

# Results of Proficiency Test Gasoline (EN specification) October 2011

Organised by: Institute for Interlaboratory Studies  
Spijkenisse, the Netherlands

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## **1 INTRODUCTION**

Since 1995, the Institute for Interlaboratory Studies (iis) organizes a proficiency scheme for Gasoline. During the annual proficiency testing program 2011/2012, it was decided to continue the round robin for the analysis of Gasoline in accordance with the latest applicable version of EN228 specification. In this interlaboratory study 111 laboratories in 51 different countries have participated. See appendix 3 for the number of participants per country. In this report, the results of the gasoline proficiency test are presented and discussed.

## **2 SET UP**

The Institute for Interlaboratory Studies (iis) in Spijkenisse, the Netherlands, was the organiser of this proficiency test. Sample analyses for fit-for-use and homogeneity testing were subcontracted. In this proficiency test, the participants received, depending on their registration, two or three samples of Gasoline: 2\*1 litre euro 95 Gasoline (labelled #11082) and/or 1\*1 litre ( $\pm 800$  mL filled) euro 95 Gasoline (labelled #11083) for DVPE only. Participants were requested to report rounded and unrounded results. The unrounded results were preferably used for statistical evaluation.

### **2.1 ACCREDITATION**

The Institute for Interlaboratory Studies in Spijkenisse, the Netherlands, is accredited in accordance with ISO guide 43 and ILAC-G13:2007, (R007), since January 2000, by the Dutch Accreditation Council: RvA (Raad voor Accreditatie). This ensures 100% 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 450 litre of Gasoline Euro 95 was obtained from local gasoline station. After homogenisation in a 500 L mixing vessel, 310 amber glass bottles of 1 litre were filled and labelled #11082.

The homogeneity of the subsamples #11082 was checked by determination of Density @15°C in accordance with ISO12185 on 10 stratified randomly selected samples.

	Density @ 15°C in kg/L
Sample #11082-1	0.73508
Sample #11082-2	0.73508
Sample #11082-3	0.73506
Sample #11082-4	0.73506
Sample #11082-5	0.73510
Sample #11082-6	0.73509
Sample #11082-7	0.73511
Sample #11082-8	0.73515
Sample #11082-9	0.73509
Sample #11082-10	0.73513

Table 1: homogeneity test results of subsamples #11082

For the second batch, specifically for Dry Vapour Pressure Equivalent (DVPE), the necessary sample material of 100 litre of Gasoline Euro 95 was also obtained from a local gasoline station. After homogenisation, 123 amber glass bottles of 1 litre were filled with approx. 800 mL for DVPE only and labelled #11083. The homogeneity of the subsamples #11083 was checked by determination of DVPE in accordance with EN13016-1:00 on 8 stratified randomly selected samples.

	DVPE in kPa
Sample #11083-1	92.39
Sample #11083-2	91.84
Sample #11083-3	91.91
Sample #11083-4	91.63
Sample #11083-5	91.70
Sample #11083-6	91.77
Sample #11083-7	91.63
Sample #11083-8	91.77

Table 2: homogeneity test results of subsamples #11083

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

	Density@ 15 °C in kg/L	DVPE in kPa
r (sample #11082)	0.00004	----
r (sample #11083)	----	0.689
reference method	ISO12185:96	EN13016-1:00
0.3 x R (ref. method)	0.00015	1.050

Table 3: repeatabilities of subsamples #11082 and #11083

The repeatability of the results of homogeneity test for Density and DVPE were in agreement with 0.3 times the corresponding reproducibility of the respective reference method. Therefore, homogeneity of subsamples #11082 and #11083 was assumed.

To the participants, depending on their registration, 2\*1 litre of sample #11082 and/or 1\*1 litre ( $\pm$  800 mL filled) of sample #11083 were sent on September 5, 2011.

## **2.5 STABILITY OF THE SAMPLES**

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

## **2.6 ANALYSIS**

The participants were requested to determine API Gravity, Aromatics by FIA, Aromatics by GC, (%V/V and %M/M), Appearance, Benzene, Copper Strip Corrosion, Doctor Test, Density @ 15°C, Distillation (automated and manual), Existent gum, Lead, Manganese, Olefins by FIA, Olefins by GC (%V/V and %M/M), DIPE, Ethanol, ETBE, MTBE, Iso-Butanol, TAME, t-Butanol, Ethers >C5, Methanol, Oxygen, Oxidation Stability, Sulphur, RON and MON (before and after correction) on sample #11082.

On sample #11083, the participants were requested to determine Air Saturated Vapour Pressure (ASVP) and Dry Vapour Pressure Equivalent (DVPE) according to EN13016-1. To get comparable results, a detailed report form on which the units and the preferred test methods were printed, was sent together with each set of samples. In addition, a letter of instructions and a SDS were added to the package.

## **3 RESULTS**

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

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

### 3.1 STATISTICS

Statistical calculations were performed as described in the report 'iis Interlaboratory Studies: Protocol for the Organisation, Statistics and Evaluation' of January 2010 (iis-protocol, version 3.2).

For the statistical evaluation the *unrounded* (when available) figures were used instead of the rounded results. Results reported as '<...>' or '>...>' were not used in the statistical evaluation.

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

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

Finally, the reproducibilities were calculated from the standard deviations by multiplying them with a factor of 2.8.

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

### 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; nos.13 and 14).

### 3.3 Z-SCORES

To evaluate the performance of the participating laboratories the z-scores were calculated. As it was decided to evaluate the performance of the participants in this proficiency test (PT)

against the literature requirements, e.g. ISO/EN reproducibilities, the z-scores were calculated using a target standard deviation. This result was an evaluation independent of the spread of this interlaboratory study. The target standard deviation was calculated from the literature reproducibility by division with 2.8. The z-scores were calculated in accordance with:

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

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

The  $z_{(\text{target})}$  scores are listed in the result tables in appendix 2

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

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

## 4 EVALUATION

In this proficiency test, problems were encountered during the transport of the samples to the laboratories in Cote D'Ivoire, Mozambique, South Africa, Sudan, and Ukraine. The samples to these laboratories arrived near of after the final reporting date.

From the 111 participants, 19 participants did report the results after the deadline for reporting and 5 participants did not report any results at all. The 106 reporting laboratories did send in 2153 numerical results. Observed were 68 outlying results, which is 3.2%. In proficiency studies, outlier percentages of 3% - 7.5% are quite normal.

### 4.1 EVALUATION PER TEST

In this section, the results are discussed per test.

Not all data sets proved to have a normal distribution. Not normal distributions were found for the following determinations for sample #11082: API gravity, Benzene, Density, Distillation (for automated: 50% and 90%) evaporated %vol at 70°C, 100°C and 150°C), Existent Gum, Olefins by GC % V/V, Ethanol, MTBE, Other oxygenates, Oxygen content, Sulphur and MON. In these cases, the statistical evaluation should be used with care.

API Gravity: This determination was not problematic. Two statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D1298:05.

Aromatics by FIA: This determination was problematic. No statistical outliers were observed. However, the calculated reproducibility is not in agreement with the requirements of D1319:10.

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

Appearance: No problems have been observed. Fifty-one participants agreed on the appearance as Clear and Bright. Other laboratories reported the appearance as clear, pass, yellow or BER.

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

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

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

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

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

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



- Lead: The consensus value of the group was below the application range (2.5 - 25 mg/L) and most participants reported a “less then” result. Therefore, no significant conclusions were drawn.
- Manganese: The consensus value of the group was below the application range (0.25 - 40 mg/L) and most participants reported a “less then” result. Therefore, no significant conclusions were drawn.
- Olefins by FIA: This determination was very problematic. No statistical outliers were observed. However, the calculated reproducibility is not at.all in agreement with the requirements of D1319;10.  
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 no 14). Another cause for the large spread observed may be the fact that in the last version of ASTM D1319 the sample is no longer depentanized, and several participating laboratories may have used the previous version of this method that did prescribe depentanization.
- Olefins by GC: The determination in %V/V was not problematic. Only one statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in good agreement with the requirements of EN14517:04.  
Regretfully for the determination in %M/M no precision data are available. Therefore, no significant conclusions were drawn.
- Ethanol: This determination was very problematic. Only one statistical outlier was observed. However, the calculated reproducibility after rejection of the statistical outlier is not at all in agreement with the requirements of EN1601:97.
- Ethers>C5 Twelve participants obviously included MTBE (a C5-ether) in the final “Ethers >C5” result. After subtraction of the MTBE result, the consensus value of “Ethers >C5” is below or near the detection limit of the test method.  
Therefore, no significant conclusions were drawn
- MTBE: This determination was not problematic. Only one statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in good agreement with the requirements of EN1601:97.
- Other Oxygenates: The concentrations of other oxygenates were all near or below the detection limit of the method used and most of the participants reported a “less then” result. Therefore, no significant conclusions were drawn.
- Oxygen content: This determination was problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of EN1601:97.

Oxidation stability: The majority of the laboratories agreed that the Oxidation Stability is >360 minutes, according to ISO 7536:96.

Sulphur: This determination was not problematic at the low level of 4.7 mg/kg. Four statistical outliers were observed and the calculated reproducibility is in full agreement with the requirements of ISO20846:11. When the results ASTM D5453 and ISO20846 results were evaluated separately, the calculated reproducibilities are respectively almost and in full agreement with the requirements of the test method.

RON: The determination of RON was problematic. Only one statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ISO5164:05. After the EN228 correction of the RON (not required in ISO5164, nor in ASTM D2699), the difference between the corrected and uncorrected values should be exactly 0.2. Regrettably not all laboratories reported the results for RON after correction. One pair of test results was excluded because the difference between RON (before correction) and RON after correction is 0.15. Forty laboratories reported both results for RON and for RON after correction. The observed average difference is 0.19.

MON: The determination of MON was not problematic. Only one statistical outlier was observed. The calculated reproducibility after rejection of the statistical is in full agreement with the requirements ISO5163:05. After the EN228 correction of the MON (not required in ISO5163, nor in ASTM D2700), the difference between the corrected and uncorrected values should be exactly 0.2. Regrettably not all laboratories reported the results for MON after correction. One pair of test results was excluded because the difference between MON (before correction) and MON after correction is 0.10. Thirtyfour laboratories reported both results for MON before correction and for MON after correction. The observed average difference is 0.19.

ASVP: This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility, after rejection of the statistical outliers, is in good agreement with the requirements of EN13016-1:00.

DVPE: The Air Saturated Vapour Pressure can be converted to Dry Vapour Pressure Equivalent (DVPE) according to EN13016-1. Three statistical outliers were observed for DVPE. Two of the three outliers are due to calculation errors. The calculated reproducibility of DVPE after rejection of the statistical outliers is in good agreement with the requirements of EN13016-1:00.

## 4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES

A comparison has been made between the reproducibility as declared by the standard and the reproducibility as found for the group of participating laboratories. The average results of sample #11082 and #11083, 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		39	60.87	0.21	0.30	
Aromatics by FIA	%V/V	43	23.00	4.46	3.70	
Aromatics by GC	%V/V	47	29.94	1.72	1.49	
Aromatics by GC	%M/M	37	35.64	2.48	n.a.	
Benzene	%V/V	68	0.77	0.09	0.04	
Copper Strip 3 hrs @ 50°C		84	1	n.a.	n.a.	
Density @ 15°C	kg/m <sup>3</sup>	87	735.29	0.52	0.50	
Dist. Auto.	IBP	°C	87	28.49	5.72	4.74
	10%-evap.	°C	85	41.29	3.43	3.20
	50%-evap.	°C	86	87.26	4.97	1.88
	90%-evap.	°C	84	147.44	3.65	3.94
	FBP	°C	87	178.86	7.02	6.78
	%vol at 70°C	%	84	41.15	3.65	2.70
	%vol at 100°C	%	85	57.32	3.00	2.20
	%vol at 150°C	%	81	91.70	2.43	1.30
Dist. Manu.	IBP	°C	8	29.25	3.14	5.60
	10%-evap.	°C	8	41.87	3.40	4.04
	50%-evap.	°C	8	88.31	9.95	4.29
	90%-evap.	°C	7	147.56	4.67	3.92
	FBP	°C	7	178.91	3.84	7.20
	%vol at 70°C	%	8	40.80	5.39	3.45
	%vol at 100°C	%	8	56.69	5.55	3.08
	%vol at 150°C	%	8	90.87	4.38	2.84
Doctor Test		54	Negative	n.a.	n.a.	
Existent gum (washed)	mg/100mL	36	0.52	0.90	(0.69)	
Lead as Pb	mg/L	10	0.38	0.76	(2.00)	
Manganese as Mn	mg/L	4	0.17	0.13	(0.04)	
Olefins by FIA	%V/V	43	7.66	4.09	2.78	
Olefins by GC	%V/V	43	8.03	1.18	1.46	
Olefins by GC	%M/M	33	7.40	1.38	n.a.	
Ethanol	%V/V	61	4.57	0.79	0.40	
Ethers >C5 (after correction)	%V/V	6	0.069	0.228	n.a.	
MTBE	%V/V	59	0.47	0.20	0.30	
Oxygen content	%M/M	59	1.81	0.35	0.30	
Oxidation Stability	min	40	>360	n.a.	n.a.	
Sulphur	mg/kg	79	4.66	1.76	1.77	
RON (measured)		48	95.53	0.74	0.70	
RON (after correction)		46	95.35	0.73	0.70	
MON (measured)		41	85.44	0.87	0.90	
MON (after correction)		36	85.28	0.90	0.90	

table 4: performance evaluation sample #11082

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

Parameter	Unit	n	mean	2.8 * sd	R (lit)
ASVP	kPa	59	98.79	2.67	3.59
DVPE acc. to EN13016-1:00	kPa	70	91.46	2.72	3.50

table 5: performance evaluation sample #11083

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

#### 4.3 COMPARISON OF THE PROFICIENCY TEST OF OCTOBER 2011 WITH PREVIOUS PTS

	<i>October 2011</i>	<i>October 2010</i>	<i>February 2010</i>	<i>October 2009</i>
Number of rep. participants	111	91	139	66
Number of results reported	2153	1827	2699	1197
Statistical outliers	68	77	95	58
Percentage outliers	3.2%	4.2%	3.5%	4.8%

table 6: comparison with previous proficiency tests

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

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

Determination	<i>October 2011</i>	<i>October 2010</i>	<i>February 2010</i>	<i>October 2009</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.
Ethanol	--	--	-	--
MTBE	+	-	--	--
Olefins by FIA	--	(--)	(--)	--
Olefins by GC	+	++	+/-	+/-
Oxygen	-	+	-	n.e.
Sulphur	+	+/-	-	++
RON	+	+/-	-	--
MON	+	-	--	--
ASVP	+	++	n.e.	n.e.
DVPE EN13016-1	+	++	n.e.	n.e.

table 7: comparison determinations against the standard

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

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

The following performance categories were used:

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

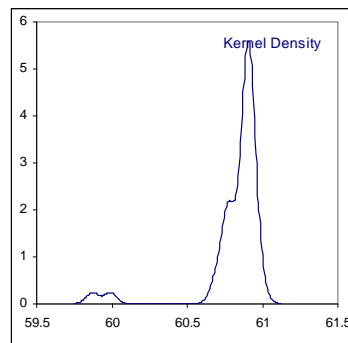
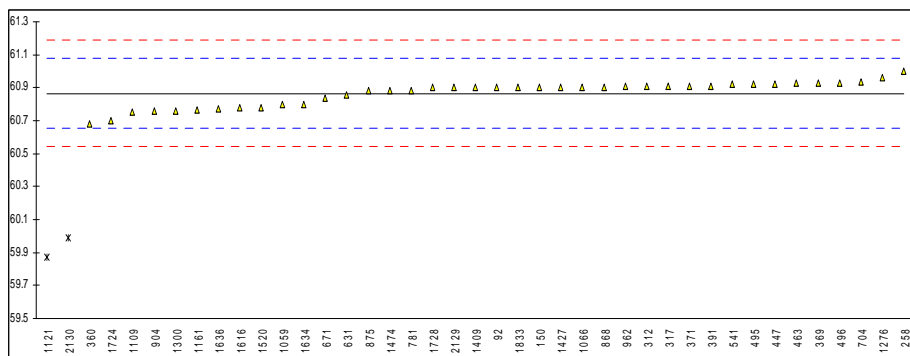
## APPENDIX 1

Determination of API Gravity on sample #11082;

lab	method	value	mark	z(targ)	remarks
92	D1298	60.9		0.32	
150	D4052	60.9		0.32	
225		----		----	
228		----		----	
258	D1298	61.00		1.25	
312	D4052	60.91		0.41	
317	D1298	60.91		0.41	
323		----		----	
334		----		----	
335		----		----	
336		----		----	
337		----		----	
338		----		----	
340		----		----	
343		----		----	
344		----		----	
353		----		----	
360	D1298	60.68		-1.74	
369	calc	60.93		0.60	
371	D1298	60.91		0.41	
391	D1298	60.91		0.41	
420		----		----	
430		----		----	
431		----		----	
440		----		----	
445		----		----	
447	D1298	60.92		0.50	
463	D1298	60.93		0.60	
468		----		----	
485		----		----	
495	D1298	60.92		0.50	
496	D1298	60.93		0.60	
541	D4052	60.92		0.50	
631	D4052	60.856		-0.09	
671	D4052	60.84		-0.24	
704	D1250	60.934		0.63	
781	D1298	60.88		0.13	
868	D1298	60.90		0.32	
875	D1298	60.88		0.13	
904	D1298	60.76		-0.99	
962	D1298	60.91		0.41	
1006		----		----	
1017		----		----	
1033		----		----	
1038		----		----	
1059	D4052	60.80		-0.62	
1066	D1298	60.9		0.32	
1067		----		----	
1080		----		----	
1081		----		----	
1108		----		----	
1109	D287	60.75		-1.08	
1121	D1298	59.87	G(0.01)	-9.30	
1126		----		----	
1140		----		----	
1161	D1298	60.765		-0.94	
1167		----		----	
1171		----		----	
1182		----		----	
1186		----		----	
1194		----		----	
1199		----		----	
1203		----		----	
1205		----		----	
1257		----		----	
1259		----		----	
1276	D1298	60.96		0.88	
1299		----		----	
1300	D1298	60.76		-0.99	
1340		----		----	
1378		----		----	
1395		----		----	

1397		----		----
1399		----		----
1404		----		----
1406		----		----
1409	D1298	60.9		0.32
1419		----		----
1426		----		----
1427	D1298	60.9		0.32
1428		----		----
1443		----		----
1468		----		----
1474	D1298	60.88		0.13
1520	D1298	60.78		-0.80
1528		----		----
1616	D1298	60.78		-0.80
1634	D1298	60.8		-0.62
1635		----		----
1636	D4052	60.77		-0.90
1650		----		----
1653		----		----
1656		----		----
1709		----		----
1720		----		----
1724	D1298	60.7		-1.55
1728	D1298	60.899		0.31
1807		----		----
1810		----		----
1811		----		----
1833	D1298	60.9		0.32
1849		----		----
1851		----		----
1864		----		----
1936		----		----
1937		----		----
1938		----		----
1948		----		----
2129	calc	60.9		0.32
2130	D1298	59.99	G(0.01)	-8.18
2146		----		----

normality not OK  
n 39  
outliers 2  
mean (n) 60.866  
st.dev. (n) 0.0752  
R(calc.) 0.211  
R(D1298:05) 0.300



## Determination of Aromatics by FIA on sample #11082; results in %V/V

lab	method	value	mark	z(targ)	remarks
92	D1319	29.4		-0.45	
150	D1319	27.1		-2.19	
225		----		----	
228		----		----	
258		----		----	
312	D1319	30.1		0.08	
317		----		----	
323		----		----	
334		----		----	
335		----		----	
336		----		----	
337		----		----	
338		----		----	
340		----		----	
343	D1319	29.1		-0.68	
344		----		----	
353		----		----	
360	D1319	30.2		0.15	
369	D1319	29.20		-0.60	
371		----		----	
391	D1319	30.5	C	0.38	result mixed up with olefins by FIA, reported 7.5
420		----		----	
430		----		----	
431		----		----	
440		----		----	
445	D1319	30.2		0.15	
447	D1319	34.1		3.11	
463	D1319	28.1		-1.43	
468		----		----	
485		----		----	
495		----		----	
496	D1319	31.50		1.14	
541		----		----	
631	D1319	33.76		2.85	
671		----		----	
704		----		----	
781		----		----	
868		----		----	
875		----		----	
904		----		----	
962		----		----	
1006	D6293	27.65		-1.78	
1017	D1319	30.83		0.63	
1033	IP156	29.0		-0.75	
1038		----		----	
1059	D1319	29.2		-0.60	
1066	D1319	31.4		1.06	
1067	D1319	30.3		0.23	
1080		----		----	
1081		----		----	
1108		----		----	
1109	D1319	31.90		1.44	
1121		----		----	
1126		----		----	
1140		----		----	
1161		----		----	
1167		----		----	
1171	D1319	32.82		2.14	
1182		----		----	
1186		----		----	
1194	INH-D1319	28.5		-1.13	
1199		----		----	
1203	D1319	31.6		1.21	
1205		----		----	
1257		----		----	
1259	D1319	29.29		-0.53	
1276	D1319	29.93		-0.05	
1299		----		----	
1300	D1319	27.995		-1.51	
1340	D1319	30.16		0.12	
1378		----		----	
1395		----		----	
1397	D1319	30.8		0.61	
1399	D1319	30.5		0.38	
1404	D1319	29.4		-0.45	
1406	in house	31.0		0.76	

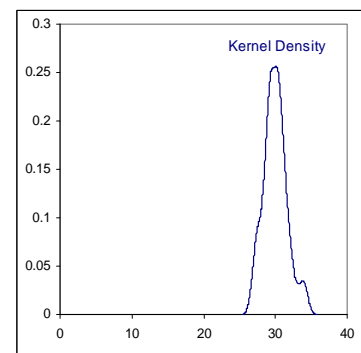
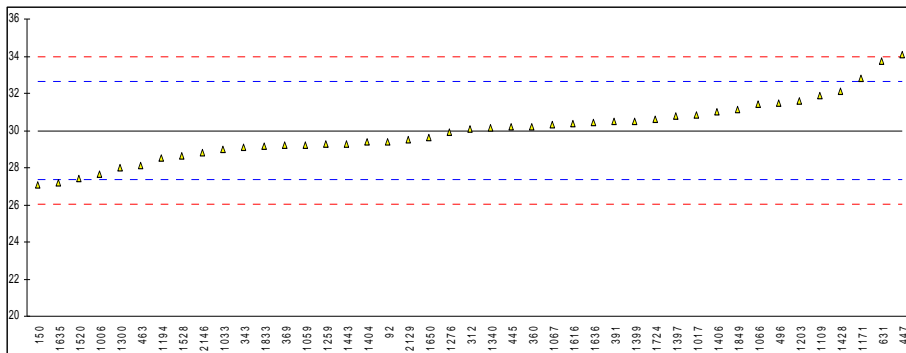


1409		----		----
1419		----		----
1426		----		----
1427		----		----
1428	ISO3837	32.14		1.62
1443	D1319	29.3		-0.53
1468		----		----
1474		----	W	----
1520	D1319	27.42		-1.95
1528	D1319	28.62		-1.04
1616	D1319	30.4		0.31
1634		----		----
1635	D1319	27.19		-2.12
1636	D1319	30.41		0.31
1650	D1319	29.60		-0.30
1653		----		----
1656		----		----
1709		----		----
1720		----		----
1724	D1319	30.6	C	0.46
1728		----		----
1807		----		----
1810		----		----
1811		----		----
1833	EN15533	29.17		-0.62
1849	D1319	31.135		0.86
1851		----		----
1864		----		----
1936		----		----
1937		----		----
1938		----		----
1948		----		----
2129	D1319	29.5		-0.38
2130		----		----
2146	D1319	28.8		-0.90

result withdrawn, first reported:6.5

first reported:38.07

normality OK  
n 43  
outliers 0  
mean (n) 30.00  
st.dev. (n) 1.592  
R(calc.) 4.46  
R(D1319:10) 3.70

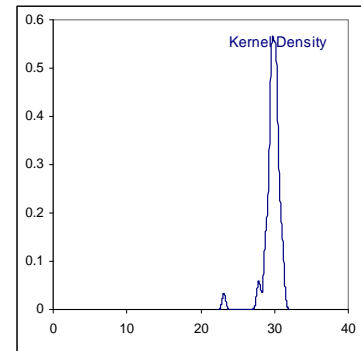
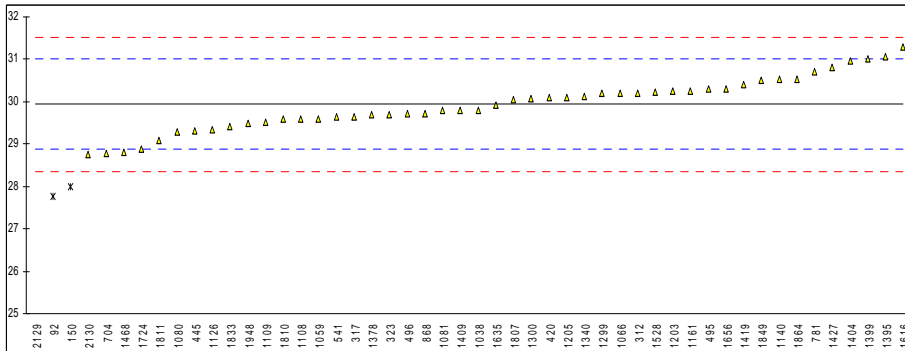


## Determination of Aromatics by GC on sample #11082; results in %V/V

lab	method	value	mark	z(targ)	remarks
92	INH-99	27.77	DG(0.05)	-4.09	
150	D5769	28.0	DG(0.05)	-3.65	
225		----		----	
228		----		----	
258		----		----	
312	ISO22854	30.2		0.49	
317	EN14517	29.65		-0.54	
323	EN22854	29.7		-0.45	
334		----		----	
335		----		----	
336		----		----	
337		----		----	
338		----		----	
340		----		----	
343		----		----	
344		----		----	
353		----		----	
360		----		----	
369		----		----	
371		----		----	
391		----		----	
420	INH-6150	30.1		0.31	
430		----		----	
431		----		----	
440		----		----	
445	EN14517	29.31		-1.18	
447		----		----	
463		----		----	
468		----		----	
485		----		----	
495	EN22854	30.30		0.68	
496	ISO22854	29.72		-0.41	
541	D5134	29.65		-0.54	
631		----		----	
671		----		----	
704	D5580	28.771		-2.20	
781	INH-5274	30.71	C	1.46	first reported 33.45
868	D6839	29.72		-0.41	
875		----		----	
904		----		----	
962		----		----	
1006		----		----	
1017		----		----	
1033		----		----	
1038	D6839	29.8		-0.26	
1059	ISO22854	29.6		-0.64	
1066	ISO22854	30.2		0.49	
1067		----		----	
1080	in house	29.29		-1.22	
1081	EN14517	29.80		-0.26	
1108	EN14517	29.6		-0.64	
1109	D6839	29.52		-0.79	
1121		----		----	
1126	in house	29.33		-1.15	
1140	IP566	30.52		1.10	
1161	ISO22854	30.26		0.61	
1167		----		----	
1171		----		----	
1182		----		----	
1186		----		----	
1194		----		----	
1199		----		----	
1203	EN14517	30.25		0.59	
1205	EN22854	30.1		0.31	
1257		----		----	
1259		----		----	
1276		----		----	
1299	EN22854	30.2	C	0.49	first reported:35.90
1300	EN14517	30.06		0.23	
1340	EN22854	30.13		0.36	
1378	D6839	29.68		-0.49	
1395	ISO22854	31.06		2.12	
1397		----		----	
1399	D5443	31.02		2.04	
1404	EN14517	30.95		1.91	
1406		----		----	

1409	ISO22854	29.8		-0.26	
1419	EN22854	30.39		0.85	
1426		----		----	
1427	EN14517	30.82		1.66	
1428		----		----	
1443		----		----	
1468	EN22854	28.80		-2.14	
1474		----		----	
1520		----		----	
1528	ISO22854	30.23		0.55	
1616	D6839	31.30		2.57	
1634		----		----	
1635	ISO22854	29.91	C	-0.05	first reported: 27.79
1636		----		----	
1650		----		----	
1653		----		----	
1656	EN14517	30.3	C	0.68	first reported: 28.3
1709		----		----	
1720		----		----	
1724	ISO22854	28.88		-1.99	
1728		----		----	
1807	ISO22854	30.04		0.19	
1810	EN14517	29.60		-0.64	
1811	EN14517	29.09		-1.60	
1833	EN22854	29.41		-0.99	
1849	EN14517	30.51		1.08	
1851		----		----	
1864	D5134	30.529		1.11	
1936		----		----	
1937		----		----	
1938		----		----	
1948	EN14517	29.50		-0.82	
2129	D6730	23.152	G(0.01)	-12.79	
2130	EN14517	28.759		-2.22	
2146		----		----	

normality OK  
n 47  
outliers 3  
mean (n) 29.938  
st.dev. (n) 0.6127  
R(calc.) 1.716  
R(EN14517:04) 1.486

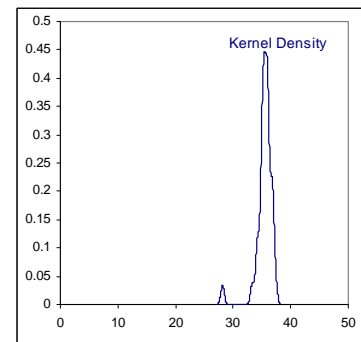
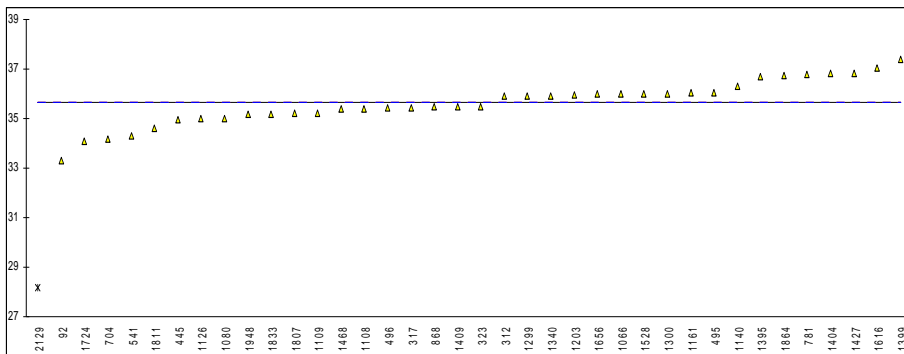


## Determination of Aromatics by GC on sample #11082; results in %M/M

lab	method	value	mark	z(targ)	remarks
92	INH-99	33.31		----	
150		----		----	
225		----		----	
228		----		----	
258		----		----	
312	ISO22854	35.9		----	
317	EN14517	35.45		----	
323	EN22854	35.5		----	
334		----		----	
335		----		----	
336		----		----	
337		----		----	
338		----		----	
340		----		----	
343		----		----	
344		----		----	
353		----		----	
360		----		----	
369		----		----	
371		----		----	
391		----		----	
420		----		----	
430		----		----	
431		----		----	
440		----		----	
445	EN14517	34.97		----	
447		----		----	
463		----		----	
468		----		----	
485		----		----	
495	EN22854	36.05		----	
496	ISO22854	35.44		----	
541	D5134	34.31		----	
631		----		----	
671		----		----	
704	D5580	34.184		----	
781	INH-5274	36.77	C	----	first reported: 39.68
868	D6839	35.48		----	
875		----		----	
904		----		----	
962		----		----	
1006		----		----	
1017		----		----	
1033		----		----	
1038		----		----	
1059		----		----	
1066	ISO22854	36.0		----	
1067		----		----	
1080	in house	34.98		----	
1081		----		----	
1108	EN14517	35.4		----	
1109	D6839	35.23		----	
1121		----		----	
1126	in house	34.98		----	
1140	IP566	36.32		----	
1161	ISO22854	36.05		----	
1167		----		----	
1171		----		----	
1182		----		----	
1186		----		----	
1194		----		----	
1199		----		----	
1203	EN14517	35.95		----	
1205		----		----	
1257		----		----	
1259		----		----	
1276		----		----	
1299	EN22854	35.9	C	----	first reported as % v/v
1300	EN14517	36.02		----	
1340	EN22854	35.92		----	
1378		----		----	
1395	ISO22854	36.71		----	
1397		----		----	
1399	D5443	37.37		----	
1404	EN14517	36.81		----	
1406		----		----	

1409	ISO22854	35.5		----
1419		----		----
1426		----		----
1427	EN14517	36.84		----
1428		----		----
1443		----		----
1468	EN22854	35.38		----
1474		----		----
1520		----		----
1528	ISO22854	36.01		----
1616	D6839	37.03		----
1634		----		----
1635		----		----
1636		----		----
1650		----		----
1653		----		----
1656	EN14517	36.0	C	---- first rep: 33.7
1709		----		----
1720		----		----
1724	ISO22854	34.08		----
1728		----		----
1807	ISO22854	35.21		----
1810		----		----
1811	EN14517	34.62		----
1833	EN22854	35.19		----
1849		----		----
1851		----		----
1864	D5134	36.746		----
1936		----		----
1937		----		----
1938		----		----
1948	EN14517	35.16		----
2129	D6730	28.177	G(0.01)	----
2130		----		----
2146		----		----

normality OK  
n 37  
outliers 1  
mean (n) 35.642  
st.dev. (n) 0.8849  
R(calc.) 2.478  
R(EN14517:04) unknown



## Determination of Appearance on sample #11082;

lab	method	value	mark	z(targ)	remarks
92	visual	C&B		----	
150	visual	C&B		----	
225		----		----	
228		----		----	
258	visual	C&B		----	
312	visual	C&B		----	
317	INH-001	C&B		----	
323	INH-001	C&B		----	
334		----		----	
335		----		----	
336	visual	C&B		----	
337	visual	C&B		----	
338	visual	C&B		----	
340	visual	C&B		----	
343	INH-608	C&B		----	
344	visual	C&B		----	
353	D4176	C&B		----	
360	visual	C&B		----	
369	visual	C&B		----	
371		----		----	
391	visual	C&B		----	
420		----		----	
430		----		----	
431		----		----	
440	visual	C&B		----	
445	visual	C&B		----	
447	visual	C&B		----	
463	D4176	pass		----	
468	D4176	pass		----	
485		----		----	
495	visual	C&B		----	
496	visual	C&B		----	
541	visual	C&B		----	
631	visual	C&B		----	
671	visual	C&B		----	
704	visual	C&B		----	
781	visual	C&B		----	
868	visual	C&B		----	
875	visual	C&B		----	
904	visual	C&B		----	
962	visual	pass		----	
1006		----		----	
1017	visual	clear		----	
1033	visual	C&B		----	
1038		----		----	
1059	visual	C&B		----	
1066	visual	C&B		----	
1067	visual	C&B		----	
1080	visual	C&B		----	
1081		----		----	
1108		----		----	
1109	D4176	pass		----	
1121	visual	C&B		----	
1126		----		----	
1140	visual	C&B		----	
1161		----		----	
1167		----		----	
1171		----		----	
1182		----		----	
1186		----		----	
1194		----		----	
1199		----		----	
1203	visual	C&B		----	
1205		----		----	
1257		----		----	
1259		----		----	
1276	visual	BER		----	
1299		----		----	
1300	D4176	C&B		----	
1340	visual	C&B		----	
1378		----		----	
1395		----		----	
1397		----		----	
1399	visual	yellow		----	
1404	visual	C&B		----	
1406		----		----	

1409	D4176	pass	----
1419		----	----
1426		----	----
1427	visual	C&B	----
1428		----	----
1443		----	----
1468	visual	clear	----
1474		----	----
1520	visual	C&B	----
1528		----	----
1616		----	----
1634		----	----
1635	visual	clear	----
1636		----	----
1650	visual	C&B	----
1653		----	----
1656	visual	pass	----
1709		----	----
1720		----	----
1724	visual	C&B	----
1728	visual	clear	----
1807	visual	C&B	----
1810		----	----
1811		----	----
1833	visual	C&B	----
1849	visual	C&B	----
1851		----	----
1864	visual	C&B	----
1936		----	----
1937	visual	C&B	----
1938		----	----
1948	visual	C&B	----
2129	visual	C&B	----
2130	visual	C&B	----
2146		----	----

C&B = Clear and Bright

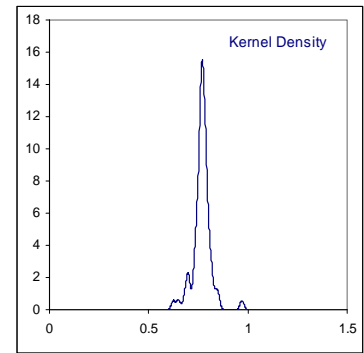
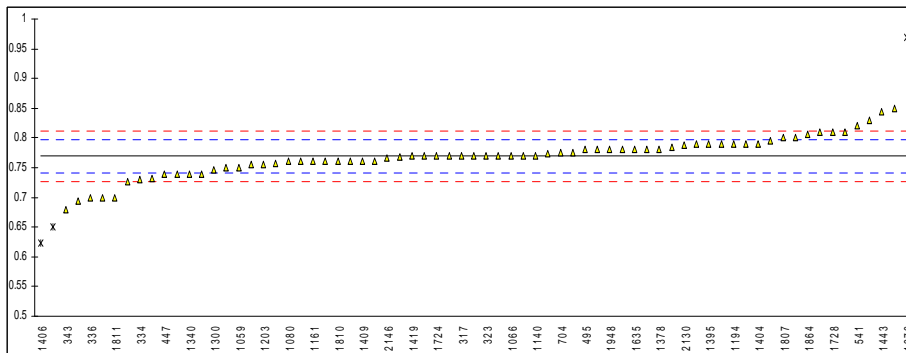
## Determination of Benzene on sample #11082; results in %V/V

lab	method	value	mark	z(targ)	remarks
92	INH-99	0.78		0.77	
150	D3606	0.76		-0.63	
225		----		----	
228		----		----	
258		----		----	
312	ISO22854	0.77		0.07	
317	EN14517	0.77		0.07	
323	EN22854	0.77		0.07	
334	EN238	0.73		-2.73	
335		----		----	
336	EN238	0.7		-4.83	
337		----		----	
338		----		----	
340	EN14517	0.694		-5.25	
343	EN238	0.68	C	-6.23	first reported:0.65
344		----		----	
353		----		----	
360	EN12177	0.726		-3.01	
369	EN238	0.85	C	5.67	first reported:0.96
371		----		----	
391		----		----	
420	EN12177	0.74		-2.03	
430		----		----	
431		----		----	
440		----		----	
445	EN14517	0.79		1.47	
447	EN14517	0.740		-2.03	
463	EN238	0.795		1.82	
468		----		----	
485		----		----	
495	EN22854	0.78		0.77	
496	ISO22854	0.770		0.07	
541	D5134	0.82		3.57	
631		----		----	
671		----		----	
704	D5580	0.775		0.42	
781	EN14517	0.83		4.27	
868	D6839	0.76		-0.63	
875	EN12177	0.81	C	2.87	first reported:0.88
904		----		----	
962		----		----	
1006	D5580	0.70		-4.83	
1017		----		----	
1033		----		----	
1038		----		----	
1059	ISO22854	0.75		-1.33	
1066	ISO22854	0.77		0.07	
1067		----		----	
1080	in house	0.76		-0.63	
1081	EN14517	0.77		0.07	
1108	EN14517	0.76		-0.63	
1109	D3606	0.732		-2.59	
1121		----		----	
1126	in house	0.78		0.77	
1140	IP566	0.77		0.07	
1161	ISO22854	0.76		-0.63	
1167		----		----	
1171	D6277	0.755		-0.98	
1182		----		----	
1186		----		----	
1194	D6277	0.79		1.47	
1199		----		----	
1203	EN14517	0.755		-0.98	
1205	EN22854	0.77		0.07	
1257		----		----	
1259	EN12177	0.774		0.35	
1276	EN238	0.97	G(0.01)	14.07	
1299	EN22854	0.79		1.47	
1300	EN14517	0.747		-1.54	
1340	EN12177	0.74	C	-2.03	first reported: 0.565
1378	D6839	0.78		0.77	
1395	ISO22854	0.79		1.47	
1397	EN12177	0.65	G(0.05)	-8.33	
1399	D5443	0.75		-1.33	
1404	EN14517	0.79		1.47	
1406	EN238	0.624	G(0.01)	-10.15	



1409	ISO22854	0.76		-0.63	
1419	EN22854	0.77		0.07	
1426		-----		-----	
1427	EN14517	0.79		1.47	
1428	EN12177	0.74		-2.03	
1443	EN12177	0.844	C	5.25	first reported:0.484
1468	EN22854	0.77		0.07	
1474		-----		-----	
1520	EN238	0.758		-0.77	
1528	EN12177	0.81		2.87	
1616	D6839	0.80		2.17	
1634		-----		-----	
1635	EN22854	0.78	C	0.77	first reported:0.9
1636	EN238	0.784		1.05	
1650		-----		-----	
1653		-----		-----	
1656	EN14517	0.78	C	0.77	first reported:0.73
1709		-----		-----	
1720		-----		-----	
1724	ISO22854	0.77		0.07	
1728	EN238	0.81	C	2.87	first reported:0.6
1807	ISO22854	0.80		2.17	
1810	EN14517	0.76		-0.63	
1811	EN14517	0.70		-4.83	
1833	EN22854	0.76		-0.63	
1849	EN14517	0.7675		-0.11	
1851		-----		-----	
1864	D5134	0.8069		2.65	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1948	EN14517	0.78		0.77	
2129	D6730	0.776		0.49	
2130	D6730	0.788		1.33	
2146	EN12177	0.767		-0.14	

normality not OK  
n 68  
outliers 3  
mean (n) 0.769  
st.dev. (n) 0.0323  
R(calc.) 0.091  
R(EN14517:04) 0.040



## Determination of Copper strip 3hrs/50°C on sample #11082;

lab	method	value	mark	z(targ)	remarks
92	D130	1A		----	
150	D130	1A		----	
225		----		----	
228		----		----	
258	D130	1A		----	
312	D130	1A		----	
317	ISO2160	1A		----	
323	ISO2160	1A		----	
334		----		----	
335		----		----	
336		----		----	
337	ISO2160	1A		----	
338		----		----	
340	ISO2160	1A		----	
343	ISO2160	1A		----	
344	D130	1A		----	
353	IP154	1A		----	
360	ISO2160	1A		----	
369	ISO2160	1A		----	
371	ISO2160	1A		----	
391		----		----	
420	ISO2160	1		----	
430		----		----	
431		----		----	
440	IP154	1A		----	
445	IP154	1A		----	
447	ISO2160	1A		----	
463	ISO2160	1A		----	
468	ISO2160	1A		----	
485		----		----	
495	ISO2160	1		----	
496	ISO2160	1A		----	
541	D130	1		----	
631	D130	1A		----	
671	D130	1A		----	
704	ISO2160	1A		----	
781	D130	1A		----	
868	D130	1A		----	
875	D130	1A		----	
904	ISO2160	1A		----	
962	ISO2160	1A		----	
1006	D130	1A		----	
1017	ISO2160	1A		----	
1033	IP154	1B		----	
1038	D130	1A		----	
1059	ISO2160	1A		----	
1066	ISO2160	1A		----	
1067	ISO2160	1A		----	
1080	ISO2160	1A		----	
1081	D130	1A		----	
1108	ISO2160	1		----	
1109	D130	1A		----	
1121	IP154	1A		----	
1126		----		----	
1140	IP154	1A		----	
1161	ISO2160	1A		----	
1167	ISO2160	1A		----	
1171	ISO2160	1A		----	
1182		----		----	
1186	D130	1A		----	
1194		----		----	
1199		----		----	
1203	ISO2160	1		----	
1205		----		----	
1257		----		----	
1259	ISO2160	1		----	
1276	ISO2160	1A		----	
1299	D130	1A		----	
1300	ISO2160	1A		----	
1340	ISO2160	1A		----	
1378	D130	1A		----	
1395	ISO2160	1A		----	
1397	ISO2160	1		----	
1399	D130	1A		----	
1404	ISO2160	1A		----	
1406	ISO2160	1A		----	

1409	ISO2160	1A	----
1419	ISO2160	1A	----
1426		----	----
1427	ISO2160	1A	----
1428	ISO2160	1	----
1443	ISO2160	1A	----
1468		----	----
1474	D130	1A	----
1520	ISO2160	1A	----
1528	ISO2160	1B	----
1616	D130	1A	----
1634	ISO2160	1A	----
1635	ISO2160	1A	----
1636	D130	1A	----
1650	D130	1A	----
1653		----	----
1656	ISO2160	1	----
1709		----	----
1720		----	----
1724	ISO2160	1A	----
1728	D130	1	----
1807	ISO2160	1A	----
1810		----	----
1811		----	----
1833	ISO2160	1A	----
1849	ISO2160	1A	----
1851	D130	1A	----
1864	ISO2160	1A	----
1936		----	----
1937		----	----
1938		----	----
1948	ISO2160	1A	----
2129	ISO2160	1A	----
2130	ISO2160	1A	----
2146		----	----

normality	unknown
n	84
outliers	0
mean (n)	1
st.dev. (n)	n.a
R(calc.)	n.a
R(ISO2160)	n.a

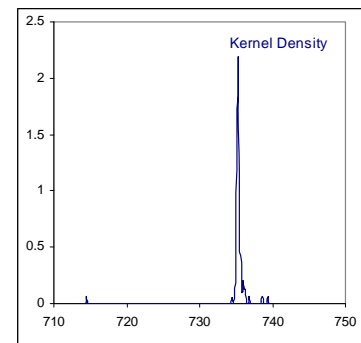
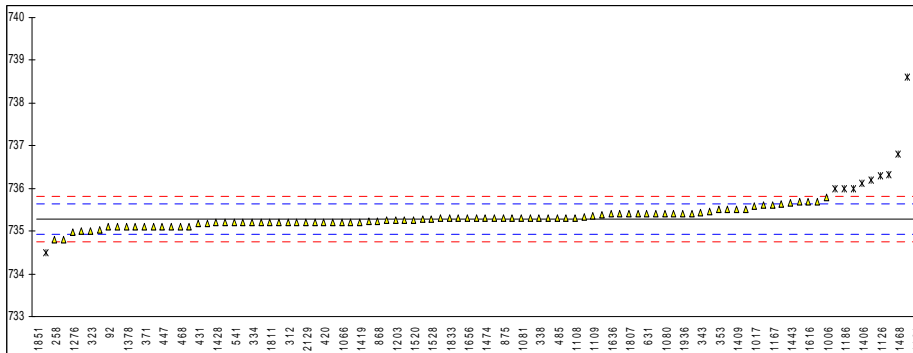
Determination of Density @ 15°C on sample #11082; results in kg/m<sup>3</sup>

lab	method	value	mark	z(targ)	remarks
92	D4052	735.1		-1.06	
150	D4052	735.4		0.62	
225		-----		-----	
228		-----		-----	
258	D1298	734.8		-2.74	
312	D4052	735.2		-0.50	
317	ISO12185	735.2		-0.50	
323	ISO12185	735.0		-1.62	
334	ISO12185	735.2		-0.50	
335		-----		-----	
336	ISO12185	735.3		0.06	
337	ISO12185	736.0	DG(0.05)	3.98	
338	ISO12185	735.3		0.06	
340	ISO12185	736.31	DG(0.01)	5.71	
343	ISO12185	735.44		0.84	
344	D4052	734.8		-2.74	
353	IP365	735.5		1.18	
360	ISO12185	735.6		1.74	
369	ISO12185	735.1		-1.06	
371	ISO12185	735.1		-1.06	
391	ISO12185	735.2		-0.50	
420	ISO12185	735.2		-0.50	
430		-----		-----	
431	ISO12185	735.17		-0.67	
440	D4052	735.5		1.18	
445	IP365	735.3		0.06	
447	ISO12185	735.1		-1.06	
463	ISO12185	735.19		-0.56	
468	ISO12185	735.10		-1.06	
485	ISO12185	735.3		0.06	
495	ISO12185	735.1		-1.06	
496	ISO12185	735.25		-0.22	
541	D4052	735.2		-0.50	
631	D4052	735.4		0.62	
671	D4052	735.5		1.18	
704	ISO12185	735.1		-1.06	
781	ISO12185	735.3		0.06	
868	D4052	735.24		-0.28	
875	D4052	735.3		0.06	
904	ISO12185	735.4		0.62	
962	ISO12185	735.2		-0.50	
1006	D4052	735.8		2.86	
1017	ISO12185	735.59		1.68	
1033	IP365	734.5	G(0.05)	-4.42	
1038	D4052	735.3		0.06	
1059	ISO12185	735.1		-1.06	
1066	ISO12185	735.2		-0.50	
1067	ISO12185	735.2	C	-0.50	first reported:753.2
1080	ISO12185	735.4		0.62	
1081	ISO12185	735.3		0.06	
1108	ISO12185	735.3		0.06	
1109	D4052	735.36		0.39	
1121	IP365	739.4	G(0.01)	23.02	
1126	ISO12185	736.30	DG(0.01)	5.66	
1140	IP365	735.2		-0.50	
1161	ISO12185	735.29		0.00	
1167	ISO12185	735.6		1.74	
1171	D4052	735.00	C	-1.62	first reported:734.16
1182	D1298	736	G(0.05)	3.98	
1186	D1298	736.0	DG(0.05)	3.98	
1194		-----		-----	
1199		-----		-----	
1203	ISO12185	735.25		-0.22	
1205		-----		-----	
1257		-----		-----	
1259	ISO12185	736.2	DG(0.05)	5.10	
1276	D4052	734.98		-1.73	
1299	D4052	735.7	C	2.30	first reported:744.8
1300	ISO12185	735.3		0.06	
1340	ISO12185	735.2		-0.50	
1378	ISO12185	735.1		-1.06	
1395	ISO12185	735.7		2.30	
1397		-----	W	-----	result withdrawn
1399	D4052	735.028		-1.46	
1404	ISO12185	735.4		0.62	
1406	ISO12185	736.12	DG(0.05)	4.65	

1409	ISO12185	735.5		1.18	
1419	ISO12185	735.21		-0.45	
1426		-----		-----	
1427	ISO12185	735.1		-1.06	
1428	ISO12185	735.2		-0.50	
1443	ISO12185	735.653		2.04	
1468	ISO12185	736.8	G(0.01)	8.46	
1474	D1298	735.3		0.06	
1520	ISO12185	735.26		-0.17	
1528	ISO12185	735.29		0.00	
1616	D4052	735.7		2.30	
1634	ISO12185	735.463		0.97	
1635	ISO3675	735.4		0.62	
1636	D4052	735.4		0.62	
1650	ISO12185	735.24		-0.28	
1653		-----		-----	
1656	ISO12185	735.3		0.06	
1709		-----		-----	
1720	D4052	735.3	C	0.06	first reported:736.6
1724	ISO12185	735.2	C	-0.50	first reported:736.12
1728	D4052	735.25		-0.22	
1807	ISO12185	735.4		0.62	
1810	ISO12185	735.2		-0.50	
1811	ISO12185	735.2		-0.50	
1833	ISO12185	735.3		0.06	
1849	ISO12185	735.33		0.23	
1851	D4052	714.5	G(0.01)	-116.42	
1864	ISO12185	735.39		0.56	
1936	ISO12185	735.4		0.62	
1937	ISO12185	735.3		0.06	
1938	ISO12185	735.3		0.06	
1948	ISO12185	735.4		0.62	
2129	D4052	735.2		-0.50	
2130	ISO12185	738.6	G(0.01)	18.54	
2146	ISO12185	735.63		1.91	

normality not OK  
n 87  
outliers 12  
mean (n) 735.29  
st.dev. (n) 0.187  
R(calc.) 0.52  
R(ISO12185:96) 0.50

Compare R(D4052:02e1) = 0.50



## Determination of Distillation ASTM D86 (automated) on sample #11082; results in °C

		IBP	mark	10% eva	mark	50% eva	mark	90% eva	mark	FBP	mark
92	D86	28.0		40.5		87.0		148.0		181.5	
150	D86	29.6		42.0		87.8		146.9		180.3	
225		----		----		----		----		----	
228		----		----		----		----		----	
258	D86	31.0		42.9		90.1		148.1		180.6	
312	ISO3405	28.9		41.0		87.6		147.2		178.4	
317		----		----		----		----		----	
323	ISO3405	28.9		40.5		86.3		146.7		180.0	
334	ISO3405	24.2		40.6		86.0		146.6		177.3	
335		----		----		----		----		----	
336	ISO3405	25.1		39.3		85.5		146.8		178.9	
337		----		----		----		----		----	
338	ISO3405	27.7		38.7		85.4		147.1		181.2	
340	ISO3405	29.1		41.1		86.2		147.3		176.8	
343		----		----		----		----		----	
344	D86	30.0		----		----		----		177.4	
353	IP123	28.5		40.3		86.8		147.4		179.7	
360	ISO3405	28.4		41.0		86.5		146.8		178.1	
369	ISO3405	28.2		41.7		87.1		147.9		179.0	
371	ISO3405	29.1		43.7		88.3		148.7		176.3	
391		----		----		----		----		----	
420	ISO3405	28.3		40.0		84.9		146.6		178.4	
430		----		----		----		----		----	
431		----		41.2		91.3		151.1		----	
440	D86	26.7		41.8		88.5		147.4		180.2	
445	IP123	29.3		----		----		----		182.8	
447	ISO3405	22.1		40.8		87.4		147.1		177.2	
463	ISO3405	29.9		43.3		87.7		146.6		178.8	
468	ISO3405	26.8		41.9		90.4		150.6		178.6	
485	ISO3405	29.10		40.65		86.20		146.25		175.70	
495	ISO3405	26.8		39.4		84.0		145.3		177.3	
496	ISO3405	28.3		41.4		87.3	fr 81.3	147.5		182.0	
541		----		----		----		----		----	
631	D86	30.1		43.5		87.0	fr 77.0	140.5	G(0.01)	183.3	
671	D86	30.2		41.9		86.7		147.1		181.0	
704		----		----		----		----		----	
781		----		----		----		----		----	
868	D86	32.0		41.6		86.9		148.2		180.0	
875		----		----		----		----		----	
904	ISO3405	26.8		43.2		90.1		149.6		180.0	
962		----		----		----		----		----	
1006	D86	29.3		41.9		88.2		148.2		175.2	
1017	ISO3405	29.6		41.8		86.5		147.0		183.0	
1033	IP123	24.9		39.5		86.5		147.1		176.9	
1038	D86	32.1		42.6		89.3		148.4		182.0	
1059	ISO3405	30.2	fr 27.5	41.8	fr 42.4	85.5	fr 91.3	145.4	fr 151.0	177.5	fr 183.7
1066	ISO3405	26.0		40.5		86.1		147.0		178.2	
1067	D86	28.5		40.7		86.7		147.4		178.3	
1080	ISO3405	27.4		40.7		85.8		146.5		176.0	
1081	D86	27.4		40.5		86.4		146.9		174.6	
1108	ISO3405	32.7		42.9		87.9		146.7		180.0	
1109	D86	27.8		40.1		86.3		145.6		180.2	
1121		----		----		----		----		----	
1126	in house	27.6		39.2		89.7		149.3		190.6	G(0.01)
1140	IP123	26.1		42.0		88.8		147.6		179.6	
1161	ISO3405	27.8		40.3		86.3		147.9		175.1	
1167	ISO3405	28.4		40.7		84.3		145.8		176.0	
1171		----		----		----		----		----	
1182	D86	29.8		42.8		91.4		150.1		179.0	
1186	D86	31		45		89		146		173	
1194	ISO3405	27.05		39.4		82.25	G(0.05)	148		172.55	
1199		----		----		----		----		----	
1203	ISO3405	29.75		42.0		87.8		147.75		177.25	
1205		----		----		----		----		----	
1257		----		----		----		----		----	
1259	ISO3405	25.4		39.7		85.1		146.3		179.5	
1276		----		29.0	G(0.01)	85.8		146.3		179.5	
1299	D86	28.6		40.7		86.4		147.3		181.1	
1300	ISO3405	29.5		40.7		87.4		149.1		182.2	fr 187.0
1340	ISO3405	30.6		41.4		86.3		146.8		178.2	
1378	D86	29.2		41.0		87.6		147.2		177.8	
1395	ISO3405	29.1		40.6	fr 43.1	85.0	fr 91.0	146.7	fr 151.8	178.5	
1397	ISO3405	28.3		41.7		87.2		148.6		171.9	
1399	D86	31.3		37.0	G(0.05)	92.4		152.5	G(0.05)	178.1	
1404	ISO3405	30.0		39.4		86.0		146.8		175.5	
1406	ISO3405	28.8		39.8		86.6		146.8		181.9	

1409	ISO3405	28.0	41.6	87.5	146.5	179.5
1419	ISO3405	31.0	43.7	91.6	151.0	182.8
1426	D86	32.1	41.9	87.2	147.0	177.4
1427	ISO3405	28.7	40.3	85.0	146.7	179.5
1428	ISO3405	28.1	41.1	87.8	147.0	180.0
1443	ISO3405	30.0	40.1	85.2	147.0	178.7
1468	ISO3405	26.0	40.0	85.5	146.7	177.6
1474	D86	32.5	41.8	86.0	146.8	180.5
1520		----	----	----	----	----
1528	ISO3405	28.6	40.8	86.2	147.3	181.1
1616	D86	30.0	44.0	92.7	151.5	181.8
1634	ISO3405	25.9	40.4	86.3	146.9	178.7
1635	ISO3405	25.0	41.6	90.3	149.8	179.7
1636	D86	25.0	41.6	87.5	146.8	177.5
1650	D86	28.5	41.1	87.5	147.6	181.8
1653		----	----	----	----	----
1656	ISO3405	29.0	41.5	87.4	147.5	180.5
1709		----	----	----	----	----
1720	D86	27.3	41.7	86.8	146.2	176.1
1724	ISO3405	26.8	42.3	89.1	148.2	177.0
1728		----	----	----	----	----
1807	ISO3405	26.8	40.6	86.7	147.4	178.2
1810	ISO3405	26.5	41.0	86.5	146.9	181.0
1811	ISO3405	28.3	42.9	90.4	150.9	180.2
1833	ISO3405	30.1	40.8	87.0	146.2	178.2
1849	ISO3405	30.7	42.8	86.1	146.27	180.27
1851	D86	28.8	43.9	87.4	149.6	176.2
1864	ISO3405	29.9	40.6	85.8	147.2	179.6
1936	ISO3405	32.7	42.4	86.3	147.1	184.3
1937	ISO3405	28.2	41.1	87.0	146.8	177.8
1938	ISO3405	27.6	41.4	86.5	146.6	176.2
1948	ISO3405	23.6	41.3	87.9	146.5	177.3
2129	ISO3405	28.1	41.1	87.3	147.1	180.9
2130	ISO3405	29.0	40.5	86.6	143.1	185.0
2146	ISO3405	28.4	40.6	85.6	146.5	175.7

G(0.05)

normality	OK	OK	not OK	not OK	OK
n	87	85	86	84	87
outliers	0	2	1	3	1
mean (n)	28.49	41.29	87.26	147.44	178.86
st.dev. (n)	2.044	1.224	1.774	1.302	2.508
R(calc.)	5.72	3.43	4.97	3.65	7.02
R(ISO3405:09)	4.74	3.20	1.88	3.94	6.78

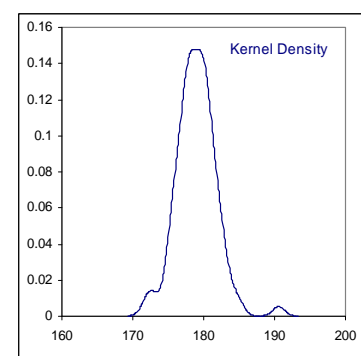
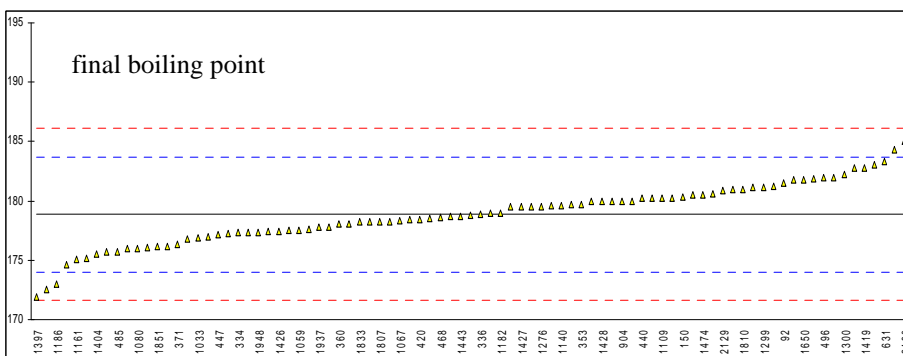
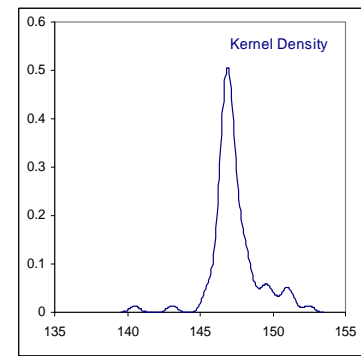
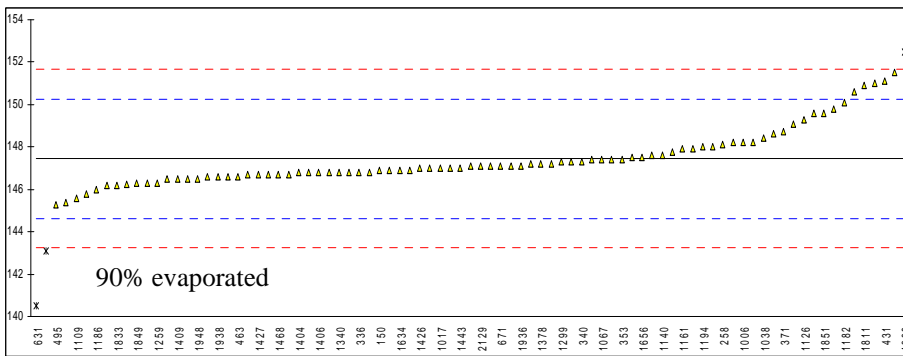
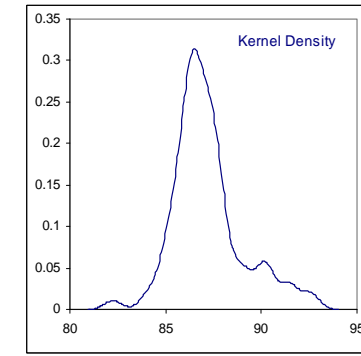
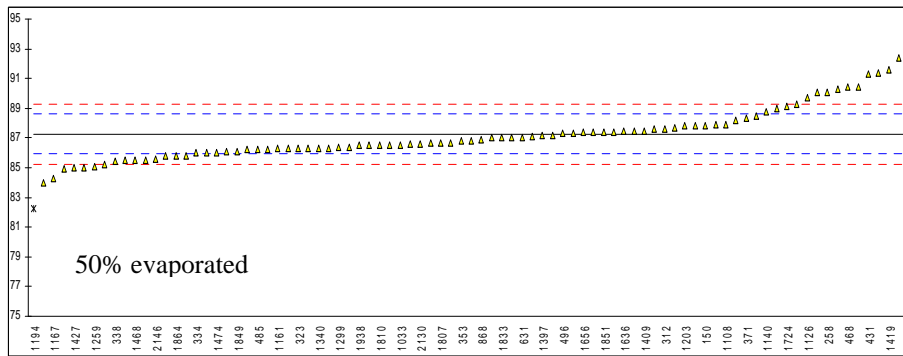
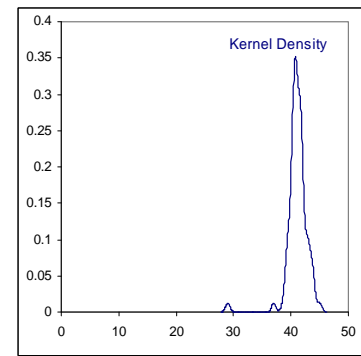
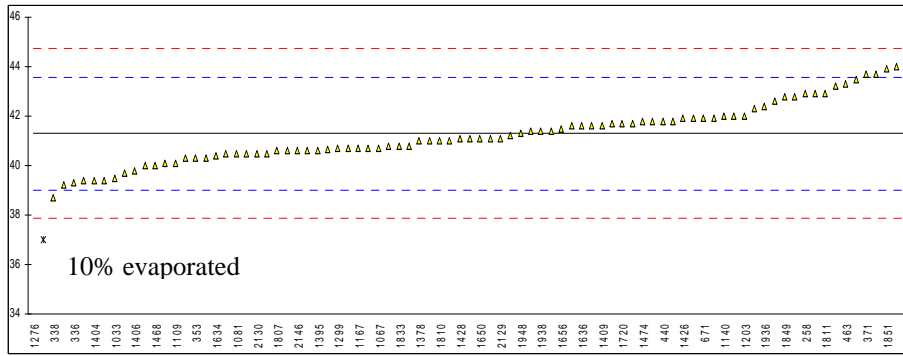
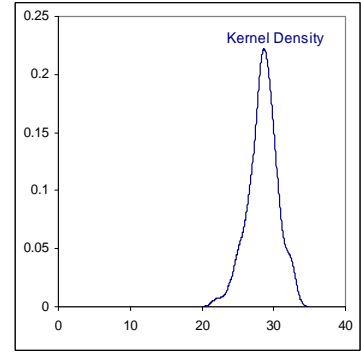
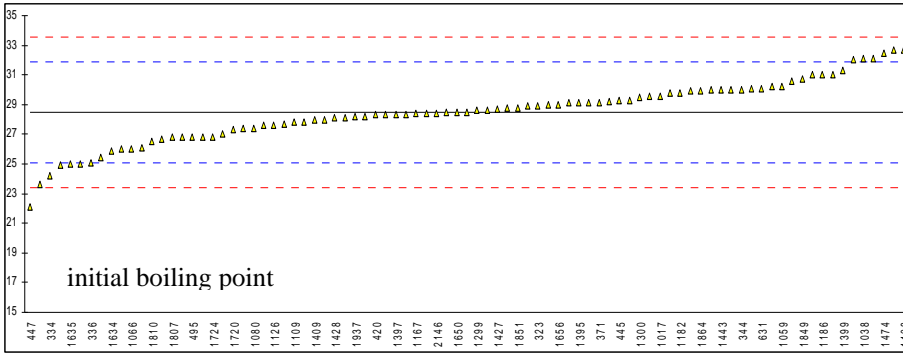
## Determination of Distillation ASTM D86 (automated) on sample #11082; results in °C

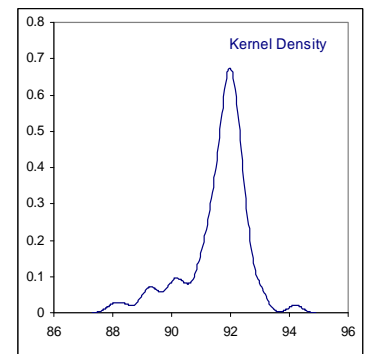
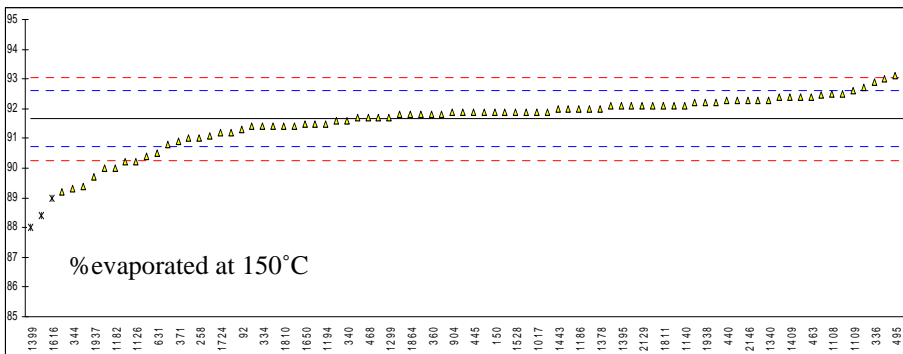
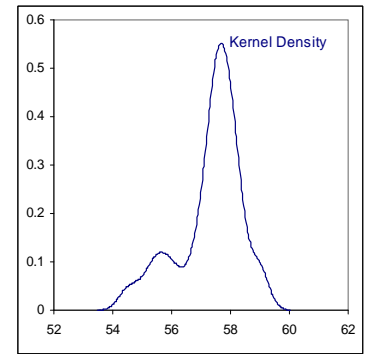
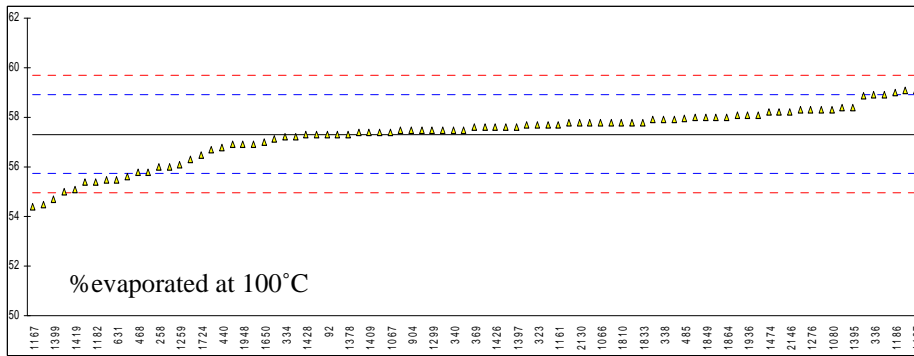
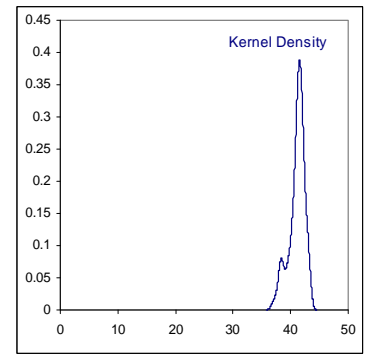
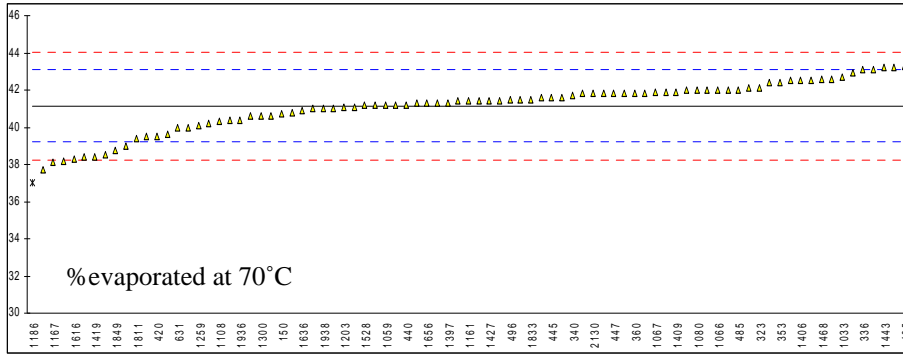
--continued--

lab	method	%vol 70°C	mark	%vol 100°C	mark	%vol 150°C	mark	%residue	mark
92	D86	42.0		57.3		91.3		1.0	
150	D86	40.7		57.2		91.9		1.1	
225		----		----		----		----	
228		----		----		----		----	
258	D86	39.5		56.0		91.0		1.0	
312	ISO3405	42.0		57.3		91.8		1.0	
317		----		----		----		----	
323	ISO3405	42.1		57.7		92.2		1.0	
334	ISO3405	41.4		57.2		91.4		0.9	
335		----		----		----		----	
336	ISO3405	43.1		58.9		92.9		1.2	
337		----		----		----		----	
338	ISO3405	43.1		57.9		92.5		0.9	
340	ISO3405	41.7		57.5		91.6		1.2	
343		----		----		----		----	
344	D86	40.8		56.0		89.3		0.5	
353	IP123	42.4		57.6		91.8		1.0	
360	ISO3405	41.8		57.7		91.8		1.0	
369	ISO3405	40.4		57.6		91.4		1.1	
371	ISO3405	40.6		56.9		90.9		1.0	
391		----		----		----		----	
420	ISO3405	39.5		55.5		89.2		1.0	
430		----		----		----		----	
431		----		----		----		----	
440	D86	41.2		56.8		92.3		0.8	
445	IP123	41.6		57.6		91.9		0.8	
447	ISO3405	41.8		57.5		91.7		1.0	
463	ISO3405	38.5		59.1		92.4		1.0	
468	ISO3405	40.0		55.8		91.7	fr:89.7	1.0	
485	ISO3405	42.00		57.95		92.45		0.9	
495	ISO3405	43.3		58.9		93.1		0.4	
496	ISO3405	41.5		57.5		92.1		1.0	
541		----		----		----		----	
631	D86	40.0	fr:46.0	55.5	fr:62.0	90.5	fr:96.5	0.8	
671	D86	39.6		55.8		90.2		1.0	
704		----		----		----		----	
781		----		----		----		----	
868	D86	41.0		57.3		91.0		1.2	
875		----		----		----		----	
904	ISO3405	41.0		57.5		91.9		1.0	
962		----		----		----		----	
1006		----		----		----		1.4	
1017	ISO3405	41.4		57.8		91.9		1.1	
1033	IP123	42.7		57.8		----		1.0	
1038	D86	40.6		56.3		91.1		1.1	
1059	ISO3405	41.2	fr:39.4	58.1	fr:54.9	93.0	fr:89.5	1.0	
1066	ISO3405	42.0		57.8		92.0		1.0	
1067	D86	41.9		57.4		91.9		0.9	
1080	ISO3405	42.0		58.3		92.2		1.0	
1081	D86	41.8		57.8		92.3		1.0	
1108		40.3		57.4		92.5		0.9	
1109	D86	42.1		58.2		92.6		0.9	
1121		----		----		----		----	
1126	in house	37.7		55.4		90.2		----	
1140	IP123	41.4		56.9		92.1		1.0	
1161	ISO3405	41.4		57.7		91.4		0.9	
1167	ISO3405	38.1		54.4		88.4	DG(0.05)	0.8	
1171		----		----		----		----	
1182	D86	38.2		55.4		90.0		0.8	
1186	D86	37	G(0.050)	59		92		0.8	
1194	ISO3405	43.2		58.85		91.5		1.1	
1199		----		----		----		----	
1203	ISO3405	41.05		57.15		91.60		0.9	
1205		----		----		----		----	
1257		----		----		----		----	
1259	ISO3405	40.1		56.1		90.0		1.4	
1276	ISO3405	41.6		58.3		92.4		1.0	
1299	D86	41.9		57.5		91.7		1.3	
1300	ISO3405	40.6		58.0		90.4		0.8	
1340	ISO3405	41.8		57.8		92.3		1.0	
1378	D86	41.3		57.3		92.0		1.0	
1395	ISO3405	42.6	fr:39.5	58.4	fr:55.3	92.1	fr:89.0	1.0	
1397	ISO3405	41.3		57.6		90.8		1.0	
1399		38.4		54.7		88.0	G(0.05)	----	
1404	ISO3405	42.5		57.9		92.3		0.8	
1406	ISO3405	42.5		57.5		91.9		0.7	



1409	ISO3405	41.9	57.4	92.4		0.8
1419	ISO3405	38.4	55.1	89.4		-----
1426	D86	41.1	57.6	91.9		1.2
1427	ISO3405	41.4	59.1	92.1		1.0
1428	ISO3405	41.2	57.3	91.9		1.2
1443	ISO3405	43.2	58.3	92.0		1.0
1468	ISO3405	42.6	58.3	92.1	fr: 82.1	1
1474	D86	41.6	58.2	92.0		1.0
1520		-----	-----	-----		-----
1528	ISO3405	41.2	57.9	91.9		1.0
1616		38.3	54.5	89.0	DG(0.05)	1.0
1634	ISO3405	41.8	58.1	91.4		1.0
1635	ISO3405	42.9	58.4	92.7		1.0
1636	D86	40.9	56.7	91.7		0.9
1650	D86	41.8	57.0	91.5		1.3
1653		-----	-----	-----		-----
1656	ISO3405	41.3	57.5	91.2		1.4
1709		-----	-----	-----		-----
1720		-----	-----	-----		1.0
1724	ISO3405	40.2	56.5	91.2		1.4
1728		-----	-----	-----		-----
1807	ISO3405	42.0	57.7	91.8		1.4
1810	ISO3405	41.3	57.8	91.4		1.0
1811	ISO3405	39.4	55.6	92.1	fr: 89.5	1.0
1833	ISO3405	41.5	57.8	92.4		1.1
1849	ISO3405	38.73	58	91.5		1.15
1851		-----	-----	-----		-----
1864	ISO3405	42.4	58.0	91.8		1.0
1936	ISO3405	40.4	58.1	91.9		1.0
1937	ISO3405	39.0	55.0	89.7		1.0
1938	ISO3405	41.0	58.0	92.2		1.2
1948	ISO3405	41.2	56.9	92.1		1.4
2129	ISO3405	41.5	57.4	92.1		1.0
2130	ISO3405	41.8	57.8	94.2		1.0
2146	ISO3405	42.5	58.2	92.3		1.4
	normality	not OK	not OK	not OK		
	n	84	85	81		
	outliers	1	0	3		
	mean (n)	41.15	57.32	91.70		
	st.dev. (n)	1.302	1.071	0.869		
	R(calc.)	3.65	3.00	2.43		
	R(ISO3405:09)	2.70	2.20	1.30		





Determination of Distillation ASTM D86 (Manual) on sample #11082; results in °C

lab	method	IBP	mark	10% eva	mark	50% eva	mark	90% eva	mark	FBP	mark
92		----		----		----		----		----	
150		----		----		----		----		----	
225		----		----		----		----		----	
228		----		----		----		----		----	
258		----		----		----		----		----	
312		----		----		----		----		----	
317		----		----		----		----		----	
323		----		----		----		----		----	
334		----		----		----		----		----	
335		----		----		----		----		----	
336		----		----		----		----		----	
337		----		----		----		----		----	
338		----		----		----		----		----	
340		----		----		----		----		----	
343		----		----		----		----		----	
344		----		----		----		----		----	
353		----		----		----		----		----	
360		----		----		----		----		----	
369		----		----		----		----		----	
371		----		----		----		----		----	
391		----		----		----		----		----	
420		----		----		----		----		----	
430		----		----		----		----		----	
431		----		----		----		----		----	
440		----		----		----		----		----	
445		----		----		----		----		----	
447		----		----		----		----		----	
463		----		----		----		----		----	
468		----		----		----		----		----	
485		----		----		----		----		----	
495		----		----		----		----		----	
496		----		----		----		----		----	
541	D86	29.0		42.5		90.0		148.5		178.0	
631		----		----		----		----		----	
671		----		----		----		----		----	
704	D86	27.7		40.8		83.4		145.4		178.5	
781	ISO3405	29.5		42.2		88.5		148.2		180.3	
868		----		----		----		----		----	
875	D86	30.0		42.5		89.5		150.0		179.5	
904		----		----		----		----		----	
962		----		----		----		----		----	
1006		----		----		----		----		----	
1017		----		----		----		----		----	
1033		----		----		----		----		----	
1038		----		----		----		----		----	
1059		----		----		----		----		----	
1066		----		----		----		----		----	
1067		----		----		----		----		----	
1080		----		----		----		----		----	
1081		----		----		----		----		----	
1108		----		----		----		----		----	
1109		----		----		----		----		----	
1121	IP123	31.1		44.1		95.1		156.2	G(0.05)	178.1	
1126		----		----		----		----		----	
1140		----		----		----		----		----	
1161		----		----		----		----		----	
1167		----		----		----		----		----	
1171	ISO3405	29.7		40.375		88.5		148.25		185.75	G(0.05)
1182		----		----		----		----		----	
1186		----		----		----		----		----	
1194		----		----		----		----		----	
1199		----		----		----		----		----	
1203		----		----		----		----		----	
1205		----		----		----		----		----	
1257		----		----		----		----		----	
1259		----		----		----		----		----	
1276		----		----		----		----		----	
1299		----		----		----		----		----	
1300		----		----		----		----		----	
1340		----		----		----		----		----	
1378		----		----		----		----		----	
1395		----		----		----		----		----	
1397		----		----		----		----		----	
1399		----		----		----		----		----	
1404		----		----		----		----		----	
1406		----		----		----		----		----	

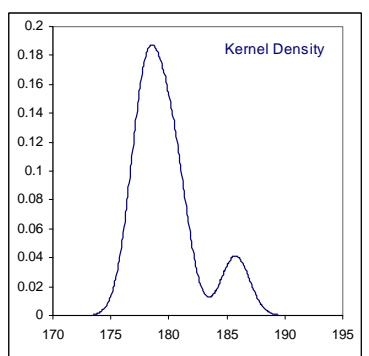
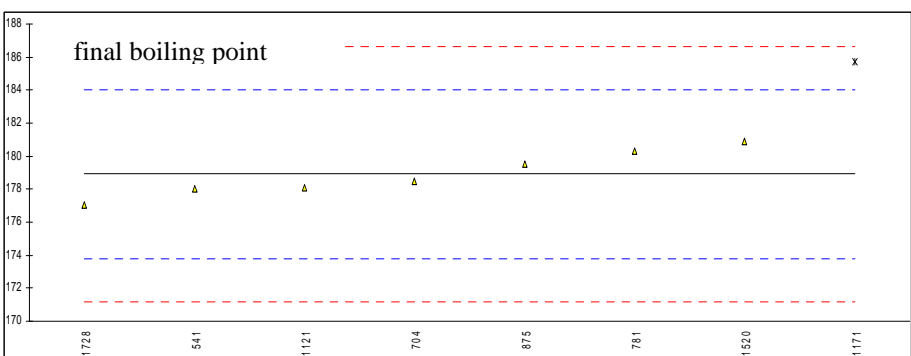
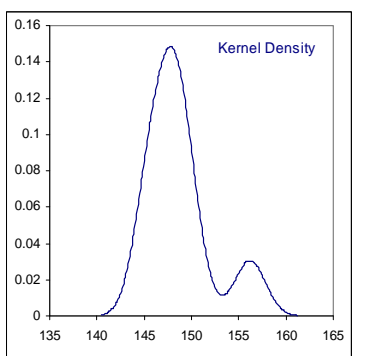
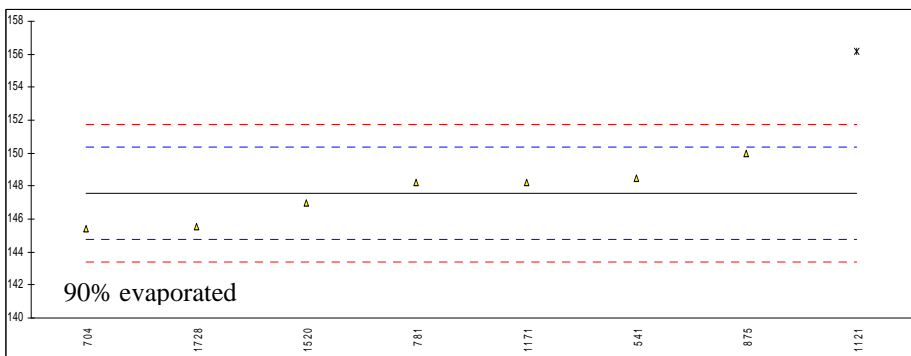
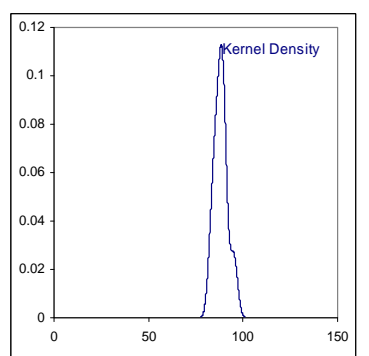
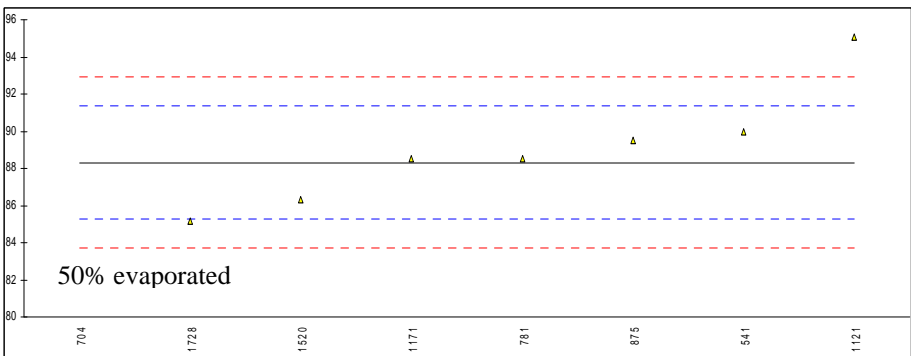
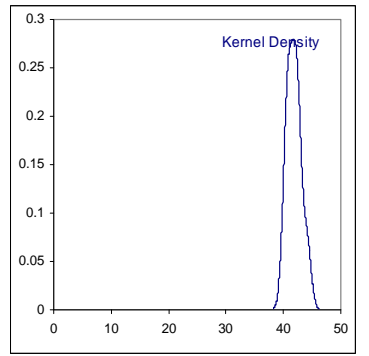
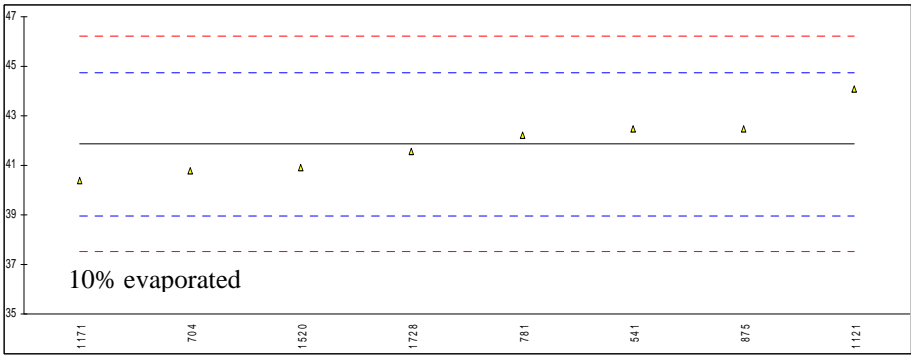
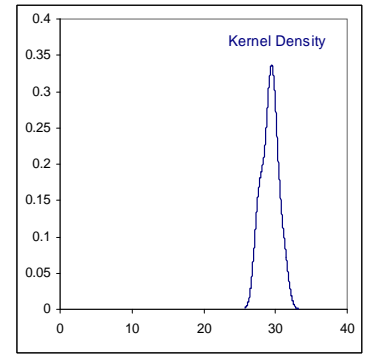
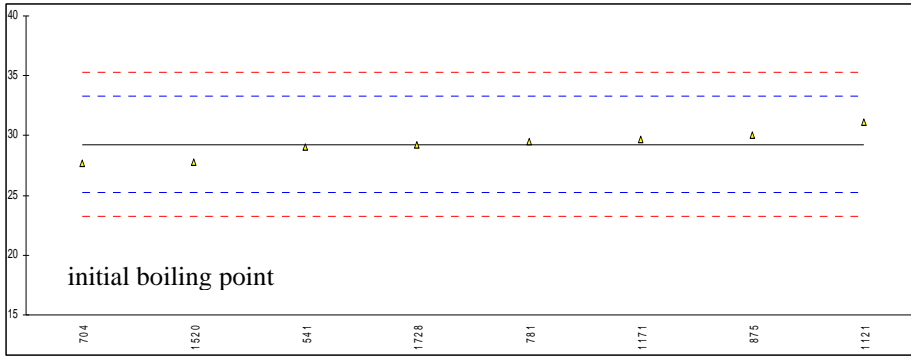
1409		----	----	----	----	----
1419		----	----	----	----	----
1426		----	----	----	----	----
1427		----	----	----	----	----
1428		----	----	----	----	----
1443		----	----	----	----	----
1468		----	----	----	----	----
1474		----	----	----	----	----
1520	ISO3405	27.8	40.9	86.3	147.0	180.9
1528		----	----	----	----	----
1616		----	----	----	----	----
1634		----	----	----	----	----
1635		----	----	----	----	----
1636		----	----	----	----	----
1650		----	----	----	----	----
1653		----	----	----	----	----
1656		----	----	----	----	----
1709		----	----	----	----	----
1720		----	----	----	----	----
1724		----	----	----	----	----
1728	ISO3405	29.22	41.545	85.175	145.56	177.075
1807		----	----	----	----	----
1810		----	----	----	----	----
1811		----	----	----	----	----
1833		----	----	----	----	----
1849		----	----	----	----	----
1851		----	----	----	----	----
1864		----	----	----	----	----
1936		----	----	----	----	----
1937		----	----	----	----	----
1938		----	----	----	----	----
1948		----	----	----	----	----
2129		----	----	----	----	----
2130		----	----	----	----	----
2146		----	----	----	----	----
normality	OK	OK	OK	OK	OK	OK
n	8	8	8	7	7	7
outliers	0	0	0	1	1	1
mean (n)	29.25	41.87	88.31	147.56	178.91	178.91
st.dev. (n)	1.122	1.213	3.554	1.668	1.370	1.370
R(calc.)	3.14	3.40	9.95	4.67	3.84	3.84
R(ISO3405:09)	5.60	4.04	4.29	3.92	7.20	7.20

Determination of Distillation ASTM D86 (manual) on sample #11082; results in °C

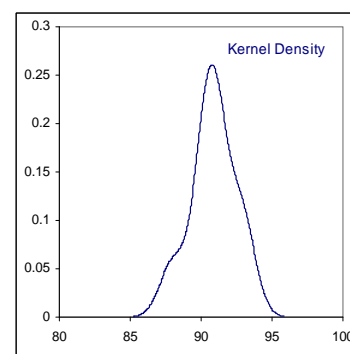
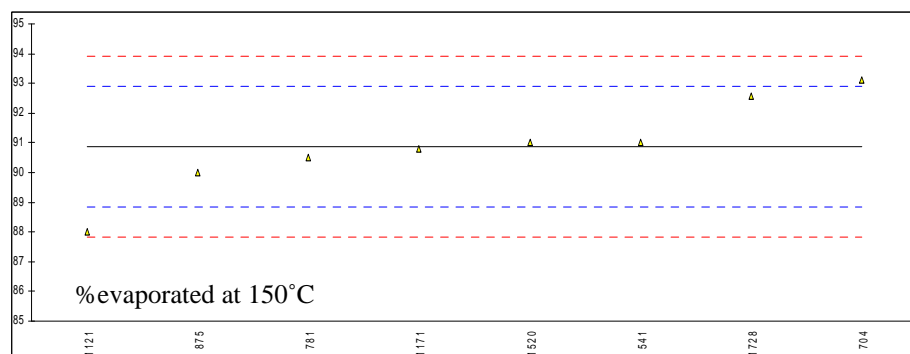
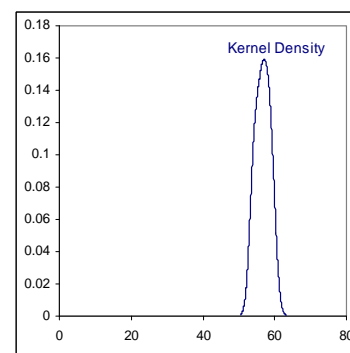
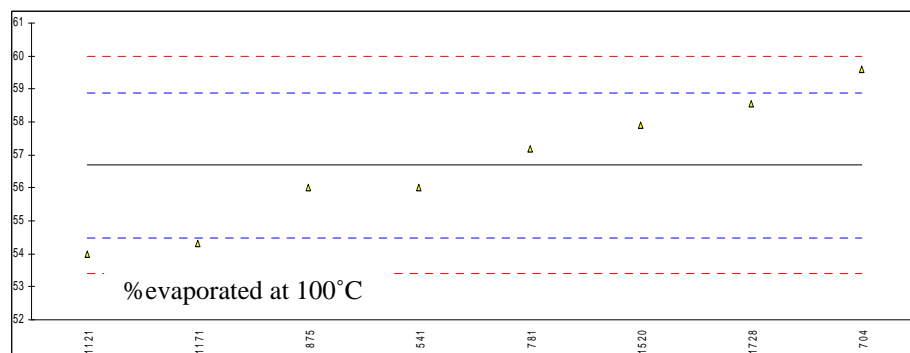
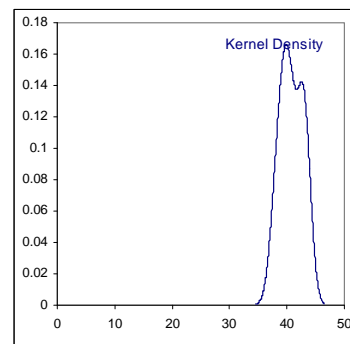
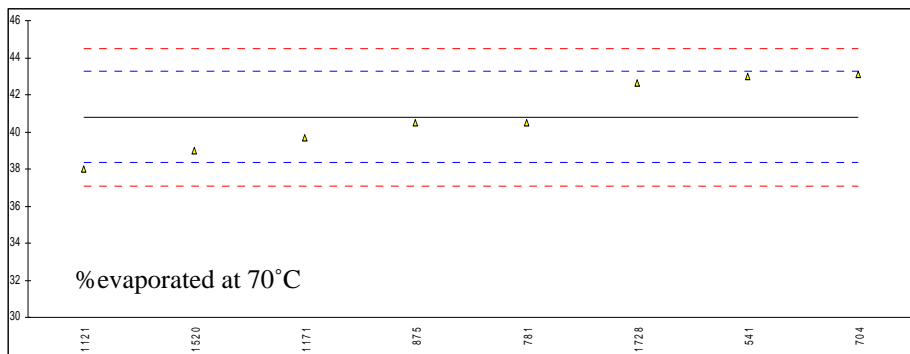
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lab	method	%vol 70°C	mark	%vol 100°C	mark	%vol 150°C	mark	%residue	mark
92		----		----		----		----	
150		----		----		----		----	
225		----		----		----		----	
228		----		----		----		----	
258		----		----		----		----	
312		----		----		----		----	
317		----		----		----		----	
323		----		----		----		----	
334		----		----		----		----	
335		----		----		----		----	
336		----		----		----		----	
337		----		----		----		----	
338		----		----		----		----	
340		----		----		----		----	
343		----		----		----		----	
344		----		----		----		----	
353		----		----		----		----	
360		----		----		----		----	
369		----		----		----		----	
371		----		----		----		----	
391		----		----		----		----	
420		----		----		----		----	
430		----		----		----		----	
431		----		----		----		----	
440		----		----		----		----	
445		----		----		----		----	
447		----		----		----		----	
463		----		----		----		----	
468		----		----		----		----	
485		----		----		----		----	
495		----		----		----		----	
496		----		----		----		----	
541	D86	43.0	fr: 33.0	56.0		91.0		1.1	
631		----		----		----		----	
671		----		----		----		----	
704	D86	43.1		59.6		93.1		0.9	
781	ISO3405	40.5		57.2		90.5		1.0	
868		----		----		----		----	
875	D86	40.5		56.0		90.0		1.0	
904		----		----		----		----	
962		----		----		----		----	
1006		----		----		----		----	
1017		----		----		----		----	
1033		----		----		----		----	
1038		----		----		----		----	
1059		----		----		----		----	
1066		----		----		----		----	
1067		----		----		----		----	
1080		----		----		----		----	
1081		----		----		----		----	
1108		----		----		----		----	
1109		----		----		----		----	
1121	IP123	38		54		88		1.0	
1126		----		----		----		----	
1140		----		----		----		----	
1161		----		----		----		----	
1167		----		----		----		----	
1171	ISO3405	39.67		54.306		90.805		1.0	
1182		----		----		----		----	
1186		----		----		----		----	
1194		----		----		----		----	
1199		----		----		----		----	
1203		----		----		----		----	
1205		----		----		----		----	
1257		----		----		----		----	
1259		----		----		----		----	
1276		----		----		----		----	
1299		----		----		----		----	
1300		----		----		----		----	
1340		----		----		----		----	
1378		----		----		----		----	
1395		----		----		----		----	
1397		----		----		----		----	
1399		----		----		----		----	
1404		----		----		----		----	
1406		----		----		----		----	

1409		----	----	----	----
1419		----	----	----	----
1426		----	----	----	----
1427		----	----	----	----
1428		----	----	----	----
1443		----	----	----	----
1468		----	----	----	----
1474		----	----	----	----
1520	ISO3405	39.0	57.9	91.0	1.2
1528		----	----	----	----
1616		----	----	----	----
1634		----	----	----	----
1635		----	----	----	----
1636		----	----	----	----
1650		----	----	----	----
1653		----	----	----	----
1656		----	----	----	----
1709		----	----	----	----
1720		----	----	----	----
1724		----	----	----	----
1728	ISO3405	42.61	58.54	92.59	1.15
1807		----	----	----	----
1810		----	----	----	----
1811		----	----	----	----
1833		----	----	----	----
1849		----	----	----	----
1851		----	----	----	----
1864		----	----	----	----
1936		----	----	----	----
1937		----	----	----	----
1938		----	----	----	----
1948		----	----	----	----
2129		----	----	----	----
2130		----	----	----	----
2146		----	----	----	----
normality	OK	OK	OK		
n	8	8	8		
outliers	0	0	0		
mean (n)	40.80	56.69	90.87		
st.dev. (n)	1.925	1.982	1.563		
R(calc.)	5.39	5.55	4.38		
R(ISO3405:09)	3.45	3.08	2.84		







Determination of Doctor Test on sample #11082;

lab	method	value	mark	z(targ)	remarks
92	D4952	neg		----	
150	D4952	neg		----	
225		----		----	
228		----		----	
258	D4952	neg		----	
312	IP30	neg		----	
317	D4952	neg		----	
323	D4952	neg		----	
334		----		----	
335		----		----	
336		----		----	
337		----		----	
338		----		----	
340	D4952	neg		----	
343		----		----	
344		----		----	
353		----		----	
360	D4952	neg		----	
369	D4952	neg		----	
371		----		----	
391	D4952	neg		----	
420		----		----	
430		----		----	
431		----		----	
440	IP30	neg		----	
445	IP30	neg		----	
447	D4952	neg		----	
463	D4952	neg		----	
468		----		----	
485		----		----	
495	D4952	neg		----	
496		----		----	
541	IP30	neg		----	
631		----		----	
671	D4952	neg		----	
704	D4952	neg		----	
781	D4952	neg		----	
868	D4952	neg		----	
875	D4952	neg		----	
904	D4952	neg		----	
962	D4952	neg		----	
1006		----		----	
1017		----		----	
1033		----		----	
1038		----		----	
1059	D4952	neg		----	
1066	D4952	neg		----	
1067		----		----	
1080		----		----	
1081		----		----	
1108	D4952	neg		----	
1109	IP30	neg		----	
1121		----		----	
1126		----		----	
1140	D4952	neg		----	
1161		----		----	
1167		----		----	
1171		----		----	
1182		----		----	
1186		----		----	
1194		----		----	
1199		----		----	
1203	D4952	neg		----	
1205		----		----	
1257		----		----	
1259		----		----	
1276	IP30	neg		----	
1299	D4952	neg		----	
1300	D4952	neg		----	
1340	D4952	neg		----	
1378		----		----	
1395		----		----	
1397	D4952	neg		----	
1399	IP30	neg		----	
1404	D4952	neg		----	
1406		----		----	

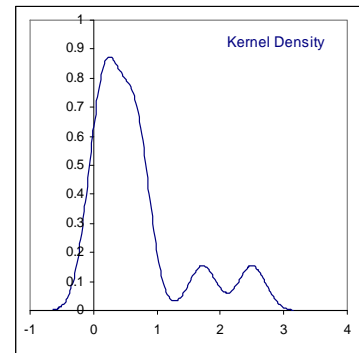
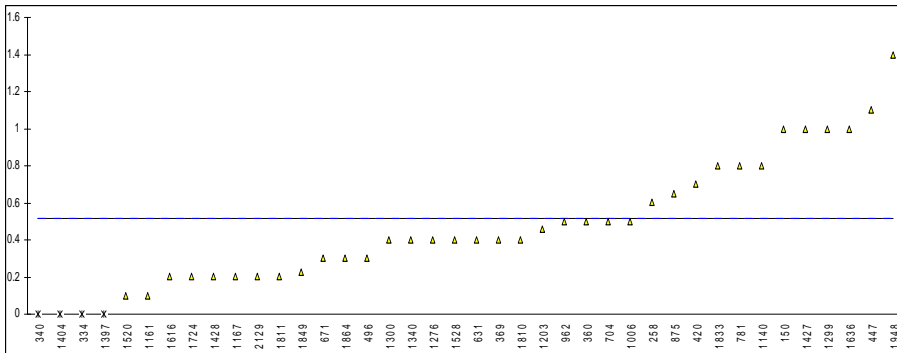
1409		----	----
1419	D4952	neg	----
1426		----	----
1427	D4952	neg	----
1428	D4952	neg	----
1443		----	----
1468		----	----
1474	D4952	neg	----
1520	D4952	neg	----
1528	D4952	neg	----
1616	D4952	neg	----
1634		----	----
1635	D4952	neg	----
1636	D4952	neg	----
1650		----	----
1653		----	----
1656		----	----
1709		----	----
1720	D4952	neg	----
1724	IP30	neg	----
1728	D4952	neg	----
1807	D4952	neg	----
1810		----	----
1811	D4952	neg	----
1833	D4952	neg	----
1849	D4952	neg	----
1851		----	----
1864	D4952	neg	----
1936		----	----
1937		----	----
1938		----	----
1948		----	----
2129	D4952	neg	----
2130		----	----
2146		----	----
	normality	n.a	
	n	54	
	outliers	0	
	mean (n)	neg	
	st.dev. (n)	n.a	
	R(calc.)	n.a	
	R(D4952:09)	n.a	

## Determination of Existent Gum (washed) on sample #11082; results in mg/100mL

lab	method	value	mark	z(targ)	remarks
92		----		----	
150	D381	1.0		----	
225		----		----	
228		----		----	
258	D381	0.6		----	
312	D381	<0.5		----	
317	D381	<1		----	
323	ISO6246	<1.0		----	
334	ISO6246	0	ex	----	result excluded, zero is not a real value
335		----		----	
336		----		----	
337		----		----	
338		----		----	
340	ISO6246	0.0	ex	----	result excluded, zero is not a real value
343	ISO6246	<1		----	
344		----		----	
353	IP131	<1		----	
360	ISO6246	0.5		----	
369	ISO6246	0.4		----	
371		----		----	
391		----		----	
420	ISO6246	0.7		----	
430		----		----	
431		----		----	
440		----		----	
445	IP131	<1		----	
447	ISO6246	1.1		----	
463	ISO6246	<0.5		----	
468	ISO6246	<0.5		----	
485		----		----	
495	ISO6246	<1		----	
496	ISO6246	0.3		----	
541		----		----	
631	D381	0.4		----	
671	D381	0.3		----	
704	ISO6246	0.5		----	
781	ISO6246	0.8		----	
868	D381	<0.5		----	
875	D381	0.65		----	
904		----		----	
962	ISO6246	0.5		----	
1006	D381	0.5		----	
1017	ISO6246	<1.0		----	
1033	IP131	<0.1		----	
1038		----		----	
1059	ISO6246	<1		----	
1066		----		----	
1067	ISO6246	<1		----	
1080	ISO6246	<1		----	
1081	D381	<0.5		----	
1108		----		----	
1109	D381	<0.5		----	
1121		----		----	
1126		----		----	
1140	ISO6246	0.8		----	
1161	ISO6246	0.1		----	
1167	ISO6246	0.2		----	
1171		----		----	
1182		----		----	
1186		----		----	
1194		----		----	
1199		----		----	
1203	ISO6246	0.46		----	
1205		----		----	
1257		----		----	
1259		----		----	
1276	ISO6246	0.4		----	
1299	ISO6246	1		----	
1300	ISO6246	0.4		----	
1340	ISO6246	0.40		----	
1378	ISO6246	<0.5		----	
1395	ISO6246	<0.5		----	
1397	ISO6246	0	ex	----	result excluded, zero is not a real value
1399		----		----	
1404	ISO6246	0	ex	----	result excluded, zero is not a real value
1406		----		----	

1409	ISO6246	<1	----
1419	ISO6246	<1.0	----
1426		----	----
1427	ISO6246	1.0	----
1428	ISO6246	0.2	----
1443		----	----
1468	ISO6246	<1	----
1474		----	----
1520	ISO6246	0.1	----
1528	ISO6246	0.4	----
1616	D381	0.2	----
1634		----	----
1635		----	----
1636	D381	1.0	----
1650		----	----
1653		----	----
1656	ISO6246	<1	----
1709		----	----
1720		----	----
1724	ISO6246	0.2	----
1728		----	----
1807	ISO6246	<1	----
1810	ISO6246	0.4	----
1811	ISO6246	0.2	----
1833	ISO6246	0.8	----
1849	ISO6246	0.225	----
1851		----	----
1864	ISO6246	0.3	----
1936		----	----
1937		----	----
1938		----	----
1948	ISO6246	1.4	----
2129	ISO6246	0.2	----
2130		----	----
2146		----	----

normality not OK  
n 36  
outliers 0  
mean (n) 0.52  
st.dev. (n) 0.322  
R(calc.) 0.90  
R(ISO6246:98) (0.69)



Determination of Lead as Pb on sample #11082; results in mg/L

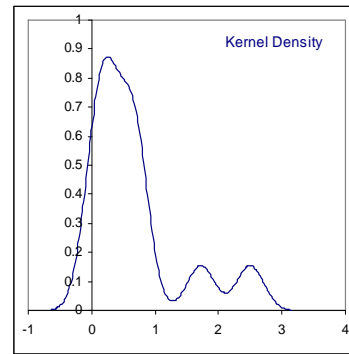
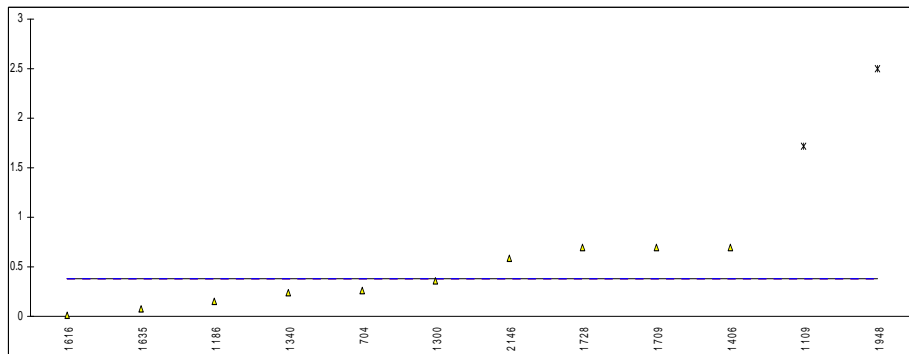
lab	method	value	mark	z(targ)	remarks
92		----		----	
150		----		----	
225		----		----	
228		----		----	
258		----		----	
312	EN237	<2.5		----	
317		----		----	
323	EN237	<2.5		----	
334		----		----	
335		----		----	
336		----		----	
337		----		----	
338		----		----	
340		----		----	
343	EN237	<2.5		----	
344		----		----	
353		----		----	
360		----		----	
369		----		----	
371	D3237	<2.5		----	
391		----		----	
420	EN237	<2.5		----	
430		----		----	
431		----		----	
440		----		----	
445	IP428	<2.5		----	
447	EN237	<2.5		----	
463	D3237	<2.5		----	
468		----		----	
485		----		----	
495	EN237	<2.5		----	
496	EN237	<2.5		----	
541	D3605	<0.1		----	
631		----		----	
671		----		----	
704	EN237	0.26		----	
781	EN237	<1		----	
868	UOP952	<0.01		----	
875		----		----	
904	EN237	<2.5		----	
962		----		----	
1006	D3237	<0.0025	U	----	probablyly unit error?
1017		----		----	
1033		----		----	
1038		----		----	
1059	EN13723	<1.0		----	
1066		----		----	
1067	in house	<0.01		----	
1080		----		----	
1081	D5059	<1		----	
1108		----		----	
1109	D3237	1.72	G(0.05)	----	
1121		----		----	
1126		----		----	
1140		----		----	
1161	EN237	<5		----	
1167	EN237	<0.25		----	
1171	D5059	<2.6		----	
1182		----		----	
1186	D3237	0.15		----	
1194		----		----	
1199		----		----	
1203	EN237	<1		----	
1205		----		----	
1257		----		----	
1259		----		----	
1276	D428	<0.1		----	
1299		----		----	
1300	EN237	0.3564		----	
1340	EN237	0.24		----	
1378		----		----	
1395		----		----	
1397		----		----	
1399		----		----	
1404	EN237	<2.5		----	
1406	EN237	0.7		----	

1409	EN237	<2.5	----
1419	EN237	<2.0	----
1426		----	----
1427	EN237	<2.5	----
1428	EN237	<2.5	----
1443		----	----
1468		----	----
1474		----	----
1520	EN237	<2.5	----
1528	EN237	<1	----
1616	IP224	0.014	----
1634		----	----
1635	EN237	0.071	----
1636	IP352	<1	----
1650		----	----
1653		----	----
1656	EN237	<2.5	----
1709	D3237	0.7	----
1720		----	----
1724	EN237	<3.0	----
1728	EN237	0.7	----
1807	EN237	<2.5	----
1810		----	----
1811		----	----
1833		----	----
1849	EN237	<2.5	----
1851		----	----
1864	EN237	<2.5	----
1936		----	----
1937		----	----
1938		----	----
1948	EN237	2.5	----
2129	EN237	<2.5	----
2130		----	----
2146	ISO8754	0.59	----

normality OK  
n 10  
outliers 2  
mean (n) 0.38  
st.dev. (n) 0.272  
R(calc.) 0.76  
R(EN237:96) (2.00)

G(0.05)

application range (2.5-25 mg/L)



Determination of Manganese as Mn on sample #11082; results in mg/L

lab	method	value	mark	z(targ)	remarks
92		----		----	
150		----		----	
225		----		----	
228		----		----	
258		----		----	
312	D3831	<0.25		----	
317		----		----	
323	D3831	<0.3		----	
334		----		----	
335		----		----	
336		----		----	
337		----		----	
338		----		----	
340		----		----	
343		----		----	
344		----		----	
353		----		----	
360		----		----	
369		----		----	
371		----		----	
391		----		----	
420		----		----	
430		----		----	
431		----		----	
440		----		----	
445		----		----	
447		----		----	
463	EN16135	<2		----	
468		----		----	
485		----		----	
495		----		----	
496		----		----	
541	D3831	<0.25		----	
631	D3831	<0.25		----	
671		----		----	
704		----		----	
781	INH-51925	<0.25		----	
868	D3831	<0.25		----	
875		----		----	
904		----		----	
962		----		----	
1006		----		----	
1017		----		----	
1033		----		----	
1038		----		----	
1059		----		----	
1066	EN16136	<2		----	
1067		----		----	
1080		----		----	
1081		----		----	
1108		----		----	
1109		----		----	
1121		----		----	
1126		----		----	
1140		----		----	
1161	INH8829	<0.25		----	
1167	D3831	<0.25		----	
1171		----		----	
1182		----		----	
1186		----		----	
1194		----		----	
1199		----		----	
1203	D3831	<1		----	
1205		----		----	
1257		----		----	
1259		----		----	
1276	IP455	0.171		----	
1299	D3831	3.2	G(0.01)	----	false positive result?
1300	D3831	<0.25		----	
1340		----		----	
1378		----		----	
1395		----		----	
1397		----		----	
1399		----		----	
1404	EN16135	<0.80		----	
1406	D3831	0.1		----	



1409		----	----
1419	in house	<0.1	----
1426		----	----
1427		----	----
1428	D3831	<0.25	----
1443		----	----
1468		----	----
1474		----	----
1520		----	----
1528	D3831	0.2	----
1616		----	----
1634		----	----
1635		----	----
1636		----	----
1650		----	----
1653		----	----
1656		----	----
1709		----	----
1720		----	----
1724		----	----
1728		----	----
1807		----	----
1810		----	----
1811		----	----
1833		----	----
1849		----	----
1851		----	----
1864	D3831	<0.25	----
1936		----	----
1937		----	----
1938		----	----
1948	D3831	0.2	----
2129	D3831	<0.2	----
2130		----	----
2146		----	----

normality OK  
n 4  
outliers 1  
mean (n) 0.17  
st.dev. (n) 0.047  
R(calc.) 0.13  
R(D3831:06) (0.04)

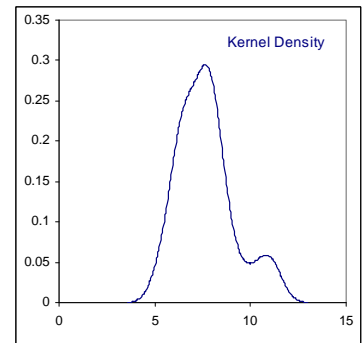
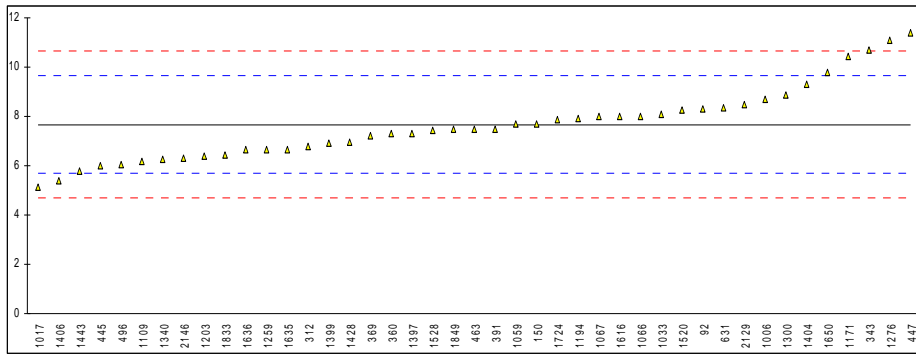
Application range: 0.25-40 mg/L

## Determination of Olefins by FIA on sample #11082; results in %V/V

lab	method	value	mark	z(targ)	remarks
92	D1319	8.3		0.65	
150	D1319	7.7		0.04	
225		----		----	
228		----		----	
258		----		----	
312	D1319	6.8		-0.87	
317		----		----	
323		----		----	
334		----		----	
335		----		----	
336		----		----	
337		----		----	
338		----		----	
340		----		----	
343	D1319	10.7		3.07	
344		----		----	
353		----		----	
360	D1319	7.3		-0.36	
369	D1319	7.21		-0.45	
371		----		----	
391	D1319	7.5	C	-0.16	result mixed up with aromatics by FIA, reported 30.5
420		----		----	
430		----		----	
431		----		----	
440		----		----	
445	D1319	6.0		-1.67	
447	D1319	11.4		3.77	
463	D1319	7.5		-0.16	
468		----		----	
485		----		----	
495		----		----	
496	D1319	6.05		-1.62	
541		----		----	
631	D1319	8.34		0.69	
671		----		----	
704		----		----	
781		----		----	
868		----		----	
875		----		----	
904		----		----	
962		----		----	
1006	D6293	8.7		1.05	
1017	D1319	5.15		-2.53	
1033	IP156	8.1		0.44	
1038		----		----	
1059	D1319	7.7		0.04	
1066	D1319	8.0		0.34	
1067	D1319	8.0		0.34	
1080		----		----	
1081		----		----	
1108		----		----	
1109	D1319	6.19		-1.48	
1121		----		----	
1126		----		----	
1140		----		----	
1161		----		----	
1167		----		----	
1171	D1319	10.45		2.81	
1182		----		----	
1186		----		----	
1194	INH-D1319	7.93		0.27	
1199		----		----	
1203	D1319	6.4		-1.27	
1205		----		----	
1257		----		----	
1259	D1319	6.66		-1.01	
1276	D1319	11.09		3.46	
1299		----		----	
1300	D1319	8.883		1.23	
1340	D1319	6.26		-1.41	
1378		----		----	
1395		----		----	
1397	D1319	7.3		-0.36	
1399	D1319	6.9		-0.77	
1404	D1319	9.3		1.65	
1406	in house	5.4		-2.28	

1409		----	----
1419		----	----
1426		----	----
1427		----	----
1428	ISO3837	6.95	-0.71
1443	D1319	5.8	-1.87
1468		----	----
1474		----	----
1520	D1319	8.25	0.60
1528	D1319	7.45	-0.21
1616	D1319	8.0	0.34
1634		----	----
1635	D1319	6.67	-1.00
1636	D1319	6.65	-1.02
1650	D1319	9.77	2.13
1653		----	----
1656		----	----
1709		----	----
1720		----	----
1724	D1319	7.87	0.21
1728		----	----
1807		----	----
1810		----	----
1811		----	----
1833	EN15533	6.44	-1.23
1849	D1319	7.47	-0.19
1851		----	----
1864		----	----
1936		----	----
1937		----	----
1938		----	----
1948		----	----
2129	D1319	8.5	0.85
2130		----	----
2146	D1319	6.3	-1.37
normality		OK	
n		43	
outliers		0	
mean (n)		7.66	
st.dev. (n)		1.462	
R(calc.)		4.09	
R(D1319:10)		2.78	

W result withdrwan, first reported:31.2

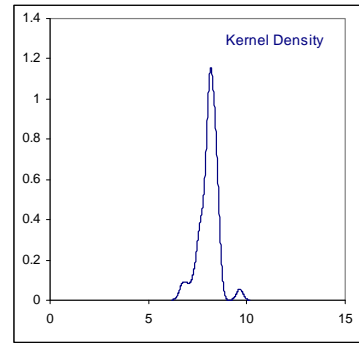
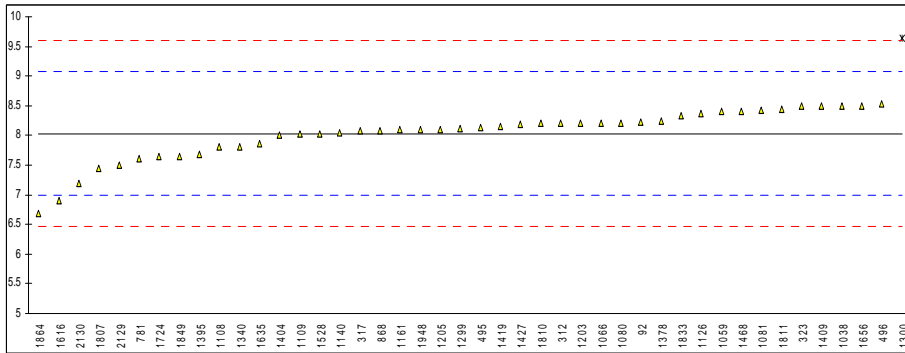


## Determination of Olefins by GC on sample #11082; results in %V/V

lab method	value	mark	z(targ)	remarks
92	INH-99	8.23	0.38	
150		----	----	
225		----	----	
228		----	----	
258		----	----	
312	ISO22854	8.2	0.33	
317	EN14517	8.08	0.09	
323	EN22854	8.5	0.90	
334		----	----	
335		----	----	
336		----	----	
337		----	----	
338		----	----	
340		----	----	
343		----	----	
344		----	----	
353		----	----	
360		----	----	
369		----	----	
371		----	----	
391		----	----	
420		----	----	
430		----	----	
431		----	----	
440		----	----	
445		----	----	
447		----	----	
463		----	----	
468		----	----	
485		----	----	
495	EN22854	8.13	0.19	
496	EN22854	8.54	0.98	
541		----	----	
631		----	----	
671		----	----	
704		----	----	
781	INH-52714	7.60	-0.83	
868	D6839	8.08	0.09	
875		----	----	
904		----	----	
962		----	----	
1006		----	----	
1017		----	----	
1033		----	----	
1038	D6839	8.5	0.90	
1059	ISO22854	8.4	0.71	
1066	ISO22854	8.2	0.33	
1067		----	----	
1080	in house	8.21	0.34	
1081	EN14517	8.43	0.77	
1108	EN14517	7.8	-0.44	
1109	D6839	8.02	-0.02	
1121		----	----	
1126	in house	8.37	0.65	
1140	IP566	8.04	0.02	
1161	ISO22854	8.09	0.11	
1167		----	----	
1171		----	----	
1182		----	----	
1186		----	----	
1194		----	----	
1199		----	----	
1203	EN14517	8.2	0.33	
1205	EN22854	8.1	0.13	
1257		----	----	
1259		----	----	
1276		----	----	
1299	EN22854	8.12	0.17	
1300	EN14517	9.64	3.09	G(0.05)
1340	EN22854	7.81	-0.42	
1378	D6839	8.25	0.42	
1395	ISO22854	7.68	-0.67	
1397		----	----	
1399		----	----	
1404	EN14517	8.01	-0.04	
1406		----	----	

1409	ISO22854	8.5	0.90
1419	EN22854	8.16	0.25
1426		----	----
1427	EN14517	8.19	0.31
1428		----	----
1443		----	----
1468	EN22854	8.41	0.73
1474		----	----
1520		----	----
1528	ISO22854	8.03	0.00
1616	D6839	6.90	-2.17
1634		----	----
1635	ISO22854	7.87	-0.31
1636		----	----
1650		----	----
1653		----	----
1656	EN14517	8.5	C 0.90 first reported: 11.5
1709		----	----
1720		----	----
1724	EN14517	7.64	-0.75
1728		----	----
1807	ISO22854	7.45	-1.12
1810	EN14517	8.20	0.33
1811	EN14517	8.44	0.79
1833	EN22854	8.33	0.58
1849	EN14517	7.64	-0.75
1851		----	----
1864	D5134	6.687	-2.58
1936		----	----
1937		----	----
1938		----	----
1948	EN14517	8.09	0.11
2129	D6730	7.503	-1.01
2130	EN14517	7.189	-1.62
2146		----	----

normality not OK  
n 43  
outliers 1  
mean (n) 8.031  
st.dev. (n) 0.4201  
R(calc.) 1.176  
R(EN14517:04) 1.456

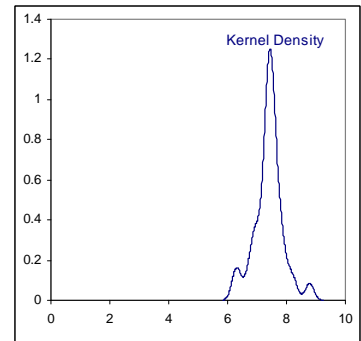
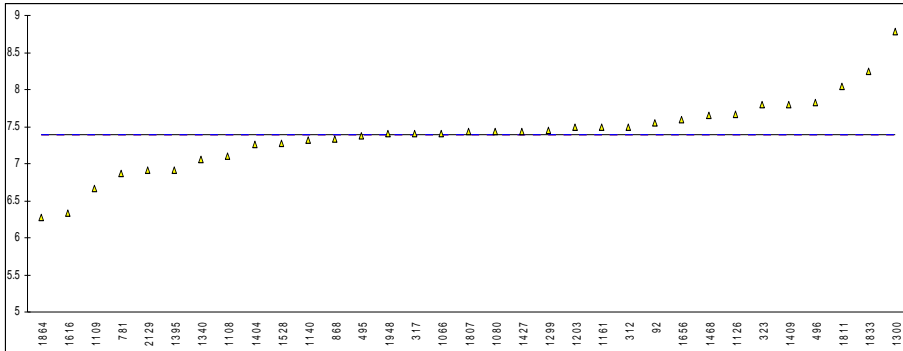


Determination of Olefins by GC on sample #11082; results in %M/M

lab method	value	mark	z(targ)	remarks
92	INH-99	7.55	----	----
150		----	----	----
225		----	----	----
228		----	----	----
258		----	----	----
312	ISO22854	7.5	----	----
317	EN14517	7.40	----	----
323	EN22854	7.8	----	----
334		----	----	----
335		----	----	----
336		----	----	----
337		----	----	----
338		----	----	----
340		----	----	----
343		----	----	----
344		----	----	----
353		----	----	----
360		----	----	----
369		----	----	----
371		----	----	----
391		----	----	----
420		----	----	----
430		----	----	----
431		----	----	----
440		----	----	----
445		----	----	----
447		----	----	----
463		----	----	----
468		----	----	----
485		----	----	----
495	EN22854	7.38	----	----
496	EN22854	7.83	----	----
541		----	----	----
631		----	----	----
671		----	----	----
704		----	----	----
781	INH-52714	6.87	----	----
868	D6839	7.34	----	----
875		----	----	----
904		----	----	----
962		----	----	----
1006		----	----	----
1017		----	----	----
1033		----	----	----
1038		----	----	----
1059		----	----	----
1066	ISO22854	7.4	----	----
1067		----	----	----
1080	in house	7.44	----	----
1081		----	----	----
1108	EN14517	7.1	----	----
1109	D6839	6.67	----	----
1121		----	----	----
1126	in house	7.67	----	----
1140	IP566	7.32	----	----
1161	ISO22854	7.50	----	----
1167		----	----	----
1171		----	----	----
1182		----	----	----
1186		----	----	----
1194		----	----	----
1199		----	----	----
1203		7.5	----	----
1205		----	----	----
1257		----	----	----
1259		----	----	----
1276		----	----	----
1299	EN22854	7.45	----	----
1300	EN14517	8.78	C	---- first reported:9.54
1340	EN22854	7.06	----	----
1378		----	----	----
1395	ISO22854	6.91	----	----
1397		----	----	----
1399		----	----	----
1404	EN14517	7.26	----	----
1406		----	----	----

1409	ISO22854	7.8	----	----
1419		----	----	----
1426		----	----	----
1427	EN14517	7.44	----	----
1428		----	----	----
1443		----	----	----
1468	EN22854	7.65	----	----
1474		----	----	----
1520		----	----	----
1528	ISO22854	7.28	----	----
1616	D6839	6.33	----	----
1634		----	----	----
1635		----	----	----
1636		----	----	----
1650		----	----	----
1653		----	----	----
1656	EN14517	7.6	C	---- first reported: 10.6
1709		----	----	----
1720		----	----	----
1724		----	----	----
1728		----	----	----
1807	ISO22854	7.44	----	----
1810		----	----	----
1811		8.05	----	----
1833	EN22854	8.24	----	----
1849		----	----	----
1851		----	----	----
1864	D5134	6.274	----	----
1936		----	----	----
1937		----	----	----
1938		----	----	----
1948		7.40	----	----
2129	D6730	6.908	----	----
2130		----	----	----
2146		----	----	----

normality OK  
n 33  
outliers 0  
mean (n) 7.40  
st.dev. (n) 0.492  
R(calc.) 1.38  
R(EN14517:04) unknown



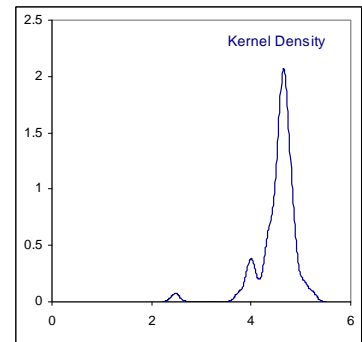
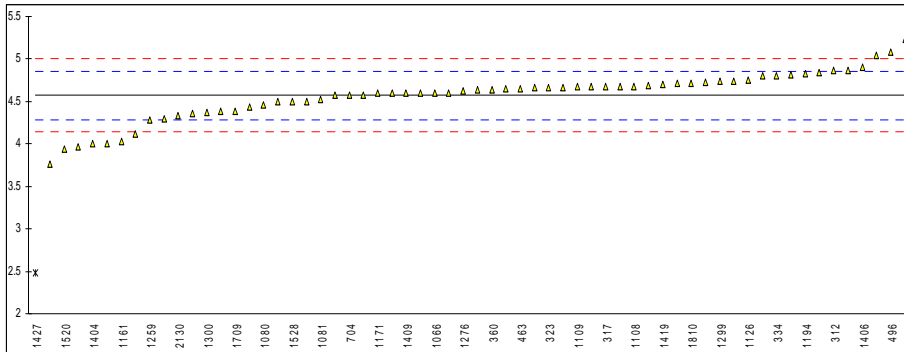
## Determination of Ethanol on sample #11082; results in %V/V

lab	method	value	mark	z(targ)	remarks
92	INH-SB	5.24		4.68	
150	D5599	4.50		-0.50	
225		----		----	
228		----		----	
258		----		----	
312	ISO22854	4.86		2.02	
317	IP408	4.68		0.76	
323	EN22854	4.66		0.62	
334	EN1601	4.8		1.60	
335		----		----	
336		----		----	
337		----		----	
338		----		----	
340		----		----	
343	EN13132	3.97		-4.21	
344		----		----	
353		----		----	
360	EN13132	4.64		0.48	
369	D4815	4.44		-0.92	
371		----		----	
391	EN1601	4.38		-1.34	
420	EN13132	4.66		0.62	
430		----		----	
431		----		----	
440		----		----	
445	D4815	4.6		0.20	
447	D4815	4.64		0.48	
463	EN13132	4.65		0.55	
468		----		----	
485		----		----	
495	EN22854	4.74		1.18	
496	EN1601	5.08		3.56	
541		----		----	
631		----		----	
671		----		----	
704	D4815	4.576		0.03	
781		----		----	
868	D6839	4.84		1.88	
875		----		----	
904		----		----	
962		----		----	
1006	D4815	4.86		2.02	
1017		----		----	
1033		----		----	
1038		----		----	
1059	ISO22854	4.58		0.06	
1066	ISO22854	4.60		0.20	
1067		----		----	
1080	in house	4.46		-0.78	
1081	EN14517	4.52		-0.36	
1108	EN14517	4.68		0.76	
1109	D6839	4.67		0.69	
1121		----		----	
1126	in house	4.75		1.25	
1140	IP566	4.60		0.20	
1161	EN13132	4.03		-3.79	
1167	EN13132	4.65		0.55	
1171	D5845	4.6	C	0.20	first reported 5.33
1182		----		----	
1186		----		----	
1194	D5845	4.83		1.81	
1199		----		----	
1203	EN14517	4.67		0.69	
1205	EN22854	4.69		0.83	
1257		----		----	
1259	EN13132	4.28		-2.04	
1276	EN13132	4.63		0.41	
1299	EN22854	4.74		1.18	
1300	EN1601	4.3703		-1.41	
1340	EN22854	4.29		-1.97	
1378		----		----	
1395	ISO22854	4.73		1.11	
1397	EN13132	4.8		1.60	
1399	D4815	4.658733		0.61	
1404	D4815	4.00		-4.00	
1406	in house	4.9		2.30	



1409	ISO22854	4.60		0.20	
1419	EN22854	4.70		0.90	
1426		-----		-----	
1427	EN14517	2.48	G(0.01)	-14.64	
1428	EN13132	4.36		-1.48	
1443	EN13132	4.12	C	-3.16	first reported:3.45
1468	EN22854	4.82		1.74	
1474		-----		-----	
1520	EN13132	3.94		-4.42	
1528	EN1601	4.50	C	-0.50	first reported:5.44
1616		-----		-----	
1634		-----		-----	
1635		-----		-----	
1636		-----		-----	
1650		-----		-----	
1653		-----		-----	
1656	EN14517	4.6		0.20	
1709	D4815	4.384		-1.31	
1720		-----		-----	
1724	ISO22854	4.57		-0.01	
1728		-----		-----	
1807	EN13132	4.0		-4.00	
1810	EN1601	4.71		0.97	
1811	EN1601	4.50		-0.50	
1833	EN22854	4.68		0.76	
1849		-----		-----	
1851		-----		-----	
1864	D4815	3.76		-5.68	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1948	EN1601	<4.51	C	-----	first reported:>4.51
2129	D6730	5.047		3.33	
2130	EN1601	4.334		-1.66	
2146	EN13132	4.708		0.95	

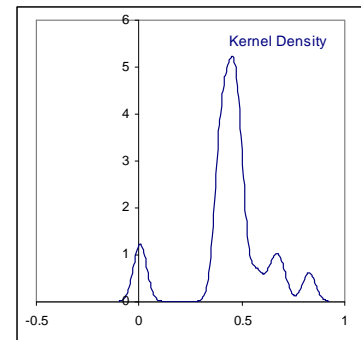
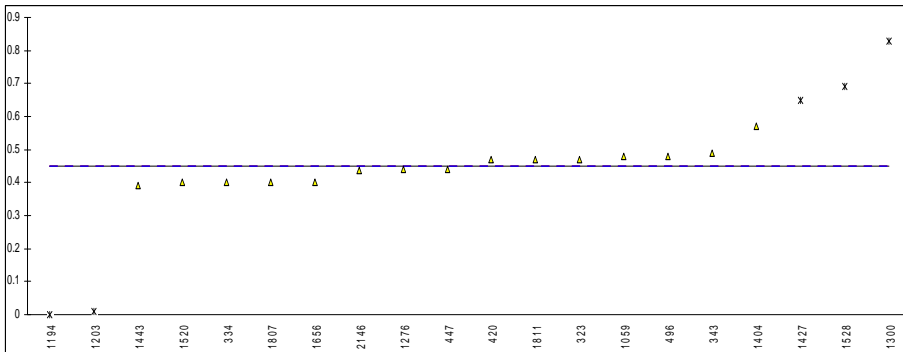
normality not OK  
n 61  
outliers 1  
mean (n) 4.572  
st.dev. (n) 0.2827  
R(calc.) 0.792  
R(EN1601:97) 0.400



Determination of Ethers (>C5) on sample #11082; results in %V/V

lab	method	value	mark	z(targ)	After correction for MTBE	remarks
92		----		----	----	
150	D5599	<0.05		----	<0.05	
225		----		----	----	
228		----		----	----	
258		----		----	----	
312	ISO22854	<0.01		----	<0.01	
317	IP408	<0.2		----	<0.2	
323	EN22854	0.47		----	0	(ex)
334	EN1601	0.4		----	0	(ex)
335		----		----	----	
336		----		----	----	
337		----		----	----	
338		----		----	----	
340		----		----	----	
343	EN13132	0.49		----	0	(ex)
344		----		----	----	
353		----		----	----	
360		----		----	----	
369		----		----	----	
371		----		----	----	
391		----		----	----	
420	EN13132	0.47		----	0	(ex)
430		----		----	----	
431		----		----	----	
440		----		----	----	
445	D4815	<0.1		----	<0.1	
447	D4815	0.44		----	0	(ex)
463		----		----	----	
468		----		----	----	
485		----		----	----	
495		----		----	----	
496	EN1601	0.48		----	0.02	
541		----		----	----	
631		----		----	----	
671		----		----	----	
704		----		----	----	
781		----		----	----	
868		----		----	----	
875		----		----	----	
904		----		----	----	
962		----		----	----	
1006		----		----	----	
1017		----		----	----	
1033		----		----	----	
1038		----		----	----	
1059	ISO22854	0.48		----	0	(ex)
1066	ISO22854	<0.01		----	<0.01	
1067		----		----	----	
1080		----		----	----	
1081		----		----	----	
1108		----		----	----	
1109	D6839	<0.01		----	<0.01	
1121		----		----	----	
1126		----		----	----	
1140		----		----	----	
1161	EN13132	<0.17		----	<0.17	
1167	EN13132	n.d.		----	n.d.	
1171		----		----	----	
1182		----		----	----	
1186		----		----	----	
1194	D5845	0	ex	----	0	(ex)
1199		----		----	----	
1203	EN14517	0.01	DG(0.01)	----	0.01	
1205		----		----	----	
1257		----		----	----	
1259		----		----	----	
1276	EN13132	0.44		----	0	(ex)
1299		----		----	----	
1300	EN1601	0.8270	C,G(0.05)	----	0.2161	first reported: 0.9231
1340		----		----	----	
1378		----		----	----	
1395		----		----	----	
1397		----		----	----	
1399		----		----	----	
1404	D4815	0.57		----	0.11	
1406		----		----	----	

1409	ISO22854	<0.8	----	<0.8		
1419		----	----	----		
1426		----	----	----		
1427	EN14517	0.65	DG(0.01)	----	0	(ex)
1428		----	----	----	----	
1443	EN13132	0.39		----	0.05	
1468	EN22854	<0.1		----	<0.1	
1474		----	----	----	----	
1520	EN13132	0.40		----	0.01	
1528	EN1601	0.69	DG(0.01)	----	0.00	(ex)
1616		----	----	----	----	
1634		----	----	----	----	
1635		----	----	----	----	
1636		----	----	----	----	
1650		----	----	----	----	
1653		----	----	----	----	
1656	EN14517	0.4		----	0.4	
1709		----	----	----	----	
1720		----	----	----	----	
1724		----	----	----	----	
1728		----	----	----	----	
1807	EN13132	0.4		----	0.4	
1810		----	----	----	----	
1811	EN1601	0.47		----	0	(ex)
1833		----	----	----	----	
1849		----	----	----	----	
1851		----	----	----	----	
1864		----	----	----	----	
1936		----	----	----	----	
1937		----	----	----	----	
1938		----	----	----	----	
1948		----	----	----	----	
2129	D6730	<0.1		----	<0.1	
2130		----	----	----	----	
2146	EN13132	0.437		----	0	(ex)
normality	OK			OK		
n	15			8		
outliers	5			0		
mean (n)	0.45			0.15		
st.dev. (n)	0.049			0.168		
R(calc.)	0.14			0.47		
R(EN1601:97)	0.30			n.a		

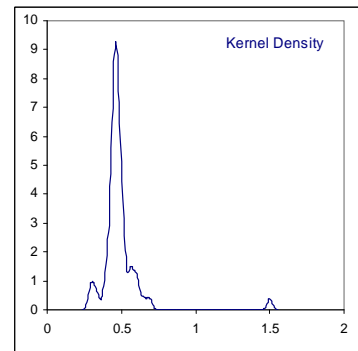
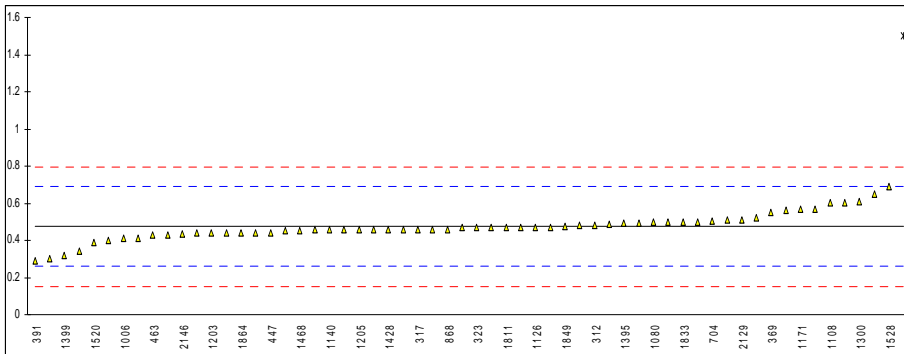


## Determination of MTBE on sample #11082; results in %V/V

lab	method	value	mark	z(targ)	remarks
92	INH-SB	0.57		0.90	
150	D5599	<0.05		<-3.89	false negative result?
225		----		----	
228		----		----	
258		----		----	
312	ISO22854	0.48		0.06	
317	IP408	0.46		-0.13	
323	EN22854	0.47		-0.03	
334	EN1601	0.4		-0.69	
335		----		----	
336		----		----	
337		----		----	
338		----		----	
340		----		----	
343	EN13132	0.49		0.15	
344		----		----	
353		----		----	
360	EN13132	0.41		-0.59	
369	D4815	0.55		0.71	
371		----		----	
391	EN1601	0.29		-1.71	
420	EN13132	0.47		-0.03	
430		----		----	
431		----		----	
440		----		----	
445	D4815	0.5		0.25	
447	D4815	0.44		-0.31	
463	EN13132	0.43		-0.41	
468		----		----	
485		----		----	
495	EN22854	0.47		-0.03	
496	EN1601	0.46		-0.13	
541		----		----	
631		----		----	
671		----		----	
704	D4815	0.505		0.29	
781		----		----	
868	D6839	0.46		-0.13	
875		----		----	
904		----		----	
962		----		----	
1006	D4815	0.41		-0.59	
1017		----		----	
1033		----		----	
1038		----		----	
1059	ISO22854	0.48		0.06	
1066	ISO22854	0.46		-0.13	
1067		----		----	
1080	in house	0.50		0.25	
1081	EN14517	0.46		-0.13	
1108	EN14517	0.6		1.18	
1109	D6839	0.45		-0.22	
1121		----		----	
1126	in house	0.47		-0.03	
1140	IP566	0.46		-0.13	
1161	EN13132	0.47		-0.03	
1167	EN13132	0.51		0.34	
1171	D5845	0.57		0.90	
1182		----		----	
1186		----		----	
1194	D5845	1.5	C,G(0.01)	9.58	first reported:1
1199		----		----	
1203	EN14517	0.44		-0.31	
1205	EN22854	0.46		-0.13	
1257		----		----	
1259	EN13132	0.56		0.81	
1276	EN13132	0.44		-0.31	
1299		----		----	
1300	EN1601	0.6109		1.28	
1340	EN22854	0.52		0.43	
1378	D6839	0.44		-0.31	
1395	ISO22854	0.49		0.15	
1397	EN13132	0.5		0.25	
1399	D4815	0.317129		-1.46	
1404	D4815	0.46		-0.13	
1406	in house	0.3		-1.62	

1409	ISO22854	<0.8		----	
1419	EN22854	0.46		-0.13	
1426		----		----	
1427	EN14517	0.65		1.65	
1428	EN13132	0.46	C	-0.13	first reported:4.55
1443	EN13132	0.34		-1.25	
1468	EN22854	0.45		-0.22	
1474		----		----	
1520	EN13132	0.39		-0.78	
1528	EN1601	0.69		2.02	
1616	D6839	0.47		-0.03	
1634		----		----	
1635	ISO22854	0.44		-0.31	
1636		----		----	
1650		----		----	
1653		----		----	
1656	EN14517	<0.1		<-3.49	false negative result?
1709	D4815	0.489		0.14	
1720		----		----	
1724		----		----	
1728		----		----	
1807		----		----	
1810		----		----	
1811	EN1601	0.47		-0.03	
1833	EN22854	0.5		0.25	
1849	EN14517	0.475		0.01	
1851		----		----	
1864	D4815	0.44		-0.31	
1936		----		----	
1937		----		----	
1938		----		----	
1948	EN1601	0.60		1.18	
2129	D6730	0.512		0.36	
2130	EN1601	0.430		-0.41	
2146	EN13132	0.437		-0.34	

normality not OK  
n 59  
outliers 1  
mean (n) 0.473  
st.dev. (n) 0.0733  
R(calc.) 0.205  
R(EN1601:97) 0.300



## Determination of other oxygenates on sample #11082; results in %V/V

lab	method	DIPE	ETBE	i-buOH	i-proOH	MeOH	TAME	Tert-buOH	Others
92		----	----	----	----	----	----	----	----
150	D5599	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	----
225		----	----	----	----	----	----	----	----
228		----	----	----	----	----	----	----	----
258		----	----	----	----	----	----	----	----
312	ISO22854	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
317	IP408	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
323	EN22854	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
334	EN1601	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
335		----	----	----	----	----	----	----	----
336		----	----	----	----	----	----	----	----
337		----	----	----	----	----	----	----	----
338		----	----	----	----	----	----	----	----
340		----	----	----	----	----	----	----	----
343	EN13132	----	<0.17	<0.17	<0.17	<0.17	----	<0.17	<0.17
344		----	----	----	----	----	----	----	----
353		----	----	----	----	----	----	----	----
360	EN13132	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
369	D4815	<0.2	----	<0.2	----	----	<0.2	----	----
371		----	----	----	----	----	----	----	----
391		----	----	----	----	----	----	----	----
420	EN13132	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
430		----	----	----	----	----	----	----	----
431		----	----	----	----	----	----	----	----
440		----	----	----	----	----	----	----	----
445	D4815	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
447	D4815	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
463	EN13132	----	----	<0.2	<0.2	<0.2	----	<0.2	----
468		----	----	----	----	----	----	----	----
485		----	----	----	----	----	----	----	----
495		----	----	----	----	----	----	----	----
496	EN1601	<0.10	0.02	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
541		----	----	----	----	----	----	----	----
631		----	----	----	----	----	----	----	----
671		----	----	----	----	----	----	----	----
704		----	----	----	----	----	----	----	----
781		----	----	----	----	----	----	----	----
868	D6839	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	----
875		----	----	----	----	----	----	----	----
904		----	----	----	----	----	----	----	----
962		----	----	----	----	----	----	----	----
1006	D4815	<0.16	<0.16	----	----	<0.16	<0.14	----	----
1017		----	----	----	----	----	----	----	----
1033		----	----	----	----	----	----	----	----
1038		----	----	----	----	----	----	----	----
1059	ISO22854	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1066	ISO22854	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1067		----	----	----	----	----	----	----	----
1080	in house	----	----	----	----	<0.01	0.01	----	----
1081	EN14517	----	0.00	----	----	0.00	----	----	----
1108		----	----	----	----	----	----	----	----
1109	D6839	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1121		----	----	----	----	----	----	----	----
1126		----	----	----	----	----	----	----	----
1140		----	----	----	----	----	----	----	----
1161	EN13132	0.18	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
1167	EN13132	----	n.d.	n.d.	n.d.	0.07	----	n.d.	11.02
1171	D5845	0.0	0.0	----	----	0.0	0.0	0.0	----
1182		----	----	----	----	----	----	----	----
1186		----	----	----	----	----	----	----	----
1194	D5845	0.5*	----	----	----	0	0.5	----	----
1199		----	----	----	----	----	----	----	----
1203	EN14517	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1205		----	----	----	----	----	----	----	----
1257		----	----	----	----	----	----	----	----
1259		----	----	----	----	----	----	----	----
1276	EN13132	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1299	EN22854	----	0.47	----	----	----	----	----	----
1300	EN1601	0.1054	0.0536	0.0103	0.0378	0.1214	0.0571	0.1733	0.1282
1340		----	----	----	----	----	----	----	----
1378		----	----	----	----	----	----	----	----
1395		----	----	----	----	----	----	----	----
1397	EN13132	----	<0.2	<0.2	----	----	----	----	----
1399		----	----	----	----	----	----	----	----
1404	D4815	0.11	<0.20	0.05	<0.20	0.13	<0.20	<0.20	<0.20
1406	in house	0.0	0.6	----	----	----	0.0	----	----

1409	ISO22854	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
1419		----	----	----	----	----	----	----	----
1426		----	----	----	----	----	----	----	----
1427	EN14517	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1428		----	<0.17	<0.16	<0.16	<0.16	----	<0.16	----
1443	EN14132	----	0.02	0.03	0.00	0.11	0.03	0.01	0.85
1468	EN22854	<0.1	0.02	<0.1	<0.1	<0.1	<0.1	<0.1	----
1474		----	----	----	----	----	----	----	----
1520	EN13132	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1528	EN1601	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1616		----	----	----	----	----	----	----	----
1634		----	----	----	----	----	----	----	----
1635	ISO22854	----	----	----	----	8.94	----	----	----
1636		----	----	----	----	----	----	----	----
1650		----	----	----	----	----	----	----	----
1653		----	----	----	----	----	----	----	----
1656	EN14517	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1709		----	----	----	----	----	----	----	----
1720		----	----	----	----	----	----	----	----
1724		----	----	----	----	----	----	----	----
1728		----	----	----	----	----	----	----	----
1807	EN13132	----	----	----	----	0.3	----	0.3	----
1810		----	0.0	----	----	0.0	----	----	----
1811	EN1601	0	0	0	0	0	0	0	0
1833		----	----	----	----	----	----	----	----
1849		----	----	----	----	----	----	----	----
1851		----	----	----	----	----	----	----	----
1864		----	----	----	----	----	----	----	----
1936		----	----	----	----	----	----	----	----
1937		----	----	----	----	----	----	----	----
1938		----	----	----	----	----	----	----	----
1948	EN1601	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	----
2129	D6730	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2130		----	----	----	----	----	----	----	----
2146	EN13132	----	<0.2	----	----	----	<0.2	----	----

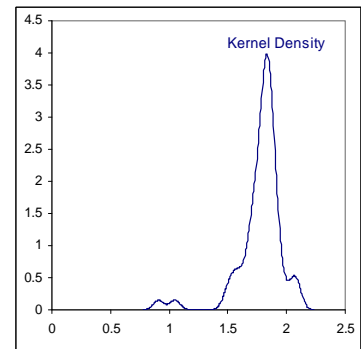
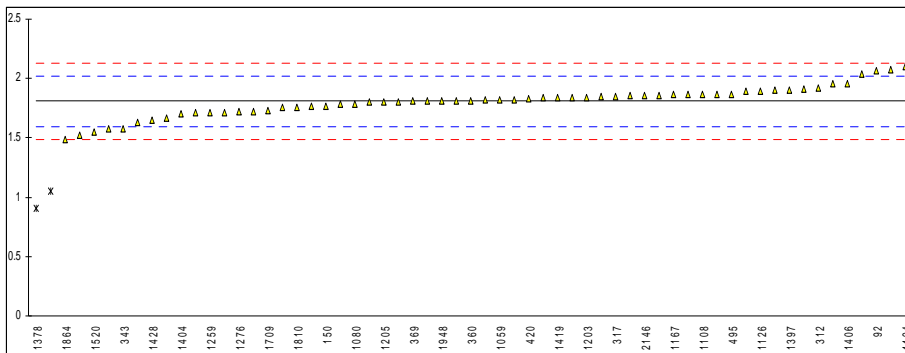
## Determination of Oxygen Content on sample #11082; results in %M/M

lab	method	value	mark	z(targ)	remarks
92	INH-SB	2.069		2.44	
150	D5599	1.77		-0.35	
225		----		----	
228		----		----	
258		----		----	
312	EN22854	1.92		1.05	
317	IP408	1.85		0.40	
323	EN22854	1.84		0.30	
334	EN1601	1.89		0.77	
335		----		----	
336		----		----	
337		----		----	
338		----		----	
340		----		----	
343	EN13132	1.58		-2.12	
344		----		----	
353		----		----	
360	EN13132	1.816		0.08	
369	D4815	1.81		0.02	
371		----		----	
391		----		----	
420	EN13132	1.83		0.21	
430		----		----	
431		----		----	
440		----		----	
445	D4815	1.670		-1.28	
447	D4815	1.82		0.12	
463	EN13132	1.82		0.12	
468		----		----	
485		----		----	
495	EN22854	1.87		0.58	
496	EN1601	1.850		0.40	
541		----		----	
631		----		----	
671		----		----	
704	D4815	1.807		0.00	
781		----		----	
868	D6839	1.91		0.96	
875		----		----	
904		----		----	
962		----		----	
1006	D4815	1.63		-1.66	
1017		----		----	
1033		----		----	
1038		----		----	
1059	EN22854	1.82		0.12	
1066	ISO22854	1.81		0.02	
1067		----		----	
1080	in house	1.78		-0.26	
1081		----		----	
1108	EN14517	1.87		0.58	
1109	D6839	1.84		0.30	
1121		----		----	
1126	in house	1.89		0.77	
1140	IP566	1.81		0.02	
1161	EN13132	1.52		-2.68	
1167	EN13132	1.865		0.54	
1171	D5845	2.076		2.51	
1182		----		----	
1186		----		----	
1194	D5845	2.1		2.73	
1199		----		----	
1203	EN14717	1.84		0.30	
1205	EN22854	1.8		-0.07	
1257		----		----	
1259	EN13132	1.713		-0.88	
1276	EN13132	1.72		-0.82	
1299	EN22854	1.86		0.49	
1300	EN1601	1.9540		1.37	
1340	EN1601	1.71		-0.91	
1378	D6839	0.91	G(0.01)	-8.38	
1395	ISO22854	1.87		0.58	
1397	EN13132	1.9		0.86	
1399		----		----	
1404	D4815	1.70		-1.00	
1406	in house	1.96		1.42	



1409	ISO22854	1.86		0.49	
1419	EN22854	1.84		0.30	
1426		----		----	
1427	EN14517	1.05	G(0.01)	-7.07	
1428	EN13132	1.65		-1.47	
1443	EN13132	1.580		-2.12	
1468	EN22854	1.9	C	0.86	first reported: 5.28
1474		----		----	
1520	EN13132	1.55		-2.40	
1528	EN1601	1.77	C	-0.35	first reported: 2.17
1616		----		----	
1634		----		----	
1635		----		----	
1636		----		----	
1650		----		----	
1653		----		----	
1656	EN14517	1.8		-0.07	
1709	D4815	1.732	C	-0.70	first reported:5.227
1720		----		----	
1724	ISO22854	1.72		-0.82	
1728		----		----	
1807	EN13132	1.76		-0.44	
1810	EN1601	1.76		-0.44	
1811	EN1601	1.78		-0.26	
1833	EN22854	1.87		0.58	
1849		----		----	
1851		----		----	
1864	D4815	1.49		-2.96	
1936		----		----	
1937		----		----	
1938		----		----	
1948	EN1601	1.81		0.02	
2129	D6730	2.034		2.11	
2130	EN1601	1.715		-0.86	
2146	EN13132	1.860		0.49	

normality not OK  
n 59  
outliers 2  
mean (n) 1.807  
st.dev. (n) 0.1252  
R(calc.) 0.351  
R(EN1601:97) 0.300



## Determination of Oxidation Stability on sample #11082; results in minutes

lab	method	value	mark	z(targ)	remarks
92		----		----	
150		----		----	
225		----		----	
228		----		----	
258		----		----	
312	D525	>900		----	
317		----		----	
323	ISO7536	>900		----	
334		----		----	
335		----		----	
336	ISO7536	>900		----	
337		----		----	
338		----		----	
340	ISO7536	>960		----	
343	D525	>900		----	
344		----		----	
353		----		----	
360	ISO7536	>900		----	
369		----		----	
371	ISO7536	>900		----	
391		----		----	
420	ISO7536	>900		----	
430		----		----	
431		----		----	
440		----		----	
445		----		----	
447	ISO7536	>900		----	
463	ISO7536	>900		----	
468		----		----	
485		----		----	
495	ISO7536	>360		----	
496		----		----	
541	ISO7536	>900		----	
631	D525	945		----	
671		----		----	
704		----		----	
781	D525	>900		----	
868	D525	>900		----	
875		----		----	
904		----		----	
962		----		----	
1006	D525	>900		----	
1017	ISO7536	>900		----	
1033		----		----	
1038		----		----	
1059	ISO7536	>900		----	
1066		----		----	
1067	D525	>900		----	
1080	ISO7536	>900		----	
1081	D525	>1000		----	
1108	ISO7536	>900		----	
1109		----		----	
1121		----		----	
1126		----		----	
1140	IP40	>600		----	
1161	ISO7536	>900		----	
1167	ISO7536	>900		----	
1171		----		----	
1182		----		----	
1186		----		----	
1194		----		----	
1199		----		----	
1203	ISO7536	>900		----	
1205		----		----	
1257		----		----	
1259		----		----	
1276	D525	>600		----	
1299	D525	>900		----	
1300	ISO7536	>900		----	
1340	ISO7536	>900		----	
1378		----		----	
1395	ISO7536	>900		----	
1397		----		----	
1399		----		----	
1404	ISO7536	>1440		----	
1406	ISO7536	>1500		----	

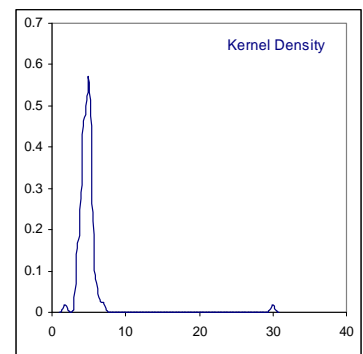
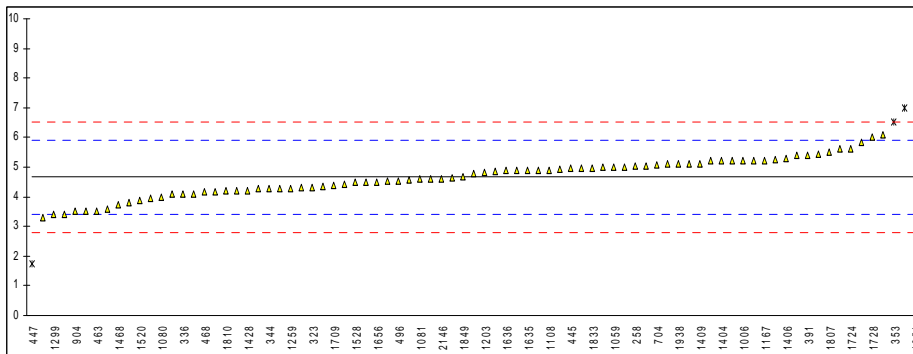
1409	ISO7536	>360	----
1419	ISO7536	>900	----
1426		----	----
1427	ISO7536	>900	----
1428	ISO7536	1505	----
1443		----	----
1468		----	----
1474		----	----
1520	ISO7536	>900	----
1528	ISO7536	>900	----
1616	D525	>900	----
1634		----	----
1635	D525	>750	----
1636	D525	>960	----
1650		----	----
1653		----	----
1656	ISO7536	>360	----
1709		----	----
1720		----	----
1724	ISO7536	>900	----
1728	D525	>900	----
1807		----	----
1810		----	----
1811		----	----
1833	ISO7536	>900	----
1849	ISO7536	540	----
1851		----	----
1864	ISO7536	283	----
1936		----	----
1937		----	----
1938		----	----
1948	ISO7536	>900	----
2129	ISO7536	>900	----
2130	ISO7536	480	----
2146		----	----
	normality	n.a	
	n	40	
	outliers	0	
	mean (n)	>360	
	st.dev. (n)	n.a	
	R(calc.)	n.a	
	R(ISO7536:96)	n.a	

## Determination of Sulphur on sample #11082; results in mg/kg

lab	method	value	mark	z(targ)	remarks
92	D5453	4.60		-0.09	
150	D5453	4.5		-0.25	
225		----		----	
228		----		----	
258	D5453	5.04		0.60	
312	D5453	4.3		-0.56	
317		----		----	
323	EN20846	4.3		-0.56	
334	EN20846	5.2		0.86	
335		----		----	
336	EN20846	4.1		-0.88	
337	EN20846	4.9		0.38	
338	EN20846	6.1		2.28	
340		----		----	
343	EN20846	4.43		-0.36	
344	D5453	4.26		-0.63	
353	IP531	6.51	DG(0.05)	2.92	
360	EN20846	5.0		0.54	
369	EN20884	5.2		0.86	
371	EN20846	4.80		0.23	
391	EN20846	5.4		1.17	
420	EN20846	3.42		-1.95	
430		----		----	
431		----		----	
440		----		----	
445	D5453	4.95		0.46	
447	EN20846	1.75	G(0.01)	-4.59	
463	EN20846	3.52		-1.79	
468	EN20846	4.15		-0.80	
485	EN20846	4.28		-0.60	
495	EN20846	3.51		-1.81	
496	EN20846	4.53		-0.20	
541	D5453	4.1		-0.88	
631		----		----	
671		----		----	
704	EN20846	5.07		0.65	
781	EN20846	4.53		-0.20	
868	D3120	5.6		1.49	
875	D5453	4.65		-0.01	
904	D5453	3.5		-1.83	
962		----		----	
1006	D5453	5.2		0.86	
1017		----		----	
1033		----		----	
1038		----		----	
1059	EN20846	5.0		0.54	
1066		----		----	
1067		----		----	
1080	EN20846	4.0		-1.04	
1081	EN20846	4.6		-0.09	
1108	EN20846	4.9		0.38	
1109	D5453	4.91		0.40	
1121	IP336	<10		----	
1126	EN20846	3.81		-1.34	
1140	D5453	5.24		0.92	
1161	EN20846	5.84		1.87	
1167	EN20846	5.22		0.89	
1171	EN20846	5.21		0.87	
1182		----		----	
1186	D5453	3.60		-1.67	
1194	D7220	7	C, DG(0.05)	3.70	first reported: 7.1
1199		----		----	
1203	EN20846	4.83		0.27	
1205		----		----	
1257		----		----	
1259	EN20846	4.29		-0.58	
1276	EN20846	4.26		-0.63	
1299	EN20846	3.4		-1.98	
1300	EN20846	5.051		0.62	
1340	EN20846	4.08		-0.91	
1378	D5453	3.3		-2.14	
1395		----		----	
1397	EN20846	5.1		0.70	
1399		----		----	
1404	EN20846	5.2		0.86	
1406	EN20846	5.3		1.01	

1409	EN20846	5.1	0.70
1419	EN20846	4.85	0.30
1426		-----	-----
1427		-----	-----
1428	EN20846	4.2	-0.72
1443	EN20846	3.96	-1.10
1468	EN20846	3.73	-1.46
1474		-----	-----
1520	EN20846	3.89	-1.21
1528	EN20846	4.49	-0.26
1616	D5453	4.16	-0.78
1634		-----	-----
1635	EN20846	4.9	0.38
1636	D5453	4.89	0.37
1650	EN20846	4.96	0.48
1653		-----	-----
1656	EN20846	4.5	-0.25
1709	D5453	4.4	-0.41
1720	D5453	4.9	0.38
1724	EN20846	5.63	1.53
1728	D5453	6.0	2.12
1807	EN20846	5.5	1.33
1810	EN20846	4.2	-0.72
1811	EN20846	4.55	-0.17
1833	EN22854	4.98	0.51
1849	EN20846	4.66	0.00
1851	D4294	30.0	G(0.01) 39.99
1864	EN20846	5.445	1.24
1936	EN20846	5.0	0.54
1937	EN20846	5.4	1.17
1938	EN20846	5.1	0.70
1948	EN20846	5.10	0.70
2129	EN20846	4.2	-0.72
2130	EN20846	4.34	-0.50
2146	EN20846	4.608	-0.08

		<u>Only EN20846 data:</u>	<u>Only D5453 data:</u>
normality	not OK	OK	OK
n	79	59	19
outliers	4	1	0
mean (n)	4.657	4.675	4.553
st.dev. (n)	0.6286	0.6136	0.6614
R(calc.)	1.760	1.718	1.852
R(ISO20846:11)	1.775	1.778	1.756



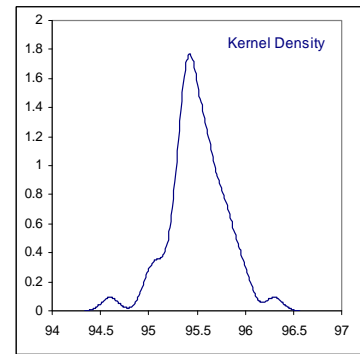
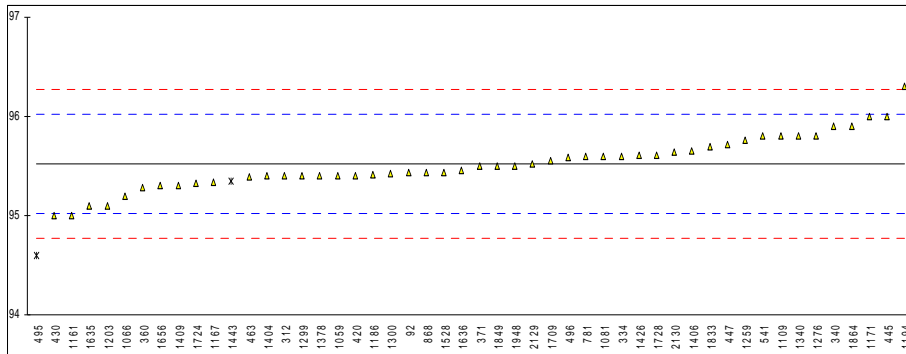
## Determination of RON (before correction) on sample #11082;

lab	method	value	mark	z(targ)	remarks
92	D2699	95.43		-0.39	
150		----	C	----	first reported: 95.4
225		----		----	
228		----		----	
258		----		----	
312	ISO5164	95.4		-0.51	
317		----		----	
323		----		----	
334	ISO5164	95.6		0.29	
335		----		----	
336		----		----	
337		----		----	
338		----		----	
340	ISO5164	95.9		1.49	
343		----		----	
344		----		----	
353		----		----	
360	ISO5164	95.28		-0.99	
369		----		----	
371	ISO5164	95.5		-0.11	
391		----		----	
420	ISO5164	95.4		-0.51	
430	ISO5164	95.0		-2.11	
431		----		----	
440		----		----	
445	D2699	96.0		1.89	
447	ISO5164	95.72		0.77	
463	ISO5164	95.39		-0.55	
468		----		----	
485		----		----	
495	ISO5164	94.6	G(0.05)	-3.71	
496	ISO5164	95.59	C	0.25	first reported:94.59
541	D2699	95.8	C	1.09	first reported:96.8
631		----		----	
671		----		----	
704		----		----	
781	ISO5164	95.6		0.29	
868	D2699	95.44		-0.35	
875		----		----	
904		----		----	
962		----		----	
1006		----		----	
1017		----		----	
1033		----		----	
1038		----		----	
1059	ISO5164	95.4		-0.51	
1066	ISO5164	95.2		-1.31	
1067		----		----	
1080		----		----	
1081	D2699	95.6		0.29	
1108		----		----	
1109	D2699	95.8		1.09	
1121		----		----	
1126		----		----	
1140		----		----	
1161	ISO5164	95.0		-2.11	
1167	ISO5164	95.34		-0.75	
1171	D2699	96	C	1.89	first reported:96.55
1182		----		----	
1186	D2699	95.41		-0.47	
1194	INH-D2699	96.3		3.09	
1199		----		----	
1203	ISO5164	95.1		-1.71	
1205		----		----	
1257		----		----	
1259	ISO5164	95.76		0.93	
1276	ISO5164	95.8		1.09	
1299	D2699	95.4		-0.51	
1300	ISO5164	95.42		-0.43	
1340	D5164	95.80		1.09	
1378	D2699	95.4		-0.51	
1395		----		----	
1397		----		----	
1399		----		----	
1404	ISO5164	95.4		-0.51	
1406	ISO5164	95.65		0.49	

1409	ISO5164	95.3		-0.91	
1419		-----		-----	
1426	D2699	95.61		0.33	
1427		-----		-----	
1428		-----		-----	
1443	ISO5164	95.35	ex	-0.71	probably calculation error, difference between RONm and RON = 0.15
1468		-----		-----	
1474		-----	W	-----	result withdrawn, first reported 94.5
1520		-----		-----	
1528	ISO5164	95.44		-0.35	
1616		-----		-----	
1634		-----		-----	
1635	ISO5164	95.1		-1.71	
1636	D2699	95.46		-0.27	
1650		-----		-----	
1653		-----		-----	
1656	ISO5164	95.3		-0.91	
1709	D2699	95.55		0.09	
1720		-----		-----	
1724	ISO5164	95.33		-0.79	
1728	D2699	95.61		0.33	
1807		-----		-----	
1810		-----		-----	
1811		-----		-----	
1833	ISO5164	95.7		0.69	
1849	ISO5164	95.5		-0.11	
1851		-----		-----	
1864	ISO5164	95.9		1.49	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1948	ISO5164	95.50		-0.11	
2129	ISO5164	95.52		-0.03	
2130	ISO5164	95.64		0.45	
2146		-----		-----	

Only verified results

normality	OK	OK
n	48	40
outliers	1	1
mean (n)	95.527	95.523
st.dev. (n)	0.2626	0.264
R(calc.)	0.735	0.740
R(ISO5164:05)	0.700	0.700



## Determination of RON (after correction) on sample #11082;

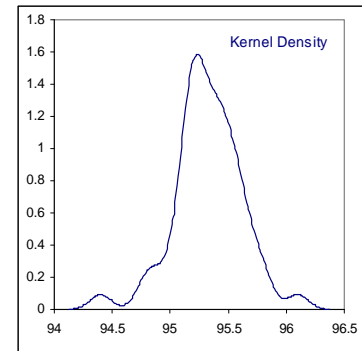
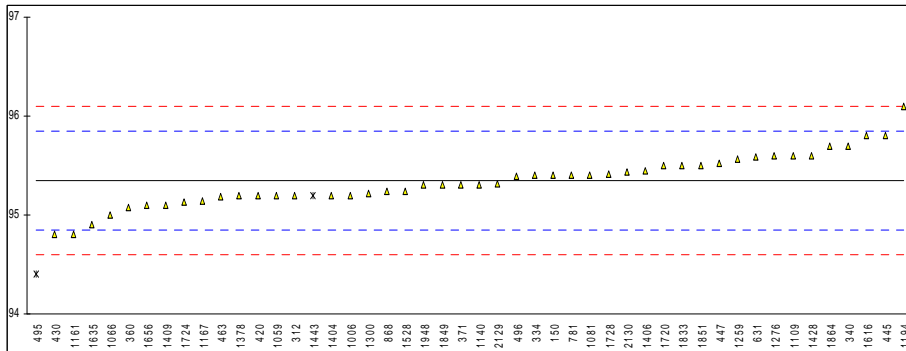
lab	method	value	mark	z(targ)	remarks
92		----		----	
150	D2699	95.4	C	0.21	first reported: 85.8
225		----		----	
228		----		----	
258		----		----	
312	ISO5164	95.2		-0.59	
317		----		----	
323		----		----	
334	ISO5164	95.4		0.21	
335		----		----	
336		----		----	
337		----		----	
338		----		----	
340	ISO5164	95.7		1.41	
343		----		----	
344		----		----	
353		----		----	
360	ISO5164	95.08		-1.07	
369		----		----	
371	ISO5164	95.3		-0.19	
391		----		----	
420	ISO5164	95.2		-0.59	
430	ISO5164	94.8		-2.19	
431		----		----	
440		----		----	
445	D2699	95.8		1.81	
447	ISO5164	95.52		0.69	
463	ISO5164	95.19		-0.63	
468		----		----	
485		----		----	
495	ISO5164	94.4	G(0.05)	-3.79	
496	ISO5164	95.39	C	0.17	first reported: 94.39
541		----		----	
631	D2699	95.59		0.97	
671		----		----	
704		----		----	
781	ISO5164	95.4		0.21	
868	D2699	95.24		-0.43	
875		----		----	
904		----		----	
962		----		----	
1006	D2699	95.2		-0.59	
1017		----		----	
1033		----		----	
1038		----		----	
1059	ISO5164	95.2		-0.59	
1066	ISO5164	95.0		-1.39	
1067		----		----	
1080		----		----	
1081	EN228	95.4		0.21	
1108		----		----	
1109	EN228	95.6		1.01	
1121		----		----	
1126		----		----	
1140	D2699	95.3		-0.19	
1161	ISO5164	94.8		-2.19	
1167	ISO5164	95.14		-0.83	
1171		----		----	
1182		----		----	
1186		----		----	
1194	INH-D2699	96.1		3.01	
1199		----		----	
1203		----		----	
1205		----		----	
1257		----		----	
1259	ISO5164	95.56		0.85	
1276	ISO5164	95.6		1.01	
1299		----		----	
1300	ISO5164	95.22		-0.51	
1340		----		----	
1378	ISO5164	95.2		-0.59	
1395		----		----	
1397		----		----	
1399		----		----	
1404	ISO5164	95.2		-0.59	
1406	ISO5164	95.45		0.41	



1409	ISO5164	95.1		-0.99	
1419		-----		-----	
1426		-----		-----	
1427		-----		-----	
1428	ISO5164	95.6		1.01	
1443	ISO5164	95.2	ex	-0.59	probably calculation error, difference between RONm and RON = 0.15
1468		-----		-----	
1474		-----	W	-----	result withdrawn, first reported 94.5
1520		-----		-----	
1528	ISO5164	95.24		-0.43	
1616	D2699	95.8		1.81	
1634		-----		-----	
1635	ISO5164	94.9		-1.79	
1636		-----		-----	
1650		-----		-----	
1653		-----		-----	
1656	ISO5164	95.1		-0.99	
1709		-----		-----	
1720	D2699	95.5		0.61	
1724	ISO5164	95.13		-0.87	
1728	D2699	95.41		0.25	
1807		-----		-----	
1810		-----		-----	
1811		-----		-----	
1833	ISO5164	95.5		0.61	
1849	ISO5164	95.3		-0.19	
1851	D2699	95.5		0.61	
1864	ISO5164	95.7		1.41	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1948	ISO5164	95.30		-0.19	
2129	ISO5164	95.32		-0.11	
2130	ISO5164	95.44		0.37	
2146		-----		-----	

Only verified results

normality	OK	OK
n	46	40
outliers	1	1
mean (n)	95.348	95.331
st.dev. (n)	0.2609	0.2650
R(calc.)	0.731	0.742
R(ISO5164:05)	0.700	0.700

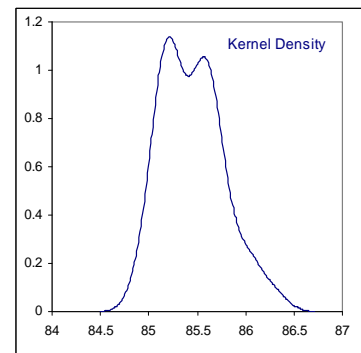
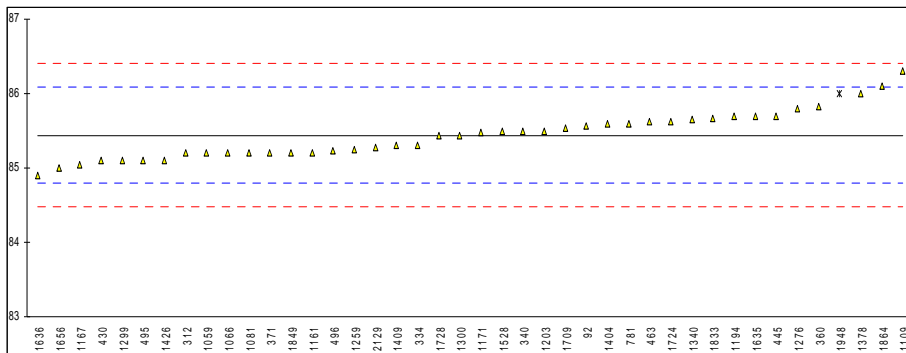


## Determination of MON (before correction) on sample #11082;

lab	method	value	mark	z(targ)	remarks
92	D2700	85.56		0.38	
150		----		----	
225		----		----	
228		----		----	
258		----		----	
312	ISO5163	85.2		-0.74	
317		----		----	
323		----		----	
334	ISO5164	85.3		-0.43	
335		----		----	
336		----		----	
337		----		----	
338		----		----	
340	ISO5163	85.5		0.19	
343		----		----	
344		----		----	
353		----		----	
360	ISO5163	85.82		1.19	
369		----		----	
371	ISO5163	85.2		-0.74	
391		----		----	
420		----		----	
430	ISO5163	85.1		-1.05	
431		----		----	
440		----		----	
445	D2700	85.7		0.82	
447		----		----	
463	ISO5163	85.62		0.57	
468		----		----	
485		----		----	
495	ISO5163	85.1		-1.05	
496	ISO5163	85.23		-0.65	
541		----		----	
631		----		----	
671		----		----	
704		----		----	
781	ISO5163	85.6		0.51	
868		----		----	
875		----		----	
904		----		----	
962		----		----	
1006		----		----	
1017		----		----	
1033		----		----	
1038		----		----	
1059	ISO5163	85.2		-0.74	
1066	ISO5163	85.2		-0.74	
1067		----		----	
1080		----		----	
1081	D2700	85.2		-0.74	
1108		----		----	
1109	D2700	86.3		2.68	
1121		----		----	
1126		----		----	
1140		----		----	
1161	ISO5163	85.2		-0.74	
1167	ISO5163	85.05		-1.21	
1171	D2699	85.48		0.13	
1182		----		----	
1186		----		----	
1194	INH-2699	85.7		0.82	
1199		----		----	
1203	ISO5163	85.5		0.19	
1205		----		----	
1257		----		----	
1259	ISO5163	85.25		-0.58	
1276	ISO5163	85.8		1.13	
1299	D2700	85.1		-1.05	
1300	ISO5164	85.44		0.01	
1340	ISO5163	85.65		0.66	
1378	D2700	86		1.75	
1395		----		----	
1397		----		----	
1399		----		----	
1404	ISO5163	85.6		0.51	
1406		----		----	

1409	ISO5163	85.3		-0.43	
1419		-----		-----	
1426	D2700	85.1		-1.05	
1427		-----		-----	
1428		-----		-----	
1443		-----		-----	
1468		-----		-----	
1474		-----		-----	
1520		-----		-----	
1528	ISO5163	85.50		0.19	
1616		-----		-----	
1634		-----		-----	
1635	ISO5163	85.7		0.82	
1636	D2700	84.90		-1.67	
1650		-----		-----	
1653		-----		-----	
1656	ISO5163	85.0		-1.36	
1709	D2700	85.54		0.32	
1720		-----		-----	
1724	ISO5163	85.62		0.57	
1728	D2700	85.43		-0.02	
1807		-----		-----	
1810		-----		-----	
1811		-----		-----	
1833	ISO5163	85.66	C	0.69	first reported: 86.5
1849	ISO5163	85.2		-0.74	
1851		-----		-----	
1864	ISO5163	86.1		2.06	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1948	ISO5163	86.00	ex	1.75	probably calculation error, difference between MONm and MON = 0.10
2129	ISO5163	85.28		-0.49	
2130		-----		-----	
2146		-----		-----	

	normality	OK	Only verified results	not OK
n	41		34	
outliers	0		0	
mean (n)	85.437		85.447	
st.dev. (n)	0.3106		0.3199	
R(calc.)	0.870		0.879	
R(ISO5163:05)	0.900		0.900	

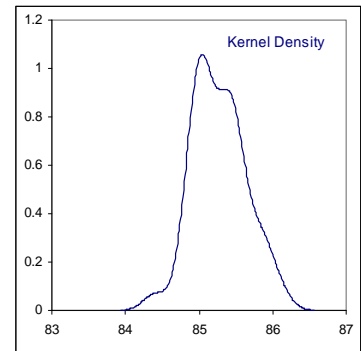
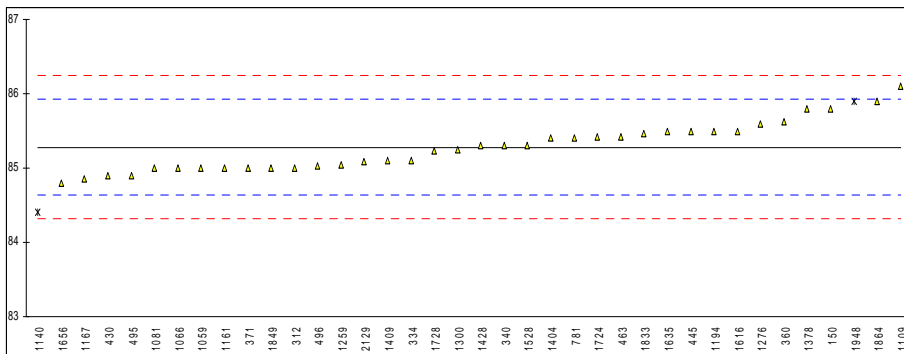


## Determination of MON (after correction) on sample #11082;

lab	method	value	mark	z(targ)	remarks
92		----		----	
150	D2700	85.8	C	1.62	first reported: no value
225		----		----	
228		----		----	
258		----		----	
312	ISO5163	85.0		-0.87	
317		----		----	
323		----		----	
334	ISO5164	85.1		-0.56	
335		----		----	
336		----		----	
337		----		----	
338		----		----	
340	ISO5163	85.3		0.06	
343		----		----	
344		----		----	
353		----		----	
360	ISO5163	85.62		1.06	
369		----		----	
371	ISO5163	85.0		-0.87	
391		----		----	
420		----		----	
430	ISO5163	84.9		-1.18	
431		----		----	
440		----		----	
445	D2700	85.5		0.68	
447		----		----	
463	ISO5163	85.42		0.43	
468		----		----	
485		----		----	
495	ISO5163	84.9		-1.18	
496	ISO5163	85.03		-0.78	
541		----		----	
631		----		----	
671		----		----	
704		----		----	
781	ISO5163	85.4		0.37	
868		----		----	
875		----		----	
904		----		----	
962		----		----	
1006		----		----	
1017		----		----	
1033		----		----	
1038		----		----	
1059	ISO5163	85.0		-0.87	
1066	ISO5163	85.0		-0.87	
1067		----		----	
1080		----		----	
1081	EN228	85.0		-0.87	
1108		----		----	
1109	EN228	86.1		2.55	
1121		----		----	
1126		----		----	
1140	D2700	84.4	G(0.05)	-2.74	
1161	ISO5163	85.0		-0.87	
1167	ISO5163	84.85		-1.34	
1171		----		----	
1182		----		----	
1186		----		----	
1194	INH-2699	85.5		0.68	
1199		----		----	
1203		----		----	
1205		----		----	
1257		----		----	
1259	ISO5163	85.05		-0.72	
1276	ISO5163	85.6		0.99	
1299		----		----	
1300	ISO5164	85.24		-0.13	
1340		----		----	
1378	D2700	85.8		1.62	
1395		----		----	
1397		----		----	
1399		----		----	
1404	ISO5163	85.4		0.37	
1406		----		----	

1409	ISO5163	85.1		-0.56	
1419		-----		-----	
1426		-----		-----	
1427		-----		-----	
1428	ISO5163	85.3		0.06	
1443		-----		-----	
1468		-----		-----	
1474		-----		-----	
1520		-----		-----	
1528	ISO5163	85.30		0.06	
1616	D2700	85.5		0.68	
1634		-----		-----	
1635	ISO5163	85.5		0.68	
1636		-----		-----	
1650		-----		-----	
1653		-----		-----	
1656	ISO5163	84.8		-1.50	
1709		-----		-----	
1720		-----		-----	
1724	ISO5163	85.42		0.43	
1728	D2700	85.23		-0.16	
1807		-----		-----	
1810		-----		-----	
1811		-----		-----	
1833	ISO5163	85.46	C	0.56	first reported: 86.3
1849	ISO5163	85.0		-0.87	
1851		-----		-----	
1864	ISO5163	85.9		1.93	
1936		-----		-----	
1937		-----		-----	
1938		-----		-----	
1948	ISO5163	85.90	ex	1.93	probably calculation error, difference between MONm and MON = 0.10
2129	ISO5163	85.08		-0.62	
2130		-----		-----	
2146		-----		-----	

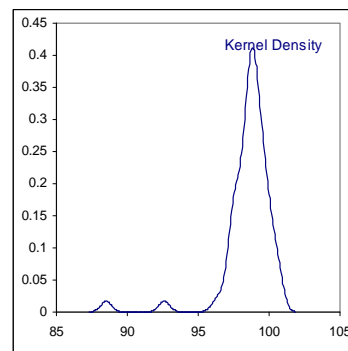
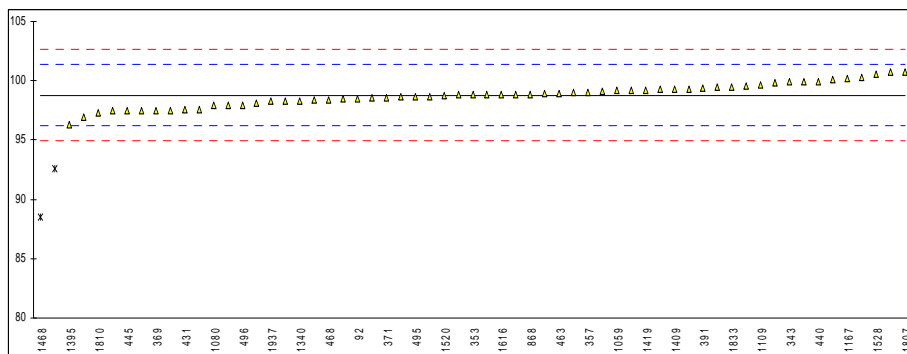
		<u>After recalculation of all reported results:</u>	<u>Only verified results</u>
normality	not OK	OK	not OK
n	36	43	34
outliers	1	1	0
mean (n)	85.281	85.256	85.258
st.dev. (n)	0.3202	0.3171	0.3140
R(calc.)	0.896	0.889	0.879
R(ISO5163:05)	0.900	0.900	0.900



## Determination of ASVP on sample #11083; results in kPa

lab	method	value	mark	z(targ)	remarks
92	D5191	98.5		-0.23	
150	D5191	98.55		-0.19	
225		----		----	
228		----		----	
258		----		----	
312	D5191	99.1		0.24	
317		----		----	
323	EN13016	99.5		0.55	
334	EN13016	97.9		-0.70	
335		----		----	
336		----		----	
337		----		----	
338	EN13016	96.9		-1.48	
340	EN13016	98.4		-0.31	
343	EN13016	99.9		0.87	
344		----		----	
353	IP394	98.8		0.01	
357	EN13016	99.05		0.20	
360	EN13016	97.6		-0.93	
369	EN13016	97.50		-1.01	
371	D5191	98.6		-0.15	
391	EN13016	99.4		0.48	
420	EN13016	99.8		0.79	
431	EN13016	97.56		-0.96	
440	D5191	99.9		0.87	
445	IP394	97.5		-1.01	
447	D5191	98.5		-0.23	
463	EN13016	98.9		0.09	
468	EN13016	98.4		-0.31	
485		----		----	
495	EN13016	98.7		-0.07	
496	EN13016	97.95		-0.66	
631		----		----	
704		----		----	
781		----		----	
868	D5191	98.85		0.05	
875	D5191	100.3		1.18	
904		----		----	
1006		----		----	
1017	EN13016	98.3		-0.38	
1033	IP394	98.1		-0.54	
1038		----		----	
1059	EN13016	99.2		0.32	
1067	D5191	92.6	G(0.01)	-4.83	
1080	EN13016	97.9		-0.70	
1081		----		----	
1108	EN13016	97.51		-1.00	
1109	D5191	99.65		0.67	
1140	EN13016	98.8		0.01	
1167	EN13016	100.2		1.10	
1171	EN13016	100.075		1.00	
1194		----		----	
1203	EN13016	99.3		0.40	
1257		----		----	
1259	EN13016	99.2		0.32	
1299		----		----	
1340	EN13016	98.3		-0.38	
1378	D5191	99.9		0.87	
1395	EN13016	96.3	C	-1.94	first reported:13.271
1404	EN13016	98.7		-0.07	
1409	EN13016	99.3		0.40	
1419	EN13016	99.23		0.34	
1427		----		----	
1428		----	C	----	first reported:90.5
1468	EN13016	88.5	G(0.01)	-8.03	
1520	EN13016	98.74		-0.04	
1528	EN13016	100.6		1.41	
1616	D5191	98.80		0.01	
1636	EN13016	98.8		0.01	
1650	D5191	98.9		0.09	
1653		----		----	
1656		----		----	
1720		----		----	
1724	EN13016	100.7		1.49	
1728	EN13016	97.45		-1.05	
1807	EN13016	100.7		1.49	

1810	EN13016	97.3		-1.16	
1811	EN13016	97.5		-1.01	
1833	EN13016	99.5		0.55	
1849	EN13016	99.0	C	0.16	first reported:91.8
1851		-----		-----	
1864	EN13016	99.254		0.36	
1936	EN13016	98.7	C	-0.07	first reported:91.5
1937	EN13016	98.3		-0.38	
1938		-----		-----	
1948	EN13016	99.6	C	0.63	first reported:49.7
2130		-----		-----	
2146	EN13016	98.8		0.01	
8010		-----		-----	
normality		OK			
n		59			
outliers		2			
mean (n)		98.791			
st.dev. (n)		0.9551			
R(calc.)		2.674			
R(EN13016-1:00)		3.587			



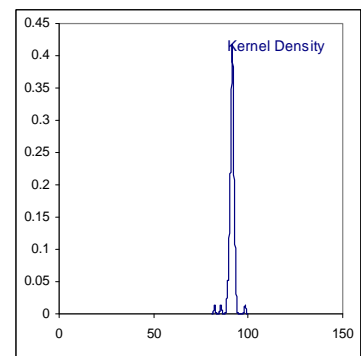
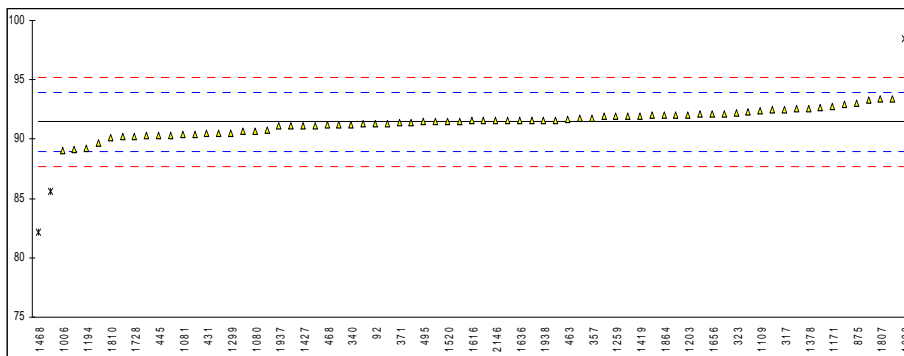
## Determination of DVPE (acc. to EN13016-1) on sample #11083; results in kPa

lab	method	value	mark	z(targ)	remarks
92	D5191	91.3		-0.12	
150	D5191	91.32		-0.11	
225		----		----	
228		----		----	
258		----		----	
312	D5191	91.9		0.36	
317	D5191	92.5		0.84	
323	EN13016	92.2		0.60	
334	EN13016	90.7		-0.60	
335		----		----	
336		----		----	
337	EN13016	91.2		-0.20	
338	EN13016	89.7		-1.41	
340	EN13016	91.2		-0.20	
343	EN13016	92.6		0.92	
344		----		----	
353	IP394	91.562		0.09	
357	EN13016	91.80		0.28	
360	EN13016	90.4		-0.85	
369	EN13016	90.30		-0.93	
371	D5191	91.37		-0.07	
391	EN13016	92.1		0.52	
420	EN13016	92.5		0.84	
431	EN13016	90.5		-0.77	
440	D5191	92.62		0.93	
445	IP394	90.3		-0.93	
447	D5191	91.4		-0.04	
463	EN13016	91.65		0.16	
468	EN13016	91.2		-0.20	
485	EN13016	92.00		0.44	
495	EN13016	91.47		0.01	
496	EN13016	90.74		-0.57	
631		----		----	
704		----		----	
781		----		----	
868	D5191	91.61		0.12	
875	D5191	93.0		1.24	
904		----		----	
1006	D5191	89.0		-1.97	
1017	EN13016	91.1		-0.28	
1033	IP394	98.45	G(0.01)	5.60	probably error in calculation
1038		----		----	
1059	EN13016	91.9		0.36	
1067	D5191	85.58	G(0.01)	-4.71	
1080	EN13016	90.7		-0.60	
1081	D5191	90.40		-0.85	
1108	EN13016	90.32		-0.91	
1109	D5191	92.38		0.74	
1140	EN13016	91.56		0.08	
1167	EN13016	92.9		1.16	
1171	EN13016	92.79		1.07	
1194	D5191	89.2	C	-1.81	first reported:11.670
1203	EN13016	92.04		0.47	
1257		----		----	
1259	EN13016	91.9		0.36	
1299	EN13016	90.5		-0.77	
1340	EN13016	91.1		-0.28	
1378	D5191	92.6		0.92	
1395	EN13016	89.1	C	-1.89	first reported:12.922
1404	EN13016	91.47		0.01	
1409	EN13016	92.0		0.44	
1419	EN13016	91.98		0.42	
1427	EN13016	91.1		-0.28	
1428	EN13016	90.5	C	-0.77	first reported as ASVP
1468	EN13016	82.2	G(0.01)	-7.41	probably error in calculation
1520	EN13016	91.50		0.04	
1528	EN13016	93.3		1.48	
1616	D5191	91.56		0.08	
1636	EN13016	91.6		0.12	
1650	D5191	91.6		0.12	
1653		----		----	
1656	EN13016	92.1		0.52	
1720		----		----	
1724	EN13016	93.4		1.56	
1728	EN13016	90.25		-0.97	
1807	EN13016	93.4		1.56	



1810	EN13016	90.1		-1.09	
1811	EN13016	90.2		-1.01	
1833		-----		-----	
1849	EN13016	91.75	C	0.24	first reported:84.79
1851	D5191	92.1		0.52	
1864	EN13016	92.0		0.44	
1936	EN13016	91.5	.	0.04	
1937	EN13016	91.1		-0.28	
1938	EN13016	91.6		0.12	
1948	EN13016	92.3	C	0.68	first reported:44.2
2130		-----		-----	
2146	EN13016	91.56		0.08	
8010	EN13016	91.27		-0.15	

normality OK  
n 70  
outliers 3  
mean (n) 91.455  
st.dev. (n) 0.9721  
R(calc.) 2.722  
R(EN13016-1:00) 3.496



## APPENDIX 2

## z-scores distillation ASTM D86 (automated mode)

lab	IBP	10%eva	50%eva	90%eva	FBP	%vol70	%vol100	%vol150
92	-0.29	-0.69	-0.38	0.40	1.09	0.88	-0.03	-0.85
150	0.66	0.62	0.81	-0.38	0.60	-0.47	-0.16	0.44
225	----	----	----	----	----	----	----	----
228	----	----	----	----	----	----	----	----
258	1.48	1.41	4.24	0.47	0.72	-1.71	-1.69	-1.50
312	0.24	-0.26	0.51	-0.17	-0.19	0.88	-0.03	0.22
317	----	----	----	----	----	----	----	----
323	0.24	-0.69	-1.42	-0.53	0.47	0.98	0.48	1.09
334	-2.53	-0.61	-1.87	-0.60	-0.64	0.26	-0.16	-0.64
335	----	----	----	----	----	----	----	----
336	-2.00	-1.74	-2.62	-0.46	0.02	2.02	2.01	2.59
337	----	----	----	----	----	----	----	----
338	-0.47	-2.27	-2.76	-0.24	0.97	2.02	0.73	1.73
340	0.36	-0.17	-1.57	-0.10	-0.85	0.57	0.22	-0.21
343	----	----	----	----	----	----	----	----
344	0.89	----	----	----	-0.60	-0.37	-1.69	-5.16
353	0.01	-0.87	-0.68	-0.03	0.35	1.29	0.35	0.22
360	-0.05	-0.26	-1.13	-0.46	-0.31	0.67	0.48	0.22
369	-0.17	0.36	-0.23	0.33	0.06	-0.78	0.35	-0.64
371	0.36	2.11	1.56	0.90	-1.06	-0.57	-0.54	-1.71
391	----	----	----	----	----	----	----	----
420	-0.11	-1.13	-3.51	-0.60	-0.19	-1.71	-2.32	-5.38
430	----	----	----	----	----	----	----	----
431	----	-0.08	6.02	2.60	----	----	----	----
440	-1.06	0.44	1.85	-0.03	0.56	0.05	-0.67	1.30
445	0.48	----	----	----	1.63	0.46	0.35	0.44
447	-3.77	-0.43	0.21	-0.24	-0.68	0.67	0.22	0.01
463	0.83	1.76	0.66	-0.60	-0.02	-2.75	2.26	1.52
468	-1.00	0.53	4.68	2.25	-0.11	-1.19	-1.94	0.01
485	0.36	-0.56	-1.57	-0.85	-1.30	0.88	0.80	1.62
495	-1.00	-1.66	-4.85	-1.52	-0.64	2.23	2.01	3.02
496	-0.11	0.09	0.07	0.04	1.30	0.36	0.22	0.87
541	----	----	----	----	----	----	----	----
631	0.95	1.93	-0.38	-4.94	1.84	-1.19	-2.32	-2.58
671	1.01	0.53	-0.83	-0.24	0.89	-1.61	-1.94	-3.22
704	----	----	----	----	----	----	----	----
781	----	----	----	----	----	----	----	----
868	2.07	0.27	-0.53	0.54	0.47	-0.16	-0.03	-1.50
875	----	----	----	----	----	----	----	----
904	-1.00	1.67	4.24	1.54	0.47	-0.16	0.22	0.44
962	----	----	----	----	----	----	----	----
1006	0.48	0.53	1.41	0.54	-1.51	----	----	----
1017	0.66	0.44	-1.13	-0.31	1.71	0.26	0.61	0.44
1033	-2.12	-1.57	-1.13	-0.24	-0.81	1.61	0.61	----
1038	2.13	1.14	3.04	0.68	1.30	-0.57	-1.30	-1.28
1059	1.01	0.44	-2.62	-1.45	-0.56	0.05	0.99	2.81
1066	-1.47	-0.69	-1.72	-0.31	-0.27	0.88	0.61	0.66
1067	0.01	-0.52	-0.83	-0.03	-0.23	0.78	0.10	0.44
1080	-0.64	-0.52	-2.17	-0.67	-1.18	0.88	1.24	1.09
1081	-0.64	-0.69	-1.27	-0.38	-1.76	0.67	0.61	1.30
1108	2.49	1.41	0.96	-0.53	0.47	-0.88	0.10	1.73
1109	-0.41	-1.04	-1.42	-1.31	0.56	0.98	1.11	1.95
1121	----	----	----	----	----	----	----	----
1126	-0.52	-1.83	3.64	1.32	4.85	-3.58	-2.45	-3.22
1140	-1.41	0.62	2.30	0.11	0.31	0.26	-0.54	0.87
1161	-0.41	-0.87	-1.42	0.33	-1.55	0.26	0.48	-0.64
1167	-0.05	-0.52	-4.40	-1.17	-1.18	-3.17	-3.72	-7.10
1171	----	----	----	----	----	----	----	----
1182	0.77	1.32	6.17	1.89	0.06	-3.06	-2.45	-3.65
1186	1.48	3.24	2.60	-1.02	-2.42	-4.31	2.13	0.66
1194	-0.85	-1.66	-7.46	0.40	-2.60	2.12	1.94	-0.42
1199	----	----	----	----	----	----	----	----
1203	0.75	0.62	0.81	0.22	-0.66	-0.11	-0.22	-0.21
1205	----	----	----	----	----	----	----	----
1257	----	----	----	----	----	----	----	----
1259	-1.82	-1.39	-3.21	-0.81	0.27	-1.09	-1.56	-3.65
1276	----	-10.76	-2.17	-0.81	0.27	0.46	1.24	1.52
1299	0.07	-0.52	-1.27	-0.10	0.93	0.78	0.22	0.01
1300	0.60	-0.52	0.21	1.18	1.38	-0.57	0.86	-2.79
1340	1.25	0.09	-1.42	-0.46	-0.27	0.67	0.61	1.30
1378	0.42	-0.26	0.51	-0.17	-0.44	0.15	-0.03	0.66
1395	0.36	-0.61	-3.36	-0.53	-0.15	1.50	1.37	0.87
1397	-0.11	0.36	-0.08	0.82	-2.87	0.15	0.35	-1.93

1399	1.66	-3.76	7.66	3.60	-0.31	-2.85	-3.34	-7.96
1404	0.89	-1.66	-1.87	-0.46	-1.39	1.40	0.73	1.30
1406	0.18	-1.31	-0.98	-0.46	1.26	1.40	0.22	0.44
1409	-0.29	0.27	0.36	-0.67	0.27	0.78	0.10	1.52
1419	1.48	2.11	6.47	2.53	1.63	-2.85	-2.83	-4.94
1426	2.13	0.53	-0.08	-0.31	-0.60	-0.05	0.35	0.44
1427	0.12	-0.87	-3.36	-0.53	0.27	0.26	2.26	0.87
1428	-0.23	-0.17	0.81	-0.31	0.47	0.05	-0.03	0.44
1443	0.89	-1.04	-3.06	-0.31	-0.06	2.12	1.24	0.66
1468	-1.47	-1.13	-2.62	-0.53	-0.52	1.50	1.24	0.87
1474	2.37	0.44	-1.87	-0.46	0.68	0.46	1.11	0.66
1520	-----	-----	-----	-----	-----	-----	-----	-----
1528	0.07	-0.43	-1.57	-0.10	0.93	0.05	0.73	0.44
1616	0.89	2.37	8.11	2.89	1.22	-2.96	-3.59	-5.81
1634	-1.53	-0.78	-1.42	-0.38	-0.06	0.67	0.99	-0.64
1635	-2.06	0.27	4.53	1.68	0.35	1.81	1.37	2.16
1636	-2.06	0.27	0.36	-0.46	-0.56	-0.26	-0.79	0.01
1650	0.01	-0.17	0.36	0.11	1.22	0.67	-0.41	-0.42
1653	-----	-----	-----	-----	-----	-----	-----	-----
1656	0.30	0.18	0.21	0.04	0.68	0.15	0.22	-1.07
1709	-----	-----	-----	-----	-----	-----	-----	-----
1720	-0.70	0.36	-0.68	-0.88	-1.14	-----	-----	-----
1724	-1.00	0.88	2.75	0.54	-0.77	-0.99	-1.05	-1.07
1728	-----	-----	-----	-----	-----	-----	-----	-----
1807	-1.00	-0.61	-0.83	-0.03	-0.27	0.88	0.48	0.22
1810	-1.17	-0.26	-1.13	-0.38	0.89	0.15	0.61	-0.64
1811	-0.11	1.41	4.68	2.46	0.56	-1.82	-2.19	0.87
1833	0.95	-0.43	-0.38	-0.88	-0.27	0.36	0.61	1.52
1849	1.31	1.32	-1.72	-0.83	0.58	-2.51	0.86	-0.42
1851	0.18	2.28	0.21	1.54	-1.10	-----	-----	-----
1864	0.83	-0.61	-2.17	-0.17	0.31	1.29	0.86	0.22
1936	2.49	0.97	-1.42	-0.24	2.25	-0.78	0.99	0.44
1937	-0.17	-0.17	-0.38	-0.46	-0.44	-2.23	-2.96	-4.30
1938	-0.52	0.09	-1.13	-0.60	-1.10	-0.16	0.86	1.09
1948	-2.89	0.01	0.96	-0.67	-0.64	0.05	-0.54	0.87
2129	-0.23	-0.17	0.07	-0.24	0.84	0.36	0.10	0.87
2130	0.30	-0.69	-0.98	-3.09	2.54	0.67	0.61	5.39
2146	-0.05	-0.61	-2.47	-0.67	-1.30	1.40	1.11	1.30

**z-scores distillation ASTM D86 (manual mode)**

lab	IBP	10%eva	50%eva	90%eva	FBP	%vol70	%vol100	%vol150
92	----	----	----	----	----	----	----	----
150	----	----	----	----	----	----	----	----
225	----	----	----	----	----	----	----	----
228	----	----	----	----	----	----	----	----
258	----	----	----	----	----	----	----	----
312	----	----	----	----	----	----	----	----
317	----	----	----	----	----	----	----	----
323	----	----	----	----	----	----	----	----
334	----	----	----	----	----	----	----	----
335	----	----	----	----	----	----	----	----
336	----	----	----	----	----	----	----	----
337	----	----	----	----	----	----	----	----
338	----	----	----	----	----	----	----	----
340	----	----	----	----	----	----	----	----
343	----	----	----	----	----	----	----	----
344	----	----	----	----	----	----	----	----
353	----	----	----	----	----	----	----	----
360	----	----	----	----	----	----	----	----
369	----	----	----	----	----	----	----	----
371	----	----	----	----	----	----	----	----
391	----	----	----	----	----	----	----	----
420	----	----	----	----	----	----	----	----
430	----	----	----	----	----	----	----	----
431	----	----	----	----	----	----	----	----
440	----	----	----	----	----	----	----	----
445	----	----	----	----	----	----	----	----
447	----	----	----	----	----	----	----	----
463	----	----	----	----	----	----	----	----
468	----	----	----	----	----	----	----	----
485	----	----	----	----	----	----	----	----
495	----	----	----	----	----	----	----	----
496	----	----	----	----	----	----	----	----
541	-0.13	0.44	1.10	0.67	-0.35	1.79	-0.63	0.12
631	----	----	----	----	----	----	----	----
671	----	----	----	----	----	----	----	----
704	-0.78	-0.74	-3.21	-1.54	-0.16	1.87	2.64	2.20
781	0.12	0.23	0.12	0.46	0.54	-0.24	0.46	-0.37
868	----	----	----	----	----	----	----	----
875	0.37	0.44	0.78	1.74	0.23	-0.24	-0.63	-0.86
904	----	----	----	----	----	----	----	----
962	----	----	----	----	----	----	----	----
1006	----	----	----	----	----	----	----	----
1017	----	----	----	----	----	----	----	----
1033	----	----	----	----	----	----	----	----
1038	----	----	----	----	----	----	----	----
1059	----	----	----	----	----	----	----	----
1066	----	----	----	----	----	----	----	----
1067	----	----	----	----	----	----	----	----
1080	----	----	----	----	----	----	----	----
1081	----	----	----	----	----	----	----	----
1108	----	----	----	----	----	----	----	----
1109	----	----	----	----	----	----	----	----
1121	0.92	1.55	4.43	6.17	-0.32	-2.27	-2.45	-2.84
1126	----	----	----	----	----	----	----	----
1140	----	----	----	----	----	----	----	----
1161	----	----	----	----	----	----	----	----
1167	----	----	----	----	----	----	----	----
1171	0.22	-1.03	0.12	0.49	2.66	-0.91	-2.17	-0.07
1182	----	----	----	----	----	----	----	----
1186	----	----	----	----	----	----	----	----
1194	----	----	----	----	----	----	----	----
1199	----	----	----	----	----	----	----	----
1203	----	----	----	----	----	----	----	----
1205	----	----	----	----	----	----	----	----
1257	----	----	----	----	----	----	----	----
1259	----	----	----	----	----	----	----	----
1276	----	----	----	----	----	----	----	----
1299	----	----	----	----	----	----	----	----
1300	----	----	----	----	----	----	----	----
1340	----	----	----	----	----	----	----	----
1378	----	----	----	----	----	----	----	----
1395	----	----	----	----	----	----	----	----
1397	----	----	----	----	----	----	----	----
1399	----	----	----	----	----	----	----	----
1404	----	----	----	----	----	----	----	----
1406	----	----	----	----	----	----	----	----

1409	----	----	----	----	----	----	----	----
1419	----	----	----	----	----	----	----	----
1426	----	----	----	----	----	----	----	----
1427	----	----	----	----	----	----	----	----
1428	----	----	----	----	----	----	----	----
1443	----	----	----	----	----	----	----	----
1468	----	----	----	----	----	----	----	----
1474	----	----	----	----	----	----	----	----
1520	-0.73	-0.67	-1.31	-0.40	0.77	-1.46	1.10	0.12
1528	----	----	----	----	----	----	----	----
1616	----	----	----	----	----	----	----	----
1634	----	----	----	----	----	----	----	----
1635	----	----	----	----	----	----	----	----
1636	----	----	----	----	----	----	----	----
1650	----	----	----	----	----	----	----	----
1653	----	----	----	----	----	----	----	----
1656	----	----	----	----	----	----	----	----
1709	----	----	----	----	----	----	----	----
1720	----	----	----	----	----	----	----	----
1724	----	----	----	----	----	----	----	----
1728	-0.02	-0.22	-2.05	-1.43	-0.71	1.47	1.68	1.69
1807	----	----	----	----	----	----	----	----
1810	----	----	----	----	----	----	----	----
1811	----	----	----	----	----	----	----	----
1833	----	----	----	----	----	----	----	----
1849	----	----	----	----	----	----	----	----
1851	----	----	----	----	----	----	----	----
1864	----	----	----	----	----	----	----	----
1936	----	----	----	----	----	----	----	----
1937	----	----	----	----	----	----	----	----
1938	----	----	----	----	----	----	----	----
1948	----	----	----	----	----	----	----	----
2129	----	----	----	----	----	----	----	----
2130	----	----	----	----	----	----	----	----
2146	----	----	----	----	----	----	----	----

**APPENDIX 3****Number of participants per country**

1 lab in ARGENTINA  
2 labs in AUSTRALIA  
3 labs in AUSTRIA  
4 labs in BELGIUM  
2 labs in BOSNIA and HERZEGOVINA  
1 lab in BRAZIL  
2 labs in BULGARIA  
1 lab in CANADA  
1 lab in COSTA RICA  
1 lab in CÔTE D'IVOIRE  
3 labs in CROATIA  
1 lab in CYPRUS  
3 labs in CZECH REPUBLIC  
2 labs in ESTONIA  
1 lab in FINLAND  
7 labs in FRANCE  
2 labs in GERMANY  
4 labs in GREECE  
1 lab in GUAM  
1 lab in HONG KONG  
2 labs in HUNGARY  
1 lab in IRELAND  
1 lab in ISRAEL  
1 lab in ITALY  
2 labs in LATVIA  
1 lab in MEXICO  
1 lab in MOZAMBIQUE  
1 lab in NORTHERN IRELAND  
1 lab in P.R. of CHINA  
1 lab in PHILIPPINES  
1 lab in POLAND  
2 labs in PORTUGAL  
1 lab in QATAR  
2 labs in REPUBLIC OF MACEDONIA  
2 labs in ROMANIA  
2 labs in RUSSIA  
1 lab in SAUDI ARABIA  
1 lab in SLOVAK REPUBLIC  
1 lab in SLOVENIA  
1 lab in SOUTH AFRICA  
5 labs in SPAIN  
1 lab in SUDAN  
2 labs in SWEDEN  
3 labs in TAIWAN R.O.C.  
6 labs in THE NETHERLANDS  
1 lab in TOGO  
13 labs in TURKEY  
1 lab in U.A.E.  
1 lab in U.S.A.  
1 lab in UKRAINE  
8 labs 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:

- 1 iis Interlaboratory Studies, Protocol for the Organisation, Statistics & Evaluation, January 2010
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- 11 J.N. Miller, Analyst, 118, 455, (1993)
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