**Institute for
Interlaboratory Studies**

Results of Proficiency Test
Gasoline - ASTM (summer)
March 2022

CONTENTS

Appendices:

1   INTRODUCTION

Since 1995 the Institute for Interlaboratory Studies (iis) organizes a proficiency scheme for the analysis of Gasoline twice a year. One round based on the latest version of EN228 and one round based on the latest version of ASTM D4814. During the annual proficiency testing program 2021/2022 it was decided to continue the round robin for the analysis of Gasoline summer quality based on the latest version of ASTM D4814.

In this interlaboratory study registered for participation:
- 112 laboratories in 57 countries for regular analyzes in Gasoline (summer) iis22B01ASTM
- 73 laboratories in 40 countries on DVPE analyses in Gasoline iis22B01DVPE
- 52 laboratories in 32 countries on RON and MON analyzes in Gasoline iis22B01RON

In total 114 laboratories in 57 countries registered for participation, see appendix 4 for the number of participants per country. In this report the results of the Gasoline ASTM (summer) proficiency tests are presented and discussed. This report is also electronically available through the iis website www.iisnl.com.

2   SET UP

The Institute for Interlaboratory Studies (iis) in Spijkenisse, the Netherlands, was the organizer of this proficiency test (PT). Sample analyzes for fit-for-use and homogeneity testing were subcontracted to an ISO/IEC17025 accredited laboratory.
In this proficiency test the participants received, depending on the registration, from one up to three different samples of Gasoline, see table below.

Samples	PT ID	Quantity	Purpose
#22025	iis22B01ASTM	1x 1 L	Regular analyzes
#22026	iis22B01DVPE	1x 1 L (75% filled)	DVPE
#22027	iis22B01RON	2x 1 L	RON and MON

Table 1: Gasoline samples used in PT iis22B01ASTM

Participants were requested to report rounded and unrounded test results. The unrounded test results were preferably used for statistical evaluation.

2.1   ACCREDITATION

The Institute for Interlaboratory Studies in Spijkenisse, the Netherlands, is accredited in agreement with ISO/IEC17043:2010 (R007), since January 2000, by the Dutch Accreditation Council (Raad voor Accreditatie). This PT falls under the accredited scope. This ensures strict adherence to protocols for sample preparation and statistical evaluation and 100% confidentiality of participant's data. Feedback from the participants on the reported data is encouraged and customer's satisfaction is measured on regular basis by sending out questionnaires.

2.2 PROTOCOL

The protocol followed in the organization of this proficiency test was the one as described for proficiency testing in the report 'iis Interlaboratory Studies: Protocol for the Organisation, Statistics and Evaluation' of June 2018 (iis-protocol, version 3.5). This protocol is electronically available through the iis website www.iisnl.com, from the FAQ page.

2.3 CONFIDENTIALITY STATEMENT

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

2.4 SAMPLES

For the preparation of the samples for the regular analyzes in Gasoline ASTM (summer) PT and for RON and MON analyzes in Gasoline ASTM PT a batch of approximately 400 liters of Gasoline (summer quality) was obtained from the local market. After homogenization approximately 150 and 140 amber glass bottles of 1 L were filled and labelled #22025 and #22027 respectively.
The homogeneity of the subsamples of #22025 and # 22027 was checked by determination of Density at 15°C in accordance with ASTM D4052 on 14 stratified randomly selected subsamples.

	Density at 15°C in kg/m^3		Density at 15°C in kg/m^3
sample 1	740.13	sample 8	740.11
sample 2	740.14	sample 9	740.13
sample 3	740.13	sample 10	740.12
sample 4	740.11	sample 11	740.15
sample 5	740.18	sample 12	740.16
sample 6	740.12	sample 13	740.12
sample 7	740.14	sample 14	740.14

Table 2: homogeneity test results of subsamples of #22025 and #22027

From the above test results the repeatability was calculated and compared with 0.3 times the reproducibility of the reference test method in agreement with the procedure of ISO13528, Annex B2 in the next table.

	Density at 15°C in kg/m^3
r (observed)	0.05
reference test method	D4052:18a
0.3 x R (reference test method)	0.67

Table 3: evaluation of the repeatability of subsamples #22025 and #22027

The calculated repeatability is in agreement with 0.3 times the reproducibility of the reference test method. Therefore, homogeneity of the subsamples was assumed.

For the preparation of the sample for the determination of DVPE in Gasoline ASTM PT a batch of approximately 200 liters of Gasoline (summer quality) was obtained from the local market. After homogenization approximately 105 amber glass bottles of 1 L were filled with 750 mL Gasoline and labelled #22026.
The homogeneity of the subsamples was checked by the determination of DVPE in accordance with ASTM D5191 on 8 stratified randomly selected subsamples.

	DVPE in psi
sample #22026-1	8.59
sample #22026-2	8.53
sample #22026-3	8.53
sample #22026-4	8.53
sample #22026-5	8.51
sample #22026-6	8.53
sample #22026-7	8.51
sample #22026-8	8.53

Table 4: homogeneity test results of subsamples #22026

From the above test results the repeatability was calculated and compared with 0.3 times the reproducibility of the reference test method in agreement with the procedure of ISO13528, Annex B2 in the next table.

	DVPE in psi
r (observed)	0.07
reference test method	ASTM D5191:20
0.3 x R (reference test method)	0.10

Table 5: evaluation of the repeatability of subsamples #22026

The calculated repeatability is in agreement with 0.3 times the reproducibility of the reference test method. Therefore, homogeneity of the subsamples was assumed.

Depending on the registration of the participant the appropriate set of PT samples was sent on February 9, 2022. An SDS was added to the sample package.

2.5   STABILITY OF THE SAMPLES

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

2.6   ANALYZES

The participants were requested to determine on sample #22025: API Gravity, Appearance, Aromatics by FIA (without oxygenates correction), Benzene, Copper Corrosion, Silver Corrosion, Density at 15°C, Distillation at 760 mmHg (IBP, Temperaure at 10%, 50%, 90% evaporated and FBP), Doctor Test, Gum (solvent washed), Lead as Pb, Manganese as Mn, Olefins by FIA (without oxygenates correction), Oxidation Stability, Oxygenates (DIPE, ETBE, Ethanol, Methanol, MTBE, TAME, Other Oxygenates), Oxygen content, Phosphorus as P and Total Sulfur.
On sample #22026 it was requested to determine Total Vapour Pressure and Dry Vapour Pressure Equivalent (according to ASTM D5191 and EPA).
On sample #22027 it was requested to determine RON and MON.

It was explicitly requested to treat the samples as if they were routine samples and to report the test results using the indicated units on the report form and not to round the test results but report as much significant figures as possible. It was also requested not to report 'less than' test results, which are above the detection limit, because such test results cannot be used for meaningful statistical evaluations.

To get comparable test results, a detailed report form and a letter of instructions are prepared. On the report form the reporting units are given as well as the reference test methods (when applicable) that will be used during the evaluation. The detailed report form and the letter of instructions are both made available on the data entry portal www.kpmd.co.uk/sgs-iis/. The participating laboratories are also requested to confirm the sample receipt on this data entry portal. The letter of instructions can also be downloaded from the iis website www.iisnl.com.

3   RESULTS

During five weeks after sample dispatch, the test results of the individual laboratories were gathered via the data entry portal www.kpmd.co.uk/sgs-iis/. The reported test results are tabulated per determination in appendices 1 and 2 of this report. The laboratories are presented by their code numbers.

Directly after the deadline, a reminder was sent to those laboratories that had not reported test results at that moment. Shortly after the deadline, the available test results were screened for suspect data. A test result was called suspect in case the Huber Elimination Rule (a robust outlier test) found it to be an outlier. The laboratories that produced these suspect data were asked to check the reported test results (no reanalyzes). Additional or corrected test results are used for data analysis and the original test results are placed under 'Remarks' in the result tables in appendices 1 or 2. Test results that came in after the deadline were not taken into account in this screening for suspect data and thus these participants were not requested for checks.

3.1 STATISTICS

The protocol followed in the organization of this proficiency test was the one as described for proficiency testing in the report 'iis Interlaboratory Studies: Protocol for the Organisation, Statistics and Evaluation' of June 2018 (iis-protocol, version 3.5).
For the statistical evaluation the *unrounded* (when available) figures were used instead of the rounded test results. Test results reported as '<…' or '>…' were not used in the statistical evaluation.

First, the normality of the distribution of the various data sets per determination was checked by means of the Lilliefors-test, a variant of the Kolmogorov-Smirnov test and by the calculation of skewness and kurtosis. Evaluation of the three normality indicators in combination with the visual evaluation of the graphic Kernel density plot, lead to judgement of the normality being either 'unknown', 'OK', 'suspect' or 'not OK'. After removal of outliers, this check was repeated. If a data set does not have a normal distribution, the (results of the) statistical evaluation should be used with due care.

The assigned value is determined by consensus based on the test results of the group of participants after rejection of the statistical outliers and/or suspect data.

According to ISO13528 all (original received or corrected) results per determination were submitted to outlier tests. In the iis procedure for proficiency tests, outliers are detected prior to calculation of the mean, standard deviation and reproducibility. For small data sets, Dixon (up to 20 test results) or Grubbs (up to 40 test results) outlier tests can be used. For larger data sets (above 20 test results) Rosner's outlier test can be used. Outliers are marked by D(0.01) for the Dixon's test, by G(0.01) or DG(0.01) for the Grubbs' test and by R(0.01) for the Rosner's test. Stragglers are marked by D(0.05) for the Dixon's test, by G(0.05) or DG(0.05) for the Grubbs' test and by R(0.05) for the Rosner's test. Both outliers and stragglers were not included in the calculations of averages and standard deviations.

For each assigned value, the uncertainty was determined in accordance with ISO13528. Subsequently the calculated uncertainty was evaluated against the respective requirement based on the target reproducibility in accordance with ISO13528. In this PT the criterion of ISO13528 paragraph 9.2.1 was met for all evaluated tests, therefore, the uncertainty of all assigned values may be negligible and need not be included in the PT report.

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

3.2 GRAPHICS

In order to visualize the data against the reproducibilities from literature, Gauss plots were made, using the sorted data for one determination (see appendix 1). On the Y-axis the reported test results are plotted. The corresponding laboratory numbers are on the X-axis. The straight horizontal line presents the consensus value (a trimmed mean). The four striped lines, parallel to the consensus value line, are the +3s, +2s, -2s and -3s target reproducibility limits of the selected reference test method. Outliers and other data, which were excluded from the calculations, are represented as 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. Also, a normal Gauss curve (dotted line) was projected over the Kernel Density Graph (smooth line) for reference. The Gauss curve is calculated from the consensus value and the corresponding standard deviation.

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 (derived from e.g. ISO or ASTM test methods), the z-scores were calculated using a target standard deviation. This results in an evaluation independent of the variation in this interlaboratory study.

This target standard deviation was calculated from the literature reproducibility by division with 2.8. In case no literature reproducibility was available, other target values were used, like Horwitz or an estimated reproducibility based on former iis proficiency tests.

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

The z-scores were calculated according to:

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

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

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

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

4   EVALUATION

Some problems were encountered with the dispatch of the samples due to COVID-19 pandemic. Therefore, the reporting time on the data entry portal was extended with another two weeks. For the regular Gasoline PT eight participants reported test results after the extended reporting date and eightteen other participants did not report any test results.
For the PT on DVPE five participants reported the test results after the extended reporting date and seventeen other participants did not report any test results.
For the PT on RON/MON four participants reported test results after the extended reporting date and eleven other participants did not report any test results.
Not all participants were able to report all tests requested.

In total 96 participants reported 1081 numerical test results. Observed were 39 outlying test results, which is 3.6% of the numerical test results. In proficiency studies, outlier percentages of 3%-7.5% are quite normal.

Not all data sets proved to have a normal Gaussian distribution. These are referred to as "not OK" or "suspect". The statistical evaluation of these data sets should be used with due care, see also paragraph 3.1.

4.1 EVALUATION PER SAMPLE AND PER TEST

In this section the reported test results are discussed per sample and per test. The test methods which were used by the various laboratories were taken into account for explaining the observed differences when possible and applicable. These test methods are also in the tables together with the original data in appendix 1. The abbreviations, used in these tables, are explained in appendix 5.

In the iis PT reports ASTM test methods are referred to with a number (e.g. D525) and an added designation for the year that the test method was adopted or revised (e.g. D525:12a). If applicable, a designation in parentheses is added to designate the year of reapproval (e.g. D525:12a(2019)). In the test results tables of appendix 1 only the method number and year of adoption or revision (e.g.D525:12a) will be used.

sample #22025

API Gravity: This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D4052:18a.

Appearance: This determination was not problematic. Almost all reporting participants agreed about the appearance as Pass (Clear and Bright).

Aromatics by FIA (without oxygenates correction): This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ASTM D1319:20a.

Benzene: This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D3606:21 and ASTM D5580:21.

Copper Corrosion: This determination was not problematic. All reporting participants agreed on classification 1 (1a).

Silver Corrosion: This determination was not problematic. Almost all reporting participants agreed on classification 0.

Density at 15°C: This determination was not problematic. Five statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D4052:18a.

Distillation at 760 mmHg: The distillation was not problematic. In total ten statistical outliers were observed over five parameters. The calculated reproducibilities after rejection of the statistical outliers are in agreement with the requirements of ASTM D86:20 automated mode. When compared to the requirements of the manual mode only the calculated reproducibility for Final Boiling Point is not in agreement.

Doctor Test: This determination was not problematic. All reporting participants agreed on the absence of Mercaptans or hydrogen sulfide and reported Negative.

Gum (solvent washed): This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D381:19.

Lead as Pb: This determination was not problematic. Almost all reporting participants agreed on a test results of less than 2.5 mg/L. Therefore, no z-scores are calculated.

Manganese as Mn: This determination was not problematic. Almost all reporting participants agreed on a test results of less than 0.5 mg/L. Therefore, no z-scores are calculated.

Olefins by FIA (without oxygenates correction): This determination was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in full agreement with the requirements of ASTM D1319:20a.

Oxidation Stability: This determination was not problematic. All of the reporting participants agreed that the Oxidation Stability is >240 minutes. Therefore, no z-scores are calculated.

Ethanol: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ASTM D4815:22.

MTBE: This determination was problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ASTM D4815:22.

The majority of the participants agreed on a concentration near or below the limit of detection for the other requested Oxygenates. Therefore, no z-scores were calculated. The reported test results of these components are listed in appendix 2.

Oxygen Content: This determination was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ASTM D4815:22.

Phosphorus as P: This determination was not problematic. All reporting laboratories agreed on a Phosphorus concentration lower than 1 mg/L. Therefore, no z-scores are calculated.

Total Sulfur: This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D5453:19a.

sample #22026

TVP: This determination was problematic for a number of participants. Four statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D5191:20.

DVPE: The conversions of the measured Total Vapour Pressure to the Dry Vapour Pressure Equivalent (DVPE) as described in ASTM D5191:20 are not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ASTM D5191:20.

The conversions of the measured Total Vapour Pressure to the Dry Vapour Pressure Equivalent (DVPE) as described in the U.S. EPA guidelines (40 CFR Part 80, App. E, Method 3) were not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of the EPA guidelines.

sample #22027

RON: This determination was not problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in full agreement with the requirements of ASTM D2699:21.

MON: This determination was not problematic. Four statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D2700:22.

4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES

A comparison has been made between the reproducibility as declared by the reference test method and the reproducibility as found for the group of participating laboratories. The number of significant test results, the average, the calculated reproducibility (2.8 * standard deviation) and the target reproducibility derived from reference test methods (in casu ASTM test methods) are presented in the next tables.

Parameter	unit	n	average	2.8 * sd	R(lit)
API Gravity		55	59.57	0.27	0.58
Appearance		44	Pass	n.a.	n.a.
Aromatics by FIA *)	%V/V	31	27.2	2.8	3.7
Benzene	%V/V	42	0.89	0.10	0.17

Parameter	unit	n	average	2.8 * sd	R(lit)
Copper Corrosion 3 hrs at 50°C		70	1 (1a)	n.a.	n.a.
Silver Corrosion 3 hrs at 50°C		18	0	n.a.	n.a.
Density at 15°C	kg/m^3	84	740.2	0.7	2.2
Initial Boiling Point	°C	82	36.3	4.7	4.7
Temp. at 10% evaporated	°C	81	54.3	1.8	4.0
Temp. at 50% evaporated	°C	80	94.3	1.9	3.7
Temp. at 90% evaporated	°C	79	131.0	3.4	5.4
Final Boiling Point	°C	83	172.3	7.0	7.1
Doctor Test		45	negative	n.a.	n.a.
Gum (solvent washed)	mg/100mL	40	0.65	0.87	2.19
Lead as Pb	mg/L	25	<2.5	n.e.	n.e.
Manganese as Mn	mg/L	17	<0.5	n.e.	n.e.
Olefins by FIA *)	%V/V	31	12.6	3.4	3.8
Oxidation Stability	minutes	35	>240	n.e.	n.e.
Ethanol	%V/V	38	4.7	0.5	0.6
MTBE	%V/V	34	4.6	0.4	0.3
Oxygen content	%M/M	33	2.6	0.2	0.3
Phosphorus as P	mg/L	11	<1	n.e.	n.e.
Total Sulfur	mg/kg	65	4.9	1.5	1.9

Table 6: reproducibilities of tests on sample #22025

*) without oxygenates correction

Parameter	unit	n	average	2.8 * sd	R(lit)
TVP	psi	35	9.4	0.2	0.3
DVPE according to ASTM D5191	psi	51	8.5	0.2	0.3
DVPE according to EPA	psi	25	8.6	0.2	0.3

Table 7: reproducibilities of tests on sample #22026

Parameter	unit	n	average	2.8 * sd	R(lit)
RON		36	95.4	0.7	0.7
MON		22	85.2	0.8	0.9

Table 8: reproducibilities of tests on sample #22027

Without further statistical calculations it can be concluded that for almost all tests there is a good compliance of the group of participants with the reference test methods. The problematic tests have been discussed in paragraph 4.1.

4.3   COMPARISON OF THE PROFICIENCY TEST OF MARCH 2022 WITH PREVIOUS PTS

	March 2022	February 2021	February 2020	February 2019	February 2018
Number of reporting laboratories	96	104	99	106	110
Number of test results	1081	1288	1158	1362	1327
Number of statistical outliers	39	38	20	55	16
Percentage of statistical outliers	3.6%	3.0%	1.7%	4.0%	1.2%

Table 9: 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 to the requirements of the reference test methods. The conclusions are given in the following table.

Parameter	March 2022	February 2021	February 2020	February 2019	February 2018
API Gravity	++	++	++	++	+
Aromatics by FIA *)	+	+	+/-	+/-	+/-
Benzene	+	++	+	++	+
Density at 15°C	++	++	++	++	++
Distillation at 760 mmHg	+	+	+	+	+
Gum (solvent washed)	++	++	++	++	++
Lead as Pb	n.e.	+	n.e.	n.e.	+/-
Manganese as Mn	n.e.	+	n.e.	+	++
Olefins by FIA *)	+/-	+/-	+	-	-
Ethanol	+	+	+/-	+	+/-
MTBE	-	-	-	-	-
Oxygen content	+	+	+	+/-	+/-
Phosphorus as P	n.e.	n.e.	n.e.	--	-
Total Sulfur	+	+/-	+	+/-	+/-
TVP	+	+	+/-	+/-	+/-
DVPE	+	+/-	+/-	+/-	+
RON	+/-	-	+	-	-
MON	+	+/-	-	-	-

Table 10: comparison determinations against the reference test methods

*) without oxygenates correction

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

APPENDIX 1
Determination of API Gravity on sample #22025;

lab	method	value	mark	z(targ)	remarks
52	D4052	59.6		0.16	
62	D4052	59.6		0.16	
92	D4052	59.43		-0.65	
120	D4052	59.61		0.21	
140	D4052	59.6		0.16	
150	D4052	59.7		0.64	
158	D4052	59.6		0.16	
159		-----		-----	
169	D4052	59.5		-0.32	
171	D4052	59.6		0.16	
175	D4052	59.6		0.16	
206		-----		-----	
207		-----		-----	
208		-----		-----	
209		-----		-----	
212	ISO12185	59.36		-0.99	
217	D4052	59.50		-0.32	
221		-----		-----	
224	D1298	59.58		0.07	
225	D4052	59.6		0.16	
228	D4052	59.58		0.07	
235		-----		-----	
237	D4052	59.48		-0.41	
238	D4052	59.79		1.08	
253	D4052	59.48		-0.41	
254		-----		-----	
256	D4052	59.64		0.36	
258	D4052	59.48		-0.41	
312	D4052	59.63		0.31	
323	D4052	59.43		-0.65	
328		-----		-----	
335		-----		-----	
337		-----		-----	
355	D4052	59.71		0.69	
365		-----		-----	
381		-----		-----	
447	D4052	59.62		0.26	
480		-----		-----	
541	D4052	59.60		0.16	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603	D4052	59.5		-0.32	
631	D4052	59.595		0.14	
634	D4052	59.30		-1.28	
657	D4052	59.6		0.16	
663	D4052	59.62		0.26	
671	D4052	59.58		0.07	
753	D4052	59.61		0.21	
754	D4052	59.53		-0.17	
823	D4052	59.6		0.16	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872	D4052	59.16	R(0.01)	-1.95	
912	D4052	59.54		-0.13	
913		-----		-----	
914		-----		-----	
922	D4052	59.59		0.11	
962	D4052	59.5		-0.32	
963	D4052	59.6		0.16	
970	D4052	59.61		0.21	
971	D4052	59.61		0.21	
974	D4052	59.61		0.21	
995	D4052	59.5		-0.32	
996		-----		-----	
1006		-----		-----	
1012		-----		-----	

lab	method	value	mark	z(targ)	remarks
1016		-----		-----	
1033		-----		-----	
1039		-----		-----	
1059		-----		-----	
1080		-----		-----	
1109		-----		-----	
1126		-----		-----	
1140		-----		-----	
1186		-----		-----	
1205		-----		-----	
1227	D4052	59.5		-0.32	
1254	D4052	59.63		0.31	
1297	D4052	59.43		-0.65	
1300	D4052	59.49		-0.37	
1320		-----		-----	
1357	D4052	n.a		-----	
1455	D4052	59.62		0.26	
1498	D4052	59.5		-0.32	
1531		-----		-----	
1631		-----		-----	
1720	D4052	59.4		-0.80	
1730		-----		-----	
1807		-----		-----	
1849		-----		-----	
1982	D4052	59.6		0.16	
1984		-----		-----	
6019	ISO12185	58.99	R(0.01)	-2.77	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6220	D4052	59.55		-0.08	
6266	D4052	59.46		-0.51	
6364	D4052	59.8		1.12	
6404		-----		-----	
6416	D1298	59.7		0.64	
6438	D4052	59.64		0.36	
6447		-----		-----	

normality	OK	
n	55	
outliers	2	
mean (n)	59.566	
st.dev. (n)	0.0946	
R(calc.)	0.265	
st.dev.(D4052:18a)	0.2081	
R(D4052:18a)	0.583	

Kernel Density
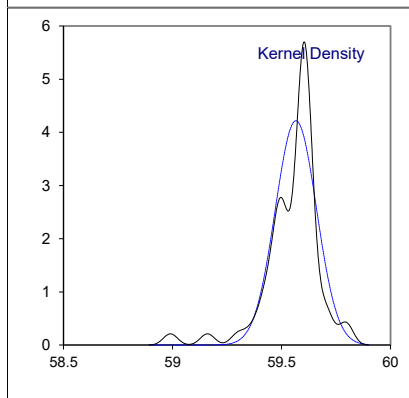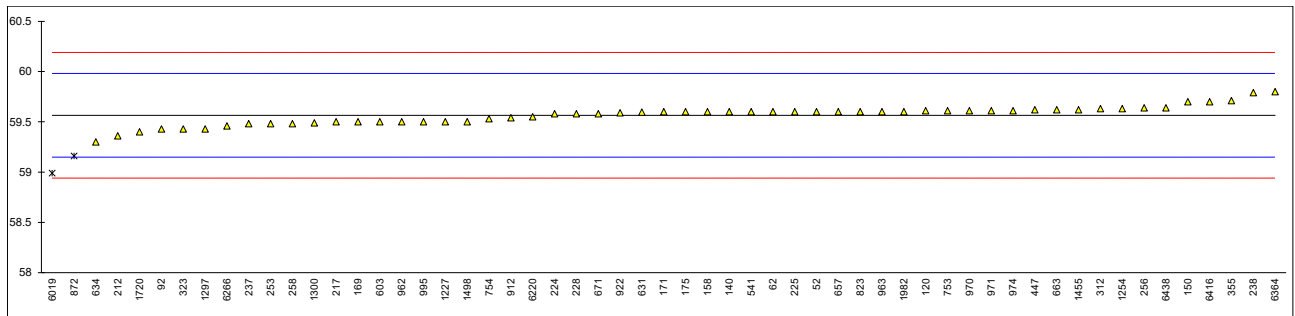
Determination of Appearance on sample #22025;

lab	method	value	mark	z(targ)	remarks
52	D4176	Pass		-----	
62	D4176	pass		-----	
92	D4176	Undyed		-----	
120	D4176	C & B		-----	
140	D4176	Clear & bright		-----	
150		-----		-----	
158	D4176	C &B		-----	
159		-----		-----	
169	D4176	Pass		-----	
171	D4176	Pass		-----	
175	D4176	Pass		-----	
206		-----		-----	
207		-----		-----	
208		-----		-----	
209		-----		-----	
212	D4176	Cl&Br		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		Clear &Bright		-----	
228	D4176	Clear & Bright		-----	
235	D4176	1		-----	
237	D4176	C&B		-----	
238		-----		-----	
253	D4176	Clear & Bright		-----	
254	D4176	Clear & Bright		-----	
256	visual	-----		-----	
258	D4176	Bright & Clear		-----	
312		-----		-----	
323	D4176	pass		-----	
328		-----		-----	
335		-----		-----	
337		-----		-----	
355		-----		-----	
365	D4176	Pass		-----	
381		-----		-----	
447	Visual	Clear & Bright		-----	
480		-----		-----	
541		-----		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631	Visual	clear & bight		-----	
634	D4176	Clear & Bright		-----	
657	D4176	Bright and clear		-----	
663	D4176	B&C		-----	
671	D4176	C/B		-----	
753	D4176	Pass		-----	
754	D4176	absent		-----	
823	D4176	Pass		-----	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872	D4176	-----		-----	
912	D4176	Pass		-----	
913		-----		-----	
914		-----		-----	
922	Visual	Clear & Bright		-----	
962	D4176	Clear & Bright		-----	
963	D4176	Pass		-----	
970	D4176	Clear & Bright		-----	
971		-----		-----	
974	D4176	Clear and Bright		-----	
995	D4176	Pass [C&B]		-----	
996		-----		-----	
1006		-----		-----	
1012		-----		-----	

lab	method	value	mark	z(targ)	remarks
1016		-----		-----	
1033		-----		-----	
1039	D4176	Clear & Bright		-----	
1059	Visual	clear & bright		-----	
1080		-----		-----	
1109	D4176	Pass		-----	
1126		-----		-----	
1140	D4176	C&B		-----	
1186		-----		-----	
1205		-----		-----	
1227		-----		-----	
1254	D4176	pass		-----	
1297		-----		-----	
1300	D4176	C&B		-----	
1320		-----		-----	
1357	D4176	Clear & Bright		-----	
1455	D4176	Clear and Bright		-----	
1498	D4176	-----		-----	
1531	D4176	clear & bright		-----	
1631	In house	Clear and Bright		-----	
1720		-----		-----	
1730		-----		-----	
1807		-----		-----	
1849		-----		-----	
1982		-----		-----	
1984		-----		-----	
6019		-----		-----	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6220		-----		-----	
6266		-----		-----	
6364	D4176	PASS		-----	
6404		-----		-----	
6416	D4176	-----		-----	
6438	D4176	Clear		-----	
6447		-----		-----	

	n	44	
	mean (n)	Pass (Clear & Bright)	

Determination of Aromatics by FIA (without oxygenates correction) on sample #22025; results in %V/V

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62	D1319	28.2	C	0.76	first reported 31.3
92	D1319	26.0		-0.91	
120		-----		-----	
140		-----		-----	
150		-----		-----	
158		-----		-----	
159		-----		-----	
169	D1319	28.8	C	1.21	first reported19.9
171		-----		-----	
175		-----		-----	
206		-----		-----	
207		-----		-----	
208		-----		-----	
209		-----		-----	
212		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
235	D1319	27.8		0.45	
237	D1319	28.3		0.83	
238		-----		-----	
253	D1319	27.30		0.07	
254		-----		-----	
256	D5986	26.6		-0.46	
258		-----		-----	
312	D1319	26.2		-0.76	
323	D1319	26.7		-0.38	
328		-----		-----	
335		-----		-----	
337		-----		-----	
355		-----		-----	
365		-----		-----	
381	EN15553	26.7		-0.38	
447	D1319	26.19		-0.77	
480		-----		-----	
541		-----		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631	D1319	28.5		0.98	
634		-----		-----	
657	D1319	27.2		0.00	
663		-----		-----	
671	D1319	29.2	C	1.51	first reported 35.5
753		-----		-----	
754		-----		-----	
823	D1319	27.5		0.23	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
912		-----		-----	
913		-----		-----	
914		-----		-----	
922	D1319	28.3		0.83	
962	D1319	26.9		-0.23	
963	D1319	27.9		0.53	
970	D1319	27.3		0.07	
971	D1319	27.1		-0.08	
974		-----		-----	
995	D1319	25.8		-1.06	
996		-----		-----	
1006		-----		-----	
1012		-----		-----	

lab	method	value	mark	z(targ)	remarks
1016		-----		-----	
1033		-----		-----	
1039		-----		-----	
1059	D1319	27.2		0.00	
1080		-----		-----	
1109	D1319	26.72		-0.36	
1126		-----		-----	
1140		-----	W	-----	test result withdrawn, reported 22.5
1186		-----		-----	
1205	D1319	25.3		-1.44	
1227		-----		-----	
1254	D1319	26.81		-0.30	
1297		-----		-----	
1300	D1319	27.77		0.43	
1320		-----		-----	
1357	D1319	n.a		-----	
1455	D1319	28.42	C	0.92	first reported 58.56
1498		-----		-----	
1531		-----		-----	
1631		-----		-----	
1720		-----		-----	
1730		-----		-----	
1807		-----		-----	
1849		-----		-----	
1982	D1319	26.97		-0.18	
1984		-----		-----	
6019		-----		-----	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6220	D1319	27.2		0.00	
6266		-----	W	-----	test result withdrawn, reported 45.6
6364	D1319	27.42	C	0.17	first reported 39.03
6404		-----		-----	
6416		-----		-----	
6438	D1319	24.96		-1.70	
6447		-----		-----	

normality	OK	
n	31	
outliers	0	
mean (n)	27.20	
st.dev. (n)	0.999	
R(calc.)	2.80	
st.dev.(D1319:20a)	1.321	
R(D1319:20a)	3.7	

Kernel Density
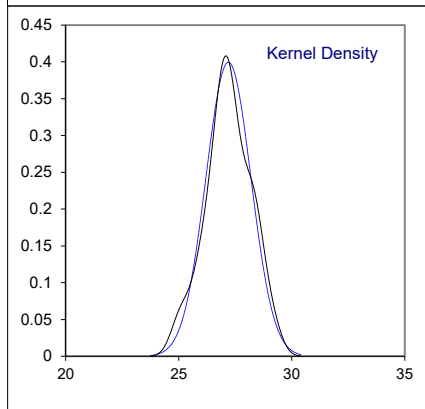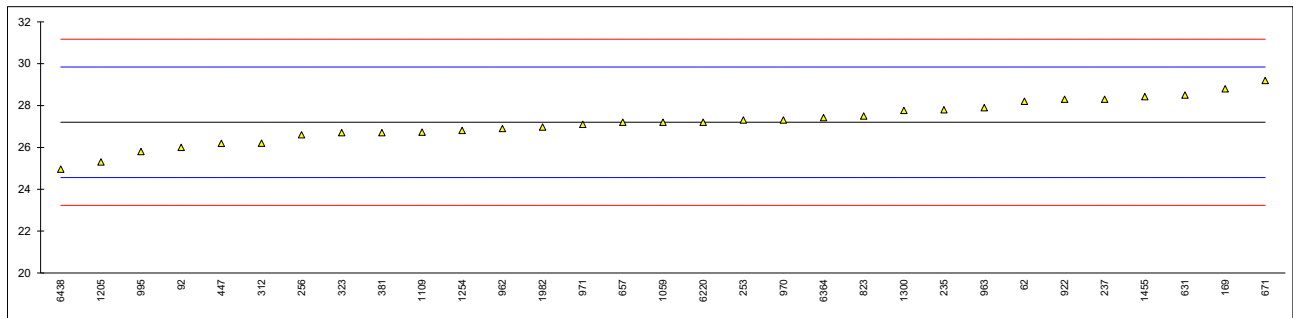
Determination of Benzene on sample #22025; results in %V/V

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62	CAN/CGSB 3.0 No 14.3-2022	0.902		0.17	
92	INH-CM	0.93		0.65	
120	D3606	0.90		0.14	
140	D3606	0.90		0.14	
150	D3606	0.86		-0.53	
158	D3606	0.88		-0.20	
159		-----		-----	
169	D3606	0.95		0.98	
171	D3606	0.84		-0.87	
175		-----		-----	
206		-----		-----	
207		-----		-----	
208		-----		-----	
209		-----		-----	
212		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
235		-----		-----	
237		-----		-----	
238		-----		-----	
253		-----		-----	
254		-----		-----	
256	D5986	0.8		-1.55	
258		-----		-----	
312	D3606	0.88		-0.20	
323	EN22854	0.91		0.31	
328		-----		-----	
335		-----		-----	
337		-----		-----	
355		-----		-----	
365		-----		-----	
381	EN22854	0.87		-0.37	
447	EN238	0.84		-0.87	
480		-----		-----	
541		-----		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631	D6277	0.79		-1.72	
634	D6277	0.66	R(0.01)	-3.91	
657	D5580	0.88		-0.20	
663		-----		-----	
671		-----		-----	
753		-----		-----	
754	D6729	0.888		-0.06	
823	D5580	0.88		-0.20	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
912		-----		-----	
913		-----		-----	
914		-----		-----	
922	D6277b	0.91		0.31	
962	D5580	0.82		-1.21	
963	D6839	0.87		-0.37	
970	D5580	0.90		0.14	
971	D5580	0.91		0.31	
974		-----		-----	
995	EN12177	0.895		0.06	
996		-----		-----	
1006	D5580	0.874		-0.30	
1012		-----		-----	

lab	method	value	mark	z(targ)	remarks
1016	ISO22854	0.89		-0.03	
1033		-----		-----	
1039	ISO22854	0.91		0.31	
1059	ISO22854	0.91		0.31	
1080	ISO22854	0.92		0.48	
1109	D3606	0.901		0.16	
1126	ISO22854	1.04	R(0.05)	2.50	
1140	EN22854	0.90		0.14	
1186		-----		-----	
1205	ISO22854	0.979		1.47	
1227		-----		-----	
1254	EN238	0.867		-0.42	
1297		-----		-----	
1300	D3606	0.905		0.22	
1320		-----		-----	
1357	D6839	0.93		0.65	
1455	D3606	0.91		0.31	
1498		-----		-----	
1531		-----		-----	
1631	EN22854	0.90		0.14	
1720		-----		-----	
1730		-----		-----	
1807	EN22854	0.90		0.14	
1849		-----		-----	
1982	D5769	0.95		0.98	
1984		-----		-----	
6019		-----		-----	
6142		-----		-----	
6170	EN12177	0.87		-0.37	
6172	D5845	0.91		0.31	
6220	D5580	0.92		0.48	
6266		-----	W	-----	test result withdrawn, reported 0.71
6364		-----		-----	
6404	EN22854	0.90		0.14	
6416		-----		-----	
6438		-----		-----	
6447		-----		-----	

	normality	suspect
	n	42
	outliers	2
	mean (n)	0.892
	st.dev. (n)	0.0367
	R(calc.)	0.103
	st.dev.(D3606:21)	0.0593
	R(D3606:21)	0.166
Compare		
	R(D5580:21)	0.114
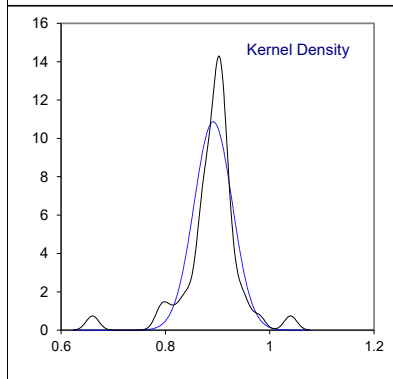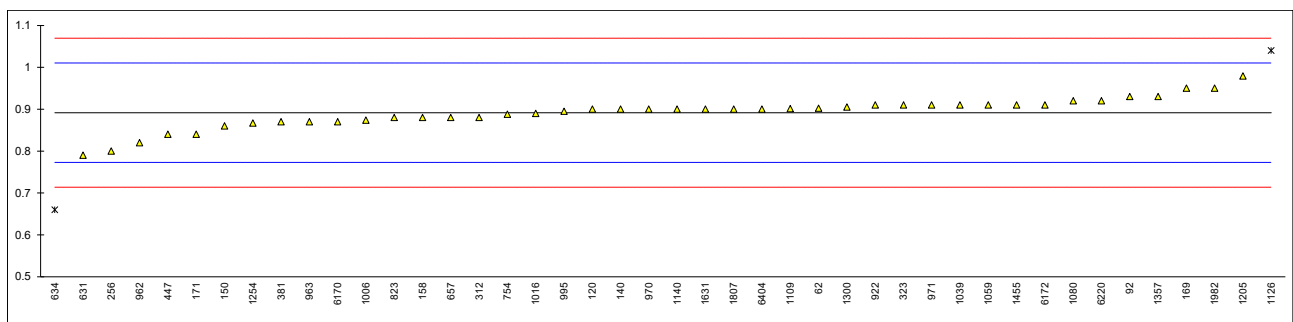
Determination of Copper Corrosion 3hrs at 50°C on sample #22025;

lab	method	value	mark	z(targ)	remarks
52	D130	1a		-----	
62	D130	1a		-----	
92	D130	1a		-----	
120	D130	1a		-----	
140	D130	1a		-----	
150	D130	1a		-----	
158	D130	1a		-----	
159		-----		-----	
169	D130	1a		-----	
171	D130	1a		-----	
175		-----		-----	
206		-----		-----	
207		-----		-----	
208		-----		-----	
209		-----		-----	
212	D130	1a		-----	
217	D130	1a		-----	
221	D130	1A		-----	
224	D130	1a		-----	
225	D130	1a		-----	
228	D130	1a		-----	
235	D130	1a		-----	
237	D130	1A		-----	
238	D130	1a		-----	
253	D130	1A		-----	
254	D130	1a		-----	
256	D130	1A		-----	
258	D130	1a		-----	
312	D130	1A		-----	
323	ISO2160	1A		-----	
328	D130	1a		-----	
335	D130	1		-----	
337		-----		-----	
355		-----		-----	
365	D130	1a		-----	
381		-----		-----	
447	D130	1A		-----	
480		-----		-----	
541	D130	1a		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562	D130	1A		-----	
603	D130	1A		-----	
631	D130	1a		-----	
634	D130	1a		-----	
657	D130	1a		-----	
663	D130	1a		-----	
671	D130	1a		-----	
753	D130	1a		-----	
754	D130	1a		-----	
823	D130	1a		-----	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
912	D130	1a		-----	
913		-----		-----	
914		-----		-----	
922	D130	1A		-----	
962	D130	1A		-----	
963	D130	1a		-----	
970	D130	1a		-----	
971	D130	1a		-----	
974	D130	1a		-----	
995	D130	1a		-----	
996		-----		-----	
1006	D130	1a		-----	
1012	D130	1a		-----	

lab	method	value	mark	z(targ)	remarks
1016	D130	1		-----	
1033		-----		-----	
1039	ISO2160	1A		-----	
1059	ISO2160	1a		-----	
1080		-----		-----	
1109	D130	1a		-----	
1126		-----		-----	
1140	IP154	1A		-----	
1186	D130	1A		-----	
1205		-----		-----	
1227	D130	1A		-----	
1254	D130	1A		-----	
1297	D130	1A		-----	
1300	D130	1A		-----	
1320		-----		-----	
1357	D130	1a		-----	
1455	D130	1A		-----	
1498		-----		-----	
1531	D130	1a		-----	
1631	ISO2160	1A		-----	
1720	D130	1a		-----	
1730		-----		-----	
1807	ISO2160	1A		-----	
1849	ISO2160	1A		-----	
1982		-----		-----	
1984		-----		-----	
6019	D130	1		-----	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6220		-----		-----	
6266		-----		-----	
6364	D130	1A		-----	
6404		-----		-----	
6416	D130	1a		-----	
6438	D130	1a		-----	
6447		-----		-----	
	n	70			
	mean (n)	1 (1a)			

Determination of Silver Corrosion 3hrs at 50°C on sample #22025;

lab	method	value	mark	z(targ)	remarks
52	D7671-A	0		-----	
62	D7671-A	0		-----	
92		-----		-----	
120	D7671-A	0		-----	
140	D7671-B	0		-----	
150	D7671-A	0		-----	
158	D7671-A	0		-----	
159		-----		-----	
169		-----		-----	
171	D7671-A	0		-----	
175		-----		-----	
206		-----		-----	
207		-----		-----	
208		-----		-----	
209		-----		-----	
212		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
235		-----		-----	
237		-----		-----	
238		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
312	D7671-A	0		-----	
323	D7671-A	0		-----	
328		-----		-----	
335		-----		-----	
337		-----		-----	
355		-----		-----	
365		-----		-----	
381		-----		-----	
447	D7671-A	0		-----	
480		-----		-----	
541		-----		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631		-----		-----	
634		-----		-----	
657	D7671-A	0		-----	
663	D7671-A	0		-----	
671		-----		-----	
753		-----		-----	
754		-----		-----	
823	D7671-A	1		-----	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
912		-----		-----	
913		-----		-----	
914		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971		-----		-----	
974		-----		-----	
995		-----		-----	
996		-----		-----	
1006		-----		-----	
1012		-----		-----	

lab	method	value	mark	z(targ)	remarks
1016	D7671-A	0		-----	
1033		-----		-----	
1039	D7671-A	0		-----	
1059		-----		-----	
1080		-----		-----	
1109	D7671-A	0		-----	
1126		-----		-----	
1140	D7671-A	0		-----	
1186		-----		-----	
1205		-----		-----	
1227		-----		-----	
1254		-----		-----	
1297		-----		-----	
1300		-----		-----	
1320		-----		-----	
1357	D7667-A	n.a		-----	
1455	D7671-A	0		-----	
1498		-----		-----	
1531		-----		-----	
1631		-----		-----	
1720		-----		-----	
1730		-----		-----	
1807		-----		-----	
1849		-----		-----	
1982		-----		-----	
1984		-----		-----	
6019		-----		-----	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6220		-----		-----	
6266		-----		-----	
6364		-----		-----	
6404		-----		-----	
6416		-----		-----	
6438		-----		-----	
6447		-----		-----	
	n	18			
	mean (n)	0			

Determination of Density at 15°C on sample #22025; results in kg/m^3

lab	method	value	mark	z(targ)	remarks
52	D4052	740.3		0.09	
62	D4052	740.2		-0.03	
92	D4052	740.3		0.09	
120	D4052	740.2		-0.03	
140	D4052	740.1		-0.16	
150	D4052	739.9		-0.41	
158	D4052	740.1		-0.16	
159		-----		-----	
169	D4052	740.7		0.59	
171	D4052	740.2		-0.03	
175	D4052	740.1		-0.16	
206	D7777	739.8		-0.53	
207	D7777	739.9		-0.41	
208	D7777	740.4		0.22	
209	D7777	739.8		-0.53	
212	ISO12185	740.7		0.59	
217	D4052	740.6		0.47	
221	D4052	740.4		0.22	
224	D1298	740.3		0.09	
225	D4052	740.2		-0.03	
228	D4052	739.8		-0.53	
235	D4052	741.14	C,R(0.05)	1.14	first reported 761.64
237	D4052	740.2		-0.03	
238	D4052	739.5		-0.91	
253	D4052	740.7		0.59	
254	D4052	739.7		-0.66	
256	D4052	740.1		-0.16	
258	D4052	740.3		0.09	
312	D4052	740.1		-0.16	
323	D4052	740.8		0.72	
328	D4052	740.1		-0.16	
335	D4052	740.1		-0.16	
337	D4052	740.3		0.09	
355	D4052	739.8		-0.53	
365	IP365	740.7		0.59	
381		-----		-----	
447	D4052	740.1		-0.16	
480	D4052	740.07		-0.20	
541	D4052	740.30		0.09	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603	D4052	740.2		-0.03	
631	D4052	740.24		0.02	
634	D4052	741.4	R(0.01)	1.47	
657	D4052	740.1		-0.16	
663	D4052	740.14		-0.11	
671	D4052	740.3		0.09	
753	D4052	740.2		-0.03	
754	D4052	740.45		0.28	
823	ISO12185	740.2		-0.03	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872	D4052	740.7		0.59	
912	D4052	740.3		0.09	
913		-----		-----	
914		-----		-----	
922	D4052	740.3		0.09	
962	D4052	740.1		-0.16	
963	D4052	740.2		-0.03	
970	D4052	740.2		-0.03	
971	D4052	740.2		-0.03	
974	D4052	740.2		-0.03	
995	D4052	740.5		0.34	
996		-----		-----	
1006	D4052	740.4		0.22	
1012	D4052	740.5		0.34	

lab	method	value	mark	z(targ)	remarks
1016		-----		-----	
1033		-----		-----	
1039	ISO12185	740.1		-0.16	
1059	ISO12185	740.4		0.22	
1080	ISO12185	740.1		-0.16	
1109	D4052	740.19		-0.05	
1126	D4052	740.36		0.17	
1140	IP365	740.1		-0.16	
1186	D4052	742.4	R(0.01)	2.72	
1205	ISO12185	740.53		0.38	
1227	D4052	740.3		0.09	
1254	D4052	740.15		-0.10	
1297	D4052	740.43		0.25	
1300	D4052	740.15		-0.10	
1320		-----		-----	
1357	D4052	740.2		-0.03	
1455	D4052	740.1		-0.16	
1498	D4052	740.5		0.34	
1531	ISO12185	740.78		0.69	
1631	ISO12185	740.1		-0.16	
1720	D4052	740.1		-0.16	
1730	D4052	740.38		0.19	
1807	ISO12185	740.27	C	0.05	first reported 0.74027 kg/m³
1849	ISO12185	740.24		0.02	
1982	D4052	740.4		0.22	
1984	ISO12185	740.1		-0.16	
6019	ISO12185	742.6	R(0.01)	2.97	
6142		-----		-----	
6170	D1298	740.2		-0.03	
6172	D4052	741.7	R(0.01)	1.84	
6220	D4052	740.4		0.22	
6266	D4052	739.98		-0.31	
6364	D4052	739.7		-0.66	
6404		-----		-----	
6416	D1298	739.8		-0.53	
6438	D4052	740.1		-0.16	
6447	D4052	740.6		0.47	

normality	OK	
n	84	
outliers	5	
mean (n)	740.227	
st.dev. (n)	0.2534	
R(calc.)	0.710	
st.dev.(D4052:18a)	0.7986	
R(D4052:18a)	2.236	

Kernel Density
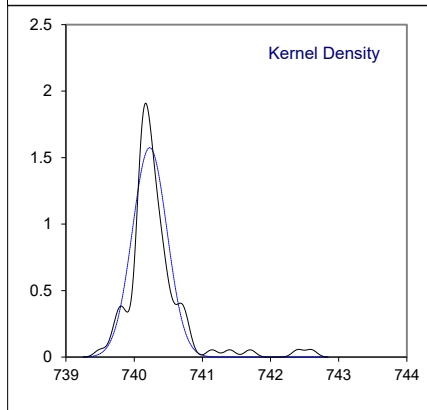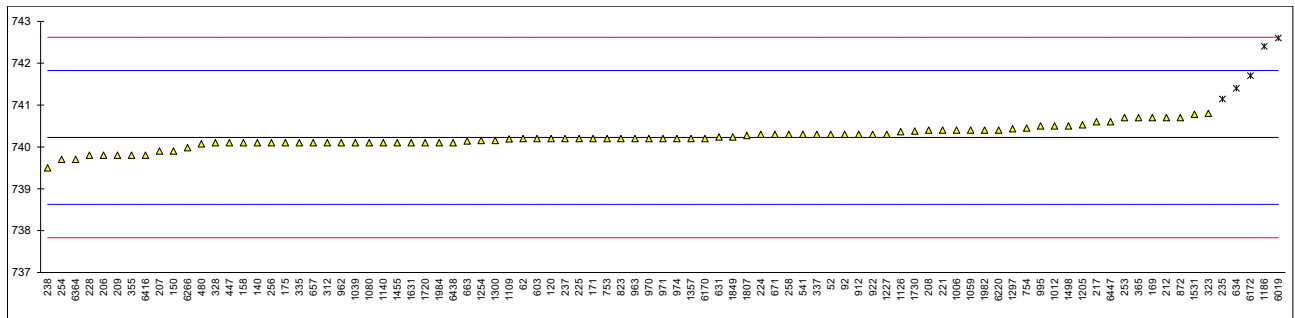
Determination of Distillation at 760 mmHg on sample #22025; results in °C

lab	Method	IBP	10%-evaporated	50%-evaporated	90%-evaporated	FBP
52	D86-automated	34.8	54.1	94.3	130.9	172.2
62	D86-automated	34.1 C	54.1	94.5	131	170.3
92	D86-automated	39.2	55.0	94.8	130.3	175.7
120	D86-automated	35.7	54.8	94.6	130.9	173.8
140	D86-automated	34.8	54.6 C	94.9	131.8	176.2
150	D86-automated	36.3	53.8	93.7	130.4	171.1
158		-----	-----	-----	-----	-----
159		-----	-----	-----	-----	-----
169	D86-automated	37.6	53.3	93.5	130.5	172.7
171	D86-automated	34.5	54.4	94.7	131.1	172.4
175	D86-automated	36.9	54.0	93.9	130.8	171.0
206	D7345	35.9	53.8	93.7	131.5	170.8
207	D7345	35.5	53.6	93.5	130.5	172.7
208	D7345	35.5	53.9	92.8	130.5	174.1
209	D7345	35.2	52.9	93.1	131.5	173.1
212	ISO3405-automated	37.0	54.4	93.9	133.0	167.3
217	D86-automated	36.7	54.2	94.3	130.4	171.3
221		-----	-----	-----	-----	-----
224	D86-manual	39.71	54.57	91.21 R(0.05)	128.82	168.25
225	D86-manual	37.0	56.0	97.0 R(0.05)	136.0 R(0.05)	169.0
228		37.0	55.0	94.0	130.9	175.0
235	D86-automated	36.8	53.9	92.4	129.6	165.7
237	D86-manual	38.5	54.7	94.4	132.8	173.5
238	D86-manual	38.5	54.5	94.0	133.5	174.5
253	D86-manual	36.0	52.8	93.6	134.2	170
254		38.0	55.0	94.0	131.0	174.0
256	D86	38	55.0	94	129	171
258	D86-automated	37.8	55.7	94.5	129.6	171.9
312	D86-automated	34.9	54.3	94.6	131.1	173.9
323	D86-automated	36.6	53.9	94.2	131.2	173.9
328	D86-automated	34.7	53.8	94.1	130.9	171.0
335	D86-automated	40.1	55.0	94.3	130.7	167.1
337		37.0	53.7	94.4	130.4	166.1
355		35.15	54.14	93.755	131.803	172.855
365	IP123-automated	35.4	54.9	94.5	131.1	171.8
381	D86-automated	36.3	55.0	95.8	132.7	173.7
447	D86-automated	33.9	54.3	94.4	131.2	174.2
480	D86-automated	39.0	54.35	94.35	131.45	169.15
541	D86-automated	35.57	53.88	94.53	131.14	174.05
551		-----	-----	-----	-----	-----
554		-----	-----	-----	-----	-----
555		-----	-----	-----	-----	-----
557		-----	-----	-----	-----	-----
558		-----	-----	-----	-----	-----
562	D86-automated	34.6	54.9	95.4	133.0	174.2
603		39.4	55.5	95.4	135.3 R(0.05)	176.2
631	D86-manual	37.0	53.0	94.5	132.0 C	174.5
634	D86-automated	35.0	54.7	95.3	133.5	171.9
657	D86-automated	35.7	54.7	94.7	131.4	172.2
663	D86-automated	36.90	55.20	94.50	130.80	171.20
671		-----	-----	-----	-----	-----
753	D86-manual	37.5	54.5	94.5	132.0	174.5
754	D86-automated	36.5	54.3	94.5	131.2	175.6
823	D86-automated	39.9	60.0 R(0.01)	93.3	128.3	166.4
845		-----	-----	-----	-----	-----
846		-----	-----	-----	-----	-----
854		-----	-----	-----	-----	-----
856		-----	-----	-----	-----	-----
861		-----	-----	-----	-----	-----
862		-----	-----	-----	-----	-----
864		-----	-----	-----	-----	-----
872		-----	-----	-----	-----	-----
912	D86-manual	39	54.0	95.0	131.0	173
913		-----	-----	-----	-----	-----
914		-----	-----	-----	-----	-----
922	D86-automated	36.8	53.3	93.7	132.8	174.3
962	D86-automated	35.8	54.8	93.5	129.0	172.1
963	D86-automated	35.5	55.2	95.7	132.9	174.2
970	D86-automated	36.5	54.5	94.1	130.6	172.2
971	D86-automated	36.5	54.5	94.1	130.4	171.5
974	D86-automated	36.2	54.5	94.1	131.6	172.0
995	D86-manual	34.5	54.2	94.5	134.8 R(0.05)	171.0
996		-----	-----	-----	-----	-----
1006	D86-automated	35.0	55.0	95.1	131.4	174.0
1012	D86	35.9	54.3	94.4	131.1	175.2

lab	Method	IBP	10%-evaporated	50%-evaporated	90%-evaporated	FBP
1016		-----	-----	-----	-----	-----
1033		-----	-----	-----	-----	-----
1039	ISO3405-automated	35.6	54.1	94.6	131.2	174.5
1059	D86-automated	36.2	53.8	94.0	131.1	171.8
1080		-----	-----	-----	-----	-----
1109	D86-automated	35.9	54.5	95.0	131.8	172.6
1126	D86-automated	33.4	53.1	94.6	130.8	171.2
1140	IP123-automated	34.7	52.8	92.6	129.5	170.4
1186		40.79	52.0 R(0.05)	93.0	128.0	162.79 R(0.05)
1205	D86-automated	36.9	54.7	94.7	131.5	172.2
1227	D86-automated	38.8	53.6	93.3	129.7	167.3
1254	D86-automated	37.55	55.1	95.0	132.3	170.35
1297	D86-automated	36.9	53.9	94.0	130.8	174.1
1300	D86-automated	37.4	54.8	94.9	131.9	172.5
1320		-----	-----	-----	-----	-----
1357	D86-automated	n.a	53.5	94.0	130.1	173.7
1455	D86-automated	32.6	54.1	94.2	129.7	170.4
1498	D86	36.8	54.3	94.5	131.9	175.1
1531	D86-automated	33.0	55.0	95.0	130.0	170.9
1631		-----	-----	-----	-----	171.1
1720	D86	35.9	54.0	93.8	130.6	171.3
1730		-----	-----	-----	-----	-----
1807	ISO3405-manual	33.8	53.8	93.9	130.4	171.2
1849	ISO3405-automated	37.6	54.1	94.3	131.6	173
1982	D86-automated	36.31	54.38	94.56	131.67	174.13
1984	ISO3405-automated	34.15	54.15	94.6	130.95	171.2
6019	ISO3405-automated	35.6	55.0	95.5	132.2	177.6
6142		-----	-----	-----	-----	-----
6170	D86-manual	35.5	54.5	93.5	130.5	170.0
6172	D86-automated	34.7	54.5	96	135.5 R (0.05)	172.3
6220	D86-automated	34.9	53.7 C	91.5 R(0.05)	129 C	177.1
6266		33.7	54.1	93.7	127.7	176.1
6364	D86-automated	36.7	55.1	94.7	131.6	168.7
6404		-----	-----	-----	-----	-----
6416	D86	36.2	54.2	94.4	131.7	174.9
6438	D86-automated	37.4	54.5	94.9	131.2	175.0
6447		-----	-----	-----	-----	-----
	normality	OK	OK	OK	OK	OK
	n	82	81	80	79	83
	outliers	0	2	3	4	1
	mean (n)	36.33	54.32	94.29	131.02	172.32
	st.dev. (n)	1.681	0.641	0.691	1.215	2.508
	R(calc.)	4.71	1.79	1.93	3.40	7.02
	st.dev.(D86-A:20b)	1.679	1.417	1.331	1.911	2.536
	R(D86-A:20b)	4.7	3.97	3.73	5.35	7.1
Compare						
	R(D86-M:20b)	4.47	3.34	3.08	3.88	3.10

Lab 62 first reported 29.7 (IBP)
Lab 140 first reported 50.4 (10%)
Lab 631 first reported 146.0 (90%)
Lab 6220 first reported 50.6 (10%) and 145.9 (90%)
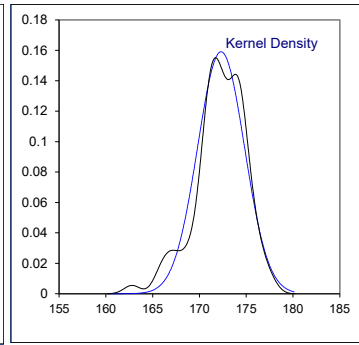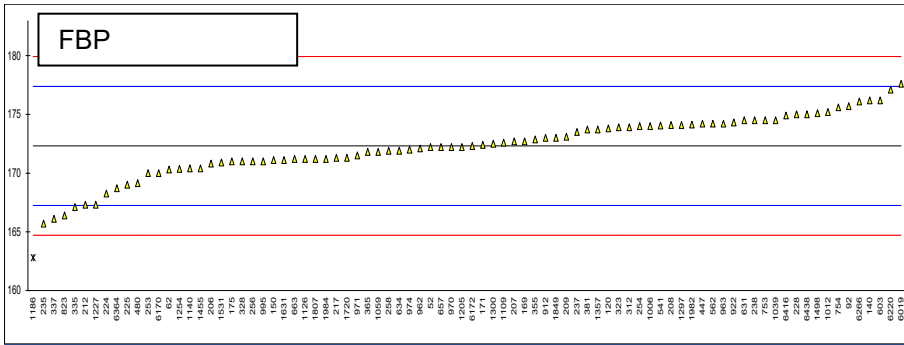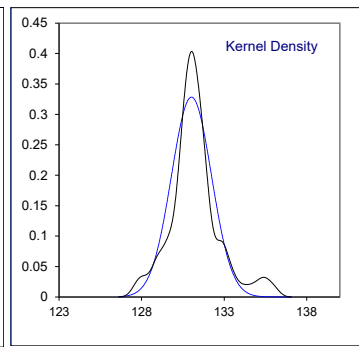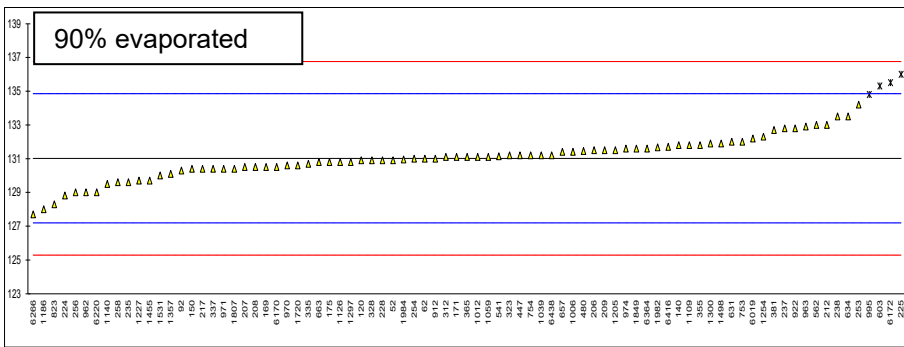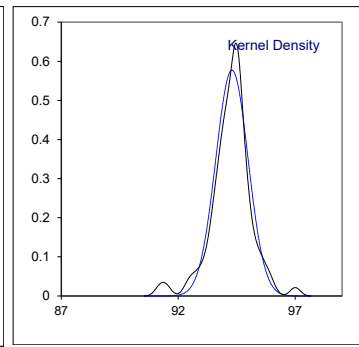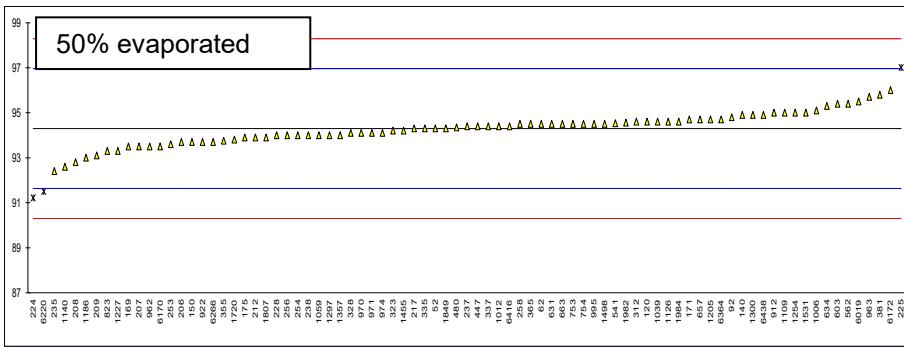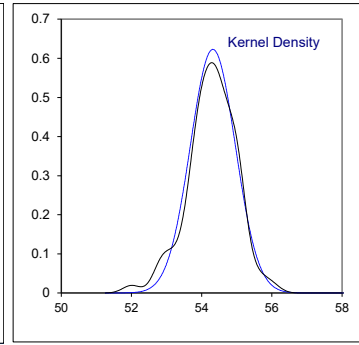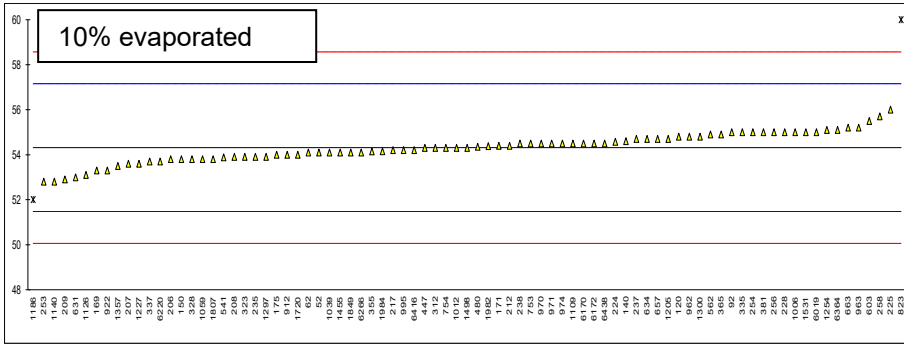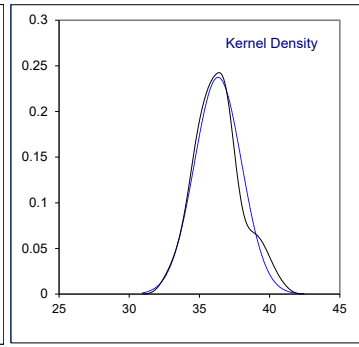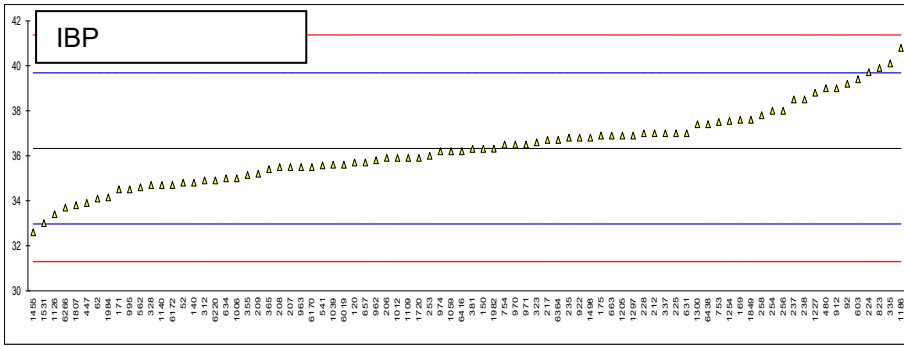
Determination of Doctor Test on sample #22025;

lab	method	value	mark	z(targ)	remarks
52	D4952	Negative		-----	
62		-----		-----	
92	D4952	Neg		-----	
120		-----		-----	
140	D4952	Negative		-----	
150	D4952	Negative/sweet		-----	
158	D4952	negative		-----	
159		-----		-----	
169		-----		-----	
171	D4952	Negative		-----	
175		-----		-----	
206		-----		-----	
207		-----		-----	
208		-----		-----	
209		-----		-----	
212		-----		-----	
217	D4952	negative		-----	
221		-----		-----	
224		-----		-----	
225	D4952	Negative		-----	
228	D4952	Negative		-----	
235	D4952	negative		-----	
237	D4952	NEGATIVE		-----	
238	D4952	Negative		-----	
253		-----		-----	
254	D4952	Negative		-----	
256		-----		-----	
258	D4952	Negative		-----	
312	IP30	negative		-----	
323	D4952	NEG		-----	
328	D4952	negative		-----	
335		-----		-----	
337		-----		-----	
355		-----		-----	
365		-----		-----	
381		-----		-----	
447	D4952	Negative		-----	
480		-----		-----	
541		-----		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631		-----		-----	
634		-----		-----	
657	IP30	Negative		-----	
663	D4952	Negative		-----	
671		-----		-----	
753		-----		-----	
754	D4952	negative		-----	
823	D4952	Negative		-----	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
912	IP30	Negative		-----	
913		-----		-----	
914		-----		-----	
922	D4952	Negative		-----	
962	D4952	Negative		-----	
963	D4952	Negative		-----	
970	D4952	Negative		-----	
971	D4952	Negative		-----	
974	D4952	Negative		-----	
995	D4952	negative		-----	
996		-----		-----	
1006		-----		-----	
1012		-----		-----	

lab	method	value	mark	z(targ)	remarks
1016	D4952	negative		-----	
1033		-----		-----	
1039	D4952	negative		-----	
1059	D4952	negative		-----	
1080		-----		-----	
1109	IP30	Negative		-----	
1126		-----		-----	
1140	IP30	Negative		-----	
1186		-----		-----	
1205		-----		-----	
1227		-----		-----	
1254	D4952	negative		-----	
1297	D4952	NEGATIVE		-----	
1300	D4952	Negative		-----	
1320		-----		-----	
1357	D4952	Negative		-----	
1455	IP30	Negative		-----	
1498		-----		-----	
1531		-----		-----	
1631		-----		-----	
1720	D4952	-ve		-----	
1730		-----		-----	
1807	D4952	NEGATIVE		-----	
1849	Other (mention below)	NEGATIVE		-----	
1982		-----		-----	
1984		-----		-----	
6019		-----		-----	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6220		-----		-----	
6266		-----		-----	
6364	D4952	NEGATIVE		-----	
6404		-----		-----	
6416		-----		-----	
6438	IP30	-Ve		-----	
6447		-----		-----	

| | n | 45 | | | |
| | mean (n) | negative | | | |

Determination of Gum (solvent washed) on sample #22025; results in mg/100mL

lab	method	value	mark	z(targ)	remarks
52	D381	0.5		-0.19	
62	D381	<0.5		-----	
92		-----		-----	
120		-----		-----	
140	D381	0.5		-0.19	
150	D381	0.5		-0.19	
158	D381	<0.5		-----	
159		-----		-----	
169	D381	<0.5		-----	
171	D381	<0.5		-----	
175		-----		-----	
206		-----		-----	
207		-----		-----	
208		-----		-----	
209		-----		-----	
212		-----		-----	
217	D381	0.4		-0.32	
221	D381	<0.5		-----	
224		-----		-----	
225	D381	0.8		0.19	
228	D381	0.5		-0.19	
235	D381	<0.5		-----	
237	D381	1.0		0.45	
238		-----		-----	
253		-----		-----	
254	D381	0.6		-0.06	
256	D381	0.6		-0.06	
258	D381	0.3		-0.45	
312	D381	1.0		0.45	
323	D381	< 0.5		-----	
328	D381	0.5		-0.19	
335		-----		-----	
337		-----		-----	
355		-----		-----	
365	IP131	1.2		0.70	
381		-----		-----	
447	D381	0.6		-0.06	
480		-----		-----	
541	D381	<0.5		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562	D381	0.5		-0.19	
603	D381	< 1		-----	
631	D381	0.65		0.00	
634	D381	1.0		0.45	
657	D381	0.5		-0.19	
663	D381	<0.5		-----	
671	IP540	0.5		-0.19	
753		-----		-----	
754	D381	0.2		-0.57	
823	D381	0.6		-0.06	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872	D381	0.9		0.32	
912	D381	0.80		0.19	
913		-----		-----	
914		-----		-----	
922	D381	<0.5		-----	
962	D381	1.0		0.45	
963	D381	1.2		0.70	
970	D381	0.5		-0.19	
971	D381	0.5		-0.19	
974	D381	0.6		-0.06	
995		-----		-----	
996		-----		-----	
1006	D381	0.5		-0.19	
1012	D381	1		0.45	

lab	method	value	mark	z(targ)	remarks
1016		-----		-----	
1033		-----		-----	
1039	ISO6246	1		0.45	
1059	ISO6246	0.5		-0.19	
1080	ISO6246	15.6	R(0.01)	19.10	
1109	D381	1.5		1.09	
1126		-----		-----	
1140	IP131	0.8		0.19	
1186		-----		-----	
1205		-----		-----	
1227		-----		-----	
1254	D381	< 0.5		-----	
1297		-----		-----	
1300	D381	0.3		-0.45	
1320		-----		-----	
1357	D381	0.5		-0.19	
1455	D381	0		-0.83	
1498	D381	0.1		-0.70	
1531		-----		-----	
1631	ISO6246	<0.5		-----	
1720	D381	7.6	R(0.01)	8.88	
1730		-----		-----	
1807	ISO6246	<1		-----	
1849	ISO6246	0.53		-0.15	
1982		-----		-----	
1984		-----		-----	
6019		-----		-----	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6220		-----		-----	
6266		-----		-----	
6364	D381	0.8	C	0.19	first reported 2.8
6404		-----		-----	
6416	D381	<0.5		-----	
6438	D381	<0.5		-----	
6447		-----		-----	

normality	OK
n	40
outliers	2
mean (n)	0.650
st.dev. (n)	0.3109
R(calc.)	0.870
st.dev.(D381:19)	0.7826
R(D381:19)	2.191
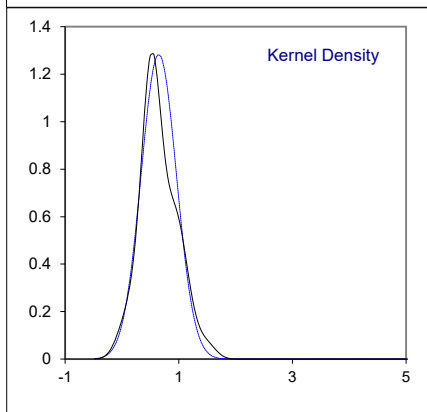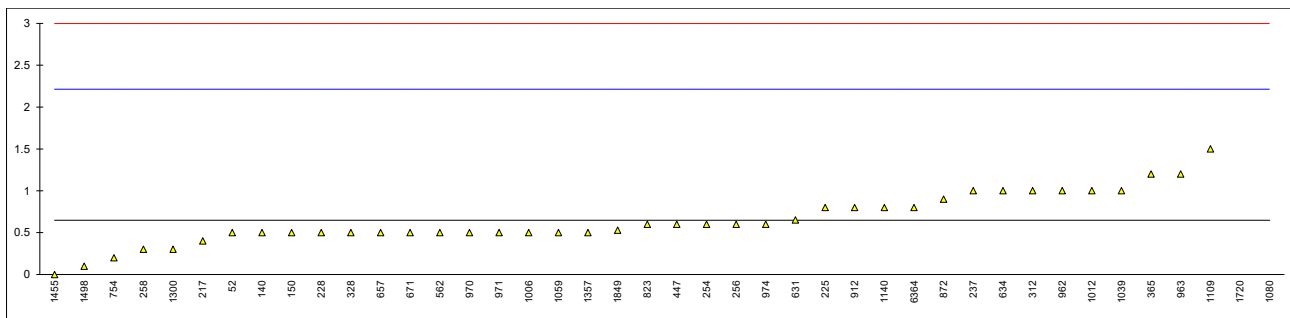
Determination of Lead as Pb on sample #22025; results in mg/L

lab	method	value	mark	z(targ)	remarks
52	D3237	<2.5		-----	
62		-----		-----	
92		-----		-----	
120		-----		-----	
140	D3237	<2.5		-----	
150		-----		-----	
158	D3237	<2.5		-----	
159		-----		-----	
169		-----		-----	
171	D3237	<2.5		-----	
175		-----		-----	
206		-----		-----	
207		-----		-----	
208		-----		-----	
209		-----		-----	
212		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		0.0		-----	
235	D3237	4.75		-----	possibly a false positive test result?
237		-----		-----	
238		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
312	D3237	<2.5		-----	
323	D3237	< 2.5		-----	
328		-----		-----	
335		-----		-----	
337		-----		-----	
355		-----		-----	
365		-----		-----	
381	EN237	<2,5		-----	
447	IP428	0.08		-----	
480		-----		-----	
541	D3237	<2.5		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631	D3237	<3		-----	
634		-----		-----	
657	D3237	<2.5		-----	
663		-----		-----	
671		-----		-----	
753		-----		-----	
754		-----		-----	
823	D3237	<2.5		-----	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
912		-----		-----	
913		-----		-----	
914		-----		-----	
922	D3237	<2.5		-----	
962	D3237	<2.5		-----	
963		-----		-----	
970		-----		-----	
971	D3237	<2.5		-----	
974		-----		-----	
995	D3237	less 2.5		-----	
996		-----		-----	
1006		-----		-----	
1012		-----		-----	

lab	method	value	mark	z(targ)	remarks
1016		-----		-----	
1033		-----		-----	
1039		-----		-----	
1059	EN13723	<2,5		-----	
1080		-----		-----	
1109		-----		-----	
1126		-----		-----	
1140	EN237	<0.1		-----	
1186		-----		-----	
1205		-----		-----	
1227		-----		-----	
1254	D3237	< 2.5		-----	
1297		-----		-----	
1300	D3237	<2.5		-----	
1320	EN237	<2		-----	
1357	D3237	n.a		-----	
1455	EN237	< 2.5		-----	
1498		-----		-----	
1531		-----		-----	
1631	EN237	<3.0		-----	
1720	D3237	0.0055		-----	
1730		-----		-----	
1807		-----		-----	
1849		-----		-----	
1982		-----		-----	
1984		-----		-----	
6019		-----		-----	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6220	IP224	<0.003		-----	
6266		-----		-----	
6364		-----		-----	
6404		-----		-----	
6416		-----		-----	
6438	D3237	<2.5		-----	
6447		-----		-----	
	n	25			
	mean (n)	<2.5			

Determination of Manganese as Mn on sample #22025; results in mg/L

lab	method	value	mark	z(targ)	remarks
52	D3831	<0.25		-----	
62		-----		-----	
92		-----		-----	
120		-----		-----	
140	D3831	<0.25		-----	
150		-----		-----	
158	D3831	<0.25		-----	
159		-----		-----	
169		-----		-----	
171	D3831	<0.25		-----	
175		-----		-----	
206		-----		-----	
207		-----		-----	
208		-----		-----	
209		-----		-----	
212		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
235	EN16135	0.36		-----	
237	EN16136	<0.5		-----	
238		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
312	EN16136	<0.25		-----	
323	D3831	< 0.50		-----	
328		-----		-----	
335		-----		-----	
337		-----		-----	
355		-----		-----	
365		-----		-----	
381	EN16135	<2,0		-----	
447	EN16135	0.1		-----	
480		-----		-----	
541	D3831	<0.25		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631	D3831	<2		-----	
634		-----		-----	
657	D3831	<0.25		-----	
663		-----		-----	
671		-----		-----	
753		-----		-----	
754		-----		-----	
823	D3831	<2		-----	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
912		-----		-----	
913		-----		-----	
914		-----		-----	
922	D3831	0.41		-----	
962	D3831	<2	C	-----	first reported 2
963		-----		-----	
970		-----		-----	
971	D3831	<1		-----	
974		-----		-----	
995		-----		-----	
996		-----		-----	
1006		-----		-----	
1012		-----		-----	

lab	method	value	mark	z(targ)	remarks
1016	EN16136	0.037		-----	
1033		-----		-----	
1039		-----		-----	
1059		-----		-----	
1080		-----		-----	
1109		-----		-----	
1126		-----		-----	
1140	EN16136	<0.5		-----	
1186		-----		-----	
1205		-----		-----	
1227		-----		-----	
1254		-----		-----	
1297		-----		-----	
1300	D3831	0.32		-----	
1320	EN16135	<2		-----	
1357	D3831	n.a		-----	
1455	EN16135	< 0.5		-----	
1498		-----		-----	
1531		-----		-----	
1631	EN16136	<2.0		-----	
1720		-----		-----	
1730		-----		-----	
1807		-----		-----	
1849		-----		-----	
1982		-----		-----	
1984		-----		-----	
6019		-----		-----	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6220	D7111	< 0.1		-----	
6266		-----		-----	
6364		-----		-----	
6404		-----		-----	
6416		-----		-----	
6438		-----		-----	
6447		-----		-----	
	n	17			
	mean (n)	<0.5			ASTM D3831:12 range 0.25 - 40 mg⁄L

Determination of Olefins by FIA (without oxygenates correction) on sample #22025; results in %V/V

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62	D1319	12.5		-0.08	
92	D1319	13.9		0.97	
120		-----		-----	
140		-----		-----	
150		-----		-----	
158		-----		-----	
159		-----		-----	
169	D1319	11.8	C	-0.60	first reported 7.6
171		-----		-----	
175		-----		-----	
206		-----		-----	
207		-----		-----	
208		-----		-----	
209		-----		-----	
212		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
235	D1319	15.1		1.87	
237	D1319	14.8		1.64	
238		-----		-----	
253	D1319	13.80		0.90	
254		-----		-----	
256		-----		-----	
258		-----		-----	
312	D1319	12.9		0.22	
323	D1319	13.0		0.30	
328		-----		-----	
335		-----		-----	
337		-----		-----	
355		-----		-----	
365		-----		-----	
381	EN15553	13.4		0.60	
447	D1319	13.01		0.31	
480		-----		-----	
541		-----		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631		-----		-----	
634		-----		-----	
657	D1319	13.8		0.90	
663		-----		-----	
671	D1319	2.72	C,R(0.01)	-7.38	first reported 8.53
753		-----		-----	
754		-----		-----	
823	D1319	10.5		-1.57	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
912		-----		-----	
913		-----		-----	
914		-----		-----	
922	D1319	11.5		-0.82	
962	D1319	11.8		-0.60	
963	D1319	11.4		-0.90	
970	D1319	12.5		-0.08	
971	D1319	12.5		-0.08	
974		-----		-----	
995	D1319	10.6		-1.49	
996		-----		-----	
1006	D1319	11.1		-1.12	
1012		-----		-----	

lab	method	value	mark	z(targ)	remarks
1016		-----		-----	
1033		-----		-----	
1039		-----		-----	
1059	D1319	13.5		0.67	
1080		-----		-----	
1109	D1319	10.76		-1.37	
1126		-----		-----	
1140	IP156	12.1		-0.37	
1186		-----		-----	
1205	D1319	11.8		-0.60	
1227		-----		-----	
1254	D1319	14.28		1.25	
1297		-----		-----	
1300	D1319	10.76		-1.37	
1320		-----		-----	
1357	D1319	12.8		0.15	
1455	D1319	13.0		0.30	
1498		-----		-----	
1531		-----		-----	
1631		-----		-----	
1720		-----		-----	
1730		-----		-----	
1807		-----		-----	
1849		-----		-----	
1982	D1319	13.58		0.73	
1984		-----		-----	
6019		-----		-----	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6220	D1319	12.2		-0.30	
6266		-----		-----	
6364	D1319	13.56	C	0.72	first reported 1.97
6404		-----		-----	
6416		-----		-----	
6438	D1319	12.38		-0.16	
6447		-----		-----	

normality	OK
n	31
outliers	1
mean (n)	12.601
st.dev. (n)	1.2237
R(calc.)	3.426
st.dev.(D1319:20a)	1.3394
R(D1319:20a)	3.750
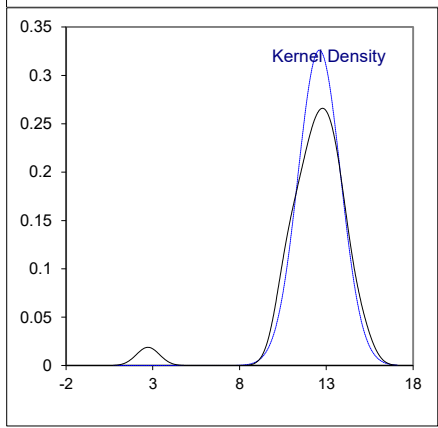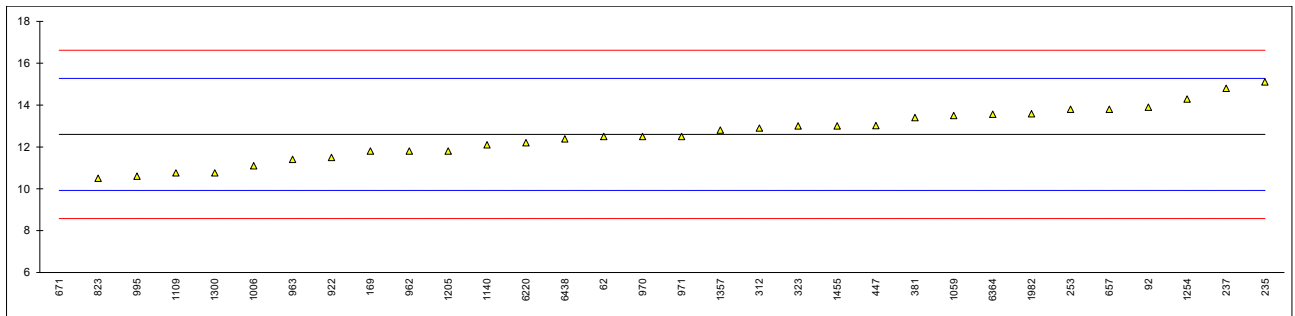
Determination of Oxidation Stability on sample #22025; results in minutes

lab	method	value	mark	z(targ)	remarks
52	D525	>480		-----	
62		-----		-----	
92		-----		-----	
120		-----		-----	
140		-----		-----	
150	D525	312		-----	
158	D525	>900		-----	
159		-----		-----	
169		-----		-----	
171	D525	>240		-----	
175		-----		-----	
206		-----		-----	
207		-----		-----	
208		-----		-----	
209		-----		-----	
212		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228	D525	>900		-----	
235	D525	>360		-----	
237	D525	>900		-----	
238		-----		-----	
253		-----		-----	
254	D525	>900		-----	
256	D525	>900		-----	
258		-----		-----	
312	D525	>900		-----	
323	D525	900		-----	
328	D525	>900		-----	
335		-----		-----	
337		-----		-----	
355		-----		-----	
365		-----		-----	
381		-----		-----	
447	D525	>900		-----	
480		-----		-----	
541		-----		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631	D525	>900		-----	
634		-----		-----	
657	D525	>900		-----	
663		-----		-----	
671		-----		-----	
753		-----		-----	
754		-----		-----	
823	D525	>720		-----	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
912	D525	>420		-----	
913		-----		-----	
914		-----		-----	
922	D525	>360		-----	
962	D525	>480		-----	
963	D525	>480		-----	
970	D525	>900		-----	
971	D525	>900		-----	
974		-----		-----	
995		-----		-----	
996		-----		-----	
1006		-----		-----	
1012		-----		-----	

lab	method	value	mark	z(targ)	remarks
1016	D525	>900		-----	
1033		-----		-----	
1039	ISO7536	>900		-----	
1059	ISO7536	>900		-----	
1080		-----		-----	
1109	D525	>930		-----	
1126		-----		-----	
1140	D525	>900		-----	
1186		-----		-----	
1205		-----		-----	
1227		-----		-----	
1254	D525	> 900		-----	
1297		-----		-----	
1300	D525	>241		-----	
1320		-----		-----	
1357	D525	>360		-----	
1455	D525	1200+		-----	
1498		-----		-----	
1531		-----		-----	
1631	ISO7536	>360		-----	
1720		-----		-----	
1730		-----		-----	
1807	D525	>380		-----	
1849	ISO7536	>900		-----	
1982		-----		-----	
1984		-----		-----	
6019		-----		-----	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6220		-----		-----	
6266		-----		-----	
6364	D525	>360		-----	
6404		-----		-----	
6416		-----		-----	
6438		-----		-----	
6447		-----		-----	
	n	35			
	mean (n)	>240			

Determination of Ethanol on sample #22025; results in %V/V

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62		-----		-----	
92	INH-CM	4.43		-1.22	
120	D5599	4.82		0.76	
140	D5599	4.67		0.00	
150	D5599	-----		-----	
158	D4815	4.71		0.20	
159		-----		-----	
169		-----		-----	
171	D4815	4.43		-1.22	
175		-----		-----	
206		-----		-----	
207		-----		-----	
208		-----		-----	
209		-----		-----	
212		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
235		-----		-----	
237		-----		-----	
238		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
312	D4815	4.63		-0.20	
323	ISO22854-A	4.65		-0.10	
328		-----		-----	
335		-----		-----	
337		-----		-----	
355		-----		-----	
365		-----		-----	
381	ISO22854-A	4.62		-0.25	
447	IP466	4.7		0.15	
480		-----		-----	
541		-----		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631	D5845	4.6		-0.36	
634	D5845	4.9		1.16	
657	D4815	4.59		-0.41	
663		-----		-----	
671		-----		-----	
753		-----		-----	
754		-----		-----	
823	D4815	4.57		-0.51	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
912		-----		-----	
913		-----		-----	
914		-----		-----	
922	D4815	4.60		-0.36	
962	D4815	4.63		-0.20	
963		4.65		-0.10	
970	D4815	4.6		-0.36	
971	D4815	4.6		-0.36	
974		-----		-----	
995	EN13132	5.01		1.72	
996		-----		-----	
1006	D4815	4.49		-0.91	
1012		-----		-----	

lab	method	value	mark	z(targ)	remarks
1016	ISO22854-A	4.58		-0.46	
1033		-----		-----	
1039	ISO22854-A	4.67		0.00	
1059	ISO22854-A	4.56		-0.56	
1080	ISO22854-A	4.49		-0.91	
1109	D6839	4.53		-0.71	
1126		4.80		0.66	
1140	IP566	4.60		-0.36	
1186		-----		-----	
1205	D8071	4.992		1.63	
1227		-----		-----	
1254	D4815	4.61		-0.30	
1297		-----		-----	
1300	D4815	4.801		0.66	
1320		-----		-----	
1357	D6839	n.a		-----	
1455	ISO22854-A	4.67		0.00	
1498		-----		-----	
1531		-----		-----	
1631		-----	W	-----	test result withdrawn, reported 3.92
1720		-----		-----	
1730		-----		-----	
1807	ISO22854-A	4.85		0.91	
1849		-----		-----	
1982	D4815	4.757		0.44	
1984		-----		-----	
6019		-----		-----	
6142		-----		-----	
6170	EN13132	5.0		1.67	
6172	D5745	4.9		1.16	
6220		4.86		0.96	
6266		-----		-----	
6364		-----		-----	
6404	ISO22854-A	4.60		-0.36	
6416		-----		-----	
6438	D4815	4.3		-1.87	
6447		-----		-----	

normality	OK	
n	38	
outliers	0	
mean (n)	4.670	
st.dev. (n)	0.1629	
R(calc.)	0.456	
st.dev.(D4815:22)	0.1977	
R(D4815:22)	0.554	
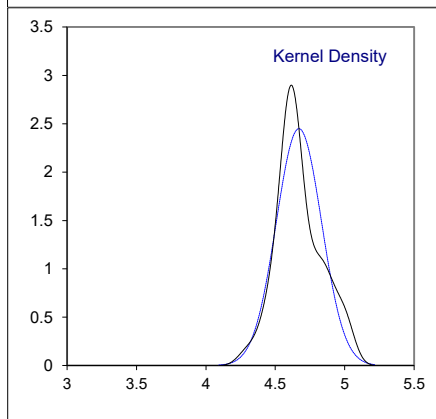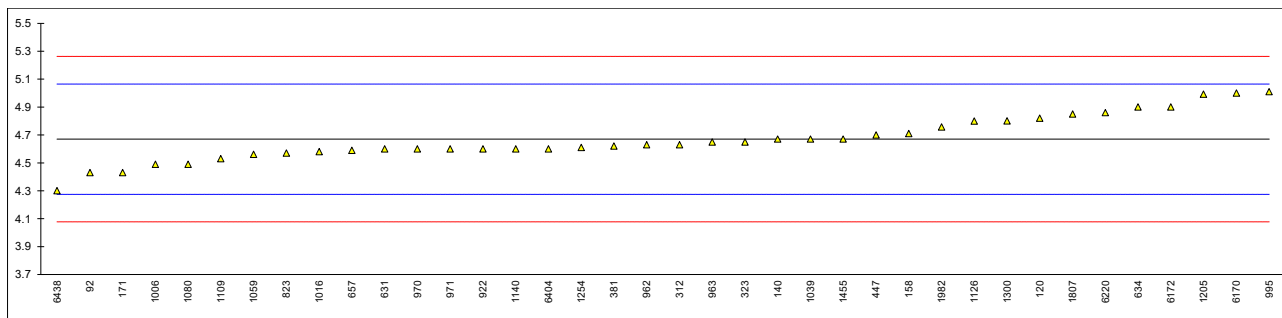
Determination of MTBE on sample #22025; results in %V/V

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62		-----		-----	
92	INH-CM	4.68		0.93	
120	D5599	4.73		1.35	
140		-----		-----	
150		-----		-----	
158		-----		-----	
159		-----		-----	
169		-----		-----	
171	D4815	4.41		-1.34	
175		-----		-----	
206		-----		-----	
207		-----		-----	
208		-----		-----	
209		-----		-----	
212		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
235		-----		-----	
237		-----		-----	
238		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
312	D4815	4.69		1.02	
323	ISO22854-A	4.54		-0.25	
328		-----		-----	
335		-----		-----	
337		-----		-----	
355		-----		-----	
365		-----		-----	
381	ISO22854-A	4.46		-0.92	
447	IP466	4.7		1.10	
480		-----		-----	
541		-----		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631	D5845	4.39	C	-1.51	first reported 4.13
634	D5845	4.0	R(0.05)	-4.80	
657	D4815	4.51		-0.50	
663		-----		-----	
671		-----		-----	
753		-----		-----	
754		-----		-----	
823	D4815	4.78		1.77	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
912		-----		-----	
913		-----		-----	
914		-----		-----	
922	D4815	4.69		1.02	
962	D4815	4.37		-1.68	
963		4.53		-0.33	
970	D4815	4.5		-0.59	
971	D4815	4.5		-0.59	
974		-----		-----	
995	EN13132	4.78	C	1.77	first reported 5.11
996		-----		-----	
1006	D4815	4.54		-0.25	
1012		-----		-----	

lab	method	value	mark	z(targ)	remarks
1016	ISO22854-A	4.72		1.27	
1033		-----		-----	
1039	ISO22854-A	4.47		-0.84	
1059	ISO22854-A	4.52		-0.42	
1080	ISO22854-A	4.26		-2.61	
1109	D6839	4.58		0.09	
1126		4.53		-0.33	
1140	IP566	4.60		0.26	
1186		-----		-----	
1205		-----		-----	
1227		-----		-----	
1254	D4815	4.323		-2.08	
1297		-----		-----	
1300	D4815	4.630		0.51	
1320		-----		-----	
1357	D6839	4.7		1.10	
1455	ISO22854-A	4.50		-0.59	
1498		-----		-----	
1531		-----		-----	
1631	ISO22854-A	4.48		-0.75	
1720		-----		-----	
1730		-----		-----	
1807	I	-----		-----	
1849		-----		-----	
1982	D4815	4.629		0.50	
1984		-----		-----	
6019		-----		-----	
6142		-----		-----	
6170	EN13132	4.7		1.10	
6172	D5745	5.1	R(0.05)	4.47	
6220		4.68		0.93	
6266		-----		-----	
6364		-----		-----	
6404	ISO22854-A	4.54		-0.25	
6416		-----		-----	
6438	D4815	4.7		1.10	
6447		-----		-----	

|		
normality	OK	
n	34	
outliers	2	
mean (n)	4.569	
st.dev. (n)	0.1322	
R(calc.)	0.370	
st.dev.(D4815:22)	0.1186	
R(D4815:22)	0.332	

Kernel Density
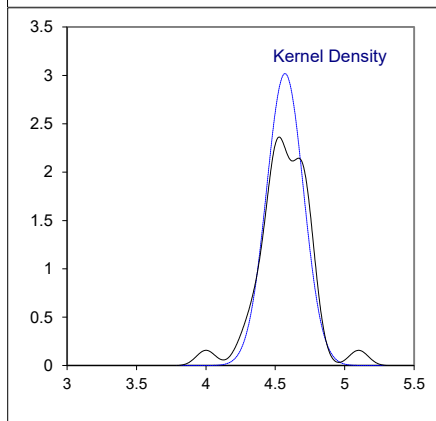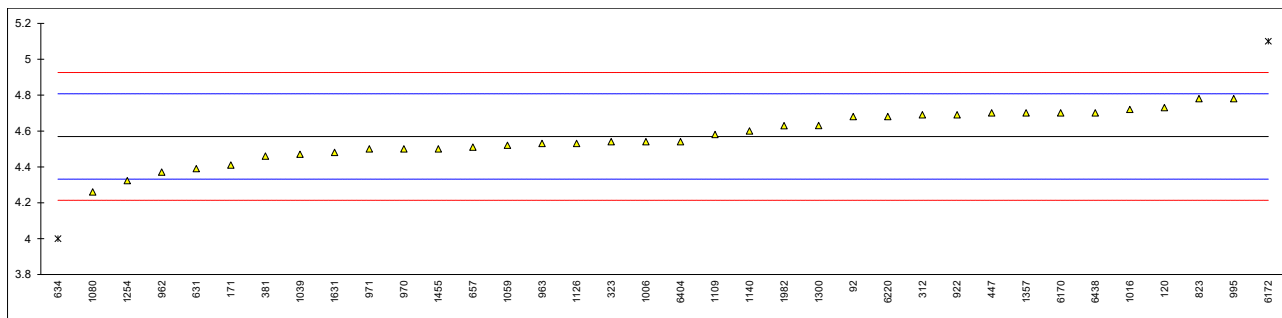
Determination of Oxygen Content on sample #22025; results in %M/M

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62		-----		-----	
92	INH-CM	2.504		-0.54	
120	D5599	2.65		0.84	
140	D5599	2.58		0.18	
150	D5599	2.52	C	-0.38	first reported 9.6
158		-----		-----	
159		-----		-----	
169		-----		-----	
171	D4815	2.46		-0.95	
175		-----		-----	
206		-----		-----	
207		-----		-----	
208		-----		-----	
209		-----		-----	
212		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
235		-----		-----	
237		-----		-----	
238		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
312	D4815	2.58		0.18	
323	ISO22854	2.56		-0.01	
328		-----		-----	
335		-----		-----	
337		-----		-----	
355		-----		-----	
365		-----		-----	
381	ISO22854	2.55		-0.10	
447	EN13132	2.6		0.37	
480		-----		-----	
541		-----		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631	D5845	2.5		-0.57	
634		-----		-----	
657	D4815	2.53		-0.29	
663		-----		-----	
671		-----		-----	
753		-----		-----	
754		-----		-----	
823	D4815	2.58		0.18	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
912		-----		-----	
913		-----		-----	
914		-----		-----	
922	D4815	2.56		-0.01	
962	D4815	2.54		-0.20	
963	D4815	2.6		0.37	
970	D4815	2.54		-0.20	
971	D4815	2.54		-0.20	
974		-----		-----	
995		-----		-----	
996		-----		-----	
1006	D4815	2.51		-0.48	
1012		-----		-----	

lab	method	value	mark	z(targ)	remarks
1016	ISO22854	2.63		0.65	
1033		-----		-----	
1039	ISO22854	2.57		0.09	
1059	ISO22854	2.54		-0.20	
1080	ISO22854	1.7	R(0.01)	-8.11	
1109	D6839	2.53	C	-0.29	first reported 9.51
1126	ISO22854	2.50		-0.57	
1140		2.57		0.09	
1186		-----		-----	
1205		-----		-----	
1227		-----		-----	
1254	D4815	2.508		-0.50	
1297		-----		-----	
1300	D4815	2.665		0.98	
1320		-----		-----	
1357	D4815	n.a		-----	
1455	ISO22854	2.59		0.28	
1498		-----		-----	
1531		-----		-----	
1631		-----	W	-----	test result withdrawn, reported 2.29
1720		-----		-----	
1730		-----		-----	
1807		-----		-----	
1849		-----		-----	
1982	D4815	2.63		0.65	
1984		-----		-----	
6019		-----		-----	
6142		-----		-----	
6170	EN13132	2.73		1.59	
6172		-----		-----	
6220	D4815	2.66		0.93	
6266		-----		-----	
6364		-----		-----	
6404	ISO22854	2.58		0.18	
6416		-----		-----	
6438	D4815	2.5		-0.57	
6447	D5622	2.4		-1.52	

normality	suspect	
n	33	
outliers	1	
mean (n)	2.561	
st.dev. (n)	0.0646	
R(calc.)	0.181	
st.dev.(D4815:22)	0.1061	
R(D4815:22)	0.297	

Kernel Density
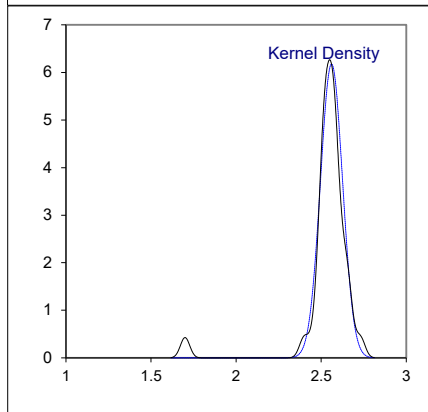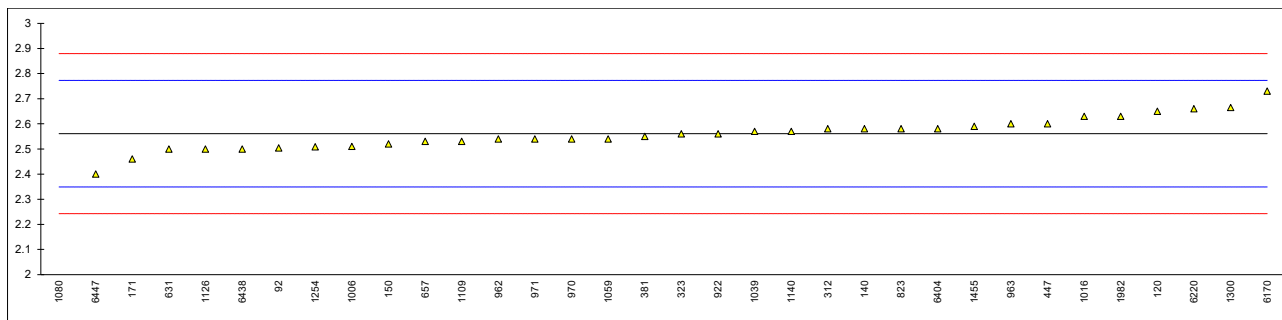
Determination of Phosphorus as P on sample #22025; results in mg/L

lab	method	value	mark	z(targ)	remarks
52	D3231	<0.20		-----	
62	D3231	<0.2		-----	
92		-----		-----	
120		-----		-----	
140		-----		-----	
150	D3231	<0.2		-----	
158		-----		-----	
159		-----		-----	
169		-----		-----	
171	D3231	<0.20		-----	
175		-----		-----	
206		-----		-----	
207		-----		-----	
208		-----		-----	
209		-----		-----	
212		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
235		-----		-----	
237		-----		-----	
238		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
312	D3231	<0.2		-----	
323		-----		-----	
328		-----		-----	
335		-----		-----	
337		-----		-----	
355		-----		-----	
365		-----		-----	
381		-----		-----	
447		-----		-----	
480		-----		-----	
541		-----		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631		-----		-----	
634		-----		-----	
657	D3231	<0.20		-----	
663		-----		-----	
671		-----		-----	
753		-----		-----	
754	D3231	0.008		-----	
823	D3231	<1		-----	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
912		-----		-----	
913		-----		-----	
914		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971		-----		-----	
974		-----		-----	
995		-----		-----	
996		-----		-----	
1006		-----		-----	
1012		-----		-----	

lab	method	value	mark	z(targ)	remarks
1016		-----		-----	
1033		-----		-----	
1039		-----		-----	
1059		-----		-----	
1080		-----		-----	
1109	D3231	0.121		-----	
1126		-----		-----	
1140	In house	<0.1		-----	
1186		-----		-----	
1205		-----		-----	
1227		-----		-----	
1254		-----		-----	
1297		-----		-----	
1300	D3231	0.333		-----	
1320		-----		-----	
1357	D3231	n.a		-----	
1455		-----		-----	
1498		-----		-----	
1531		-----		-----	
1631		-----		-----	
1720		-----		-----	
1730		-----		-----	
1807		-----		-----	
1849		-----		-----	
1982		-----		-----	
1984		-----		-----	
6019		-----		-----	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6220		-----		-----	
6266		-----		-----	
6364		-----		-----	
6404		-----		-----	
6416		-----		-----	
6438		-----		-----	
6447		-----		-----	
	n	11			
	mean (n)	<1			

Determination of Total Sulfur on sample #22025; results in mg/kg

lab	method	value	mark	z(targ)	remarks
52	D5453	4.7		-0.34	
62	D5453	6.4		2.14	
92	D5453	4.4		-0.78	
120		-----		-----	
140	D2622	5.0		0.10	
150	D5453	4.98		0.07	
158	D5453	4.6		-0.48	
159		-----		-----	
169	D5453	4.8		-0.19	
171	D5453	4.6		-0.48	
175	D5453	4.8		-0.19	
206		-----		-----	
207		-----		-----	
208		-----		-----	
209		-----		-----	
212		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
235	D5453	4.552		-0.55	
237	D5453	5.0	C	0.10	first reported 7.2
238		-----		-----	
253		-----		-----	
254	D4294	<17		-----	
256		-----		-----	
258	D5453	3.73		-1.75	
312	D5453	4.4		-0.78	
323	D5453	5.2		0.39	
328	D5453	5.6		0.98	
335	ISO20846	4.69		-0.35	
337	D5453	4.8		-0.19	
355	D2622	6.22		1.88	
365	ISO20846	5.16		0.33	
381	ISO20846	4.9		-0.05	
447	ISO20846	5.11		0.26	
480		-----		-----	
541	D5453	2.37	R(0.01)	-3.74	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562	D5453	4.7		-0.34	
603		-----		-----	
631	D4294	6.1		1.71	
634	D4294	<20		-----	
657	D5453	5.3		0.54	
663	D5453	5.05		0.17	
671	D7039	4.11		-1.20	
753	D4294	<20		-----	
754	D5453	5.396		0.68	
823	D5453	4.6		-0.48	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
912	D5453	4.46		-0.69	
913		-----		-----	
914		-----		-----	
922	D5453	4.5		-0.63	
962	D5453	4.7		-0.34	
963	D5453	5.5		0.83	
970	D5453	4.9		-0.05	
971	D5453	5.1		0.25	
974	D5453	5.0		0.10	
995	D5453	4.3		-0.92	
996		-----		-----	
1006	D5453	4.8		-0.19	
1012		-----		-----	

lab	method	value	mark	z(targ)	remarks
1016		-----		-----	
1033		-----		-----	
1039	ISO20846	4.98		0.07	
1059	ISO20846	4.3		-0.92	
1080	D5453	5.047		0.17	
1109	D7039	5.00		0.10	
1126	D5453	5.2		0.39	
1140	D5453	4.155		-1.13	
1186		-----		-----	
1205	ISO20846	4.62		-0.45	
1227	D5453	4.6		-0.48	
1254	D5453	5.533		0.88	
1297	D5453	3.73		-1.75	
1300	D5453	5.09		0.23	
1320		-----		-----	
1357	D5453	5.1		0.25	
1455	ISO20846	5.35		0.61	
1498	D5453	5.0		0.10	
1531	ISO20846	4.00		-1.36	
1631	ISO20846	5.01		0.11	
1720	D5453	4.94		0.01	
1730	ISO20846	4.98		0.07	
1807	ISO20846	4.29		-0.94	
1849	ISO20846	4.75		-0.26	
1982	D5453	5.29		0.52	
1984	ISO20846	5.45		0.76	
6019	ISO20846	5.48		0.80	
6142		-----		-----	
6170	D5453	5.65		1.05	
6172	D5453	4.85		-0.12	
6220	D5453	7	R(0.05)	3.02	
6266		-----		-----	
6364	D5453	4.58	C	-0.51	first reported 2.858
6404		-----		-----	
6416		-----		-----	
6438	D5453	5.4		0.68	
6447	D2622	6		1.56	

normality	OK
n	65
outliers	2
mean (n)	4.931
st.dev. (n)	0.5324
R(calc.)	1.491
st.dev.(D5453:19a)	0.6851
R(D5453:19a)	1.918

Kernel Density
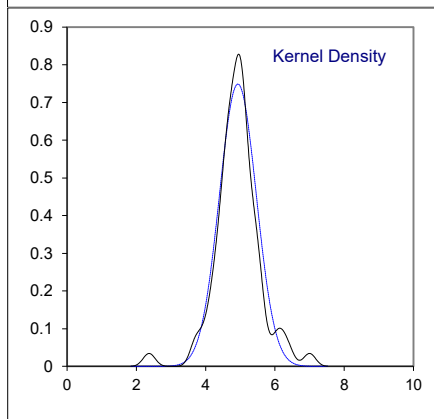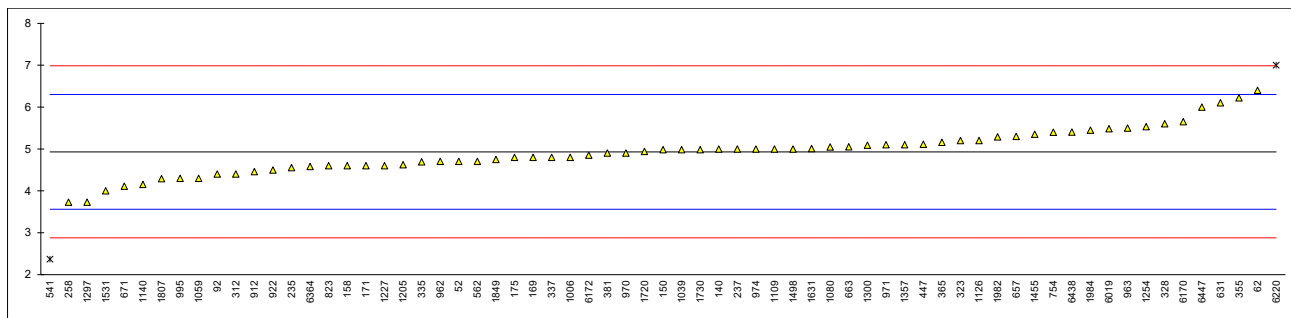
Determination of Total Vapour Pressure on sample #22026; results in psi

lab	method	value	mark	z(targ)	remarks
52	D5191	9.40		0.02	
62	D5191	9.40		0.02	
92	D5191	9.37		-0.24	
120	D5191	9.295		-0.87	
140	D5191	9.46		0.53	
150	D5191	9.31		-0.74	
158	D5191	9.40		0.02	
159		-----		-----	
169	D5191	9.44		0.36	
171	D5191	9.43		0.27	
175	D5191	9.44		0.36	
177	D5191	10.60	R(0.01)	10.18	
225		-----		-----	
228		-----		-----	
235	D5191	9.35		-0.41	
237	D5191	9.50		0.86	
238		-----		-----	
256	D5191	9.05	R(0.01)	-2.95	
258	D5191	9.355		-0.36	
312	D5191	9.47		0.61	
323		-----		-----	
328	D5191	9.60		1.71	
335	D5191	9.40		0.02	
337		-----		-----	
365		-----		-----	
381	EN13016-1	9.59		1.63	
433		-----		-----	
480		-----		-----	
541		-----		-----	
551		-----		-----	
557		-----		-----	
562		-----		-----	
603		-----		-----	
631	D5191	9.372		-0.22	
634		-----		-----	
657	D5191	9.44		0.36	
753	D5191	9.50		0.86	
754		-----		-----	
823	D5191	9.28		-1.00	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
963		-----		-----	
970	D5191	9.29		-0.91	
971	D5191	9.29		-0.91	
974	D5191	9.28		-1.00	
1006		-----		-----	
1033		-----		-----	
1039	EN13016-1	8.48	R(0.01)	-7.78	
1059	D5191	9.387		-0.09	
1109	D5191	9.38		-0.15	
1140	D5191	9.46		0.53	
1227	D5191	9.38		-0.15	
1254	D5191	9.49		0.78	
1300	D5191	9.4482		0.43	
1357	D5191	n.a		-----	
1455	D5191	9.43		0.27	
1498	D5191	9.35		-0.41	
1631		-----		-----	
1720		-----		-----	
1730		-----		-----	
1807	D5191	9.30		-0.83	
1849		-----		-----	
1984		-----		-----	
6019	EN13016-1	9.37		-0.24	

lab	method	value	mark	z(targ)	remarks
6142		-----		-----	
6170		-----		-----	
6220	D5191	9.27		-1.08	
6416	D5191	8.63	R(0.01)	-6.50	
6438		-----		-----	

normality	OK
n	35
outliers	4
mean (n)	9.398
st.dev. (n)	0.0831
R(calc.)	0.233
st.dev.(D5191:20)	0.1181
R(D5191:20)	0.331

Kernel Density
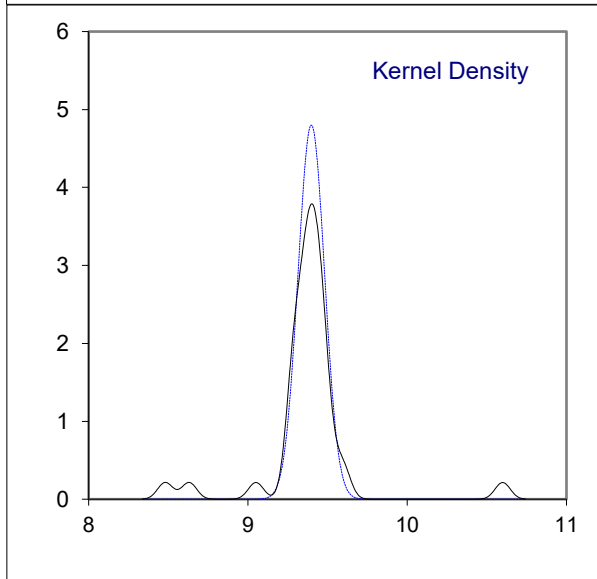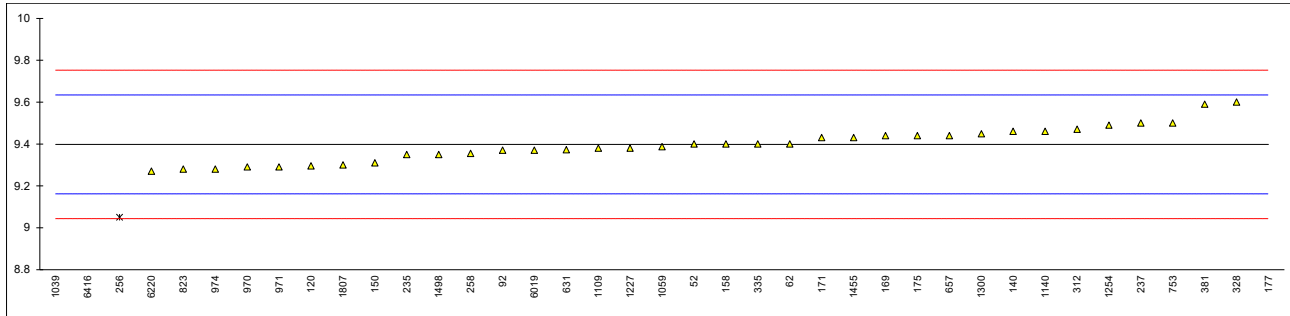
Determination of DVPE acc. to ASTM D5191 on sample #22026; results in psi

lab	method	value	mark	z(targ)	remarks
52	D5191	8.53		-0.04	
62	D5191	8.53		-0.04	
92	D5191	8.48		-0.48	
120	D5191	8.34	E	-1.70	Iis calculated 8.42
140	D5191	8.58		0.39	
150	D5191	8.43		-0.91	
158		-----		-----	
159		-----		-----	
169	D5191	8.56		0.22	
171	D5191	8.55		0.13	
175	D5191	8.56		0.22	
177	D5191	8.56	E	0.22	Iis calculated 9.68
225	D5191	8.63		0.83	
228		-----		-----	
235	D5191	8.48		-0.48	
237	D5191	8.60		0.57	
238	D5191	8.60		0.57	
256	D5191	8.18	R(0.01)	-3.09	
258	D5191	8.479		-0.49	
312	D5191	8.59		0.48	
323	D5191	8.60		0.57	
328	D5191	8.72		1.61	
335	D5191	8.53		-0.04	
337	EN13016-1	8.57		0.30	
365		-----		-----	
381	EN13016-1	8.70		1.44	
433		-----		-----	
480	D5191	8.56		0.22	
541	D6378	8.505		-0.26	
551		-----		-----	
557		-----		-----	
562	D5191	8.65		1.00	
603		-----		-----	
631	D5191	8.496		-0.34	
634		-----		-----	
657	D5191	8.56		0.22	
753	D5191	8.62		0.74	
754		-----		-----	
823	D5191	8.41		-1.09	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
963	D5191	8.3		-2.05	
970	D5191	8.42		-1.00	
971	D5191	8.42		-1.00	
974	D5191	8.4072		-1.11	
1006	D5191	8.59		0.48	
1033		-----		-----	
1039		-----		-----	
1059	D5191	8.510		-0.22	
1109	D5191	8.50		-0.30	
1140	D5191	8.58		0.39	
1227	D5191	8.50		-0.30	
1254	D5191	8.61		0.65	
1300	D5191	8.5695		0.30	
1357	D5191	8.70		1.44	
1455	D5191	8.55		0.13	
1498	D5191	8.56	E	0.22	iis calculated 8.47
1631	D5191	8.59	C	0.48	first reported as TVP
1720	D5191	8.54		0.04	
1730	EN13016-1	8.60		0.57	
1807	D5191	8.43		-0.91	
1849	EN13016-1	8.60		0.57	
1984	EN13016-1	8.46		-0.65	
6019	EN13016-1	8.48		-0.48	

lab	method	value	mark	z(targ)	remarks
6142		-----		-----	
6170		-----		-----	
6220	D5191	8.4		-1.17	
6416		-----		-----	
6438	D5191	8.55		0.13	
	normality	OK			
	n	51			
	outliers	1			
	mean (n)	8.535			
	st.dev. (n)	0.0872			
	R(calc.)	0.244			
	st.dev.(D5191:20)	0.1149			
	R(D5191:20)	0.322			

Kernel Density
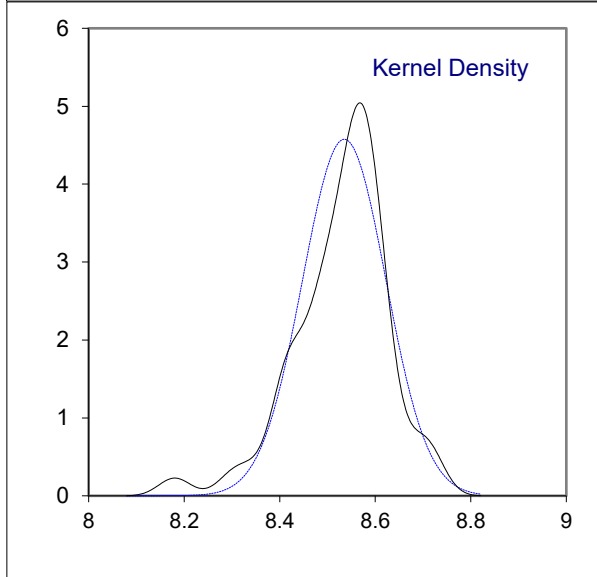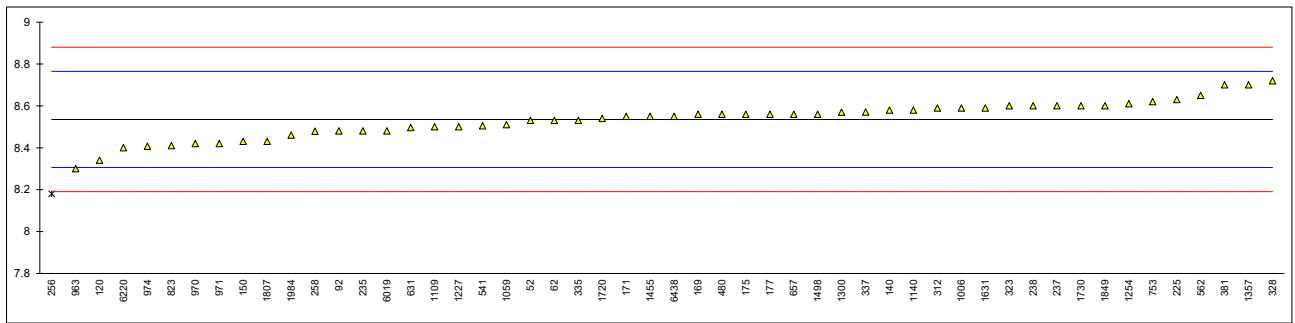
Determination of DVPE acc. to EPA on sample #22026; results in psi

lab	method	value	mark	z(targ)	remarks
52	D5191	8.64		0.10	
62	D5191	8.64		0.10	
92	D5191	8.62		-0.07	
120	D5191	8.54		-0.77	
140	D5191	8.70		0.62	
150		-----		-----	
158		-----		-----	
159		-----		-----	
169	D5191	8.68		0.45	
171		-----		-----	
175	D5191	8.68		0.45	
177		-----		-----	
225		-----		-----	
228		-----		-----	
235	D5191	8.60		-0.25	
237	D5191	8.72		0.79	
238		-----		-----	
256		-----		-----	
258		-----		-----	
312	D5191	8.70		0.62	
323		-----		-----	
328		-----		-----	
335		-----		-----	
337		-----		-----	
365		-----		-----	
381		-----		-----	
433	EN13016-1	8.59		-0.33	
480		-----		-----	
541		-----		-----	
551		-----		-----	
557		-----		-----	
562		-----		-----	
603		-----		-----	
631	D5191	8.697	E	0.59	lis calculated 8.61
634		-----		-----	
657	D5191	8.67		0.36	
753		-----		-----	
754		-----		-----	
823	D5191	8.53		-0.85	
845		-----		-----	
846		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
963		-----		-----	
970	D5191	8.53		-0.85	
971	D5191	8.53		-0.85	
974	D5191	8.5246		-0.90	
1006		-----		-----	
1033		-----		-----	
1039		-----		-----	
1059	D5191	8.627		-0.01	
1109	D5191	8.62		-0.07	
1140		-----		-----	
1227		-----		-----	
1254	D5191	8.72		0.79	
1300	D5191	8.6850		0.49	
1357	D5191	n.a		-----	
1455	D5191	8.66		0.27	
1498	D5191	8.69	E	0.53	lis calculated 8.59
1631		-----		-----	
1720		-----		-----	
1730		-----		-----	
1807		-----		-----	
1849		-----		-----	
1984		-----		-----	
6019	EN13016-1	8.60		-0.25	

lab	method	value	mark	z(targ)	remarks
6142		-----		-----	
6170		-----		-----	
6220	D5191	8.52		-0.94	
6416		-----		-----	
6438		-----		-----	

normality	OK
n	25
outliers	0
mean (n)	8.629
st.dev. (n)	0.0676
R(calc.)	0.189
st.dev.(D5191:20)	0.1153
R(D5191:20)	0.323

Kernel Density
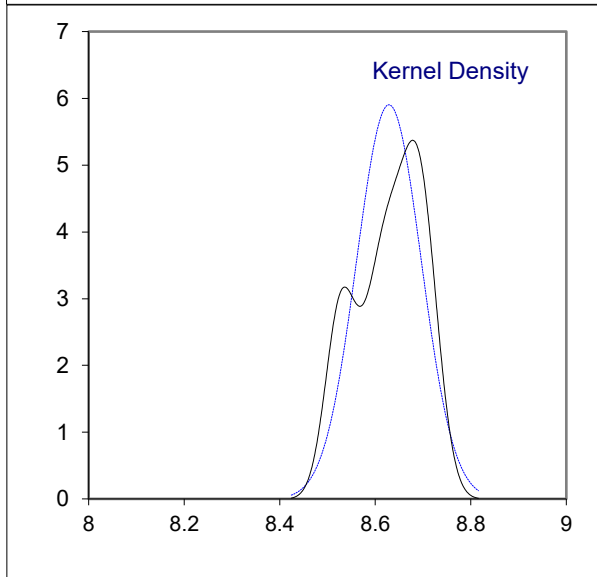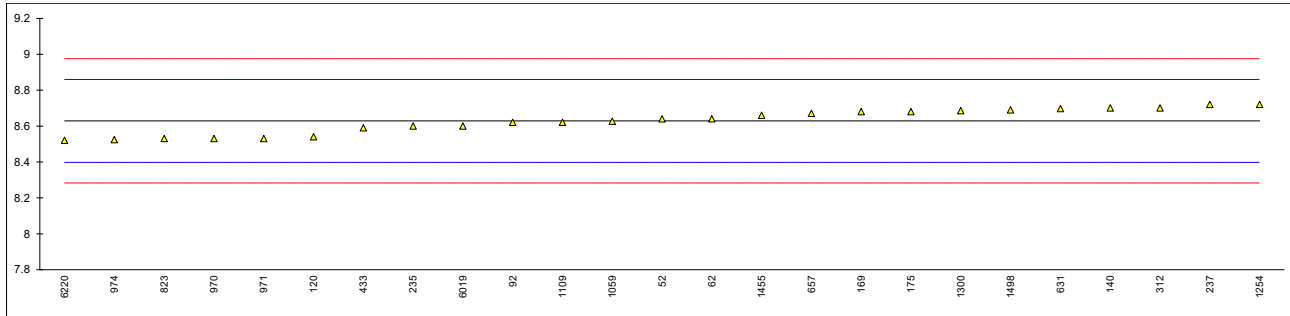
Determination of RON on sample #22027;

lab	method	value	mark	z(targ)	remarks
52	D2699	95.6		0.75	
62	D2699	95.7	C	1.15	first reported 95.9
92	D2699	95.48		0.27	
120	D2699	95.5		0.35	
140		-----		-----	
150	D2699	95.5		0.35	
159		-----		-----	
169		-----		-----	
171	D2699	95.6		0.75	
206	INH_FTIR	96.7	R(0.01)	5.15	
207	INH_FTIR	96.8	R(0.01)	5.55	
209	INH_FTIR	96.6	R(0.01)	4.75	
228	D2699	95.2		-0.85	
237	D2699	95.4		-0.05	
256		-----		-----	
312	D2699	95.3		-0.45	
323		-----		-----	
381	D2699	95.4		-0.05	
541		-----		-----	
562	D2699	95.6		0.75	
631	D2699	95.56		0.59	
657	D2699	95.3		-0.45	
754	D2699	95.33		-0.33	
823		-----		-----	
845		-----		-----	
846		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
922	D2699	96.1		2.75	
962	D2699	95.3		-0.45	
963	D2699	95.1		-1.25	
970	D2699	95.0		-1.65	
971	D2699	95.0		-1.65	
995	D2699	95.8	C	1.55	first reported 96.4
1006	D2699	95.3		-0.45	
1039	ISO5164	95.30		-0.45	
1059	ISO5164	95.3		-0.45	
1109	D2699	95.6		0.75	
1140	D2699	95.6		0.75	
1186	D2699	95.0		-1.65	
1254	D2699	95.44		0.11	
1300	D2699	95.57		0.63	
1320	ISO5164	95.5		0.35	
1357	D2699	95.5		0.35	
1498	D2699	95.4		-0.05	
1720	D2699	95.7		1.15	
6142		-----		-----	
6220	D2699	95.3		-0.45	
6266	D2699	95.4		-0.05	
6416	D2699	95.2		-0.85	
6438	D2699	95.0	C	-1.65	first reported 94.9
	normality	OK			
	n	36			
	outliers	3			
	mean (n)	95.413			
	st.dev. (n)	0.2397			
	R(calc.)	0.671			
	st.dev.(D2699:21)	0.2500			
	R(D2699:21)	0.7			
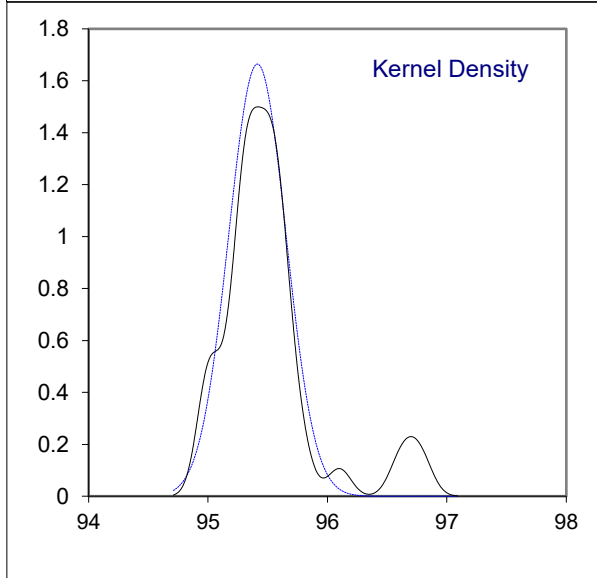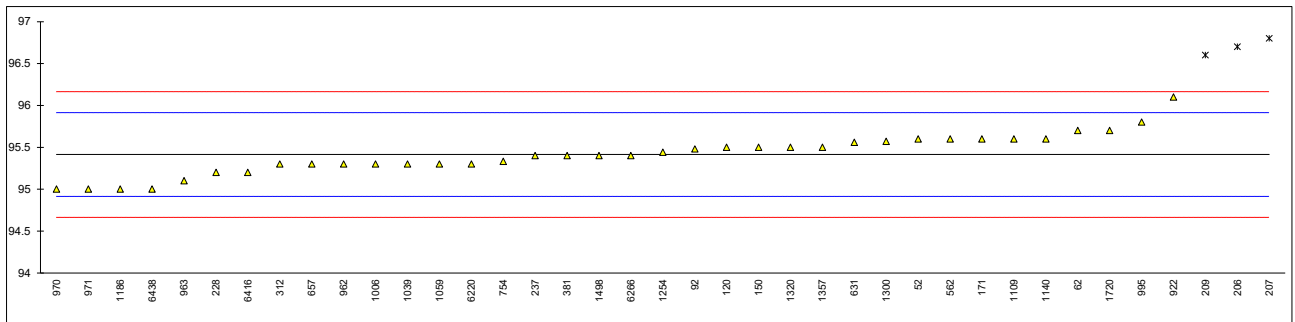
Determination of MON on sample #22027;

lab	method	value	mark	z(targ)	remarks
52	D2700	85.3		0.29	
62	D2700	85.2		-0.02	
92	D2700	85.23		0.07	
120	D2700	85.2		-0.02	
140	D2700	85.4		0.60	
150	D2700	85.4		0.60	
159		-----		-----	
169		-----		-----	
171	D2700	85.6		1.23	
206	INH-FTIR	86.6	R(0.01)	4.34	
207	INH-FTIR	86.6	R(0.01)	4.34	
209	INH-FTIR	86.4	R(0.01)	3.71	
228		-----		-----	
237		-----		-----	
256		-----		-----	
312	D2700	84.9		-0.95	
323	D2700	85.0		-0.64	
381	D2700	85.1		-0.33	
541		-----		-----	
562		-----		-----	
631	D2700	85.38		0.54	
657	D2700	84.8		-1.26	
754	D2700	85.11		-0.30	
823		-----		-----	
845		-----		-----	
846		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
922		-----		-----	
962	D2700	85.3		0.29	
963	D2700	85.2		-0.02	
970		-----		-----	
971	D2700	85.1		-0.33	
995	D2700	85.5		0.91	
1006		-----		-----	
1039	ISO5163	85.00		-0.64	
1059	ISO5163	84.6		-1.89	
1109	D2700	85.9		2.16	
1140	D2700	84.2	R(0.01)	-3.13	
1186		-----		-----	
1254	D2700	85.18		-0.08	
1300	D2700	85.13		-0.24	
1320		-----		-----	
1357	D2700	n.a		-----	
1498		-----		-----	
1720		-----		-----	
6142		-----		-----	
6220		-----		-----	
6266		-----		-----	
6416		-----		-----	
6438		-----		-----	

normality	suspect
n	22
outliers	4
mean (n)	85.206
st.dev. (n)	0.2757
R(calc.)	0.772
st.dev.(D2700:22)	0.3214
R(D2700:22)	0.9
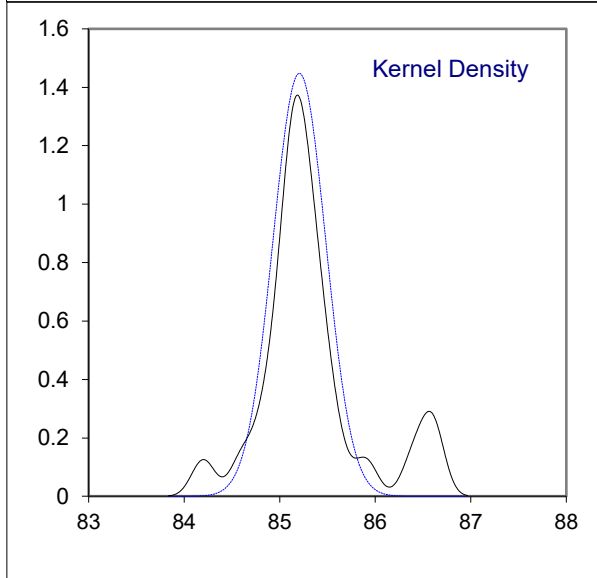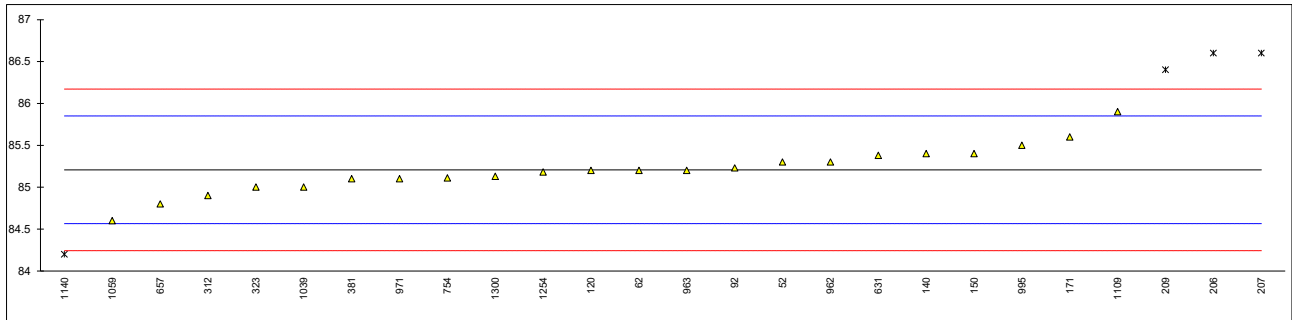
APPENDIX 2
Determination of other oxygenates on sample #22025; in %V/V

lab	DIPE	ETBE	Methanol	TAME	Other Oxygenates
52	-----	-----	-----	-----	-----
62	-----	-----	-----	-----	-----
92	-----	-----	-----	-----	-----
120	0.00	0.00	0.00	0.00	0.00
140	-----	-----	-----	-----	-----
150	<0.10	<0.10	<0.10	<0.10	<0.10
158	-----	-----	-----	-----	-----
159	-----	-----	-----	-----	-----
169	-----	-----	-----	-----	-----
171	-----	-----	-----	-----	-----
175	-----	-----	-----	-----	-----
206	-----	-----	-----	-----	-----
207	-----	-----	-----	-----	-----
208	-----	-----	-----	-----	-----
209	-----	-----	-----	-----	-----
212	-----	-----	-----	-----	-----
217	-----	-----	-----	-----	-----
221	-----	-----	-----	-----	-----
224	-----	-----	-----	-----	-----
225	-----	-----	-----	-----	-----
228	-----	-----	-----	-----	-----
235	-----	-----	-----	-----	-----
237	-----	-----	-----	-----	-----
238	-----	-----	-----	-----	-----
253	-----	-----	-----	-----	-----
254	-----	-----	-----	-----	-----
256	-----	-----	-----	-----	-----
258	-----	-----	-----	-----	-----
312	<0.2	<0.2	<0.2	<0.2	<0.2
323	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
328	-----	-----	-----	-----	-----
335	-----	-----	-----	-----	-----
337	-----	-----	-----	-----	-----
355	-----	-----	-----	-----	-----
365	-----	-----	-----	-----	-----
381	<0,8	<0,8	<0,8	<0,8	<0,8
447	<0.17	<0.17	<0.17	<0.17	<0.17
480	-----	-----	-----	-----	-----
541	-----	-----	-----	-----	-----
551	-----	-----	-----	-----	-----
554	-----	-----	-----	-----	-----
555	-----	-----	-----	-----	-----
557	-----	-----	-----	-----	-----
558	-----	-----	-----	-----	-----
562	-----	-----	-----	-----	-----
603	-----	-----	-----	-----	-----
631	-----	-----	<0.1	-----	-----
634	<0.8	<0.8	<0.8	<0.8	-----
657	N.D.	N.D.	N.D.	N.D.	N.D.
663	-----	-----	-----	-----	-----
671	-----	-----	-----	-----	-----
753	-----	-----	-----	-----	-----
754	-----	-----	-----	-----	-----
823	<0.20	<0.20	<0.20	<0.20	<0.20
845	-----	-----	-----	-----	-----
846	-----	-----	-----	-----	-----
854	-----	-----	-----	-----	-----
856	-----	-----	-----	-----	-----
861	-----	-----	-----	-----	-----
862	-----	-----	-----	-----	-----
864	-----	-----	-----	-----	-----
872	-----	-----	-----	-----	-----
912	-----	-----	-----	-----	-----
913	-----	-----	-----	-----	-----
914	-----	-----	-----	-----	-----
922	<0.2	<0.2	<0.2	<0.2	<0.2
962	<0.2	<0.2	<0.2	<0.2	<0.2
963	<0.2	<0.2	<0.2	<0.2	<0.2
970	-----	-----	-----	-----	9.1
971	<0.2	<0.2	<0.2	<0.2	<0.2
974	-----	-----	-----	-----	-----
995	-----	-----	<0.17	-----	-----
996	-----	-----	-----	-----	-----
1006	<0.02	<0.02	<0.02	0.05	-----
1012	-----	-----	-----	-----	-----

lab	DIPE	ETBE	Methanol	TAME	Other Oxygenates
1016	<0.01	<0.01	0.06	-----	-----
1033	-----	-----	-----	-----	-----
1039	-----	-----	-----	-----	-----
1059	<0,20	<0,20	<0,20	<0,20	<0,20
1080	<0.01	0.02	<0.01	<0.01	0.1
1109	0.03	0.0	0.0	0.0	-----
1126	-----	-----	-----	-----	-----
1140	-----	0.02	-----	-----	0.02
1186	-----	-----	-----	-----	-----
1205	-----	-----	-----	-----	-----
1227	-----	-----	-----	-----	-----
1254	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
1297	-----	-----	-----	-----	-----
1300	0.004	0.001	0.001	0.035	0.075
1320	-----	-----	-----	-----	-----
1357	n.a	n.a	n.a	n.a	n.a
1455	0	0.03	0	0	0.04
1498	-----	-----	-----	-----	-----
1531	-----	-----	-----	-----	-----
1631	-----	-----	<0.8	<0.8	<0.8
1720	-----	-----	-----	-----	-----
1730	-----	-----	-----	-----	-----
1807	-----	-----	-----	-----	-----
1849	-----	-----	-----	-----	-----
1982	<0,20	<0,20	<0,20	<0,20	0.038
1984	-----	-----	-----	-----	-----
6019	-----	-----	-----	-----	-----
6142	-----	-----	-----	-----	-----
6170	-----	-----	-----	-----	-----
6172	0.1	0	0	0.5	-----
6220	-----	-----	-----	-----	-----
6266	-----	-----	-----	-----	-----
6364	-----	-----	-----	-----	-----
6404	0.00	0.00	0.04	0.03	0.00
6416	-----	-----	-----	-----	-----
6438	<0.5	<0.5	<0.2	<0.2	<0.2
6447	-----	-----	-----	-----	-----

APPENDIX 3
Distillation Z-scores

lab	IBP	10%evaporated	50%evaporated	90%evaporated	FBP
52	-0.91	-0.15	0.00	-0.06	-0.05
62	-1.33	-0.15	0.15	-0.01	-0.79
92	1.71	0.48	0.38	-0.38	1.33
120	-0.37	0.34	0.23	-0.06	0.59
140	-0.91	0.20	0.45	0.41	1.53
150	-0.02	-0.37	-0.45	-0.32	-0.48
158	-----	-----	-----	-----	-----
159	-----	-----	-----	-----	-----
169	0.76	-0.72	-0.60	-0.27	0.15
171	-1.09	0.06	0.30	0.04	0.03
175	0.34	-0.22	-0.30	-0.12	-0.52
206	-0.25	-0.37	-0.45	0.25	-0.60
207	-0.49	-0.51	-0.60	-0.27	0.15
208	-0.49	-0.30	-1.12	-0.27	0.70
209	-0.67	-1.00	-0.90	0.25	0.31
212	0.40	0.06	-0.30	1.04	-1.98
217	0.22	-0.08	0.00	-0.32	-0.40
221	-----	-----	-----	-----	-----
224	2.02	0.18	-2.32	-1.15	-1.60
225	0.40	1.19	2.03	2.61	-1.31
228	0.40	0.48	-0.22	-0.06	1.06
235	0.28	-0.30	-1.42	-0.74	-2.61
237	1.29	0.27	0.08	0.93	0.47
238	1.29	0.13	-0.22	1.30	0.86
253	-0.19	-1.07	-0.52	1.66	-0.91
254	1.00	0.48	-0.22	-0.01	0.66
256	1.00	0.48	-0.22	-1.06	-0.52
258	0.88	0.98	0.15	-0.74	-0.16
312	-0.85	-0.01	0.23	0.04	0.62
323	0.16	-0.30	-0.07	0.09	0.62
328	-0.97	-0.37	-0.15	-0.06	-0.52
335	2.25	0.48	0.00	-0.17	-2.06
337	0.40	-0.44	0.08	-0.32	-2.45
355	-0.70	-0.13	-0.41	0.41	0.21
365	-0.55	0.41	0.15	0.04	-0.20
381	-0.02	0.48	1.13	0.88	0.55
447	-1.45	-0.01	0.08	0.09	0.74
480	1.59	0.02	0.04	0.22	-1.25
541	-0.45	-0.31	0.18	0.06	0.68
551	-----	-----	-----	-----	-----
554	-----	-----	-----	-----	-----
555	-----	-----	-----	-----	-----
557	-----	-----	-----	-----	-----
558	-----	-----	-----	-----	-----
562	-1.03	0.41	0.83	1.04	0.74
603	1.83	0.83	0.83	2.24	1.53
631	0.40	-0.93	0.15	0.51	0.86
634	-0.79	0.27	0.76	1.30	-0.16
657	-0.37	0.27	0.30	0.20	-0.05
663	0.34	0.62	0.15	-0.12	-0.44
671	-----	-----	-----	-----	-----
753	0.70	0.13	0.15	0.51	0.86
754	0.10	-0.01	0.15	0.09	1.30
823	2.13	4.01	-0.75	-1.42	-2.33
845	-----	-----	-----	-----	-----
846	-----	-----	-----	-----	-----
854	-----	-----	-----	-----	-----
856	-----	-----	-----	-----	-----
861	-----	-----	-----	-----	-----
862	-----	-----	-----	-----	-----
864	-----	-----	-----	-----	-----
872	-----	-----	-----	-----	-----
912	1.59	-0.22	0.53	-0.01	0.27
913	-----	-----	-----	-----	-----
914	-----	-----	-----	-----	-----
922	0.28	-0.72	-0.45	0.93	0.78
962	-0.31	0.34	-0.60	-1.06	-0.08
963	-0.49	0.62	1.06	0.98	0.74
970	0.10	0.13	-0.15	-0.22	-0.05
971	0.10	0.13	-0.15	-0.32	-0.32
974	-0.08	0.13	-0.15	0.30	-0.12
995	-1.09	-0.08	0.15	1.98	-0.52
996	-----	-----	-----	-----	-----
1006	-0.79	0.48	0.60	0.20	0.66
1012	-0.25	-0.01	0.08	0.04	1.14

lab	IBP	10%evaporated	50%evaporated	90%evaporated	FBP
1016	-----	-----	-----	-----	-----
1033	-----	-----	-----	-----	-----
1039	-0.43	-0.15	0.23	0.09	0.86
1059	-0.08	-0.37	-0.22	0.04	-0.20
1080	-----	-----	-----	-----	-----
1109	-0.25	0.13	0.53	0.41	0.11
1126	-1.74	-0.86	0.23	-0.12	-0.44
1140	-0.97	-1.07	-1.27	-0.80	-0.76
1186	2.66	-1.64	-0.97	-1.58	-3.76
1205	0.34	0.27	0.30	0.25	-0.05
1227	1.47	-0.51	-0.75	-0.69	-1.98
1254	0.73	0.55	0.53	0.67	-0.78
1297	0.34	-0.30	-0.22	-0.12	0.70
1300	0.64	0.34	0.45	0.46	0.07
1320	-----	-----	-----	-----	-----
1357	-----	-0.58	-0.22	-0.48	0.55
1455	-2.22	-0.15	-0.07	-0.69	-0.76
1498	0.28	-0.01	0.15	0.46	1.10
1531	-1.98	0.48	0.53	-0.53	-0.56
1631	-----	-----	-----	-----	-0.48
1720	-0.25	-0.22	-0.37	-0.22	-0.40
1730	-----	-----	-----	-----	-----
1807	-1.51	-0.37	-0.30	-0.32	-0.44
1849	0.76	-0.15	0.00	0.30	0.27
1982	-0.01	0.04	0.20	0.34	0.72
1984	-1.30	-0.12	0.23	-0.04	-0.44
6019	-0.43	0.48	0.91	0.62	2.08
6142	-----	-----	-----	-----	-----
6170	-0.49	0.13	-0.60	-0.27	-0.91
6172	-0.97	0.13	1.28	2.34	-0.01
6220	-0.85	-0.44	-2.10	-1.06	1.89
6266	-1.57	-0.15	-0.45	-1.74	1.49
6364	0.22	0.55	0.30	0.30	-1.43
6404	-----	-----	-----	-----	-----
6416	-0.08	-0.08	0.08	0.36	1.02
6438	0.64	0.13	0.45	0.09	1.06
6447	-----	-----	-----	-----	-----

APPENDIX 4 Number of participants per country

     1 lab in ALBANIA
     1 lab in ARGENTINA
     1 lab in AUSTRALIA
    2 labs in AUSTRIA
    2 labs in BELGIUM
    5 labs in BRAZIL
    3 labs in CANADA
    3 labs in CHILE
    7 labs in CHINA, People's Republic
     1 lab in COTE D'IVOIRE
     1 lab in CROATIA
     1 lab in DJIBOUTI
     1 lab in EGYPT
     1 lab in ESTONIA
    4 labs in FRANCE
    2 labs in GEORGIA
     1 lab in GERMANY
    4 labs in GREECE
     1 lab in GUAM
     1 lab in GUINEA REPUBLIC
     1 lab in HUNGARY
    3 labs in INDIA
    2 labs in IRELAND
     1 lab in ISRAEL
    2 labs in KENYA
     1 lab in KOREA, Republic of
     1 lab in LATVIA
     1 lab in MALAYSIA
     1 lab in MAURITIUS
    5 labs in MOROCCO
     1 lab in MOZAMBIQUE
    6 labs in NETHERLANDS
    3 labs in NIGERIA
    2 labs in OMAN
     1 lab in PAKISTAN
    2 labs in PHILIPPINES
     1 lab in POLAND
     1 lab in PORTUGAL
    3 labs in RUSSIAN FEDERATION
    3 labs in SAUDI ARABIA
     1 lab in SENEGAL
     1 lab in SERBIA
     1 lab in SINGAPORE
     1 lab in SLOVAKIA
     1 lab in SLOVENIA
     1 lab in SPAIN
     1 lab in SUDAN
     1 lab in TAIWAN
    2 labs in TANZANIA
     1 lab in THAILAND
     1 lab in TOGO
     1 lab in TUNISIA
    2 labs in TURKEY
     1 lab in TURKMENISTAN
    2 labs in UNITED ARAB EMIRATES
    3 labs in UNITED KINGDOM
    9 labs in UNITED STATES OF AMERICA

APPENDIX 5

Abbreviations

C	= final test result after checking of first reported suspect test result
D(0.01)	= outlier in Dixon's outlier test
D(0.05)	= straggler in Dixon's outlier test
G(0.01)	= outlier in Grubbs' outlier test
G(0.05)	= straggler in Grubbs' outlier test
DG(0.01)	= outlier in Double Grubbs' outlier test
DG(0.05)	= straggler in Double Grubbs' outlier test
R(0.01)	= outlier in Rosner's outlier test
R(0.05)	= straggler in Rosner's outlier test
E	= calculation difference between reported test result and result calculated by iis
W	= test result withdrawn on request of participant
ex	= test result excluded from statistical evaluation
n.a.	= not applicable
n.e.	= not evaluated
n.d.	= not detected
fr.	= first reported
f+?	= possibly a false positive test result?
f-?	= possibly a false negative test result?
SDS	= Safety Data Sheet

Literature

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