Results of Proficiency Test
Gasoline - ASTM (summer)
February 2020

Organized by: Institute for Interlaboratory Studies
Spijkenisse, the Netherlands

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1 INTRODUCTION

Since 1995 the Institute for Interlaboratory Studies (iis) organizes proficiency scheme for Gasoline twice a year. One round according to EN228 specification and one round according to ASTM D4814. During the annual proficiency testing program of 2019/2020 it was decided to continue the proficiency tests for the analysis of Gasoline summer quality in accordance with the latest version of ASTM D4814 specification.

In this interlaboratory study registered for participation:
- 110 laboratories in 58 countries on Gasoline-ASTM (summer) (iis20B01ASTM),
- 75 laboratories in 42 countries for DVPE PT (iis20B01DVPE),
- 53 laboratories in 35 countries for RON/MON PT (iis20B01RON).

In total 115 laboratories in 60 different countries registered for participation. See appendix 4 for the number of participants per country. In this report the results of this 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 from one to three different samples of Gasoline depended on the registration.

Samples	Purpose
#20015: 1x 1L	Regular analyzes
#20016: 1x 1L (75% filled)	DVPE
#20017: 2x 1L	RON/MON analyzes

Table 1: Gasoline samples in PT iis20B01ASTM

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

GASOLINE SAMPLES FOR REGULAR ROUND AND FOR RON/MON

A batch of approximately 285 liters of Gasoline (summer quality) was purchased from the local market. After homogenisation 147 and 137 amber glass bottles of 1L were filled and labelled #20015 and #20017 respectively. The homogeneity of subsamples #20015 and #20017 was checked by the determination of Density in accordance with ASTM D4052 on 10 stratified randomly selected subsamples.

	Density at 15°C in kg/m^3
Sample 1	739.99
Sample 2	739.98
Sample 3	739.98
Sample 4	740.00
Sample 5	740.03
Sample 6	739.99
Sample 7	739.99
Sample 8	739.99
Sample 9	739.97
Sample 10	739.97

Table 2: homogeneity test results of subsamples #20015 and #20017

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 #20015 and #20017

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

GASOLINE – SAMPLE FOR DVPE

A batch of approximately 100 liters of Gasoline (summer) was purchased from the local market. After homogenisation 130 amber glass bottles of 1L were filled with approximately 750mL and labelled #20016. The homogeneity of subsamples #20016 was checked by the determination of DVPE in accordance with ASTM D5191 on 8 stratified randomly selected subsamples.

	DVPE in psi
Sample #20016-1	8.64
Sample #20016-2	8.56
Sample #20016-3	8.57
Sample #20016-4	8.57
Sample #20016-5	8.59
Sample #20016-6	8.57
Sample #20016-7	8.59
Sample #20016-8	8.57

Table 4: homogeneity test results of subsamples #20016

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 D5191:19
0.3 x R (reference test method)	0.10

Table 5: evaluation of the repeatability of subsamples #20016

The calculated repeatability was 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 5, 2020. An SDS was added to the sample package.

2.5 STABILITY OF THE SAMPLES

The stability of Gasoil 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 asked to determine on sample #20015: API Gravity, Aromatics by FIA, Benzene, Copper Corrosion, Silver Corrosion, Density at 15°C, Distillation (IBP, at 10%, 50%, 90% evaporated and FBP), Doctor Test, Existent gum (solvent washed), Lead as Pb, Manganese as Mn, Olefins by FIA, Oxidation Stability, Oxygenates (DIPE, ETBE, Ethanol, Methanol, MTBE, TAME, Other Oxygenates), Oxygen content, Phosphorus as P and Total Sulfur.
On sample #20016 was requested to determine: Total Vapour Pressure and Dry Vapour Pressure Equivalent (according to ASTM D5191 and EPA).
On sample #20017 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 appropiate reference test methods 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 test result tables in appendix 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.

According to ISO5725 the original test results per determination were submitted to Dixon's and/or Grubbs' and/or Rosner's outlier tests. 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 was projected over the Kernel Density Graph for reference.

3.3 Z-SCORES

To evaluate the performance of the participating laboratories the z-scores were calculated. As it was decided to evaluate the performance of the participants in this proficiency test (PT) against the literature requirements, e.g. EN or ISO reproducibilities, 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. In some cases, a reproducibility based on former iis proficiency tests could be used.

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:

$z_{(target)}$ = (test result - average of PT) / 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:

	$\lvert z\rvert < 1$	good
$1 <$	$\lvert z\rvert < 2$	satisfactory
$2 <$	$\lvert z\rvert < 3$	questionable
$3 <$	$\lvert z\rvert$	unsatisfactory

4 EVALUATION

In this interlaboratory study, some problems were encountered with the dispatch of the samples due to several reasons with transportation (eg. customs).
For the regular Gasoline PT: six participants reported the test results after the final reporting date and fifteen other participants did not report any test results at all.
For the PT on DVPE: one participants reported the test results after the final reporting date and thirteen other participants did not report any test results at all.
For the PT on RON/MON: one participant reported the test results after the final reporting date and eleven other participants did not report any test results at all.

In total 99 participants reported 1158 numerical test results. Observed were 20 outlying test results, which is 1.7% of the numerical test results. In proficiency studies, outlier percentages of 3%-7.5% are quite normal.
Not all original 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 where possible and applicable. These test methods are also in the tables together with the original test data. The abbreviations, used in these tables, are listed in appendix 4.

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 test method number and year of adoption or revision e.g.D525:12a will be used.

Sample #20015

API Gravity: This determination was not problematic. One statistical outlier was observed. However, the calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ASTM D4052:18a.

Aromatics by FIA: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ASTM D1319:19.
No effect of change of dye could be determined as all, except one, reported to use a dye with a lot no. >3000000975.

Benzene: This determination was not problematic. One statistical outlier was observed. However, the calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ASTM D3606:17.

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

Silver Corrosion: This determination was not problematic. All reporting participants, except three, agreed on classification 0.

Density at 15°C: This determination was not problematic. One statistical outlier was observed. However, the calculated reproducibility after rejection of the statistical outlier is in good agreement with the requirements of ASTM D4052:18a.

Distillation: The distillation was not problematic. In total two statistical outliers were observed over five parameters. However, the calculated reproducibilities after rejection of the statistical outliers are in agreement with the requirements of ASTM D86:19 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 laboratories agreed on the absence of Mercaptans and reported Negative.

Existent Gum: This determination was not problematic. Four statistical outlier were observed. However, 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. All reporting laboratories agreed on a Lead concentration <3 mg/L. Therefore, no z-scores were calculated.

Manganese as Mn: This determination was not problematic. All reporting laboratories agreed on a Manganese concentration <2 mg/L. Therefore, no z-scores were calculated.

Olefins by FIA: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in good agreement with the requirements of ASTM D1319:19.

Oxidation Stability: This determination was not problematic. Almost all of the reporting laboratories agreed that the Oxidation Stability is >360 minutes.

Ethanol: This determination was not problematic. Three statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D4815:15b(2019).

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 D4815:15b(2019).

The participants did agree on a concentration near or below the limit of detection for the other requested Oxygenates. Therefore, no z-scores were calculated. These components are listed in appendix 2.

Oxygen Content: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ASTM D4815:15b(2019).

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

Total Sulfur: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ASTM D5453:19a.

Sample #20016

TVP: This determination was not problematic. One statistical outlier was observed. However, the calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ASTM D5191:19.

DVPE: The conversions of the measured Total Vapour Pressure to the Dry Vapour Pressure Equivalent (DVPE) as described in ASTM D5191:19 and to the U.S. EPA guidelines (40 CFR Part 80, App. E, Method 3) were not problematic. In total two statistical outliers were observed. Both calculated reproducibilities after rejection of the statistical outliers are in agreement with the respective requirements of ASTM D5191:15 and EPA guidelines. No calculations errors were observed.

Sample #20017

RON: This determination was not problematic. Three statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D2699:19.

MON: This determination was problematic. No statistical outliers were observed. However, the calculated reproducibility is not in agreement with the requirements of ASTM D2700:19.

4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES

A comparison has been made between the reproducibility as declared by the relevant 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 literature 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		57	59.61	0.26	0.58
Aromatics by FIA	%V/V	36	29.1	3.8	3.7
Benzene	%V/V	44	0.79	0.09	0.15
Copper Corrosion 3 hrs at 50°C		76	1 (1a/1b)	n.a.	n.a.
Silver Corrosion 3 hrs at 50°C		16	0	n.a.	n.a.
Density at 15°C	kg/m^3	92	740.2	0.8	2.2
Initial Boiling Point	°C	87	36.4	4.1	4.7
Temp. at 10% evaporated	°C	87	51.6	1.7	3.9
Temp. at 50% evaporated	°C	88	91.4	3.3	4.0
Temp. at 90% evaporated	°C	88	146.4	3.8	5.6
Final Boiling Point	°C	88	179.3	6.4	7.1
Doctor Test		51	Negative	n.a.	n.a.
Existent Gum (solvent washed)	mg/100mL	37	0.56	0.84	2.10

Parameter	unit	n	average	2.8 * sd	R(lit)
Lead as Pb	mg/L	30	<3	n.a.	n.a.
Manganese as Mn	mg/L	22	<2	n.a.	n.a.
Olefins by FIA	%V/V	33	5.8	1.8	2.4
Oxidation Stability	minutes	35	>360	n.a.	n.a.
Ethanol	%V/V	39	4.6	0.5	0.5
MTBE	%V/V	38	2.9	0.3	0.2
Oxygen content	%M/M	32	2.3	0.2	0.3
Phosphorus as P	mg/L	8	<1	n.a.	n.a.
Total Sulfur	mg/kg	70	7.9	2.2	2.7

Table 6: reproducibilities of tests on sample #20015

Parameter	unit	n	average	2.8 * sd	R(lit)
TVP	psi	45	9.4	0.3	0.3
DVPE according to ASTM D5191	psi	55	8.5	0.3	0.3
DVPE according to EPA	psi	35	8.6	0.3	0.3

Table 7: reproducibilities of tests on sample #20016

Parameter	unit	n	average	2.8 * sd	R(lit)
RON		39	95.5	0.6	0.7
MON		32	85.9	1.4	0.9

Table 8: reproducibilities of tests on sample #20017

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

4.3 COMPARISON OF THE PROFICIENCY TEST OF FEBRUARY 2020 WITH PREVIOUS PTS

	February 2020	February 2019	February 2018	February 2017	March 2016
Number of reporting laboratories	99	106	110	111	107
Number of test results	1158	1362	1327	1489	1435
Number of statistical outliers	20	55	16	39	25
Percentage of statistical outliers	1.7%	4.0%	1.2%	2.6%	1.7%

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 against the requirements of the respective reference test methods. The conclusions are given in the following table.

Parameter	February 2020	February 2019	February 2018	February 2017	March 2016
API Gravity	++	++	+	++	++
Aromatics by FIA	+/-	+/-	+/-	-	-
Benzene	+	++	+	+	++
Density at 15°C	++	++	++	++	++
Distillation	+	+	+	++	+
Existent 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.	--	-	--	--
Total Sulfur	+	+/-	+/-	+/-	+/-
TVP	+/-	+/-	+/-	+/-	+
DVPE	+/-	+/-	+	+/-	+
RON	+	-	-	-	-
MON	-	-	-	+/-	-

Table 10: comparison determinations against the reference test methods

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

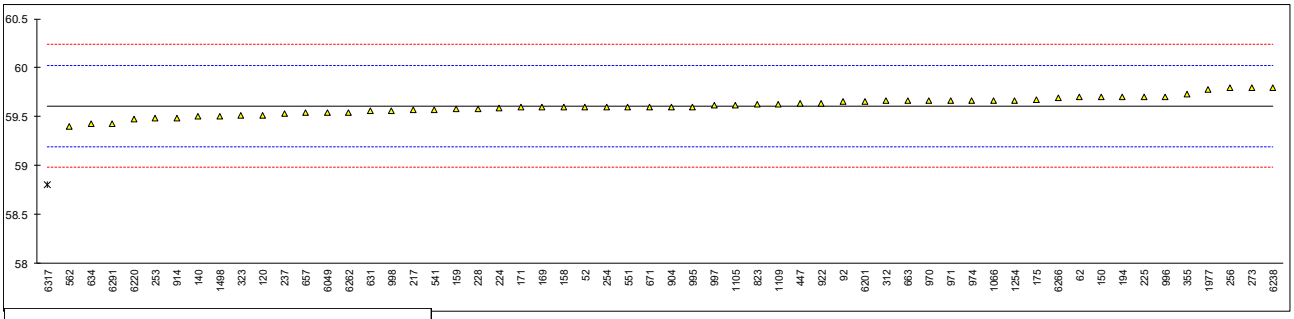
APPENDIX 1

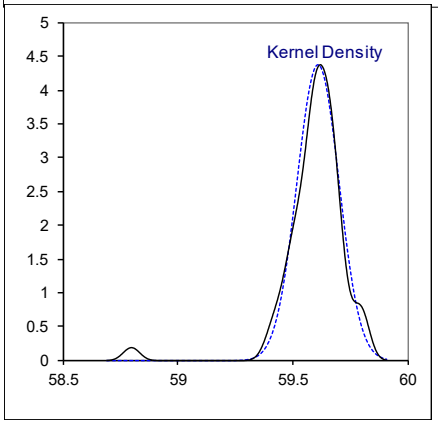
Determination of API Gravity on sample #20015;

lab	method	value	mark	z(targ)	remarks
52	D4052	59.6		-0.05	
62	D4052	59.7		0.43	
92	D4052	59.65		0.19	
120	D4052	59.51		-0.48	
140	D4052	59.5		-0.52	
150	D4052	59.7		0.43	
158	D4052	59.6		-0.05	
159	D4052	59.58		-0.14	
169	D4052	59.6		-0.05	
171	D4052	59.6		-0.05	
175	D4052	59.67		0.29	
194	D4052	59.7		0.43	
217	D4052	59.57		-0.19	
221		-----		-----	
224	D1298	59.59		-0.09	
225	D4052	59.7		0.43	
228	D4052	59.58		-0.14	
230		-----		-----	
237	D4052	59.53		-0.38	
238		-----		-----	
253	D4052	59.48		-0.62	
254	D4052	59.6		-0.05	
256	D4052	59.8		0.91	
258		-----		-----	
273	D4052	59.8		0.91	
312	D4052	59.66		0.24	
323	D4052	59.51		-0.48	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355	D4052	59.73		0.58	
381		-----		-----	
444		-----		-----	
447	D4052	59.64		0.15	
485		-----		-----	
541	D4052	59.57		-0.19	
551	D4052	59.6		-0.05	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562	D1298	59.4		-1.00	
603		-----		-----	
631	D4052	59.56		-0.24	
633		-----		-----	
634	D4052	59.43		-0.86	
657	D4052	59.54		-0.33	
663	D4052	59.66		0.24	
671	D4052	59.60		-0.05	
753		-----		-----	
754		-----		-----	
823	D4052	59.63		0.10	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
904	D4052	59.6		-0.05	
912		-----		-----	
913		-----		-----	
914	D4052	59.48		-0.62	
922	D4052	59.64		0.15	
962		-----		-----	
963		-----		-----	
970	D4052	59.66		0.24	
971	D4052	59.66		0.24	
974	Calc.	59.66		0.24	
995	D4052	59.6		-0.05	
996	Calc	59.7		0.43	
997	D4052	59.62		0.05	
998	D4052	59.56		-0.24	

lab	method	value	mark	z(targ)	remarks
1006		-----		-----	
1012		-----		-----	
1016		-----		-----	
1017		-----		-----	
1026		-----		-----	
1033		-----		-----	
1059		-----		-----	
1066	D4052	59.66		0.24	
1080		-----		-----	
1105	D1298	59.62		0.05	
1109	D287	59.63		0.10	
1254	D4052	59.66		0.24	
1310		-----		-----	
1498	D4052	59.5		-0.52	
1531		-----		-----	
1631		-----		-----	
1634		-----		-----	
1720		-----		-----	
1724		-----		-----	
1730		-----		-----	
1746		-----		-----	
1807		-----		-----	
1810		-----		-----	
1811		-----		-----	
1849		-----		-----	
1977	ISO3675	59.78		0.82	
6049	D4052	59.54		-0.33	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6201	D4052	59.65		0.19	
6220	D4052	59.472		-0.66	
6238	D4052	59.8		0.91	
6262	D4052	59.54		-0.33	
6266	D4052	59.69		0.39	
6291	D4052	59.43		-0.86	
6317	D4052	58.8	R(0.01)	-3.88	

normality	OK
n	57
outliers	1
mean (n)	59.609
st.dev. (n)	0.0910
R(calc.)	0.255
st.dev.(D4052:18a)	0.2087
R(D4052:18a)	0.584



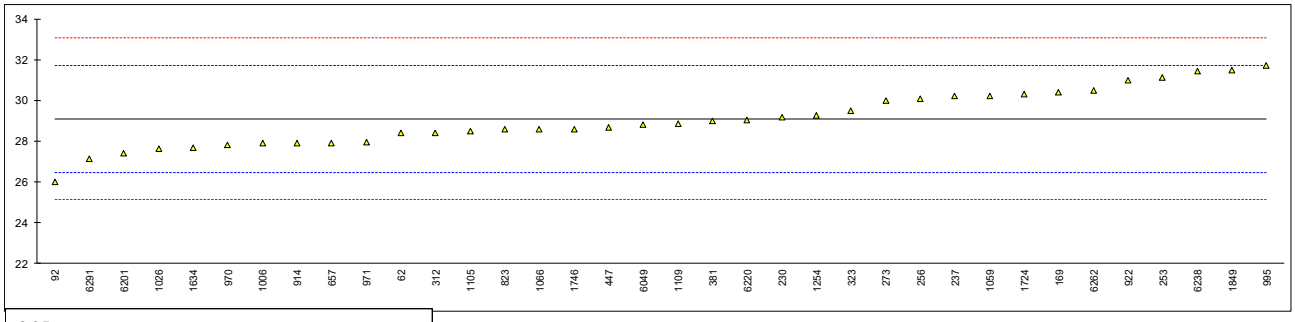


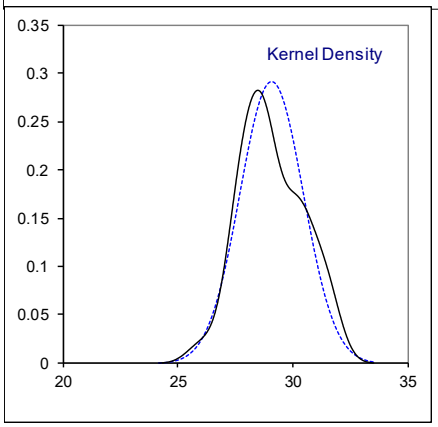
Determination of Aromatics by FIA on sample #20015; results in %V/V

lab	method	value	mark	z(targ)	Lot no. fluorescent indicator	remarks
52		-----		-----	-----	
62	D1319	28.4		-0.52	-----	
92	D1319	26.0		-2.34	3000000928	
120		-----		-----	-----	
140		-----		-----	-----	
150		-----		-----	-----	
158		-----		-----	-----	
159		-----		-----	-----	
169	D1319	30.4		0.99	3000000892	
171		-----		-----	-----	
175		-----		-----	-----	
194		-----		-----	-----	
217		-----		-----	-----	
221		-----		-----	-----	
224		-----		-----	-----	
225		-----		-----	-----	
228		-----		-----	-----	
230	D1319	29.16		0.06	3000000954	
237	D1319	30.2		0.84	3000000962	
238		-----		-----	-----	
253	D1319	31.1		1.52	3000000821	
254		-----		-----	-----	
256	D5986	30.1		0.77	-----	
258		-----		-----	-----	
273	D1319	30.0		0.69	-----	
312	D1319	28.4		-0.52	3000000976	
323	D1319	29.5		0.31	3000000970	
335		-----		-----	-----	
336		-----		-----	-----	
337		-----		-----	-----	
353		-----		-----	-----	
355		-----		-----	-----	
381	EN15553	29.0		-0.07	300000962	
444		-----		-----	-----	
447	D1319	28.657		-0.33	N1103	
485		-----		-----	-----	
541		-----		-----	-----	
551		-----		-----	-----	
554		-----		-----	-----	
555		-----		-----	-----	
557		-----		-----	-----	
558		-----		-----	-----	
562		-----		-----	-----	
603		-----		-----	-----	
631		-----		-----	-----	
633		-----		-----	-----	
634		-----		-----	-----	
657	D1319	27.9		-0.90	300QQ00917	
663		-----		-----	-----	
671		-----		-----	-----	
753		-----		-----	-----	
754		-----		-----	-----	
823	D1319	28.6		-0.37	-----	
854		-----		-----	-----	
856		-----		-----	-----	
861		-----		-----	-----	
862		-----		-----	-----	
864		-----		-----	-----	
872		-----		-----	-----	
904		-----		-----	-----	
912		-----		-----	-----	
913		-----		-----	-----	
914	D1319	27.9		-0.90	3000000857	
922	D1319	31.0		1.45	3000000855	
962		-----		-----	-----	
963		-----		-----	-----	
970	D1319	27.83		-0.95	-----	
971	D1319	27.94		-0.87	3000000848	
974		-----		-----	-----	
995	D1319	31.7		1.98	3000000955	
996		-----		-----	-----	
997		-----		-----	-----	
998		-----		-----	-----	

lab	method	value	mark	z(targ)	Lot no. fluorescent indicator	remarks
1006	D1319	27.88		-0.91	-----	
1012		-----		-----	-----	
1016		-----		-----	-----	
1017		-----		-----	-----	
1026	ISO22854	27.62		-1.11	-----	
1033		-----		-----	-----	
1059	D1319	30.2		0.84	3000000933	
1066	D1319	28.6		-0.37	881	
1080		-----		-----	-----	
1105	D1319	28.5		-0.44	-----	
1109	D1319	28.86		-0.17	3000000941	
1254	D1319	29.28		0.15	3000000941	
1310		-----		-----	-----	
1498		-----		-----	-----	
1531		-----		-----	-----	
1631		-----		-----	-----	
1634	Other	27.67		-1.07	-----	
1720		-----		-----	-----	
1724	D1319	30.3		0.92	-----	
1730		-----		-----	-----	
1746	D1319	28.6		-0.37	-----	
1807		-----		-----	-----	
1810		-----		-----	-----	
1811		-----		-----	-----	
1849	EN15553	31.5		1.83	-----	
1977		-----		-----	-----	
6049	D1319	28.8		-0.22	3000000934	
6142		-----		-----	-----	
6170		-----		-----	-----	
6172		-----		-----	-----	
6201	D1319	27.4		-1.28	3000000968	
6220	D1319	29.05		-0.03	-----	
6238	D1319	31.43		1.77	3000000894	
6262	D1319	30.5		1.07	M1039	
6266		-----		-----	-----	
6291	EN22854	27.14		-1.47	-----	
6317		-----		-----	-----	

normality	OK
n	36
outliers	0
mean (n)	29.087
st.dev. (n)	1.3672
R(calc.)	3.828
st.dev.(D1319:19)	1.3214
R(D1319:19)	3.7



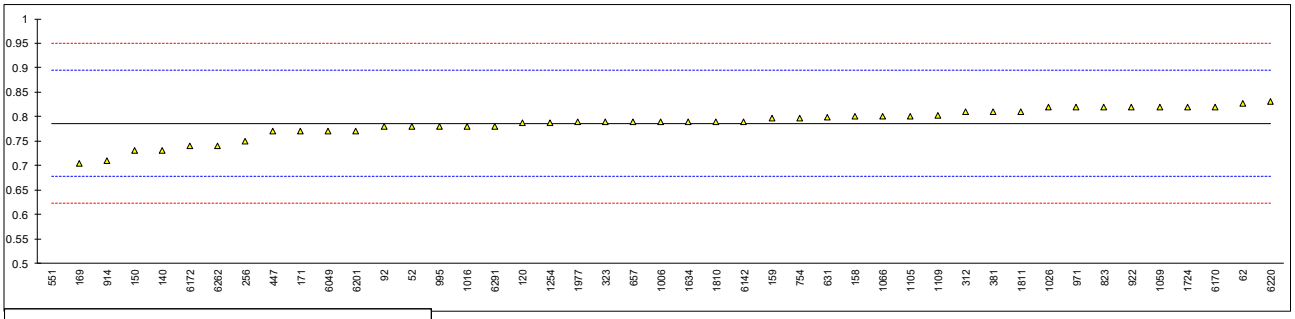


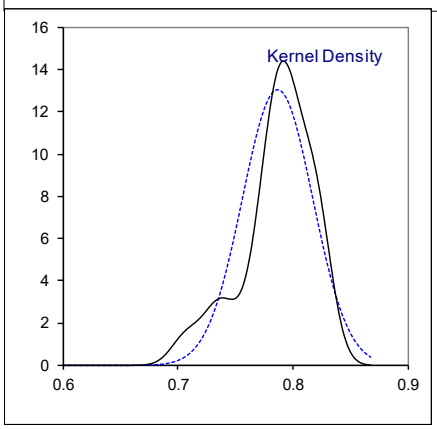
Determination of Benzene on sample #20015; results in %V/V

lab	method	value	mark	z(targ)	remarks
52	D3606	0.78		-0.12	
62	INH-GSB	0.827		0.74	
92	INH-GSB	0.78		-0.12	
120	D3606	0.787		0.01	
140	D3606	0.73		-1.04	
150	D3606	0.73		-1.04	
158	D3606	0.80		0.25	
159	D3606	0.796		0.17	
169	D3606	0.7042		-1.51	
171	D3606	0.77		-0.30	
175		-----		-----	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
253		-----		-----	
254		-----		-----	
256	D5986	0.75		-0.67	
258		-----		-----	
273		-----		-----	
312	D3606	0.81		0.43	
323	EN22854	0.79		0.06	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381	ISO22854	0.81		0.43	
444		-----		-----	
447	EN238	0.77		-0.30	
485		-----		-----	
541		-----		-----	
551	D3606	0.29	R(0.01)	-9.13	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631	INH-Mid-IR	0.798	C	0.21	First reported 0.904
633		-----		-----	
634		-----		-----	
657	D5580	0.79		0.06	
663		-----		-----	
671		-----		-----	
753		-----		-----	
754	D6729	0.797		0.19	
823	D5580	0.82		0.62	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
904		-----		-----	
912		-----		-----	
913		-----		-----	
914	D3606	0.71		-1.41	
922	D6277	0.82		0.62	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971	D5580	0.82		0.62	
974		-----		-----	
995		0.78		-0.12	
996		-----		-----	
997		-----		-----	
998		-----		-----	

lab	method	value	mark	z(targ)	remarks
1006	D5580	0.79		0.06	
1012		-----		-----	
1016	EN22854	0.78		-0.12	
1017		-----		-----	
1026	EN12177	0.8196		0.61	
1033		-----		-----	
1059	ISO22854	0.82		0.62	
1066	EN22854	0.80		0.25	
1080		-----		-----	
1105	D6839	0.80		0.25	
1109	D3606	0.802		0.28	
1254	EN238	0.788		0.03	
1310		-----		-----	
1498		-----		-----	
1531		-----		-----	
1631		-----		-----	
1634	EN22854	0.79		0.06	
1720		-----		-----	
1724	EN12177	0.82		0.62	
1730		-----		-----	
1746		-----		-----	
1807		-----		-----	
1810	D6839	0.79		0.06	
1811	ISO22854	0.81		0.43	
1849		-----		-----	
1977	D6730	0.789		0.05	
6049	ISO22854	0.77		-0.30	
6142	ISO22854	0.79		0.06	
6170	EN12177	0.82		0.62	
6172	D6277	0.74		-0.86	
6201	D3606	0.77		-0.30	
6220	D5580	0.83		0.80	
6238		-----		-----	
6262		0.74		-0.86	
6266		-----		-----	
6291	EN22854	0.78		-0.12	
6317		-----		-----	

normality	OK
n	44
outliers	1
mean (n)	0.7865
st.dev. (n)	0.03057
R(calc.)	0.0856
st.dev.(D3606:17)	0.05438
R(D3606:17)	0.1523





Determination of Copper Corrosion 3hrs at 50°C on sample #20015;

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	D130	1a		-----	
169	D130	1a		-----	
171	D130	1a		-----	
175		-----		-----	
194		-----		-----	
217	D130	1a		-----	
221	D130	1A		-----	
224	D130	1a		-----	
225	D130	1a		-----	
228	D130	1A		-----	
230	D130	1a		-----	
237	D130	1A		-----	
238		-----		-----	
253	D130	1A		-----	
254	D130	1A		-----	
256	D130	1A		-----	
258	D130	1a		-----	
273	D130	1a		-----	
312	D130	1a		-----	
323	D130	1A		-----	
335		-----		-----	
336	D130	1		-----	
337		-----		-----	
353	IP154	1a		-----	
355		-----		-----	
381		-----		-----	
444		-----		-----	
447	D130	1a		-----	
485		-----		-----	
541	D130	1a		-----	
551	D130	1A		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562	D130	1a		-----	
603	D130	1a		-----	
631	D130	1a		-----	
633		-----		-----	
634	D130	1a		-----	
657	D130	1A		-----	
663	D130	1a		-----	
671	D130	1A		-----	
753	D130	1A		-----	
754	D130	1a		-----	
823	D130	1a		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
904	D130	1a		-----	
912	D130	1A		-----	
913	D130	1a		-----	
914	D130	1a		-----	
922	D130	1a		-----	
962		-----		-----	
963		-----		-----	
970	D130	1a		-----	
971	D130	1a		-----	
974	D130	1a		-----	
995	D130	1a		-----	
996	D130	1a		-----	
997		-----		-----	
998	D130	1A		-----	

lab	method	value	mark	z(targ)	remarks
1006	D130	1a		-----	
1012	D130	1a		-----	
1016	D130	1A		-----	
1017	D130	1a		-----	
1026	ISO2160	1A		-----	
1033	IP154	1b		-----	
1059	ISO2160	1a		-----	
1066	D130	1A		-----	
1080		-----		-----	
1105	D130	1a		-----	
1109	D130	1a		-----	
1254	D130	1a		-----	
1310	ISO2160	1A		-----	
1498		-----		-----	
1531	D130	1		-----	
1631		-----		-----	
1634	D130	1a		-----	
1720		-----		-----	
1724	D130	1a		-----	
1730		-----		-----	
1746	D130	1a		-----	
1807	D130	1a		-----	
1810		-----		-----	
1811		-----		-----	
1849	ISO2160	1A		-----	
1977		-----		-----	
6049	D130	1A		-----	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6201	D130	1A		-----	
6220	D130	1a		-----	
6238	ISO2160	1A		-----	
6262		1A		-----	
6266	D130	1a		-----	
6291	D130	1A		-----	
6317	D130	1a		-----	
	n	76			
	mean (n)	1 (1a/1b)			

Determination of Silver Corrosion 3hrs at 50°C on sample #20015;

lab	method	value	mark	z(targ)	remarks
52	D7671-A	0		-----	
62	D7671-B	0		-----	
92		-----		-----	
120	D7671-A	0		-----	
140	D7671-A	0		-----	
150	D7671-A	0		-----	
158		-----		-----	
159	D7671-A	0		-----	
169	D7671-A	0		-----	
171	D7671-A	0		-----	
175		-----		-----	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D7671-A	0		-----	
323	D7671-A	0		-----	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381		-----		-----	
444		-----		-----	
447	D7671-A	0		-----	
485		-----		-----	
541		-----		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631		-----		-----	
633		-----		-----	
634		-----		-----	
657	D7671-A	0		-----	
663	D7671-A	0		-----	
671		-----		-----	
753		-----		-----	
754		-----		-----	
823	D7671-A	1		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
904		-----		-----	
912		-----		-----	
913		-----		-----	
914		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971		-----		-----	
974		-----		-----	
995		-----		-----	
996		-----		-----	
997		-----		-----	
998		-----		-----	

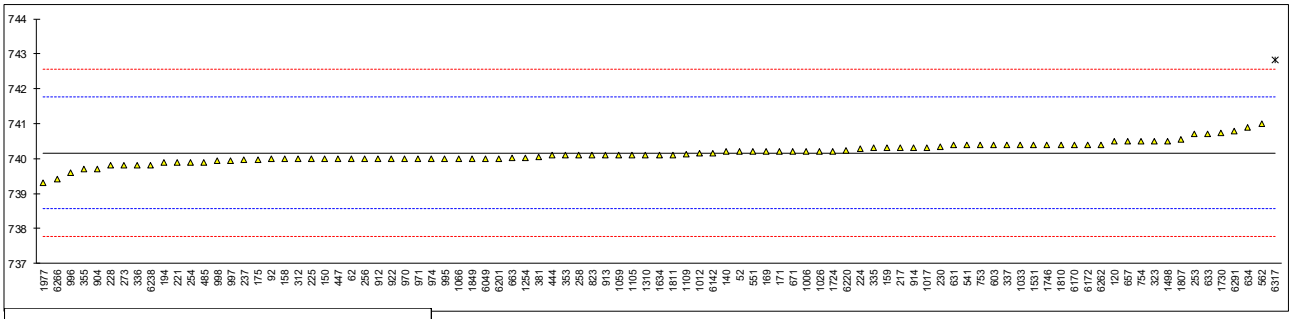
lab	method	value	mark	z(targ)	remarks
1006		-----		-----	
1012		-----		-----	
1016		-----		-----	
1017		-----		-----	
1026		-----		-----	
1033		-----		-----	
1059		-----		-----	
1066	D7671-A	0		-----	
1080		-----		-----	
1105		-----		-----	
1109	D7671-A	1		-----	
1254		-----		-----	
1310		-----		-----	
1498		-----		-----	
1531		-----		-----	
1631		-----		-----	
1634		-----		-----	
1720		-----		-----	
1724		-----		-----	
1730		-----		-----	
1746		-----		-----	
1807		-----		-----	
1810		-----		-----	
1811		-----		-----	
1849		-----		-----	
1977		-----		-----	
6049		-----		-----	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6201	D7671-A	0		-----	
6220		-----		-----	
6238		-----		-----	
6262		1A		-----	
6266		-----		-----	
6291	D7671-A	0		-----	
6317		-----		-----	
	n	16 / 3			
	mean (n)	0 / 1			

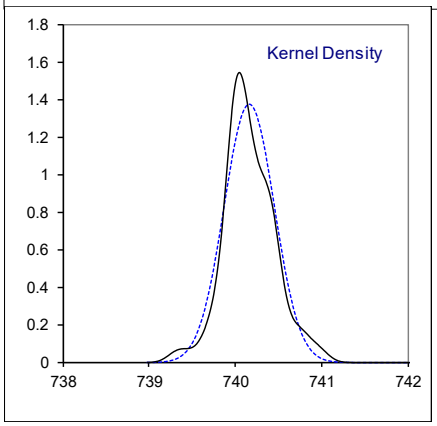
Determination of Density at 15°C on sample #20015; results in kg/m^3

lab	method	value	mark	z(targ)	remarks
52	D4052	740.2		0.05	
62	D4052	740.0		-0.20	
92	D4052	740.0		-0.20	
120	D4052	740.5		0.43	
140	D4052	740.2		0.05	
150	D4052	740.0		-0.20	
158	D4052	740.0		-0.20	
159	D4052	740.3		0.18	
169	D4052	740.2		0.05	
171	D4052	740.2		0.05	
175	D4052	739.98		-0.22	
194	D4052	739.9		-0.32	
217	D4052	740.3		0.18	
221	D4052	739.9		-0.32	
224	D1298	740.28		0.15	
225	D4052	740.0		-0.20	
228	D4052	739.8		-0.45	
230	D4052	740.35		0.24	
237	D4052	739.98		-0.22	
238		-----		-----	
253	D4052	740.7		0.68	
254	D4052	739.9		-0.32	
256	D4052	740.0		-0.20	
258	D4052	740.1		-0.07	
273	D4052	739.8		-0.45	
312	D4052	740.0		-0.20	
323	D4052	740.5		0.43	
335	D4052	740.3		0.18	
336	D4052	739.8		-0.45	
337	D4052	740.4		0.30	
353	IP365	740.1		-0.07	
355	D4052	739.7		-0.57	
381	ISO12185	740.05		-0.14	
444	D4052	740.1		-0.07	
447	IP365	740.0		-0.20	
485	D4052	739.9		-0.32	
541	D4052	740.4		0.30	
551	D4052	740.2		0.05	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562	D1298	741.0		1.05	
603	D4052	740.4		0.30	
631	D4052	740.38		0.28	
633	D1298	740.70		0.68	
634	D4052	740.9		0.93	
657	D4052	740.5		0.43	
663	D4052	740.01		-0.19	
671	D4052	740.2		0.05	
753	D4052	740.4		0.30	
754	D4052	740.5		0.43	
823	ISO12185	740.1		-0.07	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
904	D4052	739.7		-0.57	
912	D4052	740.0		-0.20	
913	D4052	740.1		-0.07	
914	D4052	740.3		0.18	
922	D4052	740.0		-0.20	
962		-----		-----	
963		-----		-----	
970	D4052	740.0		-0.20	
971	D4052	740.0		-0.20	
974	D4052	740.0		-0.20	
995	D4052	740.0		-0.20	
996	D1298	739.6		-0.70	
997	D4052	739.95		-0.26	
998	D4052	739.94		-0.27	

lab	method	value	mark	z(targ)	remarks
1006	D4052	740.2		0.05	
1012	D4052	740.15		-0.01	
1016		-----		-----	
1017	ISO12185	740.3		0.18	
1026	D4052	740.2		0.05	
1033	IP365	740.4	C	0.30	First reported 0.7404 kg/m^3
1059	ISO12185	740.1		-0.07	
1066	D4052	740.0		-0.20	
1080		-----		-----	
1105	D4052	740.1		-0.07	
1109	D4052	740.13		-0.04	
1254	D4052	740.01		-0.19	
1310	ISO12185	740.1		-0.07	
1498	D4052	740.5		0.43	
1531	ISO12185	740.40		0.30	
1631		-----		-----	
1634	D4052	740.1		-0.07	
1720		-----		-----	
1724	D4052	740.2		0.05	
1730	ISO12185	740.74		0.73	
1746	D4052	740.4		0.30	
1807	D4052	740.56	C	0.50	First reported 0.74056 kg/m^3
1810	ISO12185	740.4		0.30	
1811	ISO12185	740.1		-0.07	
1849	ISO12185	740.0		-0.20	
1977	ISO3675	739.30		-1.08	
6049	D4052	740.0		-0.20	
6142	ISO12185	740.15		-0.01	
6170	ISO3675	740.4		0.30	
6172	D4052	740.4		0.30	
6201	D4052	740.0		-0.20	
6220	D4052	740.22		0.08	
6238	D4052	739.8		-0.45	
6262		740.4	C	0.30	Reported 0.7404 kg/m^3,
6266	D4052	739.42		-0.92	
6291	D4052	740.8		0.80	
6317	D4052	742.835	R(0.01)	3.35	

normality	suspect
n	92
outliers	1
mean (n)	740.159
st.dev. (n)	0.2908
R(calc.)	0.814
st.dev.(D4052:18a)	0.7995
R(D4052:18a)	2.239



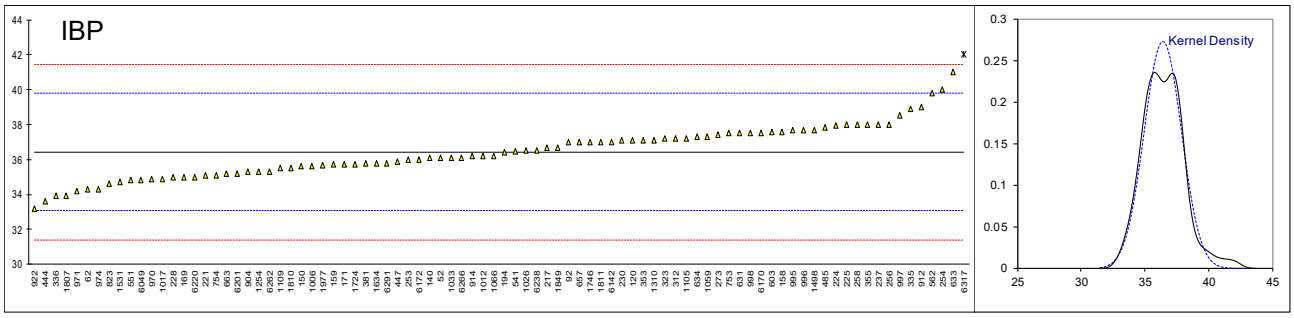


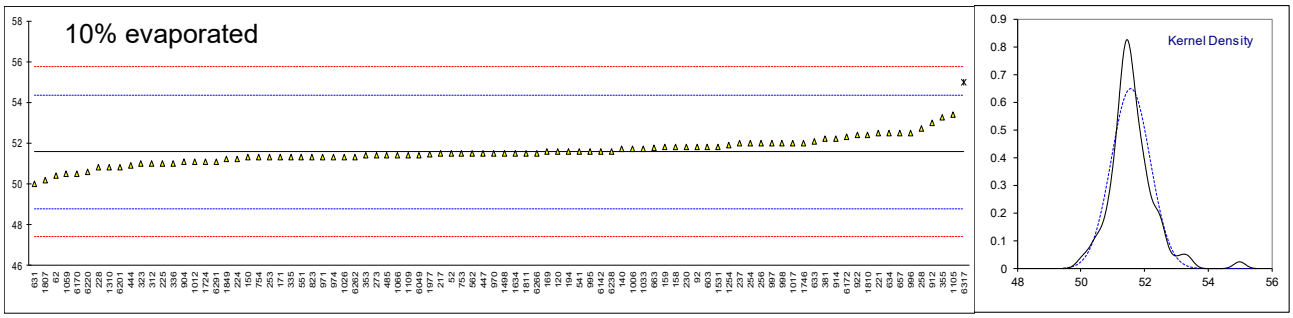
Determination of Distillation at 760 mmHg on sample #20015; results in °C

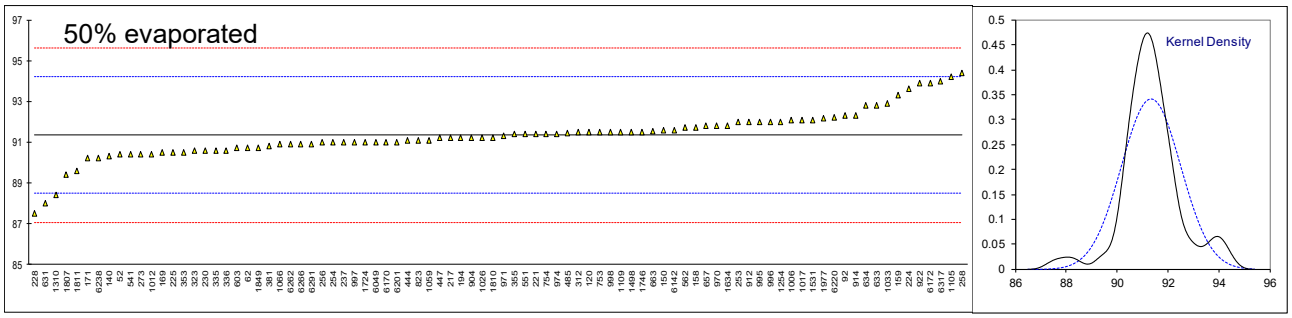
lab	method	IBP	10%-evaporated	50%-evaporated	90%-evaporated	FBP
52	D86-automated	36.1	51.5	90.4	146.2	179.4
62	D86-automated	34.3	50.4	90.7	146.3	178.8
92	D86-automated	37.0	51.8	92.3	146.5	184.4
120	D86-automated	37.1	51.6	91.5	146.0	179.9
140	D86-automated	36.1	51.7	90.3	145.1	175.3
150	D86-automated	35.6	51.3	91.6	147.1	177.9
158	D86-automated	37.6	51.8	91.7	147.2	176.4
159	D86-automated	35.7 C	51.8 C	93.3 C	148.7 C	181.6 C
169	D86-automated	35.0	51.6	90.5	146.0	179.0
171	D86-automated	35.7	51.3	90.2	145.6	179.7
175		-----	-----	-----	-----	-----
194	D86-automated	36.4	51.6	91.2	146.9	180.7
217	D86-automated	36.7	51.5	91.2	145.1	177.9
221	D86-automated	35.1	52.5	91.4	146.8	178.5
224		37.95	51.23	93.61	150.75	175.06
225	D86-manual	38.0	51.0	90.5	145.0	180.5
228	D86-manual	35.0	50.8	87.5	142.3	180.0
230	D86-automated	37.1	51.8	90.6	146.3	177.7
237	D86-manual	38.0	52.0	91.0	145.0	186.0
238		-----	-----	-----	-----	-----
253	D86-manual	36.0	51.3	92.0	145.5	180.0
254	D86-manual	40.0	52.0	91.0	145.0	181.0
256	D86-manual	38.0	52.0	91.0	145.0	181.0
258	D86-automated	38.0	52.7	94.4	146.7	180.8
273	D86-automated	37.4	51.4	90.4	144.5	177.5
312	D86-automated	37.2	51.0	91.5	146.7	180.8
323	D86-automated	37.2	51.0	90.6	146.2	178.5
335	D86-automated	38.9	51.3	90.6	146.7	178.4
336	D86-automated	33.9	51.0	90.6	146.2	179.3
337		-----	-----	-----	-----	-----
353	IP123-automated	37.1	51.4	90.5	147.7	182.8
355	D86-manual	38.00	53.25	91.38	142.75	177.50
381	ISO3405-automated	35.8	52.2	90.8	145.6	182.6
444	D86-automated	33.6	50.9	91.1	146.3	180.7
447	D86-automated	35.9	51.5	91.2	146.8	181.0
485	D86-automated	37.85	51.40	91.45	146.85	180.70
541	D86-automated	36.44	51.60	90.40	145.20	174.75
551	D86-automated	34.8	51.3	91.4	146.4	176.2
554		-----	-----	-----	-----	-----
555		-----	-----	-----	-----	-----
557		-----	-----	-----	-----	-----
558		-----	-----	-----	-----	-----
562	D86-automated	39.8 C	51.5	91.7	147.1	183.4
603	D86-automated	37.6	51.8	90.7	146.7	179.7
631	D86-manual	37.5	50.0	88.0	144.0	182.5
633	D86-automated	41.0	52.1	92.8	147.1	180.3
634	D86-automated	37.3	52.5	92.8	149.4	179.1
657	D86-automated	37.0	52.5	91.8	146.9	180.3
663	D86-automated	35.20	51.75	91.55	146.35	175.45
671		-----	-----	-----	-----	-----
753		37.5	51.5	91.5	147.0	179.0
754	D86-automated	35.1	51.3	91.4	146.2	181.1
823	D86-automated	34.6	51.3	91.1	145.7	182.1
854		-----	-----	-----	-----	-----
856		-----	-----	-----	-----	-----
861		-----	-----	-----	-----	-----
862		-----	-----	-----	-----	-----
864		-----	-----	-----	-----	-----
872		-----	-----	-----	-----	-----
904	D86-automated	35.3	51.1	91.2	146.3	178.7
912	D86-manual	39.0	53.0	92.0	148.0	181.0
913		-----	-----	-----	-----	-----
914	D86-automated	36.2	52.2	92.3	147.1	180.8
922	D86-automated	33.2	52.4	93.9	149.8	181.0
962		-----	-----	-----	-----	-----
963		-----	-----	-----	-----	-----
970	D86-automated	34.9	51.5	91.8	147.5	179.2
971	D86-automated	34.2	51.3	91.3	147.0	179.0
974	D86-automated	34.3	51.3	91.4	147.7	179.2
995	D86-manual	37.7	51.6	92.0	147.0	178.0
996	D86	37.7	52.5	92.0	146.8	176.8
997		38.5	52.0	91.0	147.0	177.0
998	D86-manual	37.5	52.0	91.5	145.5	176.5

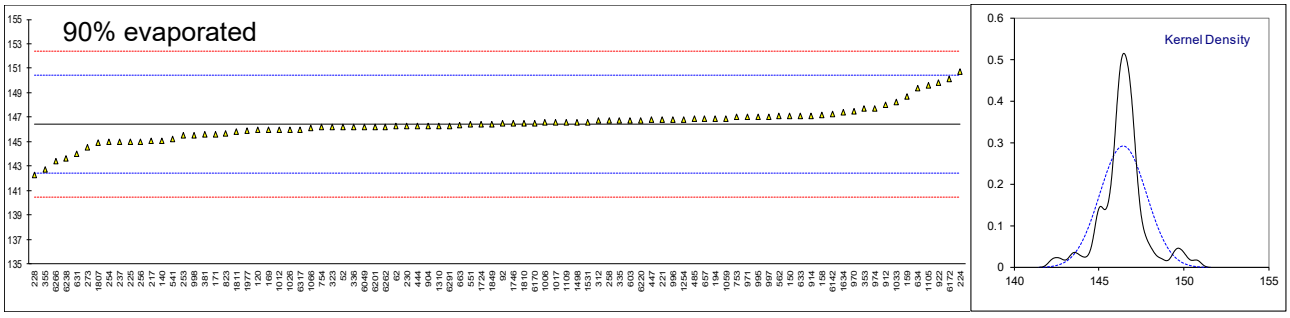
lab	method	IBP	10%-evaporated	50%-evaporated	90%-evaporated	FBP
1006	D86-automated	35.6	51.7	92.1	146.6	176.2
1012	D86	36.2	51.1	90.4	146	175.3
1016		-----	-----	-----	-----	-----
1017	D86	34.9	52.0	92.1	146.6	183.4
1026	ISO3405-automated	36.5	51.3	91.2	146.0	177.7
1033	IP123-automated	36.1	51.7	92.9	148.2	178.8
1059	ISO3405-automated	37.3	50.5	91.1	146.9	178.7
1066	D86-automated	36.2	51.4	90.9	146.1	177.3
1080		-----	-----	-----	-----	-----
1105	D86-automated	37.2	53.4	94.2	149.6	176.8
1109	D86-automated	35.5	51.4	91.5	146.6	178.9
1254	D86-automated	35.3	51.9	92.0	146.8	176.4
1310	ISO3405-automated	37.1	50.8	88.4	146.3	175.2
1498		37.7	51.5	91.5	146.6	181.7
1531	D86-automated	34.7	51.8	92.1	146.6	179.2
1631		-----	-----	-----	-----	-----
1634	D86-automated	35.8	51.5	91.8	147.4	180.4
1720		-----	-----	-----	-----	-----
1724	D86-automated	35.7	51.1	91.0	146.4	180.3
1730		-----	-----	-----	-----	-----
1746	D86-manual	37.0	52.0	91.5	146.5	180.0
1807		33.9	50.2	89.4	144.9	179.2
1810	D86-automated	35.5	52.4	91.2	146.5	178.8
1811	D86-automated	37.0	51.5	89.6	145.8	175.3
1849	ISO3405-automated	36.7	51.2	90.7	146.4	179.5
1977	D86-automated	35.68	51.44	92.17	145.92	179.35
6049	D86-automated	34.8	51.4	91.0	146.2	177.2
6142	ISO3405-automated	37.0	51.6	91.6	147.25	179.75
6170	ISO3405-manual	37.5	50.5	91.0	146.5	180.5
6172	D86-automated	36	52.3	93.9	150.1	181.1
6201	D86-automated	35.2	50.8	91.0	146.2	178.6
6220	D86-automated	35	50.6	92.2	146.7	175.7
6238		36.5	51.6	90.2	143.6	176.6
6262		35.3	51.3	90.9	146.2	180.4
6266	D86	36.11	51.5	90.9	143.42	182.48
6291	D86-automated	35.8	51.1	90.9	146.3	178.4
6317	D86-manual	42 R(0.05)	55 R(0.01)	94	146	182
	normality	OK	suspect	not OK	not OK	OK
	n	87	87	88	88	88
	outliers	1	1	0	0	0
	mean (n)	36.42	51.57	91.35	146.44	179.25
	st.dev. (n)	1.465	0.614	1.166	1.370	2.273
	R(calc.)	4.10	1.72	3.26	3.84	6.36
	st.dev.(D86-A:19)	1.679	1.391	1.428	1.996	2.536
	R(D86-A:19)	4.7	3.89	4.00	5.59	7.1
Compare						
	R(D86-M:19)	4.21	3.26	3.38	4.14	3.10

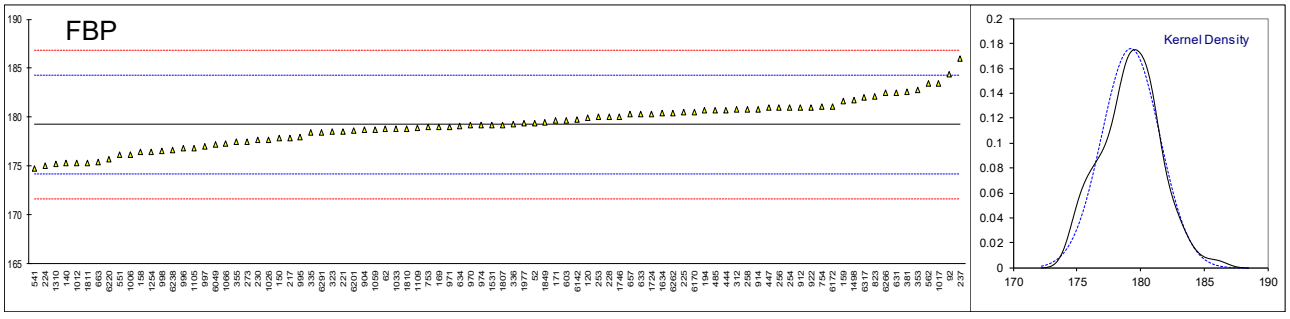
Lab 159: first reported 96.2, 125.3, 199.9, 299.6, 358.8 (possibly a unit error? °F instead of °C)
Lab 562: first reported 41.6


IBP
Kernel Density


10% evaporated
Kernel Density


50% evaporated
Kernel Density


90% evaporated
Kernel Density


FBP
Kernel Density

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Determination of Doctor Test on sample #20015;

lab	method	value	mark	z(targ)	remarks
52	D4952	Neg		-----	
62		-----		-----	
92	D4952	Neg		-----	
120	D4952	negative		-----	
140	D4952	negative		-----	
150	D4952	Neg		-----	
158	D4952	negative		-----	
159		-----		-----	
169		-----		-----	
171	D4952	Negative		-----	
175		-----		-----	
194		-----		-----	
217	D4952	Negaitve		-----	
221		-----		-----	
224		-----		-----	
225	D4952	Negative		-----	
228	D4952	Negative		-----	
230	D4952	negative		-----	
237	D4952	NEGATIVE		-----	
238		-----		-----	
253		-----		-----	
254	D4952	Negative		-----	
256	D4952	NEGATIVE		-----	
258	D4952	Negative		-----	
273	IP30	Negative		-----	
312	IP30	negative		-----	
323	IP30	negative		-----	
335		-----		-----	
336	D4952	Negative		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381		-----		-----	
444		-----		-----	
447	D4952	Negative		-----	
485		-----		-----	
541		-----		-----	
551	D4952	Negative		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631		-----		-----	
633		-----		-----	
634		-----		-----	
657	IP30	Negative		-----	
663	D4952	Negative		-----	
671		-----		-----	
753		-----		-----	
754	D4952	negative		-----	
823	D4952	Negative		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
904	D4952	negative		-----	
912		-----		-----	
913		-----		-----	
914	IP30	Negative		-----	
922	D4952	Negative		-----	
962		-----		-----	
963		-----		-----	
970	D4952	Negative		-----	
971	D4952	Negative		-----	
974	D4952	Negative		-----	
995	D4952	negative		-----	
996	D4952	neg		-----	
997	D4952	negative		-----	
998		-----		-----	

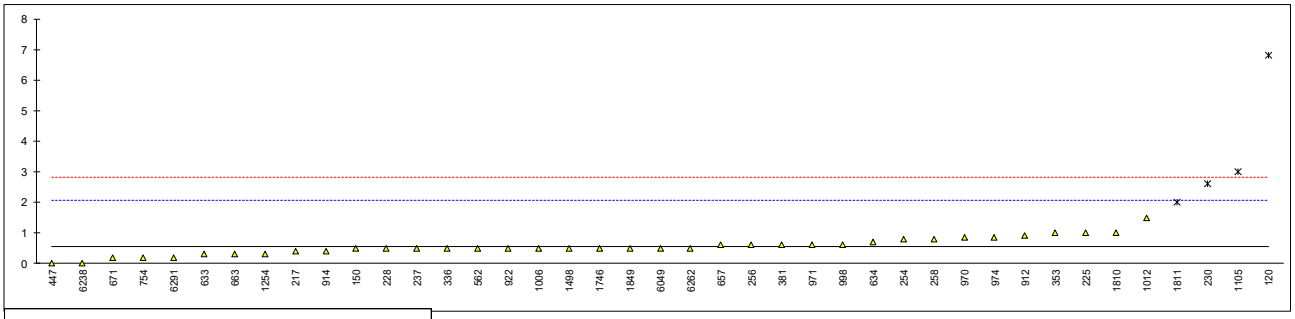
lab	method	value	mark	z(targ)	remarks
1006		-----		-----	
1012		-----		-----	
1016	D4952	Neg		-----	
1017		-----		-----	
1026	D4952	Negative		-----	
1033		-----		-----	
1059	D4952	negative		-----	
1066	D4952	negative		-----	
1080		-----		-----	
1105	D4952	Negative		-----	
1109	IP30	Negative		-----	
1254	D4952	negative		-----	
1310		-----		-----	
1498		-----		-----	
1531		-----		-----	
1631		-----		-----	
1634		-----		-----	
1720		-----		-----	
1724	IP30	negative		-----	
1730		-----		-----	
1746	D4952	Negative		-----	
1807	D4952	negative		-----	
1810		-----		-----	
1811		-----		-----	
1849	TS2884	Negative		-----	
1977		-----		-----	
6049	D4952	Negative		-----	
6142	IP30	Negative		-----	
6170		-----		-----	
6172		-----		-----	
6201	D4952	negative		-----	
6220		-----		-----	
6238	D4952	Negative		-----	
6262	D4952	Negative		-----	
6266		-----		-----	
6291	D4952	negative		-----	
6317		-----		-----	
	n	51			
	mean (n)	Negative			

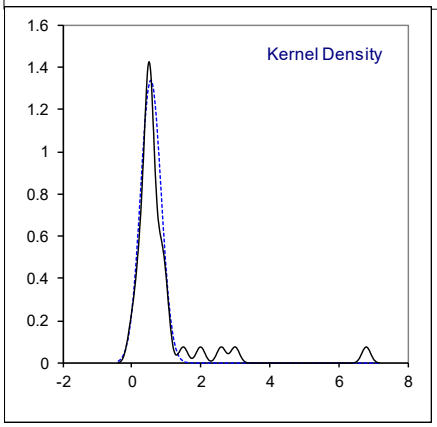
Determination of Existent Gum (solvent washed) on sample #20015; results in mg/100mL

lab	method	value	mark	z(targ)	remarks
52	D381	<0.5		-----	
62		-----		-----	
92	D381	<0.5		-----	
120	D381	6.8	R(0.01)	8.34	
140	D381	<0.5		-----	
150	D381	0.5		-0.08	
158	D381	<0.5		-----	
159		-----		-----	
169	D381	<0.5		-----	
171	D381	<0.5		-----	
175		-----		-----	
194		-----		-----	
217	D381	0.4		-0.21	
221		-----		-----	
224		-----		-----	
225	D381	1.0		0.59	
228	D381	0.5		-0.08	
230	D381	2.6	R(0.01)	2.73	
237	D381	0.5		-0.08	
238		-----		-----	
253	IP540	< 1.0		-----	
254	D381	0.8		0.32	
256	D381	0.6		0.05	
258	IP131	0.8		0.32	
273	D381	<1		-----	
312	D381	<0.5		-----	
323	D381	< 0.5		-----	
335		-----		-----	
336	D381	0.5		-0.08	
337		-----		-----	
353	IP131	1		0.59	
355		-----		-----	
381	ISO6246	0.6		0.05	
444		-----		-----	
447	D381	0		-0.75	
485		-----		-----	
541	D381	<0.5		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562	D381	0.5		-0.08	
603	D381	<1		-----	
631	D381	<0.5		-----	
633	D381	0.3		-0.35	
634	D381	0.7		0.19	
657	D381	0.6		0.05	
663	D381	0.3		-0.35	
671	IP540	0.2		-0.48	
753		-----		-----	
754	D381	0.2		-0.48	
823	D381	<0.5		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
904		-----		-----	
912	D381	0.90		0.46	
913		-----		-----	
914	D381	0.4		-0.21	
922	D381	0.5		-0.08	
962		-----		-----	
963		-----		-----	
970	D381	0.85		0.39	
971	D381	0.60		0.05	
974	D381	0.85		0.39	
995		-----		-----	
996		-----		-----	
997		-----		-----	
998	D381	0.6		0.05	

lab	method	value	mark	z(targ)	remarks
1006	D381	0.5		-0.08	
1012	D381	1.5		1.26	
1016		-----		-----	
1017		-----		-----	
1026	ISO6246	<0.5		-----	
1033		-----		-----	
1059	ISO6246	<0,5		-----	
1066		-----		-----	
1080		-----		-----	
1105	D381	3.0	R(0.01)	3.26	
1109	D381	<1		-----	
1254	D381	0.3		-0.35	
1310		-----		-----	
1498	D381	0.5		-0.08	
1531		-----		-----	
1631		-----		-----	
1634		-----		-----	
1720		-----		-----	
1724	D381	<1,0		-----	
1730		-----		-----	
1746	D381	0.5		-0.08	
1807		-----		-----	
1810	D381	1.0		0.59	
1811	D381	2.0	R(0.01)	1.93	
1849	ISO6246	0.5		-0.08	
1977		-----		-----	
6049	D381	0.5		-0.08	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6201	D381	<1		-----	
6220		-----		-----	
6238	ISO6246	0		-0.75	
6262	D381	0.5		-0.08	
6266		-----		-----	
6291	D381	0.2		-0.48	
6317		-----		-----	

normality	suspect
n	37
outliers	4
mean (n)	0.559
st.dev. (n)	0.2983
R(calc.)	0.835
st.dev.(D381:19)	0.7483
R(D381:19)	2.095





Determination of Lead as Pb on sample #20015; results in mg/L

lab	method	value	mark	z(targ)	remarks
52	D3237	<2.5		-----	
62	D3237	<2.5		-----	
92		-----		-----	
120	D3237	0.154		-----	
140	D3237	<2.5		-----	
150		-----		-----	
158	D3237	0.485		-----	
159		-----		-----	
169		-----		-----	
171	D3237	<2.5		-----	
175		-----		-----	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228	IP352	0.01		-----	
230	D3237	0.00		-----	
237	IP352	<2.5		-----	
238		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D3237	<2.5		-----	
323	D3237	< 2.5		-----	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381	EN237	<2,5		-----	
444		-----		-----	
447	IP428	<2.5		-----	
485		-----		-----	
541	D3237	<2.5		-----	
551	D3237	<2.5		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562	D3237	<2.5		-----	
603		-----		-----	
631	D3237	<2.5		-----	
633		-----		-----	
634		-----		-----	
657	D3237	<2.5		-----	
663		-----		-----	
671		-----		-----	
753		-----		-----	
754		-----		-----	
823	D3237	<3		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
904		-----		-----	
912		-----		-----	
913		-----		-----	
914	INH-HP	0.0002		-----	
922	D3237	<2.5		-----	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971	D3237	<2.5		-----	
974		-----		-----	
995	D3237	<2.5		-----	
996		-----		-----	
997		-----		-----	
998		-----		-----	

lab	method	value	mark	z(targ)	remarks
1006	D3237	2.5		-----	
1012		-----		-----	
1016		-----		-----	
1017		-----		-----	
1026		-----		-----	
1033		-----		-----	
1059	EN13723 mod.	<2,5		-----	
1066		-----		-----	
1080		-----		-----	
1105		-----		-----	
1109		-----		-----	
1254	D3237	< 2.5		-----	
1310		-----		-----	
1498		-----		-----	
1531		-----		-----	
1631		-----		-----	
1634		-----		-----	
1720		-----		-----	
1724	IP428	<3,0		-----	
1730		-----		-----	
1746	D3237	1.5		-----	
1807	EN237	0.4		-----	
1810		-----		-----	
1811		-----		-----	
1849		-----		-----	
1977		-----		-----	
6049	D3237	<2.5		-----	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6201		-----		-----	
6220		-----		-----	
6238		-----		-----	
6262		-----		-----	
6266		-----		-----	
6291		-----		-----	
6317		-----		-----	
	n	30			
	mean (n)	<3			Application range: 2.5 – 25 mg/L

Determination of Manganese as Mn on sample #20015; results in mg/L

lab	method	value	mark	z(targ)	remarks
52	D3831	<0.25		-----	
62		-----		-----	
92		-----		-----	
120	D3831	0.095		-----	
140	D3831	<0.25		-----	
150		-----		-----	
158		-----		-----	
159		-----		-----	
169		-----		-----	
171	D3831	<0.25		-----	
175		-----		-----	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230	EN16135	1.6		-----	
237	EN16136	<0.5		-----	
238		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D3831	<0.25		-----	
323	EN16136	< 0.50		-----	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381	EN16136	<2,0		-----	
444		-----		-----	
447	EN16135	<2.0		-----	
485		-----		-----	
541	D3831	<0.25		-----	
551	D3831	<0.25		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562	D3831	<0.25		-----	
603		-----		-----	
631	D3831	<2		-----	
633		-----		-----	
634		-----		-----	
657	D3831	<0.25		-----	
663		-----		-----	
671		-----		-----	
753		-----		-----	
754		-----		-----	
823		-----		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
904	D3831	<2		-----	
912		-----		-----	
913		-----		-----	
914	INH-HP	0.004		-----	
922	D3831	0.3		-----	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971	D3831	<0.25		-----	
974		-----		-----	
995		-----		-----	
996		-----		-----	
997		-----		-----	
998		-----		-----	

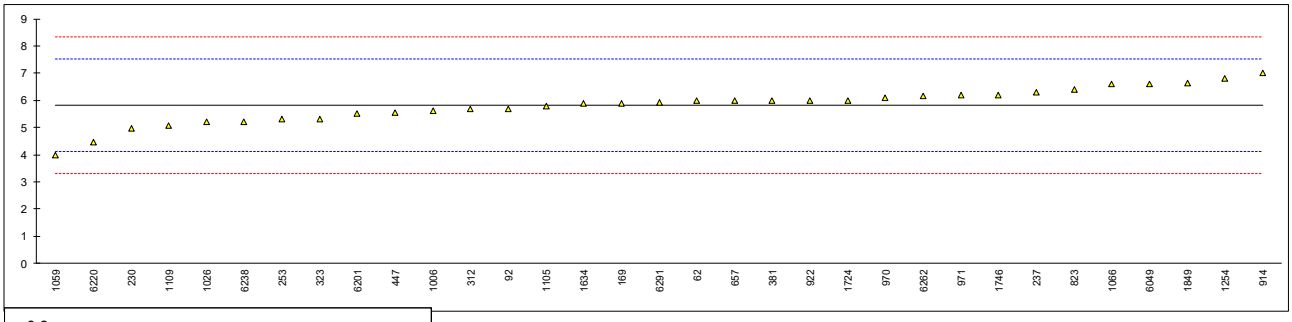
lab	method	value	mark	z(targ)	remarks
1006		-----		-----	
1012		-----		-----	
1016		-----		-----	
1017		-----		-----	
1026		-----		-----	
1033		-----		-----	
1059		-----		-----	
1066		-----		-----	
1080		-----		-----	
1105		-----		-----	
1109		-----		-----	
1254		-----		-----	
1310		-----		-----	
1498		-----		-----	
1531		-----		-----	
1631		-----		-----	
1634		-----		-----	
1720		-----		-----	
1724	EN16135	<2,0		-----	
1730		-----		-----	
1746		-----		-----	
1807	EN16135	0.44		-----	
1810		-----		-----	
1811		-----		-----	
1849		-----		-----	
1977		-----		-----	
6049	EN16136	<0.5		-----	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6201		-----		-----	
6220		-----		-----	
6238		-----		-----	
6262		-----		-----	
6266		-----		-----	
6291		-----		-----	
6317		-----		-----	
	n	22			
	mean (n)	<2			Application range: 0.25 – 40 mg/L

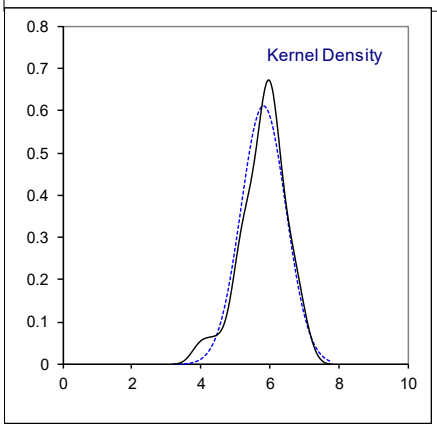
Determination of Olefins by FIA on sample #20015; results in %V/V

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62	D1319	6.0		0.21	
92	D1319	5.7		-0.14	
120		-----		-----	
140		-----		-----	
150		-----		-----	
158		-----		-----	
159		-----		-----	
169	D1319	5.9		0.10	
171		-----		-----	
175		-----		-----	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230	D1319	4.96		-1.02	
237	D1319	6.3		0.57	
238		-----		-----	
253	D1319	5.30		-0.62	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D1319	5.7		-0.14	
323	D1319	5.3		-0.62	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381	EN15553	6.0		0.21	
444		-----		-----	
447	D1319	5.542		-0.33	
485		-----		-----	
541		-----		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631		-----		-----	
633		-----		-----	
634		-----		-----	
657	D1319	6.0		0.21	
663		-----		-----	
671		-----		-----	
753		-----		-----	
754		-----		-----	
823	D1319	6.4		0.69	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
904		-----		-----	
912		-----		-----	
913		-----		-----	
914	D1319	7.0		1.40	
922	D1319	6.0		0.21	
962		-----		-----	
963		-----		-----	
970	D1319	6.1		0.33	
971	D1319	6.20		0.45	
974		-----		-----	
995		-----		-----	
996		-----		-----	
997		-----		-----	
998		-----		-----	

lab	method	value	mark	z(targ)	remarks
1006	D1319	5.6		-0.26	
1012		-----		-----	
1016		-----		-----	
1017		-----		-----	
1026	ISO22854	5.2		-0.74	
1033		-----		-----	
1059	D1319	4.0		-2.16	
1066	D1319	6.6		0.93	
1080		-----		-----	
1105	D1319	5.8		-0.02	
1109	D1319	5.07		-0.89	
1254	D1319	6.82		1.19	
1310		-----		-----	
1498		-----		-----	
1531		-----		-----	
1631		-----		-----	
1634		5.88		0.07	
1720		-----		-----	
1724	D1319	6.0		0.21	
1730		-----		-----	
1746	D1319	6.2		0.45	
1807		-----		-----	
1810		-----		-----	
1811		-----		-----	
1849	EN15553	6.65		0.99	
1977		-----		-----	
6049	D1319	6.6		0.93	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6201	D1319	5.5		-0.38	
6220	D1319	4.46		-1.61	
6238	D1319	5.2		-0.74	
6262	D1319	6.15		0.39	
6266		-----		-----	
6291	EN22854	5.91		0.11	
6317		-----		-----	

normality	OK
n	33
outliers	0
mean (n)	5.819
st.dev. (n)	0.6508
R(calc.)	1.822
st.dev.(D1319:19)	0.8425
R(D1319:19)	2.359





Determination of Oxidation Stability on sample #20015; results in minutes

lab	method	value	mark	z(targ)	remarks
52	D525	>900		-----	
62		-----		-----	
92		-----		-----	
120	D525	>900		-----	
140		-----		-----	
150	D525	>900		-----	
158	D525	>900		-----	
159		-----		-----	
169		-----		-----	
171	D525	>900		-----	
175		-----		-----	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225	D525	>240		-----	
228	D525	>900		-----	
230		-----		-----	
237	D525	>900		-----	
238		-----		-----	
253		-----		-----	
254	D525	>900		-----	
256	D525	>900		-----	
258		-----		-----	
273		-----		-----	
312	D525	>900		-----	
323		-----		-----	
335		-----		-----	
336	D525	>900		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381	ISO7536	>900		-----	
444		-----		-----	
447	D525	>900		-----	
485		-----		-----	
541		-----		-----	
551	D525	>720		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631		-----		-----	
633		-----		-----	
634		-----		-----	
657	D525	>900		-----	
663		-----		-----	
671		-----		-----	
753		-----		-----	
754		-----		-----	
823	D525	>720		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
904	D525	<360		-----	Possibly a false positive test result?
912	D525	>900		-----	
913		-----		-----	
914	D525	>900		-----	
922	D525	>900		-----	
962		-----		-----	
963		-----		-----	
970	D525	>900		-----	
971	D525	>900		-----	
974		-----		-----	
995		-----		-----	
996		-----		-----	
997		-----		-----	
998		-----		-----	

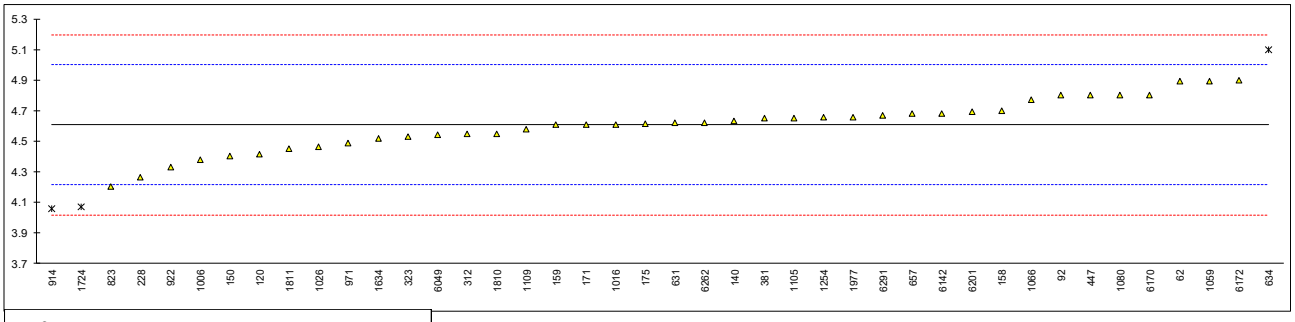
lab	method	value	mark	z(targ)	remarks
1006		-----		-----	
1012		-----		-----	
1016		-----		-----	
1017		-----		-----	
1026		-----		-----	
1033		-----		-----	
1059	ISO7536	>900		-----	
1066		-----		-----	
1080		-----		-----	
1105	D525	>900		-----	
1109	D525	>900		-----	
1254	D525	> 900		-----	
1310	ISO7536	>900		-----	
1498		-----		-----	
1531		-----		-----	
1631		-----		-----	
1634		-----		-----	
1720		-----		-----	
1724		-----		-----	
1730		-----		-----	
1746	D525	＞900		-----	
1807		-----		-----	
1810		-----		-----	
1811		-----		-----	
1849	ISO7536	480		-----	
1977	ISO7536	>900		-----	
6049	D525	>900		-----	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6201	D525	>360		-----	
6220	D525	360		-----	
6238		-----		-----	
6262	D525	>900		-----	
6266		-----		-----	
6291	D525	>900		-----	
6317		-----		-----	
	n	35			
	mean (n)	>360			

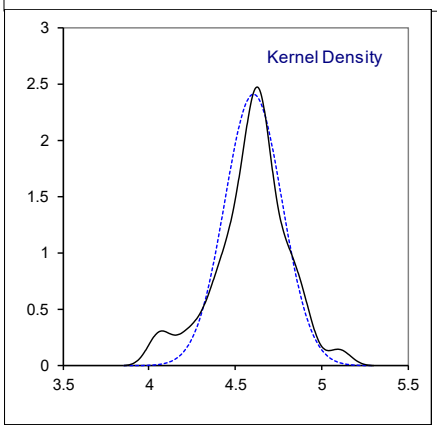
Determination of Ethanol on sample #20015; results in %V/V

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62	INH-GSB	4.89	C	1.44	Test result first reported for Methanol
92	INH-GSB	4.80		0.99	
120	D5599	4.416		-0.97	
140	D5599	4.63		0.12	
150	D5599	4.40		-1.05	
158	D4815	4.7		0.48	
159	D5599	4.61		0.02	
169		-----		-----	
171	D4815	4.61		0.02	
175	D5599	4.615		0.04	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228	D4815	4.2632		-1.75	
230		-----		-----	
237		-----		-----	
238		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D4815	4.55		-0.29	
323	ISO22854-A	4.53		-0.39	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381	ISO22854-A	4.65		0.22	
444		-----		-----	
447	IP466	4.8		0.99	
485		-----		-----	
541		-----		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631	D5845	4.618		0.06	
633		-----		-----	
634	D5845	5.1	R(0.05)	2.52	
657	D4815	4.68		0.37	
663		-----		-----	
671		-----		-----	
753		-----		-----	
754		-----		-----	
823	D4815	4.2		-2.07	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
904		-----		-----	
912		-----		-----	
913		-----		-----	
914	D4815	4.06	R(0.05)	-2.79	
922	D4815	4.33		-1.41	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971	D4815	4.49		-0.59	
974		-----		-----	
995		-----		-----	
996		-----		-----	
997		-----		-----	
998		-----		-----	

lab	method	value	mark	z(targ)	remarks
1006	D4815	4.38		-1.15	
1012		-----		-----	
1016		4.61		0.02	
1017		-----		-----	
1026	ISO22854-A	4.46		-0.75	
1033		-----		-----	
1059	ISO22854-A	4.89		1.44	
1066	ISO22854-A	4.77		0.83	
1080	INH-REFO	4.8		0.99	
1105	D7423	4.65		0.22	
1109	D6839	4.58		-0.14	
1254	D4815	4.654		0.24	
1310		-----		-----	
1498		-----		-----	
1531		-----		-----	
1631		-----		-----	
1634	ISO22854-A	4.52		-0.44	
1720		-----		-----	
1724	ISO22854-A	4.07	R(0.05)	-2.73	
1730		-----		-----	
1746		-----		-----	
1807		-----		-----	
1810	D6839	4.55		-0.29	
1811		4.45		-0.80	
1849		-----		-----	
1977	D6730	4.658		0.26	
6049	ISO22854-A	4.54		-0.34	
6142	ISO22854-A	4.68		0.37	
6170	EN13132	4.8		0.99	
6172	D5845	4.9		1.50	
6201	D4815	4.69		0.43	
6220		-----		-----	
6238		-----		-----	
6262	D4815	4.62		0.07	
6266		-----		-----	
6291	ISO22854-A	4.67		0.32	
6317		-----		-----	

normality	OK
n	39
outliers	3
mean (n)	4.607
st.dev. (n)	0.1653
R(calc.)	0.463
st.dev.(D4815:15b)	0.1962
R(D4815:15b)	0.549



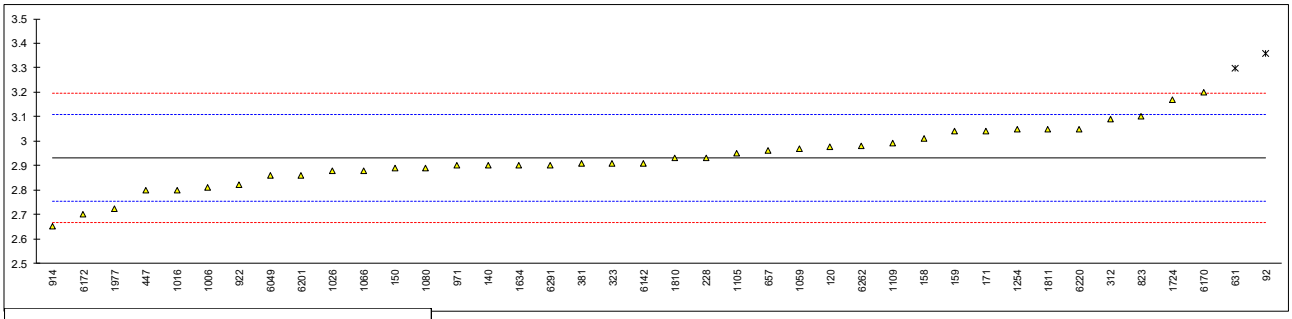


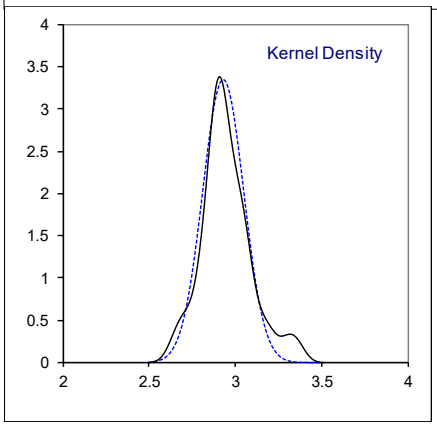
Determination of MTBE on sample #20015; results in %V/V

lab	method	value	mark	z(targ)	remarks
52		-----		-----	
62		-----		-----	
92	INH-GSB	3.36	DG(0.05)	4.87	
120	D5599	2.978		0.53	
140	D5599	2.90		-0.35	
150	D5599	2.89		-0.47	
158	D4815	3.01		0.90	
159	D5599	3.04		1.24	
169		-----		-----	
171	D4815	3.04		1.24	
175		-----		-----	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228	D4815	2.9314		0.00	
230		-----		-----	
237		-----		-----	
238		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D4815	3.09		1.80	
323	ISO22854-A	2.91		-0.24	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381	ISO22854-A	2.91		-0.24	
444		-----		-----	
447	IP466	2.8		-1.49	
485		-----		-----	
541		-----		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631	D5845	3.299	C,DG(0.05)	4.18	First reported 3.619
633		-----		-----	
634		-----		-----	
657	D4815	2.96		0.33	
663		-----		-----	
671		-----		-----	
753		-----		-----	
754		-----		-----	
823	D4815	3.1		1.92	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
904		-----		-----	
912		-----		-----	
913		-----		-----	
914	D4815	2.65		-3.19	
922	D4815	2.82		-1.26	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971	D4815	2.90		-0.35	
974		-----		-----	
995		-----		-----	
996		-----		-----	
997		-----		-----	
998		-----		-----	

lab	method	value	mark	z(targ)	remarks
1006	D4815	2.81		-1.37	
1012		-----		-----	
1016		2.80		-1.49	
1017		-----		-----	
1026	ISO22854-A	2.88		-0.58	
1033		-----		-----	
1059	ISO22854-A	2.97		0.44	
1066	ISO22854-A	2.88		-0.58	
1080	INH-REFO	2.89		-0.47	
1105	D7423	2.95		0.22	
1109	D6839	2.99		0.67	
1254	D4815	3.048		1.33	
1310		-----		-----	
1498		-----		-----	
1531		-----		-----	
1631		-----		-----	
1634	ISO22854-A	2.90		-0.35	
1720		-----		-----	
1724	ISO22854-A	3.17		2.71	
1730		-----		-----	
1746		-----		-----	
1807		-----		-----	
1810	D6839	2.93		-0.01	
1811		3.05		1.35	
1849		-----		-----	
1977	D6730	2.722		-2.37	
6049	ISO22854-A	2.86		-0.81	
6142	ISO22854-A	2.91		-0.24	
6170	EN13132	3.2		3.05	
6172	D5845	2.7		-2.62	
6201	D4815	2.86		-0.81	
6220		3.05		1.35	
6238		-----		-----	
6262	D4815	2.98		0.56	
6266		-----		-----	
6291	ISO22854-A	2.90		-0.35	
6317		-----		-----	

normality	OK
n	38
outliers	2
mean (n)	2.931
st.dev. (n)	0.1194
R(calc.)	0.334
st.dev.(D4815:15b)	0.0881
R(D4815:15b)	0.247



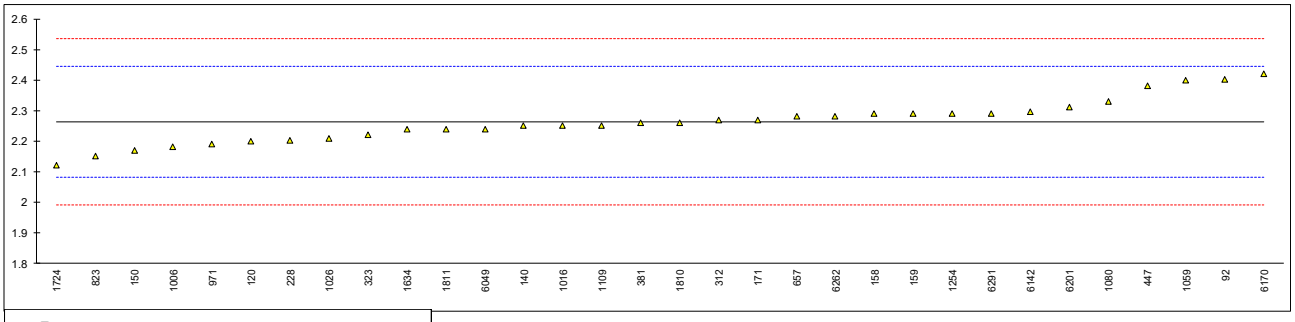


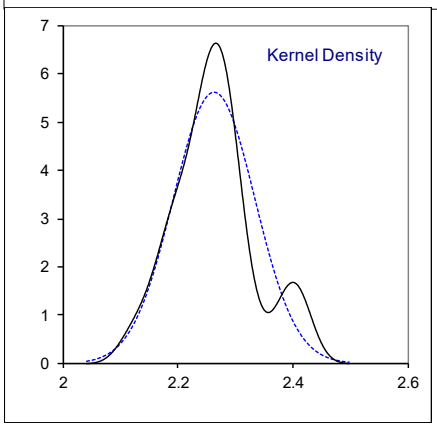
Determination of Oxygen Content on sample #20015; results in %M/M

lab	method	value	mark	z(targ)	Remarks
52		-----		-----	
62		-----		-----	
92	INH-GSB	2.403		1.54	
120	D5599	2.20		-0.70	
140	D5599	2.25		-0.15	
150	D5599	2.17		-1.03	
158	D4815	2.29		0.29	
159	D5599	2.29		0.29	
169		-----		-----	
171	D4815	2.27		0.07	
175		-----		-----	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228	D4815	2.2036		-0.66	
230		-----		-----	
237		-----		-----	
238		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D4815	2.27		0.07	
323	ISO22854	2.22		-0.48	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381	ISO22854	2.26		-0.04	
444		-----		-----	
447	IP466	2.38		1.28	
485		-----		-----	
541		-----		-----	
551		-----		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631		-----		-----	
633		-----		-----	
634		-----		-----	
657	D4815	2.28		0.18	
663		-----		-----	
671		-----		-----	
753		-----		-----	
754		-----		-----	
823	D4815	2.15		-1.25	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
904		-----		-----	
912		-----		-----	
913		-----		-----	
914		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971	D4815	2.19		-0.81	
974		-----		-----	
995		-----		-----	
996		-----		-----	
997		-----		-----	
998		-----		-----	

lab	method	value	mark	z(targ)	remarks
1006	D4815	2.18		-0.92	
1012		-----		-----	
1016	ISO22854	2.25		-0.15	
1017		-----		-----	
1026	ISO22854	2.21		-0.59	
1033		-----		-----	
1059	ISO22854	2.40		1.50	
1066		-----		-----	
1080		2.33		0.73	
1105		-----		-----	
1109	D6839	2.25		-0.15	
1254	D4815	2.29		0.29	
1310		-----		-----	
1498		-----		-----	
1531		-----		-----	
1631		-----		-----	
1634	ISO22854	2.24		-0.26	
1720		-----		-----	
1724	ISO22854	2.12		-1.58	
1730		-----		-----	
1746		-----		-----	
1807		-----		-----	
1810	D6839	2.26		-0.04	
1811	ISO22854	2.24		-0.26	
1849		-----		-----	
1977		-----		-----	
6049	ISO22854	2.24		-0.26	
6142	ISO22854	2.295		0.35	
6170	EN13132	2.42	C	1.73	First reported 2.51
6172		-----		-----	
6201	D4815	2.31		0.51	
6220		-----	W	-----	Test result withdrawn, first reported 0.56
6238		-----		-----	
6262	D4815	2.28		0.18	
6266		-----		-----	
6291	ISO22854	2.29		0.29	
6317		-----		-----	

normality	OK
n	32
outliers	0
mean (n)	2.263
st.dev. (n)	0.0710
R(calc.)	0.199
st.dev.(D4815:15b)	0.0907
R(D4815:15b)	0.254





Determination of Phosphorus as P on sample #20015; results in mg/L

lab	method	value	mark	z(targ)	remarks
52	D3231	0.30		-----	
62		-----		-----	
92		-----		-----	
120	D3231	0.216		-----	
140		-----		-----	
150	D3231	<0.20		-----	
158		-----		-----	
159		-----		-----	
169		-----		-----	
171	D3231	<0.0008		-----	
175		-----		-----	
194		-----		-----	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228		-----		-----	
230		-----		-----	
237		-----		-----	
238		-----		-----	
253		-----		-----	
254		-----		-----	
256		-----		-----	
258		-----		-----	
273		-----		-----	
312	D3231	<0.2		-----	
323		-----		-----	
335		-----		-----	
336		-----		-----	
337		-----		-----	
353		-----		-----	
355		-----		-----	
381		-----		-----	
444		-----		-----	
447		-----		-----	
485		-----		-----	
541		-----		-----	
551	D3231	<0.2		-----	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562		-----		-----	
603		-----		-----	
631		-----		-----	
633		-----		-----	
634		-----		-----	
657		-----		-----	
663		-----		-----	
671		-----		-----	
753		-----		-----	
754		-----		-----	
823	D3231	<1		-----	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
904		-----		-----	
912		-----		-----	
913		-----		-----	
914		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971		-----		-----	
974		-----		-----	
995		-----		-----	
996		-----		-----	
997		-----		-----	
998		-----		-----	

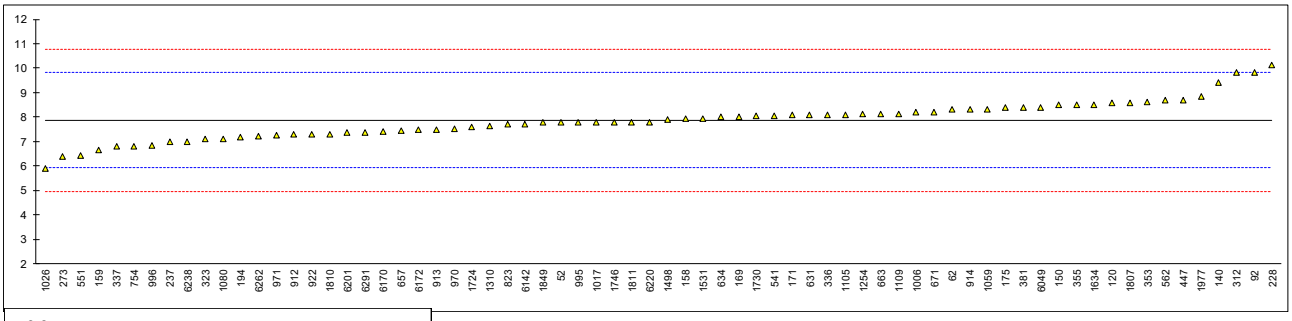
lab	method	value	mark	z(targ)	remarks
1006		-----		-----	
1012		-----		-----	
1016		-----		-----	
1017		-----		-----	
1026		-----		-----	
1033		-----		-----	
1059		-----		-----	
1066		-----		-----	
1080		-----		-----	
1105		-----		-----	
1109	D3231	0.023		-----	
1254		-----		-----	
1310		-----		-----	
1498		-----		-----	
1531		-----		-----	
1631		-----		-----	
1634		-----		-----	
1720		-----		-----	
1724		-----		-----	
1730		-----		-----	
1746		-----		-----	
1807		-----		-----	
1810		-----		-----	
1811		-----		-----	
1849		-----		-----	
1977		-----		-----	
6049		-----		-----	
6142		-----		-----	
6170		-----		-----	
6172		-----		-----	
6201		-----		-----	
6220		-----		-----	
6238		-----		-----	
6262		-----		-----	
6266		-----		-----	
6291		-----		-----	
6317		-----		-----	
	n	8			
	mean (n)	<1			

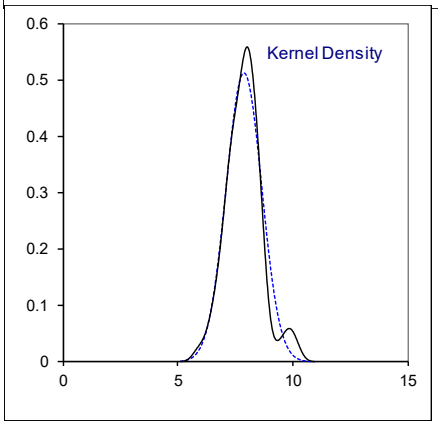
Determination of Total Sulfur on sample #20015; results in mg/kg

lab	method	value	mark	z(targ)	remarks
52	D5453	7.8		-0.07	
62	D5453	8.3		0.44	
92	D5453	9.84		2.03	
120	D2622	8.58		0.73	
140	D2622	9.4		1.57	
150	D2622	8.5		0.65	
158	D2622	7.92		0.05	
159	D5453	6.67		-1.23	
169	D5453	8.02		0.16	
171	D5453	8.1		0.24	
175	D5453	8.4		0.55	
194	D2622	7.2		-0.69	
217		-----		-----	
221		-----		-----	
224		-----		-----	
225		-----		-----	
228	D2622	10.14		2.33	
230	D4294	<20		-----	
237	D5453	7.0		-0.89	
238		-----		-----	
253		-----		-----	
254	D4294	<20		-----	
256		-----		-----	
258		-----		-----	
273	D5453	6.4		-1.51	
312	D5453	9.81		2.00	
323	D5453	7.1		-0.79	
335		-----		-----	
336	ISO20846	8.1		0.24	
337	ISO20846	6.8		-1.10	
353	IP490	8.6		0.75	
355	D2622	8.5		0.65	
381	ISO20846	8.4		0.55	
444		-----		-----	
447	IP490	8.7		0.85	
485		-----		-----	
541	D5453	8.06		0.20	
551	D6423	6.42		-1.49	
554		-----		-----	
555		-----		-----	
557		-----		-----	
558		-----		-----	
562	D5453	8.7		0.85	
603		-----		-----	
631	D7039	8.1		0.24	
633		-----		-----	
634	D4294	8		0.13	
657	D5453	7.43		-0.45	
663	D5453	8.13		0.27	
671	D5453	8.22		0.36	
753	D4294	<20		-----	
754	D5453	6.80		-1.10	
823	D5453	7.7		-0.17	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
864		-----		-----	
872		-----		-----	
904		-----		-----	
912	D5453	7.3		-0.58	
913	D5453	7.5		-0.38	
914	D5453	8.3		0.44	
922	D5453	7.3		-0.58	
962		-----		-----	
963		-----		-----	
970	D5453	7.53		-0.35	
971	D5453	7.27		-0.62	
974		-----		-----	
995	D5453	7.8		-0.07	
996	D5453	6.83		-1.07	
997		-----		-----	
998		-----		-----	

lab	method	value	mark	z(targ)	Remarks
1006	D5453	8.2		0.34	
1012		-----		-----	
1016		-----		-----	
1017	ISO20846	7.8		-0.07	
1026	ISO20846	5.9		-2.02	
1033		-----		-----	
1059	ISO20846	8.3		0.44	
1066		-----		-----	
1080	D5453	7.1		-0.79	
1105	D5453	8.1	C	0.24	First reported 4.85
1109	D7039	8.14		0.28	
1254	D5453	8.12		0.26	
1310	ISO20846	7.62		-0.26	
1498	D5453	7.9		0.03	
1531	ISO20846	7.95		0.08	
1631		-----		-----	
1634	ISO20846	8.5		0.65	
1720		-----		-----	
1724	D5453	7.6		-0.28	
1730	ISO20846	8.04		0.18	
1746	D5453	7.8		-0.07	
1807	D5453	8.58		0.73	
1810	D5453	7.3		-0.58	
1811	D5453	7.8		-0.07	
1849	ISO20846	7.79		-0.08	
1977	D5453	8.83		0.99	
6049	D5453	8.4		0.55	
6142	ISO20846	7.73		-0.14	
6170	ISO20846	7.4		-0.48	
6172	D5453	7.48		-0.40	
6201	D5453	7.37		-0.51	
6220	D5453	7.8		-0.07	
6238	D5453	7		-0.89	
6262	D5453	7.21		-0.68	
6266		-----		-----	
6291	D5453	7.39		-0.49	
6317		-----		-----	

normality	suspect
n	70
outliers	0
mean (n)	7.869
st.dev. (n)	0.7776
R(calc.)	2.177
st.dev.(D5453:19a)	0.9727
R(D5453:19a)	2.724

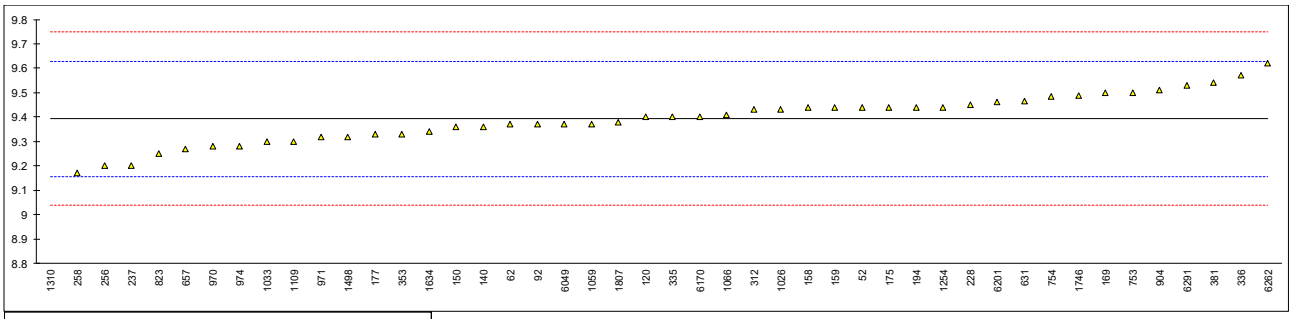


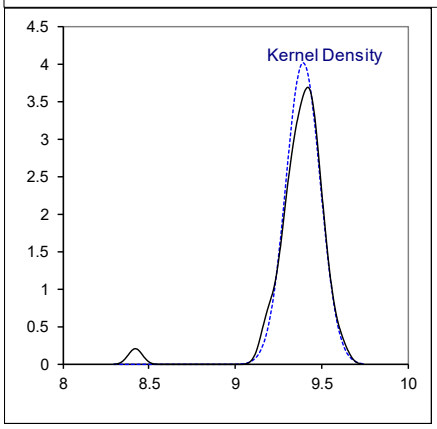


Determination of TVP on sample #20016; results in psi

lab	method	value	mark	z(targ)	remarks
52	D5191	9.44		0.39	
62	D5191	9.37		-0.20	
92	D5191	9.37		-0.20	
120	D5191	9.40		0.06	
140	D5191	9.361		-0.27	
150	D5191	9.36		-0.28	
158	D5191	9.44		0.39	
159	D5191	9.44		0.39	
169	D5191	9.50		0.90	
171		-----		-----	
175	D5191	9.44		0.39	
177	D5191	9.33		-0.54	
194	D5191	9.44		0.39	
225		-----		-----	
228	D5191	9.45		0.48	
230		-----		-----	
237	D5191	9.2		-1.64	
238		-----		-----	
256	D5191	9.20		-1.64	
258	D5191	9.17		-1.89	
312	D5191	9.43		0.31	
323		-----		-----	
335	D5191	9.40		0.06	
336	D5191	9.57		1.50	
337		-----		-----	
353	D5191	9.33		-0.54	
381	D5191	9.54		1.24	
433		-----		-----	
485		-----		-----	
541		-----		-----	
551		-----		-----	
557		-----		-----	
562		-----		-----	
603		-----		-----	
631	D5191	9.464		0.60	
633		-----		-----	
657	D5191	9.27		-1.05	
753	D5191	9.50		0.90	
754	D5191	9.485		0.78	
823	D5191	9.25		-1.21	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
904	D5191	9.51		0.99	
963		-----		-----	
970	D5191	9.28		-0.96	
971	D5191	9.32		-0.62	
974	D5191	9.28		-0.96	
1006		-----		-----	
1017		-----		-----	
1026	D5191	9.43		0.31	
1033	D5191	9.30		-0.79	
1059	D5191	9.372		-0.18	
1066	D5191	9.41		0.14	
1105		-----		-----	
1109	D5191	9.30		-0.79	
1254	D5191	9.44		0.39	
1310	EN13016-1	8.42	R(0.01)	-8.25	
1498	D5191	9.32		-0.62	
1631		-----		-----	
1634	D5191	9.34		-0.45	
1720		-----		-----	
1724		-----		-----	
1730		-----		-----	
1746	D5191	9.49		0.82	
1807	EN13016-1	9.38		-0.11	
1849		-----		-----	
6049	D5191	9.37		-0.20	
6142		-----		-----	
6170	D5191	9.40		0.06	
6201	D5191	9.46		0.56	
6238		-----		-----	
6262	D5191	9.62		1.92	
6291	D5191	9.53		1.16	

normality	OK
n	45
outliers	1
mean (n)	9.393
st.dev. (n)	0.0995
R(calc.)	0.278
st.dev.(D5191:19)	0.1180
R(D5191:19)	0.330

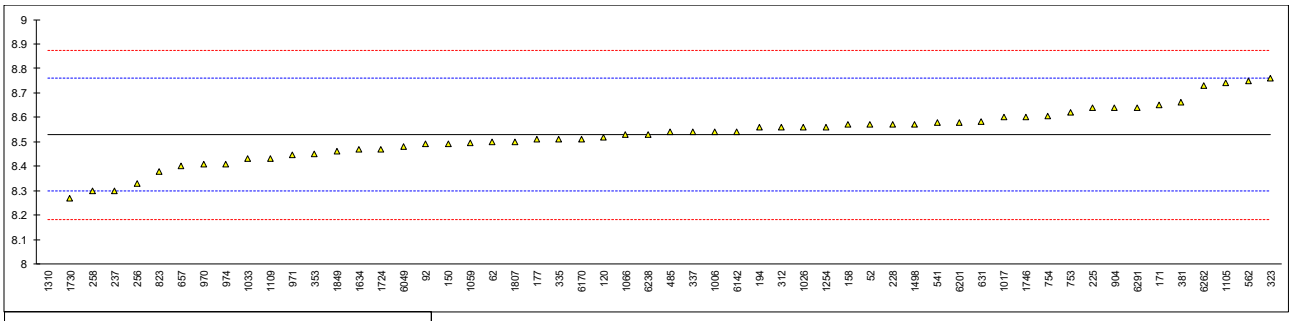


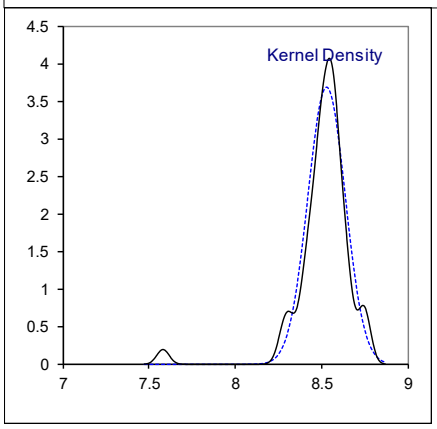


Determination of DVPE (acc. to ASTM D5191) on sample #20016; results in psi

lab	method	value	mark	z(targ)	remarks
52	D5191	8.57		0.36	
62	D5191	8.50		-0.25	
92	D5191	8.49		-0.34	
120	D5191	8.52		-0.08	
140		-----		-----	
150	D5191	8.49		-0.34	
158	D5191	8.57		0.36	
159		-----		-----	
169		-----		-----	
171	D5191	8.65		1.06	
175		-----		-----	
177	D5191	8.51		-0.16	
194	D5191	8.56		0.27	
225	D5191	8.64		0.97	
228	D5191	8.57		0.36	
230		-----		-----	
237	D5191	8.3		-1.99	
238		-----		-----	
256	D5191	8.33		-1.73	
258	D5191	8.30		-1.99	
312	D5191	8.56		0.27	
323	D5191	8.76		2.01	
335	D5191	8.51		-0.16	
336		-----		-----	
337	EN13016-1	8.54		0.10	
353	D5191	8.45		-0.68	
381	D5191	8.66		1.14	
433		-----		-----	
485	D5191	8.5		0.10	
541	D6378	8.58		0.45	
551		-----		-----	
557		-----		-----	
562	D5191	8.75		1.93	
603		-----		-----	
631	D5191	8.584		0.48	
633		-----		-----	
657	D5191	8.40		-1.12	
753	D5191	8.62		0.80	
754	D5191	8.605		0.66	
823	D5191	8.38		-1.29	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
904	D5191	8.64		0.97	
963		-----		-----	
970	D5191	8.407		-1.06	
971	D5191	8.446		-0.72	
974	D5191	8.407		-1.06	
1006	D5191	8.54		0.10	
1017	EN13016-1	8.60		0.62	
1026	D5191	8.56		0.27	
1033	D5191	8.43		-0.86	
1059	D5191	8.496		-0.28	
1066	D5191	8.53		0.01	
1105	D6378	8.74		1.84	
1109	D5191	8.43		-0.86	
1254	D5191	8.56		0.27	
1310	EN13016-1	7.58	R(0.01)	-8.26	
1498	D5191	8.57		0.36	
1631		-----		-----	
1634	D5191	8.47		-0.51	
1720		-----		-----	
1724	EN13016-1	8.47		-0.51	
1730	EN13016-1	8.27		-2.25	
1746	D5191	8.60		0.62	
1807	EN13016-1	8.50		-0.25	
1849	EN13016-1	8.46		-0.60	
6049	D5191	8.48		-0.42	
6142	EN13016-1	8.54		0.10	
6170	D5191	8.51		-0.16	
6201	D5191	8.58		0.45	
6238	D5191	8.53		0.01	
6262	D5191	8.73		1.75	
6291	D5191	8.64		0.97	

normality	OK
n	55
outliers	1
mean (n)	8.529
st.dev. (n)	0.1083
R(calc.)	0.303
st.dev.(D5191:19)	0.1149
R(D5191:19)	0.322

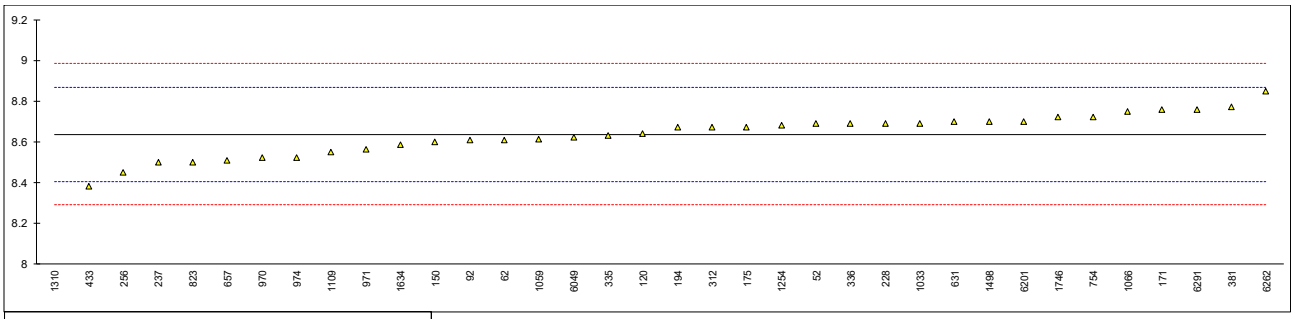


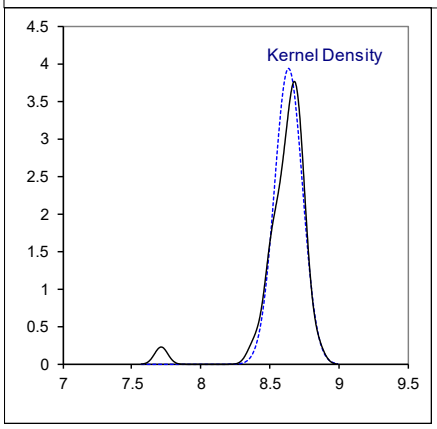


Determination of DVPE (acc. to EPA) on sample #20016; results in psi

lab	method	value	mark	z(targ)	remarks
52	D5191	8.69		0.46	
62	D5191	8.61		-0.23	
92	D5191	8.61		-0.23	
120	D5191	8.64		0.03	
140		-----		-----	
150	D5191	8.60		-0.32	
158		-----		-----	
159		-----		-----	
169		-----		-----	
171	D5191	8.76		1.07	
175	D5191	8.67		0.29	
177		-----		-----	
194	D5191	8.67		0.29	
225		-----		-----	
228	D5191	8.69		0.46	
230		-----		-----	
237	D5191	8.5		-1.19	
238		-----		-----	
256	D5191	8.45		-1.62	
258		-----		-----	
312	D5191	8.67		0.29	
323		-----		-----	
335	D5191	8.63		-0.06	
336	D5191	8.69		0.46	
337		-----		-----	
353		-----		-----	
381	D5191	8.77		1.15	
433	EN13016-1	8.38		-2.23	
485		-----		-----	
541		-----		-----	
551		-----		-----	
557		-----		-----	
562		-----		-----	
603		-----		-----	
631	D5191	8.700		0.55	
633		-----		-----	
657	D5191	8.51		-1.10	
753		-----		-----	
754	D5191	8.721		0.73	
823	D5191	8.50		-1.19	
854		-----		-----	
856		-----		-----	
861		-----		-----	
862		-----		-----	
904		-----		-----	
963		-----		-----	
970	D5191	8.524		-0.98	
971	D5191	8.564		-0.63	
974	D5191	8.524		-0.98	
1006		-----		-----	
1017		-----		-----	
1026		-----		-----	
1033	D5191	8.69		0.46	
1059	D5191	8.613		-0.21	
1066	D5191	8.75		0.98	
1105		-----		-----	
1109	D5191	8.55		-0.75	
1254	D5191	8.68		0.37	
1310	EN13016-1	7.71	R(0.01)	-8.04	
1498	D5191	8.70		0.55	
1631		-----		-----	
1634	D5191	8.587		-0.43	
1720		-----		-----	
1724		-----		-----	
1730		-----		-----	
1746	D5191	8.72		0.72	
1807		-----		-----	
1849		-----		-----	
6049	D5191	8.62		-0.15	
6142		-----		-----	
6170		-----		-----	
6201	D5191	8.70		0.55	
6238		-----		-----	
6262	D5191	8.85		1.85	
6291	D5191	8.76		1.07	

normality	OK
n	35
outliers	1
mean (n)	8.637
st.dev. (n)	0.1011
R(calc.)	0.283
st.dev.(D5191:19)	0.1153
R(D5191:19)	0.323

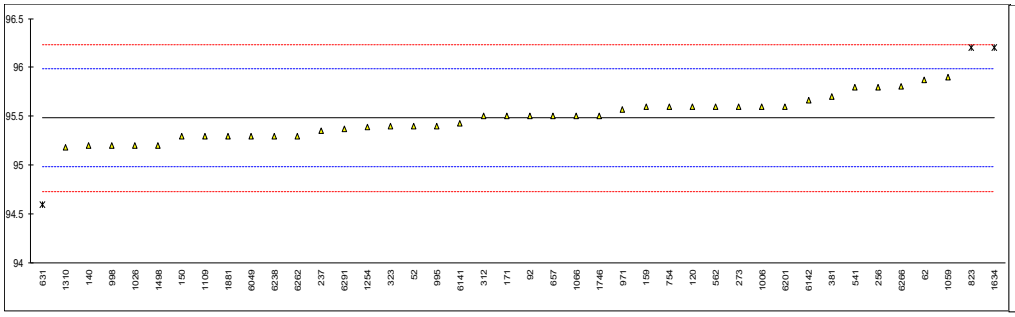


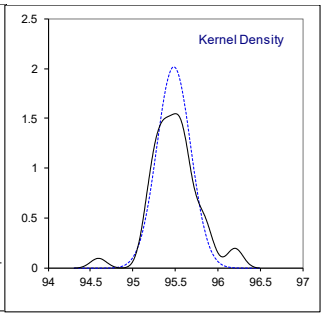


Determination of RON on sample #20017;

lab	method	value	mark	z(targ)	remarks
52	D2699	95.4		-0.33	
62	D2699	95.87		1.55	
92	D2699	95.5		0.07	
120	D2699	95.6		0.47	
140	D2699	95.2		-1.13	
150	D2699	95.3		-0.73	
159	D2699	95.6		0.47	
169		-----		-----	
171	D2699	95.5		0.07	
228		-----		-----	
237	D2699	95.35		-0.53	
256	D2699	95.8		1.27	
273	D2699	95.6	C	0.47	First reported 96.4
312	D2699	95.50		0.07	
323	D2699	95.4		-0.33	
381	D2699	95.7		0.87	
541	D2699	95.8		1.27	
562	D2699	95.6		0.47	
631	D2699	94.60	R(0.05)	-3.53	
657	D2699	95.5		0.07	
754	D2699	95.60		0.47	
823	D2699	96.2	R(0.05)	2.87	
856		-----		-----	
861		-----		-----	
862		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971	D2699	95.57		0.35	
995	D2699	95.4		-0.33	
998	GOST8226	95.2		-1.13	
1006	D2699	95.6		0.47	
1026	ISO5164	95.2		-1.13	
1059	ISO5164	95.9		1.67	
1066	D2699	95.5		0.07	
1109	D2699	95.3		-0.73	
1254	D2699	95.39		-0.37	
1310	ISO5164	95.18		-1.21	
1498	D2699	95.2		-1.13	
1634		96.2	R(0.05)	2.87	
1720		-----		-----	
1746	D2699	95.5		0.07	
1881	D2699	95.3		-0.73	
6049	D2699	95.3		-0.73	
6141	Fuel FTIR	95.43	C	-0.21	First reported 94.77
6142	ISO5164	95.66		0.71	
6201	D2699	95.6		0.47	
6238	D2699	95.3		-0.73	
6262	D2699	95.3		-0.73	
6266	D2699	95.81		1.31	
6277		-----		-----	
6291	D2699	95.37		-0.45	

normality	OK
n	39
outliers	3
mean (n)	95.483
st.dev. (n)	0.1981
R(calc.)	0.555
st.dev.(D2699:19)	0.2500
R(D2699:19)	0.7

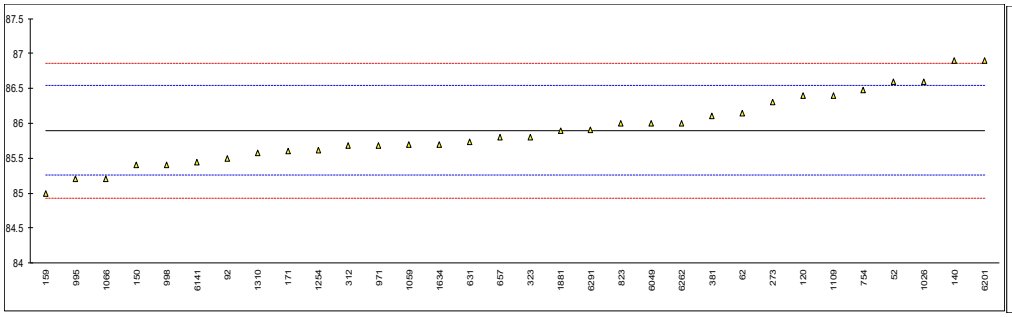


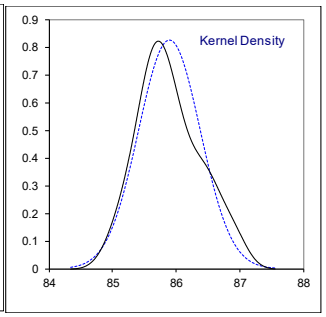


Determination of MON on sample #20017;

lab	method	value	mark	z(targ)	remarks
52	D2700	86.6		2.19	
62	D2700	86.14		0.76	
92	D2700	85.5		-1.23	
120	D2700	86.4		1.57	
140	D2700	86.9		3.12	
150	D2700	85.4		-1.54	
159	D2700	85.0		-2.79	
169		-----		-----	
171	D2700	85.6		-0.92	
228		-----		-----	
237		-----		-----	
256		-----		-----	
273	D2700	86.3		1.26	
312	D2700	85.68		-0.67	
323	D2700	85.8		-0.30	
381	D2700	86.1		0.64	
541		-----		-----	
562		-----		-----	
631	D2700	85.74		-0.48	
657	D2700	85.8		-0.30	
754	D2700	86.47		1.79	
823	D2700	86.0		0.32	
856		-----		-----	
861		-----		-----	
862		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
970		-----		-----	
971	D2700	85.68		-0.67	
995	D2700	85.2	C	-2.16	First reported 84.4
998	GOST511	85.4	C	-1.54	First reported 84.7
1006		-----		-----	
1026	ISO5163	86.6		2.19	
1059	ISO5163	85.7		-0.61	
1066	D2700	85.2		-2.16	
1109	D2700	86.4		1.57	
1254	D2700	85.62		-0.86	
1310	ISO5163	85.58		-0.98	
1498		-----		-----	
1634		85.7		-0.61	
1720		-----		-----	
1746		-----		-----	
1881	D2700	85.9		0.01	
6049	D2700	86.0		0.32	
6141	Fuel FTIR	85.44	C	-1.42	First reported 84.84
6142		-----		-----	
6201	D2700	86.9		3.12	
6238		-----		-----	
6262	D2700	86.0		0.32	
6266		-----		-----	
6277		-----		-----	
6291	D2700	85.91		0.04	

normality	OK
n	32
outliers	0
mean (n)	85.896
st.dev. (n)	0.4835
R(calc.)	1.354
st.dev.(D2700:19)	0.3214
R(D2700:19)	0.9





APPENDIX 2

Determination of other oxygenates on sample #20015; in %V/V

lab	method	DIPE	ETBE	Methanol	TAME	Other Oxygenates
52		-----	-----	-----	-----	-----
62		-----	-----	-----	-----	-----
92		-----	-----	-----	-----	-----
120	D5599	0.00	0.00	0.00	0.00	-----
140	D5599	<0.10	<0.10	<0.10	<0.10	-----
150	D5599	0.00	0.00	0.00	0.00	0.00
158		-----	-----	-----	-----	-----
159	D5599	0.00	0.00	0.00	0.00	0.00
169		-----	-----	-----	-----	-----
171	D4815	<0.2	<0.2	<0.2	<0.20	<0.20
175		-----	-----	-----	-----	-----
194		-----	-----	-----	-----	-----
217		-----	-----	-----	-----	-----
221		-----	-----	-----	-----	-----
224		-----	-----	-----	-----	-----
225		-----	-----	-----	-----	-----
228	D4815	0	0.0764	0	0.3080	-----
230		-----	-----	-----	-----	-----
237		-----	-----	-----	-----	-----
238		-----	-----	-----	-----	-----
253		-----	-----	-----	-----	-----
254		-----	-----	-----	-----	-----
256		-----	-----	-----	-----	-----
258		-----	-----	-----	-----	-----
273		-----	-----	-----	-----	-----
312	D4815	<0.2	<0.2	<0.2	<0.2	<0.2
323	ISO22854-A	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
335		-----	-----	-----	-----	-----
336		-----	-----	-----	-----	-----
337		-----	-----	-----	-----	-----
353		-----	-----	-----	-----	-----
355		-----	-----	-----	-----	-----
381	ISO22854-A	<0,8	<0,8	<0,8	<0,8	<0,8
444		-----	-----	-----	-----	-----
447	IP466	<0.2	<0.2	0.2	<0.2	<0.2
485		-----	-----	-----	-----	-----
541		-----	-----	-----	-----	-----
551		-----	-----	-----	-----	-----
554		-----	-----	-----	-----	-----
555		-----	-----	-----	-----	-----
557		-----	-----	-----	-----	-----
558		-----	-----	-----	-----	-----
562		-----	-----	-----	-----	-----
603		-----	-----	-----	-----	-----
631	D5845	<0.1	<0.1	<0.1	<0.1	-----
633		-----	-----	-----	-----	-----
634		-----	-----	-----	-----	-----
657	D4815	N.D.	N.D.	N.D.	N.D.	N.D.
663		-----	-----	-----	-----	-----
671		-----	-----	-----	-----	-----
753		-----	-----	-----	-----	-----
754		-----	-----	-----	-----	-----
823	D4815	<0.20	<0.20	<0.20	<0.20	<0.20
854		-----	-----	-----	-----	-----
856		-----	-----	-----	-----	-----
861		-----	-----	-----	-----	-----
862		-----	-----	-----	-----	-----
864		-----	-----	-----	-----	-----
872		-----	-----	-----	-----	-----
904		-----	-----	-----	-----	-----
912		-----	-----	-----	-----	-----
913		-----	-----	-----	-----	-----
914		-----	-----	-----	-----	-----
922	D4815	<0.2	<0.2	<0.2	<0.2	<0.2
962		-----	-----	-----	-----	-----
963		-----	-----	-----	-----	-----
970		-----	-----	-----	-----	-----
971	D4815	<0.20	<0.20	<0.20	<0.20	<0.20
974		-----	-----	-----	-----	-----
995		-----	-----	-----	-----	-----
996		-----	-----	-----	-----	-----
997		-----	-----	-----	-----	-----
998		-----	-----	-----	-----	-----

lab	method	DIPE	ETBE	Methanol	TAME	Other Oxygenates	
1006	D4815	-----	0.03	ND	ND	-----	
1012		-----	-----	-----	-----	-----	
1016		<0.01	<0.01	<0.01	-----	-----	
1017		-----	-----	-----	-----	-----	
1026	ISO22854-A	<0.1	<0.1	<0.1	<0.1	<0.1	
1033		-----	-----	-----	-----	-----	
1059	ISO22854-A	<0,20	<0,20	<0,20	<0,20	<0,20	
1066	ISO22854-A	<0.05	<0.05	<0.05	<0.05	0.08	
1080	INH-REFO	0	0	0	0	-----	
1105		-----	-----	-----	-----	-----	
1109	D6839	0.00	0.00	0.00	0.00	0.00	
1254	D4815	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	
1310		-----	-----	-----	-----	-----	
1498		-----	-----	-----	-----	-----	
1531		-----	-----	-----	-----	-----	
1631		-----	-----	-----	-----	-----	
1634	ISO22854-A	0	0.02	0	0	0.12	
1720		-----	-----	-----	-----	-----	
1724	ISO22854-A	<0,17	<0,17	<0,17	<0,17	<0,17	
1730		-----	-----	-----	-----	-----	
1746		-----	-----	-----	-----	-----	
1807		-----	-----	-----	-----	-----	
1810	D6839	-----	0	-----	-----	-----	
1811		-----	-----	-----	-----	-----	
1849		-----	-----	-----	-----	-----	
1977	D6730	-----	-----	-----	-----	-----	
6049	ISO22854-A	<0.8	<0.8	<0.8	<0.8	0.1	C
6142		-----	-----	-----	-----	-----	
6170		-----	0.4	-----	-----	-----	
6172	D5845	0.3	0.0	0.0	0.0	2.42	C
6201	D4815	0.15	<0.2	<0.2	<0.2	<0.2	
6220		-----	-----	-----	-----	-----	
6238		-----	-----	-----	-----	-----	
6262	D4815	0.01	0	0	0	0.11	
6266		-----	-----	-----	-----	-----	
6291	ISO22854-A	0	0.08	0	0	0	
6317		-----	-----	-----	-----	-----	

Lab 6049: first reported 7.5
Lab 6172: first reported 2.47

APPENDIX 3 Distillation z-scores

lab	IBP	10%evaporated	50%evaporated	90%evaporated	FBP
52	-0.19	-0.05	-0.67	-0.12	0.06
62	-1.26	-0.84	-0.46	-0.07	-0.18
92	0.35	0.17	0.66	0.03	2.03
120	0.41	0.03	0.10	-0.22	0.26
140	-0.19	0.10	-0.74	-0.67	-1.56
150	-0.49	-0.19	0.17	0.33	-0.53
158	0.70	0.17	0.24	0.38	-1.12
159	-0.43	0.17	1.36	1.13	0.93
169	-0.85	0.03	-0.60	-0.22	-0.10
171	-0.43	-0.19	-0.81	-0.42	0.18
175	-----	-----	-----	-----	-----
194	-0.01	0.03	-0.11	0.23	0.57
217	0.17	-0.05	-0.11	-0.67	-0.53
221	-0.79	0.67	0.03	0.18	-0.29
224	0.91	-0.24	1.58	2.16	-1.65
225	0.94	-0.41	-0.60	-0.72	0.49
228	-0.85	-0.55	-2.70	-2.07	0.30
230	0.41	0.17	-0.53	-0.07	-0.61
237	0.94	0.31	-0.25	-0.72	2.66
238	-----	-----	-----	-----	-----
253	-0.25	-0.19	0.45	-0.47	0.30
254	2.13	0.31	-0.25	-0.72	0.69
256	0.94	0.31	-0.25	-0.72	0.69
258	0.94	0.82	2.13	0.13	0.61
273	0.58	-0.12	-0.67	-0.97	-0.69
312	0.47	-0.41	0.10	0.13	0.61
323	0.47	-0.41	-0.53	-0.12	-0.29
335	1.48	-0.19	-0.53	0.13	-0.33
336	-1.50	-0.41	-0.53	-0.12	0.02
337	-----	-----	-----	-----	-----
353	0.41	-0.12	-0.60	0.63	1.40
355	0.94	1.21	0.02	-1.85	-0.69
381	-0.37	0.46	-0.39	-0.42	1.32
444	-1.68	-0.48	-0.18	-0.07	0.57
447	-0.31	-0.05	-0.11	0.18	0.69
485	0.85	-0.12	0.07	0.21	0.57
541	0.01	0.03	-0.67	-0.62	-1.77
551	-0.96	-0.19	0.03	-0.02	-1.20
554	-----	-----	-----	-----	-----
555	-----	-----	-----	-----	-----
557	-----	-----	-----	-----	-----
558	-----	-----	-----	-----	-----
562	2.01	-0.05	0.24	0.33	1.64
603	0.70	0.17	-0.46	0.13	0.18
631	0.64	-1.13	-2.35	-1.22	1.28
633	2.73	0.38	1.01	0.33	0.42
634	0.53	0.67	1.01	1.49	-0.06
657	0.35	0.67	0.31	0.23	0.42
663	-0.73	0.13	0.14	-0.04	-1.50
671	-----	-----	-----	-----	-----
753	0.64	-0.05	0.10	0.28	-0.10
754	-0.79	-0.19	0.03	-0.12	0.73
823	-1.08	-0.19	-0.18	-0.37	1.13
854	-----	-----	-----	-----	-----
856	-----	-----	-----	-----	-----
861	-----	-----	-----	-----	-----
862	-----	-----	-----	-----	-----
864	-----	-----	-----	-----	-----
872	-----	-----	-----	-----	-----
904	-0.67	-0.33	-0.11	-0.07	-0.22
912	1.54	1.03	0.45	0.78	0.69
913	-----	-----	-----	-----	-----
914	-0.13	0.46	0.66	0.33	0.61
922	-1.92	0.60	1.78	1.69	0.69
962	-----	-----	-----	-----	-----
963	-----	-----	-----	-----	-----
970	-0.90	-0.05	0.31	0.53	-0.02
971	-1.32	-0.19	-0.04	0.28	-0.10
974	-1.26	-0.19	0.03	0.63	-0.02
995	0.76	0.03	0.45	0.28	-0.49
996	0.76	0.67	0.45	0.18	-0.96
997	1.24	0.31	-0.25	0.28	-0.89
998	0.64	0.31	0.10	-0.47	-1.08

lab	IBP	10%evaporated	50%evaporated	90%evaporated	FBP
1006	-0.49	0.10	0.52	0.08	-1.20
1012	-0.13	-0.33	-0.67	-0.22	-1.56
1016	-----	-----	-----	-----	-----
1017	-0.90	0.31	0.52	0.08	1.64
1026	0.05	-0.19	-0.11	-0.22	-0.61
1033	-0.19	0.10	1.08	0.88	-0.18
1059	0.53	-0.77	-0.18	0.23	-0.22
1066	-0.13	-0.12	-0.32	-0.17	-0.77
1080	-----	-----	-----	-----	-----
1105	0.47	1.32	1.99	1.59	-0.96
1109	-0.55	-0.12	0.10	0.08	-0.14
1254	-0.67	0.24	0.45	0.18	-1.12
1310	0.41	-0.55	-2.07	-0.07	-1.60
1498	0.76	-0.05	0.10	0.08	0.97
1531	-1.02	0.17	0.52	0.08	-0.02
1631	-----	-----	-----	-----	-----
1634	-0.37	-0.05	0.31	0.48	0.46
1720	-----	-----	-----	-----	-----
1724	-0.43	-0.33	-0.25	-0.02	0.42
1730	-----	-----	-----	-----	-----
1746	0.35	0.31	0.10	0.03	0.30
1807	-1.50	-0.98	-1.37	-0.77	-0.02
1810	-0.55	0.60	-0.11	0.03	-0.18
1811	0.35	-0.05	-1.23	-0.32	-1.56
1849	0.17	-0.26	-0.46	-0.02	0.10
1977	-0.44	-0.09	0.57	-0.26	0.04
6049	-0.96	-0.12	-0.25	-0.12	-0.81
6142	0.35	0.03	0.17	0.41	0.20
6170	0.64	-0.77	-0.25	0.03	0.49
6172	-0.25	0.53	1.78	1.84	0.73
6201	-0.73	-0.55	-0.25	-0.12	-0.25
6220	-0.85	-0.69	0.59	0.13	-1.40
6238	0.05	0.03	-0.81	-1.42	-1.04
6262	-0.67	-0.19	-0.32	-0.12	0.46
6266	-0.18	-0.05	-0.32	-1.51	1.28
6291	-0.37	-0.33	-0.32	-0.07	-0.33
6317	3.33	2.47	1.85	-0.22	1.09

APPENDIX 4 Number of participants per country

1 lab in	AFGHANISTAN
1 lab in	ALBANIA
1 lab in	ARGENTINA
1 lab in	AUSTRALIA
1 lab in	AUSTRIA
3 labs in	BELGIUM
5 labs in	BRAZIL
3 labs in	CANADA
2 labs in	CHILE
5 labs in	CHINA, People's Republic
1 lab in	CONGO Brazzaville
1 lab in	COTE D'IVOIRE
1 lab in	CROATIA
1 lab in	CYPRUS
2 labs in	CZECH REPUBLIC
1 lab in	DJIBOUTI
2 labs in	EGYPT
1 lab in	ESTONIA
3 labs in	FRANCE
3 labs in	GEORGIA
2 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	KENYA
1 lab in	LATVIA
1 lab in	LITHUANIA
1 lab in	MALAYSIA
1 lab in	MAURITIUS
1 lab in	MOZAMBIQUE
6 labs in	NETHERLANDS
1 lab in	NIGER
3 labs in	NIGERIA
1 lab in	OMAN
1 lab in	PAKISTAN
3 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
2 labs in	SERBIA
1 lab in	SINGAPORE
1 lab in	SLOVENIA
1 lab in	SOUTH AFRICA
1 lab in	SOUTH KOREA
1 lab in	SPAIN
1 lab in	SUDAN
1 lab in	TAIWAN
3 labs in	TANZANIA
1 lab in	THAILAND
1 lab in	TOGO
1 lab in	TUNISIA
4 labs in	TURKEY
1 lab in	TURKMENISTAN
3 labs in	UNITED ARAB EMIRATES
3 labs in	UNITED KINGDOM
10 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	= possibly an error in calculations
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
SDS	= Safety Data Sheet

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