Institute for
Interlaboratory Studies

Results of Proficiency Test
Methanol
September 2022

Organized by: Institute for Interlaboratory Studies
Spijkenisse, the Netherlands

Author: ing. A. Ouwerkerk
Correctors: ing. R.J. Starink & ing. M Meijer
Approved by: ing. A.S. Noordman-de Neef

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1 INTRODUCTION

Since 1999 the Institute for Interlaboratory Studies (iis) organizes a proficiency scheme for the analysis of Methanol based on the latest version of the IMPCA specification every year. During the annual proficiency testing program 2022/2023 it was decided to continue the round robin for the analysis of Methanol.

In this interlaboratory study registered for participation:
- 86 laboratories in 33 countries for regular analyzes in Methanol PT iis22C06
- 42 laboratories in 19 countries on the UV analyzes iis22C06UV

In total 88 laboratories in 34 countries registered for participation, see appendix 3 for the number of participants per country. In this report the results of the Methanol proficiency tests are presented and discussed. This report is also electronically available through the iis website www.iisnl.com.

2 SET UP

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

Sample ID	PT ID	Quantity	Purpose
#22160	iis22C06	1x 1 L	Regular analyzes
#22162	iis22C06	1x 250 mL	NVM
#22161	iis22C06UV	1x 100 mL	UV

Table 1: Methanol samples used in iis22C06 and iis22C06UV PTs

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

2.1 ACCREDITATION

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

2.2 PROTOCOL

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

2.3 CONFIDENTIALITY STATEMENT

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

2.4 SAMPLES

For the preparation of the sample for the regular analyzes in Methanol a batch of approximately 110 liters of Methanol was obtained from a local supplier. After homogenization 100 amber glass bottles of 1 L were filled and labelled #22160.
The homogeneity of the subsamples was checked by the determination of Density at 20 °C in accordance with ASTM D4052 on 8 stratified randomly selected subsamples.

	Density at 20 °C in kg/L
sample #22160-1	0.79125
sample #22160-2	0.79123
sample #22160-3	0.79125
sample #22160-4	0.79124
sample #22160-5	0.79123
sample #22160-6	0.79125
sample #22160-7	0.79124
sample #22160-8	0.79124

Table 2: homogeneity test results of subsamples #22160

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 20 °C in kg/L
r (observed)	0.00002
reference test method	ISO12185:96
0.3 x R (reference test method)	0.00015

Table 3: evaluation of the repeatability of subsamples #22160

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

For the preparation of the sample for the analyzes of UV Absorbance in Methanol a batch of approximately 10 liters of Methanol was obtained from a local supplier. The batch was not further treated nor spiked and therefore very pure. After homogenization 75 amber glass bottles of 100 mL were filled and labelled #22161.
The homogeneity of the subsamples was checked by the determination of UV Absorbances at 268.5 nm using a 50 mm cuvette in accordance with IMPCA004 on 8 stratified randomly selected subsamples.

	UV Absorbance at 268.5nm
sample #22161-1	0.032
sample #22161-2	0.034
sample #22161-3	0.038
sample #22161-4	0.032
sample #22161-5	0.032
sample #22161-6	0.035
sample #22161-7	0.043
sample #22161-8	0.035

Table 4: homogeneity test results of subsamples #22161

It appeared that the above test values are close to zero and the smooth UV scans were all identical so that eight times a pass evaluation of the subsamples has been obtained. Because of the smooth scans homogeneity of the subsamples was assumed. The reported test values are below the application range (0.11-0.44) of IMPCA004:15 and therefore it could not be used as criteria for the evaluation of the homogeneity.

For the preparation of the sample for the analyzes of NVM in Methanol a batch of approximately 50 liters of Methanol was obtained from a local supplier. This batch was spiked with Sodium Chloride. After homogenization 125 amber glass bottles of 250 mL were filled and labelled #22162.
The homogeneity of the subsamples was checked by the determination of Nonvolatile matter in accordance with EN15691 on 8 stratified randomly selected subsamples.

	Nonvolatile matter in mg/100 mL
sample #22162-1	20.0
sample #22162-2	19.4
sample #22162-3	20.0
sample #22162-4	20.5
sample #22162-5	19.7
sample #22162-6	19.7
sample #22162-7	19.5
sample #22162-8	19.8

Table 5: homogeneity test results of subsamples #22162

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.

	Nonvolatile matter in mg/100 mL
r (observed)	1.0
reference test method	D1353:13R19
0.3 x R (reference test method)	2.6

Table 6: evaluation of the repeatability of subsamples #22162

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

Depending on the registration of the participant the appropriate set of PT samples was sent on August 24, 2022. An SDS was added to the sample package.

2.5 STABILITY OF THE SAMPLES

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

2.6 ANALYZES

The participants were requested to determine on sample #22160: Acidity as Acetic acid, Appearance, Carbonizables Pt/Co, Inorganic Chloride as Cl, Color Pt/Co, Density at 20 °C, Specific Gravity 20/20 °C, Distillation (IBP, 50% recovered, DP and Range), Iron as Fe, Water miscibility (Hydrocarbons), Permanganate Time Test at 15 °C, Purity by GC (as received and on dry basis), Acetone, Benzene, Ethanol, Toluene, Total Sulfur, Trimethylamine (TMA) and Water (Coulometric and Volumetric).
On sample #22161 it was requested to determine the UV Absorbance at 300, 268.5, 250, 240, 230 and 220 nm and an evaluation (Pass or Fail) of the UV scan.
On sample #22162 it was requested to determine Nonvolatile matter only.

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

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

3 RESULTS

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

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

3.1 STATISTICS

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

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

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

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

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

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

3.2 GRAPHICS

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

Furthermore, Kernel Density Graphs were made. This is a method for producing a smooth density approximation to a set of data that avoids some problems associated with histograms. Also, a normal Gauss curve (dotted line) was projected over the Kernel Density Graph (smooth line) for reference. The Gauss curve is calculated from the consensus value and the corresponding standard deviation.

3.3 Z-SCORES

To evaluate the performance of the participating laboratories the z-scores were calculated. As it was decided to evaluate the performance of the participants in this proficiency test (PT) against the literature requirements (derived from e.g. ISO or ASTM test methods), the z-scores were calculated using a target standard deviation. This results in an evaluation independent of the variation in this interlaboratory study.

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

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

The z-scores were calculated according to:

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

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

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

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

4 EVALUATION

In this proficiency test some problems were encountered with the dispatch of the samples due to the COVID-19 pandemic. Therefore, the reporting time on the data entry portal was extended with another week.
In the regular Methanol PT seven participants reported test results after the extended reporting date and eighteen other participants did not report any test results for the regular analyzes.
In the Methanol UV PT two participants reported test results after the extended reporting date and thirteen other participants did not report any test results. Not all participants were able to report all tests requested.
In total 69 participants reported 1020 numerical test results. Observed were 34 outlying test results, which is 3.3%. In proficiency tests outlier percentages of 3% - 7.5% are quite normal.

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

4.1 EVALUATION PER SAMPLE AND PER TEST

In this section the reported test results are discussed per sample and per test. The test methods which were used by the various laboratories were taken into account for explaining the observed differences when possible and applicable. These test methods are also in the tables together with the original data in appendix 1. The abbreviations, used in these tables, are explained in appendix 4.
Unfortunately, a suitable reference test method providing the precision data is not available for all determinations. For these tests the calculated reproducibility was compared against the estimated reproducibility calculated with the Horwitz equation.

In the iis PT reports ASTM test methods are referred to with a number (e.g. D1209) and an added designation for the year that the test method was adopted or revised (e.g. D1209:05). When a method has been reapproved an “R” will be added and the year of approval (e.g. D1209:05R19).

sample #22160

Acidity as Acetic acid: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ASTM D1613:17.

Appearance: This determination was not problematic. All reporting participants agreed about the appearance, which was bright, clear and free of suspended matter (Pass).

Carbonizables Pt/Co: This determination was problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ASTM E346:08e1(withdrawn in 2017).

Inorganic Chloride as Cl: This determination was not problematic. All reporting participants agreed on a test result near or below the detection limit. Therefore, no z-scores are calculated.

Color as Pt/Co: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ASTM D1209:05R19.

Density at 20 °C: This determination was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ISO12185:96.

Specific Gravity 20/20 °C: This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO12185:96.

Distillation: This determination was not problematic. One statistical outlier was observed over three parameters. All calculated reproducibilities after rejection of the statistical outlier were in agreement with the requirements of ASTM D1078:11R19 for the automated and manual mode.

Iron as Fe: This determination was not problematic. Almost all reporting participants agreed on a test result near or below the detection limit. Therefore, no z-scores are calculated.

Water miscibility (Hydrocarbons): This determination was not problematic. All reporting participants agreed on a similar test result which was a pass.

Permanganate Time Test: This determination was problematic. No statistical outliers were observed. The calculated reproducibility is not in agreement with the requirements of ASTM D1363:06R19.

Purity by GC as received: This determination may be problematic. One statistical outlier was observed and nine other test results were excluded. The calculated reproducibility after rejection of the suspect data was lower than the calculated reproducibility in the 2021 iis PT, see appendix 1.
Test results were excluded when the test result of Purity as received was lower than the test result of Purity on dry base because for Purity on dry base more components are subtracted (Water and Acidity).

Purity by GC on dry basis: This determination may be problematic. Two statistical outliers were observed and nine other test results were excluded. The calculated reproducibility after rejection of the suspect data was lower than the calculated reproducibility of the 2021 iis PT, see appendix 1.
Test results were excluded when the test result of Purity as received was lower than the test result of Purity on dry base because for Purity on dry base more components are subtracted (Water and Acidity).

Acetone: This determination was not problematic. All reporting participants agreed on a test result near or below the detection limit. Therefore, no z-scores are calculated.

Benzene: This determination was not problematic. All reporting participants agreed on a test result near or below the detection limit. Therefore, no z-scores are calculated.

Ethanol: This determination was problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the estimated reproducibility calculated with the Horwitz equation.

Toluene: This determination was not problematic. All reporting participants agreed on a test result near or below the detection limit. Therefore, no z-scores are calculated.

Total Sulfur: This determination was not problematic. All reporting participants agreed on a test result near or below the detection limit. Therefore, no z-scores are calculated.

Trimethylamine (TMA): This determination was problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not in agreement with the requirements calculated from the repeatability of ASTM E346:08e1 (withdrawn 2017).

Water, Coulometric: This determination was very problematic. Five statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not at all in agreement with the requirements of ASTM E1064:16.

Water, Volumetric: This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM E203:16.

sample #22162

Nonvolatile matter: This determination was not problematic. Four statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D1353:13R21.

sample #22161

UV Absorbance: The determination with a 50 mm cuvette may be problematic for a number of participants. Over six parameters nine statistical outliers were observed and three other test results were excluded. Because the selected sample was prepared from a very pure Methanol batch the requirements of the reference test method IMPCA004:15 could not be used to calculate z-scores. Seventeen participants would have approved the batch which is correct and remarkably four participants would have rejected the batch. Please note that IMPCA004 describes the use of a 50 mm cuvette. Eleven participants used a 10 mm cuvette. The reported test results with 10 mm cuvette are not evaluated and given in appendix 2.

4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES

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

Parameter	unit	n	average	2.8 * sd	R(lit)
Acidity as Acetic acid	mg/kg	55	12.5	11.0	14
Appearance		65	CFSM	n.a.	n.a.
Carbonizables Pt/Co		32	5.3	8.1	5.5
Inorganic Chloride as Cl	mg/kg	47	<0.5	n.e.	n.e.
Color Pt/Co		46	1.8	3.3	7
Density at 20 °C	kg/L	58	0.7913	0.0003	0.0005
Specific Gravity 20/20 °C		60	0.7927	0.0003	0.0005
Initial Boiling Point	°C	54	64.4	0.4	1.0
50% recovered	°C	51	64.5	0.3	0.4
Dry Point	°C	53	64.7	0.5	0.7
Iron as Fe	mg/kg	44	<0.1	n.e.	n.e.
Water miscibility (H.Carbons)		61	Pass	n.a.	n.a.
Permanganate Time Test 15 °C	minutes	45	92.7	26.3	23.4
Purity by GC as received	%M/M	30	99.979	0.015	n.a.
Purity by GC on dry basis	%M/M	40	99.994	0.011	n.a.
Acetone	mg/kg	51	<10	n.e.	n.e.
Benzene	mg/kg	40	<10	n.e.	n.e.
Ethanol	mg/kg	52	33.1	13.0	8.8
Toluene	mg/kg	40	<10	n.e.	n.e.
Total Sulfur	mg/kg	51	<1	n.e.	n.e.
Trimethylamine (TMA)	µg/kg	6	56.1	27.2	21.2
Water, Coulometric	mg/kg	55	183	76	(29)
Water, Volumetric	mg/kg	24	206	124	780

Parameter	unit	n	average	2.8 * sd	R(lit)
Nonvolatile matter	mg/100mL	45	18.9	2.7	8.2

Table 7: reproducibilities of tests on sample #22160 and #22162

For results between brackets no z-scores are calculated.

Parameter	unit	n	average	2.8 * sd	R(lit)
UV Absorbance at 300 nm		17	0.010	0.009	(0.015)
UV Absorbance at 268.5 nm		17	0.037	0.016	(0.010)
UV Absorbance at 250 nm		17	0.137	0.022	(0.014)
UV Absorbance at 240 nm		13	0.267	0.037	n.a.
UV Absorbance at 230 nm		13	0.586	0.081	n.a.
UV Absorbance at 220 nm		17	1.208	0.218	(0.347)

Table 8: reproducibilities of tests on sample #22161, 50 mm cuvette only

For results between brackets no z-scores are calculated.

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

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

	September 2022	September 2021	September 2020	September 2019	September 2018
Number of reporting laboratories	69	90	81	77	96
Number of test results	1020	1669	1314	1343	1412
Number of statistical outliers	34	84	49	48	62
Percentage of statistical outliers	3.3%	5.0%	3.7%	3.6%	4.4%

Table 9: comparison with previous proficiency tests

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

The performance of the determinations of the proficiency tests was compared to the requirements of the reference test methods. The conclusions are given the following table.

	September 2022	September 2021	September 2020	September 2019	September 2018
Acidity as Acetic acid	+	+	+	+	--
Carbonizables Pt/Co	-	(--)	-	+/-	-
Inorganic Chloride as Cl	n.e.	+	n.e.	++	+
Color Pt/Co	++	+	++	++	++
Density at 20 °C	+	++	++	++	++
Specific Gravity 20/20 °C	+	++	++	++	++
Distillation	+	+	++	++	++
Iron as Fe	n.e.	+/-	n.e.	-	--
Permanganate Time Test 15 °C	--	(-)	-	-	+

	September 2022	September 2021	September 2020	September 2019	September 2018
Acetone	n.e.	+/-	n.e.	+/-	n.e.
Benzene	n.e.	+/-	n.e.	+/-	n.e.
Ethanol	-	-	-	-	-
Toluene	n.e.	+/-	+	n.e.	n.e.
Total Sulfur	n.e.	+	+	n.e.	n.e.
Trimethylamine (TMA)	-	(--)	-	+/-	--
Water, Coulometric	(--)	+	-	+/-	+
Water, Volumetric	++	++	++	++	++
Nonvolatile matter	++	++	--	--	--
UV Absorbance at 300 nm	(+)	++	+	+/-	+/-
UV Absorbance at 268.5 nm	(-)	+	--	++	++
UV Absorbance at 250 nm	(-)	+/-	--	-	+
UV Absorbance at 220 nm	(+)	++	+	++	+

Table 10: comparison of the determinations to the reference test methods for sample #22160, #22162 and #22161
For results between brackets no z-scores are calculated

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

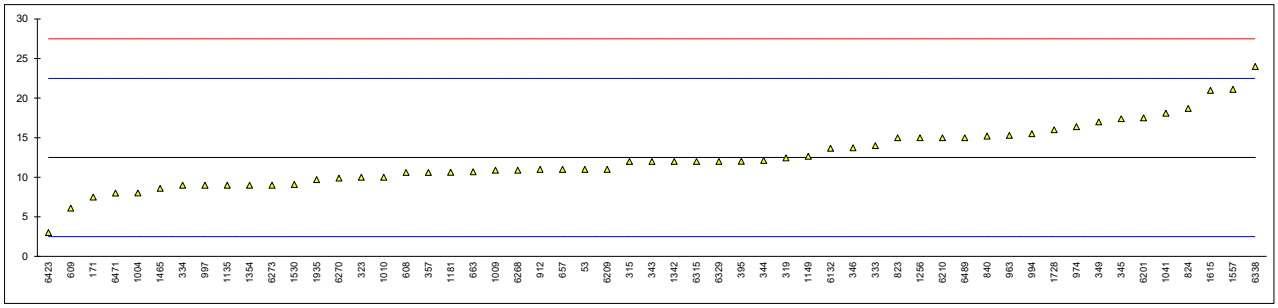
APPENDIX 1

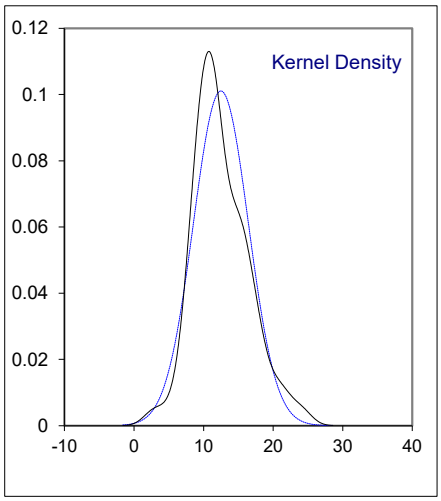
Determination of Acidity as Acetic acid on sample #22160; results in mg/kg

lab	method	value	mark	z(targ)	remarks
53	D1613	11		-0.30	
150		-----		-----	
171	D1613	7.5		-1.00	
315	D1613	12		-0.10	
316		-----		-----	
319	D1613	12.467		-0.01	
323	D1613	10		-0.50	
333	D1613	14		0.30	
334	D1613	9		-0.70	
335		-----		-----	
343	D1613	12		-0.10	
344	D1613	12.13		-0.07	
345	D1613	17.4		0.98	
346	D1613	13.73		0.25	
347		-----		-----	
349	D1613	17	C	0.90	first reported 0.0160 mg KOH/g. iis calculated to mg/kg
357	D1613	10.6		-0.38	
395	D1613	12.03		-0.09	
396		-----		-----	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608	D1613	10.6		-0.38	
609	D1613	6.1		-1.28	
657	D1613	11		-0.30	
663	D1613	10.7		-0.36	
823	D1613	15		0.50	
824	D1613	18.7		1.24	
825		-----		-----	
840	D1613	15.2		0.54	
902		-----		-----	
912	D1613	11		-0.30	
913		-----		-----	
963	D1613	15.3		0.56	
970		-----		-----	
974	D1613	16.4		0.78	
994	D1613	15.5		0.60	
997	D1613	9		-0.70	
1004	D1613	8.01		-0.90	
1009	D1613	10.9	C	-0.32	first reported 0.00109 mg/kg
1010	D1613	10		-0.50	
1016		-----		-----	
1041	D1613	18.1		1.12	
1067		-----		-----	
1120		-----		-----	
1135	D1613	9		-0.70	
1149	D1613	12.65		0.03	
1181	D1613	10.6366		-0.37	
1256	D1613	15		0.50	
1264		-----		-----	
1342	D1613	12.00		-0.10	
1354	D1613	9.0		-0.70	
1465	D1613	8.6		-0.78	
1530	D1613	9.1		-0.68	
1557	SRPS H.B8.258	21.111		1.72	
1615	D1613	21.001		1.70	
1656		-----		-----	
1728	D1613	16		0.70	
1935	D1613	9.7	C	-0.56	first reported 0.00097 mg/kg
1940		-----		-----	
6008		-----		-----	
6061		-----		-----	
6119		-----		-----	
6132	D1613	13.67		0.24	
6201	D1613	17.5		1.00	
6209	D1613	11		-0.30	
6210	D1613	15		0.50	
6261		-----		-----	
6262		-----		-----	
6268	D1613	10.9		-0.32	
6270	D1613	9.9		-0.52	
6273	D1613	9		-0.70	
6315	D1613	12		-0.10	

lab	method	value	mark	z(targ)	remarks
6329	D1613	12		-0.10	
6338	D1613	24		2.30	
6388		-----		-----	
6423	D1613	3.0		-1.90	
6470		-----		-----	
6471	D1613	8		-0.90	
6477		-----		-----	
6481		-----		-----	
6489	D1613	15		0.50	
7018		-----		-----	
7019		-----		-----	

normality	OK
n	55
outliers	0
mean (n)	12.493
st.dev. (n)	3.9461
R(calc.)	11.049
st.dev.(D1613:17)	5
R(D1613:17)	14





Determination of Appearance on sample #22160;

lab	method	value	mark	z(targ)	remarks
53	IMPCA003	Clear & Free		-----	
150		-----		-----	
171	E2680	Pass		-----	
315	IMPCA003	cl&fr of susp matter		-----	
316		-----		-----	
319	IMPCA003	clear and free of suspended matter		-----	
323	INH-001	PASS		-----	
333	IMPCA003	Clear and free from suspended matter		-----	
334	IMPCA003	Clear and free of suspended matter		-----	
335	IMPCA003	Clair sans matières en suspension		-----	
343	IMPCA003	CFSM		-----	
344	IMPCA003	C&B		-----	
345	E2680	PASS		-----	
346	IMPCA003	Pass		-----	
347	E2680	Pass		-----	
349	E2680	PASS		-----	
357	IMPCA003	CFSM		-----	
395	IMPCA003	PASS		-----	
396	IMPCA003	CFFMIS		-----	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608	IMPCA003	Passes test		-----	
609	IMPCA003	Clear and free from suspended solid		-----	
657	IMPCA003	Clear & Free from suspended matter		-----	
663	IMPCA003	clear and free of suspended matter		-----	
823	IMPCA003	CFSM		-----	
824	IMPCA003	CFSM		-----	
825	IMPCA003	Clear and free from suspended matter		-----	
840	E2680	Pass		-----	
902		-----		-----	
912	E2680	Pass		-----	
913		-----		-----	
963	IMPCA003	CFSM		-----	
970		Clear & Bright		-----	
974	IMPCA003	CFSM		-----	
994	visual	CFSM		-----	
997	E2680	pass		-----	
1004	IMPCA003	CFFSM		-----	
1009	IMPCA003	Clear and particles.		-----	
1010	IMPCA003	Cl&fsm		-----	
1016	In house	Pass		-----	
1041	IMPCA003	CFSM		-----	
1067	IMPCA003	Bright and Clear		-----	
1120		-----		-----	
1135	Visual	Clear & bright		-----	
1149	IMPCA003	C&B		-----	
1181	IMPCA003	Clear & free from suspended matter		-----	
1256	IMPCA003	Pass		-----	
1264		-----		-----	
1342	IMPCA003	CSFM		-----	
1354		Clear & Free		-----	
1465	IMPCA003	Clear & Free		-----	
1530	IMPCA003	C & B		-----	
1557	SRPS H.B8.254	Clear and free of suspended matter		-----	
1615	IMPCA003	CFSM		-----	
1656	IMPCA003	Pass		-----	
1728	IMPCA003	CLEAR		-----	
1935	IMPCA003	Bright & Clear		-----	
1940		-----		-----	
6008		-----		-----	
6061		-----		-----	
6119		-----		-----	
6132	IMPCA003	Clear & Free		-----	
6201	IMPCA003	BR/CL		-----	
6209	IMPCA003	Clear and Free from Suspended Matter		-----	
6210	IMPCA003	pass		-----	
6261	IMPCA003	Clear and Free of Suspended Solid		-----	
6262		-----		-----	
6268	IMPCA003	CFSM		-----	
6270	IMPCA003	CFSM		-----	
6273	IMPCA003	CFSM		-----	
6315	IMPCA003	clear, bright		-----	

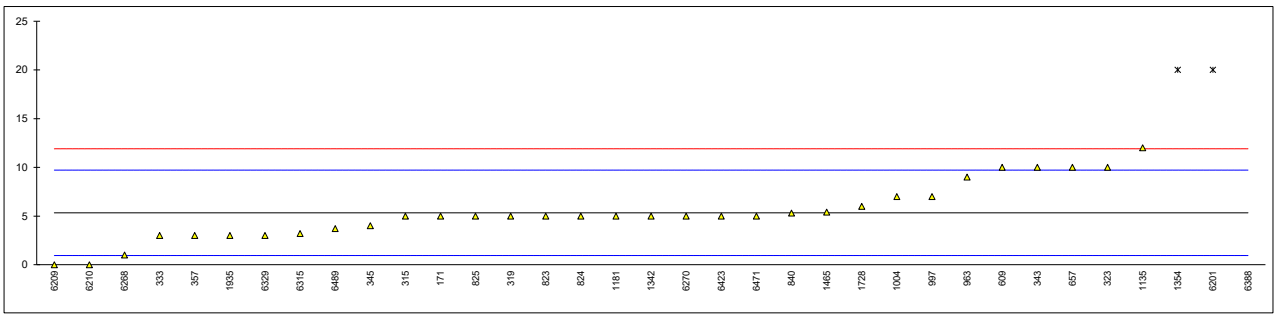
lab	method	value	mark	z(targ)	remarks
6329	IMPCA003	CFSM		-----	
6338	IMPCA003	CFSM		-----	
6388	IMPCA003	Pass		-----	
6423		Clear and Free of Suspended particles		-----	
6470		-----		-----	
6471	IMPCA003	Pass		-----	
6477		-----		-----	
6481		-----		-----	
6489	IMPCA003	Clear and free of suspended matter		-----	
7018		-----		-----	
7019		-----		-----	
	n	65			
	mean (n)	CFSM/Pass			

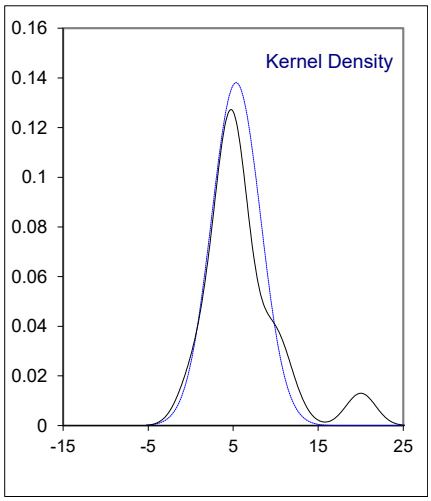
Determination of Carbonizables Pt/Co on sample #22160;

lab	method	value	mark	z(targ)	remarks
53	E346	<5		-----	
150		-----		-----	
171	E346	5		-0.17	
315	E346	5		-0.17	
316		-----		-----	
319	E346	5		-0.17	
323	E346	10		2.39	
333	E346	3		-1.19	
334		-----		-----	
335		-----		-----	
343	E346	10		2.39	
344	E346	<30		-----	
345	E346	4		-0.68	
346	E346	<10		-----	
347		-----		-----	
349		-----		-----	
357	E346	3		-1.19	
395		-----		-----	
396	E346	<30		-----	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608	E346	<5		-----	
609	E346	10		2.39	
657	E346	10		2.39	
663		-----		-----	
823	E346	5		-0.17	
824	E346	5		-0.17	
825	E346	5		-0.17	
840	E346	5.3		-0.02	
902		-----		-----	
912		-----		-----	
913		-----		-----	
963	E346	9		1.88	
970		-----		-----	
974		-----		-----	
994	E346	<10		-----	
997	E346	7.0	C	0.85	first reported 31
1004	E346	7		0.85	
1009		-----		-----	
1010		-----		-----	
1016		-----		-----	
1041		-----		-----	
1067		-----		-----	
1120		-----		-----	
1135	E346	12		3.41	
1149	E346	< 30		-----	
1181	E346	5		-0.17	
1256		-----		-----	
1264		-----		-----	
1342	E356	5		-0.17	
1354	E346	20	R(0.01)	7.51	
1465	E346	5.4		0.04	
1530		-----		-----	
1557	SRPS H.B8.263	<50		-----	
1615	E346	<5		-----	
1656		-----		-----	
1728	E346	6		0.34	
1935	E346	3.0		-1.19	
1940		-----		-----	
6008		-----		-----	
6061		-----		-----	
6119		-----		-----	
6132	E346	<5		-----	
6201	E346	20	R(0.01)	7.51	
6209	E346	0		-2.73	
6210	E346	0.0		-2.73	
6261		-----		-----	
6262		-----		-----	
6268	E346	1		-2.22	
6270	E346	5		-0.17	
6273		-----		-----	
6315	E346	3.2		-1.09	

lab	method	value	mark	z(targ)	remarks
6329	E346	3.0		-1.19	
6338		-----		-----	
6388	E346	40	R(0.01)	17.74	
6423	E346	5		-0.17	
6470		-----		-----	
6471	E346	5		-0.17	
6477		-----		-----	
6481		-----		-----	
6489	E346	3.7		-0.83	
7018		-----		-----	
7019		-----		-----	

normality	OK
n	32
outliers	3
mean (n)	5.331
st.dev. (n)	2.8886
R(calc.)	8.088
st.dev.(E346:08e1)	1.9541
R(E346:08e1)	5.471





Determination of Inorganic Chloride as Cl on sample #22160; results in mg/kg

lab	method	value	mark	z(targ)	remarks
53	IMPCA002	<0.25		-----	
150		-----		-----	
171	IMPCA002	<0.5		-----	
315	IMPCA002	<0.25		-----	
316		-----		-----	
319	IMPCA002	0.08		-----	
323	IMPCA002	< 0.25		-----	
333	IMPCA002	0.07		-----	
334	IMPCA002	<0.25		-----	
335		-----		-----	
343	IMPCA002	<0.25		-----	
344		-----		-----	
345	IMPCA002	<0.25		-----	
346	IMPCA002	<0,25		-----	
347	IMPCA002	<0.25		-----	
349		-----		-----	
357	IMPCA002	<0,25		-----	
395	IMPCA002	0.20		-----	
396		-----		-----	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609	IMPCA002	<0.25		-----	
657	IMPCA002	<0.25		-----	
663	IMPCA002	0.26		-----	
823	IMPCA002	<0.25		-----	
824	IMPCA002	0.146		-----	
825	IMPCA002	0.06		-----	
840	IMPCA002	0.06		-----	
902		-----		-----	
912		-----		-----	
913		-----		-----	
963	IMPCA002	<0.25		-----	
970		-----		-----	
974		-----		-----	
994	IMPCA002	<0.5		-----	
997	IMPCA002	0.3		-----	
1004	IMPCA002	0.04		-----	
1009		-----		-----	
1010		-----		-----	
1016		-----		-----	
1041		-----		-----	
1067	IMPCA002	0.06		-----	
1120		-----		-----	
1135	IMPCA002	<0.25		-----	
1149	JIS1501	< 0.2		-----	
1181	IMPCA002	0.0756		-----	
1256	IMPCA002	0.06		-----	
1264		-----		-----	
1342	IMPCA002	0.18		-----	
1354	IMPCA002	<0.25		-----	
1465	In house	0.07760		-----	
1530	IMPCA002	0.171		-----	
1557		-----		-----	
1615		-----		-----	
1656		-----		-----	
1728		-----		-----	
1935	IMPCA002	0.181		-----	
1940		-----		-----	
6008		-----		-----	
6061	IMPCA002	<0.3		-----	
6119		-----		-----	
6132	IMPCA002	<0.25		-----	
6201	IMPCA002	0.10		-----	
6209	IMPCA002	0.0559		-----	
6210	IMPCA002	0.127		-----	
6261		-----		-----	
6262		-----		-----	
6268	IMPCA002	0.045		-----	
6270	IMPCA002	0.089		-----	
6273		-----		-----	
6315	DIN51408	0.09		-----	

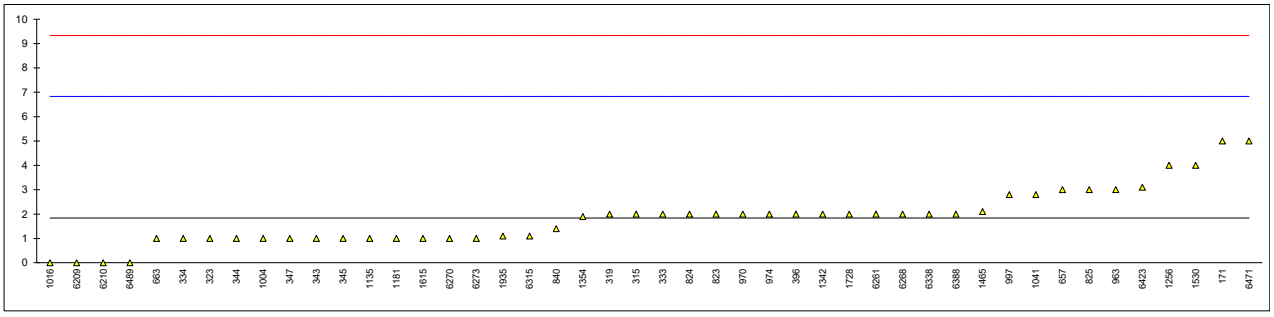
lab	method	value	mark	z(targ)	remarks
6329	IMPCA002	<0.25		-----	
6338		-----		-----	
6388	IMPCA002	0.411		-----	
6423	IMPCA002	<0.25		-----	
6470		-----		-----	
6471	IMPCA002	<0.5		-----	
6477		-----		-----	
6481		-----		-----	
6489	IMPCA002	0.06		-----	
7018		-----		-----	
7019		-----		-----	
	n	47			
	mean (n)	<0.5			

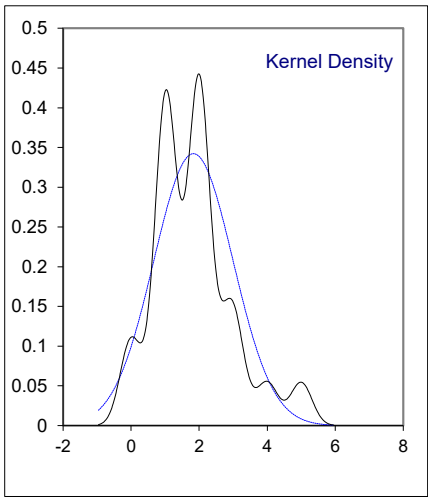
Determination of Color Pt/Co on sample #22160;

lab	method	value	mark	z(targ)	remarks
53	D1209	<5		-----	
150		-----		-----	
171	D1209	5		1.27	
315	D5386	2		0.07	
316		-----		-----	
319	D1209	2		0.07	
323	D1209	1		-0.33	
333	D1209	2		0.07	
334	D1209	1		-0.33	
335		-----		-----	
343	D5386	1		-0.33	
344	D5386	1		-0.33	
345	D5386	1		-0.33	
346	D1209	<5		-----	
347	D5386	1		-0.33	
349		-----		-----	
357	D5386	<5		-----	
395	D1209	<5		-----	
396	D1209	2		0.07	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608	D1209	<2		-----	
609	D1209	<5		-----	
657	D1209	3		0.47	
663	D1209	1		-0.33	
823	D1209	2		0.07	
824	D5386	2		0.07	
825	D1209	3		0.47	
840	D5386	1.4		-0.17	
902		-----		-----	
912		-----		-----	
913		-----		-----	
963	D1209	3		0.47	
970	D1209	2		0.07	
974	D1209	2		0.07	
994	D1209	<5		-----	
997	D1209	2.8		0.39	
1004	D1209	1		-0.33	
1009	D1209	<5		-----	
1010		-----		-----	
1016	D1209	0		-0.73	
1041	D1209	2.8		0.39	
1067	D1209	< 5		-----	
1120		-----		-----	
1135	D5386	1		-0.33	
1149	D1209	<5		-----	
1181	D1209	1		-0.33	
1256	D1209	4		0.87	
1264		-----		-----	
1342		2		0.07	
1354	D1209	1.9		0.03	
1465	D1209	2.1		0.11	
1530	D1209	4		0.87	
1557	ISO2211	<5		-----	
1615	D1209	1		-0.33	
1656	D1209	<5		-----	
1728	D1209	2		0.07	
1935	D5386	1.1		-0.29	
1940		-----		-----	
6008		-----		-----	
6061		-----		-----	
6119		-----		-----	
6132	D1209	<5		-----	
6201	D1209	<5		-----	
6209	D1209	0		-0.73	
6210	D5386	0		-0.73	
6261	D1209	2		0.07	
6262		-----		-----	
6268	D5386	2		0.07	
6270	D1209	1		-0.33	
6273	D1209	1		-0.33	
6315	ISO6271	1.1		-0.29	

lab	method	value	mark	z(targ)	remarks
6329	D5386	<1		-----	
6338	D1209	2		0.07	
6388	D1209	2		0.07	
6423	D1209	3.1		0.51	
6470		-----		-----	
6471	D1209	5		1.27	
6477		-----		-----	
6481		-----		-----	
6489	D1209	0.0		-0.73	
7018		-----		-----	
7019		-----		-----	

normality	suspect
n	46
outliers	0
mean (n)	1.83
st.dev. (n)	1.166
R(calc.)	3.27
st.dev.(D1209:05R19)	2.500
R(D1209:05R19)	7



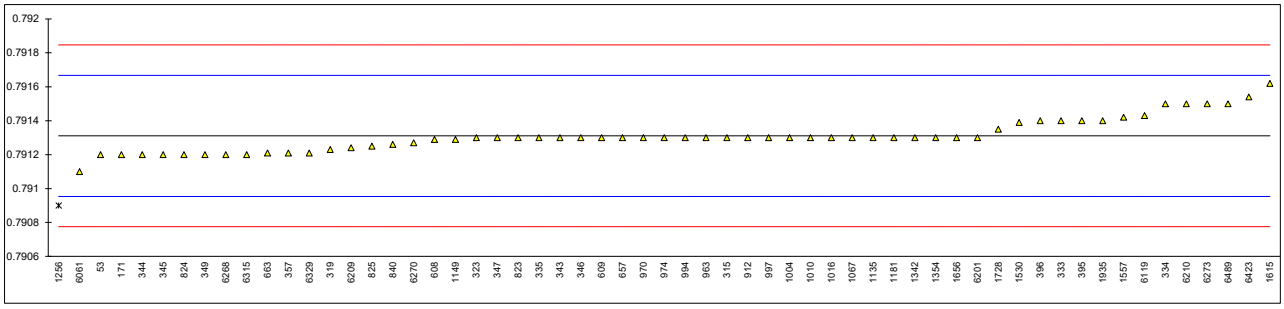


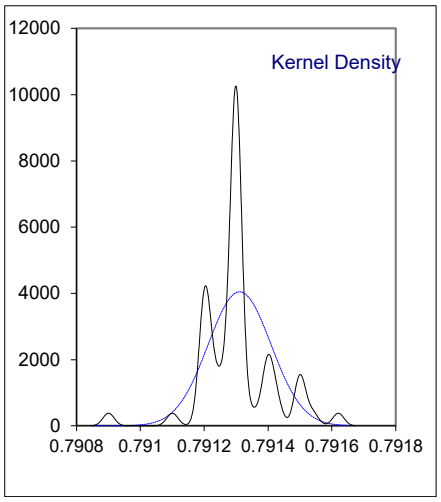
Determination of Density at 20 °C on sample #22160; results in kg/L

lab	method	value	mark	z(targ)	remarks
53	D4052	0.7912		-0.62	
150		-----		-----	
171	D4052	0.7912		-0.62	
315	D4052	0.7913		-0.06	
316		-----		-----	
319	D4052	0.79123		-0.45	
323	D4052	0.7913		-0.06	
333	D4052	0.7914		0.50	
334	ISO12185	0.7915		1.06	
335	ISO12185	0.7913		-0.06	
343	D4052	0.7913		-0.06	
344	D4052	0.7912		-0.62	
345	D4052	0.7912		-0.62	
346	D4052	0.7913		-0.06	
347	D4052	0.7913		-0.06	
349	D4052	0.7912		-0.62	
357	D4052	0.79121		-0.56	
395	D4052	0.7914		0.50	
396	ISO12185	0.7914		0.50	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608	D4052	0.79129		-0.12	
609	D4052	0.7913		-0.06	
657	D4052	0.7913		-0.06	
663	D4052	0.79121		-0.56	
823	D4052	0.7913		-0.06	
824	ISO12185	0.7912		-0.62	
825	D4052	0.79125		-0.34	
840	D4052	0.79126		-0.28	
902		-----		-----	
912	D4052	0.7913		-0.06	
913		-----		-----	
963	ISO12185	0.7913		-0.06	
970	D4052	0.7913		-0.06	
974	D4052	0.7913		-0.06	
994	ISO12185	0.7913		-0.06	
997	ISO12185	0.7913		-0.06	
1004	D4052	0.7913		-0.06	
1009		-----		-----	
1010	D4052	0.7913		-0.06	
1016	D4052	0.7913		-0.06	
1041		-----		-----	
1067	D4052	0.7913		-0.06	
1120		-----		-----	
1135	ISO12185	0.7913		-0.06	
1149	D4052	0.79129		-0.12	
1181	D4052	0.7913		-0.06	
1256	D4052	0.7909	R(0.01)	-2.30	
1264		-----		-----	
1342	D4052	0.7913		-0.06	
1354	D4052	0.7913		-0.06	
1465		-----		-----	
1530	D4052	0.79139		0.44	
1557	ISO758	0.79142		0.61	
1615	D4052	0.79162		1.73	
1656	D4052	0.7913		-0.06	
1728	ISO12185	0.79135		0.22	
1935	D4052	0.79140	C	0.50	first reported 0.79142
1940		-----		-----	
6008		-----		-----	
6061	D4052	0.7911		-1.18	
6119	ISO12185	0.79143		0.67	
6132		-----		-----	
6201	D4052	0.7913		-0.06	
6209	D4052	0.79124	C	-0.40	first reported 0.79499
6210	D4052	0.7915	C	1.06	first reported 791.5
6261		-----	W	-----	test result withdrawn, reported 0.7925
6262		-----		-----	
6268	D4052	0.79120		-0.62	
6270	D4052	0.79127		-0.23	
6273	D4052	0.7915	C	1.06	first reported 0.7925
6315	ISO12185	0.7912		-0.62	

lab	method	value	mark	z(targ)	remarks
6329	D4052	0.79121		-0.56	
6338		-----		-----	
6388		-----		-----	
6423	D4052	0.79154		1.28	
6470		-----		-----	
6471		-----		-----	
6477		-----		-----	
6481		-----		-----	
6489	D4052	0.7915		1.06	
7018		-----		-----	
7019		-----		-----	

	normality	OK
	n	58
	outliers	1
	mean (n)	0.79131
	st.dev. (n)	0.000099
	R(calc.)	0.00028
	st.dev.(ISO12185:96)	0.000179
	R(ISO12185:96)	0.0005
Compare		
	R(D4052:18a)	0.0005



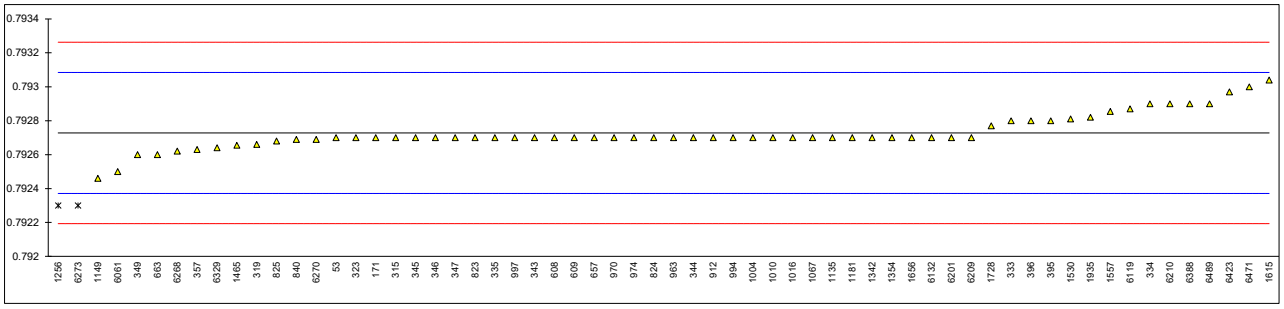


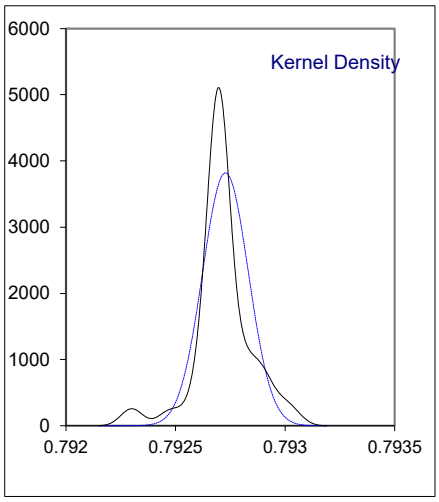
Determination of Specific Gravity 20/20 °C on sample #22160;

lab	method	value	mark	z(targ)	remarks
53	D4052	0.7927		-0.16	
150		-----		-----	
171	D4052	0.7927		-0.16	
315	D4052	0.7927		-0.16	
316		-----		-----	
319	D4052	0.79266		-0.38	
323	D4052	0.7927		-0.16	
333	D4052	0.7928		0.40	
334	D4052	0.7929		0.96	
335	D4052	0.7927		-0.16	
343	D4052	0.7927		-0.16	
344	D4052	0.7927		-0.16	
345	D4052	0.7927		-0.16	
346	D4052	0.7927		-0.16	
347	D4052	0.7927		-0.16	
349	D4052	0.7926		-0.72	
357	D4052	0.79263		-0.55	
395	D4052	0.7928		0.40	
396	ISO12185	0.7928		0.40	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608	D4052	0.7927		-0.16	
609	D4052	0.7927		-0.16	
657	D4052	0.7927		-0.16	
663	D4052	0.7926		-0.72	
823	ISO12185	0.7927		-0.16	
824	ISO12185	0.7927		-0.16	
825	D4052	0.79268		-0.27	
840	D4052	0.79269		-0.21	
902		-----		-----	
912	D4052	0.7927		-0.16	
913		-----		-----	
963	ISO12185	0.7927		-0.16	
970	D4052	0.7927		-0.16	
974	D4052	0.7927		-0.16	
994	ISO12185	0.7927		-0.16	
997	ISO12185	0.7927		-0.16	
1004	D4052	0.7927		-0.16	
1009		-----		-----	
1010	D4052	0.7927		-0.16	
1016	D4052	0.7927		-0.16	
1041		-----		-----	
1067	D4052	0.7927		-0.16	
1120		-----		-----	
1135	ISO12185	0.7927		-0.16	
1149	D4052	0.79246		-1.50	
1181	D4052	0.7927		-0.16	
1256	D4052	0.7923	R(0.01)	-2.40	
1264		-----		-----	
1342	D4052	0.7927		-0.16	
1354	D4052	0.7927		-0.16	
1465	D4052	0.792655		-0.41	
1530	D4052	0.79281		0.46	
1557	ISO12185	0.792855		0.71	
1615	D4052	0.79304		1.75	
1656	D4052	0.7927		-0.16	
1728	ISO12185	0.79277		0.24	
1935	D4052	0.79282	C	0.52	first reported 0.79284
1940		-----		-----	
6008		-----		-----	
6061	D4052	0.7925		-1.28	
6119	ISO12185	0.79287		0.80	
6132	D4052	0.7927		-0.16	
6201	ISO12185	0.7927		-0.16	
6209	D4052	0.7927		-0.16	
6210	D4052	0.7929		0.96	
6261		-----	W	-----	test result withdrawn, reported 0.7933
6262		-----		-----	
6268	D4052	0.79262		-0.60	
6270	D4052	0.79269		-0.21	
6273	D4052	0.7923	C,R(0.01)	-2.40	first reported 0.7933
6315		-----		-----	

lab	method	value	mark	z(targ)	remarks
6329	D4052	0.79264		-0.49	
6338		-----		-----	
6388	D4052	0.7929		0.96	
6423	D4052	0.79297		1.36	
6470		-----		-----	
6471	D4052	0.793		1.52	
6477		-----		-----	
6481		-----		-----	
6489	D4052	0.7929		0.96	
7018		-----		-----	
7019		-----		-----	

	normality	suspect
	n	60
	outliers	2
	mean (n)	0.79273
	st.dev. (n)	0.000104
	R(calc.)	0.00029
	st.dev.(ISO12185:96)	0.000179
	R(ISO12185:96)	0.0005
compare		
	R(D4052:18a)	0.0005





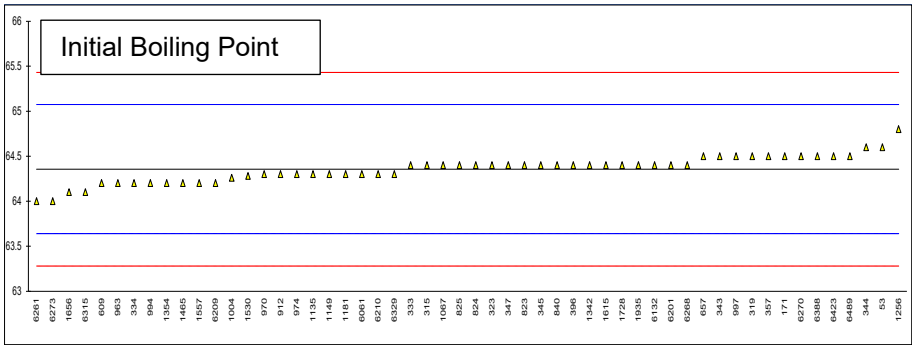
Determination of Initial Boiling point, 50% recovered and Dry Point on sample #22160; results in °C

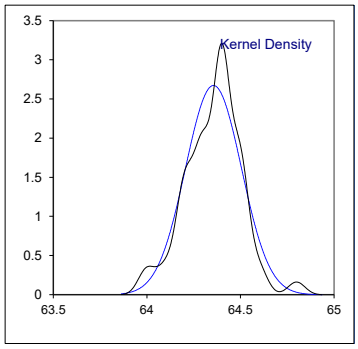
lab	method	IBP	mark	z(targ)	50% rec.	mark	z(targ)	DP	mark	z(targ)	range
53	D1078-automated	64.6		0.68	64.7		1.43	64.9		0.76	0.3
150		-----		-----	-----		-----	-----		-----	-----
171	D1078-automated	64.5		0.40	64.5		0.15	64.8		0.35	0.3
315	D1078-automated	64.4		0.12	64.5		0.15	64.8		0.35	0.4
316		-----		-----	-----		-----	-----		-----	-----
319	D1078-automated	64.5		0.40	64.7		1.43	64.9		0.76	0.4
323	D1078-automated	64.4		0.12	64.5		0.15	64.7		-0.05	0.3
333	D1078-automated	64.4		0.12	64.5		0.15	64.8		0.35	0.4
334	D1078-automated	64.2		-0.44	64.3		-1.12	64.4		-1.27	0.2
335		-----		-----	-----		-----	-----		-----	-----
343	D1078-automated	64.5		0.40	64.5		0.15	64.8		0.35	0.3
344	D1078-automated	64.6		0.68	64.6		0.79	64.7		-0.05	-----
345	D1078-automated	64.4		0.12	64.6		0.79	64.7		-0.05	0.3
346		-----		-----	-----		-----	-----		-----	-----
347	D1078-automated	64.4		0.12	64.5		0.15	64.7		-0.05	0.3
349		-----		-----	-----		-----	-----		-----	-----
357	D1078-automated	64.5		0.40	64.5		0.15	64.6		-0.46	0.1
395		-----		-----	-----		-----	-----		-----	-----
396	D1078	64.4		0.12	-----		-----	64.8		0.35	0.4
460		-----		-----	-----		-----	-----		-----	-----
492		-----		-----	-----		-----	-----		-----	-----
551		-----		-----	-----		-----	-----		-----	-----
554		-----		-----	-----		-----	-----		-----	-----
557		-----		-----	-----		-----	-----		-----	-----
608		-----		-----	-----		-----	-----		-----	-----
609	D1078	64.2		-0.44	64.4		-0.48	64.6		-0.46	0.1
657	D1078-automated	64.5		0.40	64.5		0.15	64.9		0.76	0.4
663		-----		-----	-----		-----	-----		-----	-----
823	D1078-automated	64.4		0.12	64.6		0.79	64.7		-0.05	0.3
824	D1078-automated	64.4		0.12	64.5		0.15	64.8		0.35	0.4
825	D1078-automated	64.4		0.12	64.6		0.79	64.8		0.35	0.4
840	D1078-automated	64.40		0.12	64.50		0.15	64.83		0.47	0.43
902		-----		-----	-----		-----	-----		-----	-----
912	D1078-manual	64.3		-0.16	64.5		0.15	64.9		0.76	0.6
913		-----		-----	-----		-----	-----		-----	-----
963	D1078-automated	64.2		-0.44	64.3		-1.12	64.5		-0.86	0.3
970	D1078-automated	64.3		-0.16	64.4		-0.48	64.8		0.35	0.4
974	D1078-automated	64.3		-0.16	64.5		0.15	64.7		-0.05	0.4
994	D1078-manual	64.2		-0.44	64.5		0.15	64.8		0.35	0.6
997	D1078-manual	64.5		0.40	64.6		0.79	64.8	C	0.35	0.7
1004	D1078-automated	64.26		-0.27	64.30		-1.12	64.45		-1.06	0.19
1009		-----		-----	-----		-----	-----		-----	-----
1010		-----		-----	-----		-----	-----		-----	-----
1016		-----		-----	-----		-----	-----		-----	-----
1041		-----		-----	-----		-----	-----		-----	-----
1067	D1078-automated	64.4		0.12	64.5		0.15	64.6		-0.46	0.2
1120		-----		-----	-----		-----	-----		-----	-----
1135	D1078-automated	64.3		-0.16	64.5		0.15	64.7		-0.05	0.4
1149	D1078-automated	64.3		-0.16	64.4		-0.48	64.7		-0.05	0.4
1181	D1078-automated	64.3		-0.16	64.4		-0.48	64.6		-0.46	0.3
1256	D1078-manual	64.8		1.24	-----		-----	65.2		1.97	0.4
1264		-----		-----	-----		-----	-----		-----	-----
1342	D1078	64.4		0.12	64.4		-0.48	64.4		-1.27	0.2
1354	D1078	64.2		-0.44	64.3		-1.12	64.4		-1.27	0.2
1465	D1078-automated	64.2		-0.44	64.3		-1.12	64.5		-0.86	0.3
1530	D1078-automated	64.28		-0.21	64.36		-0.74	64.61		-0.42	0.33
1557	SRPS H.B8.256-auto	64.2	C	-0.44	64.3		-1.12	65.0		1.16	-----
1615	D1078-automated	64.4		0.12	64.5		0.15	64.8		0.35	0.4
1656	D1078-automated	64.1		-0.71	64.3		-1.12	64.4		-1.27	0.3
1728	D1078-manual	64.4		0.12	64.5		0.15	64.7		-0.05	0.3
1935	D1078-manual	64.4		0.12	64.5		0.15	64.7		-0.05	0.3
1940		-----		-----	-----		-----	-----		-----	-----
6008		-----		-----	-----		-----	-----		-----	-----
6061	D1078-automated	64.3		-0.16	64.3		-1.12	64.6		-0.46	64.3-64.6
6119		-----		-----	-----		-----	-----		-----	-----
6132	D1078	64.4		0.12	64.4		-0.48	64.4		-1.27	0.2
6201	D1078-manual	64.4		0.12	64.5		0.15	64.7		-0.05	0.3
6209	D1078-automated	64.2		-0.44	64.4		-0.48	64.5		-0.86	0.3
6210	D1078-automated	64.3		-0.16	64.6		0.79	64.7		-0.05	0.4
6261	D1078-manual	64	C	-0.99	64	C,R(0.01)	-3.03	-----		-----	-----
6262		-----		-----	-----		-----	-----		-----	-----
6268	D1078-manual	64.4		0.12	64.6		0.79	65.1		1.56	0.7
6270	D1078-manual	64.5		0.40	64.6		0.79	64.9		0.76	0.4
6273	D1078-manual	64.0		-0.99	64.4		-0.48	65.0		1.16	-----
6315	D1078-automated	64.1		-0.71	64.3		-1.12	64.3		-1.67	0.2

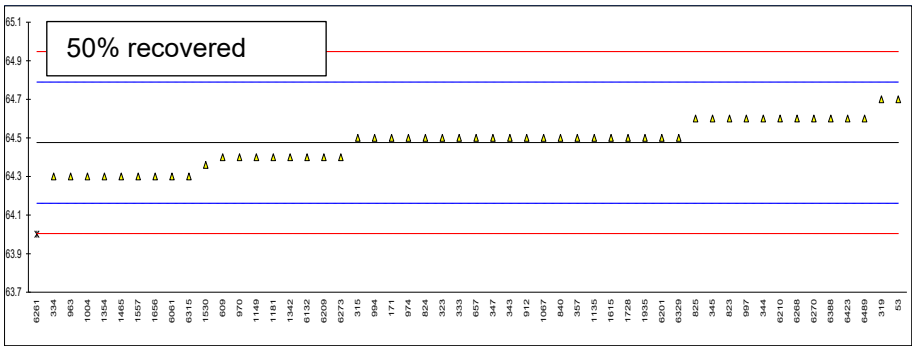
lab	method	IBP	mark	z(targ)	50% rec.	mark	z(targ)	DP	mark	z(targ)	range
6329	D1078-automated	64.3		-0.16	64.5		0.15	64.6		-0.46	0.3
6338		-----		-----	-----		-----	-----		-----	-----
6388	D1078-automated	64.5		0.40	64.6		0.79	64.8		0.35	0.3
6423	D1078	64.5		0.40	64.6		0.79	64.9		0.76	0.4
6470		-----		-----	-----		-----	-----		-----	-----
6471		-----		-----	-----		-----	-----		-----	0.3
6477		-----		-----	-----		-----	-----		-----	-----
6481		-----		-----	-----		-----	-----		-----	-----
6489	D1078-automated	64.5		0.40	64.6		0.79	64.8		0.35	0.3
7018		-----		-----	-----		-----	-----		-----	-----
7019		-----		-----	-----		-----	-----		-----	-----

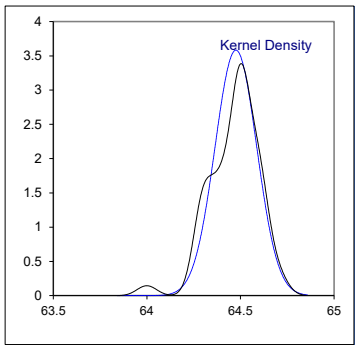
normality	OK	OK	OK
n	54	51	53
outliers	0	1	0
mean (n)	64.36	64.48	64.71
st.dev. (n)	0.149	0.111	0.188
R(calc.)	0.42	0.31	0.53
st.dev.(D1078-A:11R19)	0.359	0.157	0.247
R(D1078-A:11R19)	1.00	0.44	0.69
Compare			
R(D1078-M:11R19)	0.69	0.42	0.84

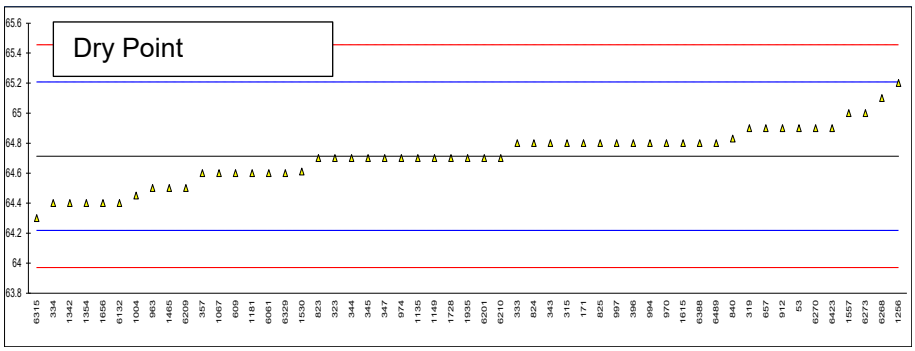
Lab 997 first reported 65.2
Lab 1557 first reported 63.9
Lab 6261 first reported 66 for IBP and 67 for 50% recovery

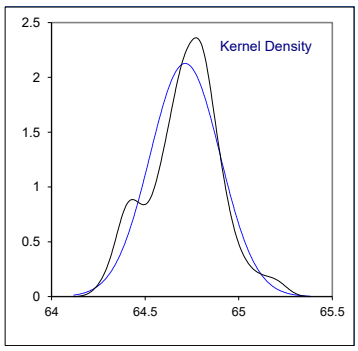












Determination of Iron as Fe on sample #22160; results in mg/kg

lab	method	value	mark	z(targ)	remarks
53	E394	<0.01		-----	
150		-----		-----	
171	E394	<0.1		-----	
315	E394	<0.01		-----	
316		-----		-----	
319	E394	0.0139		-----	
323	E394	0.11		-----	
333	E394	<0.01		-----	
334	E394	<0.01		-----	
335		-----		-----	
343	E394	<0.01		-----	
344	E394	<0.05		-----	
345	E394	0.02		-----	
346	E394	<0,1		-----	
347	E394	0.01		-----	
349		-----		-----	
357	E394	<0,02		-----	
395		-----		-----	
396		-----		-----	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609		-----		-----	
657	E394	0.0207		-----	
663		-----		-----	
823	E394	0.01		-----	
824	E394	0.01		-----	
825	E394	0.01		-----	
840	E394	0.013		-----	
902		-----		-----	
912		-----		-----	
913		-----		-----	
963	E394	<0.1		-----	
970		-----		-----	
974		-----		-----	
994	E394	<0.1		-----	
997	E394	0.02		-----	
1004	E394	0.016		-----	
1009	E394	0.01144		-----	
1010		-----		-----	
1016		-----		-----	
1041		-----		-----	
1067		-----		-----	
1120		-----		-----	
1135	E394	<0.01		-----	
1149		-----		-----	
1181	E394	0.00174		-----	
1256	E394	0.01		-----	
1264		-----		-----	
1342	E394	0.03		-----	
1354	E394	<0.01		-----	
1465	E394	0.0105		-----	
1530		-----		-----	
1557	In house	0.036		-----	
1615		-----		-----	
1656		-----		-----	
1728	E394	0.078		-----	
1935	E394	0.04		-----	
1940		-----		-----	
6008		-----		-----	
6061	E394	<0.05		-----	
6119		-----		-----	
6132	E394	<0.1		-----	
6201	E394	<0.1		-----	
6209	E394	0.00		-----	
6210	E394	0		-----	
6261	E394	0.003		-----	
6262		-----		-----	
6268	E394	0.012		-----	
6270	E394	0.0117		-----	
6273	E394	0.02		-----	
6315	E394	0.008		-----	

lab	method	value	mark	z(targ)	remarks
6329	E394	0.0305		-----	
6338		-----		-----	
6388		-----		-----	
6423	E394	0.013		-----	
6470		-----		-----	
6471	E394	0.22		-----	
6477		-----		-----	
6481		-----		-----	
6489	E394	0		-----	
7018		-----		-----	
7019		-----		-----	
	n	44			
	mean (n)	<0.1			

Determination of Water miscibility (Hydrocarbons) on sample #22160;

lab	method	value	mark	z(targ)	remarks
53	D1722	Pass		-----	
150		-----		-----	
171	D1722	Pass		-----	
315	D1722	pass		-----	
316		-----		-----	
319	D1722	pass		-----	
323	D1722	PASS		-----	
333	D1722	Pass Test		-----	
334	D1722	pass test		-----	
335	D1722	pass test		-----	
343	D1722	PASS		-----	
344	D1722	pass		-----	
345	D1722	PASS		-----	
346	D1722	Pass		-----	
347	D1722	Pass		-----	
349		-----		-----	
357	D1722	Pass		-----	
395	D1722	PASS		-----	
396	D1722	Pass		-----	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608	D1722	Passes test		-----	
609		-----		-----	
657	D1722	PASS		-----	
663	D1722	Passes test		-----	
823	D1722	pass		-----	
824	D1722	PASS		-----	
825	D1722	Passes Test		-----	
840	D1722	Passes test		-----	
902		-----		-----	
912	D1722	Pass		-----	
913		-----		-----	
963	D1722	Pass		-----	
970	D1722	Pass		-----	
974	D1722	Pass		-----	
994	D1722	pass		-----	
997	D1722	pass		-----	
1004	D1722	0.05		-----	
1009	D1722	Pass		-----	
1010	D1722	Pass		-----	
1016	D1722	Pass		-----	
1041	D1722	pass		-----	
1067	D1722	passes test		-----	
1120		-----		-----	
1135	D1722	Pass		-----	
1149	D1722	PASS		-----	
1181	D1722	Pass		-----	
1256	D1722	PASS		-----	
1264		-----		-----	
1342	D1722	PASS		-----	
1354	D1722	pass		-----	
1465	D1722	Pass		-----	
1530	D1722	pass		-----	
1557	SRPS H.B8.265	Pass test		-----	
1615	D1722	Passes Test		-----	
1656		-----		-----	
1728	D1722	PASS		-----	
1935	D1722	pass		-----	
1940		-----		-----	
6008		-----		-----	
6061		-----		-----	
6119		-----		-----	
6132	D1722	Pass		-----	
6201	D1722	Pass test		-----	
6209	D1722	Pass		-----	
6210	D1722	Pass		-----	
6261	D1722	Pass		-----	
6262		-----		-----	
6268	D1722	Passes test		-----	
6270	D1722	Passes Test		-----	
6273	D1722	PASS		-----	
6315	D1722	passed		-----	

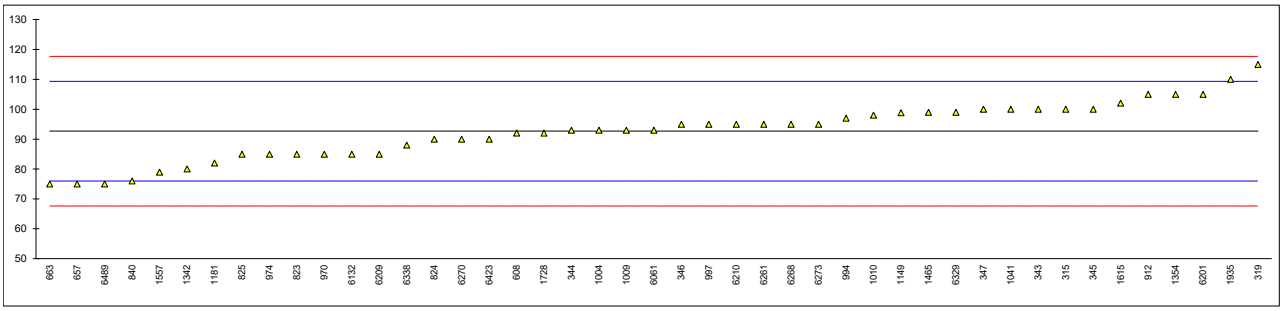
lab	method	value	mark	z(targ)	remarks
6329	D1722	Passes Test		-----	
6338	D1722	Pass		-----	
6388	D1722	Pass		-----	
6423	D1722	Pass		-----	
6470		-----		-----	
6471	D1722	Pass		-----	
6477		-----		-----	
6481		-----		-----	
6489	D1722	Pass		-----	
7018		-----		-----	
7019		-----		-----	
	n	61			
	mean (n)	Pass			

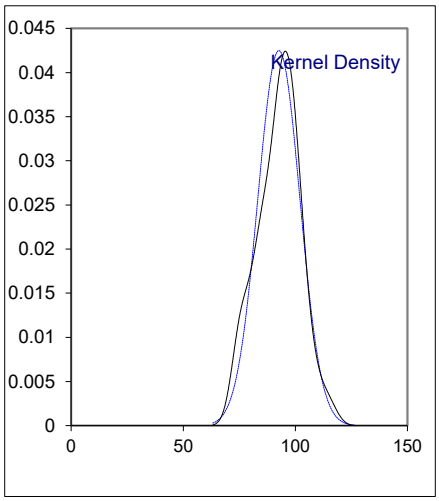
Determination of Permanganate Time Test at 15 °C on sample #22160; results in minutes

lab	method	value	mark	z(targ)	remarks
53	D1363	>60		-----	
150		-----		-----	
171		-----		-----	
315	D1363	100		0.88	
316		-----		-----	
319	D1363	115		2.68	
323	D1363	>60		-----	
333	D1363	>60		-----	
334		-----		-----	
335	D1363	>60		-----	
343	D1363	100		0.88	
344	D1363	93		0.04	
345	D1363	100		0.88	
346	D1363	95		0.28	
347	D1363	100		0.88	
349		-----		-----	
357	D1363	>90		-----	
395	D1363	>60		-----	
396	D1363	>60		-----	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608	D1363	92		-0.08	
609		-----		-----	
657	D1363	75		-2.12	
663	D1363	75		-2.12	
823	D1363	85		-0.92	
824	D1363	90		-0.32	
825	D1363	85		-0.92	
840	D1363	76		-2.00	
902		-----		-----	
912	D1363	105		1.48	
913		-----		-----	
963	D1363	>60		-----	
970	D1363	85		-0.92	
974	D1363	85		-0.92	
994	D1363	97		0.52	
997	D1363	95		0.28	
1004	D1363	93		0.04	
1009	D1363	93		0.04	
1010	D1363	98		0.64	
1016		-----		-----	
1041	D1363	100		0.88	
1067		-----		-----	
1120		-----		-----	
1135	D1363	>60		-----	
1149	D1363	98.83		0.74	
1181	D1363	82		-1.28	
1256		-----		-----	
1264		-----		-----	
1342	D1363	80		-1.52	
1354	D1363	105		1.48	
1465	D1363	99		0.76	
1530		-----		-----	
1557	SRPS H.B8.226	79		-1.64	
1615	D1363	102		1.12	
1656		-----		-----	
1728	D1363	92		-0.08	
1935	D1363	110		2.08	
1940		-----		-----	
6008		-----		-----	
6061	D1363	93		0.04	
6119		-----		-----	
6132	D1363	85		-0.92	
6201	D1363	105		1.48	
6209	D1363	85		-0.92	
6210	D1363	95		0.28	
6261	D1363	95		0.28	
6262		-----		-----	
6268	D1363	95		0.28	
6270	D1363	90		-0.32	
6273	D1363	95		0.28	
6315	D1363	>90		-----	

lab	method	value	mark	z(targ)	remarks
6329	D1363	99		0.76	
6338	D1363	88		-0.56	
6388		-----		-----	
6423	D1363	90		-0.32	
6470		-----		-----	
6471	D1363	>60		-----	
6477		-----		-----	
6481		-----		-----	
6489	D1363	75		-2.12	
7018		-----		-----	
7019		-----		-----	

normality	OK
n	45
outliers	0
mean (n)	92.66
st.dev. (n)	9.393
R(calc.)	26.30
st.dev.(D1363:06R19)	8.340
R(D1363:06R19)	23.35



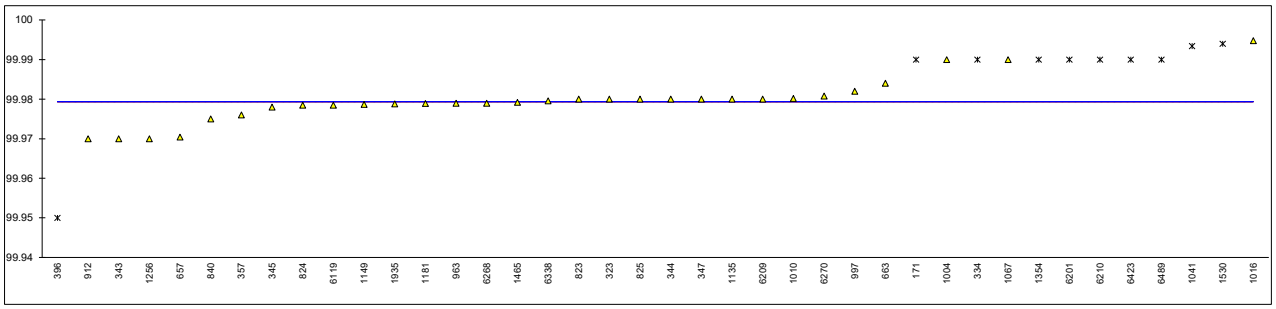


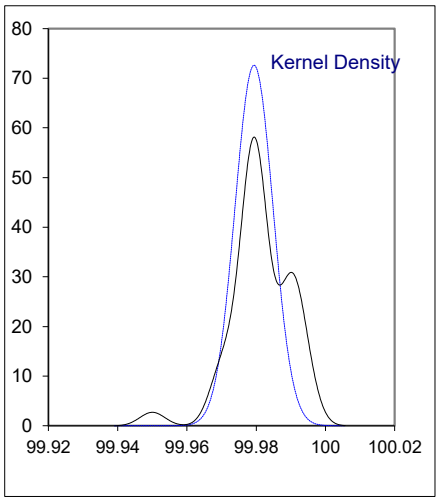
Determination of Purity by GC as received on sample #22160; results in %M/M

lab	method	value	mark	z(targ)	remarks
53		-----		-----	
150		-----		-----	
171	IMPCA001	99.99	ex	-----	See paragraph 4.1
315		-----		-----	
316		-----		-----	
319		-----		-----	
323	IMPCA001	99.98		-----	
333		-----		-----	
334	IMPCA001	99.99	ex	-----	See paragraph 4.1
335		-----		-----	
343	IMPCA001	99.97		-----	
344	IMPCA001	99.980		-----	
345	IMPCA001	99.978		-----	
346		-----		-----	
347	IMPCA001	99.98		-----	
349		-----		-----	
357	IMPCA001	99.976		-----	
395		-----		-----	
396	IMPCA001	99.95	R(0.01)	-----	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609		-----		-----	
657	IMPCA001	99.9704		-----	
663	IMPCA001	99.984		-----	
823	IMPCA001	99.98		-----	
824	IMPCA001	99.9785		-----	
825	IMPCA001	99.98		-----	
840	IMPCA001	99.975		-----	
902		-----		-----	
912	IMPCA001	99.97	C	-----	first reported 99.96
913		-----		-----	
963	IMPCA001	99.979		-----	
970		-----		-----	
974		-----		-----	
994		-----		-----	
997	IMPCA001	99.982	C	-----	first reported 99.872
1004	IMPCA001	99.99		-----	
1009		-----		-----	
1010	IMPCA001	99.9802		-----	
1016	In house	99.99476		-----	
1041	IMPCA001	99.9934	ex	-----	See paragraph 4.1
1067	IMPCA001	99.99		-----	
1120		-----		-----	
1135	IMPCA001	99.98		-----	
1149	IMPCA001	99.9787		-----	
1181	IMPCA001	99.9789		-----	
1256	IMPCA001	99.97		-----	
1264		-----		-----	
1342		-----		-----	
1354	IMPCA001	99.99	ex	-----	See paragraph 4.1
1465	IMPCA001	99.9792		-----	
1530	IMPCA001	99.994	ex	-----	See paragraph 4.1
1557		-----		-----	
1615		-----		-----	
1656		-----		-----	
1728		-----		-----	
1935	IMPCA001	99.9788		-----	
1940		-----		-----	
6008		-----		-----	
6061		-----		-----	
6119	In house	99.9785	C	-----	first reported 0.9785
6132		-----		-----	
6201	IMPCA001	99.99	ex	-----	See paragraph 4.1
6209	IMPCA001	99.98		-----	
6210	IMPCA001	99.99	ex	-----	See paragraph 4.1
6261		-----		-----	
6262		-----		-----	
6268	IMPCA001	99.9790		-----	
6270	IMPCA001	99.9808		-----	
6273		-----		-----	
6315		-----		-----	

lab	method	value	mark	z(targ)	remarks
6329		-----		-----	
6338	IMPCA001	99.9796		-----	
6388		-----		-----	
6423	IMPCA001	99.99	ex	-----	See paragraph 4.1
6470		-----		-----	
6471		-----		-----	
6477		-----		-----	
6481		-----		-----	
6489	IMPCA001	99.99	ex	-----	See paragraph 4.1
7018		-----		-----	
7019		-----		-----	

	normality	suspect
	n	30
	outliers	1 (+9 ex)
	mean (n)	99.97938
	st.dev. (n)	0.005495
	R(calc.)	0.01539
	st.dev.(lit)	unknown
	R(lit)	unknown
Compare		
	R(iis21C10)	0.03111



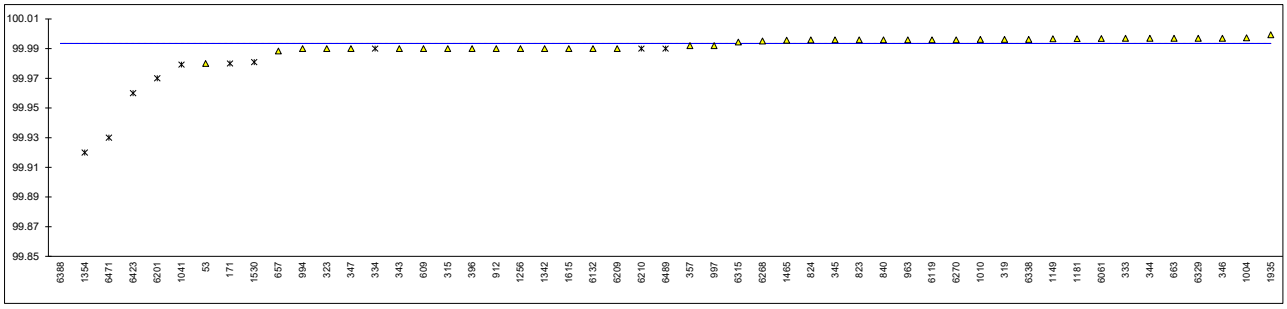


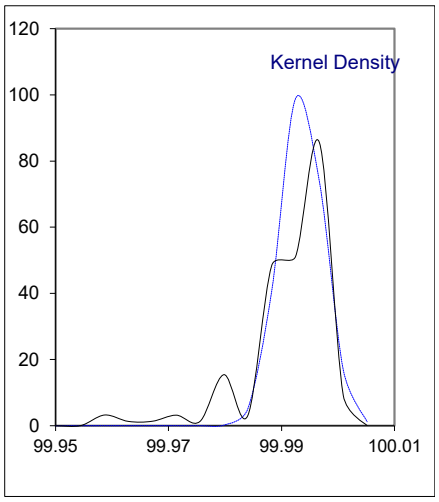
Determination of Purity by GC on dry basis on sample #22160; results in %M/M

lab	method	value	mark	z(targ)	remarks
53	IMPCA001	99.98		-----	
150		-----		-----	
171	IMPCA001	99.98	ex	-----	See paragraph 4.1
315	IMPCA001	99.99		-----	
316		-----		-----	
319	IMPCA001	99.9963		-----	
323	IMPCA001	99.99		-----	
333	IMPCA001	99.997		-----	
334	IMPCA001	99.99	ex	-----	See paragraph 4.1
335		-----		-----	
343	IMPCA001	99.99		-----	
344	IMPCA001	99.997		-----	
345	IMPCA001	99.996		-----	
346	IMPCA001	99.9970532		-----	
347	IMPCA001	99.99		-----	
349		-----		-----	
357	IMPCA001	99.992		-----	
395		-----		-----	
396	IMPCA001	99.99		-----	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609	IMPCA001	99.99		-----	
657	IMPCA001	99.9884		-----	
663	IMPCA001	99.997		-----	
823	IMPCA001	99.996		-----	
824	IMPCA001	99.9959		-----	
825	IMPCA001	>99.99		-----	
840	IMPCA001	99.996		-----	
902		-----		-----	
912	IMPCA001	99.99		-----	
913		-----		-----	
963	IMPCA001	99.996		-----	
970		-----		-----	
974		-----		-----	
994	IMPCA001	99.99		-----	
997	IMPCA001	99.992		-----	
1004	IMPCA001	99.9973		-----	
1009		-----		-----	
1010	IMPCA001	99.99626		-----	
1016		-----		-----	
1041	IMPCA001	99.9793	ex	-----	See paragraph 4.1
1067		-----		-----	
1120		-----		-----	
1135	IMPCA001	>99.99		-----	
1149	IMPCA001	99.9966		-----	
1181	IMPCA001	99.99677		-----	
1256	IMPCA001	99.99		-----	
1264		-----		-----	
1342	IMPCA001	99.99		-----	
1354	IMPCA001	99.99	ex	-----	See paragraph 4.1
1465	IMPCA001	99.9957		-----	
1530	IMPCA001	99.981	ex	-----	See paragraph 4.1
1557		-----		-----	
1615	IMPCA001	99.99		-----	
1656		-----		-----	
1728		-----		-----	
1935	IMPCA001	99.9994	C	-----	first reported 99.9585
1940		-----		-----	
6008		-----		-----	
6061	IMPCA001	99.9968		-----	
6119	In house	99.996	C	-----	first reported 0.996
6132	IMPCA001	99.99		-----	
6201	IMPCA001	99.97	ex,C	-----	See paragraph 4.1, first reported 99.96
6209	IMPCA001	99.99		-----	
6210	IMPCA001	99.99	ex	-----	See paragraph 4.1
6261		-----		-----	
6262		-----		-----	
6268	IMPCA001	99.9951		-----	
6270	IMPCA001	99.9960		-----	
6273		-----		-----	
6315	IMPCA001	99.9945		-----	

lab	method	value	mark	z(targ)	remarks
6329	IMPCA001	99.997		-----	
6338	IMPCA001	99.9963		-----	
6388	IMPCA001	98.93375	C,R(0.01)	-----	first reported 98.12737
6423	IMPCA001	99.99	ex	-----	See paragraph 4.1
6470		-----		-----	
6471	IMPCA001	99.93	R(0.01)	-----	
6477		-----		-----	
6481		-----		-----	
6489	IMPCA001	99.99	ex	-----	See paragraph 4.1
7018		-----		-----	
7019		-----		-----	

	normality	suspect
	n	40
	outliers	2 (+9ex)
	mean (n)	99.99354
	st.dev. (n)	0.003887
	R(calc.)	0.01088
	st.dev.(lit)	unknown
	R(lit)	unknown
Compare		
	R(iis21C10)	0.02513





Determination of Acetone on sample #22160; results in mg/kg

lab	method	value	mark	z(targ)	remarks
53	IMPCA001	<5		-----	
150		-----		-----	
171	IMPCA001	<5		-----	
315	IMPCA001	<5		-----	
316		-----		-----	
319	IMPCA001	<5		-----	
323	IMPCA001	< 5		-----	
333	IMPCA001	<10		-----	
334	IMPCA001	<10		-----	
335		-----		-----	
343	IMPCA001	<5		-----	
344	IMPCA001	<5		-----	
345	IMPCA001	<5		-----	
346	IMPCA001	<5		-----	
347	IMPCA001	<5		-----	
349		-----		-----	
357	IMPCA001	<5		-----	
395		-----		-----	
396	IMPCA001	<5		-----	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609		-----		-----	
657	IMPCA001	<5		-----	
663	IMPCA001	<5		-----	
823	IMPCA001	<5		-----	
824	IMPCA001	<5		-----	
825	IMPCA001	<5		-----	
840	IMPCA001	<5		-----	
902		-----		-----	
912	IMPCA001	<5		-----	
913		-----		-----	
963	IMPCA001	<10		-----	
970		-----		-----	
974		-----		-----	
994		-----		-----	
997		-----		-----	
1004	IMPCA001	0.4		-----	
1009		-----		-----	
1010	IMPCA001	0		-----	
1016	In house	0	C	-----	first reported 14.16
1041	IMPCA001	0.44		-----	
1067	IMPCA001	< 5		-----	
1120		-----		-----	
1135	IMPCA001	<5		-----	
1149	IMPCA001	1.12		-----	
1181	IMPCA001	0		-----	
1256	IMPCA001	1		-----	
1264		-----		-----	
1342	IMPCA001	0		-----	
1354	IMPCA001	<5		-----	
1465	IMPCA001	0		-----	
1530	IMPCA001	<10		-----	
1557	D1612	<30		-----	
1615	IMPCA001	<1.00		-----	
1656		-----		-----	
1728		-----		-----	
1935	IMPCA001	0		-----	
1940		-----		-----	
6008		-----		-----	
6061	IMPCA001	<5		-----	
6119	In house	<5		-----	
6132	IMPCA001	<5		-----	
6201	IMPCA001	1		-----	
6209	IMPCA001	1		-----	
6210	IMPCA001	0		-----	
6261		-----		-----	
6262		-----		-----	
6268	IMPCA001	0		-----	
6270	IMPCA001	0		-----	
6273		-----		-----	
6315	IMPCA001	< 5		-----	

lab	method	value	mark	z(targ)	remarks
6329	IMPCA001	<5		-----	
6338	IMPCA001	<5		-----	
6388		-----		-----	
6423	IMPCA001	0		-----	
6470		-----		-----	
6471	IMPCA001	<10		-----	
6477		-----		-----	
6481		-----		-----	
6489	IMPCA001	1.651		-----	
7018		-----		-----	
7019		-----		-----	
	n	51			
	mean (n)	<10			

Determination of Benzene on sample #22160; results in mg/kg

lab	method	value	mark	z(targ)	remarks
53		-----		-----	
150		-----		-----	
171	IMPCA001	<5		-----	
315	IMPCA001	<5		-----	
316		-----		-----	
319	IMPCA001	<5		-----	
323	IMPCA001	< 5		-----	
333		-----		-----	
334	IMPCA001	<10		-----	
335		-----		-----	
343	IMPCA001	<5		-----	
344	IMPCA001	<5		-----	
345	IMPCA001	<5		-----	
346	IMPCA001	<5		-----	
347		-----		-----	
349		-----		-----	
357	IMPCA001	<5		-----	
395		-----		-----	
396		-----		-----	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609		-----		-----	
657	IMPCA001	<5		-----	
663	IMPCA001	<5		-----	
823	IMPCA001	<5		-----	
824	IMPCA001	<5		-----	
825	IMPCA001	<1		-----	
840	IMPCA001	<5		-----	
902		-----		-----	
912	IMPCA001	<5		-----	
913		-----		-----	
963	IMPCA001	<10		-----	
970		-----		-----	
974		-----		-----	
994		-----		-----	
997		-----		-----	
1004	IMPCA001	<0.1		-----	
1009		-----		-----	
1010	IMPCA001	0		-----	
1016		-----		-----	
1041		-----		-----	
1067	IMPCA001	< 5		-----	
1120		-----		-----	
1135	IMPCA001	<5		-----	
1149		-----		-----	
1181	IMPCA001	0		-----	
1256		-----		-----	
1264		-----		-----	
1342		-----		-----	
1354	IMPCA001	<5		-----	
1465	IMPCA001	0		-----	
1530	IMPCA001	<10		-----	
1557		-----		-----	
1615	IMPCA001	<1.00		-----	
1656		-----		-----	
1728		-----		-----	
1935	IMPCA001	0		-----	
1940		-----		-----	
6008		-----		-----	
6061	IMPCA001	<5		-----	
6119		<5		-----	
6132		-----		-----	
6201	IMPCA001	<1		-----	
6209	IMPCA001	0		-----	
6210	IMPCA001	0		-----	
6261		-----		-----	
6262		-----		-----	
6268	IMPCA001	0		-----	
6270	IMPCA001	0		-----	
6273		-----		-----	
6315	IMPCA001	< 5		-----	

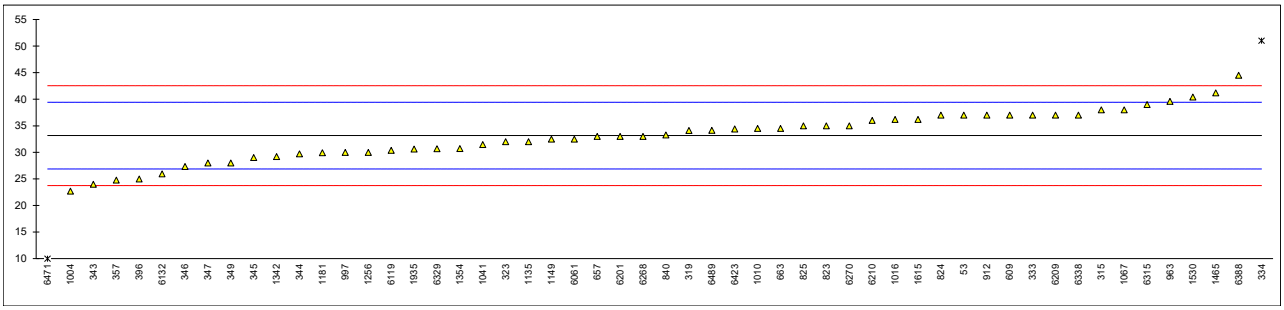
lab	method	value	mark	z(targ)	remarks
6329	IMPCA001	<5		-----	
6338	IMPCA001	<5		-----	
6388		-----		-----	
6423	IMPCA001	0		-----	
6470		-----		-----	
6471		-----		-----	
6477		-----		-----	
6481		-----		-----	
6489	IMPCA001	0		-----	
7018		-----		-----	
7019		-----		-----	
	n	40			
	mean (n)	<10			

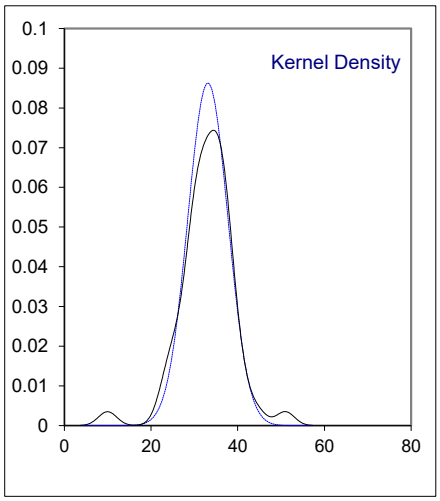
Determination of Ethanol on sample #22160; results in mg/kg

lab	method	value	mark	z(targ)	remarks
53	IMPCA001	37		1.23	
150		-----		-----	
171	IMPCA001	<5		<-8.99	possibly a false negative test result?
315	IMPCA001	38		1.55	
316		-----		-----	
319	IMPCA001	34.1		0.30	
323	IMPCA001	32		-0.37	
333	IMPCA001	37		1.23	
334	IMPCA001	51	R(0.05)	5.70	
335		-----		-----	
343	IMPCA001	24		-2.92	
344	IMPCA001	29.73		-1.09	
345	IMPCA001	29		-1.32	
346	IMPCA001	27.326		-1.86	
347	IMPCA001	28		-1.64	
349	IMPCA001	28		-1.64	
357	IMPCA001	24.8		-2.67	
395		-----		-----	
396	IMPCA001	25		-2.60	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609	IMPCA001	37		1.23	
657	IMPCA001	33		-0.05	
663	IMPCA001	34.51		0.44	
823	IMPCA001	35		0.59	
824	IMPCA001	37		1.23	
825	IMPCA001	35		0.59	
840	IMPCA001	33.3		0.05	
902		-----		-----	
912	IMPCA001	37		1.23	
913		-----		-----	
963	IMPCA001	39.6		2.06	
970		-----		-----	
974		-----		-----	
994		-----		-----	
997	IMPCA001	30		-1.00	
1004	IMPCA001	22.7		-3.34	
1009		-----		-----	
1010	IMPCA001	34.5		0.43	
1016	In house	36.20		0.98	
1041	IMPCA001	31.45		-0.54	
1067	IMPCA001	38		1.55	
1120		-----		-----	
1135	IMPCA001	32		-0.37	
1149	IMPCA001	32.48		-0.21	
1181	IMPCA001	29.95271		-1.02	
1256	IMPCA001	30		-1.00	
1264		-----		-----	
1342	IMPCA001	29.21		-1.26	
1354	IMPCA001	30.72		-0.77	
1465	IMPCA001	41.195		2.57	
1530	IMPCA001	40.4		2.32	
1557		-----		-----	
1615	IMPCA001	36.21		0.98	
1656		-----		-----	
1728		-----		-----	
1935	IMPCA001	30.63		-0.80	
1940		-----		-----	
6008		-----		-----	
6061	IMPCA001	32.5		-0.21	
6119	In house	30.4		-0.88	
6132	IMPCA001	25.95		-2.30	
6201	IMPCA001	33		-0.05	
6209	IMPCA001	37		1.23	
6210	IMPCA001	36.03		0.92	
6261		-----		-----	
6262		-----		-----	
6268	IMPCA001	33		-0.05	
6270	IMPCA001	35		0.59	
6273		-----		-----	
6315	IMPCA001	39		1.87	

lab	method	value	mark	z(targ)	remarks
6329	IMPCA001	30.69		-0.78	
6338	IMPCA001	37		1.23	
6388	IMPCA001	44.5		3.63	
6423	IMPCA001	34.4		0.40	
6470		-----		-----	
6471	IMPCA001	10	R(0.01)	-7.39	
6477		-----		-----	
6481		-----		-----	
6489	IMPCA001	34.1335		0.32	
7018		-----		-----	
7019		-----		-----	

normality	OK
n	52
outliers	2
mean (n)	33.146
st.dev. (n)	4.6269
R(calc.)	12.955
st.dev.(Horwitz)	3.1312
R(Horwitz)	8.767





Determination of Toluene on sample #22160; results in mg/kg

lab	method	value	mark	z(targ)	remarks
53		-----		-----	
150		-----		-----	
171	IMPCA001	<5		-----	
315	IMPCA001	<5		-----	
316		-----		-----	
319	IMPCA001	<5		-----	
323	IMPCA001	< 5		-----	
333		-----		-----	
334	IMPCA001	<10		-----	
335		-----		-----	
343	IMPCA001	<5		-----	
344	IMPCA001	<5		-----	
345	IMPCA001	<5		-----	
346	IMPCA001	<5		-----	
347		-----		-----	
349		-----		-----	
357	IMPCA001	<5		-----	
395		-----		-----	
396		-----		-----	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609		-----		-----	
657	IMPCA001	<5		-----	
663	IMPCA001	<5		-----	
823	IMPCA001	<5		-----	
824	IMPCA001	<5		-----	
825	IMPCA001	<5		-----	
840	IMPCA001	<5		-----	
902		-----		-----	
912	IMPCA001	<5		-----	
913		-----		-----	
963	IMPCA001	<10		-----	
970		-----		-----	
974		-----		-----	
994		-----		-----	
997		-----		-----	
1004	IMPCA001	0.4		-----	
1009		-----		-----	
1010	IMPCA001	0		-----	
1016		-----		-----	
1041		-----		-----	
1067	IMPCA001	< 5		-----	
1120		-----		-----	
1135	IMPCA001	<5		-----	
1149		-----		-----	
1181	IMPCA001	0		-----	
1256		-----		-----	
1264		-----		-----	
1342		-----		-----	
1354	IMPCA001	<5		-----	
1465	IMPCA001	0		-----	
1530	IMPCA001	<10		-----	
1557		-----		-----	
1615	IMPCA001	<1.00		-----	
1656		-----		-----	
1728		-----		-----	
1935	IMPCA001	0		-----	
1940		-----		-----	
6008		-----		-----	
6061	IMPCA001	<5		-----	
6119	In house	<5		-----	
6132		-----		-----	
6201	IMPCA001	<1		-----	
6209	IMPCA001	0		-----	
6210	IMPCA001	0		-----	
6261		-----		-----	
6262		-----		-----	
6268	IMPCA001	0		-----	
6270	IMPCA001	0		-----	
6273		-----		-----	
6315	IMPCA001	< 5		-----	

lab	method	value	mark	z(targ)	remarks
6329	IMPCA001	<5		-----	
6338	IMPCA001	<5		-----	
6388		-----		-----	
6423	IMPCA001	0		-----	
6470		-----		-----	
6471		-----		-----	
6477		-----		-----	
6481		-----		-----	
6489	IMPCA001	0		-----	
7018		-----		-----	
7019		-----		-----	
	n	40			
	mean (n)	<10			

Determination of Total Sulfur on sample #22160; results in mg/kg

lab	method	value	mark	z(targ)	remarks
53	D5453	<0.5		-----	
150		-----		-----	
171	D5453	0.5		-----	
315	D5453	<1		-----	
316		-----		-----	
319	D5453	0.05		-----	
323	D5453	< 1		-----	
333	D5453	0.4		-----	
334	D5453	<0.5		-----	
335		-----		-----	
343	D5453	<1		-----	
344	D5453	0.183		-----	
345	D5453	<0.5		-----	
346		-----		-----	
347	D5453	<0.5		-----	
349		-----		-----	
357	D5453	<0,5		-----	
395		-----		-----	
396		-----		-----	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609		-----		-----	
657	D5453	<1		-----	
663	D5453	<1.0		-----	
823	D5453	<0.5		-----	
824	D5453	<0.5		-----	
825	D5453	<0.5		-----	
840	D5453	0.25		-----	
902		-----		-----	
912	D5453	<1		-----	
913		-----		-----	
963	D5453	<1		-----	
970	D5453	<1		-----	
974	D5453	<1		-----	
994	D5453	<0.5		-----	
997	D5453	0.08		-----	
1004	D5453	0.04		-----	
1009		-----		-----	
1010		-----		-----	
1016	ISO20846	0.19		-----	
1041	D5453	<0,2		-----	
1067	D5453	0.28		-----	
1120		-----		-----	
1135	D5453	<1		-----	
1149		-----		-----	
1181	D5453	0.02		-----	
1256	D5453	0.06		-----	
1264		-----		-----	
1342	D5453	0.0		-----	
1354	D5453	0.035		-----	
1465	D5453	0		-----	
1530	D5453	<0,5		-----	
1557	ISO20846	<1		-----	
1615		-----		-----	
1656		-----		-----	
1728	D5453	<1		-----	
1935	D5453	0.07		-----	
1940		-----		-----	
6008		-----		-----	
6061		-----		-----	
6119	D5453	<0.1		-----	
6132	D5453	<0.5		-----	
6201	D5453	0.2		-----	
6209	D5453	0.181		-----	
6210	D5453	0.19		-----	
6261	D4294	0.010		-----	
6262		-----		-----	
6268		-----		-----	
6270	D5453	0.1		-----	
6273		-----		-----	
6315	ISO20846	0.05		-----	

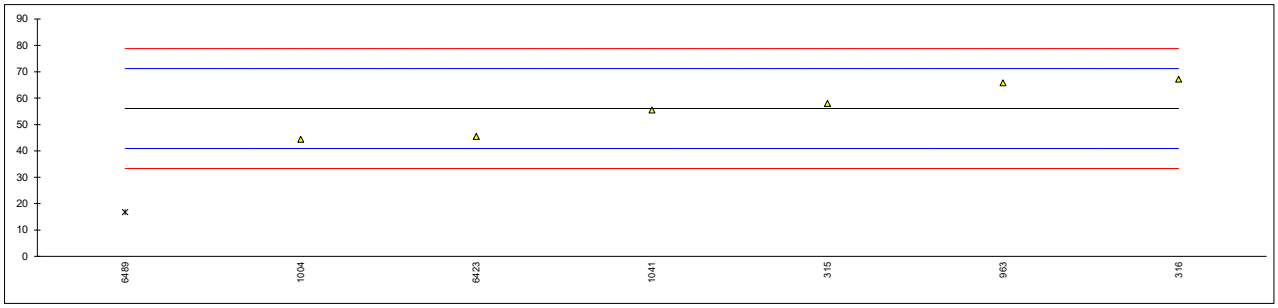
lab	method	value	mark	z(targ)	remarks
6329	D5453	<0.1		-----	
6338		-----		-----	
6388	D5453	0.43		-----	
6423	D5453	0.0		-----	
6470		-----		-----	
6471	D5453	<0.5		-----	
6477		-----		-----	
6481		-----		-----	
6489	D5453	0.06		-----	
7018		-----		-----	
7019		-----		-----	
	n	51			
	mean (n)	<1			

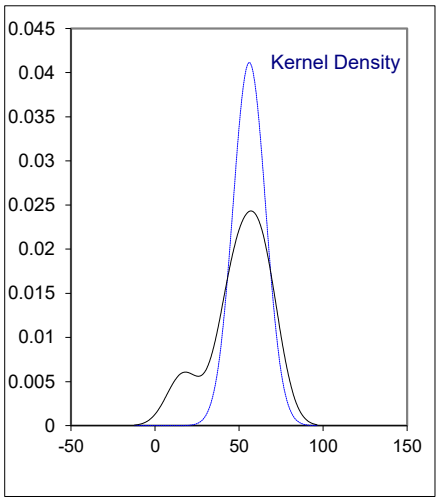
Determination of Trimethylamine (TMA) on sample #22160; results in µg/kg

lab	method	value	mark	z(targ)	remarks
53		-----		-----	
150		-----		-----	
171		-----		-----	
315	INH-981	58		0.26	
316	INH-601	67.199		1.47	
319		-----		-----	
323		-----		-----	
333		-----		-----	
334		-----		-----	
335		-----		-----	
343		-----		-----	
344		-----		-----	
345		-----		-----	
346		-----		-----	
347		-----		-----	
349		-----		-----	
357		-----		-----	
395		-----		-----	
396		-----		-----	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609		-----		-----	
657	E346	<10		<-6.09	possibly a false negative test result?
663		-----		-----	
823		-----		-----	
824		-----		-----	
825		-----		-----	
840		-----		-----	
902		-----		-----	
912		-----		-----	
913		-----		-----	
963	E346	65.8		1.29	
970		-----		-----	
974		-----		-----	
994		-----		-----	
997		-----		-----	
1004	E346	44.4		-1.54	
1009		-----		-----	
1010		-----		-----	
1016		-----		-----	
1041	E346	55.5		-0.07	
1067		-----		-----	
1120		-----		-----	
1135		-----		-----	
1149		-----		-----	
1181		-----		-----	
1256		-----		-----	
1264		-----		-----	
1342		-----		-----	
1354		-----		-----	
1465		-----		-----	
1530		-----		-----	
1557		-----		-----	
1615	E346	.<500		-----	
1656		-----		-----	
1728		-----		-----	
1935		-----		-----	
1940		-----		-----	
6008		-----		-----	
6061		-----		-----	
6119		-----		-----	
6132		-----		-----	
6201		-----		-----	
6209		-----		-----	
6210		-----		-----	
6261		-----		-----	
6262		-----		-----	
6268		-----		-----	
6270		-----		-----	
6273		-----		-----	
6315		-----		-----	

lab	method	value	mark	z(targ)	remarks
6329		-----		-----	
6338		-----		-----	
6388		-----		-----	
6423	E346	45.5		-1.40	
6470		-----		-----	
6471		-----		-----	
6477		-----		-----	
6481		-----		-----	
6489	E346	16.8	G(0.05)	-5.19	
7018		-----		-----	
7019		-----		-----	

normality	unknown
n	6
outliers	1
mean (n)	56.07
st.dev. (n)	9.700
R(calc.)	27.16
st.dev.(E346:08e1)	7.569
R(E346:08e1)	21.19



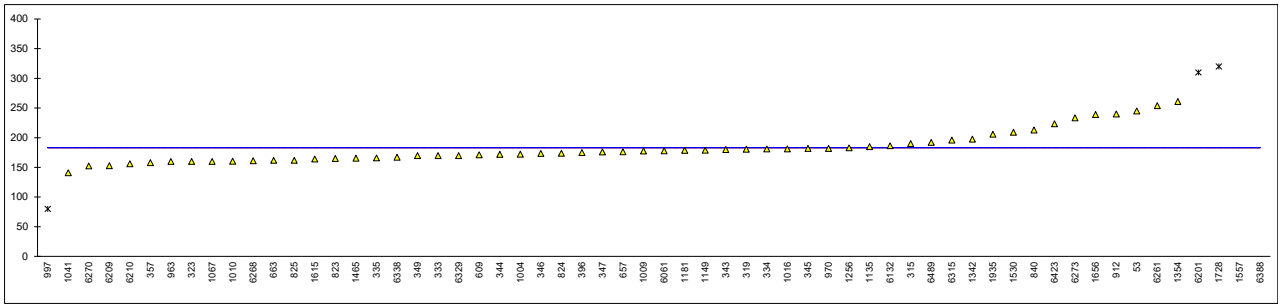


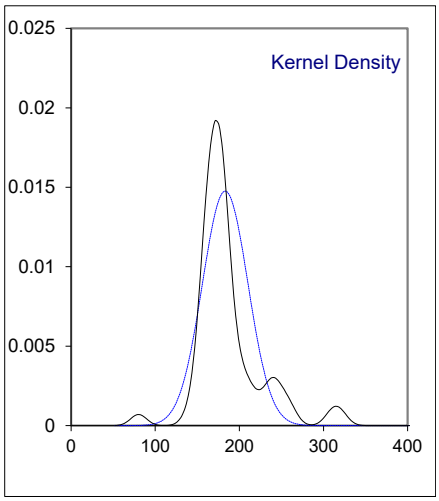
Determination of Water, Coulometric on sample #22160; results in mg/kg

lab	method	value	mark	z(targ)	remarks
53	E1064	245	C	-----	first reported 252
150		-----		-----	
171		-----		-----	
315	E1064	190		-----	
316		-----		-----	
319	E1064	180.5		-----	
323	E1064	160		-----	
333	E1064	170	C	-----	reported 0.017
334	E1064	181		-----	
335	E1064	165.9	C	-----	first reported 0.01659
343	E1064	180		-----	
344	E1064	172		-----	
345	E1064	182		-----	
346	E1064	173.37		-----	
347	E1064	176		-----	
349	D6304-A	170	C	-----	first reported 310
357	E1064	158		-----	
395		-----		-----	
396	E1064	175		-----	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609	E1064	171		-----	
657	E1064	176.3		-----	
663	E1064	162		-----	
823	E1064	165		-----	
824	E1064	174		-----	
825	E1064	162		-----	
840	E1064	213		-----	
902		-----		-----	
912	E1064	240		-----	
913		-----		-----	
963	E1064	160		-----	
970	E1064	182		-----	
974		-----		-----	
994		-----		-----	
997	E1064	80	C,R(0.01)	-----	first reported 120
1004	E1064	172.2		-----	
1009	E1064	177.7		-----	
1010	E1064	160.6		-----	
1016	E1064	181.24		-----	
1041	E1064	141		-----	
1067	E1064	160		-----	
1120		-----		-----	
1135	E1064	185		-----	
1149	E1064	179		-----	
1181	E1064	178.597		-----	
1256	E1064	183		-----	
1264		-----		-----	
1342	E1064	197.59		-----	
1354	E1064	261		-----	
1465	E1064	165.5		-----	
1530	E1064	209.14		-----	
1557	E1064	581	C,R(0.01)	-----	first reported 700
1615	E1064	164		-----	
1656	E1064	239		-----	
1728	E1064	320	C,R(0.01)	-----	first reported 255
1935	E1064	205.7		-----	
1940		-----		-----	
6008		-----		-----	
6061	E1064	178		-----	
6119		-----		-----	
6132	E1064	186.53		-----	
6201	E1064	310	C,R(0.01)	-----	first reported 290
6209	E1064	153		-----	
6210	E1064	156		-----	
6261	E1064	254	C	-----	first reported 617.7
6262		-----		-----	
6268	E1064	161.1		-----	
6270	E1064	152.5		-----	
6273	E1064	233.5		-----	
6315	ISO12937	196		-----	

lab	method	value	mark	z(targ)	remarks
6329	E1064	170		-----	
6338	E1064	167		-----	
6388	E1064	1153	R(0.01)	-----	
6423	E1064	223.6		-----	
6470		-----		-----	
471		-----		-----	
6477		-----		-----	
6481		-----		-----	
6489	E1064	192.1		-----	
7018		-----		-----	
7019		-----		-----	

normality	not OK
n	55
outliers	5
mean (n)	183.05
st.dev. (n)	27.030
R(calc.)	75.68
st.dev.(E1064:16)	(10.395)
R(E1064:16)	(29.10)



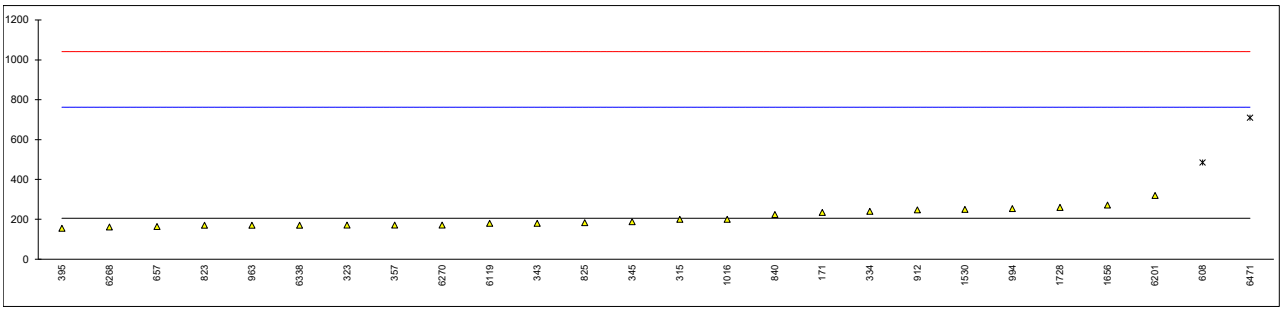


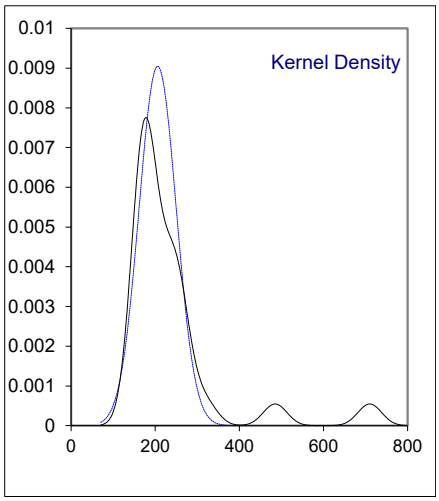
Determination of Water, Volumetric on sample #22160; results in mg/kg

lab	method	value	mark	z(targ)	remarks
53		-----		-----	
150		-----		-----	
171	E203	234.4		0.10	
315	E203	200		-0.02	
316		-----		-----	
319		-----		-----	
323	E203	171		-0.12	
333		-----		-----	
334	E203	240		0.12	
335		-----		-----	
343	E203	180		-0.09	
344		-----		-----	
345	E203	188		-0.06	
346		-----		-----	
347		-----		-----	
349		-----		-----	
357	E203	171		-0.12	
395	E203	154.9		-0.18	
396		-----		-----	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608	E203	485.0	R(0.01)	1.00	
609		-----		-----	
657	E203	163.5		-0.15	
663		-----		-----	
823	E203	170		-0.13	
824		-----		-----	
825	E203	183		-0.08	
840	E203	224		0.07	
902		-----		-----	
912	E203	247		0.15	
913		-----		-----	
963	E203	170		-0.13	
970		-----		-----	
974		-----		-----	
994	E203	254		0.17	
997		-----		-----	
1004		-----		-----	
1009		-----		-----	
1010		-----		-----	
1016	In house	200		-0.02	
1041		-----		-----	
1067		-----		-----	
1120		-----		-----	
1135		-----		-----	
1149		-----		-----	
1181		-----		-----	
1256		-----		-----	
1264		-----		-----	
1342		-----		-----	
1354		-----		-----	
1465		-----		-----	
1530	E203	250.2		0.16	
1557		-----		-----	
1615		-----		-----	
1656	EN15692	272		0.24	
1728	E203	260		0.20	
1935		-----		-----	
1940		-----		-----	
6008		-----		-----	
6061		-----		-----	
6119	E203	179.5		-0.09	
6132		-----		-----	
6201	E203	320		0.41	
6209		-----		-----	
6210		-----		-----	
6261		-----		-----	
6262		-----		-----	
6268	E203	161.2		-0.16	
6270	E203	171.3		-0.12	
6273		-----		-----	
6315		-----		-----	

lab	method	value	mark	z(targ)	remarks
6329		-----		-----	
6338	E203	170		-0.13	
6388		-----		-----	
6423		-----		-----	
6470		-----		-----	
6471	E203	710	R(0.01)	1.81	
6477		-----		-----	
6481		-----		-----	
6489		-----		-----	
7018		-----		-----	
7019		-----		-----	

normality	OK
n	24
outliers	2
mean (n)	205.63
st.dev. (n)	44.114
R(calc.)	123.52
st.dev.(E203:16)	278.571
R(E203:16)	780.00



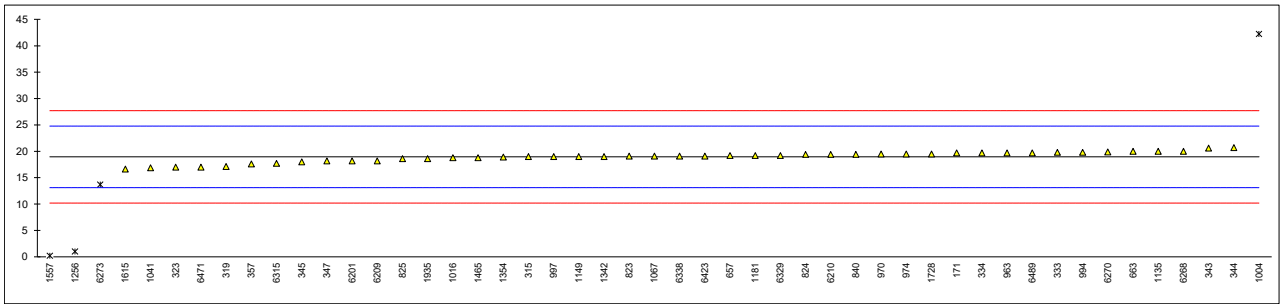


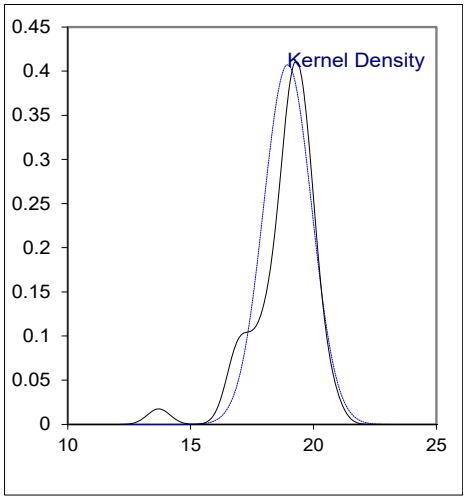
Determination of Nonvolatile matter on sample #22162; results in mg/100 mL

lab	method	value	mark	z(targ)	remarks
53		-----		-----	
150		-----		-----	
171	D1353	19.7		0.26	
315	D1353	19		0.02	
316		-----		-----	
319	D1353	17.12	C	-0.63	first reported 171.2
323	D1353	17		-0.67	
333	D1353	19.8		0.29	
334	D1353	19.7		0.26	
335		-----		-----	
343	D1353	20.6		0.57	
344	D1353	20.7		0.60	
345	D1353	18		-0.32	
346		-----		-----	
347	D1353	18.2		-0.26	
349		-----		-----	
357	D1353	17.6		-0.46	
395		-----		-----	
396		-----		-----	
460		-----		-----	
492		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609		-----		-----	
657	D1353	19.2		0.09	
663	D1353	20.0		0.36	
823	D1353	19.1		0.05	
824	D1353	19.4		0.16	
825	D1353	18.6		-0.12	
840	D1353	19.43		0.17	
902		-----		-----	
912		-----		-----	
913		-----		-----	
963	D1353	19.7		0.26	
970	D1353	19.5		0.19	
974	D1353	19.5		0.19	
994	D1353	19.8		0.29	
997	D1353	19		0.02	
1004	D1353	42.2609	R(0.01)	7.98	
1009		-----		-----	
1010		-----		-----	
1016	D1353	18.8		-0.05	
1041	D1353	16.9		-0.70	
1067	D1353	19.1		0.05	
1120		-----		-----	
1135	D1353	20		0.36	
1149	D1353	19		0.02	
1181	D1353	19.2		0.09	
1256	D1353	1.0	R(0.01)	-6.15	
1264		-----		-----	
1342	D1353	19		0.02	
1354	D1353	18.9		-0.02	
1465	D1353	18.8		-0.05	
1530		-----		-----	
1557	SPPS H.B8.257	0.21	C,R(0.01)	-6.42	first reported 0.3211
1615	D1353	16.65		-0.79	
1656		-----		-----	
1728	D1353	19.5		0.19	
1935	D1353	18.6		-0.12	
1940		-----		-----	
6008		-----		-----	
6061		-----		-----	
6119		-----		-----	
6132	D1353	<1		<-6.15	possibly a false negative test result?
6201	D1353	18.2		-0.26	
6209	D1353	18.2	C	-0.26	first reported 182
6210	D1353	19.4		0.16	
6261		-----		-----	
6262		-----		-----	
6268	D1353	20.0		0.36	
6270	D1353	19.9		0.33	
6273	D1353	13.7	R(0.01)	-1.80	
6315	D1353	17.7		-0.43	

lab	method	value	mark	z(targ)	remarks
6329	D1353	19.2		0.09	
6338	D1353	19.1		0.05	
6388		-----		-----	
6423	D1353	19.1		0.05	
6470		-----		-----	
6471	D1353	17		-0.67	
6477		-----		-----	
6481		-----		-----	
6489	D1353	19.7	C	0.26	first reported 197
7018		-----		-----	
7019		-----		-----	

normality	OK
n	45
outliers	4
mean (n)	18.947
st.dev. (n)	0.9797
R(calc.)	2.743
st.dev.(D1353:13R21)	2.9198
R(D1353:13R21)	8.175



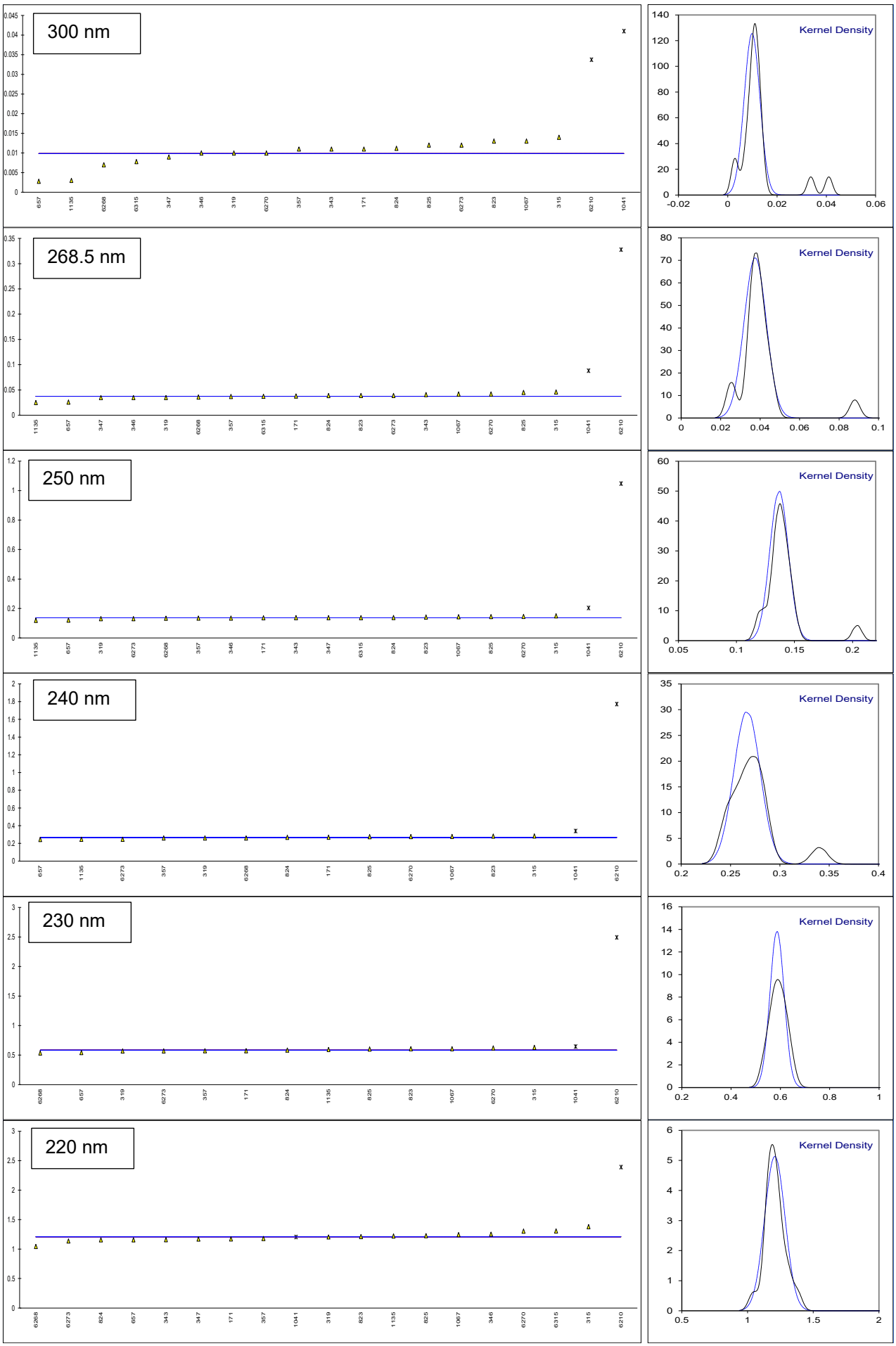


Determination of UV Absorbance (50 mm cuvette) on sample #22161

lab	method	300 nm	268.5 nm	250 nm	240 nm	230 nm	220 nm	Pass/ Fail
150		-----	-----	-----	-----	-----	-----	
171	IMPCA004	0.011	0.038	0.137	0.270	0.576	1.172	Pass
315	IMPCA004	0.014	0.046	0.150	0.284	0.632	1.381	Fail
319	IMPCA004	0.010	0.035	0.131	0.262	0.569	1.206	Pass
323	IMPCA004	-----	-----	-----	-----	-----	-----	Pass
343	IMPCA004	0.011	0.041	0.138	-----	-----	1.158	Pass
346	IMPCA004	0.010	0.035	0.135	-----	-----	1.253	Pass
347	IMPCA004	0.009	0.035	0.138	-----	-----	1.170	Pass
357	IMPCA004	0.011	0.037	0.135	0.262	0.575	1.180	Pass
395		-----	-----	-----	-----	-----	-----	
396		-----	-----	-----	-----	-----	-----	
446	IMPCA004	-----	-----	-----	-----	-----	-----	Pass
657	IMPCA004	0.0028	0.0258	0.1215	0.2458	0.5430	1.1567	Pass
663		-----	-----	-----	-----	-----	-----	
823	IMPCA004	0.013	0.039	0.142	0.283	0.608	1.214	Pass
824	IMPCA004	0.0112	0.0389	0.1392	0.2692	0.5854	1.1564	Pass
825	IMPCA004	0.012	0.045	0.145	0.276	0.603	1.228	Pass
912		-----	-----	-----	-----	-----	-----	
913		-----	-----	-----	-----	-----	-----	
963		-----	-----	-----	-----	-----	-----	
994		-----	-----	-----	-----	-----	-----	Pass
1004		-----	-----	-----	-----	-----	-----	
1041	IMPCA004	0.041 G(1)	0.088 G(1)	0.204 G(1)	0.340 ex	0.645 ex	1.205 ex	
1067	IMPCA004	0.013	0.042	0.144	0.279	0.609	1.245	Fail
1135	IMPCA004	0.003	0.025	0.120	0.248	0.595	1.222	Pass
1264		-----	-----	-----	-----	-----	-----	
1354		-----	-----	-----	-----	-----	-----	
1438		-----	-----	-----	-----	-----	-----	
1656		-----	-----	-----	-----	-----	-----	
6201		-----	-----	-----	-----	-----	-----	
6209		-----	-----	-----	-----	-----	-----	
6210	IMPCA004	0.033719 G(1)	0.3278 G(1)	1.0474 G(1)	1.7731 G(1)	2.4929 G(1)	2.3918 G(1)	Pass
6262		-----	-----	-----	-----	-----	-----	
6268	IMPCA004	0.007	0.036	0.134	0.262	0.536	1.044	Fail
6270	IMPCA004	0.010	0.042	0.146	0.278	0.623	1.304	Fail
6273	IMPCA004	0.012	0.039	0.131	0.248	0.570	1.137	Pass
6315	IMPCA004	0.0078	0.0374	0.1383	-----	-----	1.3091	Pass
6423		-----	-----	-----	-----	-----	-----	
6481		-----	-----	-----	-----	-----	-----	
6489		-----	-----	-----	-----	-----	-----	
7018		-----	-----	-----	-----	-----	-----	
7019		-----	-----	-----	-----	-----	-----	
	normality	suspect	suspect	OK	OK	OK	OK	
	n	17	17	17	13	13	17	17 Pass
	outliers	2	2	2	1 (+1ex)	1 (+1ex)	1 (+1ex)	4 Fail
	mean (n)	0.00987	0.03748	0.13676	0.26669	0.58649	1.20801	
	st.dev. (n)	0.003180	0.005603	0.007960	0.013385	0.028839	0.077722	
	R(calc.)	0.00891	0.01569	0.02229	0.03748	0.08075	0.21762	
	st.dev.(IMPCA004:15)	(0.005288)	(0.003627)	(0.004933)	unknown	unknown	(0.123821)	
	R(IMPCA004:15)	(0.01481)	(0.01016)	(0.01381)	unknown	unknown	(0.34670)	
	Range IMPCA004:15	0-0.01	0.11-0.44	0.41-0.64			1.4-2.0	

Lab 1041: excluded due to observed outliers in other UV Absorbance parameters. Possibly the test values are false positive test results?

Lab 6210 Possibly the test values are false positive test results?


300 nm
Kernel Density
268.5 nm
Kernel Density
250 nm
Kernel Density
240 nm
Kernel Density
230 nm
Kernel Density
220 nm
Kernel Density

z-scores UV Absorbance (50 mm cuvette)

lab	300nm	268.5nm	250nm	240nm	230nm	220nm
150	-----	-----	-----	-----	-----	-----
171	-----	-----	-----	-----	-----	-----
315	-----	-----	-----	-----	-----	-----
319	-----	-----	-----	-----	-----	-----
323	-----	-----	-----	-----	-----	-----
343	-----	-----	-----	-----	-----	-----
346	-----	-----	-----	-----	-----	-----
347	-----	-----	-----	-----	-----	-----
357	-----	-----	-----	-----	-----	-----
395	-----	-----	-----	-----	-----	-----
396	-----	-----	-----	-----	-----	-----
446	-----	-----	-----	-----	-----	-----
657	-----	-----	-----	-----	-----	-----
663	-----	-----	-----	-----	-----	-----
823	-----	-----	-----	-----	-----	-----
824	-----	-----	-----	-----	-----	-----
825	-----	-----	-----	-----	-----	-----
912	-----	-----	-----	-----	-----	-----
913	-----	-----	-----	-----	-----	-----
963	-----	-----	-----	-----	-----	-----
994	-----	-----	-----	-----	-----	-----
1004	-----	-----	-----	-----	-----	-----
1041	-----	-----	-----	-----	-----	-----
1067	-----	-----	-----	-----	-----	-----
1135	-----	-----	-----	-----	-----	-----
1264	-----	-----	-----	-----	-----	-----
1354	-----	-----	-----	-----	-----	-----
1438	-----	-----	-----	-----	-----	-----
1656	-----	-----	-----	-----	-----	-----
6201	-----	-----	-----	-----	-----	-----
6209	-----	-----	-----	-----	-----	-----
6210	-----	-----	-----	-----	-----	-----
6262	-----	-----	-----	-----	-----	-----
6268	-----	-----	-----	-----	-----	-----
6270	-----	-----	-----	-----	-----	-----
6273	-----	-----	-----	-----	-----	-----
6315	-----	-----	-----	-----	-----	-----
6423	-----	-----	-----	-----	-----	-----
6481	-----	-----	-----	-----	-----	-----
6489	-----	-----	-----	-----	-----	-----
7018	-----	-----	-----	-----	-----	-----
7019	-----	-----	-----	-----	-----	-----

APPENDIX 2

Determination of UV Absorbance (10 mm cuvette) on sample #22161, not evaluated

lab	method	300 nm	268.5 nm	250 nm	240 nm	230 nm	220 nm	Pass/Fail
395	IMPCA004	0.0009	-----	0.0233	-----	-----	0.2539	Pass
396	IMPCA004	0.0019	0.0079	0.0307	0.0642	0.1420	0.2843	-----
912	IMPCA004	0.0019	0.0074	0.0268	0.0526	0.1179	0.2442	-----
963	IMPCA004	0.006	0.015	0.038	0.075	0.156	0.289	Pass
1004	IMPCA004	0.0075	0.0184	0.0371	0.0615	0.1232	0.2427	Pass
1067	IMPCA004	0.002	0.008	0.029	0.056	0.121	0.250	Pass
1438		-----	0.007	0.03	0.05	0.12	-----	Pass
1656	IMPCA004	0	0.0012	0.0198	0.0478	0.1193	0.2551	Pass
6201	IMPCA004	0.000	0.0016	0.0178	0.0480	0.1022	0.2198	Pass
6209	IMPCA004	-0.0051	-0.0069	-0.0083	-0.0084	-0.0093	-0.0105	Pass
6489	IMPCA004	0.009	0.037	0.133	0.261	0.575	1.178	Pass

APPENDIX 3

Number of participants per country

1 lab in	ALGERIA
1 lab in	AZERBAIJAN
1 lab in	BAHRAIN
3 labs in	BELGIUM
6 labs in	BRAZIL
3 labs in	CANADA
2 labs in	FINLAND
3 labs in	FRANCE
1 lab in	GEORGIA
5 labs in	GERMANY
2 labs in	INDIA
2 labs in	IRAN, Islamic Republic of
1 lab in	ISRAEL
2 labs in	ITALY
2 labs in	JAPAN
3 labs in	KOREA, Republic of
5 labs in	MALAYSIA
6 labs in	NETHERLANDS
2 labs in	NEW ZEALAND
1 lab in	NORWAY
1 lab in	OMAN
1 lab in	ROMANIA
4 labs in	SAUDI ARABIA
1 lab in	SERBIA
1 lab in	SINGAPORE
6 labs in	SPAIN
1 lab in	THAILAND
1 lab in	TRINIDAD and TOBAGO W.I.
1 lab in	TURKEY
1 lab in	UNITED ARAB EMIRATES
3 labs in	UNITED KINGDOM
13 labs in	UNITED STATES OF AMERICA
1 lab in	VENEZUELA
1 lab in	VIETNAM

APPENDIX 4

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)/G(1)	= outlier in Grubbs' outlier test
G(0.05)	= straggler in Grubbs' outlier test
DG(0.01)	= outlier in Double Grubbs' outlier test
DG(0.05)	= straggler in Double Grubbs' outlier test
R(0.01)	= outlier in Rosner's outlier test
R(0.05)	= straggler in Rosner's outlier test
E	= calculation difference between reported test result and result calculated by iis
W	= test result withdrawn on request of participant
ex	= test result excluded from statistical evaluation
n.a.	= not applicable
n.e.	= not evaluated
n.d.	= not detected
fr.	= first reported
f+?	= possibly a false positive test result?
f-?	= possibly a false negative test result?
SDS	= Safety Data Sheet

Literature

1 iis Interlaboratory Studies, Protocol for the Organisation, Statistics & Evaluation, June 2018
2 ISO5725:86
3 ISO5725 parts 1-6:94
4 ISO13528:05
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7 P.L. Davies, Fr. Z. Anal. Chem, 331, 513, (1988)
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12 Bernard Rosner, Percentage Points for a Generalized ESD Many-Outlier Procedure, Technometrics, 25(2), 165-172, (1983)