	0.00007	----
r (sample #1069)	----	0.62
reference method	ISO12185	EN 13016-1
0.3 x R (ref. method)	0.00015	1.02

Table 3: repeatabilities of subsamples #1068 and #1069

The repeatabilities of the results of homogeneity test for Density and DVPE were in agreement with the respective repeatabilities required by ISO12185 and EN13016-1. Therefore, homogeneity of subsamples #1068 and #1069 was assumed.

To the participants, depending on their registration, 2*1 litre of sample #1068 and/or 1*1 litre (± 800 mL filled) of sample #1069 were sent on September 29, 2010.

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, Aromatics by GC (%V/V and %M/M), Benzene, Copper Strip Corrosion, Doctor Test, Density @ 15°C, Distillation (automated and manual), Existent gum, Lead, Manganese, Olefins by FIA, Olefins by GC (%V/V and %M/M), DIPE, Ethanol, ETBE, MTBE, Iso-Butanol, TAME, t-Butanol, Ethers >C5, Methanol, Oxygen, Oxidation Stability, Sulphur, RON and MON (before and after correction) on sample #1068.
On sample #1069, the participants were requested to determine Air Saturated Vapour Pressure and DVPE (acc. EN13016-1). 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 Bosnia and Herzegovina, Cote D'Ivoire, Croatia, India, P.R. of China, Saudi Arabia, Sudan and Sultanate of Oman. The samples to these laboratories arrived near of after the final reporting date.
From the 94 participants, 22 participants did report the results after the deadline for reporting and 3 participants did not report any results at all. The 91 reporting laboratories did send in 1827 numerical results. Observed were 77 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 #1068: API gravity, Benzene, Density, Distillation (for automated:10%, 50% and 90% evaporated and %vol at 70ºC, 100ºC and 150ºC, for manual: FBP), Existent Gum, Oxygen and RON. In these cases, the statistical evaluation should be used with care.

API Gravity: 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 D1298:05.

Aromatics by FIA: This determination was problematic for a number of laboratories. Four statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with the requirements of EN15553:07.

Aromatics by GC: The determination in %V/V was not problematic. Only two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in good agreement with the requirements of EN14517:04. Regretfully for the determination in %M/M no precision data are available. Therefore, no significant conclusions were drawn.

Appearance: No problems have been observed, all participants agreed on the appearance as Clear and Bright.

Benzene: This determination was problematic. Four statistical outliers were observed and the calculated reproducibility after rejection of the statistical outliers is not at all in agreement with the requirements of EN14517:04.

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

Density @ 15°C: This determination was problematic for a number of laboratories. Six statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in full agreement with the requirements of ISO12185:96.

Distillation This determination was problematic for a number of participants. In total twenty-two (all automated mode) statistical outliers were observed. The calculated reproducibilities of the automated mode, after rejection of the statistical outliers, for IBP, 10% and 90% evaporated, FBP and volume at 70ºC and 100ºC, are in agreement with the requirements of ISO3405:09. Not in agreement with the requirements of ISO3405:09 were the calculated reproducibilities for 50% evaporated and volume at 150ºC.
The calculated reproducibilities of the manual mode for IBP, 10% evaporated and volume at 70ºC are in agreement with the requirements of ISO3405:09. Not in agreement with the requirements of ISO3405:09 were the calculated reproducibilities for 50% and 90% evaporated, FBP and volume at 100ºC and 150ºC. The low number of results may partly explain the large spread.

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

Existent Gum: The consensus value was below the detection limit and a large number of participants reported a “less then” result.. Therefore no significant conclusions were drawn. Three statistical outliers were observed.

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.

Manganese: The consensus value of the group was below the application range (0.25 - 40 mg/L) and most participants reported a “less then” result. Therefore, no significant conclusions were drawn.

Olefins by FIA: This determination was problematic, as the results seem to be bimodally divided. Therefore, no significant conclusions were drawn.
As the sample contained an amount of Oxygenates (Ethanol and MTBE) the calculation for the correction on a total-sample basis does play a role. Reported in an independent investigation, another cause for the observed spread may be the humidity of the silica used due to insufficient drying (see appendix 4; ref nr 14). Another cause for the large spread observed may be the fact that in the last version of ASTM D1319 the sample is no longer depentanized, and several participating laboratories may have used the previous version of this method that did prescribe depentanization.

Olefins by GC: The determination in %V/V was not problematic. Only one statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in good agreement with the requirements of EN14517:04.
Regretfully for the determination in %M/M no precision data are available. Therefore, no significant conclusions were drawn.

Ethanol: This determination was problematic. Only two statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of EN1601:97.

MTBE: This determination was not problematic. Only one statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is almost in agreement with the requirements of EN1601:97.

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. However, the determination of “Ethers >C5”, was problematic. Several participants included MTBE in the final “Ethers >C5” result. After substraction of the MTBE result, the consensus value of “Ethers >C5” is below or near the detection limit of the test method.

Oxygen content: 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 good in agreement with the requirements of EN1601:97.

Oxidation stability: The majority of the laboratories agreed that the Oxidation Stability is >720 (or even >900) minutes.

Sulphur: This determination was not problematic at the low level of 6.8 mg/kg. No statistical outliers were observed and the calculated reproducibility is in full agreement with the requirements of ISO20846. When the results ASTM D5453 and ISO20846 results were evaluated separately, both calculated reproducibilities are in agreement with the requirements of the respective test method.

RON: The determination of RONm/RON 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 ISO5164:05.
In theory, the difference between the consensus values of RONm (uncorrected, measured) and RON (corrected) should be exactly 0.2. The observed difference is 0.22.

MON: The determination of MONm/MON was problematic. Only one statistical outlier was observed. However, the calculated reproducibility after rejection of the statistical outlier is not in agreement with the requirements ISO5163:05.
In theory, the difference between the consensus values of MONm (uncorrected, measured) and MON (corrected) should be exactly 0.2. The observed difference is 0.21.

ASVP: This determination of Air Saturated Vapour Pressure was not problematic. Only one statistical outlier was observed and the calculated reproducibility, after rejection of the statistical outlier, is in good agreement with the requirements of EN13016-1.

DVPE: The conversion of the measured Air Saturated Vapour Pressure to the corresponding Dry Vapour Pressure Equivalent (DVPE) as described in EN13016-1, showed only one statistical outlier for DVPE (the same lab as for ASVP, thus caused by the off ASVP test result).
The calculated reproducibility of DVPE after rejection of the statistical outlier is in good agreement with the requirements of EN13016-1. No calculation errors with the conversion of ASVP 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 #1068 and #1069, 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		-----	37	59.56	0.23	0.30
Aromatics by FIA		% V/V	38	31.23	2.95	3.70
Aromatics by GC		% V/V	40	30.30	0.98	1.50
Aromatics by GC		% M/M	31	35.82	1.38	n.a.
Benzene		% V/V	57	0.73	0.07	0.04
Copper Strip 3 hrs @ 50°C		-----	72	1	n.a.	n.a.
Density @ 15 ^{o}C		kg/m^3	80	740.20	0.53	0.50
Dist. Auto.	IBP	ºC	74	31.12	5.22	4.90
	10%-evap.	ºC	73	45.37	2.74	3.20
	50%-evap.	ºC	73	92.39	3.08	1.88
	90%-evap.	ºC	69	149.98	2.83	3.99
	FBP	ºC	74	186.32	6.38	6.78
	%vol at 70ºC	%	68	35.32	2.53	2.70
	%vol at 100ºC	%	71	55.36	2.27	2.20
	%vol at 150ºC	%	70	89.94	1.81	1.30
Dist. Manu.	IBP	ºC	7	33.27	5.82	5.60
	10%-evap.	ºC	7	46.35	4.17	4.07
	50%-evap.	ºC	7	93.06	6.58	4.26
	90%-evap.	ºC	7	150.71	12.28	3.98
	FBP	ºC	7	185.28	8.84	7.20
	%vol at 70ºC	%	7	35.46	3.53	3.44
	%vol at 100ºC	%	7	55.80	4.67	3.12
	%vol at 150ºC	%	7	89.89	4.76	2.82
Doctor Test		-----	51	Negative	n.a.	n.a.
Existent gum (washed)		mg/100mL	33	0.48	0.61	(0.64)
Lead as Pb		mg/L	14	0.28	0.84	(2.00)
Manganese as Mn		mg/L	4	0.22	0.69	(0.06)
Olefins by FIA		%V/V	39	9.71	3.95	(3.20)
Olefins by GC		%V/V	38	10.82	1.30	1.78
Olefins by GC		%M/M	30	9.83	1.25	n.a.
DiPE		%V/V	11	0.01	0.04	n.a.
Ethanol		%V/V	49	3.38	0.55	0.40
ETBE		%V/V	27	0.12	0.11	n.a.
Ethers >C5 (after correction)		%V/V	10	0.16	0.24	n.a.
iso-Butanol		%V/V	5	0.002	0.011	n.a.
Iso-Propanol		%V/V	7	0.021	0.086	n.a.
Methanol		%V/V	8	0.048	0.273	n.a.
MTBE		%V/V	53	2.04	0.33	0.30
TAME		%V/V	7	0.014	0.059	n.a.
t-Butanol		%V/V	8	0.024	0.074	n.a.
Oxygen content		%M/M	41	1.66	0.27	0.30
Oxidation Stability		min	8	>720	n.a.	n.a.
Sulphur		mg/kg	72	6.85	2.20	2.16
RONm		-----	41	96.79	0.68	0.70
RON (after correction)		-----	38	96.57	0.70	0.70
MONm		-----	39	85.98	1.12	0.90
MON (after correction)		-----	34	85.77	1.10	0.90

table 4: performance evaluation sample #1068

* 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)
ASVP	kPa	49	91.14	2.52	3.49
DVPE acc. to EN13016-1	kPa	60	84.12	2.24	3.40

table 5: performance evaluation sample #1069

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 OCTOBER 2010 WITH PREVIOUS PTS

	October 2010	*February 2010*	*October 2009*	*February 2009*
Number of rep. participants	91	139	66	126
Number of results reported	1827	2699	1197	2378
Statistical outliers	77	95	58	79
Percentage outliers	4.2%	3.5%	4.8%	3.3%

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	*October 2010*	*February 2010*	*October 2009*	*February 2009*
API Gravity	+	+	++	+
Aromatics by FIA	++	-	--	--
Aromatics by GC	++	--	+/-	--
Benzene	--	+	++	+/-
Density @ 15°C	-	++	-	+/-
Distillation Automated	+	+	++	++
Distillation Manual	-	+/-	n.e.	+/-
Existent gum (washed)	(+/-)	(++)	(++)	(++)
Lead as Pb	(++)	(++)	n.e.	n.e.
Ethanol	--	-	--	n.e.
MTBE	-	--	--	n.e.
Olefins by FIA	(--)	(--)	--	--
Olefins by GC	++	+/-	+/-	--
Sulphur	+/-	-	++	--
RON	+/-	-	--	--
MON	-	--	--	--
ASVP	++	n.e.	n.e.	n.e.
DVPE EN13016-1	++	n.e.	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

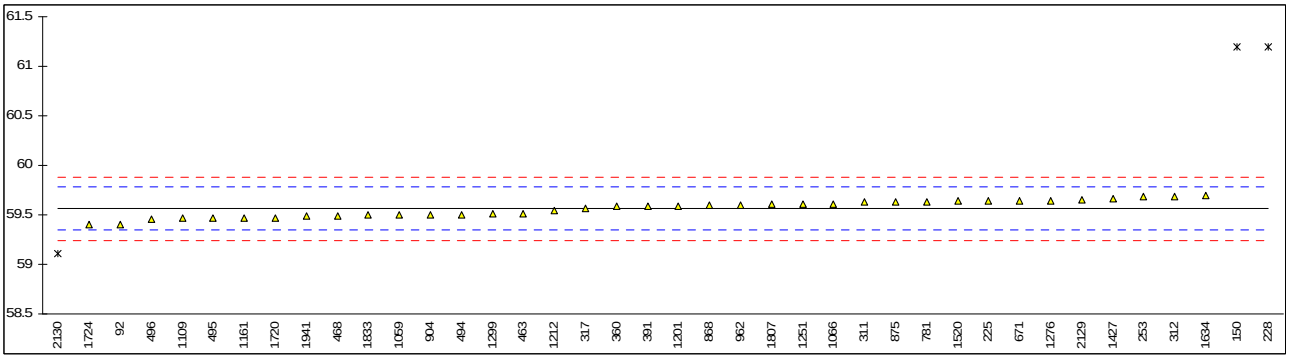
APPENDIX 1

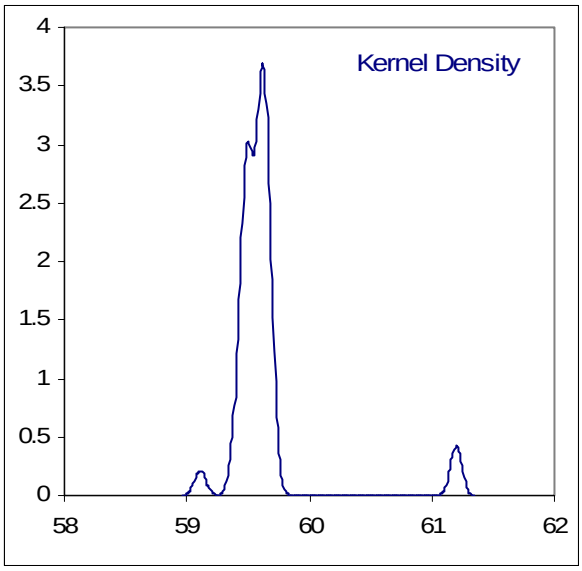
Determination of API Gravity on sample #1068;

lab	method	value	mark	z(targ)	remarks
92	D1298	59.4		-1.53	
150	D4052	61.2	G(0.01)	15.27	
225	calc	59.64		0.71	
228	D1298	61.2	G(0.01)	15.27	
253	D4052	59.68		1.08	
311	D4052	59.63		0.62	
312	D4052	59.69		1.18	
317	D1298	59.56		-0.04	
323		-----		-----	
334		-----		-----	
335		-----		-----	
336		-----		-----	
338		-----		-----	
340		-----		-----	
344		-----		-----	
353		-----		-----	
357		-----		-----	
360	D1298	59.59		0.24	
391	D1298	59.59		0.24	
430		-----		-----	
431		-----		-----	
440		-----		-----	
445		-----		-----	
447		-----		-----	
463	D1298	59.51		-0.50	
468	D1298	59.492		-0.67	
485		-----		-----	
494	D1298	59.5		-0.60	
495	calc	59.47		-0.88	
496	D4052	59.46		-0.97	
671	D4052	59.64		0.71	
781	D1298	59.63		0.62	
868	D1298	59.6		0.34	
875	D1298	59.63		0.62	
904	D4052	59.5		-0.60	
912		-----		-----	
962	D1298	59.6		0.34	
1006		-----		-----	
1017		-----		-----	
1038		-----		-----	
1059	D4052	59.50		-0.60	
1066	D1298	59.61		0.43	
1080		-----		-----	
1081		-----		-----	
1108		-----		-----	
1109	D287	59.47		-0.88	
1126		-----		-----	
1140		-----		-----	
1159		-----		-----	
1161	D1298	59.47		-0.88	
1167		-----		-----	
1186		-----		-----	
1201	D4052	59.59		0.24	
1203		-----		-----	
1205		-----		-----	
1212	ISO12185	59.54		-0.22	
1218		-----		-----	
1251	D4052 calc.	59.61		0.43	
1259		-----		-----	
1272		-----		-----	
1276	D1298	59.64		0.71	
1280		-----		-----	
1293		-----		-----	
1299	D1298	59.51		-0.50	
1340		-----		-----	
1357		-----		-----	
1419		-----		-----	
1426		-----		-----	
1427	D1298	59.66		0.90	
1432		-----		-----	
1520	D1298	59.64		0.71	
1603		-----		-----	
1631		-----		-----	
1634	D1298	59.7		1.27	
1635		-----		-----	

1636		-----		-----	
1709		-----		-----	
1720	D1298	59.47		-0.88	
1724	D1298	59.4		-1.53	
1807	D1298	59.61		0.43	
1810		-----		-----	
1811		-----		-----	
1826		-----		-----	
1833	D1298	59.5		-0.60	
1842		-----		-----	
1849		-----		-----	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1941	In house	59.49		-0.69	
1948		-----		-----	
2129	D1298	59.65	C	0.80	First reported 73.52
2130	Conversion	59.11	G(0.01)	-4.24	
2146		-----		-----	
7001		-----		-----	

normality	not OK
n	37
outliers	3
mean (n)	59.564
st.dev. (n)	0.0825
R(calc.)	0.231
R(D1298:05)	0.300



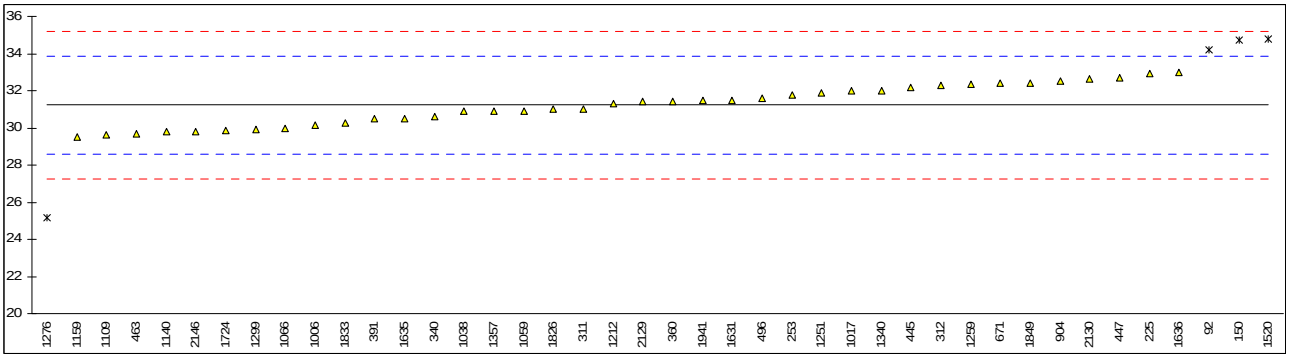


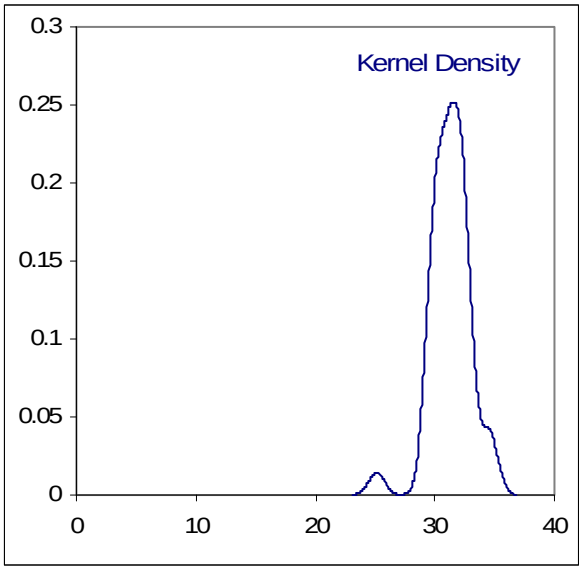
Determination of Aromatics by FIA on sample #1068; results in %V/V

lab	method	value	mark	z(targ)	remarks
92	D1319	34.2	G(0.01)	2.25	
150	D1319	34.7	DG(0.05)	2.63	
225	D1319	32.9	C	1.27	First reported 8.45
228		-----		-----	
253	D1319	31.74		0.39	
311	D1319	31.0		-0.17	
312	D1319	32.3		0.81	
317		-----		-----	
323		-----		-----	
334		-----		-----	
335		-----		-----	
336		-----		-----	
338		-----		-----	
340	D1319	30.6		-0.47	
344		-----		-----	
353		-----		-----	
357		-----		-----	
360	D1319	31.4		0.13	
391	D1319	30.5		-0.55	
430		-----		-----	
431		-----		-----	
440		-----		-----	
445	D1319	32.2		0.74	
447	D1319	32.7		1.12	
463	D1319	29.7		-1.15	
468		-----		-----	
485		-----		-----	
494		-----		-----	
495		-----		-----	
496	D1319	31.6		0.28	
671	D1319	32.39	C	0.88	First reported 41.07
781		-----		-----	
868		-----		-----	
875		-----		-----	
904	D1319	32.5		0.96	
912		-----		-----	
962		-----		-----	
1006	D6293	30.14		-0.82	
1017	D1319	32.02		0.60	
1038	D1319	30.9		-0.25	
1059	D1319	30.9		-0.25	
1066	D1319	30.0		-0.93	
1080		-----		-----	
1081		-----		-----	
1108		-----		-----	
1109	D1319	29.6		-1.23	
1126		-----		-----	
1140	IP156	29.8		-1.08	
1159	D5845	29.5		-1.31	
1161		-----		-----	
1167		-----		-----	
1186		-----		-----	
1201		-----		-----	
1203		-----		-----	
1205		-----		-----	
1212	D1319	31.32		0.07	
1218		-----		-----	
1251	D1319	31.9		0.51	
1259	D1319	32.32		0.83	
1272		-----		-----	
1276	D1319	25.14	G(0.01)	-4.61	
1280		-----		-----	
1293		-----		-----	
1299	D1319	29.9		-1.00	
1340	D1319	32.02		0.60	
1357	w/o corr	30.9		-0.25	
1419		-----		-----	
1426		-----		-----	
1427		-----		-----	
1432		-----		-----	
1520	D1319	34.77	DG(0.05)	2.68	
1603		-----		-----	
1631	D1319	31.5		0.21	
1634		-----		-----	
1635	D1319	30.5		-0.55	
1636	D1319	32.97		1.32	

1709		-----	-----
1720		-----	-----
1724	D1319	29.86	-1.03
1807		-----	-----
1810		-----	-----
1811		-----	-----
1826	D1319	30.99	-0.18
1833	EN15553	30.27	-0.72
1842		-----	-----
1849	D1319	32.4	0.89
1936		-----	-----
1937		-----	-----
1938		-----	-----
1941	D1319	31.5	0.21
1948		-----	-----
2129	D1319	31.4	0.13
2130	D1319	32.64	1.07
2146	D1319	29.8	-1.08
7001		-----	-----

normality	OK
n	38
outliers	4
mean (n)	31.226
st.dev. (n)	1.0542
R(calc.)	2.952
R(EN15553:07)	3.700



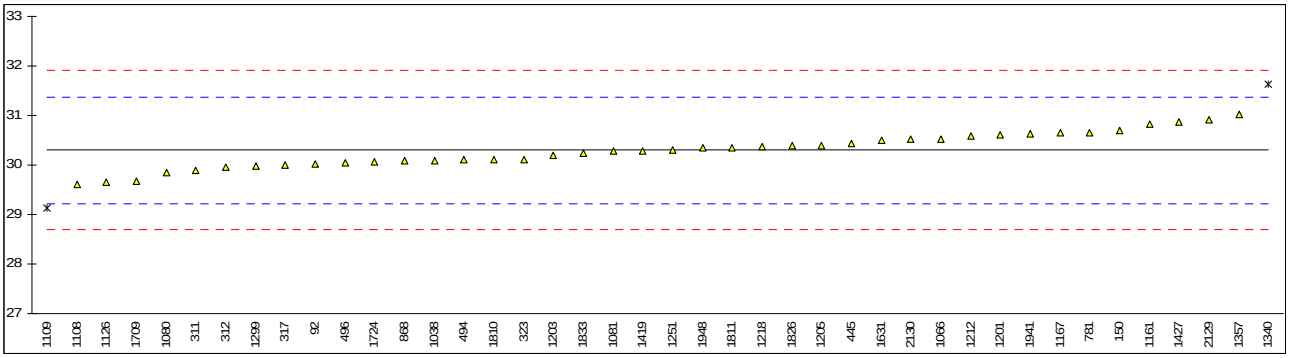


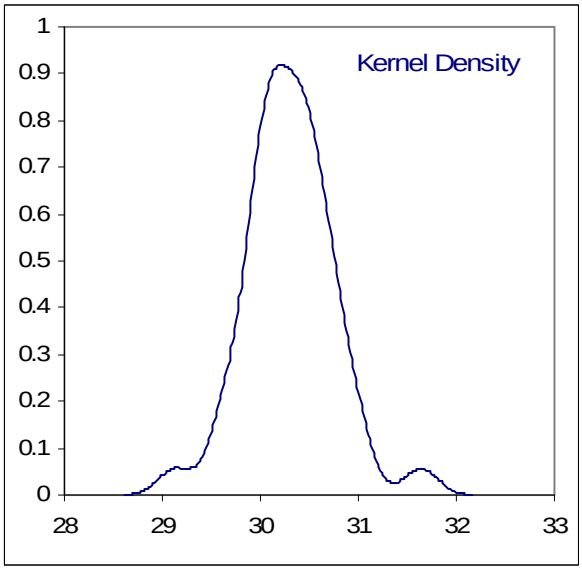
Determination of Aromatics by GC on sample #1068; results in %V/V

lab	method	value	mark	z(targ)	remarks
92	INH-3.0	30.03		-0.50	
150	D5769	30.7		0.75	
225		-----		-----	
228		-----		-----	
253		-----		-----	
311	EN14517	29.9		-0.74	
312	ISO22854	29.96		-0.63	
317	EN14517	30.0		-0.55	
323	ISO22854	30.1		-0.37	
334		-----		-----	
335		-----		-----	
336		-----		-----	
338		-----		-----	
340		-----		-----	
344		-----		-----	
353		-----		-----	
357		-----		-----	
360		-----		-----	
391		-----		-----	
430		-----		-----	
431		-----		-----	
440		-----		-----	
445	EN14517	30.44		0.27	
447		-----		-----	
463		-----		-----	
468		-----		-----	
485		-----		-----	
494	ISO22854	30.10		-0.37	
495		-----		-----	
496	ISO22854	30.05		-0.46	
671		-----		-----	
781	INH-52714	30.66		0.68	
868	D6839	30.08		-0.40	
875		-----		-----	
904		-----		-----	
912		-----		-----	
962		-----		-----	
1006		-----		-----	
1017		-----		-----	
1038	D6839	30.09		-0.38	
1059		-----		-----	
1066	ISO22854	30.53		0.44	
1080	Reform	29.85		-0.83	
1081	EN14517	30.28	C	-0.03	First reported 32.50
1108	EN14517	29.6		-1.30	
1109	D6839	29.13	G(0.05)	-2.17	
1126	EN14517	29.66		-1.19	
1140		-----		-----	
1159		-----		-----	
1161	ISO22854	30.83		1.00	
1167	ISO22854	30.65		0.66	
1186		-----		-----	
1201	ISO22854	30.6		0.57	
1203	EN14517	30.2		-0.18	
1205	EN14517	30.4		0.19	
1212	INH-155120	30.58		0.53	
1218	EN14517	30.37		0.14	
1251	ISO22854	30.3		0.01	
1259		-----		-----	
1272		-----		-----	
1276		-----		-----	
1280		-----		-----	
1293		-----		-----	
1299	EN14517	29.97		-0.61	
1340	EN14517	31.64	G(0.05)	2.51	
1357	D6730	31.02		1.35	
1419	EN22854	30.29		-0.01	
1426		-----		-----	
1427	EN14517	30.87		1.07	
1432		-----		-----	
1520		-----		-----	
1603		-----		-----	
1631	EN14517	30.5		0.38	
1634		-----		-----	
1635		-----		-----	
1636		-----		-----	

1709	EN14517	29.68		-1.15	
1720		-----		-----	
1724	EN14517	30.06		-0.44	
1807		-----		-----	
1810	EN14517	30.1		-0.37	
1811	EN14517	30.35		0.10	
1826	EN14517	30.4		0.19	
1833	ISO22854	30.25		-0.09	
1842		-----		-----	
1849		-----		-----	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1941	In house	30.62		0.60	
1948	EN14517	30.34		0.08	
2129	D6730	30.910	C	1.14	First reported 31.629
2130	D6730	30.52		0.42	
2146		-----		-----	
7001		-----		-----	

normality	OK
n	40
outliers	2
mean (n)	30.296
st.dev. (n)	0.3489
R(calc.)	0.977
R(EN14517:04)	1.502



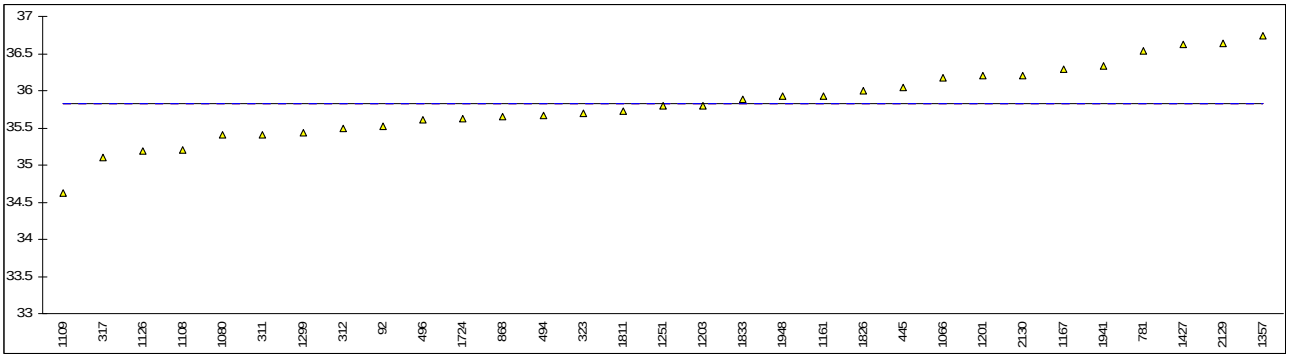


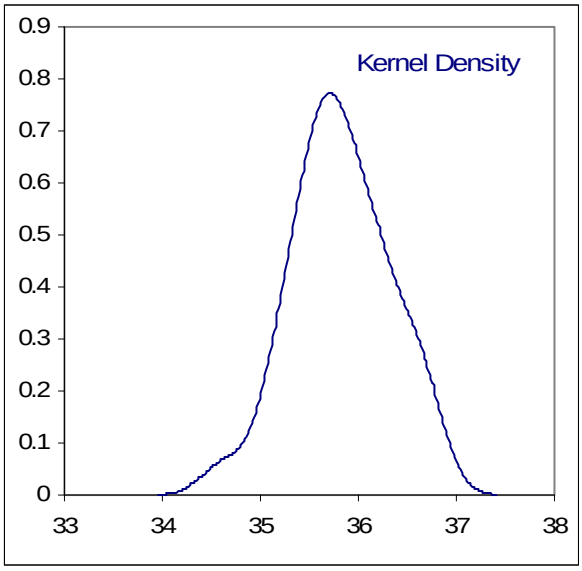
Determination of Aromatics by GC on sample #1068; results in %M/M

lab	method	value	mark	z(targ)	remarks
92	INH-3.0	35.52		-----	
150		-----		-----	
225		-----		-----	
228		-----		-----	
253		-----		-----	
311	EN14517	35.4		-----	
312	ISO22854	35.49		-----	
317	EN14517	35.1		-----	
323	ISO22854	35.7		-----	
334		-----		-----	
335		-----		-----	
336		-----		-----	
338		-----		-----	
340		-----		-----	
344		-----		-----	
353		-----		-----	
357		-----		-----	
360		-----		-----	
391		-----		-----	
430		-----		-----	
431		-----		-----	
440		-----		-----	
445	EN14517	36.04		-----	
447		-----		-----	
463		-----		-----	
468		-----		-----	
485		-----		-----	
494	ISO22854	35.67		-----	
495		-----		-----	
496	ISO22854	35.61		-----	
671		-----		-----	
781	INH-52714	36.54		-----	
868	D6839	35.65		-----	
875		-----		-----	
904		-----		-----	
912		-----		-----	
962		-----		-----	
1006		-----		-----	
1017		-----		-----	
1038		-----		-----	
1059		-----		-----	
1066	ISO22854	36.17		-----	
1080	Reform	35.40		-----	
1081		-----		-----	
1108	EN14517	35.2		-----	
1109	D6839	34.62		-----	
1126	EN14517	35.19		-----	
1140		-----		-----	
1159		-----		-----	
1161	ISO22854	35.93		-----	
1167	ISO22854	36.29		-----	
1186		-----		-----	
1201	ISO22854	36.2		-----	
1203	EN14517	35.8		-----	
1205		-----		-----	
1212		-----		-----	
1218		-----		-----	
1251	ISO22854	35.8		-----	
1259		-----		-----	
1272		-----		-----	
1276		-----		-----	
1280		-----		-----	
1293		-----		-----	
1299	EN14517	35.43		-----	
1340		-----		-----	
1357	D6730	36.74		-----	
1419		-----		-----	
1426		-----		-----	
1427	EN14517	36.62	C	-----	First reported 30.62
1432		-----		-----	
1520		-----		-----	
1603		-----		-----	
1631		-----		-----	
1634		-----		-----	
1635		-----		-----	
1636		-----		-----	

1709		-----		-----	
1720		-----		-----	
1724	EN14517	35.63		-----	
1807		-----		-----	
1810		-----		-----	
1811	EN14517	35.72		-----	
1826	EN14517	36.0		-----	
1833	ISO22854	35.89		-----	
1842		-----		-----	
1849		-----		-----	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1941	In house	36.33		-----	
1948	EN14517	35.93		-----	
2129	D6730	36.636	C	-----	First reported 37.375
2130	D6730	36.21		-----	
2146		-----		-----	
7001		-----		-----	

normality	OK
n	31
outliers	0
mean (n)	35.821
st.dev. (n)	0.4926
R(calc.)	1.379
R(EN14517:04)	unknown





Determination of Appearance on sample #1068;

lab	method	value	mark	z(targ)	remarks
92	VISUAL	C&B		-----	
150	VISUAL	C&B		-----	
225		-----		-----	
228		-----		-----	
253		-----		-----	
311	INH-402	C&B		-----	
312	VISUAL	C&B		-----	
317	INH-001	C&B		-----	
323	INH-001	C&B		-----	
334		-----		-----	
335		-----		-----	
336		-----		-----	
338	VISUAL	CFFSM		-----	
340	VISUAL	CLEAR		-----	
344	VISUAL	C&B		-----	
353	VISUAL	C&B		-----	
357	VISUAL	C&B		-----	
360	VISUAL	C&B		-----	
391	VISUAL	C&B		-----	
430		-----		-----	
431		-----		-----	
440	VISUAL	C&B		-----	
445	VISUAL	C&B		-----	
447		-----		-----	
463	D4176	PASS		-----	
468	D4176	PASS		-----	
485		-----		-----	
494	VISUAL	C&B		-----	
495	VISUAL	C&B		-----	
496	VISUAL	C&B		-----	
671	VISUAL	C&B		-----	
781	VISUAL	C&B		-----	
868	VISUAL	C&B		-----	
875	VISUAL	C&B		-----	
904	VISUAL	C&B		-----	
912		-----		-----	
962		-----		-----	
1006		-----		-----	
1017	VISUAL	C&B		-----	
1038		-----		-----	
1059	VISUAL	CLEAR		-----	
1066	VISUAL	C&B		-----	
1080	VISUAL	C&B		-----	
1081		-----		-----	
1108	VISUAL	C&B		-----	
1109	VISUAL	PASS		-----	
1126		-----		-----	
1140		-----		-----	
1159		-----		-----	
1161	VISUAL	C&B		-----	
1167		-----		-----	
1186		-----		-----	
1201	VISUAL	C&B		-----	
1203	VISUAL	C&B		-----	
1205		-----		-----	
1212	VISUAL	C&B		-----	
1218		-----		-----	
1251	VISUAL	C&B		-----	
1259	VISUAL	CLEAR		-----	
1272	VISUAL	CLEAR		-----	
1276	VISUAL	C&B		-----	
1280		-----		-----	
1293		-----		-----	
1299	VISUAL	C&B		-----	
1340	VISUAL	BRIGHT		-----	
1357	VISUAL	C&B		-----	
1419		-----		-----	
1426		-----		-----	
1427	VISUAL	C&B		-----	
1432		-----		-----	
1520	VISUAL	C&B		-----	
1603		-----		-----	
1631		-----		-----	
1634		-----		-----	
1635	VISUAL	CLEAR		-----	
1636	VISUAL	C&B		-----	

1709		-----	-----
1720		-----	-----
1724	VISUAL	C&B	-----
1807		-----	-----
1810		-----	-----
1811		-----	-----
1826	VISUAL	CLEAR	-----
1833	VISUAL	CLEAR	-----
1842		-----	-----
1849		-----	-----
1936		-----	-----
1937		-----	-----
1938		-----	-----
1941	VISUAL	C&B	-----
1948	VISUAL	C&B	-----
2129	VISUAL	C&B	-----
2130	VISUAL	C&B	-----
2146		-----	-----
7001	VISUAL	Clear	-----

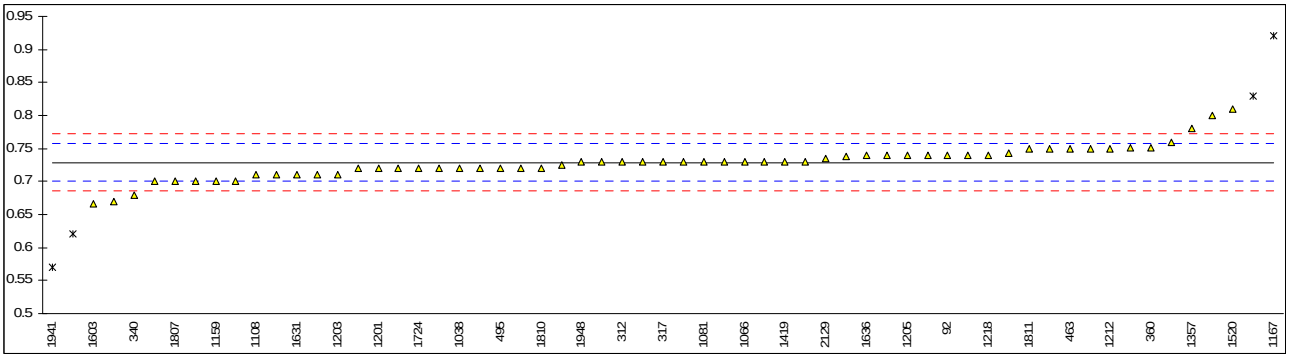
C&B = Clear and Bright
CFFSM = Clear free from suspended matter

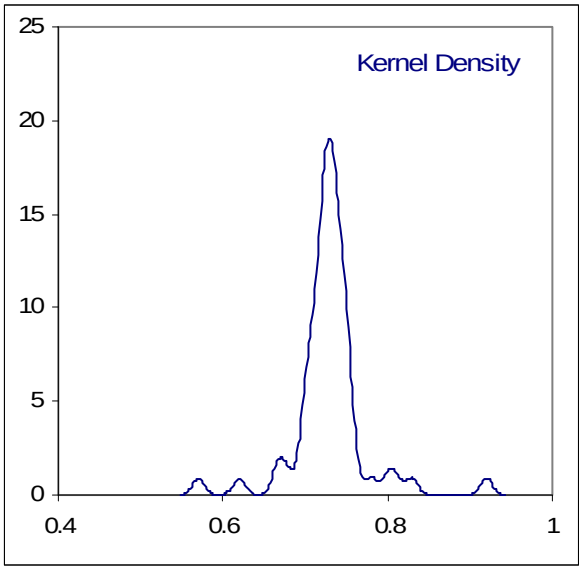
Determination of Benzene on sample #1068; results in %V/V

lab	method	value	mark	z(targ)	remarks
92	INH-3.0	0.74		0.77	
150	D3606	0.71		-1.33	
225		-----		-----	
228		-----		-----	
253		-----		-----	
311	EN14517	0.72		-0.63	
312	ISO22854	0.73		0.07	
317	EN14517	0.73		0.07	
323	ISO22854	0.73		0.07	
334	EN238	0.67		-4.13	
335		-----		-----	
336	EN238	0.7		-2.03	
338		-----		-----	
340	EN238	0.68		-3.43	
344		-----		-----	
353		-----		-----	
357		-----		-----	
360	EN12177	0.751		1.54	
391	EN14517	0.73		0.07	
430		-----		-----	
431		-----		-----	
440		-----		-----	
445	EN14517	0.74		0.77	
447		-----		-----	
463	EN238	0.75		1.47	
468		-----		-----	
485		-----		-----	
494	ISO22854	0.73		0.07	
495	D5580	0.72		-0.63	
496	ISO22854	0.725		-0.28	
671		-----		-----	
781	EN14517	0.75		1.47	
868	D6839	0.74		0.77	
875	INH-52714	0.76		2.17	
904		-----		-----	
912		-----		-----	
962		-----		-----	
1006	D5580	0.70		-2.03	
1017		-----		-----	
1038	D3606	0.72		-0.63	
1059	EN12177	0.83	G(0.05)	7.07	
1066	ISO22854	0.73		0.07	
1080	ReformM3	0.72		-0.63	
1081	EN14517	0.73	C	0.07	First reported 0.60
1108	EN14517	0.71		-1.33	
1109	D3606	0.701		-1.96	
1126	EN14517	0.73		0.07	
1140		-----		-----	
1159	D5845	0.70	C	-2.03	First reported 0.64
1161	ISO22854	0.74		0.77	
1167	ISO22854	0.92	G(0.01)	13.37	
1186		-----		-----	
1201	ISO22854	0.72		-0.63	
1203	EN14517	0.71		-1.33	
1205	EN14517	0.74		0.77	
1212	EN238	0.75		1.47	
1218	EN14517	0.74		0.77	
1251	ISO22854	0.72		-0.63	
1259		-----		-----	
1272	EN238	0.75	C	1.47	First reported 0.83
1276		-----		-----	
1280		-----		-----	
1293		-----		-----	
1299	EN14517	0.73		0.07	
1340	EN12177	0.62	G(0.05)	-7.63	
1357	D6730	0.78		3.57	
1419	EN22854	0.73		0.07	
1426		-----		-----	
1427	EN14517	0.743		0.98	
1432		-----		-----	
1520	EN238	0.81		5.67	
1603	in house	0.666		-4.41	
1631	EN14517	0.71		-1.33	
1634		-----		-----	
1635	EN238	0.8		4.97	
1636	EN238	0.74		0.77	

1709	D5580	0.71		-1.33	
1720		-----		-----	
1724	EN14517	0.72		-0.63	
1807	ISO12177	0.70		-2.03	
1810	EN14517	0.72		-0.63	
1811	EN14517	0.75		1.47	
1826	EN14517	0.73		0.07	
1833	ISO22854	0.72		-0.63	
1842		-----		-----	
1849	EN14517	0.7376		0.61	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1941	D6277Mod.	0.57	C,G(0.05)	-11.13	First reported 0.62
1948	EN14517	0.73		0.07	
2129	D6730	0.735		0.42	
2130	D6730	0.751		1.54	
2146	EN12177	0.72		-0.63	
7001		-----		-----	

normality	not OK
n	57
outliers	4
mean (n)	0.729
st.dev. (n)	0.0254
R(calc.)	0.071
R(EN14517:04)	0.040





Determination of Copper strip 3hrs/50°C on sample #1068;

lab	method	value	mark	z(targ)	remarks
92	D130	1A		-----	
150	D130	1A		-----	
225	D130	1		-----	
228	D130	1		-----	
253	D130	1A		-----	
311	ISO2160	1A		-----	
312	D130	1A		-----	
317	ISO2160	1A		-----	
323	ISO2160	1A		-----	
334	D130	1A		-----	
335		-----		-----	
336		-----		-----	
338		-----		-----	
340	ISO2160	1A		-----	
344	D130	1A		-----	
353	IP154	1A		-----	
357	ISO2160	1A		-----	
360	ISO2160	1A		-----	
391	ISO2160	1A		-----	
430		-----		-----	
431		-----		-----	
440	IP154	1A		-----	
445	IP154	1A		-----	
447		-----		-----	
463	ISO2160	1A		-----	
468	ISO2160	1A		-----	
485		-----		-----	
494	ISO2160	1		-----	
495	ISO2160	1		-----	
496	ISO2160	1A		-----	
671	D130	1A		-----	
781	D130	1A		-----	
868	D130	1A		-----	
875	D130	1A		-----	
904	ISO2160	1A		-----	
912		-----		-----	
962	D130	1A		-----	
1006	D130	1A		-----	
1017	ISO2160	1A		-----	
1038	D130	1A		-----	
1059	ISO2160	1A		-----	
1066	ISO2160	1A		-----	
1080	D130	1A		-----	
1081	D130	1A		-----	
1108	ISO2160	1		-----	
1109	D130	1A		-----	
1126		-----		-----	
1140	IP154	1A		-----	
1159	D130	1A		-----	
1161	ISO2160	1		-----	
1167	ISO2160	1A		-----	
1186	D130	1A		-----	
1201	ISO2160	1A		-----	
1203	ISO2160	1		-----	
1205		-----		-----	
1212	ISO2160	1A		-----	
1218		-----		-----	
1251	ISO2160	1A		-----	
1259	ISO2160	1		-----	
1272	ISO2160	1A		-----	
1276	D130	1A		-----	
1280		-----		-----	
1293		-----		-----	
1299	ISO2160	1A		-----	
1340	ISO2160	1A		-----	
1357	D130	1A		-----	
1419	ISO2160	1A		-----	
1426		-----		-----	
1427	ISO2160	1A		-----	
1432		-----		-----	
1520	ISO2160	1A		-----	
1603	in house	1A		-----	
1631	ISO2160	1		-----	
1634	D130	1A		-----	
1635	ISO2160	1A		-----	
1636	D130	1A		-----	

1709		-----	-----
1720	D130	1A	-----
1724	ISO2160	1A	-----
1807	ISO2160	1A	-----
1810		-----	-----
1811	ISO2160	1	-----
1826	ISO2160	1A	-----
1833	ISO2160	1A	-----
1842		-----	-----
1849	ISO2160	1	-----
1936		-----	-----
1937		-----	-----
1938		-----	-----
1941	ISO2160	1A	-----
1948	ISO2160	1A	-----
2129	ISO2160	1A	-----
2130	D130	1A	-----
2146		-----	-----
7001		-----	-----

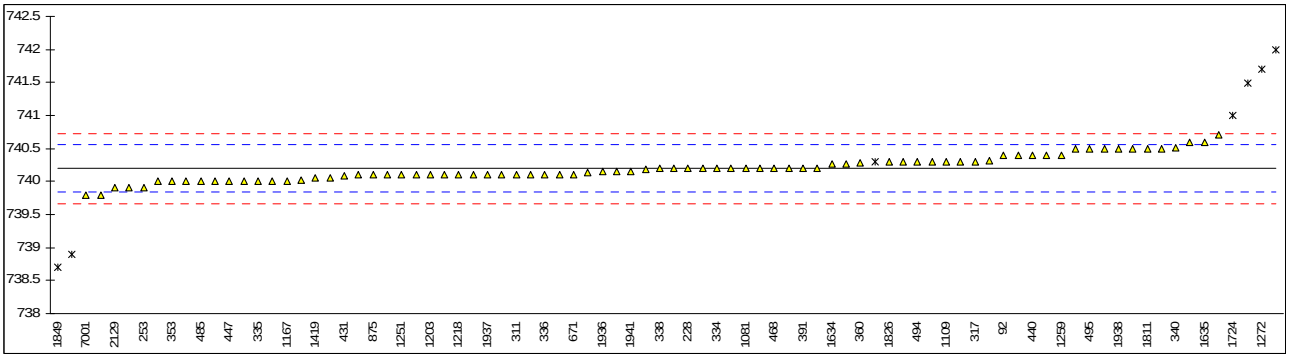
normality	unknown
n	72
outliers	0
mean (n)	1
st.dev. (n)	n.a.
R(calc.)	n.a.
R(ISO2160)	n.a.

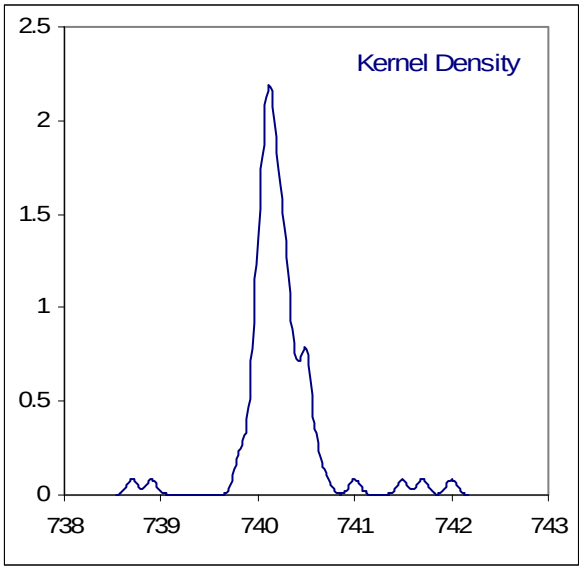
Determination of Density @ 15°C on sample #1068; results in kg/m^3

lab	method	value	mark	z(targ)	remarks
92	D4052	740.4		1.14	
150		-----		-----	
225	D4052	740.1		-0.54	
228	D1298	740.2		0.02	
253	D4052	739.9		-1.66	
311	ISO12185	740.1		-0.54	
312	D4052	739.9		-1.66	
317	D4052	740.3		0.58	
323	ISO12185	740.2		0.02	
334	ISO12185	740.2		0.02	
335	ISO12185	740.0		-1.10	
336	ISO12185	740.1		-0.54	
338	ISO12185	740.2		0.02	
340	ISO12185	740.51		1.76	
344	D4052	740.0		-1.10	
353	IP365	740.0		-1.10	
357	ISO12185	740.1		-0.54	
360	ISO12185	740.28		0.47	
391	ISO12185	740.2		0.02	
430		-----		-----	
431	ISO12185	740.09		-0.60	
440	D4052	740.4		1.14	
445	IP365	740.0		-1.10	
447	ISO12185	740.0		-1.10	
463	ISO12185	740.13		-0.37	
468	ISO12185	740.2		0.02	
485	ISO12185	740.0		-1.10	
494	ISO12185	740.3		0.58	
495	ISO12185	740.5		1.70	
496	ISO12185	740.27		0.41	
671	D4052	740.1		-0.54	
781	D4052	740.1		-0.54	
868	D4052	740.20		0.02	
875	D4052	740.1		-0.54	
904	ISO12185	740.0		-1.10	
912		-----		-----	
962	D4052	740.1		-0.54	
1006	D4052	740.5		1.70	
1017	ISO12185	740.3		0.58	
1038	D4052	740.0		-1.10	
1059	ISO12185	740.1		-0.54	
1066	ISO12185	740.1		-0.54	
1080	ISO12185	740.4		1.14	
1081	ISO12185	740.2		0.02	
1108	ISO12185	740.3	C	0.58	First reported 741.7
1109	D4052	740.3		0.58	
1126	D4052	741.49	G(0.01)	7.24	
1140	IP	740.1		-0.54	
1159	D1298	738.9	G(0.01)	-7.26	
1161	ISO12185	740.3		0.58	
1167	ISO12185	740.0		-1.10	
1186	D1298	739.8		-2.22	
1201	ISO12185	740.2		0.02	
1203	ISO12185	740.1		-0.54	
1205		-----		-----	
1212	ISO12185	740.6		2.26	
1218	ISO12185	740.1		-0.54	
1251	ISO12185	740.1		-0.54	
1259	ISO3675	740.4		1.14	
1272	ISO12185	741.7	C,G(0.01)	8.42	First reported 742.8
1276	D4052	740.02		-0.99	
1280		-----		-----	
1293	ISO12185	740.18		-0.09	
1299	D4052	740.7		2.82	
1340	ISO12185	740.15		-0.26	
1357	D4052	740.3		0.58	
1419	ISO12185	740.05		-0.82	
1426		-----		-----	
1427	ISO12185	740.0		-1.10	
1432		-----		-----	
1520	ISO12185	740.05		-0.82	
1603	in house	740.5	C	1.70	First reported 0.7405
1631	ISO12185	740.2		0.02	
1634	D4052	740.268		0.40	
1635	ISO12185	740.6		2.26	
1636	D4052	740.5		1.70	

1709		-----		-----	
1720	D4052	740.4	C	1.14	First reported 740.7
1724	D1298	741.0	G(0.01)	4.50	
1807	ISO12185	740.2		0.02	
1810	ISO12185	740.2		0.02	
1811	ISO12185	740.5		1.70	
1826	ISO12185	740.3		0.58	
1833	ISO12185	740.1		-0.54	
1842		-----		-----	
1849	ISO12185	738.7	C,G(0.05)	-8.38	First reported 741.3
1936	ISO12185	740.15		-0.26	
1937	ISO12185	740.1		-0.54	
1938	ISO12185	740.5		1.70	
1941	ISO12185	740.16		-0.20	
1948	ISO12185	740.5		1.70	
2129	ISO12185	739.90		-1.66	
2130	D4052	742.0	G(0.01)	10.10	
2146	ISO12185	740.31		0.64	
7001	D4052	739.8		-2.22	

normality	not OK
n	80
outliers	6
mean (n)	740.20
st.dev. (n)	0.190
R(calc.)	0.53
R(ISO12185:96)	0.50





Determination of Distillation ASTM D86 (automated) on sample #1068; results in °C

lab	method	IBP	10% eva	50% eva	90% eva	FBP	%vol 70ºC	%vol 100ºC	%vol 150ºC
92	D86	32.0	45.0	92.5	150.0	189.0	35.5	55.3	90.0
150	D86	33.7	***49.9***	91.9	148.8	188.1	***30.6***	55.6	90.6
225		-----	-----	-----	-----	-----	-----	-----	-----
228		-----	-----	-----	-----	-----	-----	-----	-----
253		-----	-----	-----	-----	-----	-----	-----	-----
311	ISO3405	29.2	44.8	92.1	149.5	187.3	35.9	55.6	90.2
312	D86	30.9	45.0	93.1	149.9	188.3	35.5	55.0	90.1
317	D86	27.4	46.3	***96.6***	***155.2***	187.4	36.7	56.2	90.8
323	ISO3405	31.3	44.9	92.3	149.4	187.2	35.8	55.4	90.3
334	D86	30.6	45.3	91.9	149.0	182.4	35.2	55.5	90.4
335	D86	28.4	44.6	92.3	148.2	182.3	35.7	55.4	90.9
336	ISO3405	29.3	45.1	92.9	150.5	184.8	35.3	54.9	89.8
338	ISO3405	32.7	43.9	91.4	150.4	192.3	36.3	55.8	89.8
340	ISO3405	29.9	46.5	94.5	152.7	183.2	35.2	54.7	89.6
344	D86	31.8	-----	-----	-----	186.2	33.2	53.4	87.8
353	IP123	31.1	46.3	93.7	150.1	184.4	34.0	54.7	89.9
357	ISO3405	32.0	44.8	92.6	149.9	187.2	35.6	55.3	90.1
360	ISO3405	29.7	45.2	92.1	149.2	185.4	35.8	55.6	90.2
391	ISO3405	33.0	45.2	92.3	149.6	188.7	35.3	56.0	90.1
430		-----	-----	-----	-----	-----	-----	-----	-----
431		-----	44.3	92.85	151.25	-----	-----	-----	-----
440	D86	31.7	46.3	93.7	149.9	188.2	34.5	54.4	90.0
445	IP123	32.9	45.9	93.6	149.9	187.9	34.8	54.5	90.0
447	ISO3405	29.2	44.7	92.7	150.3	187.8	35.5	55.1	90.0
463	D86	31.0	43.4	90.7	149.0	183.2	37.0	56.8	90.4
468		-----	-----	-----	-----	-----	-----	-----	-----
485	ISO3405	32.45	45.8	92.35	149.8	186.5	35.25	55.5	90.1
494	ISO3405	29.6	44.6	92.0	149.6	185.6	35.8	55.6	90.2
495	ISO3405	30.4	44.2	90.6	148.2	183.4	36.8	56.8	90.8
496	ISO3405	31.4	44.9	92.1	150.7	186.6	35.6	55.6	89.7
671	D86	33.1	46.1	92.0	148.8	187.1	36.0	56.0	90.5
781		-----	-----	-----	-----	-----	-----	-----	-----
868	D86	31.8	45.2	92.5	151.0	190.0	35.8	55.3	89.6
875		-----	-----	-----	-----	-----	-----	-----	-----
904	ISO3405	34.0	48.0	92.0	151.0	186.0	34.0	55.0	90.0
912		-----	-----	-----	-----	-----	-----	-----	-----
962		-----	-----	-----	-----	-----	-----	-----	-----
1006	D86	32.9	45.9	92.8	150.7	187.6	-----	-----	-----
1017	ISO3405	32.6	45.5	93.3	150.2	184.6	34.7	54.9	89.9
1038	D86	32.0	45.3	92.5	150.1	187.6	35.3	55.3	90.0
1059	ISO3405	30.7	45.0	92.0	149.9	186.8	35.7	55.7	90.0
1066	ISO3405	29.2	44.3	91.9	149.8	186.0	36.1	55.6	90.2
1080	ISO3405	31.0	45.1	91.4	149.1	184.6	36.0	56.2	90.4
1081	D86	31.5	45.5	93.7	149.8	184.8	34.5	54.8	90.1
1108	ISO3405	34.9	45.7	91.3	148.6	186.8	35.9	56.1	90.7
1109	D86	33.7	45.5	92.5	149.3	190.7	35.4	55.5	90.4
1126	in house	***22.8***	***41.0***	***81.4***	*150.4*	*193.0*	***31.6***	***60.7***	*89.7*
1140	IP123	28.7	44.5	91.5	149.0	187.3	36.3	56.1	90.5
1159		-----	-----	-----	-----	-----	-----	-----	-----
1161	ISO3405	28.7	44.5	92.6	151.95	186.5	34.15	53.65	89.7
1167	ISO3405	30.3	44.8	90.7	149.0	184.6	33.7	53.6	88.0
1186		-----	-----	-----	-----	-----	-----	-----	-----
1201	ISO3405	31.7	45.1	92.1	149.4	183.9	35.5	55.7	90.3
1203	ISO3405	31.4	46.0	93.3	151.3	188.4	34.8	54.8	89.4
1205		-----	-----	-----	-----	-----	-----	-----	-----
1212	ISO3405	33.4	47.6	91.7	150.0	189.6	***1.3***	56.2	90.0
1218	ISO3405	34.9	42.8	89.8	149.1	186.4	***38.1***	56.7	90.4
1251	ISO3405	29.3	44.2	91.4	149.9	186.3	36.8	55.9	90.0
1259	ISO3405	29.0	45.8	93.6	151.3	186.7	34.6	54.6	89.4
1272	ISO3405	*35.6*	***51.5***	***96.7***	***156.4***	*189.4*	***27.3***	*55.5*	***86.9***
1276	D86	31.6	44.9	91.0	149.1	183.4	36.1	56.2	90.4
1280		-----	-----	-----	-----	-----	-----	-----	-----
1293		-----	-----	-----	-----	-----	-----	-----	-----
1299	D86	29.1	45.2	92.6	150.9	189.5	35.5	55.2	89.5
1340	ISO3405	32.65	47.90	94.90	***153.50***	187.30	33.10	53.80	88.25
1357	D86	28.1	44.7	91.9	149.6	185.1	-----	-----	-----
1419	ISO3405	33.2	46.9	94.9	152.8	191.0	33.6	53.7	88.7
1426	D86	34.9	46.8	92.6	150.3	188.1	34.6	55.2	89.9
1427	ISO3405	28.5	45.0	92.4	149.4	185.1	35.4	55.5	90.3
1432		-----	-----	-----	-----	-----	-----	-----	-----
1520		-----	-----	-----	-----	-----	-----	-----	-----
1603	in house	29.5	45.8	93.5	***154.0***	184.6	-----	-----	-----
1631	ISO3405	32.5	45.4	91.9	150.5	187.3	35.6	55.6	89.7
1634	D86	29.3	44.8	91.9	150.5	182.7	35.5	56.0	89.7
1635	ISO3405	30.2	46.4	94.4	***153.3***	186.3	35.6	55.7	90.1
1636	D86	30.5	45.5	91.9	150.5	186.5	35.5	55.5	89.8

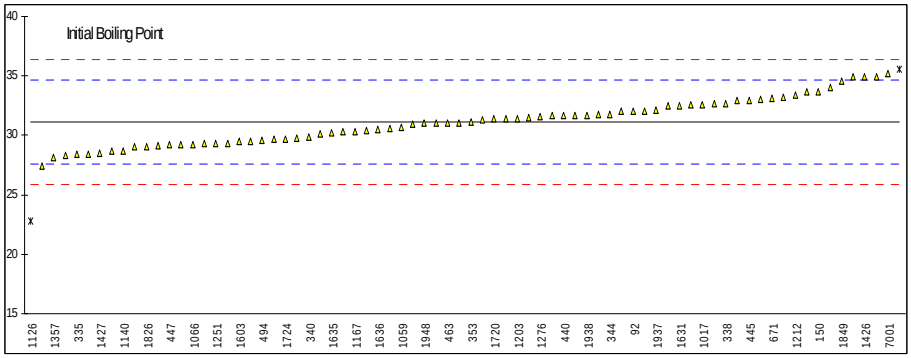
1709		-----	-----	-----	-----	-----	-----	-----	-----
1720	D86	31.4	44.9	91.4	149.3	185.2	36.0	56.0	90.5
1724	ISO3405	29.7	46.6	93.6	151.5	185.6	34.1	54.5	89.3
1807	ISO3405	31.7	46.1	93.2	150.5	187.3	34.8	54.9	89.8
1810	ISO3405	28.3	45.2	92.0	149.8	183.8	34.4	54.7	89.2
1811	ISO3405	30.1	46.0	93.7	151.6	185.6	34.5	54.5	89.1
1826	ISO3405	29.0	44.5	90.4	148.6	180.9	36.9	56.8	90.6
1833	ISO3405	32.6	46	92.5	149.7	188.3	35.2	55.5	90.2
1842		-----	-----	-----	-----	-----	-----	-----	-----
1849	ISO3405	34.6	47.6	94.4	152.3	190.2	34.5	55.8	90.2
1936	ISO3405	29.8	44.6	91.5	149.7	184.8	36.1	55.8	90.3
1937	ISO3405	32.1	45.6	92.4	149.5	188.6	34.0	54.0	88.9
1938	ISO3405	31.7	45.6	92.4	149.6	187.3	35.2	55.4	90.2
1941	ISO3405	28.4	44.5	91.3	149.2	184.9	36.3	56.1	90.4
1948	D86	31.0	45.9	94.6	***154.2***	183.3	34.1	53.7	88.0
2129	ISO3405	29.5	44.3	89.8	148.6	182.2	36.8	57.1	90.6
2130	D86	30.3	44.5	91.3	148.8	187.2	36.3	56.1	90.5
2146	ISO3405	31.0	44.7	92.0	149.8	182.8	35.8	55.8	90.1
7001	D86	35.20	46.80	92.95	151.45	187.35	34.45	54.95	***92.95***
	normality	OK	not OK	not OK	not OK	OK	not OK	not OK	not OK
	n	74	73	73	69	74	68	71	70
	outliers	1	3	3	6	0	5	1	3
	mean (n)	31.12	45.37	92.39	149.98	186.32	35.32	55.36	89.94
	st.dev. (n)	1.863	0.978	1.101	1.011	2.277	0.903	0.812	0.646
	R(calc.)	5.22	2.74	3.08	2.83	6.38	2.53	2.27	1.81
	R(ISO3405:09)	4.90	3.20	1.88	3.99	6.78	2.70	2.20	1.30

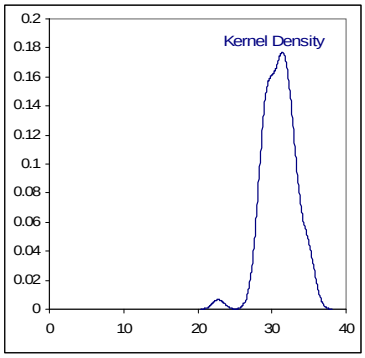
Results in bold/italic/underlined are statistical outliers according Grubbs outlier test.
Results underlined are excluded for statistical evaluation

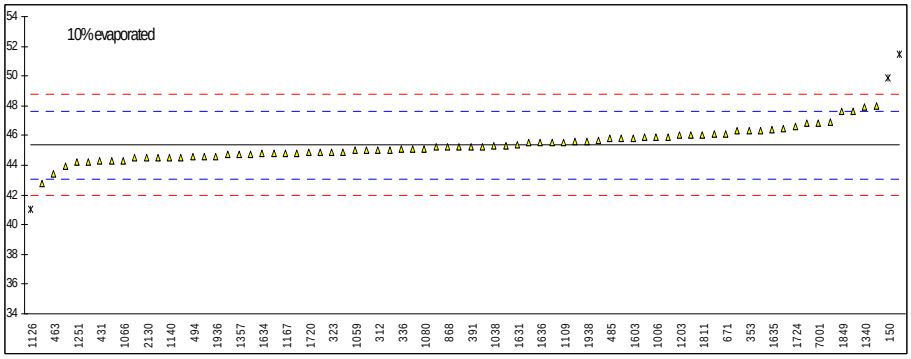
First reported results

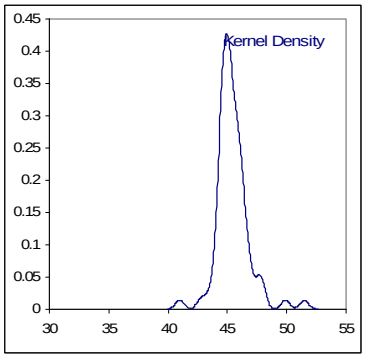
Lab 1159	10% eva: 49.336ºC; 50% eva: 93.519ºC; 90% eva: 155.777ºC; FBP: 181.886ºC
Lab 1161	%vol@150ºC: 87.9
Lab 1833	%vol@70ºC: 32.5; %vol@100ºC: 52.6; %vol@150ºC: 87.5

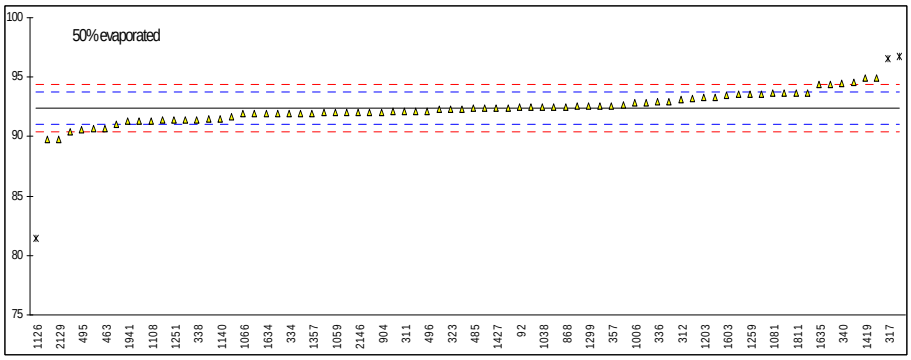
Determination of Distillation ASTM D86 (automated) on sample #1068;
-- continued --

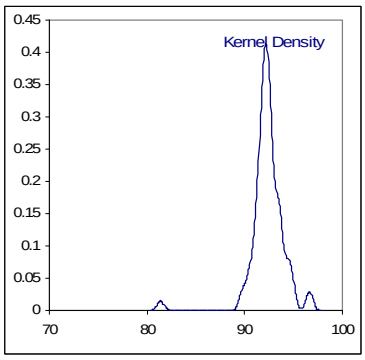


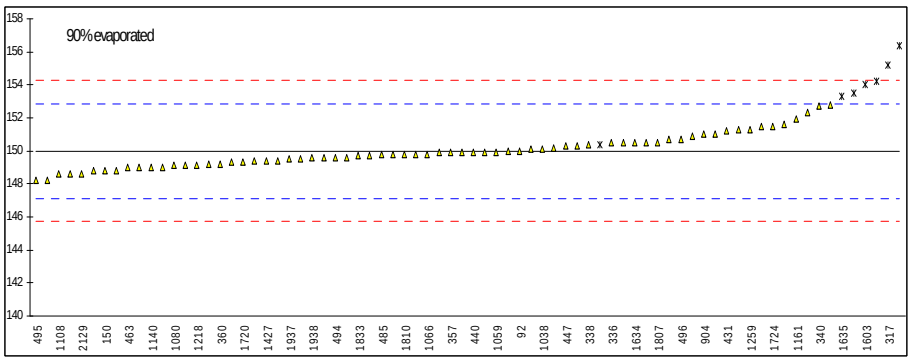


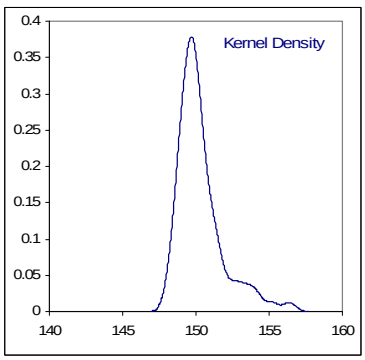


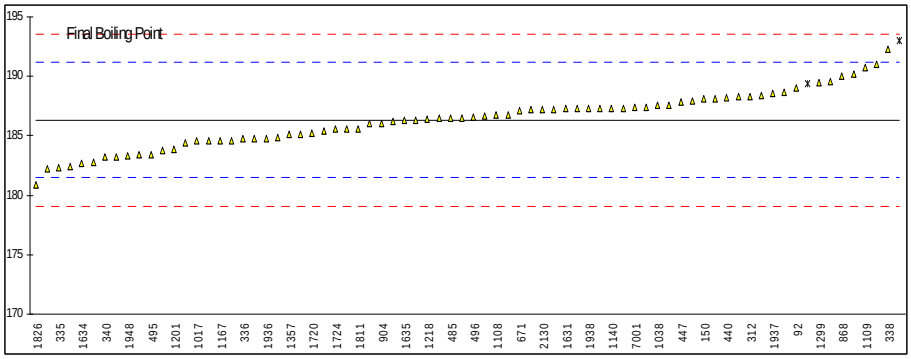


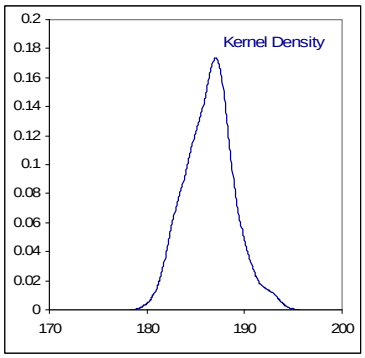


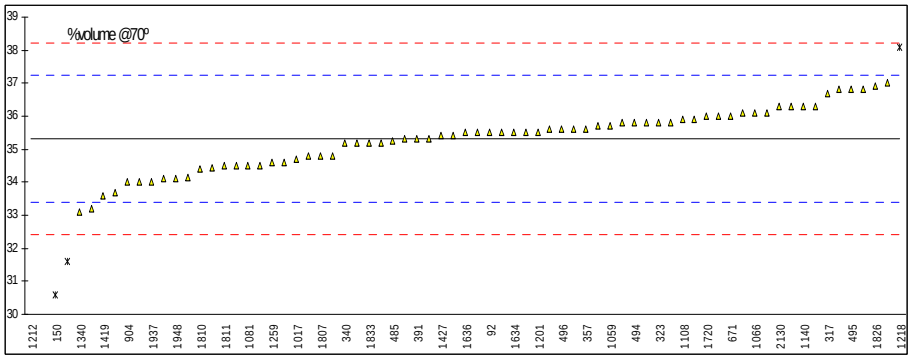


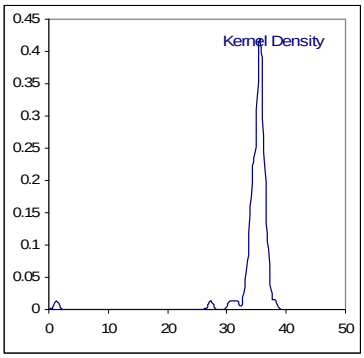


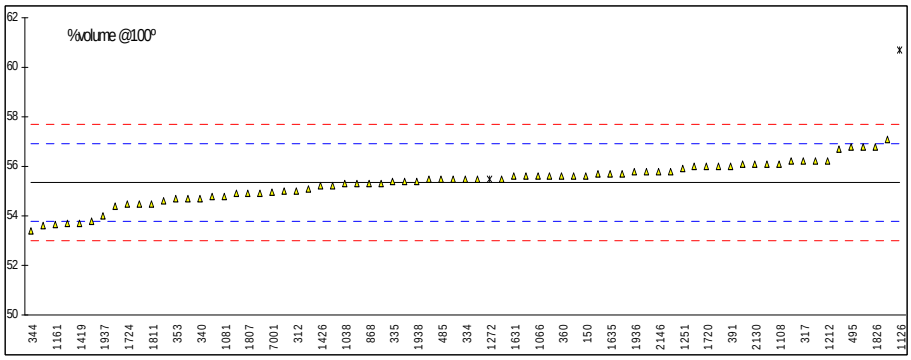


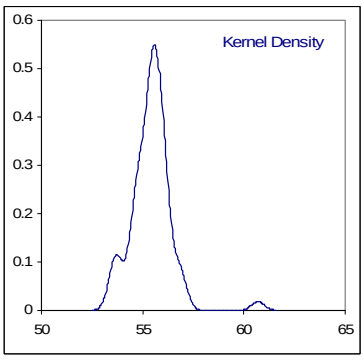


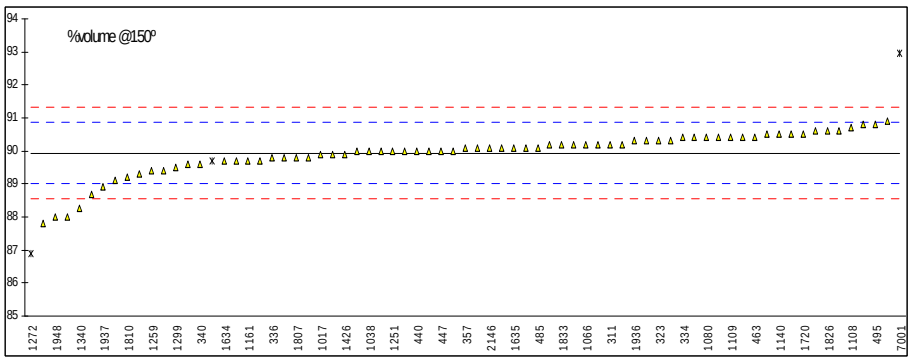


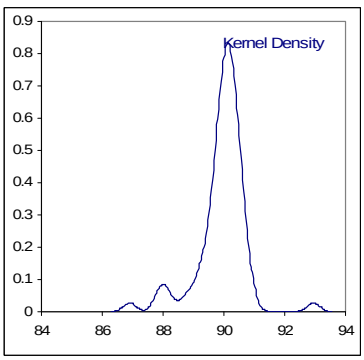

%volume @70º


Kernel Density


%volume @100º


Kernel Density


%volume @150º


Kernel Density

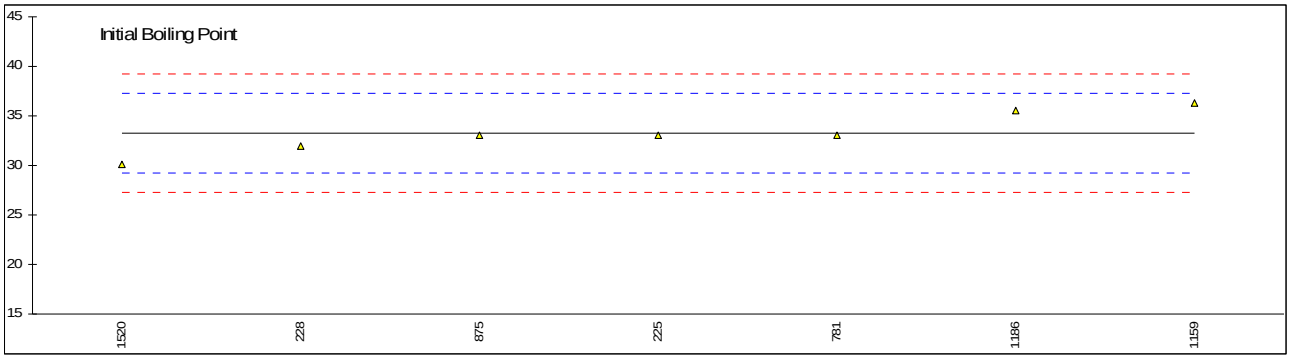
Determination of Distillation ASTM D86 (Manual) on sample #1068; results in °C

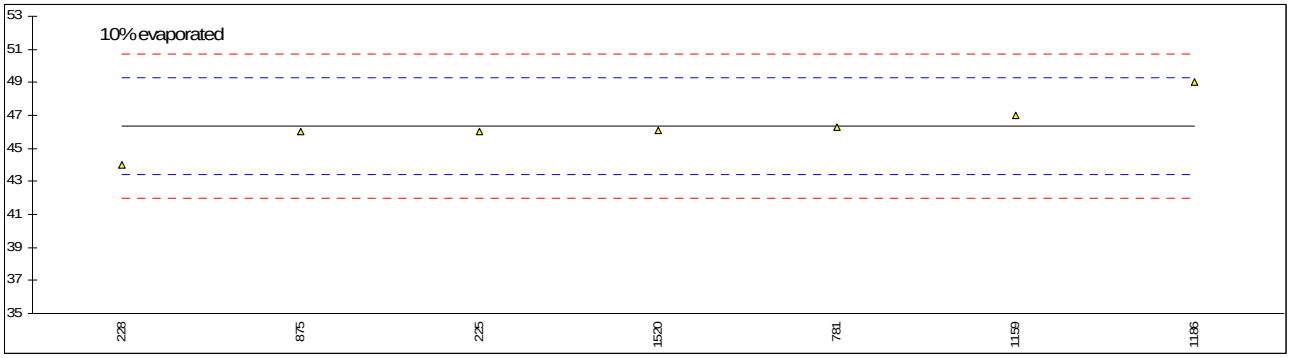
lab	method	IBP	10% eva	50% eva	90% eva	FBP	%vol 70ºC	%vol 100ºC	%vol 150ºC
92		-----	-----	-----	-----	-----	-----	-----	-----
150		-----	-----	-----	-----	-----	-----	-----	-----
225	D86	33.0	46.0	93.0	149.0	186.0	34.5	55.0	91.0
228	D86	32.0	44.0	89.0	145.0	182.0	37.5	59.0	92.5
253		-----	-----	-----	-----	-----	-----	-----	-----
311		-----	-----	-----	-----	-----	-----	-----	-----
312		-----	-----	-----	-----	-----	-----	-----	-----
317		-----	-----	-----	-----	-----	-----	-----	-----
323		-----	-----	-----	-----	-----	-----	-----	-----
334		-----	-----	-----	-----	-----	-----	-----	-----
335		-----	-----	-----	-----	-----	-----	-----	-----
336		-----	-----	-----	-----	-----	-----	-----	-----
338		-----	-----	-----	-----	-----	-----	-----	-----
340		-----	-----	-----	-----	-----	-----	-----	-----
344		-----	-----	-----	-----	-----	-----	-----	-----
353		-----	-----	-----	-----	-----	-----	-----	-----
357		-----	-----	-----	-----	-----	-----	-----	-----
360		-----	-----	-----	-----	-----	-----	-----	-----
391		-----	-----	-----	-----	-----	-----	-----	-----
430		-----	-----	-----	-----	-----	-----	-----	-----
431		-----	-----	-----	-----	-----	-----	-----	-----
440		-----	-----	-----	-----	-----	-----	-----	-----
445		-----	-----	-----	-----	-----	-----	-----	-----
447		-----	-----	-----	-----	-----	-----	-----	-----
463		-----	-----	-----	-----	-----	-----	-----	-----
468		-----	-----	-----	-----	-----	-----	-----	-----
485		-----	-----	-----	-----	-----	-----	-----	-----
494		-----	-----	-----	-----	-----	-----	-----	-----
495		-----	-----	-----	-----	-----	-----	-----	-----
496		-----	-----	-----	-----	-----	-----	-----	-----
671		-----	-----	-----	-----	-----	-----	-----	-----
781	ISO3405	33.0	46.3	93.5	151.0	187.5	35.0	55.0	90.0
868		-----	-----	-----	-----	-----	-----	-----	-----
875	D86	33.0	46.0	94.0	152.0	186.0	34.5	54.5	89.0
904		-----	-----	-----	-----	-----	-----	-----	-----
912		-----	-----	-----	-----	-----	-----	-----	-----
962		-----	-----	-----	-----	-----	-----	-----	-----
1006		-----	-----	-----	-----	-----	-----	-----	-----
1017		-----	-----	-----	-----	-----	-----	-----	-----
1038		-----	-----	-----	-----	-----	-----	-----	-----
1059		-----	-----	-----	-----	-----	-----	-----	-----
1066		-----	-----	-----	-----	-----	-----	-----	-----
1080		-----	-----	-----	-----	-----	-----	-----	-----
1081		-----	-----	-----	-----	-----	-----	-----	-----
1108		-----	-----	-----	-----	-----	-----	-----	-----
1109		-----	-----	-----	-----	-----	-----	-----	-----
1126		-----	-----	-----	-----	-----	-----	-----	-----
1140		-----	-----	-----	-----	-----	-----	-----	-----
1159	D86	36.282	47.018	91.027	146.753	187.869	36.1	57.1	90.1
1161		-----	-----	-----	-----	-----	-----	-----	-----
1167		-----	-----	-----	-----	-----	-----	-----	-----
1186	D86	35.5	49.0	95.3	158.3	179.8	36.5	54.5	87.0
1201		-----	-----	-----	-----	-----	-----	-----	-----
1203		-----	-----	-----	-----	-----	-----	-----	-----
1205		-----	-----	-----	-----	-----	-----	-----	-----
1212		-----	-----	-----	-----	-----	-----	-----	-----
1218		-----	-----	-----	-----	-----	-----	-----	-----
1251		-----	-----	-----	-----	-----	-----	-----	-----
1259		-----	-----	-----	-----	-----	-----	-----	-----
1272		-----	-----	-----	-----	-----	-----	-----	-----
1276		-----	-----	-----	-----	-----	-----	-----	-----
1280		-----	-----	-----	-----	-----	-----	-----	-----
1293		-----	-----	-----	-----	-----	-----	-----	-----
1299		-----	-----	-----	-----	-----	-----	-----	-----
1340		-----	-----	-----	-----	-----	-----	-----	-----
1357		-----	-----	-----	-----	-----	-----	-----	-----
1419		-----	-----	-----	-----	-----	-----	-----	-----
1426		-----	-----	-----	-----	-----	-----	-----	-----
1427		-----	-----	-----	-----	-----	-----	-----	-----
1432		-----	-----	-----	-----	-----	-----	-----	-----
1520	ISO3405	30.1	46.1	95.6	152.9	187.8	34.1	55.5	89.6
1603		-----	-----	-----	-----	-----	-----	-----	-----
1631		-----	-----	-----	-----	-----	-----	-----	-----
1634		-----	-----	-----	-----	-----	-----	-----	-----
1635		-----	-----	-----	-----	-----	-----	-----	-----
1636		-----	-----	-----	-----	-----	-----	-----	-----

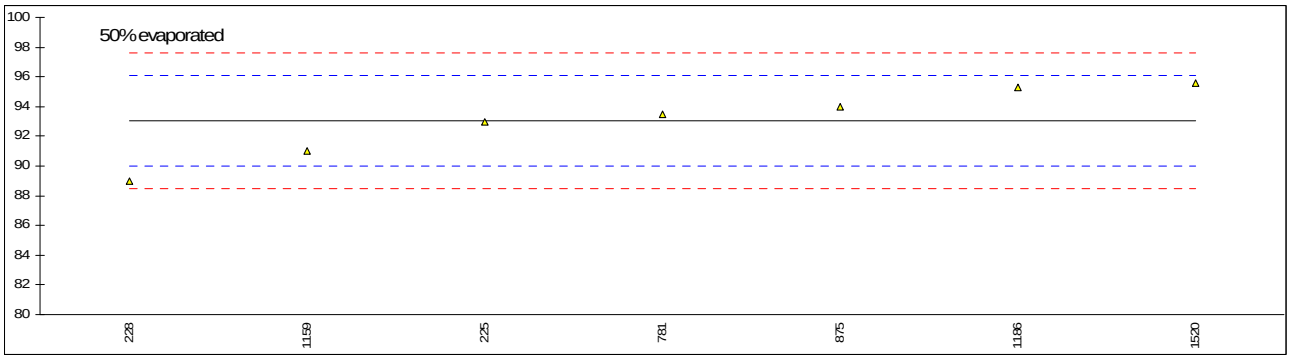
1709	-----	-----	-----	-----	-----	-----	-----	-----
1720	-----	-----	-----	-----	-----	-----	-----	-----
1724	-----	-----	-----	-----	-----	-----	-----	-----
1807	-----	-----	-----	-----	-----	-----	-----	-----
1810	-----	-----	-----	-----	-----	-----	-----	-----
1811	-----	-----	-----	-----	-----	-----	-----	-----
1826	-----	-----	-----	-----	-----	-----	-----	-----
1833	-----	-----	-----	-----	-----	-----	-----	-----
1842	-----	-----	-----	-----	-----	-----	-----	-----
1849	-----	-----	-----	-----	-----	-----	-----	-----
1936	-----	-----	-----	-----	-----	-----	-----	-----
1937	-----	-----	-----	-----	-----	-----	-----	-----
1938	-----	-----	-----	-----	-----	-----	-----	-----
1941	-----	-----	-----	-----	-----	-----	-----	-----
1948	-----	-----	-----	-----	-----	-----	-----	-----
2129	-----	-----	-----	-----	-----	-----	-----	-----
2130	-----	-----	-----	-----	-----	-----	-----	-----
2146	-----	-----	-----	-----	-----	-----	-----	-----
7001	-----	-----	-----	-----	-----	-----	-----	-----
normality	OK	OK	OK	OK	not OK	OK	OK	OK
n	7	7	7	7	7	7	7	7
outliers	0	0	0	0	0	0	0	0
mean (n)	33.27	46.35	93.06	150.71	185.28	35.46	55.80	89.89
st.dev. (n)	2.079	1.489	2.351	4.384	3.157	1.262	1.667	1.699
R(calc.)	5.82	4.17	6.58	12.28	8.84	3.53	4.67	4.76
R(ISO3405:09)	5.60	4.07	4.26	3.98	7.20	3.44	3.12	2.82

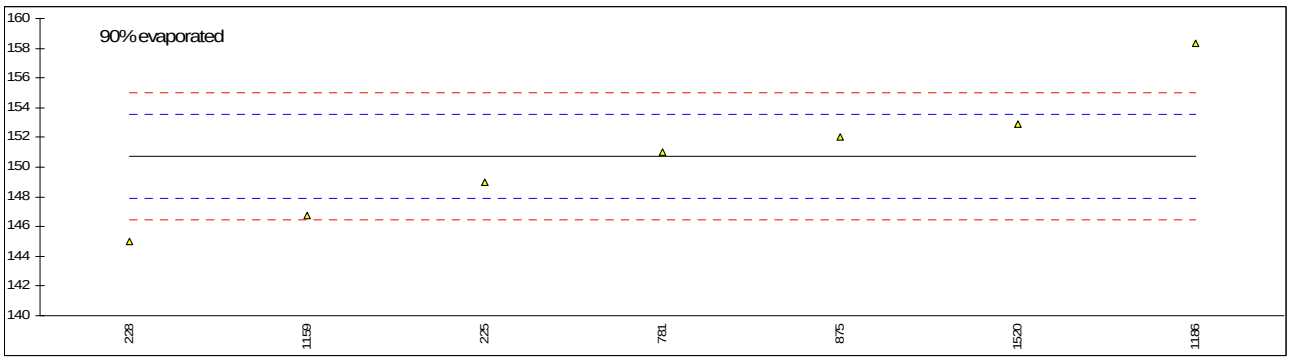
First reported results
Lab 1186 %vol@70ºC: 28.5

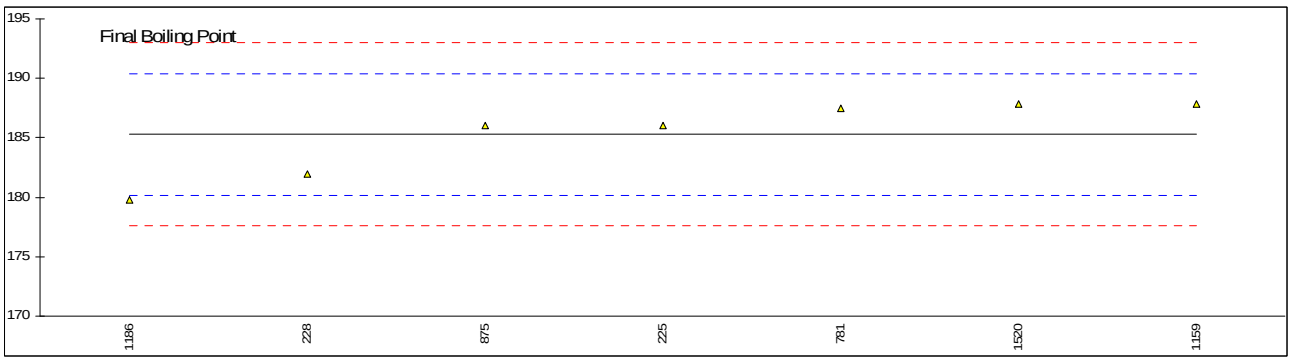
Determination of Distillation ASTM D86 (Manual) on sample #1068; results in °C
-- continued --

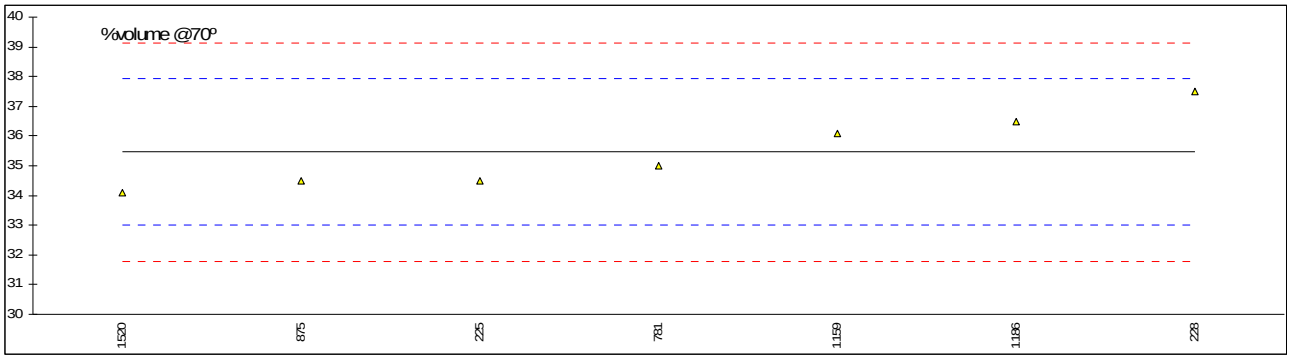


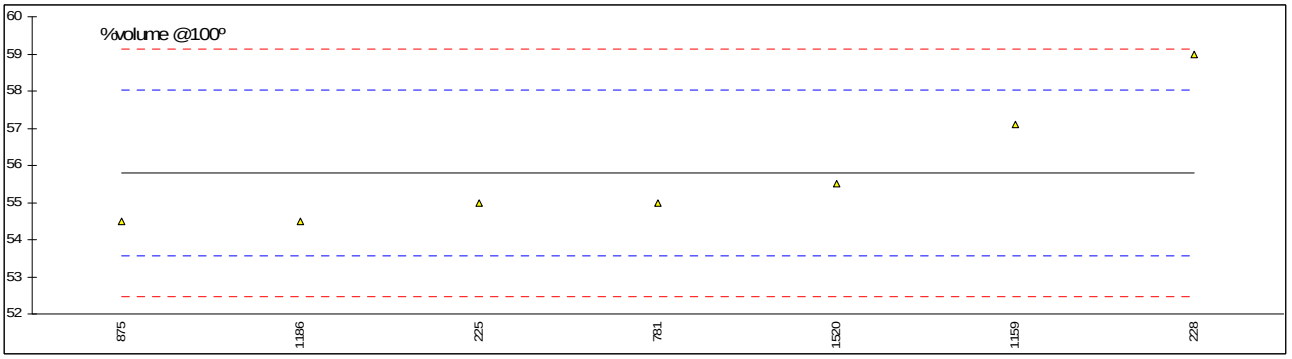


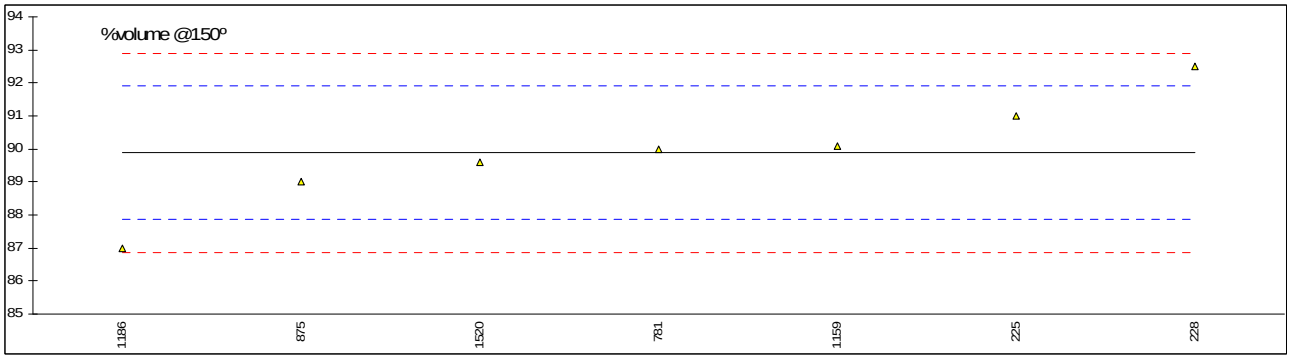







%volume @70º
40
39
38
37
36
35
34
33
32
31
30
1520
875
225
781
1159
1186
228


%volume @100º
60
59
58
57
56
55
54
53
52
875
1186
225
781
1520
1159
228


%volume @150º
94
93
92
91
90
89
88
87
86
85
1186
875
1520
781
1159
225
228

Determination of Doctor Test on sample #1068;

lab	method	value	mark	z(targ)	remarks
92	D4952	NEG		-----	
150	D4952	NEG		-----	
225	D4952	NEG		-----	
228		-----		-----	
253		-----		-----	
311	D4952	NEG		-----	
312	IP30	NEG		-----	
317		-----		-----	
323		-----		-----	
334		-----		-----	
335		-----		-----	
336		-----		-----	
338		-----		-----	
340		-----		-----	
344		-----		-----	
353		-----		-----	
357	D4952	NEG		-----	
360	D4952	NEG		-----	
391		-----		-----	
430		-----		-----	
431		-----		-----	
440	IP30	NEG		-----	
445	IP30	NEG		-----	
447		-----		-----	
463	IP30	NEG		-----	
468		-----		-----	
485		-----		-----	
494	D4952	NEG		-----	
495	D4952	NEG		-----	
496		-----		-----	
671	D4952	NEG		-----	
781	D4952	NEG		-----	
868	D4952	NEG		-----	
875	D4952	NEG	C	-----	First reported positive
904	D4952	NEG		-----	
912		-----		-----	
962	D4952	NEG		-----	
1006		-----		-----	
1017		-----		-----	
1038	IP30	NEG		-----	
1059	D4952	NEG		-----	
1066	D4952	NEG		-----	
1080		-----		-----	
1081	D4952	NEG		-----	
1108	D4952	NEG		-----	
1109	IP30	NEG		-----	
1126		-----		-----	
1140	IP30	NEG		-----	
1159		-----		-----	
1161		-----		-----	
1167		-----		-----	
1186		-----		-----	
1201	D4952	NEG		-----	
1203	D4952	NEG		-----	
1205		-----		-----	
1212	D4952	NEG		-----	
1218		-----		-----	
1251	D4952	NEG		-----	
1259	D4952	NEG		-----	
1272		-----		-----	
1276	IP30	NEG		-----	
1280		-----		-----	
1293		-----		-----	
1299	D4952	NEG		-----	
1340	D4952	NEG		-----	
1357	D4952	NEG		-----	
1419	D4952	NEG		-----	
1426		-----		-----	
1427	D4952	NEG		-----	
1432		-----		-----	
1520	D4952	NEG		-----	
1603	in house	NEG		-----	
1631		-----		-----	
1634		-----		-----	
1635	D4952	NEG		-----	
1636	D4952	NEG		-----	

1709		-----	-----
1720	D4952	NEG	-----
1724	IP30	NEG	-----
1807	D4952	NEG	-----
1810		-----	-----
1811	D4952	NEG	-----
1826	D4952	Passes	-----
1833	D4952	NEG	-----
1842		-----	-----
1849	D4952	NEG	-----
1936		-----	-----
1937		-----	-----
1938		-----	-----
1941	D4952	NEG	-----
1948		-----	-----
2129	IP30	NEG	-----
2130	IP30	NEG	-----
2146		-----	-----
7001	D4952	NEG	-----

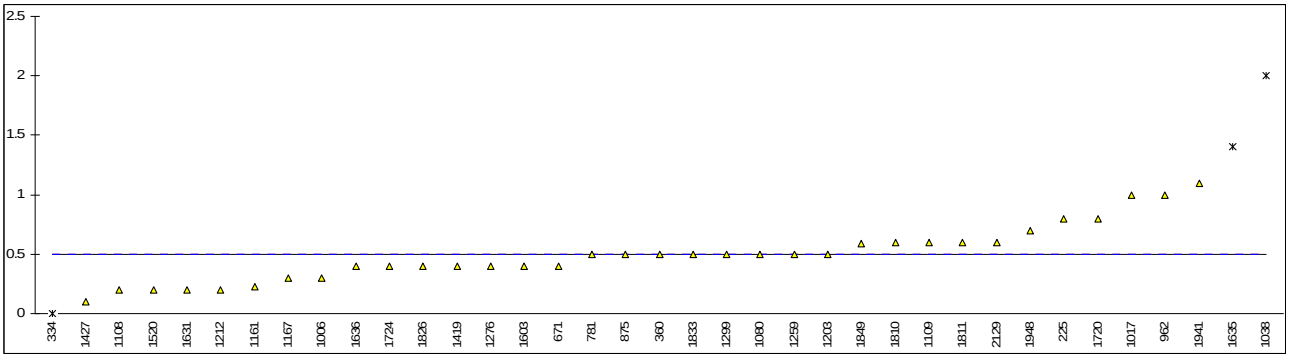
	mean (n)	Negative

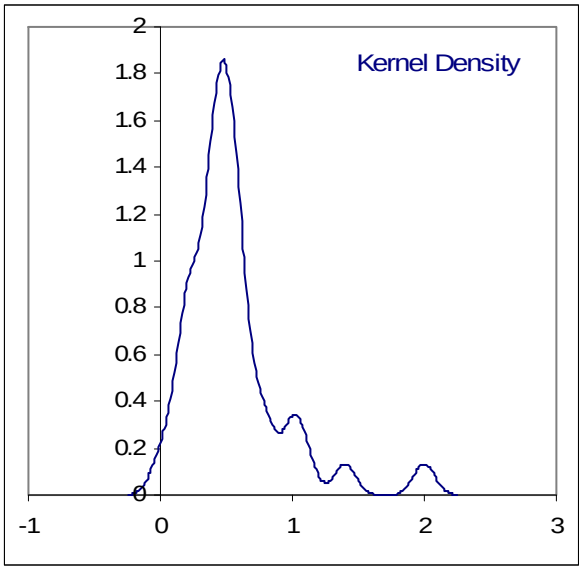
Determination of Existent Gum (washed) on sample #1068; results in mg/100mL

lab	method	value	mark	z(targ)	remarks
92		-----		-----	
150	D381	<0.5		-----	
225	D381	0.8		-----	
228		-----		-----	
253		-----		-----	
311	ISO6246	<1		-----	
312	D381	<0.5		-----	
317		-----		-----	
323	D381	<0.5	C	-----	First reported 2.0
334	ISO6246	0	ex	-----	Result excluded, zero is not a real result
335		-----		-----	
336		-----		-----	
338		-----		-----	
340	ISO6246	<1		-----	
344		-----		-----	
353	IP131	<1		-----	
357	ISO6246	<1		-----	
360	ISO6246	0.5		-----	
391		-----		-----	
430		-----		-----	
431		-----		-----	
440		-----		-----	
445	IP131	<1		-----	
447		-----		-----	
463	ISO6246	<0.5		-----	
468	ISO6246	<0.5		-----	
485		-----		-----	
494	ISO6246	<1		-----	
495	ISO6246	<1		-----	
496	ISO6246	<1		-----	
671	D381	0.4		-----	
781	D381	0.50		-----	
868	D381	<0.5		-----	
875	D381	0.50		-----	
904		-----		-----	
912		-----		-----	
962	D381	1		-----	
1006	D381	0.3		-----	
1017	ISO6246	1		-----	
1038	D381	2	G(0.01)	-----	False positive result?
1059	ISO6246	<1		-----	
1066		-----		-----	
1080	ISO6246	0.5		-----	
1081	D381	<0.1		-----	
1108	ISO6246	0.2		-----	
1109	D381	0.6		-----	
1126		-----		-----	
1140	IP131	<1.0		-----	
1159		-----		-----	
1161	ISO6246	0.23		-----	
1167	ISO6246	0.3		-----	
1186		-----		-----	
1201	ISO6246	<0.5		-----	
1203	ISO6246	0.5		-----	
1205		-----		-----	
1212	ISO3246	0.2		-----	
1218		-----		-----	
1251	ISO6246	<0.5		-----	
1259	ISO6246	0.5		-----	
1272		-----		-----	
1276	D381	0.4		-----	
1280		-----		-----	
1293		-----		-----	
1299	ISO3246	0.5		-----	
1340	ISO6246	<1		-----	
1357		-----		-----	
1419	ISO6246	0.4		-----	
1426		-----		-----	
1427	ISO6246	0.1		-----	
1432		-----		-----	
1520	ISO6246	0.20		-----	
1603	in house	0.4		-----	
1631	ISO6246	0.2		-----	
1634		-----		-----	
1635	ISO6246	1.4	G(0.05)	-----	False positive result?
1636	IP540	0.4		-----	

1709		-----		-----	
1720	D381	0.8		-----	
1724	ISO6246	0.4		-----	
1807	ISO6246	<1		-----	
1810	ISO6246	0.6		-----	
1811	ISO6246	0.6		-----	
1826	ISO6246	0.4		-----	
1833	ISO6246	0.5		-----	
1842		-----		-----	
1849	ISO6246	0.59		-----	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1941	ISO6246	1.1	G(0.05)	-----	False positive result?
1948	ISO6246	0.7		-----	
2129	ISO6246	0.6		-----	
2130	D381	<1		-----	
2146		-----		-----	
7001	D381	<0.5		-----	

normality	not OK
n	33
outliers	4
mean (n)	0.48
st.dev. (n)	0.216
R(calc.)	0.61
R(ISO6246:98)	(0.64)



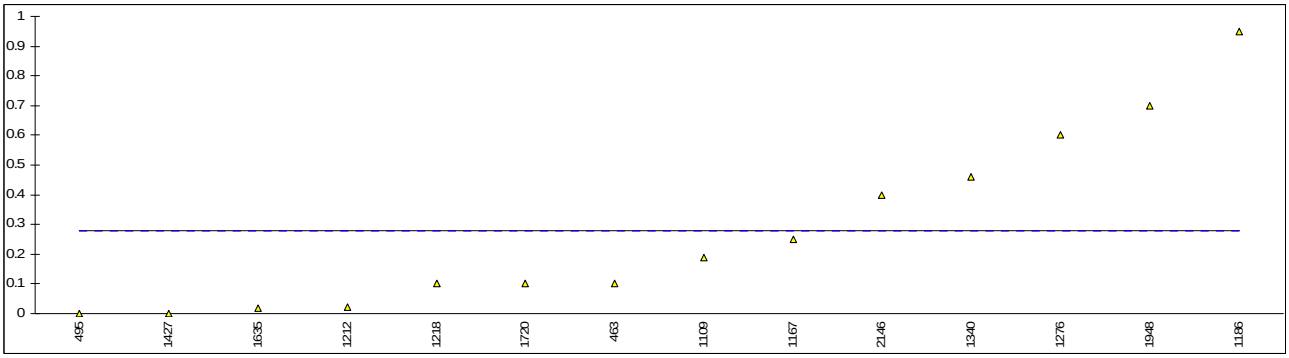


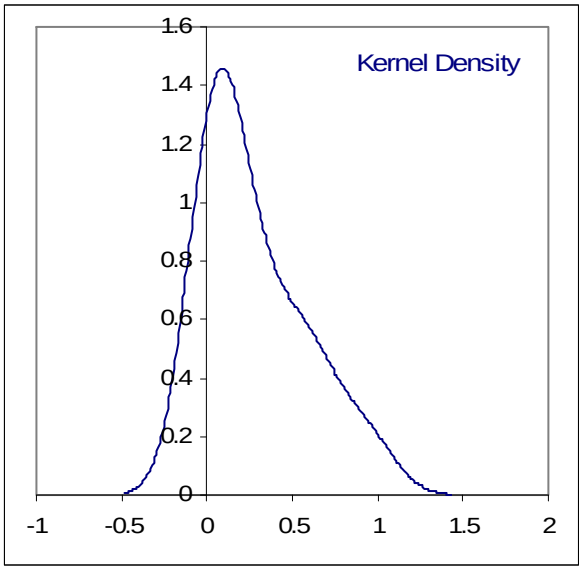
Determination of Lead as Pb on sample #1068; results in mg/L

lab	method	value	mark	z(targ)	remarks
92	D3237	<2.5		-----	
150		-----		-----	
225		-----		-----	
228		-----		-----	
253		-----		-----	
311		-----		-----	
312	EN237	<2.5		-----	
317		-----		-----	
323	EN237	<2.5		-----	
334		-----		-----	
335		-----		-----	
336		-----		-----	
338		-----		-----	
340		-----		-----	
344		-----		-----	
353		-----		-----	
357		-----		-----	
360		-----		-----	
391		-----		-----	
430		-----		-----	
431		-----		-----	
440		-----		-----	
445	IP428	<0.1		-----	
447		-----		-----	
463	D3237	0.10		-----	
468		-----		-----	
485		-----		-----	
494		-----		-----	
495	EN237	0		-----	
496	EN237	<2.5		-----	
671		-----		-----	
781	EN237	<1		-----	
868	UOP952	<0.01		-----	
875	EN237	<1		-----	
904	EN237	<2.5		-----	
912		-----		-----	
962		-----		-----	
1006	D3237	<0.0025	U	-----	Different unit?
1017		-----		-----	
1038		-----		-----	
1059	EN13723	<1.0		-----	
1066		-----		-----	
1080		-----		-----	
1081	D5059	<1		-----	
1108		-----		-----	
1109	D3237	0.19		-----	
1126		-----		-----	
1140		-----		-----	
1159		-----		-----	
1161	EN237	<5		-----	
1167	EN237	0.25		-----	
1186	D3237	0.95		-----	
1201	EN237	<1		-----	
1203	EN237	<1		-----	
1205		-----		-----	
1212	EN237	0.02		-----	
1218	in house XRF	0.1		-----	
1251		-----		-----	
1259	EN237	<2.5		-----	
1272		-----	W	-----	Result withdrawn, first reported 2.822
1276	EN237	0.6		-----	
1280		-----		-----	
1293		-----		-----	
1299	EN237	<0.0025	U	-----	Different unit?
1340	EN237	0.46		-----	
1357		-----		-----	
1419	EN237	<2.0		-----	
1426		-----		-----	
1427	EN237	0.00		-----	
1432		-----		-----	
1520	EN237	<2.50		-----	
1603		-----		-----	
1631		-----		-----	
1634		-----		-----	
1635	EN237	0.018		-----	
1636	XRF	<1		-----	

1709	D3237	<2.5		-----	
1720	D3237	0.10		-----	
1724	EN237	<2.5		-----	
1807	EN237	<2.5		-----	
1810		-----		-----	
1811		-----		-----	
1826		-----		-----	
1833	EN237	<2.5		-----	
1842		-----		-----	
1849	EN237	<2.5		-----	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1941	EN237	<2.5		-----	
1948	EN237	0.7	C	-----	First reported 3.28
2129		-----		-----	
2130	IP352	<1		-----	
2146	ISO8754	0.4		-----	
7001	INH-9406	<0.005	U	-----	Different unit?

normality	OK
n	14
outliers	0
mean (n)	0.28
st.dev. (n)	0.300
R(calc.)	0.84
R(EN237:96)	(2.00)





Determination of Manganese as Mn on sample #1068; results in mg/L

lab	method	value	mark	z(targ)	remarks
92		-----		-----	
150		-----		-----	
225		-----		-----	
228		-----		-----	
253		-----		-----	
311		-----		-----	
312	D3831	<0.25		-----	
317		-----		-----	
323		-----		-----	
334		-----		-----	
335		-----		-----	
336		-----		-----	
338		-----		-----	
340		-----		-----	
344		-----		-----	
353		-----		-----	
357		-----		-----	
360		-----		-----	
391		-----		-----	
430		-----		-----	
431		-----		-----	
440		-----		-----	
445		-----		-----	
447		-----		-----	
463		-----		-----	
468		-----		-----	
485		-----		-----	
494	INH-19	0.01		-----	
495		-----		-----	
496		-----		-----	
671		-----		-----	
781	INH-51925	<0.25		-----	
868	D3831	<0.25		-----	
875		-----		-----	
904		-----		-----	
912		-----		-----	
962		-----		-----	
1006		-----		-----	
1017		-----		-----	
1038		-----		-----	
1059		-----		-----	
1066		-----		-----	
1080		-----		-----	
1081		-----		-----	
1108		-----		-----	
1109		-----		-----	
1126		-----		-----	
1140		-----		-----	
1159		-----		-----	
1161	INH-8891	<0.25		-----	
1167	D3831	0.017		-----	
1186		-----		-----	
1201		<1		-----	
1203		-----		-----	
1205		-----		-----	
1212	AAS	<0.2		-----	
1218		-----		-----	
1251		-----		-----	
1259		-----		-----	
1272		-----		-----	
1276	IP455	0.5		-----	
1280		-----		-----	
1293		-----		-----	
1299		-----		-----	
1340		-----		-----	
1357		-----		-----	
1419	in house	<0.3		-----	
1426		-----		-----	
1427		-----		-----	
1432		-----		-----	
1520		-----		-----	
1603		-----		-----	
1631		-----		-----	
1634		-----		-----	
1635		-----		-----	
1636		-----		-----	

1709		-----	-----
1720		-----	-----
1724		-----	-----
1807		-----	-----
1810		-----	-----
1811		-----	-----
1826		-----	-----
1833		-----	-----
1842		-----	-----
1849		-----	-----
1936		-----	-----
1937		-----	-----
1938		-----	-----
1941		-----	-----
1948	D3831	0.348	-----
2129		-----	-----
2130		-----	-----
2146		-----	-----
7001		-----	-----

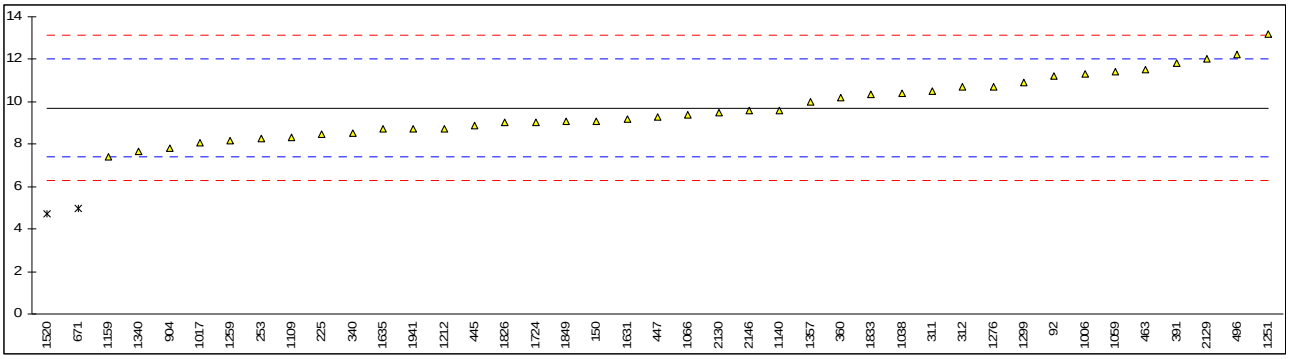
normality	unknown	
n	4	
outliers	0	
mean (n)	0.22	
st.dev. (n)	0.245	
R(calc.)	0.69	
R(D3831:06)	(0.06)	Application range: 0.25 – 40 mg/L

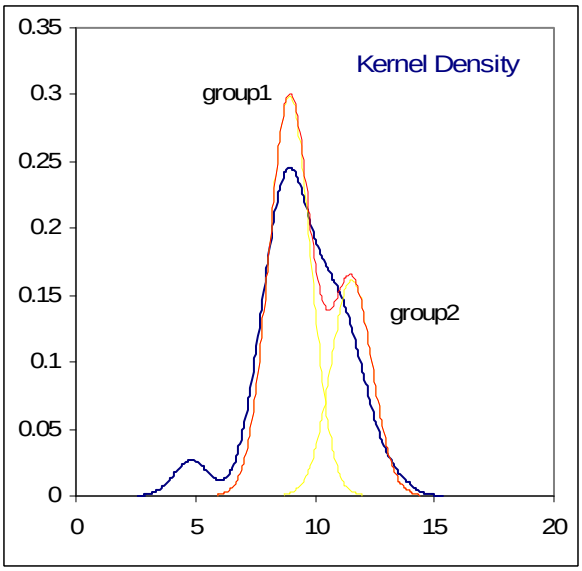
Determination of Olefins by FIA on sample #1068; results in %V/V

lab	method	value	mark	z(targ)	remarks
92	D1319	11.2		-----	
150	D1319	9.1		-----	
225	D1319	8.45	C	-----	First reported 32.9
228		-----		-----	
253	D1319	8.28		-----	
311	D1319	10.5		-----	
312	D1319	10.7		-----	
317		-----		-----	
323		-----		-----	
334		-----		-----	
335		-----		-----	
336		-----		-----	
338		-----		-----	
340	D1319	8.5		-----	
344		-----		-----	
353		-----		-----	
357		-----		-----	
360	D1319	10.2		-----	
391	D1319	11.8		-----	
430		-----		-----	
431		-----		-----	
440		-----		-----	
445	D1319	8.9		-----	
447	D1319	9.3		-----	
463	D1319	11.5		-----	
468		-----		-----	
485		-----		-----	
494		-----		-----	
495		-----		-----	
496	D1319	12.20		-----	
671	D1319	4.97	DG(0.05)	-----	
781		-----		-----	
868		-----		-----	
875		-----		-----	
904	D1319	7.8		-----	
912		-----		-----	
962		-----		-----	
1006	D6293	11.3		-----	
1017	D1319	8.04		-----	
1038	D1319	10.4		-----	
1059	D1319	11.4		-----	
1066	D1319	9.4		-----	
1080		-----		-----	
1081		-----		-----	
1108		-----		-----	
1109	D1319	8.3		-----	
1126		-----		-----	
1140	IP156	9.6		-----	
1159	D5845	7.4	C	-----	First reported 3.7
1161		-----		-----	
1167		-----		-----	
1186		-----		-----	
1201		-----		-----	
1203		-----		-----	
1205		-----		-----	
1212	D1319	8.71		-----	
1218		-----		-----	
1251	D1319	13.2		-----	
1259	D1319	8.17		-----	
1272		-----		-----	
1276	D1319	10.72		-----	
1280		-----		-----	
1293		-----		-----	
1299	D1319	10.9		-----	
1340	D1319	7.68		-----	
1357	D1319	10.0		-----	
1419		-----		-----	
1426		-----		-----	
1427		-----		-----	
1432		-----		-----	
1520	D1319	4.70	DG(0.05)	-----	
1603		-----		-----	
1631	D1319	9.2		-----	
1634		-----		-----	
1635	D1319	8.7		-----	
1636		-----		-----	

1709		-----	-----
1720		-----	-----
1724	D1319	9.03	-----
1807		-----	-----
1810		-----	-----
1811		-----	-----
1826	D1319	9.01	-----
1833	EN15553	10.37	-----
1842		-----	-----
1849	D1319	9.08	-----
1936		-----	-----
1937		-----	-----
1938		-----	-----
1941	D1319	8.7	-----
1948		-----	-----
2129	D1319	12.0	-----
2130	D1319	9.49	-----
2146	D1319	9.6	-----
7001		-----	-----

		Group 1	Group 2
	normality	OK	OK
	n	39	23	16
	outliers	2	2	0
	mean (n)	9.714	8.715	11.149
	st.dev. (n)	1.4090	0.6247	0.8536
	R(calc.)	3.945	1.749	2.390
	R(EN15553:07)	(3.202)	3.000	3.478



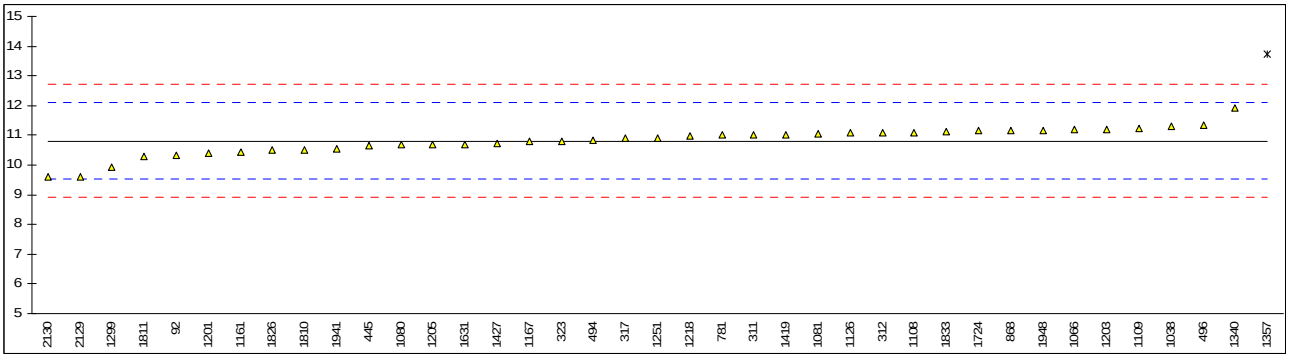


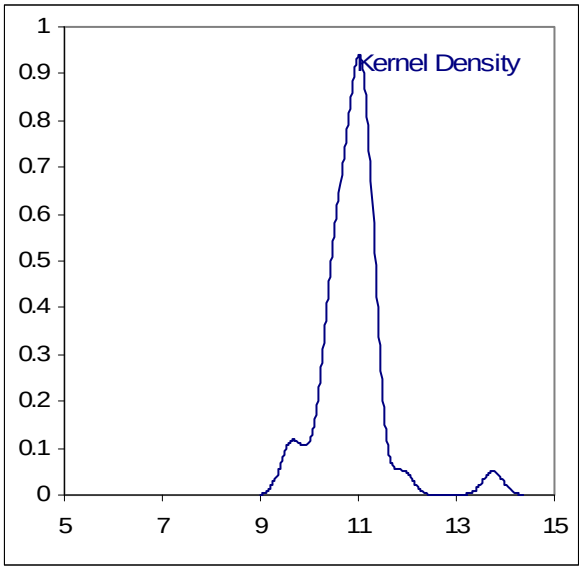
Determination of Olefins by GC on sample #1068; results in %V/V

lab	method	value	mark	z(targ)	remarks
92	INH-3.0	10.34		-0.75	
150		-----		-----	
225		-----		-----	
228		-----		-----	
253		-----		-----	
311	EN14517	11.0		0.29	
312	ISO22854	11.08		0.42	
317	EN14517	10.9		0.13	
323	ISO22854	10.8		-0.02	
334		-----		-----	
335		-----		-----	
336		-----		-----	
338		-----		-----	
340		-----		-----	
344		-----		-----	
353		-----		-----	
357		-----		-----	
360		-----		-----	
391		-----		-----	
430		-----		-----	
431		-----		-----	
440		-----		-----	
445	EN14517	10.66		-0.24	
447		-----		-----	
463		-----		-----	
468		-----		-----	
485		-----		-----	
494	ISO22854	10.85		0.06	
495		-----		-----	
496	ISO22854	11.35		0.84	
671		-----		-----	
781	INH-52714	11.00		0.29	
868	D6839	11.16		0.54	
875		-----		-----	
904		-----		-----	
912		-----		-----	
962		-----		-----	
1006		-----		-----	
1017		-----		-----	
1038	D6839	11.3		0.76	
1059		-----		-----	
1066	ISO22854	11.18		0.57	
1080	ReformM3	10.68		-0.21	
1081	EN14517	11.06	C	0.38	First reported 19.00
1108	EN14517	11.1		0.45	
1109	D6839	11.22		0.64	
1126	EN14517	11.07		0.40	
1140		-----		-----	
1159		-----		-----	
1161	ISO22854	10.44		-0.59	
1167	ISO22854	10.78		-0.05	
1186		-----		-----	
1201	ISO22854	10.4		-0.65	
1203	EN14517	11.2		0.60	
1205	EN14517	10.7		-0.18	
1212		-----		-----	
1218	EN14517	10.99		0.28	
1251	ISO22854	10.9		0.13	
1259		-----		-----	
1272		-----		-----	
1276		-----		-----	
1280		-----		-----	
1293		-----		-----	
1299	EN14517	9.94		-1.37	
1340	EN14517	11.91		1.72	
1357	D6730	13.75	G(0.01)	4.61	
1419	EN22854	11.02		0.32	
1426		-----		-----	
1427	EN14517	10.733		-0.13	
1432		-----		-----	
1520		-----		-----	
1603		-----		-----	
1631	EN14517	10.7		-0.18	
1634		-----		-----	
1635		-----		-----	
1636		-----		-----	

1709		-----		-----	
1720		-----		-----	
1724	EN14517	11.16		0.54	
1807		-----		-----	
1810	EN14517	10.5		-0.49	
1811	EN14517	10.28		-0.84	
1826	EN14517	10.5		-0.49	
1833	ISO22854	11.14		0.51	
1842		-----		-----	
1849		-----		-----	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1941	in house	10.53		-0.45	
1948	EN14517	11.17		0.56	
2129	D6730	9.619	C	-1.88	First reported 9.524
2130	D6730	9.60		-1.91	
2146		-----		-----	
7001		-----		-----	

normality	OK
n	38
outliers	1
mean (n)	10.815
st.dev. (n)	0.4627
R(calc.)	1.296
R(EN14517:04)	1.784



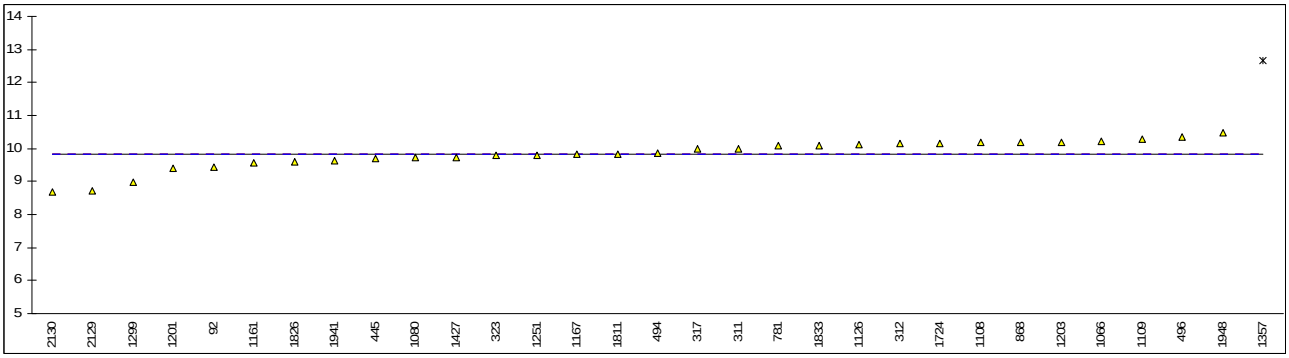


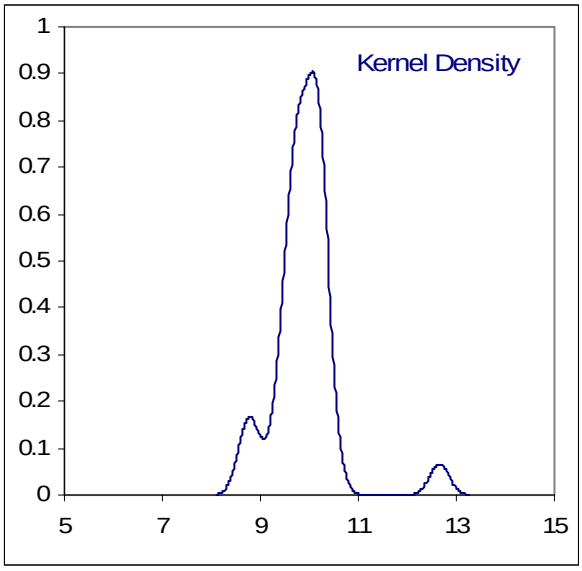
Determination of Olefins by GC on sample #1068; results in %M/M

lab	method	value	mark	z(targ)	remarks
92	INH-3.0	9.42		-----	
150		-----		-----	
225		-----		-----	
228		-----		-----	
253		-----		-----	
311	EN14517	10.0		-----	
312	ISO22854	10.16		-----	
317	EN14517	10.0		-----	
323	ISO22854	9.8		-----	
334		-----		-----	
335		-----		-----	
336		-----		-----	
338		-----		-----	
340		-----		-----	
344		-----		-----	
353		-----		-----	
357		-----		-----	
360		-----		-----	
391		-----		-----	
430		-----		-----	
431		-----		-----	
440		-----		-----	
445	EN14517	9.69		-----	
447		-----		-----	
463		-----		-----	
468		-----		-----	
485		-----		-----	
494	ISO22854	9.86		-----	
495		-----		-----	
496	ISO22854	10.35		-----	
671		-----		-----	
781	INH-52714	10.08		-----	
868	D6839	10.20		-----	
875		-----		-----	
904		-----		-----	
912		-----		-----	
962		-----		-----	
1006		-----		-----	
1017		-----		-----	
1038		-----		-----	
1059		-----		-----	
1066	ISO22854	10.22		-----	
1080	ReformM3	9.72		-----	
1081		-----		-----	
1108	EN14517	10.2		-----	
1109	D6839	10.28		-----	
1126	EN14517	10.11		-----	
1140		-----		-----	
1159		-----		-----	
1161	ISO22854	9.56		-----	
1167	ISO22854	9.81		-----	
1186		-----		-----	
1201	ISO22854	9.4		-----	
1203	EN14517	10.2		-----	
1205		-----		-----	
1212		-----		-----	
1218		-----		-----	
1251	ISO22854	9.8		-----	
1259		-----		-----	
1272		-----		-----	
1276		-----		-----	
1280		-----		-----	
1293		-----		-----	
1299	EN14517	8.97		-----	
1340		-----		-----	
1357	D6730	12.66	G(0.01)	-----	
1419		-----		-----	
1426		-----		-----	
1427	EN14517	9.727		-----	
1432		-----		-----	
1520		-----		-----	
1603		-----		-----	
1631		-----		-----	
1634		-----		-----	
1635		-----		-----	
1636		-----		-----	

1709		-----		-----	
1720		-----		-----	
1724	EN14517	10.16		-----	
1807		-----		-----	
1810		-----		-----	
1811	EN14517	9.82		-----	
1826	EN14517	9.6	C	-----	First reported 9.01
1833	ISO22854	10.1		-----	
1842		-----		-----	
1849		-----		-----	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1941	in house	9.62		-----	
1948	EN14517	10.48		-----	
2129	D6730	8.733	C	-----	First reported 8.631
2130	D6730	8.70		-----	
2146		-----		-----	
7001		-----		-----	

normality	OK
n	30
outliers	1
mean (n)	9.826
st.dev. (n)	0.4447
R(calc.)	1.245
R(EN14517:04)	unknown



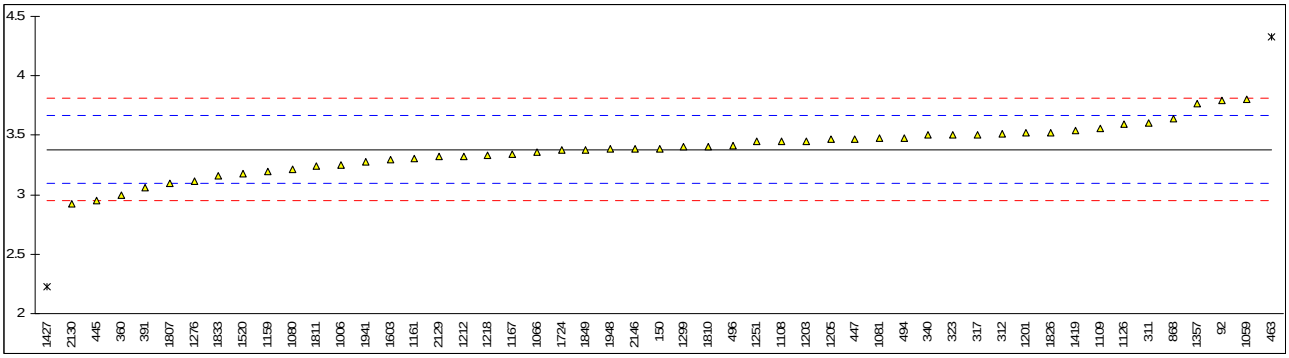


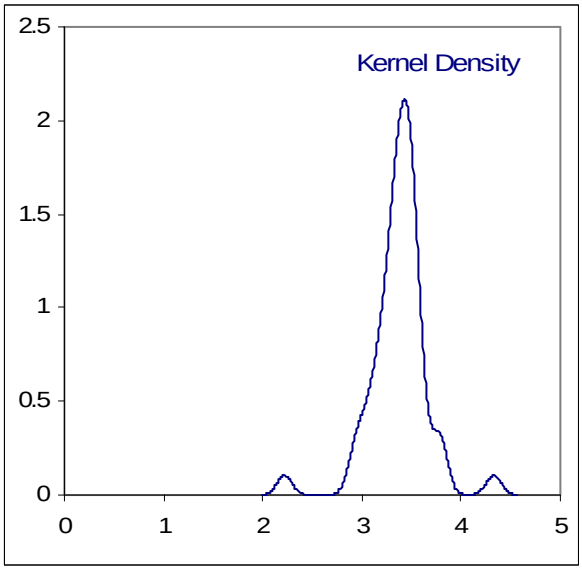
Determination of Ethanol on sample #1068; results in %V/V

lab	method	value	mark	z(targ)	remarks
92	INH-CGSB3.0	3.79		2.87	
150	D5599	3.39		0.07	
225		-----		-----	
228		-----		-----	
253		-----		-----	
311	EN14517	3.6		1.54	
312	ISO22854	3.51		0.91	
317	EN14517	3.50		0.84	
323	ISO22854	3.50		0.84	
334		-----		-----	
335		-----		-----	
336		-----		-----	
338		-----		-----	
340	EN1601	3.5		0.84	
344		-----		-----	
353		-----		-----	
357		-----		-----	
360	EN13132	3.00		-2.66	
391	EN1601	3.06		-2.24	
430		-----		-----	
431		-----		-----	
440		-----		-----	
445	D4815	2.950		-3.01	
447	D4815	3.47		0.63	
463	EN13132	4.33	G(0.05)	6.65	
468		-----		-----	
485		-----		-----	
494	ISO22854	3.48		0.70	
495		-----		-----	
496	EN1601	3.41		0.21	
671		-----		-----	
781		-----		-----	
868	D6839	3.64		1.82	
875		-----		-----	
904		-----		-----	
912		-----		-----	
962		-----		-----	
1006	D4815	3.25		-0.91	
1017		-----		-----	
1038		-----		-----	
1059	EN1601	3.8		2.94	
1066	ISO22854	3.36		-0.14	
1080	ReformM3	3.21		-1.19	
1081	EN14517	3.48	C	0.70	First reported 0
1108	EN14517	3.45		0.49	
1109	D6839	3.56		1.26	
1126	Reform	3.59		1.47	
1140		-----		-----	
1159	D5845	3.2		-1.26	
1161	EN13132	3.3		-0.56	
1167	EN13132	3.34		-0.28	
1186		-----		-----	
1201	ISO22854	3.52		0.98	
1203	EN1601	3.45		0.49	
1205	EN14517	3.47		0.63	
1212	D4815	3.32		-0.42	
1218	EN13132	3.33		-0.35	
1251	ISO22854	3.45		0.49	
1259		-----		-----	
1272		-----		-----	
1276	D4815	3.11		-1.89	
1280		-----		-----	
1293		-----		-----	
1299	EN13132	3.4		0.14	
1340		-----		-----	
1357	D6730	3.77		2.73	
1419	EN22854	3.54		1.12	
1426		-----		-----	
1427	EN14517	2.223	G(0.01)	-8.10	
1432		-----		-----	
1520	EN13132	3.18		-1.40	
1603	in house	3.292	C	-0.62	First reported 4.623
1631		-----		-----	
1634		-----		-----	
1635		-----		-----	
1636		-----		-----	

1709		-----		-----	
1720		-----		-----	
1724	EN14517	3.38		0.00	
1807	EN13132	3.1		-1.96	
1810	EN1601	3.4		0.14	
1811	EN1601	3.24		-0.98	
1826	D6839	3.52		0.98	
1833	ISO22854	3.16		-1.54	
1842		-----		-----	
1849	EN1601	3.38	C	0.00	First reported 4.11
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1941	in house	3.28		-0.70	
1948	EN13132	3.387	C	0.04	First reported 3.69
2129	EN1601	3.319		-0.43	
2130	D6730	2.923		-3.20	
2146	EN13132	3.39		0.07	
7001		-----		-----	

normality	OK
n	49
outliers	2
mean (n)	3.381
st.dev. (n)	0.1980
R(calc.)	0.554
R(EN1601:97)	0.400





Determination of Ethers (>C5) on sample #1068; results in %V/V

lab	method	value	mark	z(targ)	After correction for MTBE		remarks
92		-----		-----	-----		
150		-----		-----	-----		
225		-----		-----	-----		
228		-----		-----	-----		
253		-----		-----	-----		
311	EN14517	<0.1		-----	<0.1		
312	ISO22854	<0.10		-----	<0.10		
317	EN14517	2.01		-----	0	(ex)	
323		-----		-----	-----		
334		-----		-----	-----		
335		-----		-----	-----		
336		-----		-----	-----		
338		-----		-----	-----		
340	EN1601	2.1	C	-----	0	(ex)	First reported <0.17
344		-----		-----	-----		
353		-----		-----	-----		
357		-----		-----	-----		
360		-----		-----	-----		
391		-----		-----	-----		
430		-----		-----	-----		
431		-----		-----	-----		
440		-----		-----	-----		
445	D4815	2.143		-----	0.22		
447	D4815	2.05		-----	0	(ex)	
463		-----		-----	-----		
468		-----		-----	-----		
485		-----		-----	-----		
494	ISO22854	2.07		-----	0.08		
495		-----		-----	-----		
496	EN1601	2.25		-----	0.2		
671		-----		-----	-----		
781		-----		-----	-----		
868		-----		-----	-----		
875		-----		-----	-----		
904		-----		-----	-----		
912		-----		-----	-----		
962		-----		-----	-----		
1006		-----		-----	-----		
1017		-----		-----	-----		
1038		-----		-----	-----		
1059	EN1601	1.8		-----	0	(ex)	
1066	ISO22854	<0.01		-----	<0.01		
1080		-----		-----	-----		
1081		-----		-----	-----		
1108	EN14517	2.21		-----	0.13		
1109		-----		-----	-----		
1126	Reform	2.18		-----	0.12		
1140		-----		-----	-----		
1159		-----		-----	-----		
1161	EN13132	<0.17		-----	<0.17		
1167	EN13132	0.10	G(0.01)	-----	0.10		
1186		-----		-----	-----		
1201		-----		-----	-----		
1203	EN1601	2.05		-----	0.18		
1205	EN14517	0	ex	-----	0	(ex)	
1212	D4815	1.90		-----	0	(ex)	
1218		-----		-----	-----		
1251		-----		-----	-----		
1259		-----		-----	-----		
1272		-----		-----	-----		
1276	D4815	6.25	G(0.01)	-----	3.85		
1280		-----		-----	-----		
1293		-----		-----	-----		
1299	EN1601	2.2		-----	0.1		
1340		-----		-----	-----		
1357		-----		-----	-----		
1419		-----		-----	-----		
1426		-----		-----	-----		
1427	EN14517	2.113		-----	0	(ex)	
1432		-----		-----	-----		
1520	EN13132	2.18		-----	0.36		
1603		-----		-----	-----		
1631		-----		-----	-----		
1634		-----		-----	-----		
1635		-----		-----	-----		
1636		-----		-----	-----		

1709	D4815	n.d.		-----	n.d.	
1720		-----		-----	-----	
1724		-----		-----	-----	
1807	UNE13132	3.1	G(0.01)	-----	1	
1810		-----		-----	-----	
1811		-----		-----	-----	
1826	D6839	2.16		-----	0.11	
1833		-----		-----	-----	
1842		-----		-----	-----	
1849		-----		-----	-----	
1936		-----		-----	-----	
1937		-----		-----	-----	
1938		-----		-----	-----	
1941		-----		-----	-----	
1948		-----		-----	-----	
2129	EN1601	<0.1		-----	<0.1	
2130		-----		-----	-----	
2146	EN13132	1.92		-----	0	(ex)
7001		-----		-----	-----	

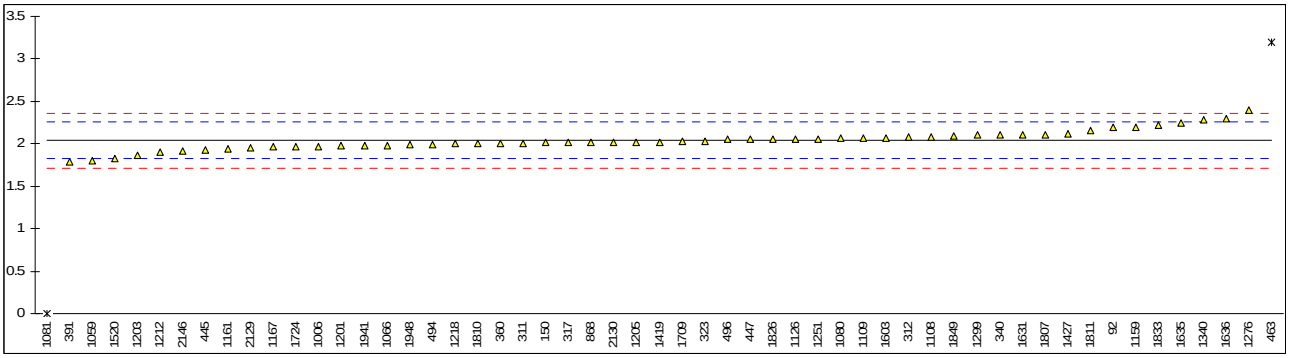
	normality	OK	OK
	n	16	10
	outliers	3	2
	mean (n)	2.084	0.160
	st.dev. (n)	0.1252	0.0845
	R(calc.)	0.351	0.236
	R(EN1601:97)	0.300	n.a.

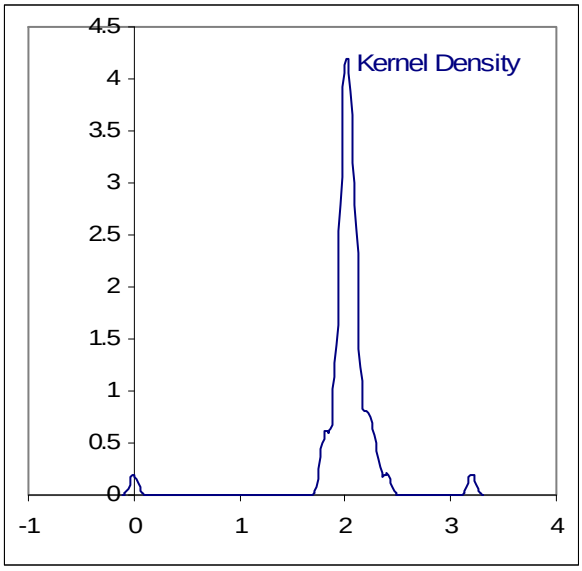
Determination of MTBE on sample #1068; results in %V/V

lab	method	value	mark	z(targ)	remarks
92	INH-CGSB3.0	2.19		1.40	
150	D5599	2.01		-0.28	
225		-----		-----	
228		-----		-----	
253		-----		-----	
311	EN14517	2.0		-0.37	
312	ISO22854	2.08		0.38	
317	EN14517	2.01		-0.28	
323	ISO22854	2.03		-0.09	
334		-----		-----	
335		-----		-----	
336		-----		-----	
338		-----		-----	
340	EN1601	2.1	C	0.56	First reported <0.17
344		-----		-----	
353		-----		-----	
357		-----		-----	
360	EN13132	2.00		-0.37	
391	EN1601	1.79		-2.33	
430		-----		-----	
431		-----		-----	
440		-----		-----	
445	D4815	1.923		-1.09	
447	D4815	2.05		0.10	
463	EN13132	3.20	G(0.01)	10.83	
468		-----		-----	
485		-----		-----	
494	ISO22854	1.99		-0.46	
495		-----		-----	
496	EN1601	2.05		0.10	
671		-----		-----	
781		-----		-----	
868	D6839	2.01		-0.28	
875		-----		-----	
904		-----		-----	
912		-----		-----	
962		-----		-----	
1006	D4815	1.97		-0.65	
1017		-----		-----	
1038		-----		-----	
1059	EN1601	1.8		-2.24	
1066	ISO22854	1.98		-0.56	
1080	ReformM3	2.07		0.28	
1081	EN14517	0.0	ex	-19.04	Result excluded, zero not a real result
1108	EN14517	2.08		0.38	
1109	D6839	2.07		0.28	
1126	Reform	2.06		0.19	
1140		-----		-----	
1159	D5845	2.2		1.50	
1161	EN13132	1.94		-0.93	
1167	EN13132	1.96		-0.74	
1186		-----		-----	
1201	ISO22854	1.98		-0.56	
1203	EN1601	1.87		-1.58	
1205	EN14517	2.02		-0.18	
1212	D4815	1.90		-1.30	
1218	EN13132	2.00		-0.37	
1251	ISO22854	2.06		0.19	
1259		-----		-----	
1272		-----		-----	
1276	D4815	2.40		3.36	
1280		-----		-----	
1293		-----		-----	
1299	EN1601	2.1		0.56	
1340	EN13132	2.28		2.24	
1357		-----		-----	
1419	EN22854	2.02		-0.18	
1426		-----		-----	
1427	EN14517	2.113		0.68	
1432		-----		-----	
1520	EN13132	1.82		-2.05	
1603	in house	2.072		0.30	
1631	EN14517	2.1		0.56	
1634		-----		-----	
1635	EN1601	2.24		1.87	
1636	D5845	2.3	C	2.43	First reported 1.3

1709	D4815	2.027		-0.12	
1720		-----		-----	
1724	EN14517	1.96		-0.74	
1807	EN13132	2.11		0.66	
1810	EN1601	2.0		-0.37	
1811	EN1601	2.15		1.03	
1826	D6839	2.05		0.10	
1833	ISO22854	2.22		1.68	
1842		-----		-----	
1849	EN1601	2.087		0.44	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1941	in house	1.98		-0.56	
1948	EN13132	1.99	C	-0.46	First reported 3.62
2129	EN1601	1.954		-0.80	
2130	D6730	2.018		-0.20	
2146	EN13132	1.92		-1.12	
7001		-----		-----	

normality	OK
n	53
outliers	1
mean (n)	2.040
st.dev. (n)	0.1180
R(calc.)	0.330
R(EN1601:97)	0.300





Determination of other oxygenates on sample #1068; results in %V/V

lab	method	DIPE	ETBE	i-buOH	i-proOH	MeOH	Tert-buOH	TAME	Others
92	INH-CGSB 3.0	-----	-----	-----	-----	-----	-----	0.01	-----
150	D5599	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	-----
225		-----	-----	-----	-----	-----	-----	-----	-----
228		-----	-----	-----	-----	-----	-----	-----	-----
253		-----	-----	-----	-----	-----	-----	-----	-----
311	EN14517	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
312	ISO22854	0.02	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
317	EN14517	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
323	ISO22854	<0.10	0.12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
334		-----	-----	-----	-----	-----	-----	-----	-----
335		-----	-----	-----	-----	-----	-----	-----	-----
336		-----	-----	-----	-----	-----	-----	-----	-----
338		-----	-----	-----	-----	-----	-----	-----	-----
340	EN1601	<0.17	-----	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
344		-----	-----	-----	-----	-----	-----	-----	-----
353		-----	-----	-----	-----	-----	-----	-----	-----
357		-----	-----	-----	-----	-----	-----	-----	-----
360	EN13132	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
391		-----	-----	-----	-----	-----	-----	-----	-----
430		-----	-----	-----	-----	-----	-----	-----	-----
431		-----	-----	-----	-----	-----	-----	-----	-----
440		-----	-----	-----	-----	-----	-----	-----	-----
445	D4815	<0.1	0.220	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
447	D4815	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
463	EN13132	-----	-----	<0.2	<0.2	<0.2	<0.2	-----	-----
468		-----	-----	-----	-----	-----	-----	-----	-----
485		-----	-----	-----	-----	-----	-----	-----	-----
494	ISO22854	<0.01	0.08	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
495		-----	-----	-----	-----	-----	-----	-----	-----
496	EN1601	<0.1	0.17	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
671		-----	-----	-----	-----	-----	-----	-----	-----
781		-----	-----	-----	-----	-----	-----	-----	-----
868	D6839	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-----
875		-----	-----	-----	-----	-----	-----	-----	-----
904		-----	-----	-----	-----	-----	-----	-----	-----
912		-----	-----	-----	-----	-----	-----	-----	-----
962		-----	-----	-----	-----	-----	-----	-----	-----
1006	D4815	<0.2	<0.2	-----	-----	<0.19	-----	<0.19	-----
1017		-----	-----	-----	-----	-----	-----	-----	-----
1038		-----	-----	-----	-----	-----	-----	-----	-----
1059	EN1601	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1066	ISO22854	0.03	0.10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1080	ReformM3	0.04	0.13	<0.01	-----	<0.01	<0.01	<0.01	-----
1081	EN14517	-----	0.14	-----	-----	0.0	-----	-----	-----
1108	EN14517	-----	0.13	-----	-----	-----	-----	-----	-----
1109	D6839	0.02	0.08	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1126	Reform	-----	0.12	-----	-----	-----	-----	-----	-----
1140		-----	-----	-----	-----	-----	-----	-----	-----
1159	D5845	-----	-----	-----	-----	***0.7***	-----	-----	-----
1161	EN13132	***0.13***	0.14	<0.17	<0.17	<0.17	0.07	<0.17	<0.17
1167	EN13132	-----	0.10	nd	nd	0.11	0.04	-----	*7.98*
1186		-----	-----	-----	-----	-----	-----	-----	-----
1201	ISO22854	<0.1	0.11	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1203	EN1601	0.02	0.18	0.07	0.07	<0.01	0.02	<0.01	<0.01
1205	EN14517	0	***0***	0	0	0	0	0	0
1212	D4815	<0.1	-----	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1218	EN13132	-----	0.17	-----	-----	-----	-----	-----	-----
1251	ISO22854	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1259		-----	-----	-----	-----	-----	-----	-----	-----
1272		-----	-----	-----	-----	-----	-----	-----	-----
1276	D4815	0.00	0.12	0.00	0.00	0.00	0.01	0.00	0.00
1280		-----	-----	-----	-----	-----	-----	-----	-----
1293		-----	-----	-----	-----	-----	-----	-----	-----
1299	EN1601	-----	0.1	-----	-----	-----	***0.1***	-----	-----
1340		-----	-----	-----	-----	-----	-----	-----	-----
1357		-----	-----	-----	-----	-----	-----	-----	-----
1419	EN22854	-----	0.11	-----	-----	-----	-----	-----	-----
1426		-----	-----	-----	-----	-----	-----	-----	-----
1427	EN14517	0.0	***0.0***	0.0	0.0	0.0	0.0	0.0	0.0
1432		-----	-----	-----	-----	-----	-----	-----	-----
1520	EN13132	<0.1	0.22	<0.1	<0.1	<0.1	<0.1	0.14	<0.1
1603		-----	-----	-----	-----	-----	-----	-----	-----
1631		-----	-----	-----	-----	-----	-----	-----	-----
1634		-----	-----	-----	-----	-----	-----	-----	-----
1635		-----	-----	-----	-----	-----	-----	-----	-----
1636		-----	-----	-----	-----	-----	-----	-----	-----

1709	D4815	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	-----
1720		-----	-----	-----	-----	-----	-----	-----	-----
1724	EN14517	***0.11***	-----	-----	-----	-----	-----	0.05	-----
1807	EN13132	-----	***0.97***	<0.2	<0.2	<0.2	<0.2	-----	-----
1810		-----	-----	-----	-----	-----	-----	-----	-----
1811	EN1601	-----	*0*	-----	-----	-----	-----	-----	-----
1826	D6839	0.02	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1833	EN22854	-----	0.12	-----	-----	-----	-----	-----	-----
1842		-----	-----	-----	-----	-----	-----	-----	-----
1849	EN1601	-----	0.075	-----	0.06	0.27	-----	0.038	-----
1936		-----	-----	-----	-----	-----	-----	-----	-----
1937		-----	-----	-----	-----	-----	-----	-----	-----
1938		-----	-----	-----	-----	-----	-----	-----	-----
1941	in house	0.0	0.08	0.0	0.0	0.0	0.0	0.0	-----
1948	EN13132	0.0015	0.0971	0.0085	0.0187	0.0026	0.0490	absent	0.1331
2129	EN1601	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2130		-----	-----	-----	-----	-----	-----	-----	-----
2146	EN13132	-----	-----	-----	-----	-----	-----	<0.2	-----
7001		-----	-----	-----	-----	-----	-----	-----	-----
	Normality	not OK	not OK	unknown	not OK	not OK	OK	not OK	unknown
	N	11	27	5	7	8	8	7	4
	Outliers	0	0	0	0	0	0	0	1
	mean (n)	0.014	0.122	0.002	0.021	0.048	0.024	0.014	0.033275
	st.dev. (n)	0.0142	0.0404	0.0038	0.0308	0.0976	0.0266	0.0211	0.06655
	R(calc.)	0.040	0.113	0.011	0.086	0.273	0.074	0.059	0.18634
	R(EN1601:97)	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown

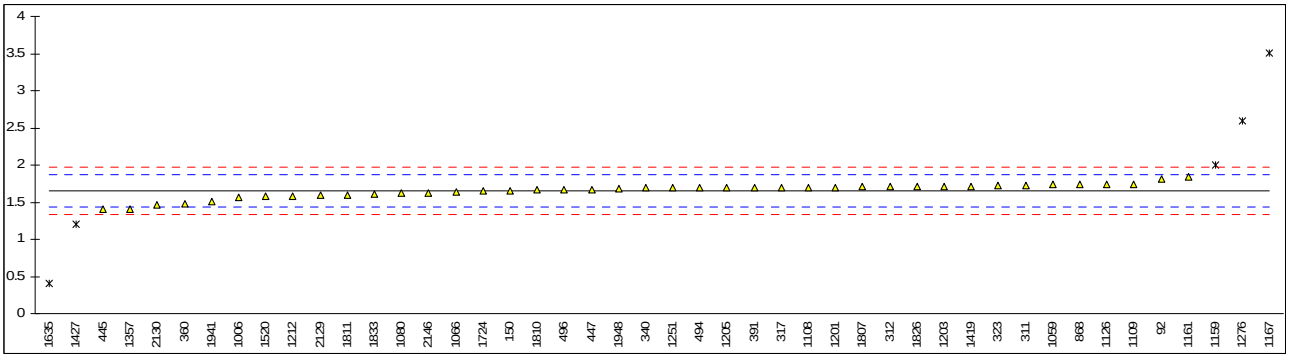
Results in bold, italic and underlined are excluded for evaluation

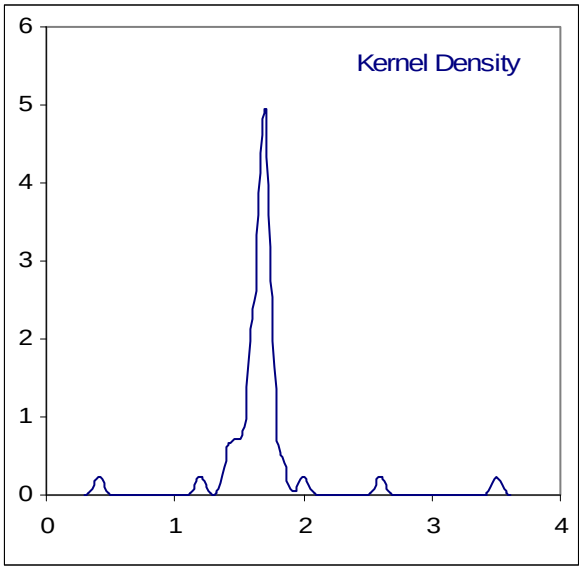
Determination of Oxygen Content on sample #1068; results in %M/M

lab	method	value	mark	z(targ)	remarks
92	INH-3.0	1.814		1.48	
150	D5599	1.65		-0.05	
225		-----		-----	
228		-----		-----	
253		-----		-----	
311	EN1601	1.73		0.70	
312	ISO22854	1.71		0.51	
317	EN14517	1.7		0.42	
323	ISO22854	1.72		0.60	
334		-----		-----	
335		-----		-----	
336		-----		-----	
338		-----		-----	
340	EN1601	1.69		0.32	
344		-----		-----	
353		-----		-----	
357		-----		-----	
360	EN13132	1.484		-1.60	
391	EN1601	1.7		0.42	
430		-----		-----	
431		-----		-----	
440		-----		-----	
445	D4815	1.41		-2.29	
447	D4815	1.67		0.14	
463		-----		-----	
468		-----		-----	
485		-----		-----	
494	ISO22854	1.69		0.32	
495		-----		-----	
496	EN1601	1.670		0.14	
671		-----		-----	
781		-----		-----	
868	D6839	1.74		0.79	
875		-----		-----	
904		-----		-----	
912		-----		-----	
962		-----		-----	
1006	D4815	1.57		-0.80	
1017		-----		-----	
1038		-----		-----	
1059	EN1601	1.74		0.79	
1066	ISO22854	1.64		-0.14	
1080	ReformM3	1.62		-0.33	
1081		-----		-----	
1108	EN14517	1.70		0.42	
1109	D6839	1.74		0.79	
1126	Reform	1.74		0.79	
1140		-----		-----	
1159	D5845	2.0	G(0.05)	3.22	
1161	EN13132	1.84		1.72	
1167	EN13132	3.506	G(0.01)	17.27	
1186		-----		-----	
1201	ISO22854	1.70		0.42	
1203	EN1601	1.71		0.51	
1205	EN14517	1.7		0.42	
1212	D4815	1.58		-0.70	
1218		-----		-----	
1251	ISO22854	1.69		0.32	
1259		-----		-----	
1272		-----		-----	
1276	D4815	2.6	G(0.01)	8.82	
1280		-----		-----	
1293		-----		-----	
1299		-----		-----	
1340		-----		-----	
1357	D6730	1.41		-2.29	
1419	EN22854	1.71		0.51	
1426		-----		-----	
1427	EN14517	1.2	G(0.01)	-4.25	
1432		-----		-----	
1520	EN13132	1.58		-0.70	
1603		-----		-----	
1631		-----		-----	
1634		-----		-----	
1635	EN1601	0.41	G(0.05)	-11.62	
1636		-----		-----	

1709		-----		-----	
1720		-----		-----	
1724	EN14517	1.65		-0.05	
1807	EN13132	1.71		0.51	
1810	EN1601	1.67		0.14	
1811	EN1601	1.6		-0.52	
1826	D6839	1.71		0.51	
1833	ISO22854	1.61		-0.42	
1842		-----		-----	
1849		-----		-----	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1941	in house	1.51		-1.36	
1948	EN1601	1.68	C	0.23	First reported 1.591
2129	EN1601	1.591		-0.60	
2130	D6730	1.464		-1.78	
2146	EN13132	1.62		-0.33	
7001		-----		-----	

normality	not OK
n	41
outliers	5
mean (n)	1.655
st.dev. (n)	0.0956
R(calc.)	0.268
R(EN1601:97)	0.300





Determination of Oxidation Stability on sample #1068; results in minutes

lab	method	value	mark	z(targ)	remarks
92		-----		-----	
150		-----		-----	
225		-----		-----	
228		-----		-----	
253		-----		-----	
311	ISO7536	>900		-----	
312	D525	>900		-----	
317		-----		-----	
323	ISO7536	>900		-----	
334		-----		-----	
335		-----		-----	
336		-----		-----	
338		-----		-----	
340	ISO7536	>960		-----	
344		-----		-----	
353		-----		-----	
357		-----		-----	
360	ISO7536	>900		-----	
391		-----		-----	
430		-----		-----	
431		-----		-----	
440		-----		-----	
445	IP40	>900		-----	
447		-----		-----	
463	D525	>360		-----	
468		-----		-----	
485		-----		-----	
494	ISO7536	489		-----	
495	ISO7536	>900		-----	
496	ISO7536	>900		-----	
671		-----		-----	
781		-----		-----	
868	D525	>900		-----	
875		-----		-----	
904	D525	>360		-----	
912		-----		-----	
962		-----		-----	
1006	D525	>720		-----	
1017		-----		-----	
1038		-----		-----	
1059	ISO7536	>960		-----	
1066		-----		-----	
1080	ISO7536	1318		-----	
1081	D525	>900		-----	
1108	ISO7536	818		-----	
1109		-----		-----	
1126		-----		-----	
1140		-----		-----	
1159		-----		-----	
1161	ISO7536	>900		-----	
1167	ISO7536	>900		-----	
1186		-----		-----	
1201	D525	>900		-----	
1203	ISO7536	790		-----	
1205		-----		-----	
1212	ISO7536	>1000		-----	
1218		-----		-----	
1251	D525	>360		-----	
1259		-----		-----	
1272		-----		-----	
1276	D525	>900		-----	
1280		-----		-----	
1293		-----		-----	
1299	D525	>960		-----	
1340		-----		-----	
1357		-----		-----	
1419	ISO7536	>900		-----	
1426		-----		-----	
1427	ISO7536	>900		-----	
1432		-----		-----	
1520	ISO7536	>900		-----	
1603	in house	763		-----	
1631		-----		-----	
1634		-----		-----	
1635	ISO7536	>750		-----	
1636	D525	>1255		-----	

1709		-----	-----
1720	D525	>900	-----
1724	ISO7536	>900	-----
1807	ISO7536	>720	-----
1810		-----	-----
1811		-----	-----
1826		-----	-----
1833	ISO7536	>760	-----
1842		-----	-----
1849	ISO7536	658	-----
1936		-----	-----
1937		-----	-----
1938		-----	-----
1941	ISO7536	>900	-----
1948	ISO7536	>900	-----
2129	ISO7536	1020	-----
2130	ISO7536	540	-----
2146		-----	-----
7001		-----	-----

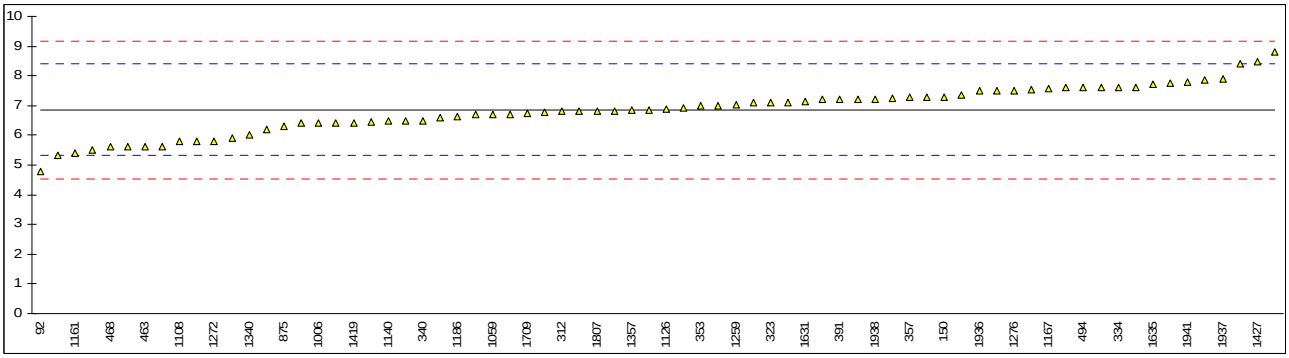
normality	n.a.
n	8
outliers	0
mean (n)	>720
st.dev. (n)	n.a.
R(calc.)	n.a.
R(ISO7536:96)	n.a.

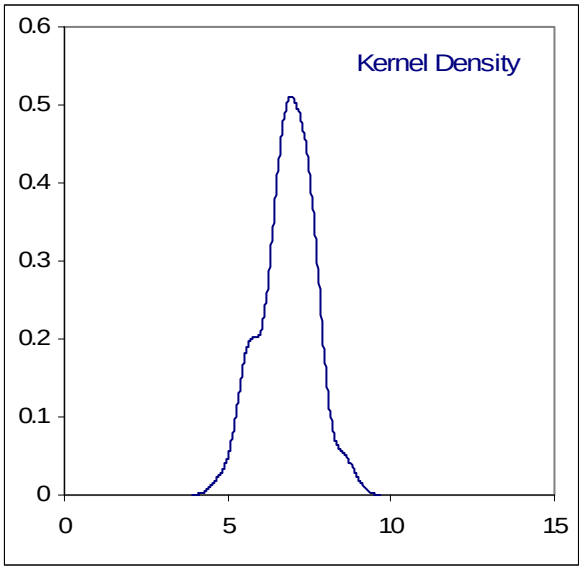
Determination of Sulphur on sample #1068; results in mg/kg

lab	method	value	mark	z(targ)	remarks
92	D5453	4.80		-2.66	
150	D5453	7.3		0.58	
225		-----		-----	
228		-----		-----	
253		-----		-----	
311	EN20846	7.1		0.32	
312	D5453	6.8		-0.07	
317		-----		-----	
323	EN20846	7.1		0.32	
334	EN20846	7.6		0.97	
335	EN20846	5.34		-1.96	
336	EN20846	5.6		-1.63	
338	EN20846	8.4		2.01	
340	EN20846	6.5		-0.46	
344	D5453	6.92		0.09	
353	IP531	6.98		0.16	
357	EN20846	7.3		0.58	
360	EN20846	6.77		-0.11	
391	EN20846	7.2		0.45	
430		-----		-----	
431		-----		-----	
440		-----		-----	
445	IP440	8.80		2.52	
447	IP490	5.63		-1.59	
463	EN20846	5.63		-1.59	
468	EN20846	5.6		-1.63	
485	EN20846	6.21		-0.84	
494	EN20846	7.6		0.97	
495	EN20846	6.4		-0.59	
496	EN20846	7.53		0.88	
671		-----		-----	
781	D2622	6.72		-0.17	
868	D3120	7.25		0.51	
875	D5453	6.31		-0.71	
904	D5453	5.5		-1.76	
912		-----		-----	
962		-----		-----	
1006	D5453	6.4		-0.59	
1017		-----		-----	
1038		-----		-----	
1059	EN20846	6.7		-0.20	
1066	EN20846	7.6		0.97	
1080	EN20846	5.8		-1.37	
1081	EN20846	6.8		-0.07	
1108	EN20846	5.8		-1.37	
1109	D5453	6.85		-0.01	
1126	EN20846	6.87		0.02	
1140	D5453	6.5		-0.46	
1159		-----		-----	
1161	EN20846	5.4	C	-1.89	First reported 4.70
1167	ISO20846	7.58		0.94	
1186	D5453	6.623	C	-0.30	First reported 3.622
1201	EN20846	7.2		0.45	
1203	EN20846	7.1		0.32	
1205		-----		-----	
1212	EN20846	7.0		0.19	
1218		-----		-----	
1251	EN20846	6.6		-0.33	
1259	EN20846	7.02		0.22	
1272	EN20846	5.8		-1.37	
1276	EN20846	7.5		0.84	
1280		-----		-----	
1293		-----		-----	
1299	EN20846	5.9		-1.24	
1340	EN20846	6.02		-1.08	
1357	D5453	6.84		-0.02	
1419	EN20846	6.43		-0.55	
1426		-----		-----	
1427	EN20846	8.49		2.12	
1432		-----		-----	
1520	EN20846	6.70		-0.20	
1603		-----		-----	
1631	EN20846	7.12	C	0.34	First reported 10.53
1634		-----		-----	
1635	EN20846	7.7		1.10	
1636	D5453	7.62		0.99	

1709	D5453	6.75	-0.13
1720	D5453	7.5	0.84
1724	EN20846	7.76	1.18
1807	EN20884	6.8	-0.07
1810	EN20846	7.2	0.45
1811	EN20846	7.6	0.97
1826	EN20846	6.5	-0.46
1833	EN20846	7.34	0.63
1842		-----	-----
1849	EN20846	6.8	-0.07
1936	EN20846	7.5	0.84
1937	EN20846	7.9	1.36
1938	EN20846	7.2	0.45
1941	EN20846	7.78	1.20
1948	EN20846	7.86	1.30
2129	EN20846	6.44	-0.54
2130		-----	-----
2146	EN20846	7.30	0.58
7001	D5453	6.41	-0.58

		Only ISO20846 data:	Only ASTM D5453 data:
normality	OK	OK	OK
n	72	51	15
outliers	0	0	0
mean (n)	6.854	6.906	6.608
st.dev. (n)	0.7871	0.7775	0.7194
R(calc.)	2.204	2.177	2.014
R(ISO20846)	2.159	2.168	2.389



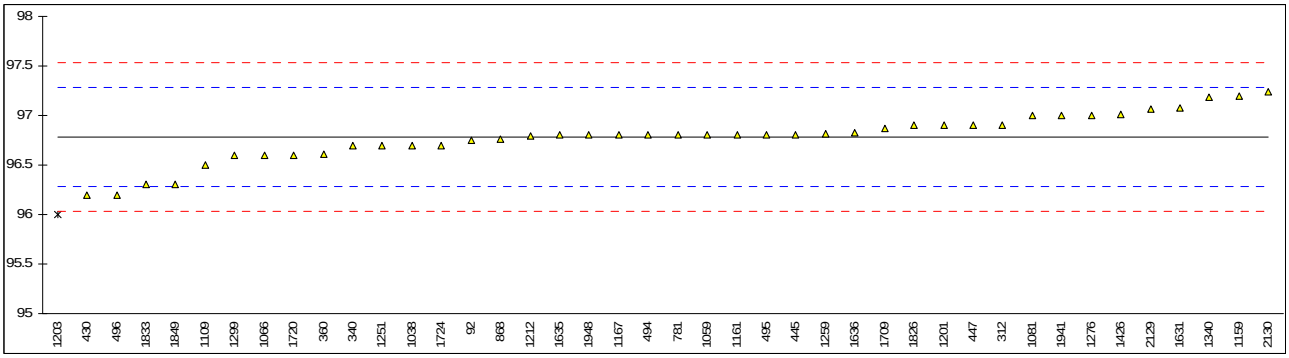


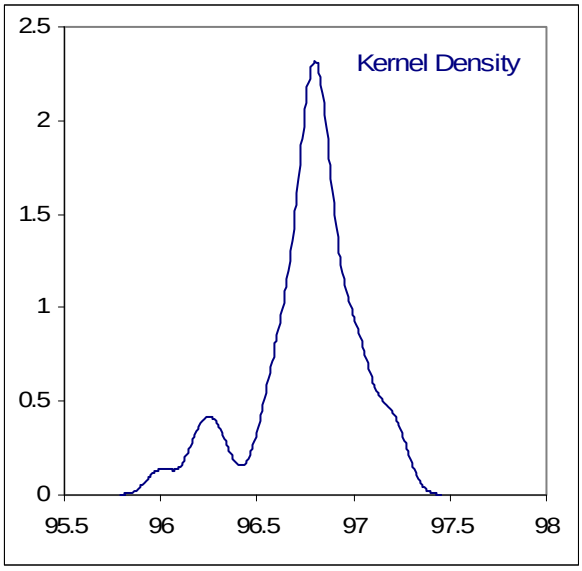
Determination of RONm (before correction) on sample #1068;

lab	method	value	mark	z(targ)	remarks
92	D2699	96.75		-0.13	
150		-----		-----	
225		-----		-----	
228		-----		-----	
253		-----		-----	
311		-----		-----	
312	ISO5164	96.9		0.47	
317		-----		-----	
323		-----		-----	
334		-----		-----	
335		-----		-----	
336		-----		-----	
338		-----		-----	
340	ISO5164	96.7		-0.33	
344		-----		-----	
353		-----		-----	
357		-----		-----	
360	ISO5164	96.61		-0.69	
391		-----		-----	
430	ISO5164	96.2		-2.33	
431		-----		-----	
440		-----		-----	
445	ISO5164	96.8		0.07	
447	D2699	96.9		0.47	
463		-----		-----	
468		-----		-----	
485		-----		-----	
494	ISO5164	96.8		0.07	
495	ISO5164	96.8	C	0.07	First reported 96
496	ISO5164	96.20		-2.33	
671		-----		-----	
781	D2699	96.8		0.07	
868	D2699	96.76		-0.09	
875		-----		-----	
904		-----		-----	
912		-----		-----	
962		-----		-----	
1006		-----		-----	
1017		-----		-----	
1038	D2699	96.7		-0.33	
1059	ISO5164	96.8		0.07	
1066	ISO5164	96.6		-0.73	
1080		-----		-----	
1081	D2699	97.0		0.87	
1108		-----		-----	
1109	D2700	96.5		-1.13	
1126		-----		-----	
1140		-----		-----	
1159	D5845	97.2		1.67	
1161	ISO5164	96.8		0.07	
1167	ISO5164	96.8		0.07	
1186		-----		-----	
1201	ISO5164	96.9		0.47	
1203	ISO5164	96.0	G(0.05)	-3.13	
1205		-----		-----	
1212	ISO5164	96.79		0.03	
1218		-----		-----	
1251	ISO5164	96.7		-0.33	
1259	ISO5164	96.81		0.11	
1272		-----		-----	
1276	D2699	97.0		0.87	
1280		-----		-----	
1293		-----		-----	
1299	D2699	96.6		-0.73	
1340	ISO5164	97.18		1.59	
1357		-----		-----	
1419		-----		-----	
1426	D2699	97.01		0.91	
1427		-----		-----	
1432		-----		-----	
1520		-----		-----	
1603		-----		-----	
1631	ISO5164	97.08		1.19	
1634		-----		-----	
1635	ISO5164	96.8		0.07	
1636	D2699	96.83		0.19	

1709	D2699	96.87	0.35
1720	D2699	96.6	-0.73
1724	ISO5164	96.7	-0.33
1807		-----	-----
1810		-----	-----
1811		-----	-----
1826	ISO5164	96.9	0.47
1833	ISO5164	96.3	-1.93
1842		-----	-----
1849	ISO5164	96.3	-1.93
1936		-----	-----
1937		-----	-----
1938		-----	-----
1941	D2699	97.00	0.87
1948	D2699	96.8	0.07
2129	ISO5164	97.07	1.15
2130	ISO5164	97.24	1.83
2146		-----	-----
7001		-----	-----

normality	not OK
n	41
outliers	1
mean (n)	96.79
st.dev. (n)	0.243
R(calc.)	0.68
R(ISO5164:05)	0.70



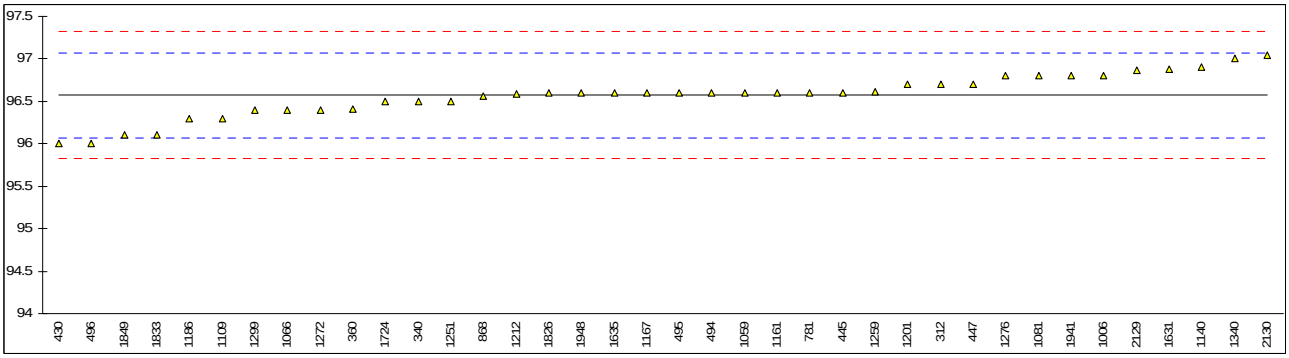


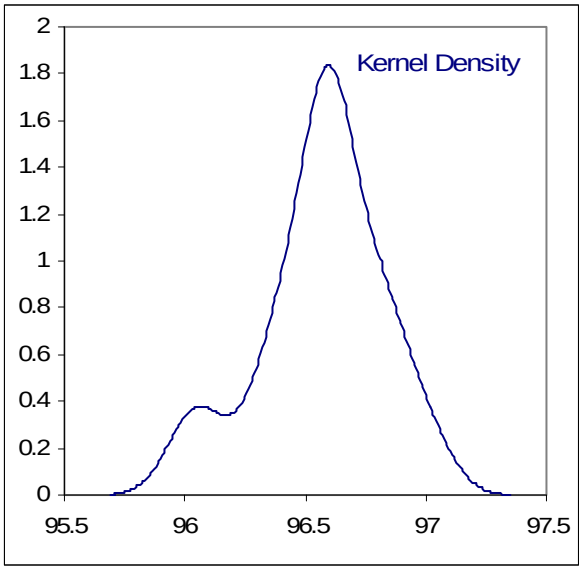
Determination of RON (after correction) on sample #1068;

lab	method	value	mark	z(targ)	remarks
92		-----		-----	
150		-----		-----	
225		-----		-----	
228		-----		-----	
253		-----		-----	
311		-----		-----	
312	ISO5164	96.7		0.52	
317		-----		-----	
323		-----		-----	
334		-----		-----	
335		-----		-----	
336		-----		-----	
338		-----		-----	
340	ISO5164	96.5		-0.28	
344		-----		-----	
353		-----		-----	
357		-----		-----	
360	ISO5164	96.41		-0.64	
391		-----		-----	
430	ISO5164	96.0		-2.28	
431		-----		-----	
440		-----		-----	
445	ISO5164	96.6		0.12	
447	EN228	96.7		0.52	
463		-----		-----	
468		-----		-----	
485		-----		-----	
494	ISO5164	96.6		0.12	
495	ISO5164	96.6	C	0.12	First reported 95.8
496	ISO5164	96.00		-2.28	
671		-----		-----	
781	D2699	96.6		0.12	
868	D2699	96.56		-0.04	
875		-----		-----	
904		-----		-----	
912		-----		-----	
962		-----		-----	
1006	D2699	96.8		0.92	
1017		-----		-----	
1038		-----		-----	
1059	ISO5164	96.6		0.12	
1066	ISO5164	96.4		-0.68	
1080		-----		-----	
1081	EN228	96.8		0.92	
1108		-----		-----	
1109	EN228	96.3		-1.08	
1126		-----		-----	
1140	D2699	96.9		1.32	
1159		-----		-----	
1161	ISO5164	96.6		0.12	
1167	ISO5164	96.6		0.12	
1186	D2699	96.30		-1.08	
1201	ISO5164	96.7		0.52	
1203		-----		-----	
1205		-----		-----	
1212	ISO5164	96.59		0.08	
1218		-----		-----	
1251	ISO5164	96.5		-0.28	
1259	ISO5164	96.61		0.16	
1272	In House	96.4		-0.68	
1276	D2699	96.8		0.92	
1280		-----		-----	
1293		-----		-----	
1299	ISO5164	96.4		-0.68	
1340	ISO5164	97.0		1.72	
1357		-----		-----	
1419		-----		-----	
1426		-----		-----	
1427		-----		-----	
1432		-----		-----	
1520		-----		-----	
1603		-----		-----	
1631	ISO5164	96.88		1.24	
1634		-----		-----	
1635	ISO5164	96.6		0.12	
1636		-----		-----	

1709		-----		-----	
1720		-----		-----	
1724	ISO5164	96.5		-0.28	
1807		-----		-----	
1810		-----		-----	
1811		-----		-----	
1826	ISO5164	96.6	C, E	0.12	First reported 96.8, calculation error: 96.9 - 0.2 =96.7
1833	ISO5164	96.1		-1.88	
1842		-----		-----	
1849	ISO5164	96.1		-1.88	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1941	D2699	96.80		0.92	
1948	D2699	96.6		0.12	
2129	ISO5164	96.87		1.20	
2130	ISO5164	97.04		1.88	
2146		-----		-----	
7001		-----		-----	

normality	not OK
n	38
outliers	0
mean (n)	96.57
st.dev. (n)	0.251
R(calc.)	0.70
R(ISO5164:05)	0.70



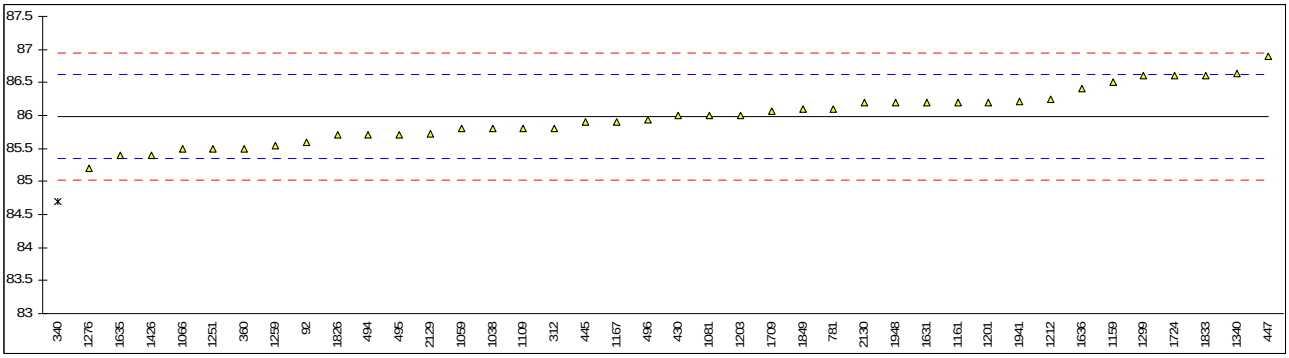


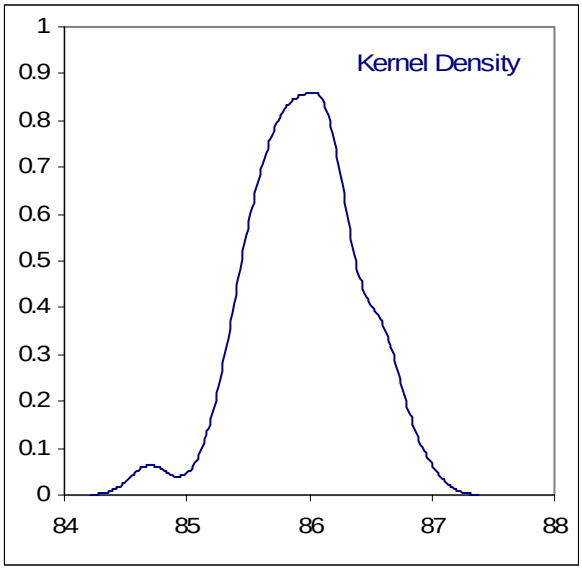
Determination of MONm (before correction) on sample #1068;

lab	method	value	mark	z(targ)	remarks
92	D2700	85.59		-1.22	
150		-----		-----	
225		-----		-----	
228		-----		-----	
253		-----		-----	
311		-----		-----	
312	ISO5163	85.8		-0.57	
317		-----		-----	
323		-----		-----	
334		-----		-----	
335		-----		-----	
336		-----		-----	
338		-----		-----	
340	ISO5163	84.7	G(0.05)	-3.99	
344		-----		-----	
353		-----		-----	
357		-----		-----	
360	ISO5163	85.50		-1.50	
391		-----		-----	
430	ISO5163	86.0		0.05	
431		-----		-----	
440		-----		-----	
445	ISO5163	85.9		-0.26	
447	D2700	86.9		2.85	
463		-----		-----	
468		-----		-----	
485		-----		-----	
494	ISO5163	85.7		-0.88	
495	ISO5163	85.7		-0.88	
496	ISO5163	85.93		-0.17	
671		-----		-----	
781	D2700	86.1		0.36	
868		-----		-----	
875		-----		-----	
904		-----		-----	
912		-----		-----	
962		-----		-----	
1006		-----		-----	
1017		-----		-----	
1038	D2700	85.8		-0.57	
1059	ISO5163	85.8		-0.57	
1066	ISO5163	85.5		-1.50	
1080		-----		-----	
1081	D2700	86.0		0.05	
1108		-----		-----	
1109	D2699	85.8		-0.57	
1126		-----		-----	
1140		-----		-----	
1159	D5845	86.5		1.61	
1161	ISO5163	86.2		0.67	
1167	ISO5163	85.9		-0.26	
1186		-----		-----	
1201	ISO5163	86.2		0.67	
1203	ISO5163	86.0		0.05	
1205		-----		-----	
1212	ISO5163	86.25		0.83	
1218		-----		-----	
1251	ISO5163	85.5		-1.50	
1259	ISO5163	85.54		-1.38	
1272		-----		-----	
1276	D2699	85.2		-2.44	
1280		-----		-----	
1293		-----		-----	
1299	D2700	86.6		1.92	
1340	ISO5163	86.64		2.04	
1357		-----		-----	
1419		-----		-----	
1426	D2700	85.4		-1.82	
1427		-----		-----	
1432		-----		-----	
1520		-----		-----	
1603		-----		-----	
1631	ISO5163	86.2		0.67	
1634		-----		-----	
1635	ISO5163	85.4		-1.82	
1636	D2700	86.41		1.33	

1709	D2700	86.07		0.27	
1720		-----		-----	
1724	ISO5163	86.6		1.92	
1807		-----		-----	
1810		-----		-----	
1811		-----		-----	
1826	ISO5163	85.7	C	-0.88	First reported 85.5
1833	ISO5163	86.6		1.92	
1842		-----		-----	
1849	ISO5163	86.1		0.36	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1941	D2700	86.21		0.70	
1948	D2700	86.2		0.67	
2129	ISO5163	85.72		-0.82	
2130	ISO5163	86.20		0.67	
2146		-----		-----	
7001		-----		-----	

normality	OK
n	39
outliers	1
mean (n)	85.98
st.dev. (n)	0.399
R(calc.)	1.12
R(ISO5163:05)	0.90



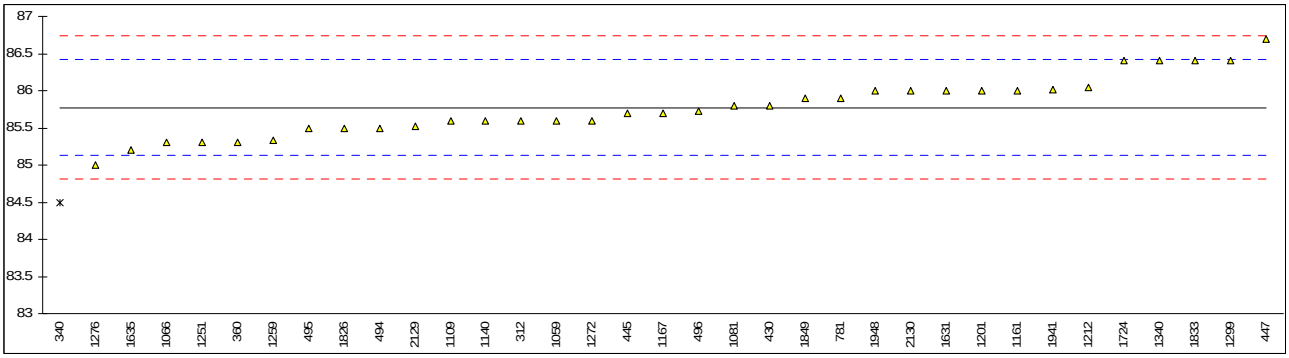


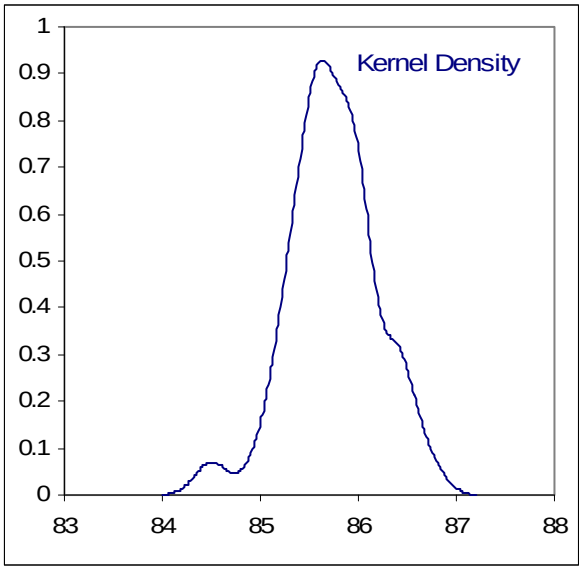
Determination of MON (after correction) on sample #1068;

lab	method	value	mark	z(targ)	remarks
92		-----		-----	
150		-----		-----	
225		-----		-----	
228		-----		-----	
253		-----		-----	
311		-----		-----	
312	ISO5163	85.6		-0.54	
317		-----		-----	
323		-----		-----	
334		-----		-----	
335		-----		-----	
336		-----		-----	
338		-----		-----	
340	ISO5163	84.5	G(0.05)	-3.97	
344		-----		-----	
353		-----		-----	
357		-----		-----	
360	ISO5163	85.30		-1.48	
391		-----		-----	
430	ISO5163	85.8		0.08	
431		-----		-----	
440		-----		-----	
445	ISO5163	85.7		-0.23	
447	EN228	86.7		2.88	
463		-----		-----	
468		-----		-----	
485		-----		-----	
494	ISO5163	85.5		-0.86	
495	ISO5163	85.5		-0.86	
496	ISO5163	85.73		-0.14	
671		-----		-----	
781	D2700	85.9		0.39	
868		-----		-----	
875		-----		-----	
904		-----		-----	
912		-----		-----	
962		-----		-----	
1006		-----		-----	
1017		-----		-----	
1038		-----		-----	
1059	ISO5163	85.6		-0.54	
1066	ISO5163	85.3		-1.48	
1080		-----		-----	
1081	EN228	85.8		0.08	
1108		-----		-----	
1109	EN228	85.6		-0.54	
1126		-----		-----	
1140	D2700	85.6		-0.54	
1159		-----		-----	
1161	ISO5163	86.0		0.70	
1167	ISO5163	85.7		-0.23	
1186		-----		-----	
1201	ISO5163	86.0		0.70	
1203		-----		-----	
1205		-----		-----	
1212	ISO5163	86.05		0.86	
1218		-----		-----	
1251	ISO5163	85.3		-1.48	
1259	ISO5163	85.34		-1.35	
1272	In House	85.6		-0.54	
1276	D2699	85.0		-2.41	
1280		-----		-----	
1293		-----		-----	
1299	ISO5163	86.4		1.94	
1340	ISO5163	86.4		1.94	
1357		-----		-----	
1419		-----		-----	
1426		-----		-----	
1427		-----		-----	
1432		-----		-----	
1520		-----		-----	
1603		-----		-----	
1631	ISO5163	86.0		0.70	
1634		-----		-----	
1635	ISO5163	85.2		-1.79	
1636		-----		-----	

1709		-----		-----	
1720		-----		-----	
1724	ISO5163	86.4		1.94	
1807		-----		-----	
1810		-----		-----	
1811		-----		-----	
1826	ISO5163	85.5	C	-0.86	First reported 85.7
1833	ISO5163	86.4		1.94	
1842		-----		-----	
1849	ISO5163	85.9		0.39	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1941	D2700	86.01		0.73	
1948	D2700	86.0		0.70	
2129	ISO5163	85.52		-0.79	
2130	ISO5163	86.00		0.70	
2146		-----		-----	
7001		-----		-----	

normality	OK
n	34
outliers	1
mean (n)	85.77
st.dev. (n)	0.393
R(calc.)	1.10
R(ISO5163:05)	0.90

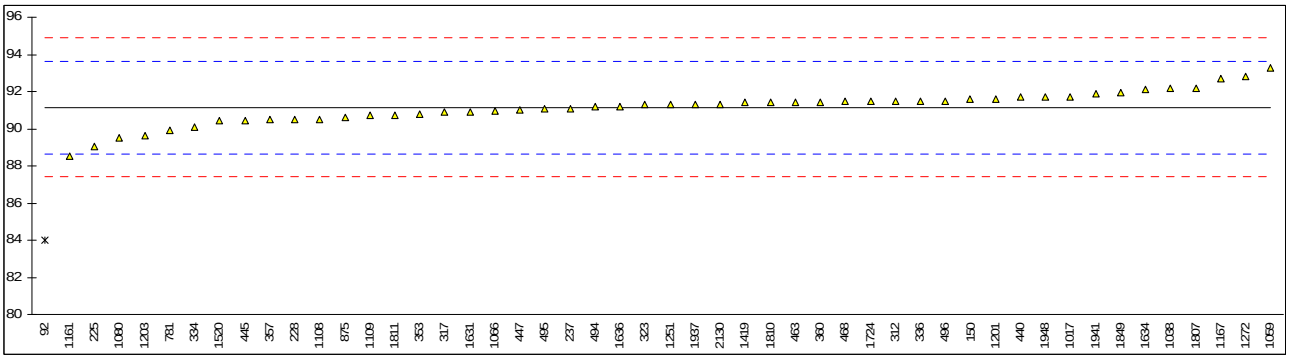


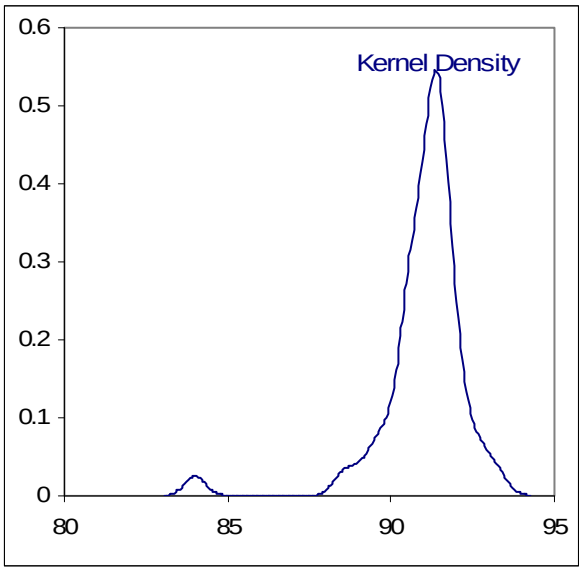


Determination of ASVP on sample #1069; results in kPa

lab	method	value	mark	z(targ)	remarks
92	D5191	84.0	G(0.01)	-5.73	
150	EN13016	91.6		0.37	
225	D5191	89.02		-1.70	
228	D5191	90.5		-0.51	
237	D5191	91.1		-0.03	
311		-----		-----	
312	EN13016	91.5		0.29	
317	D5191	90.9		-0.19	
323	EN13016	91.3		0.13	
334	EN13016	90.1		-0.83	
335		-----		-----	
336	EN13016	91.5		0.29	
338		-----		-----	
344		-----		-----	
353	D5191	90.8		-0.27	
357	EN13016	90.5		-0.51	
360	EN13016	91.4		0.21	
391		-----		-----	
431		-----		-----	
440	D5191	91.7		0.45	
445	IP394	90.43		-0.57	
447	D5191	91.0		-0.11	
463	EN13016	91.4	C	0.21	First reported 84.4
468	EN13016	91.482		0.27	
485		-----		-----	
494	EN13016	91.2		0.05	
495	EN13016	91.1		-0.03	
496	EN13016	91.50		0.29	
781	EN13016	89.9	C	-0.99	First reported 87.1
868		-----		-----	
875	D5191	90.6		-0.43	
904		-----		-----	
1006		-----		-----	
1017	EN13016	91.7		0.45	
1038	D5191	92.2		0.85	
1059	EN13016	93.3	C	1.73	First reported 86.3
1066	D5191	90.95		-0.15	
1080	EN13016	89.5		-1.32	
1081		-----		-----	
1108	EN13016	90.5		-0.51	
1109	D5191	90.7		-0.35	
1161	EN13016	88.5		-2.12	
1167	EN13016	92.7		1.25	
1201	EN13016	91.6		0.37	
1203	EN13016	89.63	C	-1.21	First reported 13.761
1218		-----		-----	
1251	EN13016	91.3		0.13	
1272	EN13016	92.8		1.33	
1419	EN13016	91.4		0.21	
1427		-----		-----	
1520	EN13016	90.41		-0.59	
1631	EN13016	90.9		-0.19	
1634	EN13016	92.11		0.78	
1636	EN13016	91.2		0.05	
1724	EN13016	91.5		0.29	
1807	EN13016	92.2		0.85	
1810	EN13016	91.4		0.21	
1811	EN13016	90.7		-0.35	
1833		-----		-----	
1849	EN13016	91.958		0.66	
1936		-----	W	-----	Result withdrawn, reported 83.9
1937	EN13016	91.3		0.13	
1938		-----		-----	
1941	EN13016	91.9		0.61	
1948	EN13016	91.7		0.45	
2130	D5191	91.3		0.13	
2146		-----		-----	

normality	OK
n	49
outliers	1
mean (n)	91.141
st.dev. (n)	0.9009
R(calc.)	2.522
R(EN13016-1)	3.492

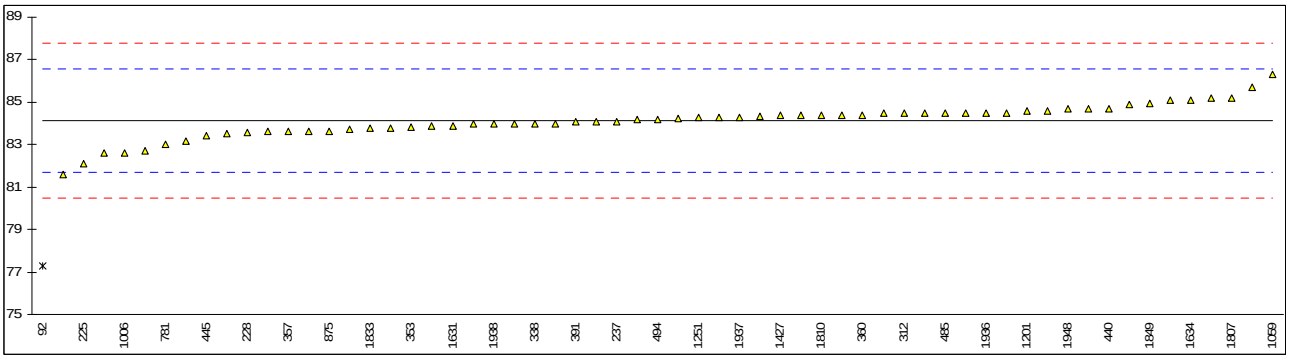

96
94
92
90
88
86
84
82
80
92
1161
225
1060
1203
781
334
1530
445
357
228
1106
875
1109
1811
353
317
1631
1066
447
495
237
494
1636
323
1251
1937
2130
1419
1810
463
300
468
1724
312
336
486
150
1201
440
1948
1017
1941
1849
1634
1038
1937
1167
1272
1069

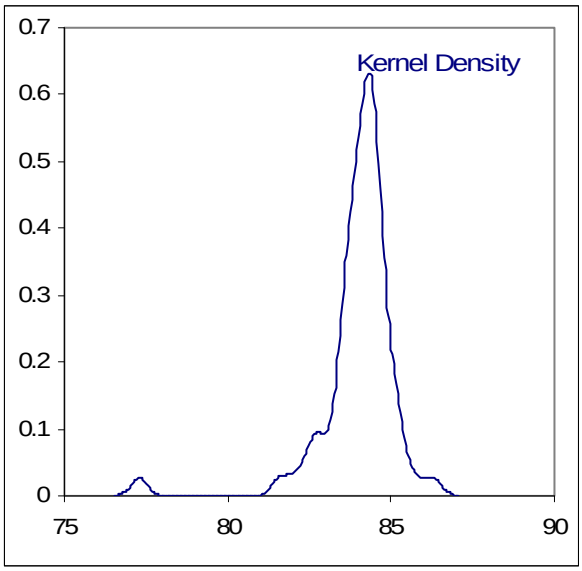

Kernel Density
0.6
0.5
0.4
0.3
0.2
0.1
0
80
85
90
95

Determination of DVPE (acc. to EN13016-1) on sample #1069; results in kPa

lab	method	value	mark	z(targ)	remarks
92	D5191	77.3	C,G(0.01)	-5.61	First reported 80.7
150	EN13016	84.6		0.40	
225	D5191	82.11		-1.65	
228	D5191	83.55		-0.47	
237	D5191	84.1		-0.01	
311	D5191	84.0		-0.10	
312	EN13016	84.5		0.32	
317	D5191	83.9		-0.18	
323	EN13016	84.3		0.15	
334	EN13016	83.1665		-0.78	
335	D5191	83.5		-0.51	
336	EN13016	84.5		0.32	
338	EN13016	84.0	C	-0.10	First reported 91.0
344		-----		-----	
353	D5191	83.84		-0.23	
357	EN13016	83.6		-0.43	
360	EN13016	84.4		0.23	
391	EN13016	84.1		-0.01	
431	D5191	85.1		0.81	
440	D5191	84.71		0.49	
445	IP394	83.43		-0.57	
447	EN13016	84.0		-0.10	
463	EN13016	84.4	C	0.23	First reported 77.66
468	EN13016	84.5		0.32	
485	EN13016	84.5		0.32	
494	EN13016	84.2		0.07	
495	EN13016	84.1		-0.01	
496	EN13016	84.5		0.32	
781	EN13016	83.0	C	-0.92	First reported 83.0
868		-----		-----	
875	D5191	83.6		-0.43	
904		-----		-----	
1006	D5191	82.6		-1.25	
1017	EN13016	84.7		0.48	
1038	D5191	85.19		0.88	
1059	EN13016	86.3	C	1.80	First reported 79.5
1066	D5191	83.99		-0.10	
1080	EN13016	82.6		-1.25	
1081	D5191	84.20		0.07	
1108	EN13016	83.6		-0.43	
1109	D5191	83.7		-0.34	
1161	EN13016	81.6		-2.07	
1167	EN13016	85.7		1.30	
1201	EN13016	84.6		0.40	
1203	EN13016	82.73	C	-1.14	First reported 12.731
1218		-----		-----	
1251	EN13016	84.3		0.15	
1272		-----		-----	
1419	EN13016	84.4		0.23	
1427	EN13016	84.4		0.23	
1520	EN13016	83.60		-0.43	
1631	EN13016	83.9		-0.18	
1634	EN13016	85.11		0.82	
1636	EN13016	84.23		0.09	
1724	EN13016	84.5		0.32	
1807	EN13016	85.2		0.89	
1810	EN13016	84.4		0.23	
1811		-----		-----	
1833	EN13016	83.8		-0.26	
1849	EN13016	84.96		0.69	
1936	EN13016	84.5	C	0.32	First reported 83.9
1937	EN13016	84.3		0.15	
1938	EN13016	84.0		-0.10	
1941	EN13016	84.90		0.64	
1948	EN13016	84.7		0.48	
2130	D5191	84.32		0.17	
2146	EN13016	83.8		-0.26	

normality	OK
n	60
outliers	1
mean (n)	84.117
st.dev. (n)	0.8011
R(calc.)	2.243
R(EN13016-1)	3.400


89
87
85
83
81
79
77
75
92
225
1006
781
445
228
357
875
1833
353
1631
1933
338
391
237
494
1251
1937
1427
1810
300
312
485
1936
1201
1948
440
1849
1634
1807
1059


Kernel Density
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
75
80
85
90

APPENDIX 2

z-scores distillation ASTM D86 (automated mode)

lab	IBP	10%eva	50%eva	90%eva	FBP	%vol70	%vol100	%vol150
92	0.50	-0.32	0.17	0.01	1.11	0.19	-0.07	0.14
150	1.47	3.96	-0.72	-0.83	0.73	-4.89	0.31	1.43
225	-----	-----	-----	-----	-----	-----	-----	-----
228	-----	-----	-----	-----	-----	-----	-----	-----
253	-----	-----	-----	-----	-----	-----	-----	-----
311	-1.10	-0.50	-0.43	-0.34	0.40	0.61	0.31	0.57
312	-0.13	-0.32	1.06	-0.06	0.82	0.19	-0.46	0.35
317	-2.13	0.81	6.28	3.67	0.44	1.44	1.07	1.86
323	0.10	-0.41	-0.13	-0.41	0.36	0.50	0.05	0.78
334	-0.30	-0.06	-0.72	-0.69	-1.62	-0.12	0.18	1.00
335	-1.56	-0.67	-0.13	-1.25	-1.66	0.40	0.05	2.08
336	-1.04	-0.24	0.77	0.37	-0.63	-0.02	-0.58	-0.29
338	0.90	-1.29	-1.47	0.29	2.47	1.02	0.56	-0.29
340	-0.70	0.99	3.15	1.91	-1.29	-0.12	-0.84	-0.72
344	0.39	-----	-----	-----	-0.05	-2.19	-2.49	-4.60
353	-0.01	0.81	1.96	0.08	-0.79	-1.36	-0.84	-0.08
357	0.50	-0.50	0.32	-0.06	0.36	0.30	-0.07	0.35
360	-0.81	-0.15	-0.43	-0.55	-0.38	0.50	0.31	0.57
391	1.07	-0.15	-0.13	-0.27	0.98	-0.02	0.82	0.35
430	-----	-----	-----	-----	-----	-----	-----	-----
431	-----	-0.94	0.69	0.89	-----	-----	-----	-----
440	0.33	0.81	1.96	-0.06	0.77	-0.85	-1.22	0.14
445	1.02	0.46	1.81	-0.06	0.65	-0.53	-1.09	0.14
447	-1.10	-0.59	0.47	0.22	0.61	0.19	-0.33	0.14
463	-0.07	-1.72	-2.51	-0.69	-1.29	1.75	1.84	1.00
468	-----	-----	-----	-----	-----	-----	-----	-----
485	0.76	0.38	-0.05	-0.13	0.07	-0.07	0.18	0.35
494	-0.87	-0.67	-0.57	-0.27	-0.30	0.50	0.31	0.57
495	-0.41	-1.02	-2.66	-1.25	-1.21	1.54	1.84	1.86
496	0.16	-0.41	-0.43	0.51	0.11	0.30	0.31	-0.51
671	1.13	0.64	-0.57	-0.83	0.32	0.71	0.82	1.21
781	-----	-----	-----	-----	-----	-----	-----	-----
868	0.39	-0.15	0.17	0.72	1.52	0.50	-0.07	-0.72
875	-----	-----	-----	-----	-----	-----	-----	-----
904	1.65	2.30	-0.57	0.72	-0.13	-1.36	-0.46	0.14
912	-----	-----	-----	-----	-----	-----	-----	-----
962	-----	-----	-----	-----	-----	-----	-----	-----
1006	1.02	0.46	0.62	0.51	0.53	-----	-----	-----
1017	0.85	0.11	1.36	0.15	-0.71	-0.64	-0.58	-0.08
1038	0.50	-0.06	0.17	0.08	0.53	-0.02	-0.07	0.14
1059	-0.24	-0.32	-0.57	-0.06	0.20	0.40	0.44	0.14
1066	-1.10	-0.94	-0.72	-0.13	-0.13	0.81	0.31	0.57
1080	-0.07	-0.24	-1.47	-0.62	-0.71	0.71	1.07	1.00
1081	0.22	0.11	1.96	-0.13	-0.63	-0.85	-0.71	0.35
1108	2.16	0.29	-1.62	-0.97	0.20	0.61	0.94	1.64
1109	1.47	0.11	0.17	-0.48	1.81	0.09	0.18	1.00
1126	-4.76	-3.82	-16.36	0.29	2.76	-3.85	6.80	-0.51
1140	-1.38	-0.76	-1.32	-0.69	0.40	1.02	0.94	1.21
1159	-----	-----	-----	-----	-----	-----	-----	-----
1161	-1.38	-0.76	0.32	1.38	0.07	-1.21	-2.17	-0.51
1167	-0.47	-0.50	-2.51	-0.69	-0.71	-1.68	-2.24	-4.17
1186	-----	-----	-----	-----	-----	-----	-----	-----
1201	0.33	-0.24	-0.43	-0.41	-1.00	0.19	0.44	0.78
1203	0.16	0.55	1.36	0.93	0.86	-0.53	-0.71	-1.16
1205	-----	-----	-----	-----	-----	-----	-----	-----
1212	1.30	1.95	-1.02	0.01	1.35	-35.28	1.07	0.14
1218	2.16	-2.25	-3.85	-0.62	0.03	2.89	1.71	1.00
1251	-1.04	-1.02	-1.47	-0.06	-0.01	1.54	0.69	0.14
1259	-1.21	0.38	1.81	0.93	0.16	-0.74	-0.96	-1.16
1272	2.56	5.36	6.43	4.51	1.27	-8.31	0.18	-6.54
1276	0.27	-0.41	-2.06	-0.62	-1.21	0.81	1.07	1.00
1280	-----	-----	-----	-----	-----	-----	-----	-----
1293	-----	-----	-----	-----	-----	-----	-----	-----
1299	-1.16	-0.15	0.32	0.65	1.31	0.19	-0.20	-0.94
1340	0.87	2.21	3.74	2.47	0.40	-2.30	-1.98	-3.63
1357	-1.73	-0.59	-0.72	-0.27	-0.51	-----	-----	-----
1419	1.19	1.34	3.74	1.98	1.93	-1.78	-2.11	-2.66
1426	2.16	1.25	0.32	0.22	0.73	-0.74	-0.20	-0.08
1427	-1.50	-0.32	0.02	-0.41	-0.51	0.09	0.18	0.78
1432	-----	-----	-----	-----	-----	-----	-----	-----
1520	-----	-----	-----	-----	-----	-----	-----	-----
1603	-0.93	0.38	1.66	2.82	-0.71	-----	-----	-----
1631	0.79	0.03	-0.72	0.37	0.40	0.30	0.31	-0.51
1634	-1.04	-0.50	-0.72	0.37	-1.50	0.19	0.82	-0.51
1635	-0.53	0.90	3.00	2.33	-0.01	0.30	0.44	0.35
1636	-0.35	0.11	-0.72	0.37	0.07	0.19	0.18	-0.29

1709	-----	-----	-----	-----	-----	-----	-----	-----
1720	0.16	-0.41	-1.47	-0.48	-0.46	0.71	0.82	1.21
1724	-0.81	1.08	1.81	1.07	-0.30	-1.26	-1.09	-1.37
1807	0.33	0.64	1.21	0.37	0.40	-0.53	-0.58	-0.29
1810	-1.61	-0.15	-0.57	-0.13	-1.04	-0.95	-0.84	-1.59
1811	-0.58	0.55	1.96	1.14	-0.30	-0.85	-1.09	-1.80
1826	-1.21	-0.76	-2.96	-0.97	-2.24	1.64	1.84	1.43
1833	0.85	0.55	0.17	-0.20	0.82	-0.12	0.18	0.57
1842	-----	-----	-----	-----	-----	-----	-----	-----
1849	1.99	1.95	3.00	1.63	1.60	-0.85	0.56	0.57
1936	-0.75	-0.67	-1.32	-0.20	-0.63	0.81	0.56	0.78
1937	0.56	0.20	0.02	-0.34	0.94	-1.36	-1.73	-2.23
1938	0.33	0.20	0.02	-0.27	0.40	-0.12	0.05	0.57
1941	-1.56	-0.76	-1.62	-0.55	-0.59	1.02	0.94	1.00
1948	-0.07	0.46	3.30	2.96	-1.25	-1.26	-2.11	-4.17
2129	-0.93	-0.94	-3.85	-0.97	-1.70	1.54	2.22	1.43
2130	-0.47	-0.76	-1.62	-0.83	0.36	1.02	0.94	1.21
2146	-0.07	-0.59	-0.57	-0.13	-1.46	0.50	0.56	0.35
7001	2.33	1.25	0.84	1.03	0.42	-0.90	-0.52	6.49

z-scores distillation ASTM D86 (manual mode)

lab	IBP	10%eva	50%eva	90%eva	FBP	%vol70	%vol100	%vol150
92	-----	-----	-----	-----	-----	-----	-----	-----
150	-----	-----	-----	-----	-----	-----	-----	-----
225	-0.13	-0.24	-0.04	-1.20	0.28	-0.78	-0.72	1.11
228	-0.63	-1.61	-2.67	-4.02	-1.28	1.66	2.87	2.60
253	-----	-----	-----	-----	-----	-----	-----	-----
311	-----	-----	-----	-----	-----	-----	-----	-----
312	-----	-----	-----	-----	-----	-----	-----	-----
317	-----	-----	-----	-----	-----	-----	-----	-----
323	-----	-----	-----	-----	-----	-----	-----	-----
334	-----	-----	-----	-----	-----	-----	-----	-----
335	-----	-----	-----	-----	-----	-----	-----	-----
336	-----	-----	-----	-----	-----	-----	-----	-----
338	-----	-----	-----	-----	-----	-----	-----	-----
340	-----	-----	-----	-----	-----	-----	-----	-----
344	-----	-----	-----	-----	-----	-----	-----	-----
353	-----	-----	-----	-----	-----	-----	-----	-----
357	-----	-----	-----	-----	-----	-----	-----	-----
360	-----	-----	-----	-----	-----	-----	-----	-----
391	-----	-----	-----	-----	-----	-----	-----	-----
430	-----	-----	-----	-----	-----	-----	-----	-----
431	-----	-----	-----	-----	-----	-----	-----	-----
440	-----	-----	-----	-----	-----	-----	-----	-----
445	-----	-----	-----	-----	-----	-----	-----	-----
447	-----	-----	-----	-----	-----	-----	-----	-----
463	-----	-----	-----	-----	-----	-----	-----	-----
468	-----	-----	-----	-----	-----	-----	-----	-----
485	-----	-----	-----	-----	-----	-----	-----	-----
494	-----	-----	-----	-----	-----	-----	-----	-----
495	-----	-----	-----	-----	-----	-----	-----	-----
496	-----	-----	-----	-----	-----	-----	-----	-----
671	-----	-----	-----	-----	-----	-----	-----	-----
781	-0.13	-0.03	0.29	0.21	0.86	-0.37	-0.72	0.11
868	-----	-----	-----	-----	-----	-----	-----	-----
875	-0.13	-0.24	0.62	0.91	0.28	-0.78	-1.17	-0.88
904	-----	-----	-----	-----	-----	-----	-----	-----
912	-----	-----	-----	-----	-----	-----	-----	-----
962	-----	-----	-----	-----	-----	-----	-----	-----
1006	-----	-----	-----	-----	-----	-----	-----	-----
1017	-----	-----	-----	-----	-----	-----	-----	-----
1038	-----	-----	-----	-----	-----	-----	-----	-----
1059	-----	-----	-----	-----	-----	-----	-----	-----
1066	-----	-----	-----	-----	-----	-----	-----	-----
1080	-----	-----	-----	-----	-----	-----	-----	-----
1081	-----	-----	-----	-----	-----	-----	-----	-----
1108	-----	-----	-----	-----	-----	-----	-----	-----
1109	-----	-----	-----	-----	-----	-----	-----	-----
1126	-----	-----	-----	-----	-----	-----	-----	-----
1140	-----	-----	-----	-----	-----	-----	-----	-----
1159	1.51	0.46	-1.34	-2.78	1.01	0.52	1.17	0.21
1161	-----	-----	-----	-----	-----	-----	-----	-----
1167	-----	-----	-----	-----	-----	-----	-----	-----
1186	1.12	1.83	1.47	5.35	-2.13	0.85	-1.17	-2.87
1201	-----	-----	-----	-----	-----	-----	-----	-----
1203	-----	-----	-----	-----	-----	-----	-----	-----
1205	-----	-----	-----	-----	-----	-----	-----	-----
1212	-----	-----	-----	-----	-----	-----	-----	-----
1218	-----	-----	-----	-----	-----	-----	-----	-----
1251	-----	-----	-----	-----	-----	-----	-----	-----
1259	-----	-----	-----	-----	-----	-----	-----	-----
1272	-----	-----	-----	-----	-----	-----	-----	-----
1276	-----	-----	-----	-----	-----	-----	-----	-----
1280	-----	-----	-----	-----	-----	-----	-----	-----
1293	-----	-----	-----	-----	-----	-----	-----	-----
1299	-----	-----	-----	-----	-----	-----	-----	-----
1340	-----	-----	-----	-----	-----	-----	-----	-----
1357	-----	-----	-----	-----	-----	-----	-----	-----
1419	-----	-----	-----	-----	-----	-----	-----	-----
1426	-----	-----	-----	-----	-----	-----	-----	-----
1427	-----	-----	-----	-----	-----	-----	-----	-----
1432	-----	-----	-----	-----	-----	-----	-----	-----
1520	-1.58	-0.17	1.67	1.54	0.98	-1.10	-0.27	-0.28
1603	-----	-----	-----	-----	-----	-----	-----	-----
1631	-----	-----	-----	-----	-----	-----	-----	-----
1634	-----	-----	-----	-----	-----	-----	-----	-----
1635	-----	-----	-----	-----	-----	-----	-----	-----
1636	-----	-----	-----	-----	-----	-----	-----	-----
1709	-----	-----	-----	-----	-----	-----	-----	-----

1720	-----	-----	-----	-----	-----	-----	-----	-----
1724	-----	-----	-----	-----	-----	-----	-----	-----
1807	-----	-----	-----	-----	-----	-----	-----	-----
1810	-----	-----	-----	-----	-----	-----	-----	-----
1811	-----	-----	-----	-----	-----	-----	-----	-----
1826	-----	-----	-----	-----	-----	-----	-----	-----
1833	-----	-----	-----	-----	-----	-----	-----	-----
1842	-----	-----	-----	-----	-----	-----	-----	-----
1849	-----	-----	-----	-----	-----	-----	-----	-----
1936	-----	-----	-----	-----	-----	-----	-----	-----
1937	-----	-----	-----	-----	-----	-----	-----	-----
1938	-----	-----	-----	-----	-----	-----	-----	-----
1941	-----	-----	-----	-----	-----	-----	-----	-----
1948	-----	-----	-----	-----	-----	-----	-----	-----
2129	-----	-----	-----	-----	-----	-----	-----	-----
2130	-----	-----	-----	-----	-----	-----	-----	-----
2146	-----	-----	-----	-----	-----	-----	-----	-----
7001	-----	-----	-----	-----	-----	-----	-----	-----

APPENDIX 3

Number of participants per country

2 laboratories in AUSTRALIA
2 laboratories in AUSTRIA
1 laboratory in BELARUS REPUBLIC
3 laboratories in BELGIUM
1 laboratory in BOSNIA and HERZEGOVINA
1 laboratory in BULGARIA
1 laboratory in CANADA
1 laboratory in COSTA RICA
1 laboratory in CÔTE D'IVOIRE
2 laboratories in CROATIA
2 laboratories in CZECH REPUBLIC
1 laboratory in ESTONIA
2 laboratories in FINLAND
5 laboratories in FRANCE
4 laboratories in GERMANY
1 laboratory in GREECE
1 laboratory in GUAM
2 laboratories in HUNGARY
1 laboratory in INDIA
1 laboratory in IRAN
2 laboratories in IRELAND
1 laboratory in ISRAEL
1 laboratory in ITALY
1 laboratory in NORTHERN IRELAND
1 laboratory in P.R. of CHINA
1 laboratory in POLAND
2 laboratories in PORTUGAL
1 laboratory in REPUBLIC OF DJIBOUTI
1 laboratory in REPUBLIC OF MACEDONIA
2 laboratories in RUSSIA
1 laboratory in SAUDI ARABIA
2 laboratories in SERBIA
1 laboratory in SLOVAKIA
1 laboratory in SLOVENIA
3 laboratories in SPAIN
2 laboratories in SUDAN
1 laboratory in SULTANATE OF OMAN
3 laboratories in SWEDEN
3 laboratories in TAIWAN R.O.C.
9 laboratories in THE NETHERLANDS
1 laboratory in TOGO
13 laboratories in TURKEY
1 laboratories in U.S.A.
6 laboratories in UNITED KINGDOM

APPENDIX 4

Abbreviations:

C	= final result after checking of first reported suspect result
C(0.01)	= outlier in Cochran's outlier test
C(0.05)	= straggler in Cochran's outlier test
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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