

Results of Proficiency Test
Gasoline
February 2010

Organised by: Institute for Interlaboratory Studies
Spijkenisse, the Netherlands

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1 INTRODUCTION

Since 1995, the Institute organizes a proficiency scheme for Gasoline. During the annual proficiency testing program 2009/2010, it was decided to continue the round robin for the analysis of Gasoline. In this international Interlaboratory Studies 144 laboratories in 67 different countries have participated. See appendix 3 for the list of participants in alphabetical country order. In this report, the results of the gasoline proficiency test are presented and discussed.

2 SET UP

The Institute for Interlaboratory Studies (iis) in Spijkensisse, 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 #1009) and/or 1*1 litre (\pm 800 mL filled) euro 95 Gasoline (labelled #1010) 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 Spijkensisse, 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% confidentiality of participant's data. Feedback from the participants on the reported data is encouraged and customer's satisfaction is measured on regular basis by sending out questionnaires.

2.2 PROTOCOL

The protocol followed in the organisation of this proficiency test was the one as described for proficiency testing in the report 'iis Interlaboratory Studies: 'Protocol for the Organisation, Statistics and Evaluation' of 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 purchased at a regular fuel pump station in the Netherlands. After homogenisation in a 500 L mixing vessel, 344 amber glass bottles of 1 litre were filled and labelled #1009.

The homogeneity of the subsamples #1009 was checked by determination of Density @15°C in accordance with ASTM D4052:09 on 15 stratified randomly selected samples.

	Density @ 15°C in kg/m ³
Sample #1009-1	733.74
Sample #1009-2	733.72
Sample #1009-3	733.75
Sample #1009-4	733.79
Sample #1009-5	733.77
Sample #1009-6	733.76
Sample #1009-7	733.74
Sample #1009-8	733.74
Sample #1009-9	733.75
Sample #1009-10	733.80
Sample #1009-11	733.76
Sample #1009-12	733.78
Sample #1009-13	733.78
Sample #1009-14	733.77
Sample #1009-15	733.84

Table 1: homogeneity test of subsamples #1009

For the second batch, the necessary sample material of 200 litre of Gasoline Euro 95 was also purchased at a regular fuel pump station in the Netherlands. After homogenisation, 168 amber glass bottles of 1 litre with approx. 800 mL for Vapour Pressure only and labelled #1010. The homogeneity of the subsamples #1010 was checked by determination of Dry Vapour Pressure Equivalent in accordance with ASTM D5191:07 on 8 stratified randomly selected samples.

	DVPE in psi
Sample #1010-1	8.68
Sample #1010-2	8.57
Sample #1010-3	8.58
Sample #1010-4	8.56
Sample #1010-5	8.56
Sample #1010-6	8.56
Sample #1010-7	8.54
Sample #1010-8	8.54

Table 2: homogeneity test of subsamples #1010

From the above test results in table 1 and 2, the repeatabilities were calculated and compared with 0.3 times the corresponding reproducibilities in agreement with the procedure of ISO 13528, Annex B2 in the next table:

	Density@ 15 °C in kg/m ³	DVPE in psi
r (sample #1009)	0.08	----
r (sample #1010)	----	0.04
reference method	ASTM D4052:09	ASTM D5191:07
0.3 x R (ref. method)	0.74	0.10

Table 3: repeatabilities of subsamples #1009 and #1010

The repeatabilities of the results of homogeneity test for Density and DVPE were in agreement with the respective repeatabilities required by ASTM D4052:09 and ASTM D5191:07.

Therefore, homogeneity of subsamples #1009 and #1010 was assumed.

To the participants, depending on their registration, 2*1 litre of sample #1009 and/or 1*1 litre (\pm 800 mL filled) of sample #1010 were sent on February 3, 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, Mercaptans, Olefins by FIA, Olefins by GC (%V/V and %M/M), DIPE, Ethanol, ETBE, MTBE, Isobutanol, TAME, t-Butanol, Oxidation Stability, Sulphur, RON and MON (before and after correction) on sample #1009.

On sample #1010, the participants were requested to determine Total Vapour Pressure and DVPE (acc. ASTM D5191 and EPA). To get comparable results, a detailed report form on which the units and the preferred test methods were printed, was sent together with each set of samples. Also 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. ASTM 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:

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

The $z_{(\text{target})}$ 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, major problems were encountered during the transport of the samples to the laboratories in Brazil, Cote D'Ivoire, Georgia, India, Lithuania, Nigeria, P.R. of China, Tunisia and Turkmenistan. The samples to these laboratories arrived near or after the final reporting date.

From the 144 participants, 25 participants did report the results after the deadline for reporting and 5 participants did not report any results at all. The 139 reporting laboratories did send in 2699 numerical results. Observed were 95 outlying results, which is 3.6%. 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 #1009: API gravity, Aromatics by GC (%V/V), Benzene, Density, Distillation (for automated: 10% and 50% evaporated and %eva at 70°C, for manual: FBP), Existent Gum and Sulfur. For sample #1010: TVP and DVPE (ASTM). In these cases, the statistical evaluation should be used with care.

API Gravity: This determination is problematic for several laboratories. Five statistical outliers were observed. However, the calculated reproducibility, after rejection of the statistical outliers, is in good agreement with the requirements of ASTM D1298:05.

Aromatics by FIA: This determination is problematic for three laboratories. Only two statistical outliers were observed and the calculated reproducibility, after rejection of the statistical outliers, is almost in agreement with the requirements of ASTM D1319:08. This may be caused by the fact that in the last version of ASTM D1319 the sample is no longer deparaffinized and several participating laboratories may have used the previous version of this method that did prescribe deparaffinization. It is remarkable that 4 laboratories reported FIA results more than 1% lower than GC results in %V/V.

Aromatics by GC: The determination is problematic. In total eight statistical outliers were detected (4 in %M/M and 4 in %V/V). Both calculated reproducibilities, after rejection of the statistical outliers, are not in agreement with the requirements

of EN14517:04. The results of one participant were excluded for statistical calculation as result in %V/V > results in % M/M, which is in principle not possible for Gasoline.

- Benzene: This determination is not problematic. Three statistical outliers were observed and the calculated reproducibility is, after rejection of the statistical outliers, in good agreement with the requirements of ASTM D3606:07.
- Copper strip: No problems have been observed, all participants agreed on a result of 1.
- Doctor Test: No analytical problems have been observed, all participants, except one agreed on the absence of Mercaptans (see also: Determination of Mercaptans). One participant reported the Doctor test as positive.
- Density @ 15°C: This determination is problematic for some laboratories. Four statistical outliers were observed and the calculated reproducibility, after rejection of the statistical outliers, is in good agreement with the requirements of ASTM D4052:09. However, when compared with the requirements of ASTM D4052:02e1, which is 5 times smaller, the calculated reproducibility does not agree at all.
- Distillation This determination is problematic on some points. In total twenty-five (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 100°C and 150°C, are in agreement with the requirements of ASTM D86:09e1. Not in agreement with the requirements of ASTM D86:09e1 were the calculated reproducibilities for 50% evaporated and volume at 70°C. The calculated reproducibilities of the manual mode for IBP, 10% evaporated and volume at 100°C and 150°C, are in agreement with the requirements of ASTM D86:09e1. Not in agreement with the requirements of ASTM D86:09e1 were the calculated reproducibilities for 50% and 90% evaporated, FBP and volume at 70°C.
- Existent Gum: (washed) This determination is problematic for at least one laboratory. Three statistical outliers and one false negative were observed. The calculated reproducibility, after rejection of the statistical outliers, is in good agreement with the requirements of ASTM D381:09.
- Lead: The consensus value of the group is 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 is below the application range (0.25 - 40 mg/L) and most participants reported a "less then" result. Therefore, no significant conclusions were drawn.

- Mercaptans: This determination is not problematic at this low level (application range: 0.0003 – 0.01%M/M). Only two statistical outliers were observed and the calculated reproducibility, after rejection of the statistical outliers, is in full agreement with the requirements of ASTM D3227:04a.
- Olefins by FIA: This determination is 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. It is remarkable that 10 laboratories reported FIA results more than 1% lower than GC results in %V/V.
- Olefins by GC: The determination in %V/V is only problematic for some laboratories. Four statistical outliers were observed and the results of two other participants were excluded as the results in %V/V < results in %W/W, which is in principle not possible. The calculated reproducibility is, after rejection of the statistical outliers, in 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 is problematic for several laboratories. Five statistical outliers were observed and one result was excluded, which was probably reported in %M/M instead of %V/V using ASTM D6730. The calculated reproducibility, after rejection of the statistical outliers, is in agreement with the requirements of ASTM D4815:09.
- MTBE: This determination is very problematic. One statistical outlier and three false negatives were observed. Furthermore, one reported result was excluded, the reported result was probably expressed as %M/M instead of %V/V using ASTM D6730. The calculated reproducibility, after rejection of the statistical outlier, is not at all in agreement with the requirements of ASTM D4815:09.
- DiPE: The concentration of DiPE was near or below the detection limit of the methods used and most of the participants reported a “less then” result. Therefore, no significant conclusions were drawn.
- ETBE: The concentration of ETBE was near or below the detection limit of the methods used and most of the participants reported a “less then” result. Therefore, no significant conclusions were drawn.

- iso-Butanol: The concentration of iso-Butanol was near or below the detection limit of the methods used and most of the participants reported a “less than” result. Therefore, no significant conclusions were drawn.
- Isopropanol: The concentration of Isopropanol was near or below the detection limit of the methods used and most of the participants reported a “less than” result. Therefore, no significant conclusions were drawn.
- Methanol: The concentration of Methanol was near or below the detection limit of the methods used and most of the participants reported a “less than” result. Therefore, no significant conclusions were drawn.
- TAME: The concentration of TAME was near or below the detection limit of the methods used and most of the participants reported a “less than” result. Therefore, no significant conclusions were drawn.
- t-Butanol: The concentration of t-Butanol was near or below the detection limit of the methods used and most of the participants reported a “less than” result. Therefore, no significant conclusions were drawn.
- Oxygen content: This determination was problematic. Six statistical outliers were observed. The calculated reproducibility, after rejection of the statistical outliers, is not in agreement with the requirements of ASTM D4815:09.
- Oxidation stability: The majority of the laboratories agreed that the Oxidation Stability is >360 (or even >900) minutes. However, one laboratory reported a false positive.
- Sulphur: This determination was problematic at the low level of 5 mg/kg. Six statistical outliers were detected. The calculated reproducibility, after rejection of statistical outliers, is not in agreement with the requirements of ASTM D5453:09 (Application range: 1 – 8000 mg/kg). When the results ASTM D5453 and ISO20846 results were evaluated separately, only the calculated reproducibility of the ISO20846 results is in agreement with the requirements of the test method.
- RON: This determination of RONm is problematic. Only one statistical outlier was observed. However, the calculated reproducibility, after rejection of the statistical outlier, is almost in agreement with the requirements of ASTM D2699:09.
In theory, the difference between the consensus values of RONm (uncorrected, measured) and RON (corrected) should be exactly 0.2. However, the observed difference is 0.17. When only the results are evaluated from the 37 laboratories that reported both results for RONm (uncorrected, measured) as well as for RON (corrected) the new difference between both new consensus values is exactly 0.20 as expected. It is noticed that the new consensus value of RON (corrected) is 0.06 smaller

than the original value and is probably more reliable. It is too bad that not all participants that reported a RONm result also reported a RON result.

MON: This determination of MONm is problematic. Only two statistical outliers were observed. However, the calculated reproducibility, after rejection of the statistical outlier, is not in agreement with the requirements ASTM D2700:09. In theory, the difference between the consensus values of MONm (uncorrected, measured) and MON (corrected) should be exactly 0.2. However, the observed difference is 0.13. When only the results are evaluated from the 31 laboratories that reported both results for MONm (uncorrected) as well as for MON (corrected), the new difference between both new consensus values is exactly 0.20 as expected. It is noticed that the new consensus value of MONm is 0.02 smaller than the original value and is probably more reliable. It is too bad that not all participants that reported a MONm result also reported a MON result.

TVP: This determination is 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 ASTM D5191:07 and with the 0.30 psi required by EPA for re-analysis of batches RFG that are downstream in the distribution chain.

DVPE: The conversion of the measured Total Vapour Pressure to the corresponding Dry Vapour Pressure Equivalent (DVPE) as described in the ASTM D5191:07 and the U.S. EPA guidelines (40 CFR Part 80, App. E, Method3), showed four statistical outliers for DVPE-ASTM and one for DVPE-EPA. The calculated reproducibilities of DVPE-ASTM and DVPE-EPA, after rejection of the statistical outliers, are both in good agreement with the requirements of ASTM D5191:07 and the EPA guidelines. No calculation errors with the conversion of TVP to DVPE-ASTM and/or DVPE-EPA 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 #1009 and #1010, 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	-----	67	61.22	0.27	0.30	
Aromatics by FIA	% V/V	60	30.50	3.97	3.70	
Aromatics by GC	% V/V	52	29.34	2.34	1.46	
Aromatics by GC	% M/M	41	35.04	2.84	1.72	
Benzene	% V/V	81	0.82	0.13	0.16	
Copper Strip 3 hrs @ 50°C	-----	95	1 (1a)	n.a.	n.a.	
Doctor Test	-----	80	negative	n.a.	n.a.	
Density @ 15 °C	kg/m ³	127	734.01	0.92	2.42	
Dist. Auto.	IBP	°C	97	28.26	4.93	4.73
	10%-evap.	°C	98	40.57	3.26	3.20
	50%-evap.	°C	98	83.88	4.74	1.88
	90%-evap.	°C	95	148.68	2.10	3.96
	FBP	°C	98	182.45	6.53	6.78
	%eva at 70°C	%	86	43.40	2.68	2.13
	%eva at 100°C	%	85	58.57	1.87	1.83
	%eva at 150°C	%	83	90.70	1.11	1.19
Dist. Manu.	IBP	°C	32	30.15	5.04	5.60
	10%-evap.	°C	32	42.06	3.86	3.95
	50%-evap.	°C	32	86.05	6.70	4.35
	90%-evap.	°C	32	150.25	9.05	4.15
	FBP	°C	32	182.44	7.76	7.20
	%eva at 70°C	%	26	41.72	5.50	4.83
	%eva at 100°C	%	26	57.77	4.23	4.46
	%eva at 150°C	%	26	89.81	3.89	4.28
Existent gum (washed)	mg/100mL	54	0.60	0.85	2.14	
Lead as Pb	mg/L	19	0.44	1.13	(2.60)	
Manganese as Mn	mg/kg	4	0.20	0.23	(0.10)	
Mercaptans as S	% M/M	38	0.00018	0.00016	(0.00032)	
Olefins by FIA	% V/V	60	(9.34)	(3.75)	(3.13)	
Olefins by GC	%V/V	42	10.43	1.68	1.74	
Olefins by GC	%M/M	33	9.50	1.55	unknown	
DiPE	% V/V	16	0.051	0.209	n.a.	
Ethanol	% V/V	62	4.64	0.59	0.55	
ETBE	% V/V	20	0.165	1.364	n.a.	
iso-Butanol	% V/V	9	0.019	0.139	n.a.	
Isopropanol	%V/V	12	0.055	0.222	n.a.	
Methanol	%V/V	12	0.096	0.388	n.a.	
MTBE	% V/V	67	0.67	0.17	0.09	
TAME	% V/V	12	0.068	0.319	n.a.	
t-Butanol	%V/V	13	0.026	0.094	n.a.	
Oxygen content	%M/M	56	1.87	0.26	0.20	
Oxidation Stability	min	11	n.a.	n.a.	n.a.	
Sulphur	mg/kg	94	5.18	2.25	1.99	
RONm	-----	57	96.15	0.75	0.70	
RON (after correction)	-----	44	95.98	0.84	0.70	
MONm	-----	47	85.40	0.97	0.90	
MON (after correction)	-----	33	85.27	1.00	0.90	

table 4: performance evaluation sample #1009

* 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)
Total Vapour Pressure	psi	77	9.507	0.252	0.332
DVPE acc. to ASTM D5191	psi	84	8.619	0.239	0.323
DVPE acc. to EPA	psi	72	8.743	0.256	0.324

table 5: performance evaluation sample #1010

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

4.3 COMPARISON OF THE PROFICIENCY TEST OF FEBRUARY 2010 WITH PREVIOUS PTS

	<i>February 2010</i>	<i>October 2009</i>	<i>February 2009</i>	<i>October 2008</i>
Number of rep. participants	139	66	126	64
Number of results reported	2699	1197	2378	1188
Statistical outliers	95	58	79	56
Percentage outliers	3.5%	4.8%	3.3%	4.7%

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	<i>February 2010</i>	<i>October 2009</i>	<i>February 2009</i>	<i>October 2008</i>
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.	(++)
Mercaptans as S	(+)	(+)	(+)	(+/-)
DiPE	n.e.	n.e.	n.e.	n.e.
Ethanol	-	--	n.e.	n.e.
ETBE	n.e.	n.e.	n.e.	n.e.
iso-Butanol	n.e.	n.e.	n.e.	n.e.
Isopropanol	n.e.	n.e.	n.e.	n.e.
Methanol	n.e.	n.e.	n.e.	n.e.
MTBE	--	--	n.e.	++
TAME	n.e.	n.e.	n.e.	n.e.
t-Butanol	n.e.	n.e.	n.e.	n.e.
Olefins by FIA	(--)	--	--	--
Olefins by GC	+/-	+/-	--	+
Sulphur	-	++	--	--
RON	-	--	--	+/-
MON	--	--	--	--
TVP	++	--	-	-
DVPE ASTM D5191	++	--	+	+/-
DVPE EPA	++	--	+/-	-

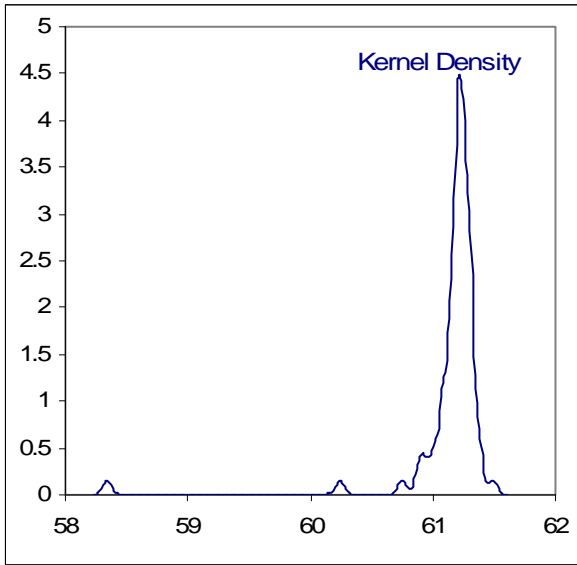
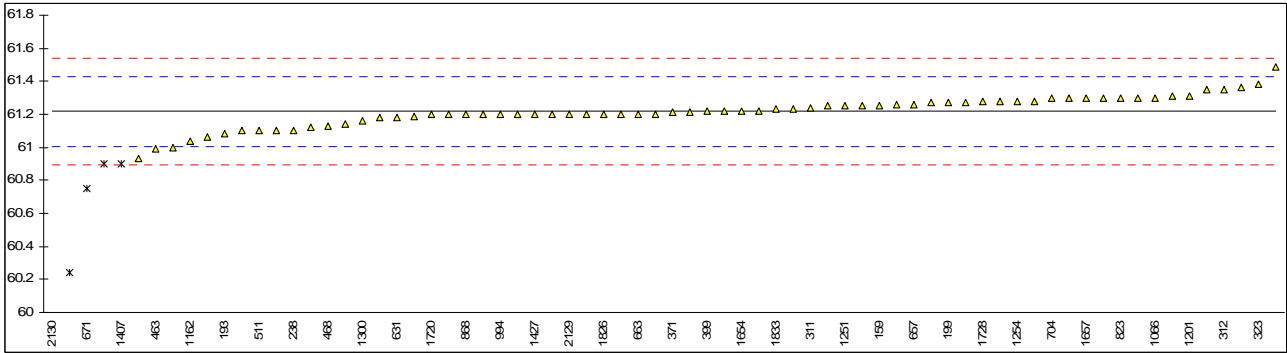
Table 7: comparison determinations against the standard

* 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.

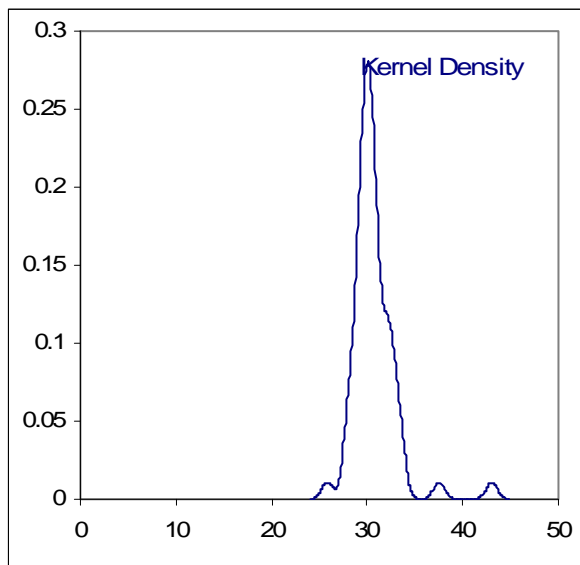
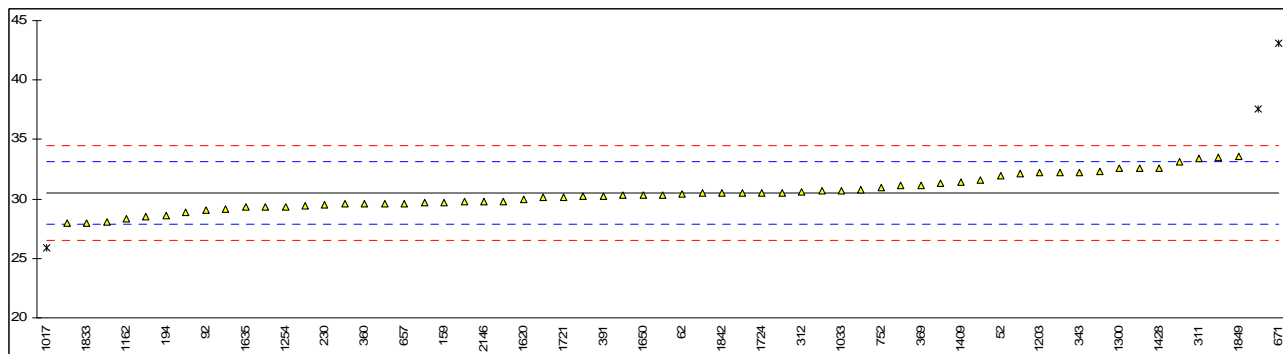
The following performance categories were used:

- ++: 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



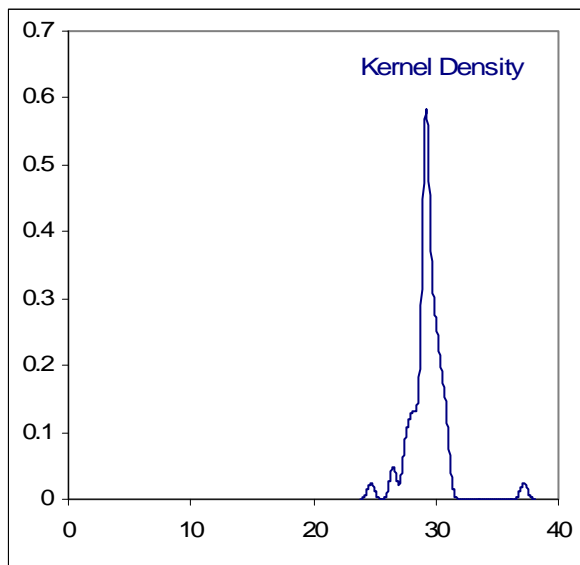
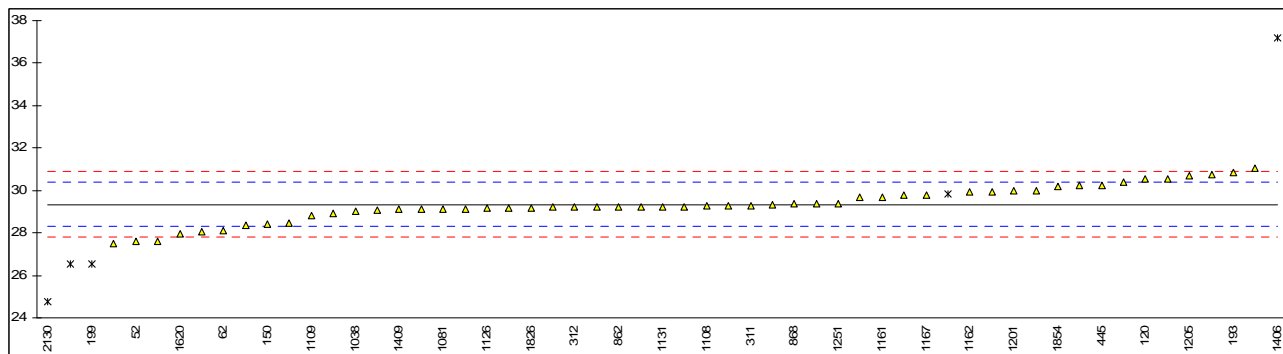
Determination of Aromatics by FIA on sample #1009; results in %V/V

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52	D1319	32.0		1.14		996		----		----	
62	D1319	30.40		-0.08		1006		----		----	
92	D1319	29.1		-1.06		1016		----	W	----	Fr 35.9
120	D1319	30.2		-0.23		1017	D1319	25.85	G(0.01)	-3.52	
150	D1319	29.7		-0.61		1033	IP156	30.7		0.15	
158	D1319	28.5		-1.51		1038	D1319	29.13		-1.04	
159	D1319	29.7		-0.61		1059	D1319	31.6		0.83	
169	D1319	29.6		-0.68		1066	D1319	29.8		-0.53	
171	D1319	28.9		-1.21		1081		----		----	
180	D1319	29.3		-0.91		1108		----		----	
193	D1319	30.53		0.02		1109	D1319	33.16		2.01	
194	D1319	28.629		-1.42		1126		----		----	
199	D1319	27.96		-1.92		1131		----		----	
217		----		----		1140	D1319	29.6		-0.68	
221		----		----		1161		----		----	
224		----		----		1162	D1319	28.29		-1.67	
225		----		----		1167		----		----	
228		----		----		1171	D1319	29.763		-0.56	
230	D1319	29.5		-0.76		1186		----		----	
237		----		----		1194	D1319	30.1		-0.30	
238		----		----		1201		----		----	
252		----		----		1203	D1319	32.2		1.29	
253	D1319	37.53	G(0.01)	5.32		1205		----		----	
254		----		----		1215		----		----	
256		----		----		1218		----		----	
258		----		----		1231		----		----	
273		----		----		1251	D1319	32.1		1.21	
311	D1319	33.4		2.19		1254	D1319	29.35		-0.87	
312	D1319	30.61		0.08		1257		----		----	
317		----		----		1276	D1319	30.37		-0.10	
323		----		----		1300	D1319	32.5799		1.57	
333		----		----		1310		----		----	
334		----		----		1406		----		----	
335		----		----		1407		----		----	
336		----		----		1409	D1319	31.4		0.68	
337		----		----		1427		----		----	
338		----		----		1428	ISO3837	32.63		1.61	
340	D1319	30.3		-0.15		1501		----		----	
343	D1319	32.2		1.29		1531		----		----	
353		----		----		1620	D1319	30.0		-0.38	
360	D1319	29.6	C	-0.68	Fr 9.6	1634		----		----	
369	D1319	31.13		0.48		1635	D1319	29.3		-0.91	
371		----		----		1636	D1319	31.33		0.63	
391	D1319	30.2		-0.23		1650	D1319	30.35	C	-0.11	Fr 35.05
399		----		----		1654		----		----	
420		----		----		1657	D1319	30.8		0.23	
430		----		----		1720		----		----	
433		----		----		1721	D1319	30.18		-0.24	
440		----		----		1724	D1319	30.51		0.01	
445		----		----		1728		----		----	
447		----		----		1730		----		----	
463	D1319	30.5		0.00		1740		----		----	
468		----		----		1810		----		----	
485		----		----		1811		----		----	
511		----		----		1826	D1319	31.1		0.45	
541		----		----		1833	D1319	27.96		-1.92	
557		----		----		1842	D1319	30.5		0.00	
562		----		----		1849	D1319	33.58		2.33	
631	D1319	33.48		2.26		1854	D1319	32.36		1.41	
657	D1319	29.62		-0.67		1864		----		----	
663		----		----		1936		----		----	
671	D1319	43.058	G(0.01)	9.50		1937		----		----	
704		----		----		1938		----		----	
752	D1319	30.94		0.33		2129	D1319	29.4		-0.83	
759		----		----		2130		----		----	
781		----		----		2146	D1319	29.8		-0.53	
823	D1319	30.67		0.13		7003		----		----	
862	D1319	28.1		-1.82		8010		----		----	
868		----		----							
875		----		----							
904	D1319	32.6		1.59			normality	OK			
912		----		----			n	60			
962	D1319	32.2		1.29			outliers	3			
974	D1319	30.49		-0.01			mean (n)	30.500			
994		----		----			st.dev. (n)	1.4175			
995		----		----			R(calc.)	3.969			
							R(D1319:08)	3.700			



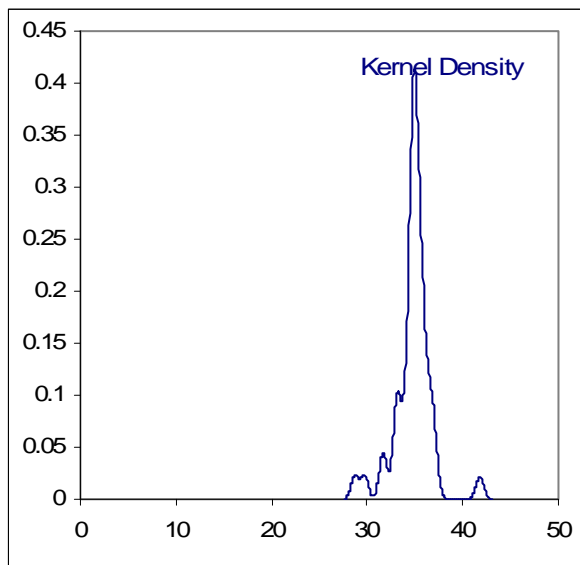
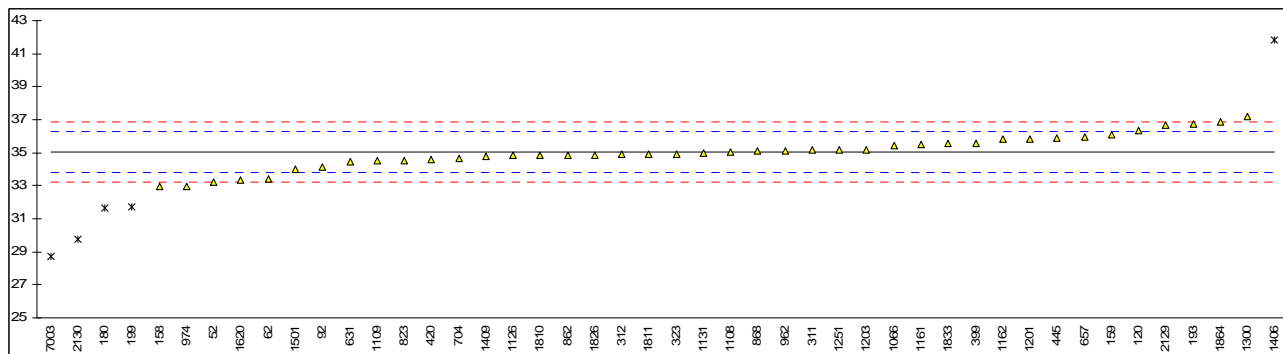
Determination of Aromatics by GC on sample #1009; results in %V/V

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52	Nat meth	27.6		-3.35		996		----		----	
62	Nat meth	28.097		-2.39		1006	D6293	29.2		-0.27	
92	Nat meth	28.44		-1.73		1016		----		----	
120	D5769	30.52		2.26		1017		----		----	
150	D5769	28.4		-1.81		1033		----		----	
158	D5769	27.61		-3.33		1038	D6839	29.03		-0.60	
159	D5769	30.22		1.68		1059		----		----	
169		----		----		1066	EN22854	29.66		0.61	
171		----		----		1081	EN14517	29.10		-0.47	
180	D5769	26.52	DG(0.05)	-5.42		1108	EN14517	29.28		-0.12	
193	D5769	30.84		2.87		1109	D6839	28.81		-1.02	
194		----		----		1126	D6839	29.15		-0.37	
199	D5769	26.52	DG(0.05)	-5.42		1131	ISO22854	29.24		-0.20	
217		----		----		1140	D6293	29.1		-0.47	
221		----		----		1161	EN14517	29.676		0.64	
224		----		----		1162	D6839	29.91		1.09	
225		----		----		1167	EN14517	29.8		0.88	
228		----		----		1171		----		----	
230		----		----		1186		----		----	
237		----		----		1194		----		----	
238		----		----		1201	EN14517	30.0		1.26	
252		----		----		1203	EN14517	29.4		0.11	
253		----		----		1205	EN14517	30.7		2.60	
254		----		----		1215		----		----	
256		----		----		1218	EN22854	28.04		-2.50	
258		----		----		1231	D6293	29.305		-0.07	
273		----		----		1251	EN14517	29.4		0.11	
311	EN14517	29.3		-0.08		1254		----		----	
312	D6839	29.20		-0.27		1257		----		----	
317		----		----		1276		----		----	
323	EN22854	29.1		-0.47		1300	EN14517	31.0334		3.24	
333		----		----		1310		----		----	
334		----		----		1406	EN14517	37.2	G(0.01)	15.08	
335		----		----		1407	IN HOUSE	30.4		2.03	
336		----		----		1409	ISO22854	29.1		-0.47	
337		----		----		1427		----		----	
338		----		----		1428		----		----	
340		----		----		1501	D6293	28.34		-1.92	
343		----		----		1531		----		----	
353		----		----		1620	D5580	27.98		-2.62	
360		----		----		1634		----		----	
369		----		----		1635		----		----	
371		----		----		1636		----		----	
391		----		----		1650		----		----	
399	EN14517	29.79		0.86		1654		----		----	
420	INH-656150	29.2		-0.27		1657		----		----	
430		----		----		1720		----		----	
433		----		----		1721		----		----	
440		----		----		1724		----		----	
445	EN14517	30.22		1.68		1728		----		----	
447		----		----		1730		----		----	
463		----		----		1740		----		----	
468		----		----		1810	EN14517	29.25		-0.18	
485		----		----		1811	EN14517	29.16		-0.35	
511		----		----		1826	EN14517	29.18		-0.31	
541		----		----		1833	EN14517	29.96		1.18	
557		----		----		1842		----		----	
562		----		----		1849		----		----	
631	D6839	29.22	C	-0.24	Fr 33.22	1854	EN14517	30.2		1.65	
657	D6293	30.00		1.26		1864	D5134	30.553		2.32	
663		----		----		1936		----		----	
671		----		----		1937		----		----	
704	D5580	29.08		-0.50		1938		----		----	
752		----		----		2129	D6730	30.73		2.66	
759		----		----		2130	D6730	24.74	G(0.01)	-8.83	
781		----		----		2146		----		----	
823	D5580	28.94		-0.77		7003	D5134	29.814	ex	0.90	%V/V > %M/M
862	D6839	29.20		-0.27		8010		----		----	
868	D6839	29.36		0.03							
875		----		----							
904		----		----			normality	not OK			
912		----		----			n	52			
962	D6839	29.3		-0.08			outliers	4			
974	D6839	27.50		-3.54			mean (n)	29.343			
994		----		----			st.dev. (n)	0.8358			
995		----		----			R(calc.)	2.340			
							R(EN14517:04)	1.459			



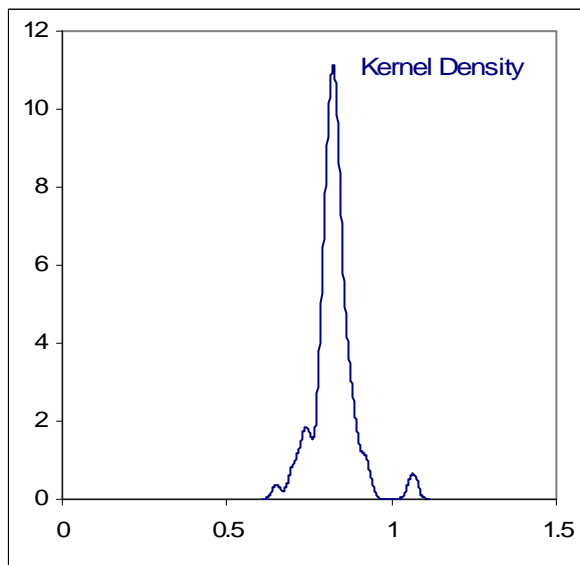
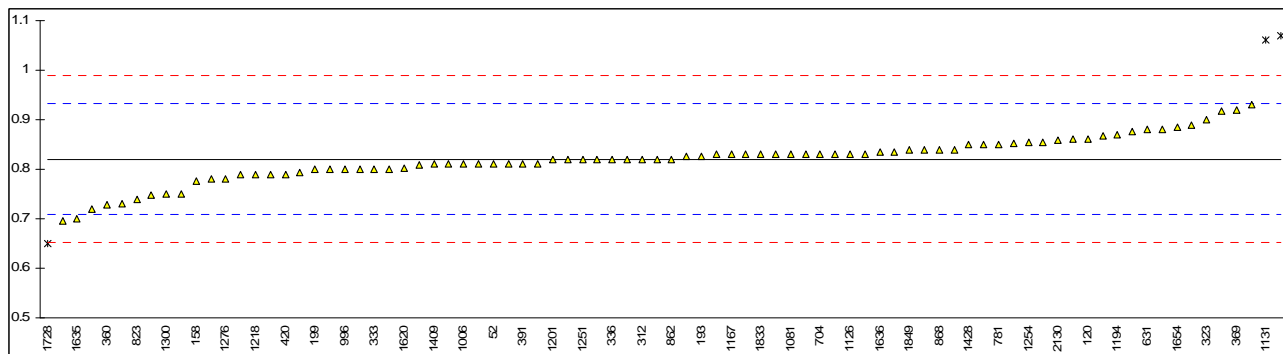
Determination of Aromatics by GC on sample #1009; results in %M/M

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52	Nat meth	33.2		-3.01		996		----		----	
62	Nat meth	33.406		-2.67		1006		----		----	
92	Nat meth	34.11		-1.53		1016		----		----	
120	D5769	36.38		2.18		1017		----		----	
150		----		----		1033		----		----	
158	D5769	32.95		-3.42		1038		----		----	
159	D5769	36.06		1.66		1059		----		----	
169		----		----		1066	EN22854	35.42		0.61	
171		----		----		1081		----		----	
180	D5769	31.67	DG(0.05)	-5.51		1108	EN14517	35.05		0.01	
193	D5769	36.76		2.80		1109	D6839	34.49		-0.90	
194		----		----		1126	D6839	34.84		-0.33	
199	D5769	31.69	DG(0.05)	-5.48		1131	ISO22854	34.96		-0.14	
217		----		----		1140		----		----	
221		----		----		1161	EN14517	35.473		0.70	
224		----		----		1162	D6839	35.80		1.23	
225		----		----		1167		----		----	
228		----		----		1171		----		----	
230		----		----		1186		----		----	
237		----		----		1194		----		----	
238		----		----		1201	EN14517	35.8		1.23	
252		----		----		1203	EN14517	35.2		0.25	
253		----		----		1205		----		----	
254		----		----		1215		----		----	
256		----		----		1218		----		----	
258		----		----		1231		----		----	
273		----		----		1251	EN14517	35.2		0.25	
311	EN14517	35.2		0.25		1254		----		----	
312	D6839	34.89		-0.25		1257		----		----	
317		----		----		1276		----		----	
323	EN22854	34.9		-0.24		1300	EN14517	37.1866		3.50	
333		----		----		1310		----		----	
334		----		----		1406	EN14517	41.8	G(0.01)	11.03	
335		----		----		1407		----		----	
336		----		----		1409	ISO22854	34.8		-0.40	
337		----		----		1427		----		----	
338		----		----		1428		----		----	
340		----		----		1501	D6293	33.97		-1.75	
343		----		----		1531		----		----	
353		----		----		1620	D5580	33.36		-2.75	
360		----		----		1634		----		----	
369		----		----		1635		----		----	
371		----		----		1636		----		----	
391		----		----		1650		----		----	
399	EN14517	35.59		0.89		1654		----		----	
420	INH-656150	34.6		-0.73		1657		----		----	
430		----		----		1720		----		----	
433		----		----		1721		----		----	
440		----		----		1724		----		----	
445	EN14517	35.92		1.43		1728		----		----	
447		----		----		1730		----		----	
463		----		----		1740		----		----	
468		----		----		1810	EN14517	34.85		-0.32	
485		----		----		1811	EN14517	34.89		-0.25	
511		----		----		1826	EN14517	34.88		-0.27	
541		----		----		1833	EN14517	35.56		0.84	
557		----		----		1842		----		----	
562		----		----		1849		----		----	
631	D6839	34.45	C	-0.97	Fr 38.90	1854		----		----	
657	D6293	35.93		1.45		1864	D5134	36.858		2.96	
663		----		----		1936		----		----	
671		----		----		1937		----		----	
704	D5580	34.644		-0.65		1938		----		----	
752		----		----		2129	D6730	36.68		2.67	
759		----		----		2130	D6730	29.73	G(0.01)	-8.67	
781		----		----		2146		----		----	
823	D5580	34.52		-0.86		7003	D5134	28.737	ex	-10.30	%M/M < %V/V
862	D6839	34.87		-0.28		8010		----		----	
868	D6839	35.10		0.09							
875		----		----							
904		----		----			normality	OK			
912		----		----			n	41			
962	D6839	35.1		0.09			outliers	4			
974	D6839	32.97		-3.39			mean (n)	35.044			
994		----		----			st.dev. (n)	1.0146			
995		----		----			R(calc.)	2.841			
							R(EN14517:04)	1.715			



Determination of Benzene on sample #1009; results in %V/V

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52	Nat meth	0.81		-0.18		996	D6277	0.80		-0.36	
62	Nat meth	0.852		0.57		1006	D5580	0.81		-0.18	
92	Nat meth	0.82		0.00		1016		----		----	
120	D3606	0.861		0.73		1017		----		----	
150	D3606	0.81		-0.18		1033		----		----	
158	D3606	0.776		-0.79		1038	D6839	0.81		-0.18	
159	D3606	0.831		0.19		1059	EN12177	0.93		1.96	
169	D3606	0.748237		-1.29		1066	EN22854	0.83		0.17	
171	D3606	0.855		0.62		1081	EN14517	0.83		0.17	
180	D3606	0.8081		-0.22		1108	EN238	0.88		1.07	
193	D3606	0.826		0.10		1109	D6839	0.83		0.17	
194		----		----		1126	D6839	0.83		0.17	
199	D3606	0.80		-0.36		1131	EN12177	1.06	G(0.01)	4.29	
217		----		----		1140		----		----	
221		----		----		1161	EN14517	0.826		0.10	
224		----		----		1162	D6839	0.835		0.26	
225		----		----		1167	EN14517	0.83		0.17	
228		----		----		1171	D6277	0.789		-0.56	
230		----		----		1186		----		----	
237		----		----		1194	D6277	0.87		0.89	
238		----		----		1201	D3606	0.82		0.00	
252		----		----		1203	EN14517	0.82		0.00	
253		----		----		1205	EN14517	0.84		0.35	
254		----		----		1215		----		----	
256		----		----		1218	EN22854	0.79		-0.54	
258		----		----		1231	D6293	0.830		0.17	
273		----		----		1251	D3606	0.82		0.00	
311	EN14517	0.81		-0.18		1254	IP429	0.855		0.62	
312	EN12177	0.82		0.00		1257		----		----	
317		----		----		1276	D6277	0.78		-0.72	
323	EN238	0.9		1.43		1300	D3606	0.7495		-1.27	
333	D3606	0.8		-0.36		1310		----		----	
334		----		----		1406	EN238	0.696	C	-2.22	Fr 0.596
335		----		----		1407	IN HOUSE	0.73		-1.61	
336	EN238	0.82		0.00		1409	ISO22854	0.81		-0.18	
337		----		----		1427		----		----	
338		----		----		1428	EN12177	0.85		0.53	
340	EN238	0.78		-0.72		1501	D6293	0.85		0.53	
343	EN238	0.80	C	-0.36	Fr 0.49	1531		----		----	
353		----		----		1620	D5580	0.803		-0.31	
360	EN12177	0.729		-1.63		1634		----		----	
369	EN238	0.92		1.78		1635	EN238	0.70		-2.15	
371		----		----		1636	EN238	0.835		0.26	
391	EN12177	0.81		-0.18		1650		----		----	
399	EN14517	0.83		0.17		1654	D6729	0.88574		1.17	
420	EN12177	0.79		-0.54		1657		----		----	
430		----		----		1720		----		----	
433		----		----		1721	D6277	0.80		-0.36	
440		----		----		1724	EN12177	0.918		1.75	
445	EN14517	0.79		-0.54		1728	EN238	0.65	CG(0.05)	-3.04	Fr 0.96
447		----		----		1730		----		----	
463	D3606	0.868		0.85		1740		----		----	
468		----		----		1810	D3606	0.82		0.00	
485		----		----		1811	D3606	0.82		0.00	
511		----		----		1826	D3606	0.793		-0.49	
541	D6730	0.72		-1.79		1833	EN12177	0.83		0.17	
557		----		----		1842		----		----	
562		----		----		1849	D3606	0.839		0.33	
631	D6839	0.88		1.07		1854	D3606	0.86		0.71	
657	D5580	0.81		-0.18		1864	D5134	0.8759		0.99	
663		----		----		1936		----		----	
671		----		----		1937		----		----	
704	D5580	0.83		0.17		1938		----		----	
752	EN12177	0.75		-1.26		2129	D6730	0.83		0.17	
759		----		----		2130	D6730	0.858		0.67	
781	D6277	0.85		0.53		2146	EN12177	0.80		-0.36	
823	D3606	0.74		-1.44		7003	D5134	1.070	G(0.01)	4.46	
862	D6839	0.82		0.00		8010		----		----	
868	D6839	0.84		0.35							
875		----		----							
904		----		----			normality	not OK			
912		----		----			n	81			
962	D6839	0.84		0.35			outliers	3			
974	D6839	0.89		1.25			mean (n)	0.820			
994		----		----			st.dev. (n)	0.0457			
995		----		----			R(calc.)	0.128			
							R(D3606:07)	0.157			



Determination of Copper strip 3hrs/50°C on sample #1009;

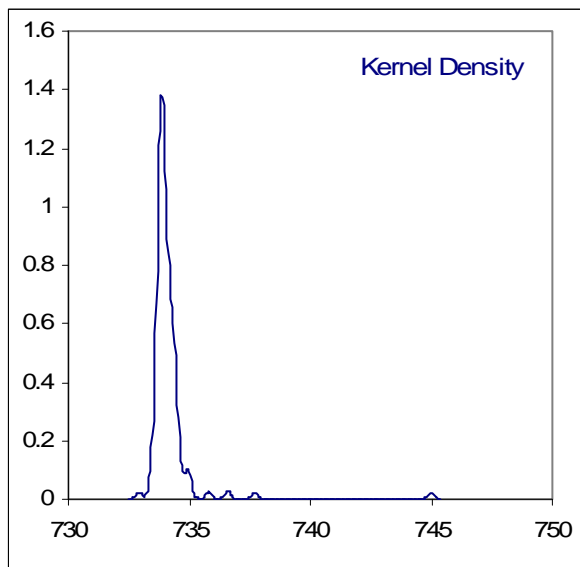
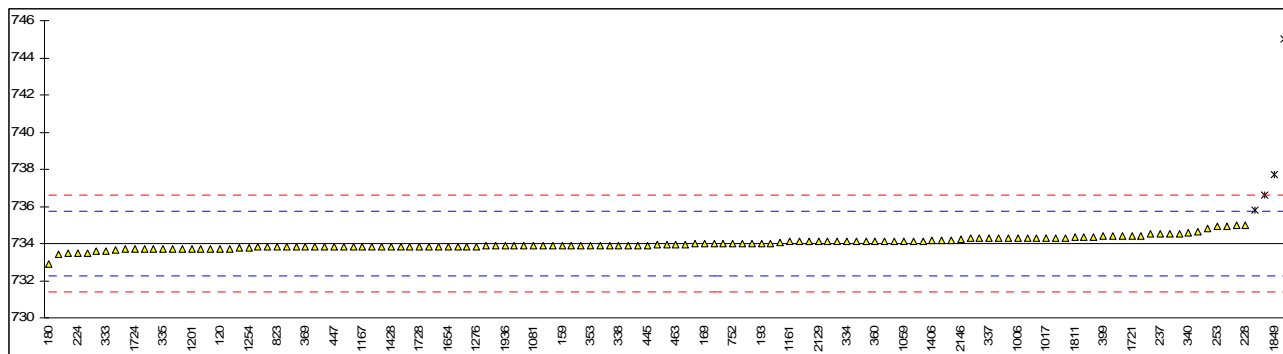
lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52	D130	1A		----		996	D130	1A		----	
62	D130	1A		----		1006	D130	1A		----	
92	D130	1A		----		1016	D130	1		----	
120	D130	1A		----		1017	D130	1A		----	
150	D130	1A		----		1033	IP154	1B		----	
158	D130	1A		----		1038	D130	1A		----	
159		----		----		1059	D130	1A		----	
169	D130	1A		----		1066	D130	1A		----	
171	D130	1A		----		1081	D130	1A		----	
180		----		----		1108	D130	1A		----	
193	D130	1A		----		1109	D130	1A		----	
194	D130	1A		----		1126		----		----	
199		----		----		1131	ISO2160	1A		----	
217		----		----		1140	D130	1A		----	
221	D130	1A		----		1161	ISO2160	1		----	
224		----		----		1162	D130	1A		----	
225		----		----		1167	D130	1A		----	
228	D130	1A		----		1171	ISO2160	1A		----	
230	D130	1A		----		1186		----		----	
237		----		----		1194		----		----	
238	D130	1A		----		1201	D130	1A		----	
252	D130	1A		----		1203	ISO2160	1		----	
253	D130	1A		----		1205		----		----	
254	D130	1A		----		1215		----		----	
256		----		----		1218		----		----	
258	D130	1A		----		1231	D130	1A		----	
273	D130	1A		----		1251	D130	1A		----	
311	D130	1A		----		1254	D130	1A		----	
312	D130	1A		----		1257		----		----	
317	D130	1A		----		1276	D130	1A		----	
323	D130	1A		----		1300	D130	1		----	
333		----		----		1310	ISO2160	1		----	
334		----		----		1406	D130	1A		----	
335	D130	1B		----		1407		----		----	
336		----		----		1409	D130	1A		----	
337		----		----		1427	D130	1A		----	
338		----		----		1428	D130	1A		----	
340	D130	1A		----		1501	D130	1A		----	
343	D130	1A		----		1531		----		----	
353	D130	1A		----		1620	D130	1		----	
360	D130	1A		----		1634	D130	1A		----	
369	D130	1A		----		1635	D130	1A		----	
371	D130	1A		----		1636	D130	1A		----	
391		----		----		1650	D130	1A		----	
399	D130	1A		----		1654	D130	1A		----	
420	ISO2160	1		----		1657	D130	1		----	
430		----		----		1720	D130	1A		----	
433		----		----		1721	D130	1		----	
440	D130	1A		----		1724	D130	1A		----	
445	D130	1A		----		1728	D130	1A		----	
447	D130	1A		----		1730		----		----	
463	D130	1A		----		1740		----		----	
468	D130	1A		----		1810		----		----	
485		----		----		1811	D130	1		----	
511	D130	1A		----		1826	D130	1		----	
541	D130	1		----		1833	D130	1A		----	
557		----		----		1842		----		----	
562	D130	1A		----		1849	D130	1B		----	
631	D130	1A		----		1854	D130	1A		----	
657	D130	1		----		1864	ISO2160	1A		----	
663	D130	1A		----		1936		----		----	
671	D130	1A		----		1937		----		----	
704	D130	1A		----		1938		----		----	
752	D130	1A		----		2129	D130	1A		----	
759		----		----		2130	D130	1A		----	
781	D130	1A		----		2146		----		----	
823	D130	1		----		7003		----		----	
862	D130	1A		----		8010		----		----	
868	D130	1A		----							
875	D130	1A		----			normality	n.a.			
904	D130	1A		----			n	95			
912	D130	1A		----			outliers	0			
962	D130	1A		----			mean (n)	1			
974	D130	1A		----			st.dev. (n)	n.a.			
994	D130	1A		----			R(calc.)	n.a.			
995		----		----			R(D130:04e1)	n.a.			

Determination of Doctor Test on sample #1009;

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52	D4952	NEG		----		996	D4952	NEG		----	
62		----		----		1006		----		----	
92	D4952	NEG		----		1016	D4952	NEG		----	
120	D4952	NEG		----		1017		----		----	
150	D4952	NEG		----		1033		----		----	
158	D4952	NEG		----		1038	IP30	NEG		----	
159	D4952	NEG		----		1059	ISO5275	NEG		----	
169		----		----		1066	D4952	NEG		----	
171	D4952	NEG		----		1081		----		----	
180		----		----		1108	D4952	NEG		----	
193		----		----		1109	IP30	NEG		----	
194	D4952	NEG		----		1126		----		----	
199	D4952	NEG		----		1131		----		----	
217		----		----		1140	IP30	NEG		----	
221		----		----		1161		----		----	
224		----		----		1162		----		----	
225		----		----		1167		----		----	
228		----		----		1171		----		----	
230	D4952	NEG		----		1186		----		----	
237	D4952	NEG		----		1194		----		----	
238	D4952	NEG		----		1201	D4952	NEG		----	
252	IP30	NEG		----		1203	D4952	NEG		----	
253		----		----		1205		----		----	
254	D4952	NEG		----		1215		----		----	
256	D4952	NEG		----		1218		----		----	
258	IP30	NEG		----		1231		----		----	
273	D4952	NEG		----		1251	D4952	NEG		----	
311	D4952	NEG		----		1254	D4952	NEG		----	
312	IP30	NEG		----		1257		----		----	
317	IP30	NEG		----		1276	D4952	NEG		----	
323	D4952	NEG		----		1300	D4952	NEG		----	
333		----		----		1310		----		----	
334	D4952	NEG		----		1406		----		----	
335		----		----		1407		----		----	
336	D4952	NEG		----		1409		----		----	
337	D4952	NEG		----		1427	D4952	POS		----	False pos?
338		----		----		1428	D4952	NEG		----	
340	ISO5275	NEG		----		1501	D4952	NEG		----	
343		----		----		1531		----		----	
353		----		----		1620	D4952	NEG		----	
360	D4952	NEG		----		1634		----		----	
369	D4952	NEG		----		1635	D4952	NEG		----	
371		----		----		1636		----		----	
391	D4952	NEG		----		1650		----		----	
399	D4952	NEG		----		1654	D4952	NEG		----	
420		----		----		1657	D4952	NEG		----	
430		----		----		1720	D4952	NEG		----	
433		----		----		1721		----		----	
440	IP30	NEG		----		1724	IP30	NEG		----	
445	D4952	NEG		----		1728	D4952	NEG		----	
447	D4952	NEG		----		1730		----		----	
463	D4952	NEG		----		1740		----		----	
468		----		----		1810		----		----	
485		----		----		1811	D4952	NEG		----	
511		----		----		1826	D4952	NEG		----	
541	IP30	NEG		----		1833	D4952	NEG		----	
557		----		----		1842		----		----	
562		----		----		1849	D4952	NEG		----	
631	D4952	NEG		----		1854	D4952	NEG		----	
657	D4952	NEG		----		1864	D4952	NEG		----	
663	D4952	NEG		----		1936		----		----	
671	D4952	NEG		----		1937		----		----	
704	D4952	NEG		----		1938		----		----	
752	D4952	NEG		----		2129	D4952	NEG		----	
759		----		----		2130	IP30	NEG		----	
781	D4952	NEG		----		2146		----		----	
823	D4952	NEG		----		7003		----		----	
862	D4952	NEG		----		8010		----		----	
868	D4952	NEG		----							
875		----		----							
904	D4952	NEG		----							
912		----		----							
962	D4952	NEG		----							
974	D4952	NEG		----							
994	D4952	NEG		----							
995		----		----							

Determination of Density @ 15°C on sample #1009; results in kg/m³

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52	D4052	734.3		0.33		996	D1298	734.1		0.10	
62	D4052	733.90		-0.13		1006	D4052	734.3		0.33	
92	D4052	733.7		-0.35		1016		-----		-----	
120	D4052	733.7		-0.35		1017	D4052	734.3		0.33	
150	D4052	733.9		-0.13		1033	IP365	733.8		-0.24	
158	D4052	733.9		-0.13		1038	D4052	733.7		-0.35	
159	D4052	733.9		-0.13		1059	D4052	734.1		0.10	
169	D4052	734.0		-0.01		1066	D4052	733.7		-0.35	
171	D4052	734.1		0.10		1081	ISO12185	733.9		-0.13	
180	D4052	732.9		-1.27		1108	D4052	733.95		-0.07	
193	D4052	734.0		-0.01		1109	D4052	733.86		-0.17	
194	D4052	733.98		-0.03		1126	D4052	734.95		1.07	
199	D4052	734.0	C	-0.01	Fr 0.7340	1131	ISO12185	733.8		-0.24	
217		-----		-----		1140	D4052	733.8	C	-0.24	Fr 0.7338
221	D4052	733.8		-0.24		1161	ISO12185	734.09		0.09	
224	D1298	733.5		-0.58		1162	D1298	734.4		0.45	
225		-----		-----		1167	D4052	733.8		-0.24	
228	D1298	735.0		1.13		1171	D4052	734.066		0.06	
230	D1298	734.4	C	0.45	Fr 735.0	1186		-----		-----	
237	D1298	734.5		0.56		1194		-----		-----	
238	D1298	734.5	C	0.56	Fr 735.5	1201	D4052	733.7		-0.35	
252	D4052	734.36		0.40		1203	ISO12185	733.8		-0.24	
253	D4052	734.9		1.02		1205		-----		-----	
254	D4052	733.65		-0.41		1215	D1298	734.1		0.10	
256	D4052	733.8		-0.24		1218	D4052	735.0	C	1.13	Fr 744.30
258	D1298	734.1		0.10		1231	D4052	734.36		0.40	
273		-----		-----		1251	D4052	733.9		-0.13	
311	D4052	733.9		-0.13		1254	D4052	733.78		-0.26	
312	D4052	733.5		-0.58		1257		-----		-----	
317	D4052	733.8		-0.24		1276	D4052	733.83	C	-0.21	Fr 0.73383
323	D4052	733.4		-0.70		1300	D4052	733.71		-0.34	
333	D4052	733.6		-0.47		1310	ISO12185	734.3		0.33	
334	D4052	734.1		0.10		1406	ISO12185	734.2		0.22	
335	D4052	733.7		-0.35		1407	ISO12185	734.8		0.90	
336	D4052	733.9		-0.13		1409	ISO12185	734.1		0.10	
337	D4052	734.3		0.33		1427	D4052	733.8		-0.24	
338	D4052	733.9		-0.13		1428	ISO12185	733.8		-0.24	
340	D4052	734.6		0.67		1501	D4052	733.5		-0.58	
343	D4052	734.61		0.69		1531		-----		-----	
353	D4052	733.9		-0.13		1620	D4052	733.89		-0.14	
360	D4052	734.1		0.10		1634	D4052	734.2		0.22	
369	D4052	733.8		-0.24		1635	D4052	734.3		0.33	
371	D4052	734.0		-0.01		1636	D4052	733.6		-0.47	
391	EN12185	733.8		-0.24		1650	D4052	733.78		-0.26	
399	D1298	734.4		0.45		1654	D4052	733.8		-0.24	
420	ISO12185	733.8		-0.24		1657	D4052	736.6	CG(0.01)	2.96	Fr 0.7366
430		-----		-----		1720	D4052	733.9		-0.13	
433	EN12185	734.3		0.33		1721	D4052	734.4		0.45	
440	D4052	734.1		0.10		1724	D4052	733.7		-0.35	
445	D4052	733.9		-0.13		1728	D4052	733.8		-0.24	
447	D4052	733.8		-0.24		1730	D4052	734.4		0.45	
463	D4052	733.93		-0.09		1740	ISO3675	734.3		0.33	
468	D4052	733.9		-0.13		1810	D4052	734.3		0.33	
485	D4052	733.7		-0.35		1811	D4052	734.35		0.39	
511	D1298	734.5		0.56		1826	D4052	733.8		-0.24	
541		-----		-----		1833	D4052	734.0		-0.01	
557		-----		-----		1842	D4052	733.7	C	-0.35	Fr 0.7337
562	D4052	734.53		0.59		1849	D4052	737.7	CG(0.01)	4.22	Fr 736.82
631	D4052	734.1		0.10		1854	D4052	734.2		0.22	
657	D4052	733.9		-0.13		1864	ISO12185	733.92		-0.10	
663	D4052	734.1		0.10		1936	ISO12185	733.9		-0.13	
671	D4052	735.8	G(0.01)	2.05		1937	D4052	733.9		-0.13	
704	D4052	733.7		-0.35		1938	D4052	734.3		0.33	
752	D4052	734.0		-0.01		2129	D4052	734.1		0.10	
759	D4052	733.83		-0.21		2130	D4052	745.0	CG(0.01)	12.56	Fr 0.745
781	D4052	733.8		-0.24		2146	ISO12185	734.21		0.23	
823	D4052	733.8		-0.24		7003	D4052	733.8	C	-0.24	Fr 373.8
862	D4052	734.00		-0.01		8010	D4052	734.3		0.33	
868	D4052	733.92		-0.10							
875	D4052	733.7		-0.35							
904	D4052	733.8		-0.24			normality	not OK			
912	D4052	734.1		0.10			n	127			
962	D4052	733.8		-0.24			outliers	4			
974	D4052	734.0		-0.01			mean (n)	734.01			
994	D4052	734.1		0.10			st.dev. (n)	0.329			
995		-----		-----			R(calc.)	0.92			
							R(D4052:09)	2.45			Compare R(D4052:02e1) = 0.50



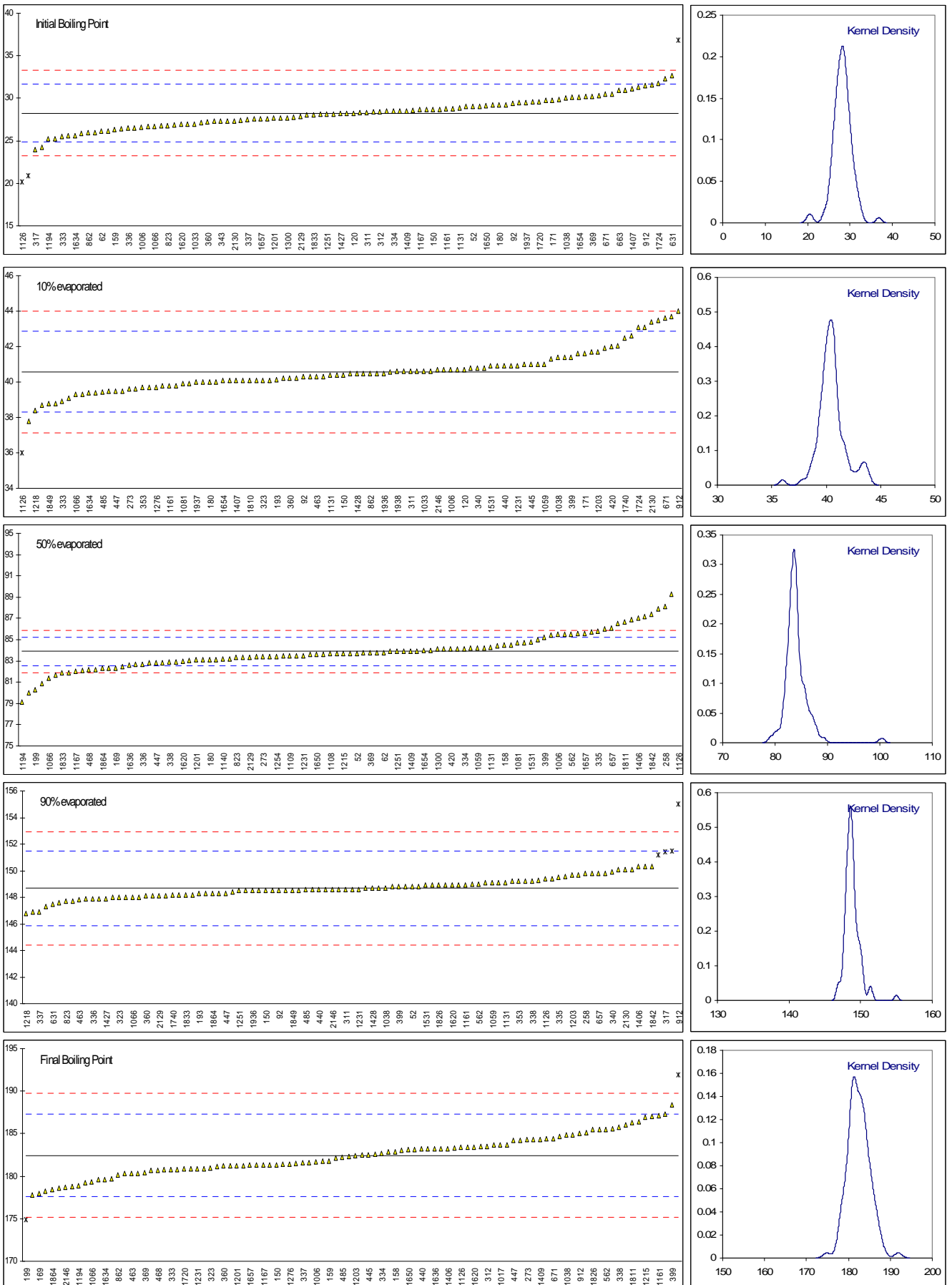
Determination of Distillation ASTM D86 (automated) on sample #1009; results in °C (Res in %)

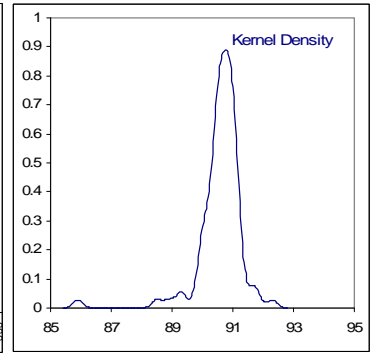
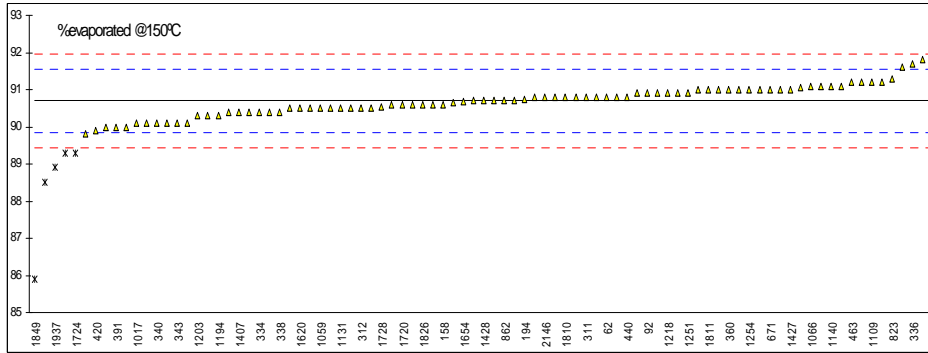
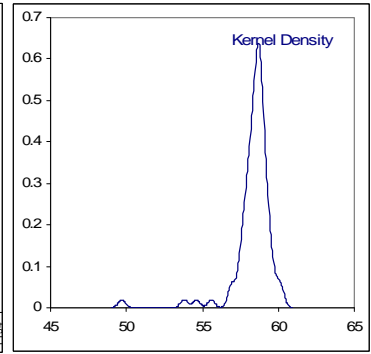
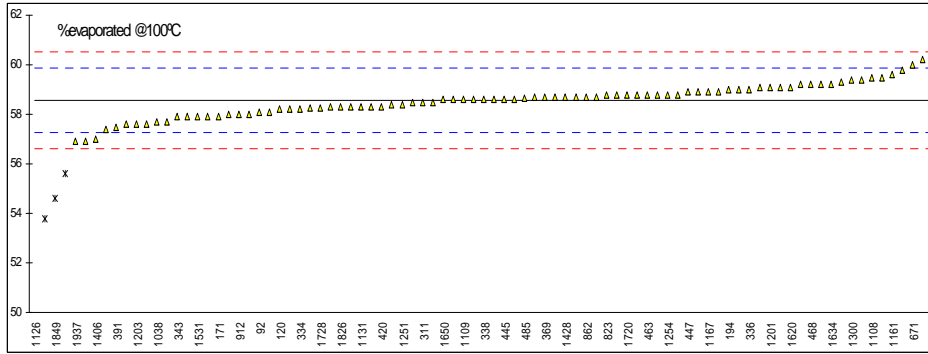
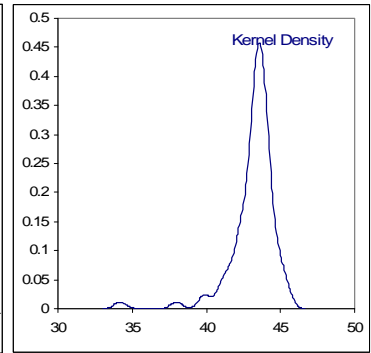
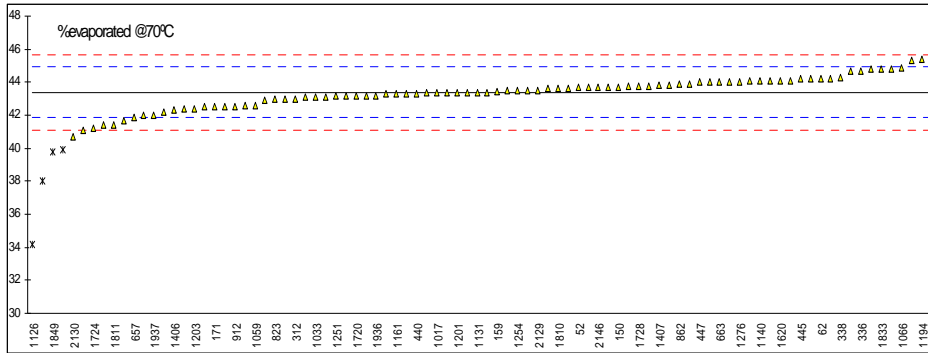
lab	method	IBP	10% eva	50% eva	90% eva	FBP	% eva 70°C	%eva 100°C	%eva 150°C	Res %
52	D86	29.0	40.3	83.7	148.8	182.3	43.7	----	----	1.0
62	D86	26.1	39.1	83.8	148.1	181.5	44.2	58.2	90.8	1.1
92	D86	29.4	40.3	84.7	148.5	184.7	43.2	58.1	90.9	1.0
120	D86	28.2	40.7	83.5	148.3	183.0	43.0	58.2	90.9	1.1
150	D86	28.7	40.4	83.9	148.5	181.3	43.7	58.3	90.8	1.2
158	D86	27.1	40.0	84.5	148.9	182.9	43.4	57.9	90.6	1.1
159	D86	26.3	40.6	83.6	148.6	181.8	43.46	58.68	90.64	1.2
169	D86	26.5	39.8	82.3	148.2	178.0	----	----	----	1.0
171	D86	29.8	41.6	84.1	149.2	181.3	42.5	57.9	90.4	1.0
180	D86	29.2	40.0	83.1	148.3	182.6	43.785	58.913	91.071	0.9
193	D86	32.28	40.11	83.39	148.28	184.22	----	----	----	0.7
194	D86	29.05	40.55	83.11	148.55	184.39	43.35	58.99	90.74	0.8
199	D86	<u>20.9</u>	38.8	80.3	146.9	<u>174.9</u>	45.3	60.2	91.1	1.0
217		----	----	----	----	----	----	----	----	----
221		----	----	----	----	----	----	----	----	----
224		----	----	----	----	----	----	----	----	----
225		----	----	----	----	----	----	----	----	----
228		----	----	----	----	----	----	----	----	----
230		----	----	----	----	----	----	----	----	----
237		----	----	----	----	----	----	----	----	----
238		----	----	----	----	----	----	----	----	----
252		----	----	----	----	----	----	----	----	----
253		----	----	----	----	----	----	----	----	----
254		----	----	----	----	----	----	----	----	----
256		----	----	----	----	----	----	----	----	----
258	D86	30.5	43.1	88.1	149.8	185.1	41.4	<u>53.8</u>	<u>89.3</u>	1.1
273	D86	28.4	39.6	83.4	148.0	184.3	----	----	----	0.8
311	D86	28.3	40.6	83.3	148.6	181.8	43.9	58.5	90.8	1.0
312	D86	28.4	41.0	85.4	149.1	183.5	43.0	57.7	90.5	1.1
317	D86	24.0	40.4	87.9	<u>151.4</u>	180.8	43.5	58.7	91.0	0.9
323	D86	28.2	40.1	83.1	148.0	181.0	44.0	58.8	91.1	1.0
333	D86	25.5	38.9	82.2	147.6	180.8	44.8	59.3	<u>92.3</u>	0.8
334	D86	28.5	40.9	84.1	149.4	182.7	43.2	58.2	90.4	1.0
335	D86	27.6	40.9	85.8	149.5	181.2	43.6	58.5	90.3	1.5
336	D86	26.5	40.0	82.7	147.9	179.6	44.7	59.0	91.7	0.8
337	D86	27.5	37.8	80.9	146.9	181.6	45.5	59.4	91.8	0.5
338	D86	28.1	39.4	82.9	149.2	185.8	44.3	58.6	90.4	1.0
340	D86	28.5	40.8	84.0	149.9	178.6	43.5	58.3	90.1	1.2
343	D86	27.3	----	----	----	181.1	41.7	57.9	90.1	1.0
353	IP123	28.0	39.7	83.7	149.2	180.3	43.7	58.6	90.5	1.4
360	D86	27.2	40.2	83.2	148.1	181.2	43.8	58.8	91.0	1.0
369	D86	30.2	43.5	83.8	148.5	180.4	42.2	58.7	90.7	0.9
371		----	----	----	----	----	----	----	----	----
391	D86	29.8	40.1	85.7	149.8	183.2	42.0	57.5	90.0	1
399	D86	27.3	41.4	85.2	148.8	188.4	42.5	57.9	90.7	0.6
420	ISO3405	28.3	42.0	84.1	147.9	178.2	41.1	58.3	89.9	1.0
430		----	----	----	----	----	----	----	----	----
433		----	----	----	----	----	----	----	----	----
440	D86	26.9	40.9	85.0	148.6	183.2	43.3	58.0	90.8	0.8
445	IP123	36.8	41.0	80.0	148.0	182.5	44.2	58.6	90.5	1.0
447	D86	27.7	39.5	82.8	148.3	184.2	44.0	58.9	91.0	0.8
463	D86	29.2	40.3	81.9	147.8	180.3	44.7	58.8	91.2	1.0
468	D86	27.8	39.7	82.2	148.9	180.7	44.2	59.2	90.7	1.0
485	D86	26.66	39.43	83.03	148.56	182.23	44.06	58.66	90.80	1.0
511		----	----	----	----	----	----	----	----	----
541		----	----	----	----	----	----	----	----	----
557		----	----	----	----	----	----	----	----	----
562	D86	29.0	41.0	85.5	149.0	185.5	42.6	57.6	90.4	1.1
631	D86	32.7	41.9	84.1	147.5	187.3	----	----	----	0.8
657	D86	29.5	41.4	86.1	149.8	183.1	41.9	57.6	90.1	1.4
663	D86	30.9	42.6	84.4	148.5	181.2	44	58	91	1.1
671	D86	30.5	43.6	87.2	148.7	184.4	<u>38.0</u>	60.0	91.0	1.1
704		----	----	----	----	----	----	----	----	----
752		----	----	----	----	----	----	----	----	----
759		----	----	----	----	----	----	----	----	----
781		----	----	----	----	----	----	----	----	----
823	D86	26.8	40.5	83.3	147.7	183.7	43.0	58.8	91.3	1.2
862	D86	26.0	40.5	83.9	148.6	180.1	43.9	58.7	90.7	0.8
868		----	----	----	----	----	----	----	----	----
875		----	----	----	----	----	----	----	----	----
904		----	----	----	----	----	----	----	----	----
912	D86	31.5	44.0	86.0	<u>155.0</u>	185.0	42.5	58.0	<u>88.5</u>	1.2
962		----	----	----	----	----	----	----	----	----
974		----	----	----	----	----	----	----	----	----
994		----	----	----	----	----	----	----	----	----
995		----	----	----	----	----	----	----	----	----
996		----	----	----	----	----	----	----	----	----

1006	D86	26.6	40.7	85.5	150.1	181.7	----	----	----	1.5
1016		----	----	----	----	----	----	----	----	----
1017	D86	26.1	40.8	86.5	150.1	183.7	43.4	58.1	90.1	1.2
1033	IP123	27.0	40.6	83.9	150.3	177.8	43.1	58.6	90.0	2.0
1038	D86	30.0	41.4	85.6	148.7	184.9	42.4	57.7	90.8	1.0
1059	ISO3405	29.2	41.0	84.2	149.1	184.9	42.6	58.6	90.5	1.4
1066	D86	26.7	39.3	81.4	148.0	179.3	44.9	59.5	91.1	1.0
1081	D86	27.0	39.9	84.7	148.6	180.8	----	----	----	----
1108	D86	31.6	43.7	83.7	148.8	186.0	39.9	59.5	90.6	0.8
1109	D86	31.3	40.6	83.5	148.0	183.4	43.6	58.6	91.2	0.9
1126	D86	20.2	36.0	100.4	149.4	183.4	34.2	49.7	90.5	----
1131	D86	28.9	40.4	84.3	149.1	182.1	43.4	58.3	90.5	1.2
1140	D86	24.2	39.3	83.2	147.9	180.7	44.1	58.7	91.1	1.0
1161	ISO3405	28.8	39.8	82.8	148.9	187.1	43.3	59.6	90.6	1
1162		----	----	----	----	----	----	----	----	----
1167	D86	28.7	40.1	82.0	148.5	181.3	44.1	58.9	91.2	1.0
1171		----	----	----	----	----	----	----	----	----
1186		----	----	----	----	----	----	----	----	----
1194	D86	25.2	38.7	79.1	149.55	178.9	45.4	60.2	90.3	1.1
1201	D86	27.7	40.5	83.1	149.7	181.2	43.4	59.1	90.1	1.5
1203	ISO3405	28.8	41.7	85.5	149.7	182.4	42.4	57.6	90.3	1.0
1205		----	----	----	----	----	----	----	----	----
1215	D86	27.3	40.2	83.7	148.5	186.9	----	----	----	0.8
1218	D86	28.6	38.4	82.9	146.8	183.2	44.0	58.8	90.9	----
1231	D86	28.7	40.9	83.5	148.6	180.9	----	----	----	1.3
1251	D86	28.1	40.7	83.9	148.5	181.4	43.2	58.4	90.9	1.0
1254	D86	25.2	39.5	83.4	148.2	180.9	43.5	58.8	91.0	1.0
1257		----	----	----	----	----	----	----	----	----
1276	D86	27.4	39.7	82.7	148.1	181.4	44.0	58.7	91.0	1.0
1300	D86	27.71	39.9	84.1	149.8	185.5	42.5	59.4	90.1	0.8
1310		----	----	----	----	----	----	----	----	----
1406	ISO3405	28.5	41.7	87.0	150.3	183.2	42.3	57.0	89.8	1.5
1407	ISO3405	31.1	40.1	83.4	149.2	191.9	43.8	58.8	90.4	0.5
1409	ISO3405	28.5	40.3	83.9	147.3	184.3	43.7	58.4	91.6	1.0
1427	D86	28.2	39.6	82.1	147.9	179.7	44.2	59.2	91.0	1.0
1428	ISO3405	29.6	40.5	83.6	148.7	185.6	43.4	58.7	90.7	0.8
1501		----	----	----	----	----	----	----	----	----
1531	D86	26.0	40.9	84.8	148.9	187.0	42.9	57.9	90.5	0.6
1620	D86	27.0	40.1	83.0	148.9	183.4	44.1	59.1	90.5	1.4
1634	D86	25.6	39.4	82.8	148.8	179.6	43.4	59.2	90.5	1.0
1635		----	----	----	----	----	----	----	----	----
1636	D86	25.6	39.5	82.6	148.4	183.2	44.1	59.1	91.0	0.9
1650	D86	29.1	40.2	83.6	148.9	183.1	43.3	58.6	90.6	1.2
1654	D86	30.10	40.07	84.00	148.60	178.83	43.77	58.27	90.67	1.07
1657	D86	27.6	40.7	85.6	151.2	181.3	----	----	----	1.0
1720	D86	29.6	40.8	83.5	148.8	180.9	43.2	58.8	90.6	1.0
1721		----	----	----	----	----	----	----	----	----
1724	D86	31.8	43.1	86.9	151.5	183.5	41.2	57.4	89.3	1.4
1728	ISO3405	29.828	42.04	84.195	149.075	180.357	43.775	58.275	90.526	1.2
1730		----	----	----	----	----	----	----	----	----
1740	ISO3405	30.2	42.5	83.7	148.2	181.3	43.3	59.8	90.8	1.3
1810	D86	30.1	40.1	82.5	148.7	180.9	43.6	59.1	90.8	1.0
1811	D86	30.9	41.6	86.7	149.0	186.3	41.4	56.9	91.0	1
1826	D86	25.9	40.6	84.5	148.9	185.5	43.1	58.3	90.6	1.1
1833	D86	28.0	39.8	81.9	148.2	183.7	44.8	59.2	90.9	1.0
1842	D86	26.4	41.3	87.4	150.3	184.3	----	----	----	----
1849	D86	27.6	38.8	81.7	148.5	183.3	39.8	54.6	85.9	1.0
1854		----	----	----	----	----	----	----	----	----
1864	ISO3405	30.3	40.1	82.3	148.3	178.4	44.8	58.9	90.9	0.6
1936	ISO3405	28.1	40.5	83.8	148.5	181.6	43.2	58.5	90.8	1.1
1937	D86	29.5	40	82.3	147.7	182.9	42	56.9	88.9	1.0
1938	D86	26.8	40.6	84.2	149.3	182.5	43.1	58.3	90.4	1.2
2129	D86	27.9	40.5	83.3	148.1	179.2	43.5	59.0	91.2	1.3
2130	D86	27.3	43.4	89.3	150.1	186.4	40.7	55.6	90.0	1.2
2146	ISO3405	28.7	40.7	83.8	148.6	178.7	43.7	58.6	90.8	1.6
7003		----	----	----	----	----	----	----	----	----
8010		----	----	----	----	----	----	----	----	----
	normality	OK	not OK	not OK	OK	OK	not OK	OK	OK	
	n	97	98	98	95	98	86	85	83	
	outliers	3	1	1	4	2	4	4	6	
	mean (n)	28.26	40.57	83.88	148.68	182.45	43.40	58.57	90.70	
	st.dev. (n)	1.761	1.164	1.692	0.751	2.332	0.957	0.668	0.397	
	R(calc.)	4.93	3.26	4.74	2.10	6.53	2.68	1.87	1.11	
	R(D86:09e1)	4.73	3.20	1.88	3.96	6.78	2.13	1.83	1.19	

Bold and underlined results are marked as statistical outliers according Grubbs outlier test

Determination of Distillation ASTM D86 (automated) on sample #1009; results in °C (Res in %) (continued)



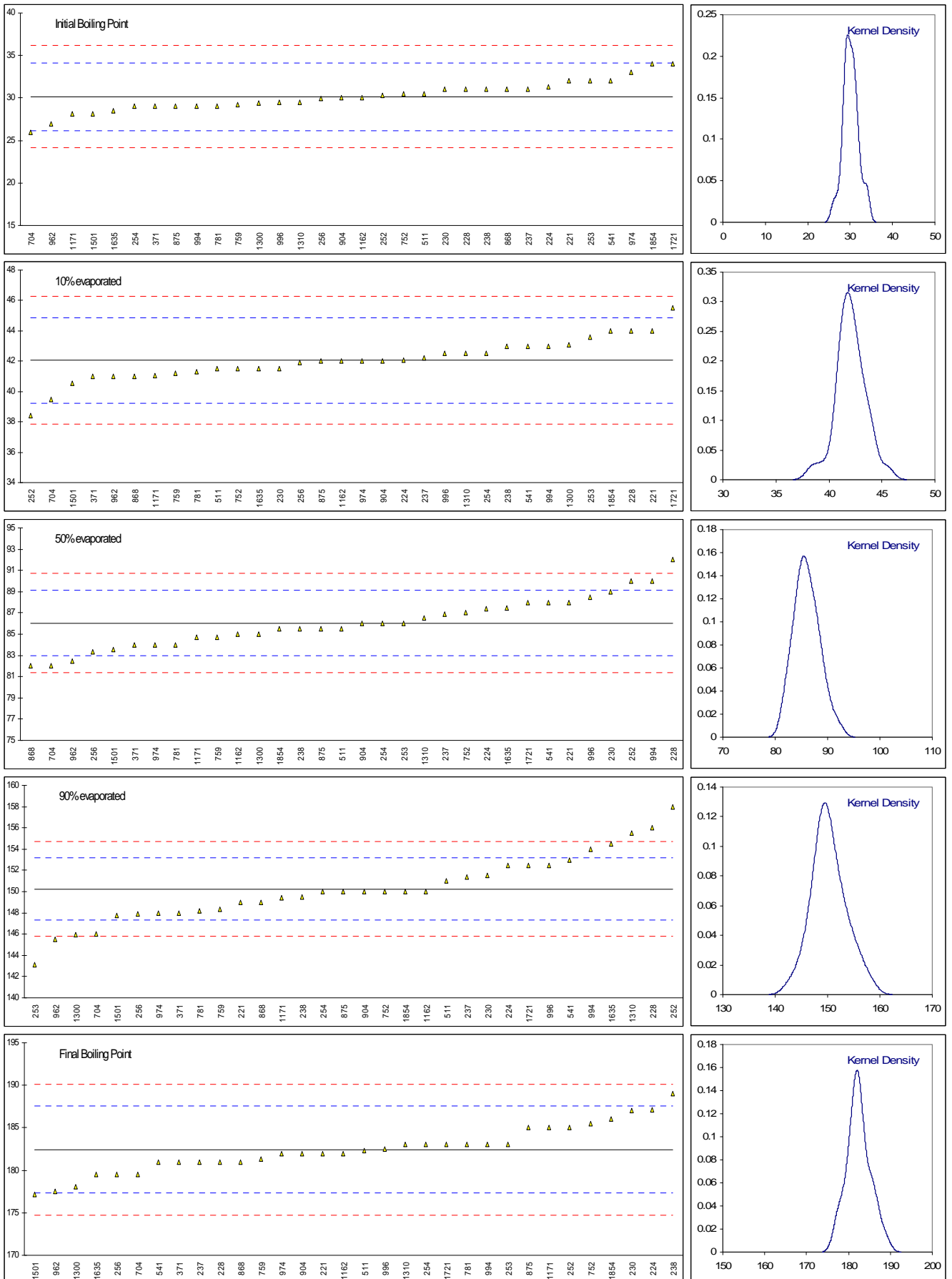


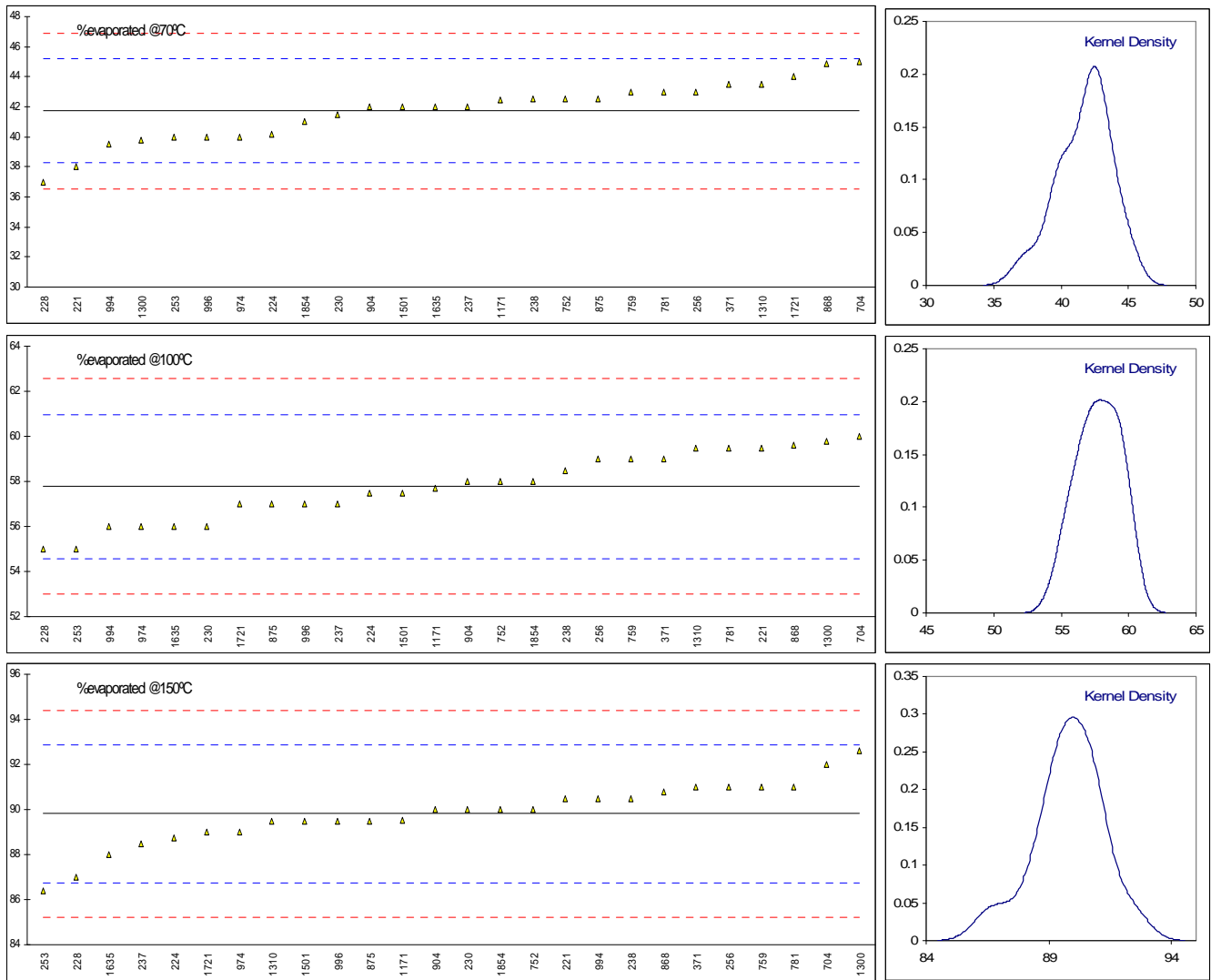
Determination of Distillation ASTM D86 (Manual) on sample #1009; results in °C (Res in %)

lab	method	IBP	10% eva	50% eva	90% eva	FBP	% eva 70°C	%eva 100°C	%eva 150°C	Res %
52		----	----	----	----	----	----	----	----	----
62		----	----	----	----	----	----	----	----	----
92		----	----	----	----	----	----	----	----	----
120		----	----	----	----	----	----	----	----	----
150		----	----	----	----	----	----	----	----	----
158		----	----	----	----	----	----	----	----	----
159		----	----	----	----	----	----	----	----	----
169		----	----	----	----	----	----	----	----	----
171		----	----	----	----	----	----	----	----	----
180		----	----	----	----	----	----	----	----	----
193		----	----	----	----	----	----	----	----	----
194		----	----	----	----	----	----	----	----	----
199		----	----	----	----	----	----	----	----	----
217		----	----	----	----	----	----	----	----	----
221	D86	32.0	44.0	88.0	149.0	182.0	38.0	59.50	90.50	1.0
224	D86	31.29	42.09	87.39	152.49	187.09	40.2	57.5	88.75	1.2
225		----	----	----	----	----	----	----	----	----
228	D86	31.0	44.0	92.0	156.0	181.0	37.0	55.0	87.0	----
230	D86	31.0	41.5	89.0	151.5	187.0	41.5	56.0	90.0	1.0
237	D86	31.0	42.2	86.9	151.4	181.0	42.0	57.0	88.5	2.0
238	D86	31.0	43.0	85.5	149.5	189.0	42.5	58.5	90.5	0.5
252	D86	30.31	38.40	90.0	158.0	185.0	----	----	----	----
253	D86	32.0	43.6	86.0	143.1	183.0	40.0	55.0	86.4	0.8
254	D86	29.0	42.5	86.0	150.0	183.0	----	----	----	----
256	D86	29.95	41.9	83.3	147.9	179.5	43	59	91	1.0
258		----	----	----	----	----	----	----	----	----
273		----	----	----	----	----	----	----	----	----
311		----	----	----	----	----	----	----	----	----
312		----	----	----	----	----	----	----	----	----
317		----	----	----	----	----	----	----	----	----
323		----	----	----	----	----	----	----	----	----
333		----	----	----	----	----	----	----	----	----
334		----	----	----	----	----	----	----	----	----
335		----	----	----	----	----	----	----	----	----
336		----	----	----	----	----	----	----	----	----
337		----	----	----	----	----	----	----	----	----
338		----	----	----	----	----	----	----	----	----
340		----	----	----	----	----	----	----	----	----
343		----	----	----	----	----	----	----	----	----
353		----	----	----	----	----	----	----	----	----
360		----	----	----	----	----	----	----	----	----
369		----	----	----	----	----	----	----	----	----
371	D86	29.0	41.0	84.0	148.0	181.0	43.5	59.0	91.0	1.0
391		----	----	----	----	----	----	----	----	----
399		----	----	----	----	----	----	----	----	----
420		----	----	----	----	----	----	----	----	----
430		----	----	----	----	----	----	----	----	----
433		----	----	----	----	----	----	----	----	----
440		----	----	----	----	----	----	----	----	----
445		----	----	----	----	----	----	----	----	----
447		----	----	----	----	----	----	----	----	----
463		----	----	----	----	----	----	----	----	----
468		----	----	----	----	----	----	----	----	----
485		----	----	----	----	----	----	----	----	----
511	D86	30.5	41.5	85.5	151.0	182.3	----	----	----	1.0
541	D86	32	43	88	153	181	----	----	----	----
557		----	----	----	----	----	----	----	----	----
562		----	----	----	----	----	----	----	----	----
631		----	----	----	----	----	----	----	----	----
657		----	----	----	----	----	----	----	----	----
663		----	----	----	----	----	----	----	----	----
671		----	----	----	----	----	----	----	----	----
704	D86	26.0	39.5	82.0	146.0	179.5	45.0	60.0	92.0	1.0
752	D86	30.5	41.5	87.0	150.0	185.5	42.5	58.0	90.0	1.0
759	D86	29.2	41.2	84.7	148.3	181.3	43.0	59.0	91.0	1.0
781	D86	29.0	41.3	84.0	148.2	183.0	43.0	59.5	91.0	1.0
823		----	----	----	----	----	----	----	----	----
862		----	----	----	----	----	----	----	----	----
868	D86	31.0	41.0	82.0	149.0	181.0	44.9	59.6	90.8	1.2
875	D86	29.0	42.0	85.5	150.0	185.0	42.5	57.0	89.5	0.9
904	D86	30.0	42.0	86.0	150.0	182.0	42.0	58.0	90.0	1.0
912		----	----	----	----	----	----	----	----	----
962	D86	27.0	41.0	82.5	145.5	177.5	----	----	----	1.4
974	D86	33.0	42.0	84.0	148.0	182.0	40.0	56.0	89.0	1.2
994	D86	29.0	43.0	90.0	154.0	183.0	39.5	56	90.5	----
995		----	----	----	----	----	----	----	----	----
996	D86	29.5	42.5	88.5	152.5	182.5	40.0	57.0	89.5	1.0

1006		----	----	----	----	----	----	----	----	----
1016		----	----	----	----	----	----	----	----	----
1017		----	----	----	----	----	----	----	----	----
1033		----	----	----	----	----	----	----	----	----
1038		----	----	----	----	----	----	----	----	----
1059		----	----	----	----	----	----	----	----	----
1066		----	----	----	----	----	----	----	----	----
1081		----	----	----	----	----	----	----	----	----
1108		----	----	----	----	----	----	----	----	----
1109		----	----	----	----	----	----	----	----	----
1126		----	----	----	----	----	----	----	----	----
1131		----	----	----	----	----	----	----	----	----
1140		----	----	----	----	----	----	----	----	----
1161		----	----	----	----	----	----	----	----	----
1162	D86	30.0	42.0	85.0	150.0	182.0	----	----	----	1.3
1167		----	----	----	----	----	----	----	----	----
1171	ISO3405	28.125	41.035	84.680	149.435	185.000	42.449	57.699	89.519	1.05
1186		----	----	----	----	----	----	----	----	----
1194		----	----	----	----	----	----	----	----	----
1201		----	----	----	----	----	----	----	----	----
1203		----	----	----	----	----	----	----	----	----
1205		----	----	----	----	----	----	----	----	----
1215		----	----	----	----	----	----	----	----	----
1218		----	----	----	----	----	----	----	----	----
1231		----	----	----	----	----	----	----	----	----
1251		----	----	----	----	----	----	----	----	----
1254		----	----	----	----	----	----	----	----	----
1257		----	----	----	----	----	----	----	----	----
1276		----	----	----	----	----	----	----	----	----
1300	D86	29.38	43.10	85.00	145.93	178.07	39.8	59.8	92.6	0.9
1310	ISO3405	29.5	42.5	86.5	155.5	183	43.5	59.5	89.5	0.9
1406		----	----	----	----	----	----	----	----	----
1407		----	----	----	----	----	----	----	----	----
1409		----	----	----	----	----	----	----	----	----
1427		----	----	----	----	----	----	----	----	----
1428		----	----	----	----	----	----	----	----	----
1501	D86	28.14	40.56	83.54	147.76	177.20	42.0	57.5	89.5	1.2
1531		----	----	----	----	----	----	----	----	----
1620		----	----	----	----	----	----	----	----	----
1634		----	----	----	----	----	----	----	----	----
1635	D86	28.5	41.5	87.5	154.5	179.5	42	56	88	1.2
1636		----	----	----	----	----	----	----	----	----
1650		----	----	----	----	----	----	----	----	----
1654		----	----	----	----	----	----	----	----	----
1657		----	----	----	----	----	----	----	----	----
1720		----	----	----	----	----	----	----	----	----
1721	D86	34.0	45.5	88.0	152.5	183.0	44.0	57.0	89.0	1.0
1724		----	----	----	----	----	----	----	----	----
1728		----	----	----	----	----	----	----	----	----
1730		----	----	----	----	----	----	----	----	----
1740		----	----	----	----	----	----	----	----	----
1810		----	----	----	----	----	----	----	----	----
1811		----	----	----	----	----	----	----	----	----
1826		----	----	----	----	----	----	----	----	----
1833		----	----	----	----	----	----	----	----	----
1842		----	----	----	----	----	----	----	----	----
1849		----	----	----	----	----	----	----	----	----
1854	D86	34	44	85.5	150	186	41	58	90	0.86
1864		----	----	----	----	----	----	----	----	----
1936		----	----	----	----	----	----	----	----	----
1937		----	----	----	----	----	----	----	----	----
1938		----	----	----	----	----	----	----	----	----
2129		----	----	----	----	----	----	----	----	----
2130		----	----	----	----	----	----	----	----	----
2146		----	----	----	----	----	----	----	----	----
7003		----	----	----	----	----	----	----	----	----
8010		----	----	----	----	----	----	----	----	----
normality	OK	OK	OK	OK	not OK	OK	OK	OK	OK	
n	32	32	32	32	32	26	26	26	26	
outliers	0	0	0	0	0	0	0	0	0	
mean (n)	30.15	42.06	86.05	150.25	182.44	41.72	57.77	89.81	89.81	
st.dev. (n)	1.798	1.380	2.392	3.233	2.773	1.964	1.511	1.389	1.389	
R(calc.)	5.04	3.86	6.70	9.05	7.76	5.50	4.23	3.89	3.89	
R(D86:09e1)	5.60	3.95	4.35	4.15	7.20	4.83	4.46	4.28	4.28	

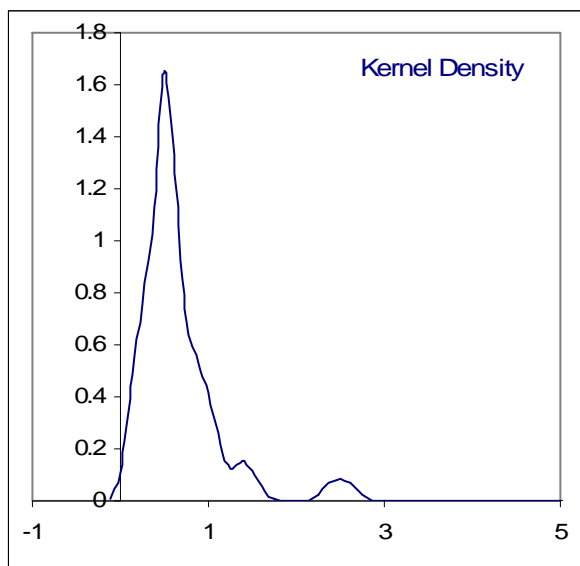
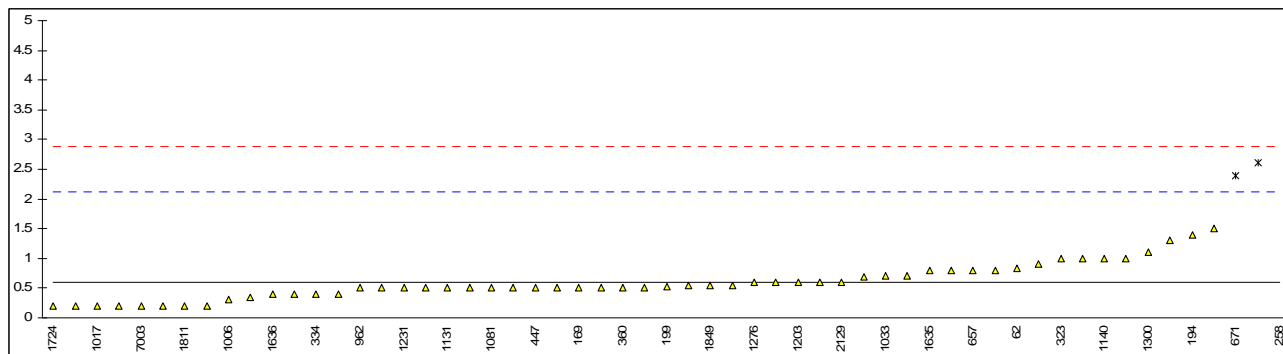
Determination of Distillation ASTM D86 (Manual) on sample #1009; results in °C (Res in %) (continued)





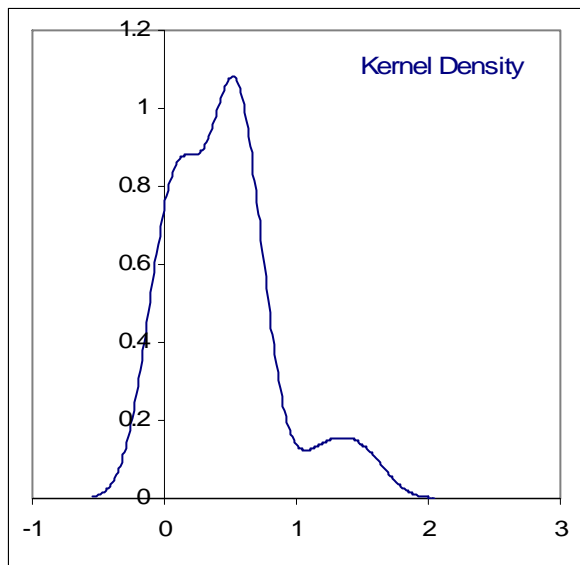
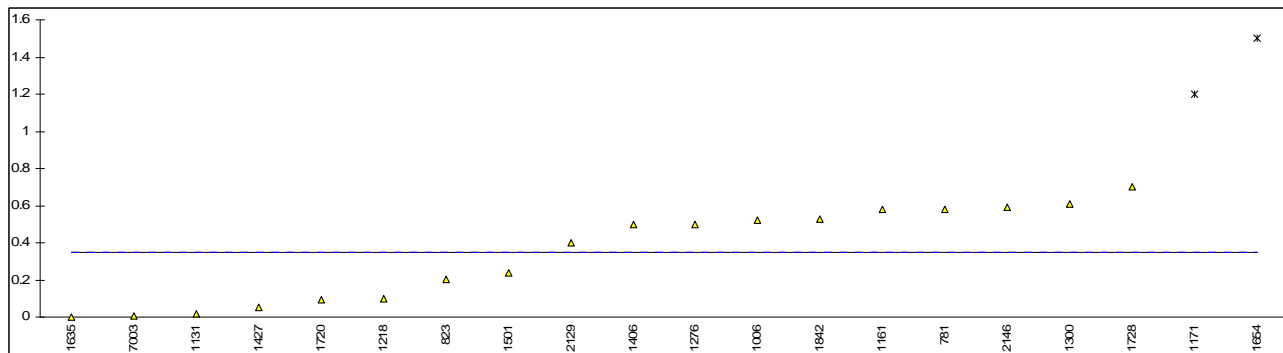
Determination of Existent Gum (washed) on sample #1009; results in mg/100mL

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52	D381	<0.5		----		996		----		----	
62	D381	0.84		0.32		1006	D381	0.3		-0.39	
92	D381	0.8		0.26		1016		----		----	
120	D381	0.5		-0.13		1017	D381	0.2		-0.52	
150	D381	0.5		-0.13		1033	IP131	0.70		0.13	
158	D381	<0.05		----	False neg.	1038	D381	0.5		-0.13	
159		----		----		1059	ISO6246	1		0.53	
169	D381	0.5		-0.13		1066	D381	<0.5		----	
171	D381	<0.5		----		1081	D381	0.5		-0.13	
180		----		----		1108	D381	0.5		-0.13	
193		----		----		1109	D381	0.8		0.26	
194	D381	1.4		1.05		1126		----		----	
199	D381	0.52		-0.10		1131	ISO6246	0.5		-0.13	
217		----		----		1140	IP131	1.0		0.53	
221		----		----		1161	ISO3405	0.34		-0.34	
224		----		----		1162		----		----	
225		----		----		1167	D381	2.6	G(0.01)	2.62	
228		----		----		1171		----		----	
230	D381	<0.5		----		1186		----		----	
237		----		----		1194		----		----	
238		----		----		1201	D381	<0.5		----	
252	D381	<1.0		----		1203	ISO6246	0.6		0.00	
253		----		----		1205		----		----	
254		----		----		1215		----		----	
256		----		----		1218		----		----	
258	D381	31.3	G(0.01)	40.21		1231	D381	0.50		-0.13	
273		----		----		1251	D381	<0.5		----	
311	D381	<0.5		----		1254	D381	<0.5		----	
312	D381	<1		----		1257		----		----	
317		----		----		1276	D381	0.6		0.00	
323	D381	1.0		0.53		1300	D381	1.0981		0.65	
333		----		----		1310		----		----	
334	D381	0.4		-0.26		1406		----		----	
335		----		----		1407		----		----	
336		----		----		1409	ISO6246	<1		----	
337		----		----		1427	D381	<0.5		----	
338		----		----		1428	ISO6246	0.2		-0.52	
340	D381	<1		----		1501	D381	0.54		-0.08	
343	D381	<0.5		----		1531		----		----	
353	IP131	<1		----		1620	D381	<0.5		----	
360	D381	0.5		-0.13		1634		----		----	
369	D381	<0.5		----		1635	D381	0.8		0.26	
371		----		----		1636	D381	0.4		-0.26	
391	D381	<0.5		----		1650		----		----	
399	D381	<0.5		----		1654		----		----	
420	ISO6246	1.3		0.92		1657	D381	1		0.53	
430		----		----		1720	D381	0.6		0.00	
433		----		----		1721		----		----	
440		----		----		1724	D381	0.2		-0.52	
445	D381	1.50		1.18		1728		----		----	
447	D381	0.5		-0.13		1730		----		----	
463		----		----		1740		----		----	
468	D381	0.4		-0.26		1810	D381	0.2		-0.52	
485		----		----		1811	D381	0.2		-0.52	
511		----		----		1826	D381	<0.5		----	
541		----		----		1833	D381	0.7		0.13	
557		----		----		1842		----		----	
562		----		----		1849	D381	0.54		-0.08	
631	D381	0.5		-0.13		1854	D381	0.69		0.12	
657	D381	0.8		0.26		1864	ISO6246	0.2		-0.52	
663		----		----		1936		----		----	
671	D381	2.4	G(0.01)	2.36		1937		----		----	
704	D381	0.9		0.40		1938		----		----	
752		----		----		2129	D381	0.6		0.00	
759		----		----		2130	D381	0.4		-0.26	
781	D381	0.50		-0.13		2146		----		----	
823	D381	<0.5		----		7003	D381	0.2		-0.52	
862	D381	0.6		0.00		8010		----		----	
868	D381	<0.5		----							
875		----		----							
904	D381	0.2		-0.52			normality	not OK			
912		----		----			n	54			
962	D381	0.5		-0.13			outliers	3			
974	D381	0.5		-0.13			mean (n)	0.60			
994	D381	0.54		-0.08			st.dev. (n)	0.305			
995		----		----			R(calc.)	0.85			
							R(D381:09)	2.14			



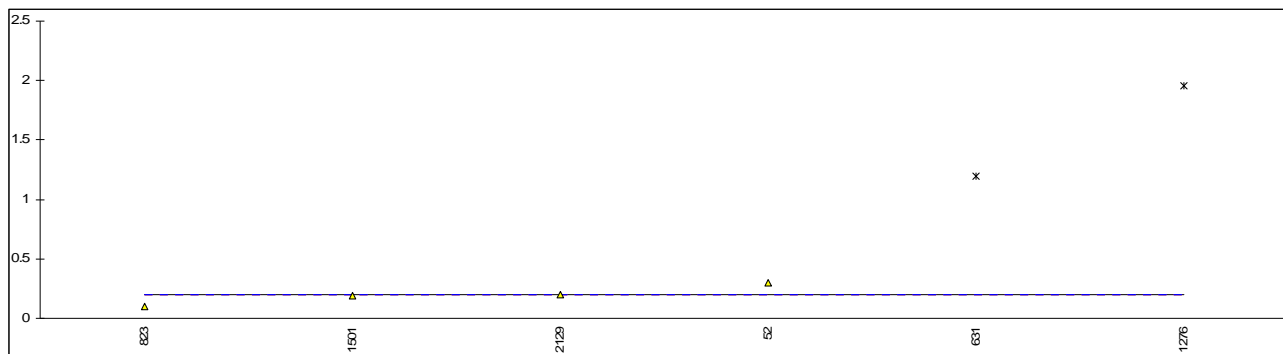
Determination of Lead as Pb on sample #1009; results in mg/L

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52	D3237	<2.5		----		996		----		----	
62	D3237	<0.1		----		1006	D3237	0.52		----	
92	D3237	<2.5		----		1016		----		----	
120	D3237	<0.001		----		1017		----		----	
150		----		----		1033		----		----	
158	D3237	<0.004		----		1038		----		----	
159		----		----		1059	EN13723	<1.0		----	
169		----		----		1066	D3237	<2.5		----	
171	D3237	<0.004		----		1081		----		----	
180		----		----		1108		----		----	
193		----		----		1109		----		----	
194		----		----		1126		----		----	
199		----		----		1131	EN237	0.02		----	
217		----		----		1140		----		----	
221		----		----		1161	EN237	0.579		----	
224		----		----		1162		----		----	
225		----		----		1167		----		----	
228		----		----		1171	D5059	1.2	DG(0.05)	----	
230	D3237	<2.5		----		1186		----		----	
237		----		----		1194		----		----	
238		----		----		1201		----		----	
252		----		----		1203	D3237	<1		----	
253		----		----		1205		----		----	
254		----		----		1215		----		----	
256		----		----		1218	XRF	0.1		----	
258		----		----		1231		----		----	
273		----		----		1251		----		----	
311		----		----		1254	D3237	<2.5		----	
312	D3237	<2		----		1257		----		----	
317		----		----		1276	D3237	0.5		----	
323	D3237	<2.5		----		1300	D3237	0.6076		----	
333		----		----		1310		----		----	
334		----		----		1406	D3237	0.5		----	
335		----		----		1407		----		----	
336		----		----		1409	EN237	<2.5		----	
337		----		----		1427	D3237	0.055		----	
338		----		----		1428	EN237	<2.5		----	
340	D3237	<2		----		1501	D3237	0.24		----	
343	D3237	<2.5		----		1531		----		----	
353		----		----		1620	D3237	<2.5		----	
360		----		----		1634		----		----	
369		----		----		1635	D3237	0.0		----	
371	D3237	<2.5		----		1636	D3237	<1		----	
391		----		----		1650		----		----	
399		----		----		1654	D3237	1.5	DG(0.05)	----	
420	EN237	<2.5		----		1657		----		----	
430		----		----		1720	D3237	0.092		----	
433		----		----		1721		----		----	
440		----		----		1724	EN237	<2.5		----	
445	IP428	<2.5		----		1728	EN237	0.7		----	
447		----		----		1730		----		----	
463		----		----		1740		----		----	
468		----		----		1810		----		----	
485		----		----		1811		----		----	
511		----		----		1826	D3237	<2.5		----	
541	IN HOUSE	<2.5		----		1833		----		----	
557		----		----		1842	IN HOUSE	0.530	U	----	Fr. in µg/L?
562	D3237	<2.5		----		1849	D3237	<1.0		----	
631	D3237	<2.5		----		1854	D3237	<2.5		----	
657	D3237	<2.5		----		1864		----		----	
663		----		----		1936		----		----	
671		----		----		1937		----		----	
704	D3237	<2.5		----		1938		----		----	
752		----		----		2129	D3237	0.4		----	
759		----		----		2130	IP352	<1		----	
781	EN237	0.58		----		2146	ISO8754	0.59		----	
823	D3237	0.2		----		7003	D3237	0.005		----	
862	D3237	<2.5		----		8010		----		----	
868	UOP952	<0.01		----							
875	D3237	<2.5		----			normality	OK			
904	D3237	<2.5		----			n	19			
912		----		----			outliers	1			
962		----		----			mean (n)	0.44			
974		----		----			st.dev. (n)	0.402			
994		----		----			R(calc.)	1.13			
995		----		----			R(D3237:06e1)	(2.60)			Application range: 2.5 – 25 mg/L



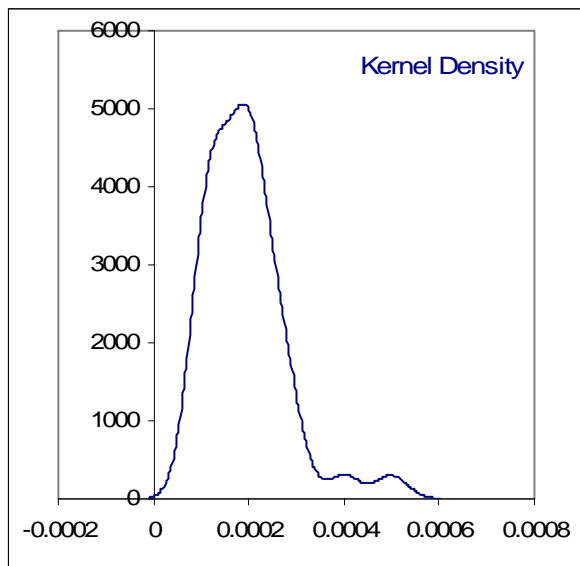
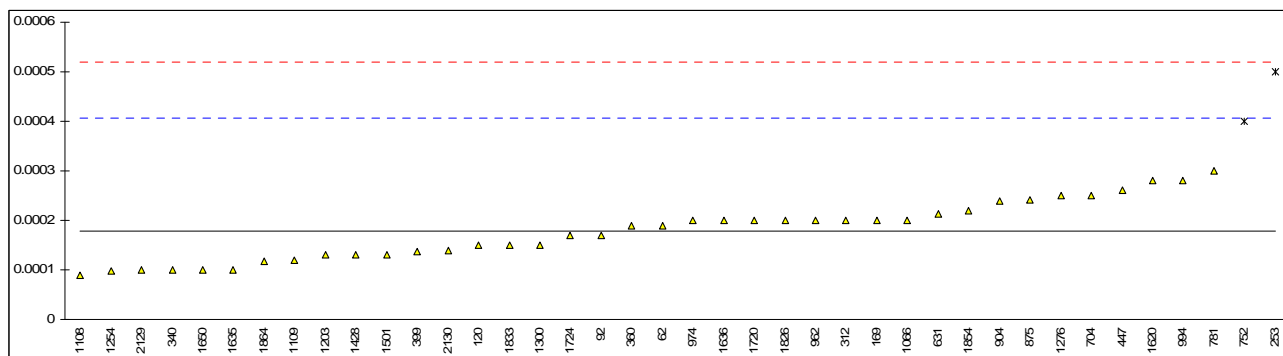
Determination of Manganese as Mn on sample #1009; results in %M/M

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52	D3831	0.3		----		996		----		----	
62	D3831	<0.5		----		1006		----		----	
92		----		----		1016		----		----	
120		----		----		1017		----		----	
150		----		----		1033		----		----	
158		----		----		1038		----		----	
159		----		----		1059		----		----	
169		----		----		1066	D3831	<0.25		----	
171		----		----		1081		----		----	
180		----		----		1108		----		----	
193		----		----		1109		----		----	
194		----		----		1126		----		----	
199		----		----		1131		----		----	
217		----		----		1140		----		----	
221		----		----		1161		----		----	
224		----		----		1162		----		----	
225		----		----		1167		----		----	
228		----		----		1171		----		----	
230		----		----		1186		----		----	
237		----		----		1194		----		----	
238		----		----		1201		----		----	
252		----		----		1203		----		----	
253		----		----		1205		----		----	
254		----		----		1215		----		----	
256		----		----		1218		----		----	
258		----		----		1231		----		----	
273		----		----		1251		----		----	
311		----		----		1254		----		----	
312		----		----		1257		----		----	
317		----		----		1276	D3831	1.958	DG(0.01)	----	
323		----		----		1300		----		----	
333		----		----		1310		----		----	
334		----		----		1406	D3831	<0.1		----	
335		----		----		1407		----		----	
336		----		----		1409		----		----	
337		----		----		1427		----		----	
338		----		----		1428	D3831	<0.25		----	
340		----		----		1501	D3831	0.19		----	
343		----		----		1531		----		----	
353		----		----		1620	D3831	<0.25		----	
360		----		----		1634		----		----	
369		----		----		1635		----		----	
371		----		----		1636		----		----	
391		----		----		1650		----		----	
399		----		----		1654		----		----	
420		----		----		1657		----		----	
430		----		----		1720		----		----	
433		----		----		1721		----		----	
440		----		----		1724		----		----	
445		----		----		1728		----		----	
447		----		----		1730		----		----	
463		----		----		1740		----		----	
468		----		----		1810		----		----	
485		----		----		1811		----		----	
511		----		----		1826	D3831	<0.25		----	
541	D3831	<0.25		----		1833		----		----	
557		----		----		1842		----		----	
562		----		----		1849		----		----	
631	D3831	1.2	DG(0.01)	----		1854		----		----	
657	D3831	<0.25		----		1864		----		----	
663		----		----		1936		----		----	
671		----		----		1937		----		----	
704		----		----		1938		----		----	
752		----		----		2129	D3831	0.2		----	
759		----		----		2130		----		----	
781		----		----		2146		----		----	
823	D3831	0.1		----		7003		----		----	
862	D3831	<0.25		----		8010		----		----	
868	D3831	<0.25		----							
875		----		----							
904		----		----			normality	n.a.			
912		----		----			n	4			
962		----		----			outliers	2			
974		----		----			mean (n)	0.20			
994		----		----			st.dev. (n)	0.082			
995		----		----			R(calc.)	0.23			
							R(D3831:06)	(0.10)			Application range: 0.25 – 40 mg/L



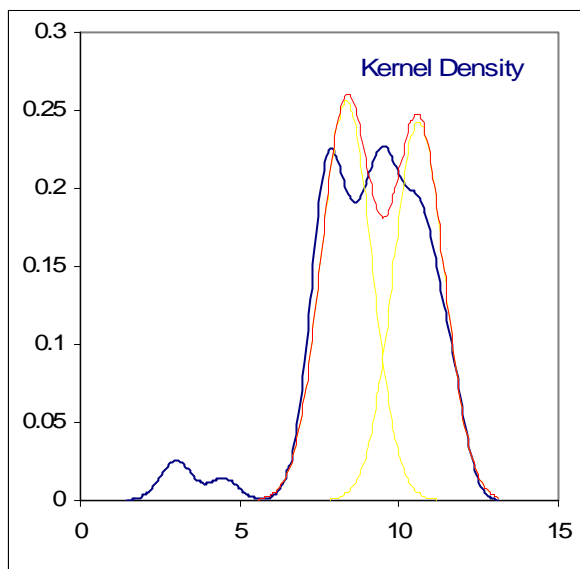
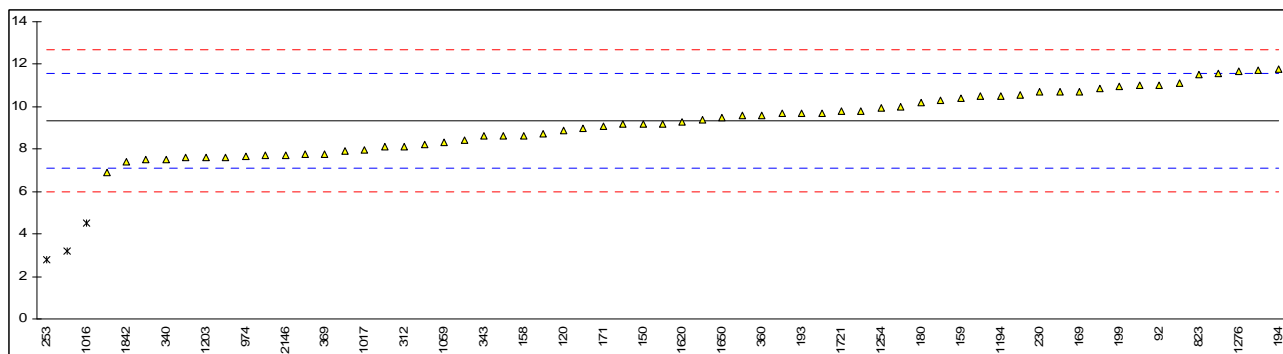
Determination of Mercaptans as S on sample #1009; results in %M/M

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52	D3227	<0.0003		----		996	D3227	<0.0003		----	
62	D3227	0.00019		0.10		1006		----		----	
92	D3227	0.00017		-0.08		1016		----		----	
120	D3227	0.00015		-0.26		1017		----		----	
150	D3227	<0.0003		----		1033		----		----	
158	D3227	<0.0003		----		1038		----		----	
159		----		----		1059	D3227	<0.0003		----	
169	D3227	0.0002		0.19		1066	D3227	0.0002		0.19	
171	D3227	<0.0003		----		1081	D3227	<0.0003		----	
180		----		----		1108	D3227	0.00009		-0.78	
193		----		----		1109	D3227	0.00012		-0.52	
194	D3227	<0.00030		----		1126		----		----	
199	D3227	<0.0001		----		1131		----		----	
217		----		----		1140	D3227	<0.0003	C	----	Fr <3
221		----		----		1161		----		----	
224		----		----		1162		----		----	
225		----		----		1167		----		----	
228		----		----		1171		----		----	
230		----		----		1186		----		----	
237		----		----		1194		----		----	
238		----		----		1201	D3227	<0.0003		----	
252		----		----		1203	UOP163	0.00013		-0.43	
253	D3227	0.0005	G(0.01)	2.83		1205		----		----	
254		----		----		1215		----		----	
256		----		----		1218		----		----	
258		----		----		1231		----		----	
273		----		----		1251		----		----	
311	D3227	<0.0003		----		1254	D3227	0.000098		-0.71	
312	D3227	0.00020		0.19		1257		----		----	
317		----		----		1276	D3227	0.00025		0.63	
323		----		----		1300	D3227	0.000151		-0.25	
333		----		----		1310		----		----	
334	D3227	<0.0003	C	----	Fr <3	1406		----		----	
335		----		----		1407		----		----	
336		----		----		1409		----		----	
337		----		----		1427	D3227	<0.0001		----	
338		----		----		1428	ISO3012	0.00013		-0.43	
340	D3227	0.0001		-0.70		1501	D3227	0.00013		-0.43	
343		----		----		1531		----		----	
353		----		----		1620	D3227	0.00028		0.89	
360	D3227	0.00019		0.10		1634		----		----	
369	D3227	<0.0003		----		1635	D3227	0.0001		-0.70	
371	D3227	<0.0003		----		1636	D3227	0.0002		0.19	
391	D3227	<0.0003		----		1650	D3227	0.0001		-0.70	
399	D3227	0.000137		-0.37		1654		----		----	
420		----		----		1657		----		----	
430		----		----		1720	D3227	0.0002		0.19	
433		----		----		1721	D3227	<0.0001	C	----	Fr <1
440		----		----		1724	D3227	0.00017		-0.08	
445	IP342	<0.0003		----		1728		----		----	
447	D3227	0.00026		0.71		1730		----		----	
463	D3227	absent		----		1740		----		----	
468		----		----		1810		----		----	
485		----		----		1811		----		----	
511		----		----		1826	D3227	0.0002		0.19	
541		----		----		1833	D3227	0.00015	C	-0.26	Fr 1.5
557		----		----		1842		----		----	
562		----		----		1849		----		----	
631	D3227	0.000214	C	0.31	Fr 0.00055	1854	D3227	0.00022		0.36	
657	D3227	<0.0003		----		1864	D3227	0.000118		-0.54	
663		----		----		1936		----		----	
671		----		----		1937		----		----	
704	D3227	0.00025		0.63		1938		----		----	
752	D3227	0.0004	G(0.05)	1.95		2129	D3227	0.0001		-0.70	
759		----		----		2130	D3227	0.00014		-0.34	
781	UOP163	0.0003		1.07		2146		----		----	
823		----		----		7003		----		----	
862	D3227	<0.0003		----		8010		----		----	
868	D3227	<0.0003		----							
875	D3227	0.000242	C	0.56	Fr 2.42		normality	OK			
904	D3227	0.00024		0.54			n	38			
912		----		----			outliers	2			
962	D3227	0.0002		0.19			mean (n)	0.00018			
974	D3227	0.0002		0.18			st.dev. (n)	0.000058			
994	D3227	0.00028		0.89			R(calc.)	0.00016			
995		----		----			R(D3227:04a)	0.00032			



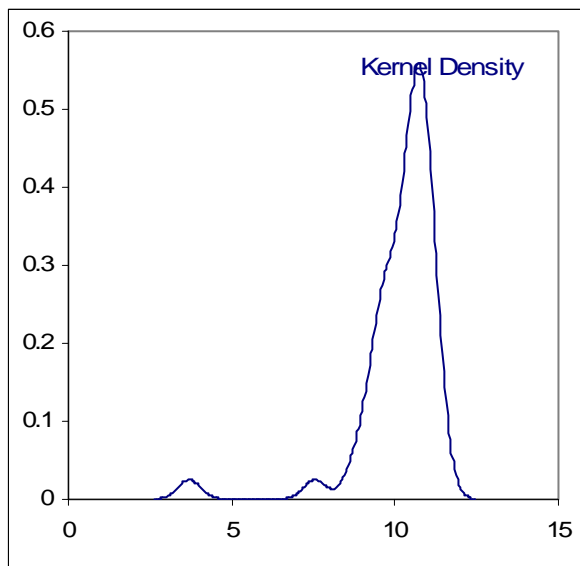
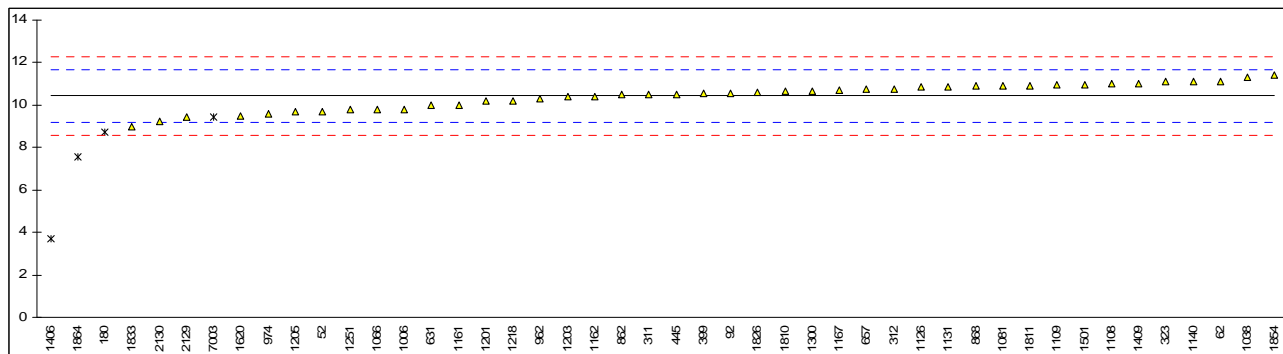
Determination of Olefins by FIA on sample #1009; results in %V/V

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52	D1319	11.7		----		996		----		----	
62	D1319	10.87		----		1006		----		----	
92	D1319	11.0		----		1016	D1319	4.5	G(0.05)	----	False neg
120	D1319	8.9		----		1017	D1319	7.98		----	
150	D1319	9.2		----		1033	IP156	11.1		----	
158	D1319	8.6		----		1038	D1319	9.36		----	
159	D1319	10.4		----		1059	D1319	8.3		----	
169	D1319	10.7		----		1066	D1319	8.1		----	
171	D1319	9.1		----		1081		----		----	
180	D1319	10.2		----		1108		----		----	
193	D1319	9.68		----		1109	D1319	7.69		----	
194	D1319	11.760		----		1126		----		----	
199	D1319	10.95		----		1131		----		----	
217		----		----		1140	D1319	7.6		----	
221		----		----		1161		----		----	
224		----		----		1162	D1319	7.49		----	
225		----		----		1167		----		----	
228		----		----		1171	D1319	10.542		----	
230	D1319	10.7		----		1186		----		----	
237		----		----		1194	D1319	10.5		----	
238		----		----		1201		----		----	
252		----		----		1203	D1319	7.6		----	
253	D1319	2.81	G(0.05)	----	False neg.	1205		----		----	
254		----		----		1215		----		----	
256		----		----		1218		----		----	
258		----		----		1231		----		----	
273		----		----		1251	D1319	9.2		----	
311	D1319	10.5		----		1254	D1319	9.93		----	
312	D1319	8.10		----		1257		----		----	
317		----		----		1276	D1319	11.67		----	
323		----		----		1300	D1319	9.6933		----	
333		----		----		1310		----		----	
334		----		----		1406		----		----	
335		----		----		1407		----		----	
336		----		----		1409	D1319	6.9		----	
337		----		----		1427		----		----	
338		----		----		1428	ISO3837	9.98		----	
340	D1319	7.5		----		1501		----		----	
343	D1319	8.6		----		1531		----		----	
353		----		----		1620	D1319	9.3		----	
360	D1319	9.6	C	----	Fr 29.6	1634		----		----	
369	D1319	7.77		----		1635	D1319	8.2		----	
371		----		----		1636		----		----	
391	D1319	9.6		----		1650	D1319	9.47		----	
399		----		----		1654		----		----	
420		----		----		1657	D1319	3.2	G(0.01)	----	False neg
430		----		----		1720		----		----	
433		----		----		1721	D1319	9.79		----	
440		----		----		1724	D1319	7.76		----	
445		----		----		1728		----		----	
447		----		----		1730		----		----	
463	D1319	8.75		----		1740		----		----	
468		----		----		1810		----		----	
485		----		----		1811		----		----	
511		----		----		1826	D1319	9.0		----	
541		----		----		1833	D1319	9.17		----	
557		----		----		1842	D1319	7.4		----	
562		----		----		1849	D1319	8.40		----	
631	D1319	11.55		----		1854	D1319	10.7		----	
657	D1319	10.99		----		1864		----		----	
663		----		----		1936		----		----	
671	D1319	9.666		----		1937		----		----	
704		----		----		1938		----		----	
752	D1319	7.59		----		2129	D1319	10.3		----	
759		----		----		2130		----		----	
781		----		----		2146	D1319	7.7		----	
823	D1319	11.50		----		7003		----		----	
862	D1319	8.6		----		8010		----		----	
868		----		----							
875		----		----							
904	D1319	7.9		----			normality	OK			
912		----		----			n	60			
962	D1319	9.8		----			outliers	3			
974	D1319	7.64		----			mean (n)	9.337			
994		----		----			st.dev. (n)	1.3382			
995		----		----			R(calc.)	3.747			
							R(D1319:08)	(3.133)			



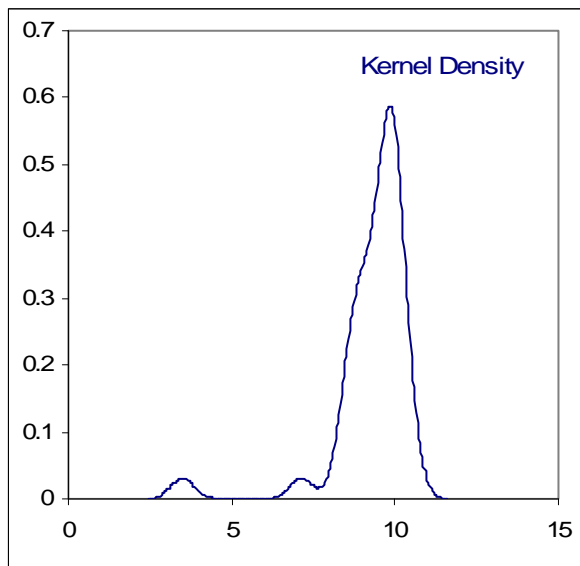
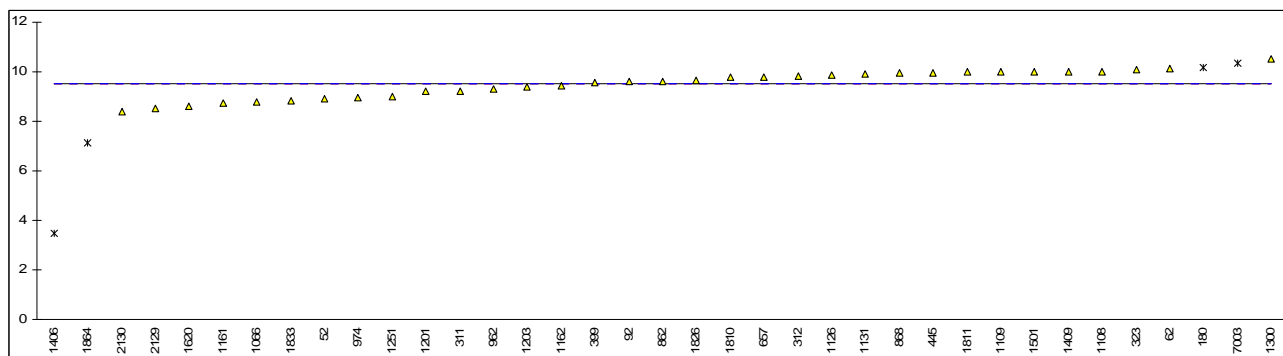
Determination of Olefins by GC on sample #1009; results in %V/V

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52	Nat meth	9.7		-1.18		996		----		----	
62	Nat meth	11.134		1.13		1006	D6293	9.8		-1.02	
92	Nat meth	10.54		0.18		1016		----		----	
120		----		----		1017		----		----	
150		----		----		1033		----		----	
158		----		----		1038	D6839	11.3		1.40	
159		----		----		1059		----		----	
169		----		----		1066	EN22854	9.8		-1.02	
171		----		----		1081	EN14517	10.90		0.76	
180	D6550	8.72	ex	-2.76	%V/V < %M/M	1108	EN14517	10.99		0.90	
193		----		----		1109	D6839	10.97		0.87	
194		----		----		1126	D6839	10.83		0.64	
199		----		----		1131	ISO22854	10.88		0.72	
217		----		----		1140	D6293	11.1		1.08	
221		----		----		1161	EN14517	10.013		-0.67	
224		----		----		1162	D6839	10.42		-0.02	
225		----		----		1167	EN14517	10.7		0.43	
228		----		----		1171		----		----	
230		----		----		1186		----		----	
237		----		----		1194		----		----	
238		----		----		1201	EN14517	10.2		-0.37	
252		----		----		1203	EN14517	10.4		-0.05	
253		----		----		1205	EN14517	9.7		-1.18	
254		----		----		1215		----		----	
256		----		----		1218	EN22854	10.22		-0.34	
258		----		----		1231		----		----	
273		----		----		1251	EN14517	9.8		-1.02	
311	EN14517	10.5		0.11		1254		----		----	
312	D6839	10.76		0.53		1257		----		----	
317		----		----		1276		----		----	
323	EN22854	11.1		1.08		1300	EN14517	10.6336		0.33	
333		----		----		1310		----		----	
334		----		----		1406	EN14517	3.70	G(0.01)	-10.84	
335		----		----		1407		----		----	
336		----		----		1409	ISO22854	11.0		0.92	
337		----		----		1427		----		----	
338		----		----		1428		----		----	
340		----		----		1501	D6293	10.97		0.87	
343		----		----		1531		----		----	
353		----		----		1620	D6730	9.51		-1.48	
360		----		----		1634		----		----	
369		----		----		1635		----		----	
371		----		----		1636		----		----	
391		----		----		1650		----		----	
399	EN14517	10.53		0.16		1654		----		----	
420		----		----		1657		----		----	
430		----		----		1720		----		----	
433		----		----		1721		----		----	
440		----		----		1724		----		----	
445	EN14517	10.51		0.13		1728		----		----	
447		----		----		1730		----		----	
463		----		----		1740		----		----	
468		----		----		1810	EN14517	10.63		0.32	
485		----		----		1811	EN14517	10.91		0.77	
511		----		----		1826	EN14517	10.62		0.30	
541		----		----		1833	EN14517	8.98		-2.34	
557		----		----		1842		----		----	
562		----		----		1849		----		----	
631	D6839	10.0		-0.69		1854	EN14517	11.40		1.56	
657	D6293	10.76		0.53		1864	D5134	7.548	G(0.01)	-4.64	
663		----		----		1936		----		----	
671		----		----		1937		----		----	
704		----		----		1938		----		----	
752		----		----		2129	D6730	9.43		-1.61	
759		----		----		2130	EN14517	9.22		-1.95	
781		----		----		2146		----		----	
823		----		----		7003	D5134	9.444	ex	-1.59	%V/V < %M/M
862	D6839	10.49		0.09		8010		----		----	
868	D6839	10.89		0.74							
875		----		----			normality	OK			
904		----		----			n	42			
912		----		----			outliers	2			
962	D6839	10.3		-0.21			mean (n)	10.431			
974	D6839	9.570		-1.39			st.dev. (n)	0.5981			
994		----		----			R(calc.)	1.675			
995		----		----			R(EN14517:04)	1.739			



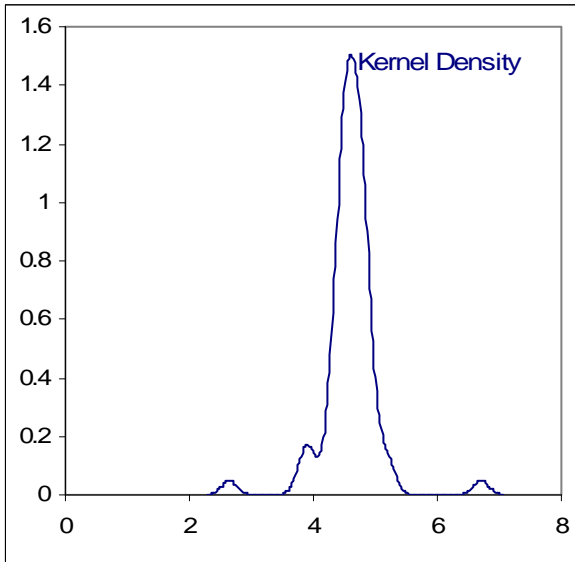
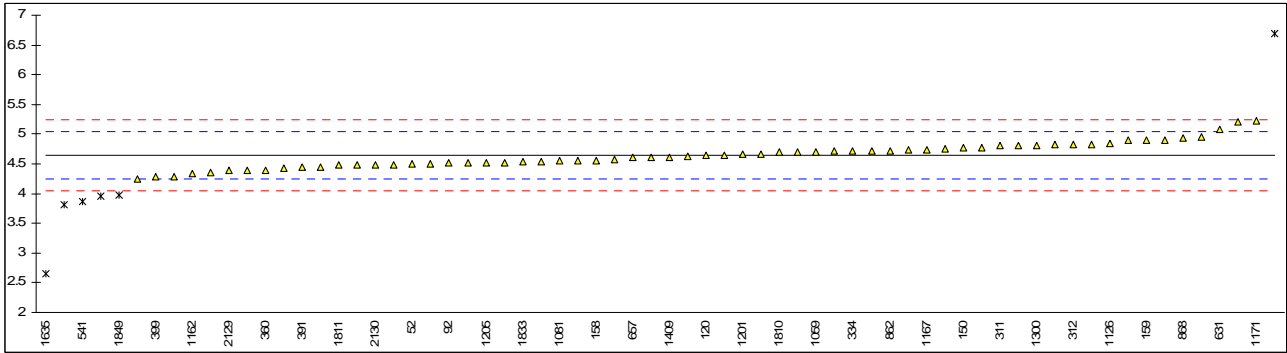
Determination of Olefins by GC on sample #1009; results in %M/M

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52	Nat meth	8.9		----		996		----		----	
62	Nat meth	10.112		----		1006		----		----	
92	Nat meth	9.62		----		1016		----		----	
120				----		1017		----		----	
150				----		1033		----		----	
158				----		1038		----		----	
159				----		1059		----		----	
169				----		1066	EN22854	8.8		----	
171				----		1081		----		----	
180	D6550	10.17	ex	----	%M/M > %V/V	1108	EN14517	10.01		----	
193				----		1109	D6839	9.99		----	
194				----		1126	D6839	9.88		----	
199				----		1131	ISO22854	9.92		----	
217				----		1140		----		----	
221				----		1161	EN14517	8.73		----	
224				----		1162	D6839	9.44		----	
225				----		1167		----		----	
228				----		1171		----		----	
230				----		1186		----		----	
237				----		1194		----		----	
238				----		1201	EN14517	9.2		----	
252				----		1203	EN14517	9.4		----	
253				----		1205		----		----	
254				----		1215		----		----	
256				----		1218		----		----	
258				----		1231		----		----	
273				----		1251	EN14517	9.0		----	
311	EN14517	9.2		----		1254		----		----	
312	D6839	9.83		----		1257		----		----	
317				----		1276		----		----	
323	EN22854	10.1		----		1300	EN14517	10.5341		----	
333				----		1310		----		----	
334				----		1406	EN14517	3.50	G(0.01)	----	
335				----		1407		----		----	
336				----		1409	ISO22854	10.0		----	
337				----		1427		----		----	
338				----		1428		----		----	
340				----		1501	D6293	9.99		----	
343				----		1531		----		----	
353				----		1620	D6730	8.62		----	
360				----		1634		----		----	
369				----		1635		----		----	
371				----		1636		----		----	
391				----		1650		----		----	
399	EN14517	9.55		----		1654		----		----	
420				----		1657		----		----	
430				----		1720		----		----	
433				----		1721		----		----	
440				----		1724		----		----	
445	EN14517	9.97		----		1728		----		----	
447				----		1730		----		----	
463				----		1740		----		----	
468				----		1810	EN14517	9.77		----	
485				----		1811	EN14517	9.99		----	
511				----		1826	EN14517	9.67		----	
541				----		1833	EN14517	8.81		----	
557				----		1842		----		----	
562				----		1849		----		----	
631				----		1854		----		----	
657	D6293	9.79		----		1864	D5134	7.127	G(0.01)	----	
663				----		1936		----		----	
671				----		1937		----		----	
704				----		1938		----		----	
752				----		2129	D6730	8.52		----	
759				----		2130	EN14517	8.39		----	
781				----		2146		----		----	
823				----		7003	D5134	10.356	ex	----	%M/M > %V/V
862	D6839	9.62		----		8010		----		----	
868	D6839	9.94		----							
875				----			normality	OK			
904				----			n	33			
912				----			outliers	2			
962	D6839	9.3		----			mean (n)	9.501			
974	D6839	8.945		----			st.dev. (n)	0.5526			
994				----			R(calc.)	1.547			
995				----			R(EN14517:04)	unknown			



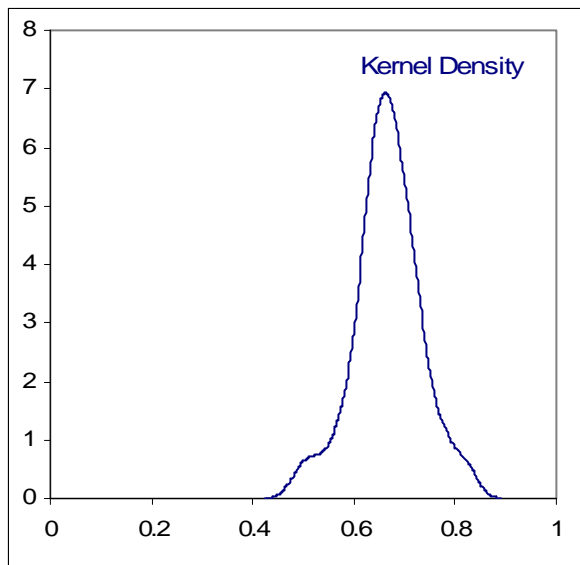
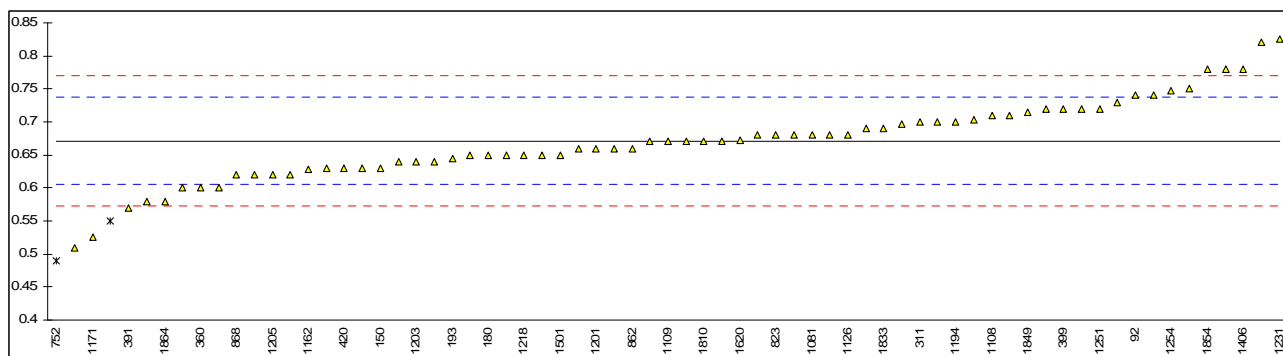
Determination of Ethanol on sample #1009; results in %V/V

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52	Nat meth	4.5		-0.73		996		----		----	
62		----		----		1006	D4815	4.24		-2.05	
92	Nat meth	4.51		-0.68		1016		----		----	
120	D5599	4.64		-0.02		1017		----		----	
150	D5599	4.77		0.64		1033		----		----	
158	D5599	4.56		-0.43		1038		----		----	
159	D5599	4.90		1.30		1059	EN13132	4.7		0.28	
169	D4815	4.71		0.33		1066	EN22854	4.52		-0.63	
171	D4815	4.63		-0.07		1081	EN14517	4.55		-0.48	
180	D4815	4.52		-0.63		1108	EN14517	4.89		1.25	
193	D5599	4.956		1.58		1109	D6839	4.75		0.54	
194		----		----		1126	D6839	4.84		0.99	
199	D4815	4.39		-1.29		1131	ISO22854	4.45		-0.99	
217		----		----		1140		----		----	
221		----		----		1161	EN13132	4.8		0.79	
224		----		----		1162	D4815	4.346		-1.51	
225		----		----		1167	EN13132	4.74		0.48	
228		----		----		1171	D5845	5.221		2.92	
230		----		----		1186		----		----	
237		----		----		1194	D5845	4.9		1.30	
238		----		----		1201	EN13132	4.66		0.08	
252		----		----		1203	ISO14517	4.65		0.03	
253		----		----		1205	EN14517	4.52		-0.63	
254		----		----		1215		----		----	
256		----		----		1218	D4815	4.55		-0.48	
258		----		----		1231	D4815	4.435		-1.06	
273		----		----		1251	D4815	4.83		0.94	
311	EN14517	4.8		0.79		1254	D4815	4.575		-0.35	
312	EN13132	4.83		0.94		1257		----		----	
317		----		----		1276		----		----	
323	D4815	4.72		0.38		1300	D4815	4.8122		0.85	
333		----		----		1310		----		----	
334	D4815	4.71		0.33		1406	EN14517	6.70	G(0.01)	10.43	
335		----		----		1407		----		----	
336		----		----		1409	ISO22854	4.61		-0.17	
337		----		----		1427		----		----	
338		----		----		1428	EN13132	5.21		2.87	
340	EN1601	4.6		-0.23		1501		----		----	
343	EN13132	3.96	DG(0.05)	-3.47		1531		----		----	
353		----		----		1620	D4815	4.734		0.45	
360	EN13132	4.40		-1.24		1634		----		----	
369		----		----		1635	D4815	2.65	CG(0.01)	-10.12	Fr 2.87
371	D4815	4.5		-0.73		1636		----		----	
391	EN1601	4.44		-1.04		1650		----		----	
399	D4815	4.28		-1.85		1654		----		----	
420	EN13132	4.7		0.28		1657		----		----	
430		----		----		1720		----		----	
433		----		----		1721		----		----	
440		----		----		1724		----		----	
445	D4815	4.78		0.69		1728		----		----	
447		----		----		1730		----		----	
463	D4815	4.48		-0.83		1740		----		----	
468		----		----		1810	D4815	4.70		0.28	
485		----		----		1811	D4815	4.48		-0.83	
511		----		----		1826	EN14517	4.82		0.89	
541	D6730	3.86	ex	-3.98	Rep in %M/M?	1833	EN13132	4.532		-0.57	
557		----		----		1842		----		----	
562		----		----		1849	D4815	3.97	G(0.05)	-3.42	
631	D6839	5.08		2.21		1854		----		----	
657	D4815	4.60		-0.23		1864		----		----	
663		----		----		1936		----		----	
671		----		----		1937		----		----	
704	D4815	4.67		0.13		1938		----		----	
752	EN13132	4.54		-0.53		2129	D4815	4.39		-1.29	
759		----		----		2130	D4815	4.487		-0.80	
781		----		----		2146	EN13132	4.49		-0.78	
823	D4815	4.29		-1.80		7003	D5134	3.811	DG(0.05)	-4.23	
862	D4815	4.72		0.38		8010		----		----	
868	D6839	4.94		1.50							
875		----		----			normality	OK			
904		----		----			n	62			
912		----		----			outliers	5			
962		----		----			mean (n)	4.644			
974	D6839	4.36		-1.44			st.dev. (n)	0.2103			
994		----		----			R(calc.)	0.589			
995		----		----			R(D4815:09)	0.552			



Determination of MTBE on sample #1009; results in %V/V

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52	Nat meth	0.72		1.48		996		----		----	
62		----		----		1006	D4815	0.58		-2.79	
92	Nat meth	0.74		2.09		1016		----		----	
120	D5599	0.64		-0.96		1017		----		----	
150	D5599	0.63		-1.26		1033		----		----	
158	D5599	<0.05		<-18.90	False neg?	1038		----		----	
159	D5599	0.82		4.53		1059	EN13132	0.7		0.87	
169	D4815	0.65		-0.65		1066	EN22854	<0.01		<-20.12	False neg?
171	D4815	0.63		-1.26		1081	EN14517	0.68		0.26	
180	D4815	0.65		-0.65		1108	EN14517	0.71		1.18	
193	D5599	0.644		-0.84		1109	D6839	0.67		-0.04	
194		----		----		1126	D6839	0.68		0.26	
199	D4815	0.72		1.48		1131	ISO22854	0.65		-0.65	
217		----		----		1140		----		----	
221		----		----		1161	EN13132	0.68		0.26	
224		----		----		1162	D4815	0.628		-1.32	
225		----		----		1167	EN13132	0.62		-1.57	
228		----		----		1171	D5845	0.526		-4.43	
230		----		----		1186		----		----	
237		----		----		1194	D5845	0.7		0.87	
238		----		----		1201	EN13132	0.66		-0.35	
252		----		----		1203	ISO14517	0.64		-0.96	
253		----		----		1205	EN14517	0.62		-1.57	
254		----		----		1215		----		----	
256		----		----		1218	EN22854	0.65		-0.65	
258		----		----		1231	D4815	0.825		4.68	
273		----		----		1251	D4815	0.72		1.48	
311	EN14517	0.7		0.87		1254	D4815	0.747		2.30	
312	EN13132	0.66		-0.35		1257		----		----	
317		----		----		1276		----		----	
323	D4815	0.67		-0.04		1300	D4815	0.70269		0.95	
333		----		----		1310		----		----	
334	D4815	0.68		0.26		1406	EN14517	0.78		3.31	
335		----		----		1407		----		----	
336		----		----		1409	ISO22854	<0.8		----	
337		----		----		1427		----		----	
338		----		----		1428	EN13132	0.64		-0.96	
340	EN1601	0.6		-2.18		1501	D6293	0.65		-0.65	
343	EN13132	0.67		-0.04		1531		----		----	
353		----		----		1620	D4815	0.673		0.05	
360	EN13132	0.60		-2.18		1634		----		----	
369		----		----		1635	D4815	0.75		2.39	
371	D4815	0.74		2.09		1636		----		----	
391	EN1601	0.57		-3.09		1650		----		----	
399	D4815	0.72		1.48		1654		----		----	
420	EN13132	0.63		-1.26		1657		----		----	
430		----		----		1720		----		----	
433		----		----		1721	D4815	<0.1		<-17.38	False neg?
440		----		----		1724	EN13132	0.696		0.75	
445	D4815	0.67		-0.04		1728		----		----	
447		----		----		1730		----		----	
463	D4815	0.73		1.78		1740		----		----	
468		----		----		1810	D4815	0.67		-0.04	
485		----		----		1811	D4815	0.69		0.57	
511		----		----		1826	EN14517	0.71		1.18	
541	D6730	0.55	ex	-3.70	rep in %M/M?	1833	EN13132	0.69	C	0.57	Fr 0.445
557		----		----		1842		----		----	
562		----		----		1849	D4815	0.715		1.33	
631	D6839	0.66		-0.35		1854	D4815	0.78		3.31	
657	D4815	0.63		-1.26		1864	D4815	0.58		-2.79	
663		----		----		1936		----		----	
671		----		----		1937		----		----	
704	D4815	0.68		0.26		1938		----		----	
752	EN13132	0.49	G(0.05)	-5.53		2129	D4815	0.51		-4.92	
759		----		----		2130	D4815	0.649		-0.68	
781		----		----		2146	EN13132	0.60		-2.18	
823	D4815	0.68		0.26		7003		----		----	
862	D4815	0.66		-0.35		8010		----		----	
868	D6839	0.62		-1.57							
875		----		----			normality	OK			
904		----		----			n	67			
912		----		----			outliers	1			
962	D6839	0.62		-1.57			mean (n)	0.671			
974	D6839	0.78		3.31			st.dev. (n)	0.0604			
994		----		----			R(calc.)	0.169			
995		----		----			R(D4815:09)	0.092			



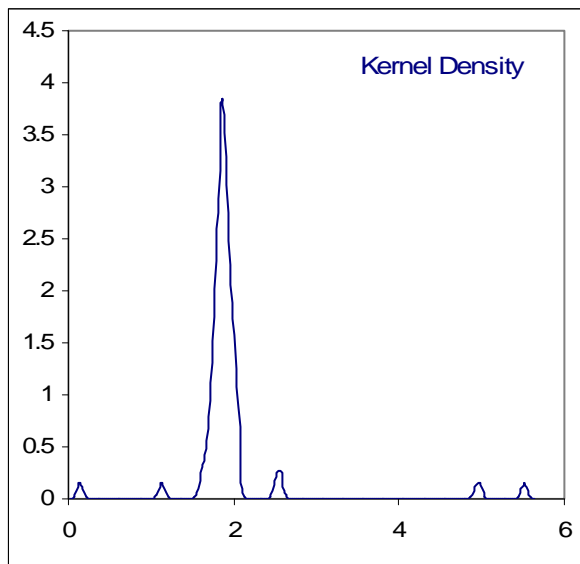
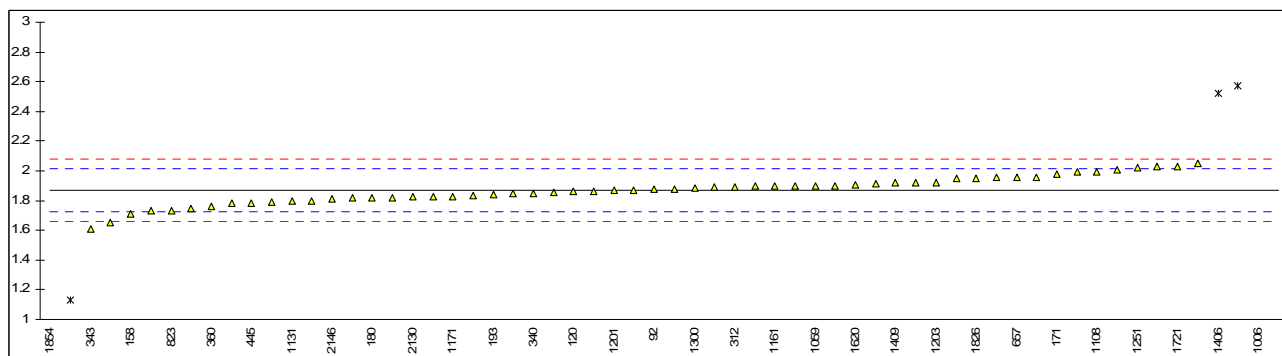
Determination of DiPE, ETBE, i-Butanol and TAME on sample #1009; results in %V/V

lab	method	DIPE	ETBE	i-BuOH	IPA	MeOH	TAME	t-BuOH
52		----	----	----	----	----	----	----
62		----	----	----	----	----	----	----
92	Nat meth	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
120	D5599	0	0	0	0	0	0	0
150	D5599	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
158	D5599	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
159	D5599	0	0	0	0	0	0	0
169	D4815	0	0	0	0	0	0	0
171	D4815	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
180		----	----	----	----	----	----	----
193	D5599	0	0	0	0	0	0	0
194		----	----	----	----	----	----	----
199		----	----	----	----	----	----	----
217		----	----	----	----	----	----	----
221		----	----	----	----	----	----	----
224		----	----	----	----	----	----	----
225		----	----	----	----	----	----	----
228		----	----	----	----	----	----	----
230		----	----	----	----	----	----	----
237		----	----	----	----	----	----	----
238		----	----	----	----	----	----	----
252		----	----	----	----	----	----	----
253		----	----	----	----	----	----	----
254		----	----	----	----	----	----	----
256		----	----	----	----	----	----	----
258		----	----	----	----	----	----	----
273		----	----	----	----	----	----	----
311	EN14517	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
312	EN13132	----	<0.2	----	----	----	----	----
317		----	----	----	----	----	----	----
323	D4815	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
333		----	----	----	----	----	----	----
334	D4815	----	0.19	----	----	----	----	----
335		----	----	----	----	----	----	----
336		----	----	----	----	----	----	----
337		----	----	----	----	----	----	----
338		----	----	----	----	----	----	----
340	EN1601	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
343	EN13132	----	<0.0001	<0.17	<0.17	<0.17	<0.17	<0.17
353		----	----	----	----	----	----	----
360	EN13132	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
369		----	----	----	----	----	----	----
371	D4815	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
391		----	----	----	----	----	----	----
399	D4815	<0.20	0.11	<0.20	0.04	<0.20	0.02	0.09
420	EN13132	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
430		----	----	----	----	----	----	----
433		----	----	----	----	----	----	----
440		----	----	----	----	----	----	----
445	D4815	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
447		----	----	----	----	----	----	----
463	D4815	----	----	<0.2	0.18	<0.2	----	<0.2
468		----	----	----	----	----	----	----
485		----	----	----	----	----	----	----
511		----	----	----	----	----	----	----
541		----	----	----	----	----	----	----
557		----	----	----	----	----	----	----
562		----	----	----	----	----	----	----
631		----	----	----	----	----	----	----
657	D4815	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
663		----	----	----	----	----	----	----
671		----	----	----	----	----	----	----
704	D4815	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
752	EN13132	----	<0.20	<0.20	0.24	<0.20	----	<0.20
759		----	----	----	----	----	----	----
781		----	----	----	----	----	----	----
823	D4815	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
862	D4815	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
868	D6839	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
875		----	----	----	----	----	----	----
904		----	----	----	----	----	----	----
912		----	----	----	----	----	----	----
962		----	----	----	----	----	----	----
974		----	----	----	----	----	----	----
994		----	----	----	----	----	----	----
995		----	----	----	----	----	----	----
996		----	----	----	----	----	----	----

1006	D4815	0.02	0.12	----	----	----	----	----
1016		----	----	----	----	----	----	----
1017		----	----	----	----	----	----	----
1033		----	----	----	----	----	----	----
1038		----	----	----	----	----	----	----
1059	EN13132	----	<0.2	<0.2	<0.2	<0.2	----	----
1066	EN22854	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1081	EN14517	----	0	----	----	0	----	----
1108	EN14517	----	0.04	----	----	----	----	----
1109	D6839	----	<0.1	----	----	----	<0.1	<0.1
1126		----	----	----	----	----	----	----
1131	ISO22854	0.02	0	0	0	0	0	0
1140		----	----	----	----	----	----	----
1161	EN13132	0.09	0	0	0	0.28	0.38	0.07
1162	D4815	0.042	0.066	----	0.070	<0.01	0.092	<0.01
1167	EN13132	----	----	----	----	0.12	----	0.04
1171	D5845	0	0.044	----	----	0	0.042	0
1186		----	----	----	----	----	----	----
1194	D5845	0.3	0	----	----	0	0.1	----
1201	EN13132	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1203	ISO14517	0.04	----	----	----	----	----	----
1205	EN14517	<DL	<DL	<DL	<DL	<DL	<DL	<DL
1215		----	----	----	----	----	----	----
1218		----	----	----	----	----	----	----
1231		----	----	----	----	----	----	----
1251	D4815	0.05	<0.05	0.15	<0.05	<0.05	<0.05	0.07
1254	D4815	ND	ND	ND	ND	ND	ND	ND
1257		----	----	----	----	----	----	----
1276		----	----	----	----	----	----	----
1300	D4815	0.11962	0.11873	0.01572	0.07514	0.10979	0.18247	0.017948
1310		----	----	----	----	----	----	----
1406	EN14517	----	0	----	----	----	0	0
1407		----	----	----	----	----	----	----
1409	ISO22854	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
1427		----	----	----	----	----	----	----
1428	EN13132	----	<0.17	<0.15	<0.16	0.40	----	<0.16
1501		----	----	----	----	----	----	----
1531		----	----	----	----	----	----	----
1620	D4815	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1634		----	----	----	----	----	----	----
1635		----	----	----	----	----	----	----
1636		----	----	----	----	----	----	----
1650		----	----	----	----	----	----	----
1654		----	----	----	----	----	----	----
1657		----	----	----	----	----	----	----
1720		----	----	----	----	----	----	----
1721		----	----	----	----	----	----	----
1724	EN13132	----	2.217	----	----	----	----	----
1728		----	----	----	----	----	----	----
1730		----	----	----	----	----	----	----
1740		----	----	----	----	----	----	----
1810		----	----	----	----	----	----	----
1811		----	----	----	----	----	----	----
1826	EN14517	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1833	EN13132	----	0.114	----	----	----	----	----
1842		----	----	----	----	----	----	----
1849	D4815	0.048	0.127	0.0033	0.0597	0.2367	----	0.0503
1854		----	----	----	----	----	----	----
1864	D4815	----	0.15	----	----	----	----	----
1936		----	----	----	----	----	----	----
1937		----	----	----	----	----	----	----
1938		----	----	----	----	----	----	----
2129	D4815	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2130		----	----	----	----	----	----	----
2146	EN13132	----	<0.2	----	----	----	<0.2	----
7003		----	----	----	----	----	----	----
8010		----	----	----	----	----	----	----
	Normality	not OK	not OK	not OK	not OK	not OK	not OK	not OK
	N	16	20	9	12	12	12	13
	Outliers	0	0	0	0	1	0	0
	mean (n)	0.051	0.165	0.019	0.055	0.096	0.068	0.026
	st.dev. (n)	0.0747	0.4871	0.0495	0.0791	0.1386	0.1139	0.0336
	R(calc.)	0.209	1.364	0.139	0.222	0.388	0.319	0.094
	R(D4815:09)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Determination of Oxygen Content on sample #1009; results in %M/M

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52		----		----		996		----		----	
62		----		----		1006	D4815	4.96	G(0.01)	43.44	
92	Nat meth	1.877		0.11		1016		----		----	
120	D5599	1.86		-0.13		1017		----		----	
150	D5599	1.91		0.57		1033		----		----	
158	D5599	1.71		-2.24		1038		----		----	
159	D5599	1.99		1.69		1059	EN13132	1.90		0.43	
169	D4815	1.89		0.29		1066	EN22854	1.82		-0.70	
171	D4815	1.98		1.55		1081		----		----	
180	D4815	1.82		-0.70		1108	EN14517	1.99		1.69	
193	D5599	1.84		-0.41		1109	D6839	1.92		0.71	
194		----		----		1126	D6839	5.52	G(0.01)	51.31	
199	D4815	1.78		-1.26		1131	ISO22854	1.80		-0.98	
217		----		----		1140		----		----	
221		----		----		1161	EN13132	1.90	C	0.43	Fr 2.17
224		----		----		1162	D4815	1.825		-0.63	
225		----		----		1167	EN13132	1.954		1.19	
228		----		----		1171	D5845	1.828		-0.58	
230		----		----		1186		----		----	
237		----		----		1194	D5845	2.03		2.26	
238		----		----		1201	EN13132	1.87		0.01	
252		----		----		1203	ISO14517	1.92		0.71	
253		----		----		1205	EN14517	<DL		----	
254		----		----		1215		----		----	
256		----		----		1218	EN22854	1.83		-0.55	
258		----		----		1231		----		----	
273		----		----		1251	D4815	2.02		2.12	
311	EN14517	1.95		1.13		1254	D4815	1.855		-0.20	
312	D6839	1.89		0.29		1257		----		----	
317		----		----		1276		----		----	
323	D4815	1.90		0.43		1300	D4815	1.88357		0.20	
333		----		----		1310		----		----	
334	D4815	1.96		1.27		1406	EN14517	2.52	G(0.01)	9.14	
335		----		----		1407	IN HOUSE	2.05		2.54	
336		----		----		1409	ISO22854	1.92		0.71	
337		----		----		1427		----		----	
338		----		----		1428	EN13132	2.57	CG(0.01)	9.85	Fr 2.62
340	EN1601	1.85		-0.27		1501		----		----	
343	EN13132	1.61		-3.65		1531		----		----	
353		----		----		1620	D4815	1.904		0.49	
360	EN13132	1.763		-1.50		1634		----		----	
369		----		----		1635	D4815	1.13	G(0.01)	-10.39	
371	D4815	1.85		-0.27		1636		----		----	
391	EN1601	1.8		-0.98		1650		----		----	
399	D4815	1.73		-1.96		1654		----		----	
420	EN13132	1.86		-0.13		1657		----		----	
430		----		----		1720		----		----	
433		----		----		1721	D4815	2.03		2.26	
440		----		----		1724		----		----	
445	D4815	1.78		-1.26		1728		----		----	
447		----		----		1730		----		----	
463	D4815	1.87		0.01		1740		----		----	
468		----		----		1810	D4815	1.90		0.43	
485		----		----		1811	D4815	1.82		-0.70	
511		----		----		1826	EN14517	1.95		1.13	
541		----		----		1833	EN13132	1.79		-1.12	
557		----		----		1842		----		----	
562		----		----		1849		----		----	
631		----		----		1854	D4815	0.14	G(0.01)	-24.31	
657	D4815	1.96		1.27		1864		----		----	
663		----		----		1936		----		----	
671		----		----		1937		----		----	
704	D4815	1.88		0.15		1938		----		----	
752		----		----		2129	D4815	1.743		-1.78	
759		----		----		2130	D4815	1.824		-0.64	
781		----		----		2146	EN13132	1.81		-0.84	
823	D4815	1.73		-1.96		7003		----		----	
862	D4815	1.90		0.43		8010		----		----	
868	D6839	2.01		1.97							
875		----		----			normality	OK			
904		----		----			n	56			
912		----		----			outliers	6			
962		----		----			mean (n)	1.869			
974	calc	1.6546		-3.02			st.dev. (n)	0.0932			
994		----		----			R(calc.)	0.261			
995		----		----			R(D4815:09)	0.199			



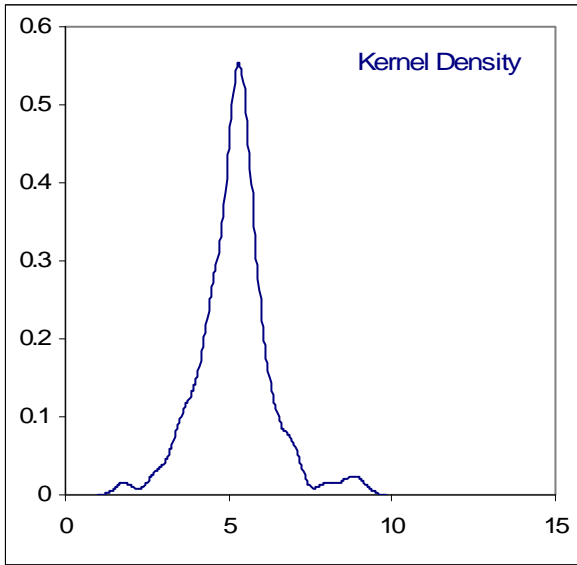
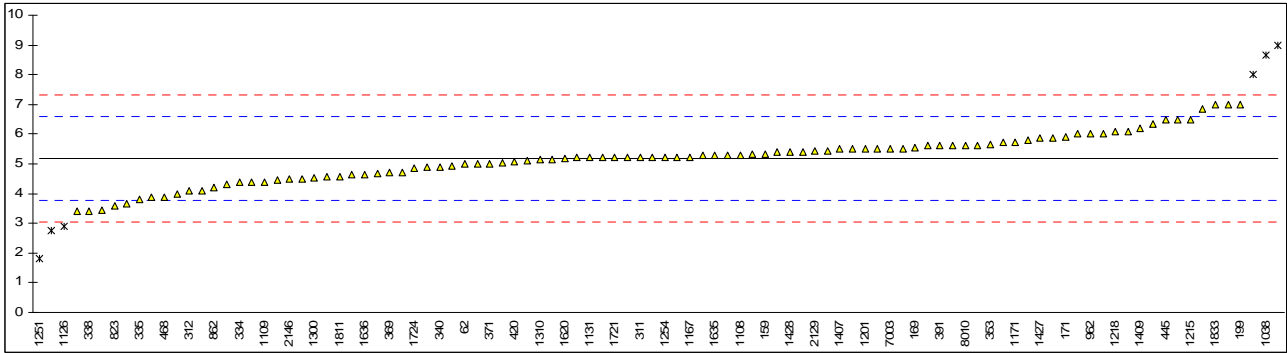
Determination of Oxidation Stability on sample #1009; results in minutes

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52	D525	>900		----		996		----		----	
62	D525	>240		----		1006	D525	>1017		----	
92		----		----		1016		----		----	
120		----		----		1017		----		----	
150	D525	>900		----		1033		----		----	
158		----		----		1038		----		----	
159		----		----		1059	ISO7536	>900		----	
169		----		----		1066	D525	>360		----	
171	D525	>900		----		1081		----		----	
180		----		----		1108	D525	534		----	
193		----		----		1109		----		----	
194	D525	648.0		----		1126		----		----	
199		----		----		1131	ISO7536	630		----	
217		----		----		1140		----		----	
221		----		----		1161	ISO7536	>900		----	
224		----		----		1162	D525	>900		----	
225		----		----		1167	D525	>900		----	
228		----		----		1171		----		----	
230		----		----		1186		----		----	
237		----		----		1194		----		----	
238		----		----		1201		----		----	
252	D525	>360		----		1203	ISO7536	>360		----	
253		----		----		1205		----		----	
254		----		----		1215		----		----	
256		----		----		1218		----		----	
258		----		----		1231	D525	>1440		----	
273		----		----		1251	D525	>1000		----	
311	D525	>360		----		1254	D525	>900		----	
312	D525	>900		----		1257		----		----	
317		----		----		1276	D525	>900		----	
323	D525	>900		----		1300	D525	547		----	
333		----		----		1310		----		----	
334		----		----		1406	ISO7536	384		----	
335		----		----		1407		----		----	
336		----		----		1409	D525	>360		----	
337		----		----		1427		----		----	
338		----		----		1428		----		----	
340	D525	>960		----		1501	D525	>900		----	
343	D525	>360		----		1531		----		----	
353		----		----		1620	D525	>900		----	
360		----		----		1634		----		----	
369		----		----		1635	D525	>750		----	
371	D525	>900		----		1636	D525	383		----	
391		----		----		1650		----		----	
399		----		----		1654	D525	>900		----	
420	ISO7536	>900		----		1657		----		----	
430		----		----		1720		----		----	
433		----		----		1721		----		----	
440		----		----		1724	D525	>900		----	
445	D525	660		----		1728	D525	360		----	
447	D525	>900		----		1730		----		----	
463	D525	>360		----		1740		----		----	
468		----		----		1810		----		----	
485		----		----		1811		----		----	
511		----		----		1826	D525	>900		----	
541		----		----		1833	D525	900		----	
557		----		----		1842		----		----	
562		----		----		1849	D525	390		----	
631		----		----		1854		----		----	
657	D525	>900		----		1864	ISO7536	>360		----	
663		----		----		1936		----		----	
671		----		----		1937		----		----	
704		----		----		1938		----		----	
752	D525	>900		----		2129	D525	>900		----	
759		----		----		2130	D525	255		----	False pos?
781		----		----		2146		----		----	
823		----		----		7003		----		----	
862	D525	>900		----		8010		----		----	
868	D525	>900		----							
875		----		----							
904	D525	>360		----			normality	n.a.			
912		----		----			n	11			
962		----		----			outliers	0			
974	D525	>900		----			mean (n)	n.a.			
994		----		----			st.dev. (n)	n.a.			
995		----		----			R(calc.)	n.a.			
							R(D525:05)	n.a.			

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Determination of Sulphur on sample #1009; results in mg/kg

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52	D5453	5.2		0.03		996	D5453	4.57		-0.86	
62	D5453	4.99		-0.27		1006	D5453	5.1		-0.11	
92	D5453	4.63		-0.77		1016		-----		-----	
120	D2622	6.35		1.65		1017		-----		-----	
150	D5453	6.1		1.30		1033		-----		-----	
158		-----		-----		1038	D2622	8.65	G(0.05)	4.88	
159	D5453	5.32		0.20		1059	ISO20846	5.2		0.03	
169	D5453	5.526		0.49		1066	D2622	5.2	C	0.03	Fr 10.4
171	D5453	5.91		1.03		1081	ISO20846	5.3		0.17	
180	D2622	6		1.15		1108	D5453	5.3		0.17	
193	D7039	5.60		0.59		1109	D5453	4.4		-1.10	
194	D5453	5.45		0.38		1126	ISO20846	2.9	G(0.05)	-3.21	
199	D2622	7		2.56		1131	ISO20846	5.2		0.03	
217		-----		-----		1140		-----		-----	
221		-----		-----		1161	ISO20846	4.66		-0.73	
224		-----		-----		1162	D5453	3.45		-2.43	
225		-----		-----		1167	D5453	5.23		0.07	
228		-----		-----		1171	ISO20846	5.73		0.77	
230		-----		-----		1186		-----		-----	
237		-----		-----		1194	D7220	8.0	G(0.05)	3.97	
238		-----		-----		1201	D5453	5.5		0.45	
252		-----		-----		1203	ISO20846	5.2		0.03	
253		-----		-----		1205	D5453	<QL		-----	
254		-----		-----		1215	D5453	6.50		1.86	
256		-----		-----		1218	ISO20884	6.1		1.30	
258		-----		-----		1231	D5453	9	G(0.05)	5.38	
273		-----		-----		1251	D5453	1.8	G(0.05)	-4.75	
311	D5453	5.2		0.03		1254	D5453	5.21		0.04	
312	D5453	4.1		-1.52		1257		-----		-----	
317		-----		-----		1276	D5453	2.74	G(0.05)	-3.43	
323	ISO20846	5.6		0.59		1300	D5453	4.5262		-0.92	
333	D5453	4.7		-0.67		1310	ISO20846	5.153		-0.04	
334	D5453	4.4		-1.10		1406	ISO20846	5.6		0.59	
335	D5453	3.8		-1.94		1407	ISO20846	5.5		0.45	
336		-----		-----		1409	ISO20846	6.2		1.44	
337	D5453	4.9		-0.39		1427	D5453	5.87		0.97	
338	D5453	3.4		-2.50		1428	ISO20846	5.4		0.31	
340	EN20846	4.9		-0.39		1501	D5453	4.32		-1.21	
343		-----		-----		1531		-----		-----	
353	IP531	5.67		0.69		1620	D5453	5.18		0.00	
360	D5453	4.92		-0.36		1634		-----		-----	
369	D2622	4.70		-0.67		1635	D5453	5.3		0.17	
371	D5453	5		-0.25		1636	D5453	4.65		-0.74	
391	D5453	5.6		0.59		1650	D5453	3.65		-2.15	
399		-----		-----		1654	D5453	6.0		1.15	
420	ISO20846	5.09		-0.13		1657	D5453	6.48		1.83	
430		-----		-----		1720	D5453	3.39		-2.52	
433		-----		-----		1721	ISO20846	5.2		0.03	
440		-----		-----		1724	D5453	4.86		-0.45	
445	D5453	6.47		1.82		1728	D5453	5.88		0.99	
447		-----		-----		1730	ISO20884	5.4		0.31	
463	D5453	3.87		-1.84		1740	ISO20846	5.22		0.06	
468	D5453	3.88		-1.83		1810		-----		-----	
485	D5453	4.00		-1.66		1811	D5453	4.58		-0.84	
511		-----		-----		1826	D5453	5.0		-0.25	
541		-----		-----		1833	D5453	7.0		2.56	
557		-----		-----		1842	In house	<5		-----	
562		-----		-----		1849	D5453	4.470		-1.00	
631	D5453	6.83		2.32		1854	ISO20846	5.4		0.31	
657	D5453	5.52		0.48		1864	ISO20846	5.28		0.14	
663		-----		-----		1936	ISO20846	4.4		-1.10	
671		-----		-----		1937	ISO20846	5.5		0.45	
704	D5453	5.71		0.75		1938	D5453	4.1		-1.52	
752		-----		-----		2129	D5453	5.44		0.37	
759		-----		-----		2130	D5453	4.50		-0.96	
781	D2622	5.5		0.45		2146	ISO20846	4.4849		-0.98	
823	D5453	3.6		-2.22		7003	D5453	5.52		0.48	
862	D5453	4.2		-1.38		8010	D7220	5.6		0.59	
868	D3120	5.80		0.87							
875	D5453	5.32		0.20			normality	not OK			
904	D5453	7		2.56			n	94	OK	OK	
912	D5453	5.16		-0.03			outliers	6	3	1	
962	D4294	6.00		1.15			mean (n)	5.179	5.029	5.248	
974		-----		-----			st.dev. (n)	0.8017	0.8895	0.4108	
994	D5453	5.02		-0.22			R(calc.)	2.245	2.491	1.150	
995		-----		-----			R(D5453:09)	1.990	1.947	1.878	

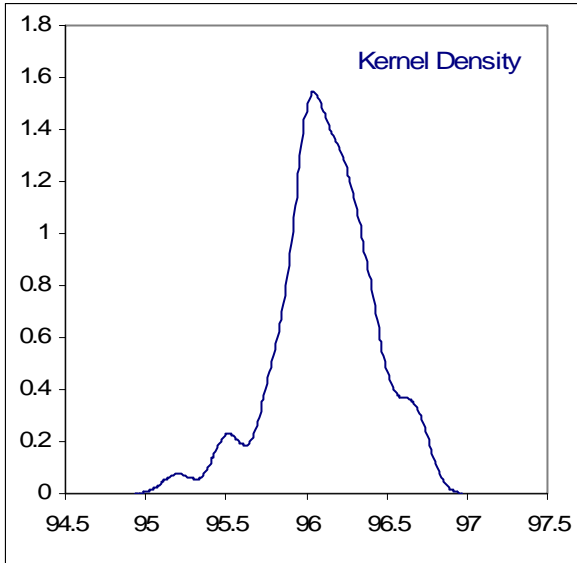
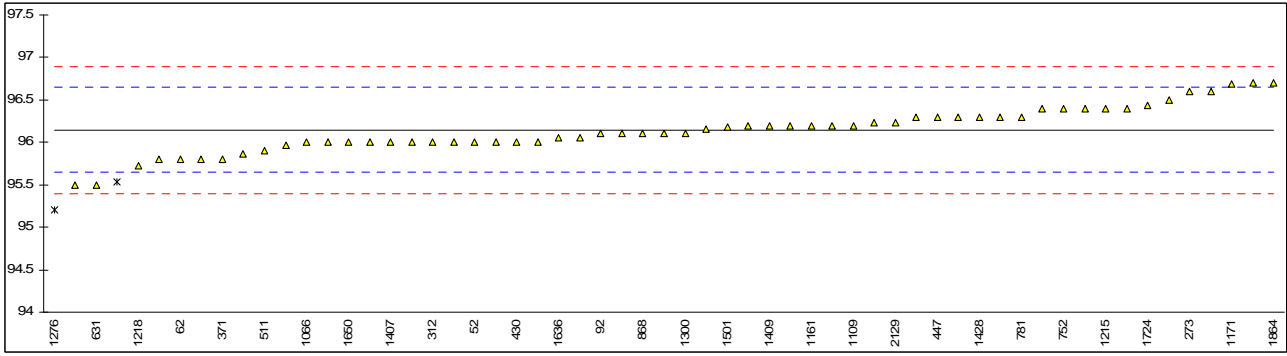


Determination of RONm (before correction) on sample #1009;

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52	D2699-	96.0		-0.58		996		----		----	
62	D2699-	95.8		-1.38		1006		----		----	
92	D2699-	96.10		-0.18		1016		----		----	
120	D2699-	96.3		0.62		1017		----		----	
150	D2699-	96.4		1.02		1033		----		----	
158		----		----		1038	D2699-	96.0		-0.58	
159		----		----		1059	ISO5164	96.2		0.22	
169	D2699-	96.0		-0.58		1066	D2699-08	96.0		-0.58	
171		----		----		1081	D2699-03	96.4		1.02	
180		----		----		1108		----		----	
193		----		----		1109	D2699-09	96.2		0.22	
194		----		----		1126		----		----	
199	D2699-	96.4		1.02		1131	ISO5164	96.1		-0.18	
217		----		----		1140	D2699-	96.0		-0.58	
221		----		----		1161	ISO5164	96.2	C	0.22	Fr 93.2
224		----		----		1162		----		----	
225		----		----		1167		----		----	
228		----		----		1171	D2699-	96.684		2.15	
230		----		----		1186		----		----	
237		----		----		1194	D2699	96.7		2.22	
238		----		----		1201		----		----	
252		----		----		1203		----	W	----	Fr 95.2
253		----		----		1205		----		----	
254		----		----		1215	D2699-06a	96.4		1.02	
256		----		----		1218	FTNIR	95.73		-1.66	
258		----		----		1231	D2699-	96.2		0.22	
273	D2699-	96.6		1.82		1251	D2699-	95.8		-1.38	
311		----		----		1254	D2699-	95.97		-0.70	
312	ISO5164	96.0		-0.58		1257		----		----	
317		----		----		1276	D2699-	95.2	G(0.05)	-3.78	
323	ISO5164	96.2		0.22		1300	D2699-04	96.103		-0.17	
333		----		----		1310	D2699-03A	95.53	ex	-2.46	RONm<RON
334		----		----		1406	D2699-86	96.23		0.34	
335		----		----		1407	IN HOUSE	96.0		-0.58	
336		----		----		1409	ISO5164	96.2		0.22	
337		----		----		1427		----		----	
338		----		----		1428	D2699-	96.3		0.62	
340	D2699-	96.6		1.82		1501	D2699-	96.18		0.14	
343		----		----		1531		----		----	
353		----		----		1620		----		----	
360	D2699-	96.15		0.02		1634		----		----	
369		----		----		1635	D2699-08	95.87		-1.10	
371	D2699-	95.8		-1.38		1636	D2699-	96.05		-0.38	
391		----		----		1650	estimation	96.0	C	-0.58	Fr 96.6
399		----		----		1654		----		----	
420	INH-IR	95.8		-1.38		1657		----		----	
430	D2699-	96.0		-0.58		1720		----		----	
433		----		----		1721		----		----	
440		----		----		1724	D2699-	96.44		1.18	
445	ISO5164	96.5		1.42		1728	D2699-	96.06		-0.34	
447	D2699-01	96.3		0.62		1730		----		----	
463		----		----		1740		----		----	
468		----		----		1810		----		----	
485		----		----		1811		----		----	
511	D2699-09	95.9		-0.98		1826	D2699-	96.0		-0.58	
541		----		----		1833	D2699-	96.0		-0.58	
557		----		----		1842		----		----	
562		----		----		1849	D2699-	96.0		-0.58	
631	D2699-	95.5		-2.58		1854		----		----	
657	D2699-08	96.3		0.62		1864	D2699-09	96.7		2.22	
663		----		----		1936		----		----	
671		----		----		1937		----		----	
704		----		----		1938		----		----	
752	D2699-	96.4		1.02		2129	D2699-04	96.23		0.34	
759		----		----		2130		----		----	
781	GOST8226	96.3		0.62		2146		----		----	
823	D2699-	96.1		-0.18		7003		----		----	
862	D2699-	96.3		0.62		8010		----		----	
868	D2699-	96.10		-0.18							
875		----		----							
904		----		----			normality	OK			OK
912		----		----			n	57			36
962		----		----			outliers	1			1
974	D2699-	95.5	C	-2.58	Fr 95.3		mean (n)	96.15			96.12
994		----		----			st.dev. (n)	0.266			0.284
995		----		----			R(calc.)	0.75			0.79
							R(D2699:09)	0.70			0.70

Only RONm + RON *)

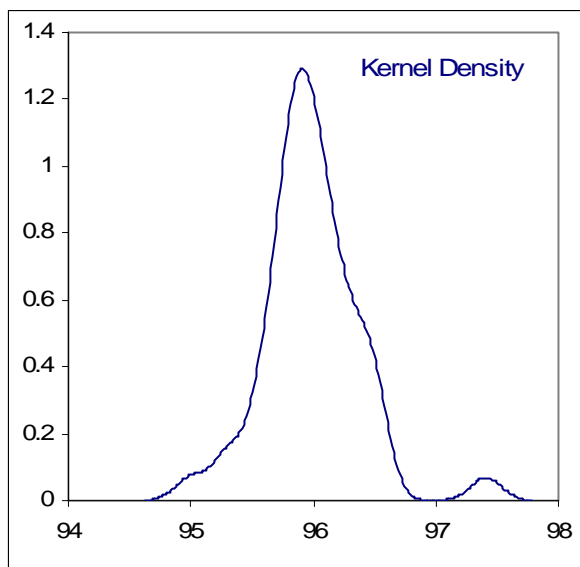
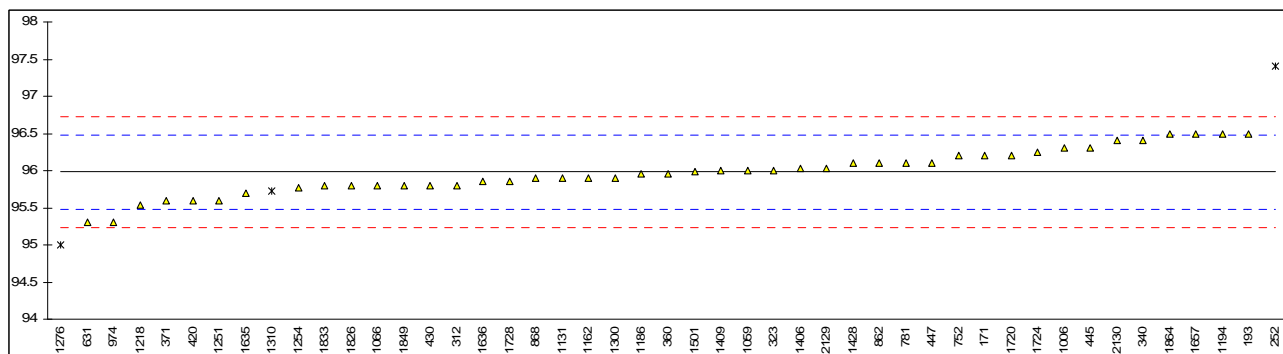
*) selected results of laboratories that reported both RONm and RON after correction



Determination of RON (after correction) on sample #1009;

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52		----		----		996		----		----	
62		----		----		1006	D2699-	96.3		1.28	
92		----		----		1016		----		----	
120		----		----		1017		----		----	
150		----		----		1033		----		----	
158		----		----		1038		----		----	
159		----		----		1059	ISO5164	96.0		0.08	
169		----		----		1066	D2699-08	95.8		-0.72	
171	D2699-	96.2	C	0.88	Fr 85.8	1081		----		----	
180		----		----		1108		----		----	
193	D2699-	96.50		2.08		1109		----		----	
194		----		----		1126		----		----	
199		----		----		1131	ISO5164	95.9		-0.32	
217		----		----		1140		----		----	
221		----		----		1161		----		----	
224		----		----		1162	D2699-	95.9		-0.32	
225		----		----		1167		----		----	
228		----		----		1171		----		----	
230		----		----		1186	D2699-08	95.95		-0.12	
237		----		----		1194	D2699	96.5		2.08	
238		----		----		1201		----		----	
252	D2699-	97.41	G(0.01)	5.72		1203		----		----	
253		----		----		1205		----		----	
254		----		----		1215		----		----	
256		----		----		1218	FTNIR	95.53		-1.80	
258		----		----		1231		----		----	
273		----		----		1251	D2699-	95.6		-1.52	
311		----		----		1254	D2699-	95.77		-0.84	
312	ISO5164	95.8		-0.72		1257		----		----	
317		----		----		1276	D2699-	95.0	G(0.05)	-3.92	
323	ISO5164	96.0		0.08		1300	D2699-04	95.903		-0.31	
333		----		----		1310	D2699-03A	95.73	ex	-1.00	RON<RONm
334		----		----		1406	D2699-86	96.03		0.20	
335		----		----		1407		----		----	
336		----		----		1409	ISO5164	96.0		0.08	
337		----		----		1427		----		----	
338		----		----		1428	ISO5164	96.1		0.48	
340	D2699-	96.4		1.68		1501	D2699-	95.98		0.00	
343		----		----		1531		----		----	
353		----		----		1620		----		----	
360	D2699-	95.96		-0.08		1634		----		----	
369		----		----		1635	D2699-08	95.7		-1.12	
371	D2699-	95.6		-1.52		1636	D2699-	95.85		-0.52	
391		----		----		1650		----		----	
399		----		----		1654		----		----	
420	INH-IR	95.6		-1.52		1657	D2699-	96.5		2.08	
430	D2699-	95.8		-0.72		1720	D2699-	96.2		0.88	
433		----		----		1721		----		----	
440		----		----		1724	D2699-	96.24		1.04	
445	ISO5164	96.3		1.28		1728	D2699-	95.86		-0.48	
447	D2699-01	96.1		0.48		1730		----		----	
463		----		----		1740		----		----	
468		----		----		1810		----		----	
485		----		----		1811		----		----	
511		----		----		1826	D2699-	95.8		-0.72	
541		----		----		1833	D2699-	95.8		-0.72	
557		----		----		1842		----		----	
562		----		----		1849	D2699-	95.8		-0.72	
631	D2699-	95.3		-2.72		1854		----		----	
657		----		----		1864	D2699-09	96.5		2.08	
663		----		----		1936		----		----	
671		----		----		1937		----		----	
704		----		----		1938		----		----	
752	D2699-	96.2		0.88		2129	D2699-04	96.03		0.20	
759		----		----		2130	D2699-86	96.40		1.68	
781	GOST8226	96.1		0.48		2146		----		----	
823		----		----		7003		----		----	
862	EN228	96.1		0.48		8010		----		----	
868	D2699-	95.90		-0.32							Only RONm + RON *)
875		----		----			normality	OK			OK
904		----		----			n	44			36
912		----		----			outliers	2			1
962		----		----			mean (n)	95.98			95.92
974	D2699-	95.3	C	-2.72	Fr 95.1		st.dev. (n)	0.299			0.283
994		----		----			R(calc.)	0.84			0.79
995		----		----			R(D2699:09)	0.70			0.70

*) selected results of laboratories that reported both RONm and RON after correction

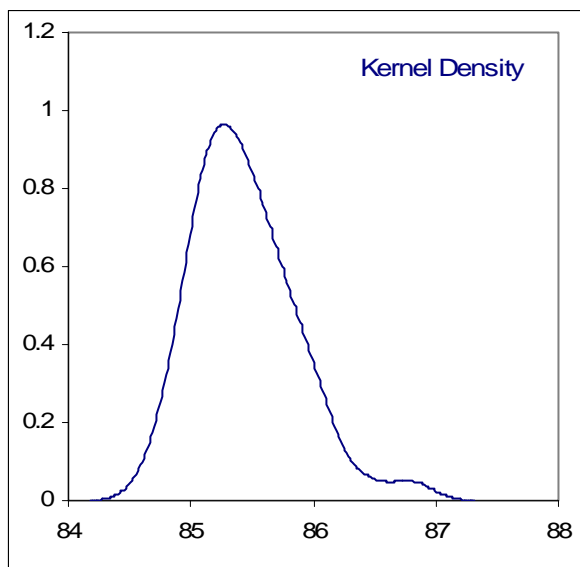
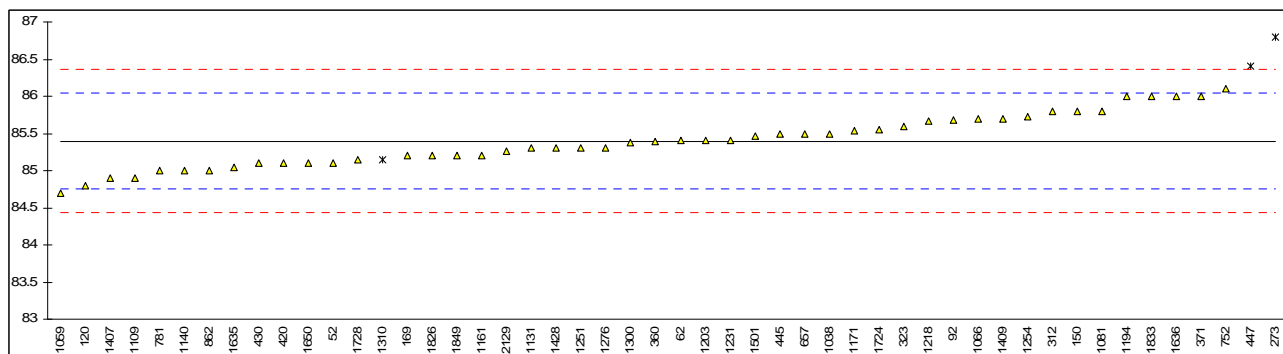


Determination of MONm (before correction) on sample #1009;

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52	D2700-	85.1		-0.93		996		----		----	
62	D2700-	85.4		0.01		1006		----		----	
92	D2700-	85.68		0.88		1016		----		----	
120	D2700-	84.8		-1.86		1017		----		----	
150	D2700-	85.8		1.25		1033		----		----	
158		----		----		1038	D2700-	85.5		0.32	
159		----		----		1059	D2700-	84.7		-2.17	
169	D2700-	85.2		-0.62		1066	D2700-08	85.7		0.94	
171		----		----		1081	D2700-03	85.8		1.25	
180		----		----		1108		----		----	
193		----		----		1109	D2700-09	84.9		-1.55	
194		----		----		1126		----		----	
199		----		----		1131	ISO5163	85.3		-0.31	
217		----		----		1140	D2700-	85.0		-1.24	
221		----		----		1161	ISO5163	85.2	C	-0.62	Fr 83.4
224		----		----		1162		----		----	
225		----		----		1167		----		----	
228		----		----		1171	D2699	85.537		0.43	
230		----		----		1186		----		----	
237		----		----		1194	D2700-	86.0		1.87	
238		----		----		1201		----		----	
252		----		----		1203	ISO5163	85.4		0.01	
253		----		----		1205		----		----	
254		----		----		1215		----		----	
256		----		----		1218	FTNIR	85.66		0.81	
258		----		----		1231	D2700-	85.4		0.01	
273	D2700-	86.8	G(0.05)	4.36		1251	D2700-	85.3		-0.31	
311		----		----		1254	D2700-	85.72		1.00	
312	ISO5163	85.8		1.25		1257		----		----	
317		----		----		1276	D2700-	85.3		-0.31	
323	ISO5163	85.6		0.63		1300	D2700-04	85.373		-0.08	
333		----		----		1310	D2700-03B	85.15	ex	-0.77	MONm<MON
334		----		----		1406		----		----	
335		----		----		1407	IN HOUSE	84.9		-1.55	
336		----		----		1409	ISO5163	85.7		0.94	
337		----		----		1427		----		----	
338		----		----		1428	D2700-	85.3		-0.31	
340		----		----		1501	D2700-	85.46		0.19	
343		----		----		1531		----		----	
353		----		----		1620		----		----	
360	D2700-	85.39		-0.03		1634		----		----	
369		----		----		1635	D2700-08	85.04		-1.11	
371	D2700-	86.0		1.87		1636	D2700-	86.00		1.87	
391		----		----		1650	ESTIMATION	85.1	C	-0.93	Fr 85.1
399		----		----		1654		----		----	
420	INH-IR	85.1		-0.93		1657		----		----	
430	D2700-	85.1		-0.93		1720		----		----	
433		----		----		1721		----		----	
440		----		----		1724	D2700-	85.55		0.47	
445	ISO5163	85.5		0.32		1728	D2700-	85.14		-0.80	
447	D2700-01	86.4	G(0.05)	3.12		1730		----		----	
463		----		----		1740		----		----	
468		----		----		1810		----		----	
485		----		----		1811		----		----	
511		----		----		1826	D2700-	85.2		-0.62	
541		----		----		1833	D2700-	86.0		1.87	
557		----		----		1842		----		----	
562		----		----		1849	D2700-	85.2		-0.62	
631		----		----		1854		----		----	
657	D2700-08	85.5		0.32		1864		----		----	
663		----		----		1936		----		----	
671		----		----		1937		----		----	
704		----		----		1938		----		----	
752	D2700-	86.1		2.18		2129	D2700-04	85.26		-0.43	
759		----		----		2130		----		----	
781	GOST511	85.0		-1.24		2146		----		----	
823		----		----		7003		----		----	
862	D2700-	85.0		-1.24		8010		----		----	
868		----		----							
875		----		----							
904		----		----			normality	OK			OK
912		----		----			n	47			30
962		----		----			outliers	2			1
974		----		----			mean (n)	85.40			85.45
994		----		----			st.dev. (n)	0.348			0.361
995		----		----			R(calc.)	0.97			1.01
							R(D2700:09)	0.90			0.90

Only MONm + MON *)

*) selected results of laboratories that reported both MONm and MON after correction

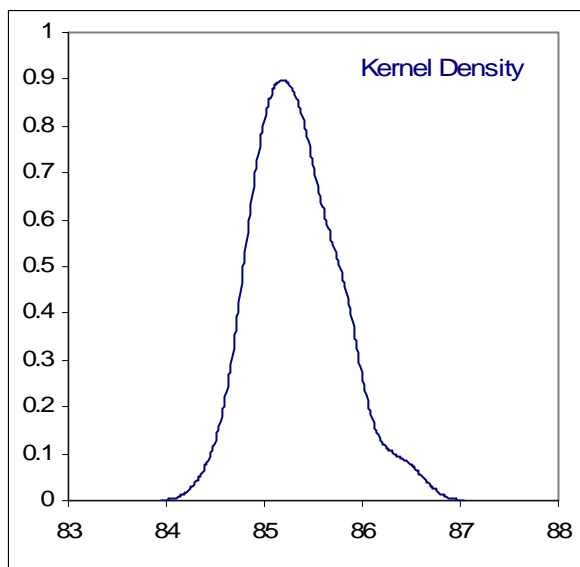
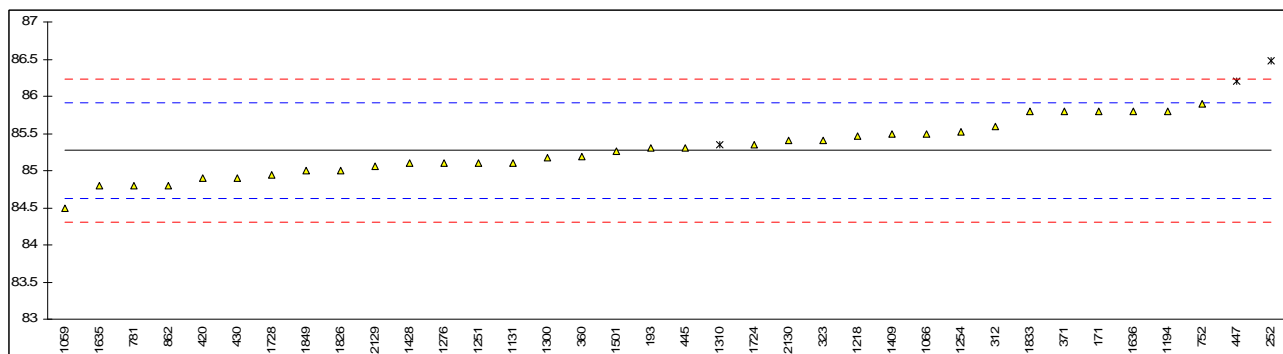


Determination of MON (after correction) on sample #1009;

lab	method	value	mark	z(targ)	remarks	lab	method	value	mark	z(targ)	remarks
52		----		----		996		----		----	
62		----		----		1006		----		----	
92		----		----		1016		----		----	
120		----		----		1017		----		----	
150		----		----		1033		----		----	
158		----		----		1038		----		----	
159		----		----		1059	D2700-	84.5		-2.40	
169		----		----		1066	D2700-08	85.5		0.71	
171	D2700-	85.8	C	1.64	Fr 96.2	1081		----		----	
180		----		----		1108		----		----	
193	D2700-	85.30		0.09		1109		----		----	
194		----		----		1126		----		----	
199		----		----		1131	ISO5163	85.1		-0.53	
217		----		----		1140		----		----	
221		----		----		1161		----		----	
224		----		----		1162		----		----	
225		----		----		1167		----		----	
228		----		----		1171		----		----	
230		----		----		1186		----	W	----	Fr 82.52
237		----		----		1194	D2700-	85.8		1.64	
238		----		----		1201		----		----	
252	D2700-	86.48	G(0.05)	3.76		1203		----		----	
253		----		----		1205		----		----	
254		----		----		1215		----		----	
256		----		----		1218	FTNIR	85.46		0.59	
258		----		----		1231		----		----	
273		----		----		1251	D2700-	85.1		-0.53	
311		----		----		1254	D2700-	85.52		0.77	
312	ISO5163	85.6		1.02		1257		----		----	
317		----		----		1276	D2700-	85.1		-0.53	
323	ISO5163	85.4		0.40		1300	D2700-04	85.173		-0.31	
333		----		----		1310	D2700-03B	85.35	ex	0.24	MON>MONm
334		----		----		1406		----		----	
335		----		----		1407		----		----	
336		----		----		1409	ISO5163	85.5		0.71	
337		----		----		1427		----		----	
338		----		----		1428	ISO5163	85.1		-0.53	
340		----		----		1501	D2700-	85.26		-0.04	
343		----		----		1531		----		----	
353		----		----		1620		----		----	
360	D2700-	85.19		-0.25		1634		----		----	
369		----		----		1635	D2700-08	84.8		-1.47	
371	D2700-	85.8		1.64		1636	D2700-	85.80		1.64	
391		----		----		1650		----		----	
399		----		----		1654		----		----	
420	INH-IR	84.9		-1.16		1657		----		----	
430	D2700-	84.9		-1.16		1720		----		----	
433		----		----		1721		----		----	
440		----		----		1724	D2700-	85.35		0.24	
445	ISO5163	85.3		0.09		1728	D2700-	84.94		-1.03	
447	D2700-01	86.2	G(0.05)	2.89		1730		----		----	
463		----		----		1740		----		----	
468		----		----		1810		----		----	
485		----		----		1811		----		----	
511		----		----		1826	D2700-	85.0		-0.84	
541		----		----		1833	D2700-	85.8		1.64	
557		----		----		1842		----		----	
562		----		----		1849	D2700-	85.0		-0.84	
631		----		----		1854		----		----	
657		----		----		1864		----		----	
663		----		----		1936		----		----	
671		----		----		1937		----		----	
704		----		----		1938		----		----	
752	D2700-	85.9		1.96		2129	D2700-04	85.06		-0.66	
759		----		----		2130	D2700-86	85.40		0.40	
781	GOST511	84.8		-1.47		2146		----		----	
823		----		----		7003		----		----	
862	EN228	84.8		-1.47		8010		----		----	
868		----		----							
875		----		----							
904		----		----			normality	OK			OK
912		----		----			n	33			30
962		----		----			outliers	2			1
974		----		----			mean (n)	85.27			85.25
994		----		----			st.dev. (n)	0.359			0.362
995		----		----			R(calc.)	1.00			1.01
							R(D2700:09)	0.90			0.90

Only MONm + MON *)

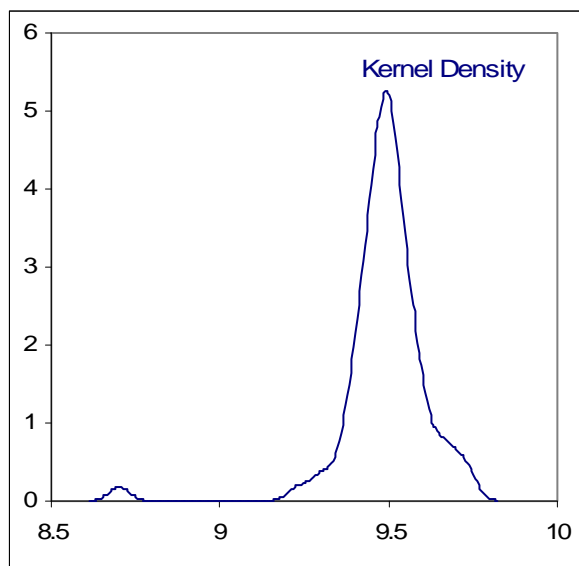
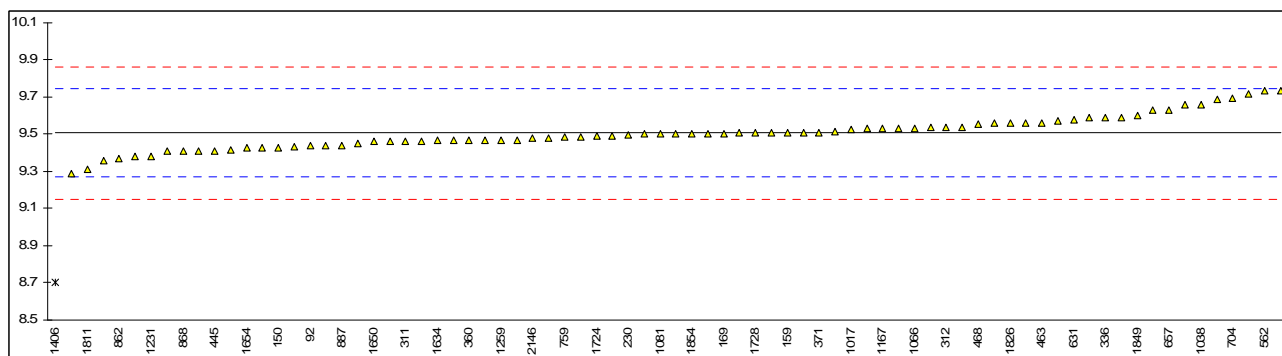
*) selected results of laboratories that reported both MONm and MON after correction



Determination of Total Vapour Pressure on sample #1010; results in psi

lab	method	value	mark	z(targ)	remarks
62	D5191	9.514		0.06	
92	D5191	9.44		-0.56	
120	D5191	9.45		-0.48	
150	D5191	9.43		-0.65	
158	D5191	9.54		0.28	
159	D5191	9.51		0.03	
169	D5191	9.50		-0.06	
171	D5191	9.485		-0.18	
177		-----		-----	
180	D5191	9.47		-0.31	
193	D5191	9.50		-0.06	
194	D5191	9.56		0.45	
199	D5191	9.46		-0.39	
225		-----		-----	
230	D5191	9.4955		-0.09	
237	D5191	9.629		1.03	
238		-----		-----	
258	D5191	9.492		-0.12	
311	D5191	9.46		-0.39	
312	D5191	9.54		0.28	
317		-----		-----	
323	D5191	9.56		0.45	
333		-----		-----	
334	D5191	9.59		0.70	
336	D5191	9.59		0.70	
338	D5191	9.48		-0.23	
340	EN13016	9.41	C	-0.82	First reported 9.55
343	D5191	9.736		1.94	
353		-----		-----	
357	D5191	9.41		-0.82	
360	D5191	9.47		-0.31	
369	D5191	9.471		-0.30	
371	D5191	9.51		0.03	
399	D5191	9.69		1.55	
420	EN13016	9.4637		-0.36	
431		-----		-----	
433		-----		-----	
445	D5191	9.411		-0.81	
447		-----		-----	
463	D5191	9.56		0.45	
468	D5191	9.556		0.42	
485		-----		-----	
557		-----		-----	
562	D5191	9.733		1.91	
631	D5191	9.580		0.62	
657	D5191	9.63		1.04	
704	D5191	9.694		1.58	
752	D5191	9.659		1.29	
759	D5191	9.484		-0.19	
781	D5191	9.510		0.03	
862	D5191	9.37		-1.15	
868	D5191	9.41		-0.82	
875	D5191	9.53		0.20	
887	D5191	9.44		-0.56	
904		-----		-----	
1017	EN13016	9.524		0.15	
1033	IP394	9.471		-0.30	
1038	D5191	9.660		1.29	
1059		-----		-----	
1066	D5191	9.53		0.20	
1081	D5191	9.50		-0.06	
1108	D5191	9.50		-0.06	
1109	D5191	9.507		0.00	
1131	EN13016	9.435		-0.61	
1161	EN13016	9.72	C	1.80	First reported 9.23
1167	D5191	9.53		0.20	
1194		-----		-----	
1201	D5191	9.54		0.28	
1203	EN13016	9.440		-0.56	
1218	EN13016	9.5290		0.19	
1231	D5191	9.384		-1.04	
1251	D5191	9.51		0.03	
1257		-----		-----	
1259	D5191	9.471		-0.30	
1300	D5191	9.5725		0.56	
1310		-----		-----	
1406	D5191	8.702	CG(0.01)	-6.79	First reported 8.412

1407		-----		-----
1409	EN13016	9.36		-1.24
1428		-----		-----
1501	D6378	9.418		-0.75
1620	D5191	9.29		-1.83
1634	EN13016	9.466		-0.34
1650	D5191	9.46		-0.39
1654	D5191	9.427		-0.67
1724	IP394	9.49		-0.14
1728	D5191	9.51		0.03
1730		-----		-----
1810	D5191	9.38		-1.07
1811	D5191	9.311		-1.65
1826	D5191	9.56		0.45
1833	D5191	9.59		0.70
1849	D5191	9.601		0.80
1854	D5191	9.50		-0.06
1936		-----		-----
1937	D5191	9.427		-0.67
1938		-----		-----
2130	D5191	9.50	C	-0.06
2146	EN13016	9.479		-0.23
				First reported 9.85
	normality	not OK		
	n	77		
	outliers	1		
	mean (n)	9.507		
	st.dev. (n)	0.0900		
	R(calc.)	0.252		
	R(D5191:07)	0.332		

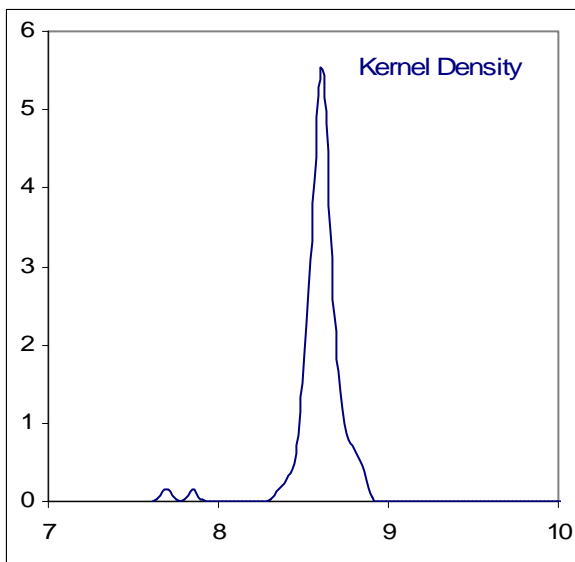
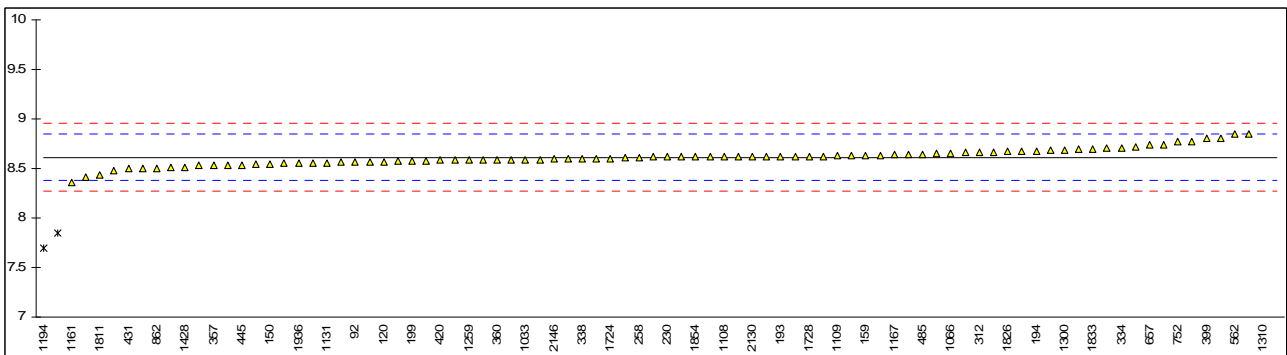


Determination of DVPE (ASTM D5191 calculation) on sample #1010; results in psi

lab	method	value	mark	z(targ)	remarks
62	D5191	8.633		0.12	
92	D5191	8.56		-0.52	
120	D5191	8.57		-0.43	
150	D5191	8.54		-0.69	
158	D5191	8.658		0.34	
159	D5191	8.63		0.09	
169	D5191	8.62		0.01	
171	D5191	8.619		0.00	
177		-----		-----	
180	D5191	8.591		-0.25	
193	D5191	8.62		0.01	
194	D5191	8.677		0.50	
199	D5191	8.58		-0.34	
225		-----		-----	
230	D5191	8.6152		-0.04	
237	D5191	8.744		1.08	
238		-----		-----	
258	D5191	8.612		-0.06	
311	D5191	8.59		-0.26	
312	D5191	8.66		0.35	
317		-----		-----	
323	D5191	8.68		0.53	
333		-----		-----	
334	D5191	8.71		0.79	
336	D5191	8.71		0.79	
338	D5191	8.60		-0.17	
340	EN13016	8.53	C	-0.78	First reported 8.34
343	D5191	8.847		1.98	
353		-----		-----	
357	D5191	8.53		-0.78	
360	D5191	8.59		-0.26	
369	D5191	8.592		-0.24	
371	D5191	8.62		0.01	
399	D5191	8.80		1.57	
420	EN13016	8.5845		-0.30	
431	D5191	8.499		-1.04	
433	EN13016	8.61		-0.08	
445	D5191	8.533		-0.75	
447		-----		-----	
463	D5191	8.62		0.01	
468	D5191	8.673		0.47	
485	D5191	8.644		0.21	
557		-----		-----	
562	D5191	8.844		1.95	
631	D5191	8.696		0.66	
657	D5191	8.74		1.05	
704	D5191	8.807		1.63	
752	D5191	8.773		1.33	
759	D5191	8.599		-0.18	
781	D5191	8.571		-0.42	
862	D5191	8.50		-1.04	
868	D5191	8.53		-0.78	
875	D5191	8.62		0.01	
887	D5191	8.56		-0.52	
904	D5191	13.4	G(0.01)	41.49	
1017	EN13016	8.643		0.20	
1033	IP394	8.5915		-0.24	
1038	D5191	8.773		1.33	
1059		-----		-----	
1066	D5191	8.65		0.27	
1081	D5191	8.62		0.01	
1108	D5191	8.62		0.01	
1109	D5191	8.626		0.06	
1131	EN13016	8.557		-0.54	
1161	EN13016	8.83	C	1.83	First reported 8.36
1167	D5191	8.64		0.18	
1194	EN13016	7.693	G(0.01)	-8.04	
1201	D5191	8.66		0.35	
1203	EN13016	8.561		-0.51	
1218	EN13016	8.6472		0.24	
1231	D5191	8.507		-0.98	
1251	D5191	8.63		0.09	
1257		-----		-----	
1259	D5191	8.586		-0.29	
1300	D5191	8.6878		0.59	
1310	EN13016-1	13.3579	G(0.01)	41.12	
1406	D5191	7.849	CG(0.01)	-6.69	First reported 7.569

1407		-----	-----		
1409	EN13016	8.48	-1.21		
1428	EN13016	8.51	-0.95		
1501	D6378	8.54	-0.69		
1620	D5191	8.417	-1.76		
1634	EN13016	8.586	-0.29		
1650	D5191	8.581	-0.33		
1654	D5191	8.549	-0.61		
1724	IP394	8.60	-0.17		
1728	D5191	8.62	0.01		
1730	EN13016	8.615	-0.04		
1810	D5191	8.50	-1.04		
1811	D5191	8.437	-1.58		
1826	D5191	8.67	0.44		
1833	D5191	8.70	0.70		
1849	D5191	8.717	0.85		
1854	D5191	8.62	0.01		
1936	EN13016	8.55	-0.60		
1937	D5191	8.557	-0.54		
1938	D5191	8.60	-0.17		
2130	D5191	8.620	0.01	C	First reported 8.957
2146	EN13016	8.599	-0.18		

normality not OK
n 84
outliers 4
mean (n) 8.619
st.dev. (n) 0.0855
R(calc.) 0.239
R(D5191:07) 0.323

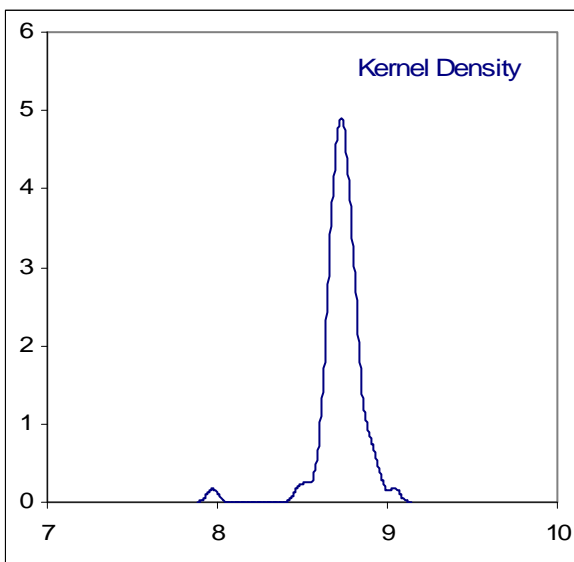
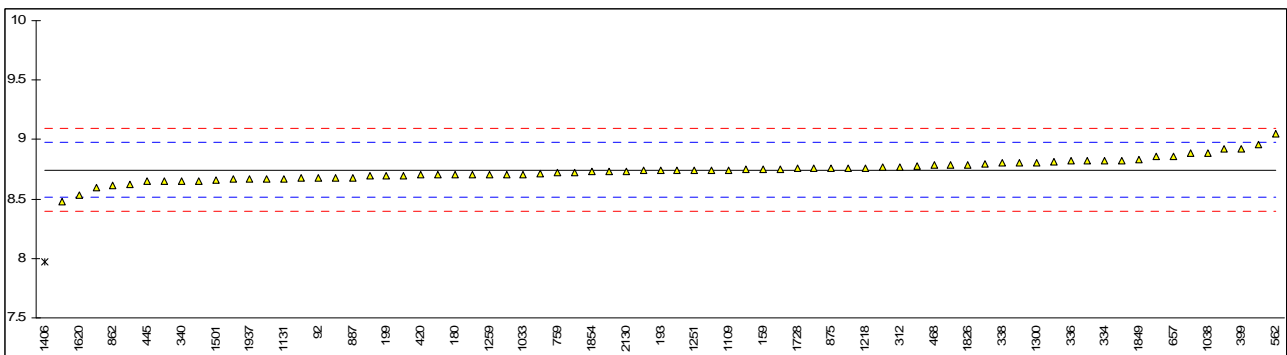


Determination of DVPE (EPA calculation) on sample #1010; results in psi

lab	method	value	mark	z(targ)	remarks
62	D5191	8.748		0.04	
92	D5191	8.68		-0.55	
120	D5191	8.68		-0.55	
150	D5191	8.67		-0.63	
158	D5191	8.773		0.26	
159	D5191	8.75		0.06	
169	D5191	8.74		-0.03	
171	D5191	8.715		-0.24	
177		----		----	
180	D5191	8.706		-0.32	
193	D5191	8.74		-0.03	
194	D5191	8.792		0.42	
199	D5191	8.70		-0.37	
225		----		----	
230	D5191	8.7307		-0.11	
237	D5191	8.858		0.99	
238		----		----	
258		----		----	
311	D5191	8.70		-0.37	
312	D5191	8.77		0.23	
317		----		----	
323	D5191	8.79		0.41	
333		----		----	
334	D5191	8.82		0.66	
336	D5191	8.82		0.66	
338	D5191	8.80		0.49	
340	EN13016	8.65		-0.81	
343	D5191	8.961		1.88	
353		----		----	
357	D5191	8.65		-0.81	
360	D5191	8.706		-0.32	
369	D5191	8.707		-0.31	
371	D5191	8.82		0.66	
399	D5191	8.92		1.53	
420	EN13016	8.7003		-0.37	
431		----		----	
433		----		----	
445	D5191	8.649		-0.81	
447		----		----	
463	D5191	8.74		-0.03	
468	D5191	8.788		0.39	
485		----		----	
557		----		----	
562	D5191	9.045		2.61	
631	D5191	8.811		0.59	
657	D5191	8.86		1.01	
704	D5191	8.920		1.53	
752	D5191	8.887		1.24	
759	D5191	8.72		-0.20	
781	D5191	8.752		0.08	
862	D5191	8.615		-1.11	
868	D5191	8.65		-0.81	
875	D5191	8.76		0.15	
887	D5191	8.68		-0.55	
904		----		----	
1017	EN13016	8.758		0.13	
1033	IP394	8.7072		-0.31	
1038	D5191	8.887		1.24	
1059		----		----	
1066	D5191	8.76		0.15	
1081		----		----	
1108	D5191	8.74		-0.03	
1109	D5191	8.742		-0.01	
1131	EN13016	8.67		-0.63	
1161	EN13016	8.48		-2.27	
1167		----		----	
1194		----		----	
1201	D5191	8.77		0.23	
1203	EN13016	8.677		-0.57	
1218	EN13016	8.7631		0.17	
1231	D5191	8.624		-1.03	
1251	D5191	8.74		-0.03	
1257		----		----	
1259	D5191	8.707		-0.31	
1300	D5191	8.8038		0.52	
1310		----		----	
1406	D5191	7.972	CG(0.01)	-6.67	First reported 7.695

1407		----	----	
1409	EN13016	8.60	-1.24	
1428		----	----	
1501	D6378	8.657	-0.74	
1620	D5191	8.534	-1.81	
1634	EN13016	8.702	-0.36	
1650	D5191	8.697	-0.40	
1654	D5191	8.665	-0.68	
1724	IP394	8.72	-0.20	
1728	D5191	8.755	0.10	
1730		----	----	
1810		----	----	
1811		----	----	
1826	D5191	8.79	0.41	
1833	D5191	8.82	0.66	
1849	D5191	8.83	0.75	
1854	D5191	8.73	-0.11	
1936		----	----	
1937	D5191	8.668	-0.65	
1938		----	----	
2130	D5191	8.735	-0.07	First reported 9.070
2146	EN13016	8.800	0.49	

normality OK
n 72
outliers 1
mean (n) 8.743
st.dev. (n) 0.0913
R(calc.) 0.256
R(D5191:07) 0.324



APPENDIX 2

z-scores distillation ASTM D86 (automated mode)

lab	IBP	10% evap.	50% evap.	90% evap.	FBP	%eva at 70°C	%eva at 100°C	%eva at 150°C
52	0.44	-0.24	-0.27	0.09	-0.06	0.40	----	----
62	-1.28	-1.29	-0.12	-0.41	-0.39	1.06	-0.56	0.24
92	0.67	-0.24	1.22	-0.13	0.93	-0.26	-0.72	0.48
120	-0.04	0.11	-0.57	-0.27	0.23	-0.52	-0.56	0.48
150	0.26	-0.15	0.03	-0.13	-0.47	0.40	-0.41	0.24
158	-0.69	-0.50	0.92	0.16	0.19	0.01	-1.02	-0.23
159	-1.16	0.02	-0.42	-0.06	-0.27	0.08	0.17	-0.13
169	-1.04	-0.68	-2.36	-0.34	-1.84	----	----	----
171	0.91	0.90	0.32	0.37	-0.47	-1.18	-1.02	-0.70
180	0.55	-0.50	-1.17	-0.27	0.06	0.51	0.53	0.88
193	2.38	-0.41	-0.73	-0.28	0.73	----	----	----
194	0.47	-0.02	-1.15	-0.09	0.80	-0.06	0.65	0.10
199	-4.36	-1.55	-5.34	-1.26	-3.12	2.50	2.50	0.95
217	----	----	----	----	----	----	----	----
221	----	----	----	----	----	----	----	----
224	----	----	----	----	----	----	----	----
225	----	----	----	----	----	----	----	----
228	----	----	----	----	----	----	----	----
230	----	----	----	----	----	----	----	----
237	----	----	----	----	----	----	----	----
238	----	----	----	----	----	----	----	----
252	----	----	----	----	----	----	----	----
253	----	----	----	----	----	----	----	----
254	----	----	----	----	----	----	----	----
256	----	----	----	----	----	----	----	----
258	1.32	2.21	6.28	0.79	1.10	-2.62	-7.30	-3.30
273	0.08	-0.85	-0.72	-0.48	0.77	----	----	----
311	0.02	0.02	-0.87	-0.06	-0.27	0.66	-0.10	0.24
312	0.08	0.37	2.26	0.30	0.43	-0.52	-1.33	-0.46
317	-2.53	-0.15	5.98	1.92	-0.68	0.14	0.20	0.72
323	-0.04	-0.42	-1.17	-0.48	-0.60	0.79	0.36	0.95
333	-1.64	-1.47	-2.51	-0.76	-0.68	1.84	1.12	3.78
334	0.14	0.28	0.32	0.51	0.10	-0.26	-0.56	-0.70
335	-0.39	0.28	2.86	0.58	-0.52	0.27	-0.10	-0.94
336	-1.04	-0.50	-1.76	-0.55	-1.18	1.71	0.66	2.37
337	-0.45	-2.43	-4.44	-1.26	-0.35	2.76	1.27	2.60
338	-0.10	-1.03	-1.46	0.37	1.38	1.19	0.05	-0.70
340	0.14	0.20	0.17	0.86	-1.59	0.14	-0.41	-1.41
343	-0.57	----	----	----	-0.56	-2.23	-1.02	-1.41
353	-0.16	-0.77	-0.27	0.37	-0.89	0.40	0.05	-0.46
360	-0.63	-0.33	-1.02	-0.41	-0.52	0.53	0.36	0.72
369	1.15	2.56	-0.12	-0.13	-0.85	-1.57	0.20	0.01
371	----	----	----	----	----	----	----	----
391	0.91	-0.42	2.71	0.79	0.31	-1.83	-1.64	-1.65
399	-0.57	0.72	1.96	0.09	2.46	-1.18	-1.02	0.01
420	0.02	1.25	0.32	-0.55	-1.75	-3.01	-0.41	-1.88
430	----	----	----	----	----	----	----	----
433	----	----	----	----	----	----	----	----
440	-0.81	0.28	1.66	-0.06	0.31	-0.13	-0.87	0.24
445	5.06	0.37	-5.78	-0.48	0.02	1.06	0.05	-0.46
447	-0.33	-0.94	-1.61	-0.27	0.72	0.79	0.51	0.72
463	0.55	-0.24	-2.95	-0.62	-0.89	1.71	0.36	1.19
468	-0.27	-0.77	-2.51	0.16	-0.72	1.06	0.97	0.01
485	-0.95	-1.00	-1.27	-0.08	-0.09	0.87	0.14	0.24
511	----	----	----	----	----	----	----	----
541	----	----	----	----	----	----	----	----
557	----	----	----	----	----	----	----	----
562	0.44	0.37	2.41	0.23	1.26	-1.04	-1.48	-0.70
631	2.63	1.16	0.32	-0.83	2.00	----	----	----
657	0.73	0.72	3.30	0.79	0.27	-1.96	-1.48	-1.41
663	1.56	1.77	0.77	-0.13	-0.52	0.79	-0.87	0.72
671	1.32	2.65	4.94	0.02	0.81	-7.09	2.19	0.72
704	----	----	----	----	----	----	----	----
752	----	----	----	----	----	----	----	----
759	----	----	----	----	----	----	----	----
781	----	----	----	----	----	----	----	----
823	-0.87	-0.07	-0.87	-0.69	0.52	-0.52	0.36	1.42
862	-1.34	-0.07	0.03	-0.06	-0.97	0.66	0.20	0.01
868	----	----	----	----	----	----	----	----
875	----	----	----	----	----	----	----	----
904	----	----	----	----	----	----	----	----
912	1.92	3.00	3.15	4.47	1.05	-1.18	-0.87	-5.19
962	----	----	----	----	----	----	----	----
974	----	----	----	----	----	----	----	----
994	----	----	----	----	----	----	----	----
995	----	----	----	----	----	----	----	----

996	----	----	----	----	----	----	----	----
1006	-0.99	0.11	2.41	1.01	-0.31	----	----	----
1016	----	----	----	----	----	----	----	----
1017	-1.28	0.20	3.90	1.01	0.52	0.01	-0.72	-1.41
1033	-0.75	0.02	0.03	1.15	-1.92	-0.39	0.05	-1.65
1038	1.03	0.72	2.56	0.02	1.01	-1.31	-1.33	0.24
1059	0.55	0.37	0.47	0.30	1.01	-1.04	0.05	-0.46
1066	-0.93	-1.12	-3.70	-0.48	-1.30	1.98	1.43	0.95
1081	-0.75	-0.59	1.22	-0.06	-0.68	----	----	----
1108	1.98	2.73	-0.27	0.09	1.47	-4.59	1.43	-0.23
1109	1.80	0.02	-0.57	-0.48	0.39	0.27	0.05	1.19
1126	-4.78	-4.00	24.60	0.51	0.39	-12.08	-13.58	-0.46
1131	0.38	-0.15	0.62	0.30	-0.14	0.01	-0.41	-0.46
1140	-2.41	-1.12	-1.02	-0.55	-0.72	0.93	0.20	0.95
1161	0.32	-0.68	-1.61	0.16	1.92	-0.13	1.58	-0.23
1162	----	----	----	----	----	----	----	----
1167	0.26	-0.42	-2.80	-0.13	-0.47	0.93	0.51	1.19
1171	----	----	----	----	----	----	----	----
1186	----	----	----	----	----	----	----	----
1194	-1.81	-1.64	-7.12	0.62	-1.46	2.63	2.50	-0.94
1201	-0.33	-0.07	-1.17	0.72	-0.52	0.01	0.81	-1.41
1203	0.32	0.98	2.41	0.72	-0.02	-1.31	-1.48	-0.94
1205	----	----	----	----	----	----	----	----
1215	-0.57	-0.33	-0.27	-0.13	1.84	----	----	----
1218	0.20	-1.90	-1.46	-1.33	0.31	0.79	0.36	0.48
1231	0.26	0.28	-0.57	-0.06	-0.64	----	----	----
1251	-0.10	0.11	0.03	-0.13	-0.43	-0.26	-0.26	0.48
1254	-1.81	-0.94	-0.72	-0.34	-0.64	0.14	0.36	0.72
1257	----	----	----	----	----	----	----	----
1276	-0.51	-0.77	-1.76	-0.41	-0.43	0.79	0.20	0.72
1300	-0.33	-0.59	0.32	0.79	1.26	-1.18	1.27	-1.41
1310	----	----	----	----	----	----	----	----
1406	0.14	0.98	4.64	1.15	0.31	-1.44	-2.40	-2.12
1407	1.68	-0.42	-0.72	0.37	3.90	0.53	0.36	-0.70
1409	0.14	-0.24	0.03	-0.97	0.77	0.40	-0.26	2.13
1427	-0.04	-0.85	-2.66	-0.55	-1.13	1.06	0.97	0.72
1428	0.79	-0.07	-0.42	0.02	1.30	0.01	0.20	0.01
1501	----	----	----	----	----	----	----	----
1531	-1.34	0.28	1.37	0.16	1.88	-0.65	-1.02	-0.46
1620	-0.75	-0.42	-1.31	0.16	0.39	0.93	0.81	-0.46
1634	-1.58	-1.03	-1.61	0.09	-1.18	0.01	0.97	-0.46
1635	----	----	----	----	----	----	----	----
1636	-1.58	-0.94	-1.91	-0.20	0.31	0.93	0.81	0.72
1650	0.50	-0.33	-0.42	0.16	0.27	-0.13	0.05	-0.23
1654	1.09	-0.44	0.17	-0.06	-1.49	0.49	-0.46	-0.06
1657	-0.39	0.11	2.56	1.78	-0.47	----	----	----
1720	0.79	0.20	-0.57	0.09	-0.64	-0.26	0.36	-0.23
1721	----	----	----	----	----	----	----	----
1724	2.09	2.21	4.49	2.00	0.43	-2.88	-1.79	-3.30
1728	0.93	1.28	0.46	0.28	-0.86	0.50	-0.45	-0.40
1730	----	----	----	----	----	----	----	----
1740	1.15	1.68	-0.27	-0.34	-0.47	-0.13	1.89	0.24
1810	1.09	-0.42	-2.06	0.02	-0.64	0.27	0.81	0.24
1811	1.56	0.90	4.20	0.23	1.59	-2.62	-2.55	0.72
1826	-1.40	0.02	0.92	0.16	1.26	-0.39	-0.41	-0.23
1833	-0.16	-0.68	-2.95	-0.34	0.52	1.84	0.97	0.48
1842	-1.10	0.63	5.24	1.15	0.77	----	----	----
1849	-0.39	-1.55	-3.25	-0.13	0.35	-4.72	-6.08	-11.32
1854	----	----	----	----	----	----	----	----
1864	1.21	-0.42	-2.36	-0.27	-1.67	1.84	0.51	0.48
1936	-0.10	-0.07	-0.12	-0.13	-0.35	-0.26	-0.10	0.24
1937	0.73	-0.50	-2.36	-0.69	0.19	-1.83	-2.55	-4.24
1938	-0.87	0.02	0.47	0.44	0.02	-0.39	-0.41	-0.70
2129	-0.22	-0.07	-0.87	-0.41	-1.34	0.14	0.66	1.19
2130	-0.57	2.47	8.07	1.01	1.63	-3.54	-4.54	-1.65
2146	0.26	0.11	-0.12	-0.06	-1.55	0.40	0.05	0.24
7003	----	----	----	----	----	----	----	----
8010	----	----	----	----	----	----	----	----

z-scores distillation ASTM D86 (manual mode)

lab	IBP	10% evap.	50% evap.	90% evap.	FBP	%eva at 70°C	%eva at 100°C	%eva at 150°C
52	----	----	----	----	----	----	----	----
62	----	----	----	----	----	----	----	----
92	----	----	----	----	----	----	----	----
120	----	----	----	----	----	----	----	----
150	----	----	----	----	----	----	----	----
158	----	----	----	----	----	----	----	----
159	----	----	----	----	----	----	----	----
169	----	----	----	----	----	----	----	----
171	----	----	----	----	----	----	----	----
180	----	----	----	----	----	----	----	----
193	----	----	----	----	----	----	----	----
194	----	----	----	----	----	----	----	----
199	----	----	----	----	----	----	----	----
217	----	----	----	----	----	----	----	----
221	0.92	1.38	1.26	-0.84	-0.17	-2.16	1.08	0.45
224	0.57	0.02	0.86	1.51	1.81	-0.88	-0.17	-0.69
225	----	----	----	----	----	----	----	----
228	0.42	1.38	3.83	3.88	-0.56	-2.74	-1.74	-1.84
230	0.42	-0.40	1.90	0.84	1.77	-0.13	-1.11	0.12
237	0.42	0.10	0.55	0.77	-0.56	0.16	-0.49	-0.86
238	0.42	0.67	-0.35	-0.51	2.55	0.45	0.46	0.45
252	0.08	-2.60	2.54	5.22	1.00	----	----	----
253	0.92	1.09	-0.03	-4.82	0.22	-1.00	-1.74	-2.23
254	-0.58	0.31	-0.03	-0.17	0.22	----	----	----
256	-0.10	-0.11	-1.77	-1.58	-1.14	0.74	0.77	0.78
258	----	----	----	----	----	----	----	----
273	----	----	----	----	----	----	----	----
311	----	----	----	----	----	----	----	----
312	----	----	----	----	----	----	----	----
317	----	----	----	----	----	----	----	----
323	----	----	----	----	----	----	----	----
333	----	----	----	----	----	----	----	----
334	----	----	----	----	----	----	----	----
335	----	----	----	----	----	----	----	----
336	----	----	----	----	----	----	----	----
337	----	----	----	----	----	----	----	----
338	----	----	----	----	----	----	----	----
340	----	----	----	----	----	----	----	----
343	----	----	----	----	----	----	----	----
353	----	----	----	----	----	----	----	----
360	----	----	----	----	----	----	----	----
369	----	----	----	----	----	----	----	----
371	-0.58	-0.75	-1.32	-1.52	-0.56	1.03	0.77	0.78
391	----	----	----	----	----	----	----	----
399	----	----	----	----	----	----	----	----
420	----	----	----	----	----	----	----	----
430	----	----	----	----	----	----	----	----
433	----	----	----	----	----	----	----	----
440	----	----	----	----	----	----	----	----
445	----	----	----	----	----	----	----	----
447	----	----	----	----	----	----	----	----
463	----	----	----	----	----	----	----	----
468	----	----	----	----	----	----	----	----
485	----	----	----	----	----	----	----	----
511	0.17	-0.40	-0.35	0.51	-0.05	----	----	----
541	0.92	0.67	1.26	1.85	-0.56	----	----	----
557	----	----	----	----	----	----	----	----
562	----	----	----	----	----	----	----	----
631	----	----	----	----	----	----	----	----
657	----	----	----	----	----	----	----	----
663	----	----	----	----	----	----	----	----
671	----	----	----	----	----	----	----	----
704	-2.08	-1.82	-2.60	-2.86	-1.14	1.90	1.40	1.43
752	0.17	-0.40	0.61	-0.17	1.19	0.45	0.14	0.12
759	-0.48	-0.61	-0.87	-1.31	-0.44	0.74	0.77	0.78
781	-0.58	-0.54	-1.32	-1.38	0.22	0.74	1.08	0.78
823	----	----	----	----	----	----	----	----
862	----	----	----	----	----	----	----	----
868	0.42	-0.75	-2.60	-0.84	-0.56	1.84	1.15	0.65
875	-0.58	-0.04	-0.35	-0.17	1.00	0.45	-0.49	-0.20
904	-0.08	-0.04	-0.03	-0.17	-0.17	0.16	0.14	0.12
912	----	----	----	----	----	----	----	----
962	-1.58	-0.75	-2.28	-3.20	-1.92	----	----	----
974	1.42	-0.04	-1.32	-1.52	-0.17	-1.00	-1.11	-0.53
994	-0.58	0.67	2.54	2.53	0.22	-1.29	-1.11	0.45
995	----	----	----	----	----	----	----	----
996	-0.33	0.31	1.58	1.52	0.02	-1.00	-0.49	-0.20

1006	----	----	----	----	----	----	----	----
1016	----	----	----	----	----	----	----	----
1017	----	----	----	----	----	----	----	----
1033	----	----	----	----	----	----	----	----
1038	----	----	----	----	----	----	----	----
1059	----	----	----	----	----	----	----	----
1066	----	----	----	----	----	----	----	----
1081	----	----	----	----	----	----	----	----
1108	----	----	----	----	----	----	----	----
1109	----	----	----	----	----	----	----	----
1126	----	----	----	----	----	----	----	----
1131	----	----	----	----	----	----	----	----
1140	----	----	----	----	----	----	----	----
1161	----	----	----	----	----	----	----	----
1162	-0.08	-0.04	-0.67	-0.17	-0.17	----	----	----
1167	----	----	----	----	----	----	----	----
1171	-1.01	-0.73	-0.88	-0.55	1.00	0.42	-0.05	-0.19
1186	----	----	----	----	----	----	----	----
1194	----	----	----	----	----	----	----	----
1201	----	----	----	----	----	----	----	----
1203	----	----	----	----	----	----	----	----
1205	----	----	----	----	----	----	----	----
1215	----	----	----	----	----	----	----	----
1218	----	----	----	----	----	----	----	----
1231	----	----	----	----	----	----	----	----
1251	----	----	----	----	----	----	----	----
1254	----	----	----	----	----	----	----	----
1257	----	----	----	----	----	----	----	----
1276	----	----	----	----	----	----	----	----
1300	-0.39	0.74	-0.67	-2.91	-1.70	-1.12	1.27	1.83
1310	-0.33	0.31	0.29	3.54	0.22	1.03	1.08	-0.20
1406	----	----	----	----	----	----	----	----
1407	----	----	----	----	----	----	----	----
1409	----	----	----	----	----	----	----	----
1427	----	----	----	----	----	----	----	----
1428	----	----	----	----	----	----	----	----
1501	-1.01	-1.06	-1.61	-1.68	-2.04	0.16	-0.17	-0.20
1531	----	----	----	----	----	----	----	----
1620	----	----	----	----	----	----	----	----
1634	----	----	----	----	----	----	----	----
1635	-0.83	-0.40	0.93	2.86	-1.14	0.16	-1.11	-1.18
1636	----	----	----	----	----	----	----	----
1650	----	----	----	----	----	----	----	----
1654	----	----	----	----	----	----	----	----
1657	----	----	----	----	----	----	----	----
1720	----	----	----	----	----	----	----	----
1721	1.92	2.44	1.26	1.52	0.22	1.32	-0.49	-0.53
1724	----	----	----	----	----	----	----	----
1728	----	----	----	----	----	----	----	----
1730	----	----	----	----	----	----	----	----
1740	----	----	----	----	----	----	----	----
1810	----	----	----	----	----	----	----	----
1811	----	----	----	----	----	----	----	----
1826	----	----	----	----	----	----	----	----
1833	----	----	----	----	----	----	----	----
1842	----	----	----	----	----	----	----	----
1849	----	----	----	----	----	----	----	----
1854	1.92	1.38	-0.35	-0.17	1.39	-0.42	0.14	0.12
1864	----	----	----	----	----	----	----	----
1936	----	----	----	----	----	----	----	----
1937	----	----	----	----	----	----	----	----
1938	----	----	----	----	----	----	----	----
2129	----	----	----	----	----	----	----	----
2130	----	----	----	----	----	----	----	----
2146	----	----	----	----	----	----	----	----
7003	----	----	----	----	----	----	----	----
8010	----	----	----	----	----	----	----	----

APPENDIX 3**List of participants per country**

1 laboratory in	ARGENTINA
2 laboratories in	AUSTRALIA
2 laboratories in	AUSTRIA
1 laboratory in	AZERBAIJAN
4 laboratories in	BELGIUM
1 laboratory in	BOSNIA and HERZEGOVINA
1 laboratory in	BRAZIL
1 laboratory in	BULGARIA
3 laboratories in	CANADA
1 laboratory in	CHILE
1 laboratory in	CÔTE D'IVOIRE
1 laboratory in	CROATIA
1 laboratory in	CYPRUS
3 laboratories in	CZECH REPUBLIC
2 laboratories in	ESTONIA
1 laboratory in	FINLAND
7 laboratories in	FRANCE
1 laboratory in	GEORGIA
7 laboratories in	GREECE
1 laboratory in	GUAM
1 laboratory in	HUNGARY
1 laboratory in	INDIA
1 laboratory in	IRAN
2 laboratories in	IRELAND
1 laboratory in	ISRAEL
2 laboratories in	ITALY
2 laboratories in	KENYA
1 laboratory in	KOREA
4 laboratories in	LATVIA
2 laboratories in	LITHUANIA
1 laboratory in	MALAYSIA
1 laboratory in	MAURITIUS
1 laboratory in	MOZAMBIQUE
1 laboratory in	NETHERLANDS ANTILLES
2 laboratories in	NIGERIA
1 laboratory in	NORTHERN IRELAND
4 laboratories in	P.R. of CHINA
1 laboratory in	PERU
1 laboratory in	PHILIPPINES
1 laboratory in	POLAND
2 laboratories in	PORTUGAL
1 laboratory in	REPUBLIC OF DJIBOUTI
1 laboratory in	REPUBLIC OF GUINEE
2 laboratories in	REPUBLIC OF MACEDONIA
1 laboratory in	ROMANIA
4 laboratories in	RUSSIA
1 laboratory in	SAUDI ARABIA
1 laboratory in	SENEGAL
1 laboratory in	SINGAPORE
1 laboratory in	SLOVENIA
1 laboratory in	SOUTH AFRICA
1 laboratory in	SPAIN
1 laboratory in	SUDAN
2 laboratories in	SWEDEN
1 laboratory in	TAIWAN R.O.C.
1 laboratory in	TANZANIA
3 laboratories in	THAILAND
10 laboratories in	THE NETHERLANDS
1 laboratory in	TOGO
1 laboratory in	TUNISIA
13 laboratories in	TURKEY
1 laboratory in	TURKMENISTAN
2 laboratories in	U.A.E.
1 laboratory in	U.S. VIRGIN ISLANDS
8 laboratories in	U.S.A.
1 laboratory in	UKRAINE
7 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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- 2 ASTM E178-02
- 3 ASTM E1301-03
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