Results of Proficiency Test
Methanol
September 2014

Organised by: Institute for Interlaboratory Studies
               Spijkenisse, the Netherlands

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1   INTRODUCTION

Since 1996, a proficiency test for Methanol was organised every year by The Institute for
Interlaboratory Studies. During the annual proficiency testing program 2014/2015, it was decided
to continue the round robin for the analysis of Methanol in accordance with the latest applicable
version of the IMPCA specification (latest version can be found and downloaded from
www.impca.be, see ref. 13 in appendix 3). In this interlaboratory study, 89 laboratories in 33
different countries have participated. See appendix 2 for the number of participants per country.
In this report, the results of the 2014 proficiency test are presented and discussed. This report is
also electronically available through the iis internet site www.iisnl.com.

2   SET UP

The Institute for Interlaboratory studies in Spijkenisse, the Netherlands, was the organiser of this
proficiency test. Sample analyses for fit-for-use and homogeneity testing were subcontracted. To
get maximum information from this study it was decided to spike the batch Methanol with
Acetone (15.6 mg/kg), Ethanol (33.2 mg/kg), Benzene (10.4 mg/kg), Anorganic Chloride (total of
0.61 mg Cl/kg), Iron (0.025 mg/kg) and Trimethylamine (40 µg/kg). All materials used for spiking
were >99% pure. The batch was used to prepare the 1 litre sample as well as the 100 ml sample
for UV only.
In this proficiency test, the participants received, depending on the registration, one or two
samples of Methanol: 1*1L Methanol (labelled #14160) and/or 1*100 mL Methanol (labelled
#14162) for UV only. The participants were requested to report rounded and unrounded results.
The unrounded results were preferably used for the statistical evaluations.

2.1   ACCREDITATION

The Institute for Interlaboratory Studies in Spijkenisse, the Netherlands, is accredited in
agreement with ISO/IEC 17043:2010 (R007), since January 2000, by the Dutch Accreditation
Council (Raad voor Accreditatie). This ensures strict adherence to protocols for sample
preparation and statistical evaluation and 100% confidentially of participant's data. Feedback
from the participants on the reported data is encouraged and customer's satisfaction is measured
on regular basis by sending out questionnaires.

2.2   PROTOCOL

The protocol followed in the organisation was the one as described for proficiency testing in the
report 'iis Interlaboratory Studies: Protocol for the Organisation, Statistics and Evaluation' of April
2014 (iis-protocol, version 3.3). This protocol can be downloaded from the iis website
http://www.iisnl.com.

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

The necessary batch of methanol was provided by a Methanol producer. From this material, 122 litre bulk material was spiked with the components listed in table 1:

Component	Amount
Acetone	1506 mg
Ethanol	3204 mg
Benzene	1005 mg
Sodium Chloride	88.8 mg
Iron(III) Chloride.6H_2O	11.8 mg
Trimethylamine	3.87 mg

Table 1: components that were added to bulk material

After homogenisation in a pre-cleaned metal drum, for the first batch 113 brown glass bottles of 1L were filled and labelled #14160.

The homogeneity of the subsamples #14160 was checked by determination of Density at 20 ^{o}C in accordance with ASTM D4052 and Chloride in accordance with IMPCA 002 on 8 stratified randomly selected samples.

	Density at 20 ^{o}C in kg/L	Chloride in mg/kg
sample #14160-1	0.79143	0.7
sample #14160-2	0.79140	0.7
sample #14160-3	0.79144	0.6
sample #14160-4	0.79142	0.7
sample #14160-5	0.79142	0.7
sample #14160-6	0.79142	0.7
sample #14160-7	0.79142	0.6
sample #14160-8	0.79142	0.7

Table 2: homogeneity test results of subsamples #14160

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

	Density at 20 ^{o}C in kg/L	Chloride in mg/kg
r (sample #14160)	0.00003	0.1
reference test	ASTM D4052:02e1	IMPCA002:98
0.3*R (reference test)	0.00015	0.1

Table 3: evaluation of repeatabilities of the subsamples #14160

The calculated repeatabilities of the sample #14160 were respectively less than and equal to 0.3 times the corresponding reproducibility of the reference method. Therefore, homogeneity of the subsamples #14160 was assumed.

From the same spiked Methanol batch approx. 8 litre was taken at first for UV absorbance. This amount was divided over 70 brown glass bottles of 100 mL and labelled #14162.
The homogeneity of the subsamples #14162 was checked by determination of UV absorbance at 268.5nm (using a 5cm cell) according IMPCA004:06 on 6 stratified randomly selected samples.

	UV absorbance at 268.5 nm
sample #14162-1	0.0486
sample #14162-2	0.0476
sample #14162-3	0.0459
sample #14162-4	0.0458
sample #14162-5	0.0457
sample #14162-6	0.0455

Table 4: homogeneity tests of subsamples #14162

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

	UV absorbance at 268.5 nm
r (sample #14162)	0.0036
reference test	IMPCA004:08
0.3*R (reference test)	0.0038

Table 5: repeatabilities of the subsamples #14162

The calculated repeatability of sample #14162 was less than 0.3 times the corresponding reproducibility of the reference method. Therefore, homogeneity of the subsamples #14162 was assumed.

To the participants, depending on the registration, 1*1L bottle labelled #14160 and/or 1*100 mL bottle, labelled #14162 were sent on September 20, 2014.

2.5   STABILITY OF THE SAMPLES

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

2.6   ANALYSES

The participants were requested to determine: Acidity, Anorganic Chloride, Appearance, Carbonisable Substances Pt/Co, Colour Pt/Co, Density @ 20°C, Distillation (IBP, 50% and DP), Acetone, Benzene, Ethanol, Toluene, Water Miscibility, Nonvolatile Matter, Purity ("as received" and "on dry basis"), Permanganate Time Test, Specific Gravity 20/20 °C/°C, Sulphur, Total Iron, Trimethylamine and Water (coulometric and titrimetric) on sample #14160. On sample #14162 was requested to determine the UV absorbance at 300, 268.5, 250, 240, 230 and 220 nm (50mm or 10mm cuvette).

To get comparable results a detailed report form, on which the units were prescribed as well as the required standards and a letter of instructions were prepared and made available on the data entry portal www.kpmd.co.uk/sgs-iis/. The detailed report form was also made available for download on the iis website www.iisnl.com.
A SDS and a form to confirm receipt of the samples were added to the sample package.

3   RESULTS

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

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

3.1   STATISTICS

Statistical calculations were performed as described in the report 'iis Interlaboratory Studies: Protocol for the Organisation, Statistics and Evaluation' (iis-protocol, April 2014 version 3.3). For the statistical evaluation the *unrounded* (when available) figures were used instead of the rounded results. Results reported as '<…' or '>…' were not used in the statistical evaluation.

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

In accordance to ISO 5725 (1986 and 1994) the original results per determination were submitted subsequently to Dixon, Grubbs and Rosner outlier tests. Outliers are marked by D(0.01) for the Dixon test, by G(0.01) or DG(0.01) for the Grubbs test and by R(0.01) for the Rosner General ESD test (see appendix 3, no.17). Stragglers are marked by D(0.05) for the Dixon 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 the averages and the 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. When the uncertainty passed the evaluation, no remarks are made in the report. However, when the uncertainty failed the evaluation it is mentioned in the report and it will have consequences for the evaluation of the test results.

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 analysis results are plotted. The corresponding laboratory numbers are under the X-axis. The straight horizontal line presents the consensus value (a trimmed mean). The four striped lines, parallel to the consensus value line, are the +3s, +2s, -2s and -3s target reproducibility limits of the selected standard. Outliers and other data, which were excluded from the calculations, are represented as a "x". Accepted data are represented as a triangle. Furthermore, Kernel Density Graphs were made. This is a method for producing a smooth density approximation to a set of data that avoids some problems associated with histograms (see appendix 3; nos.15 and 16). Also a normal Gauss curve was projected over the Kernel Density Graph.

3.3   Z-SCORES

To evaluate the performance of the participating laboratories the z-scores were calculated. As it was decided to evaluate the performance of the participants in this proficiency test (PT) against the literature requirements, e.g. ASTM reproducibilities, the z-scores were calculated using a target standard deviation. This results in an evaluation independent of the spread of this interlaboratory study. The target standard deviation was calculated from the literature reproducibility by division with 2.8.

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 in accordance with:

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

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

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

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

4   EVALUATION

In this interlaboratory study, problems with sample despatch were encountered due to several reasons. Ten participants reported after the final reporting date and eleven other participants did not report any results at all. Not all laboratories were able to report all analyses requested. In total 78 participants reported 1360 results. Observed were 49 outlying results, which is 3.6% of the numerical results. In proficiency studies, outlier percentages of 3% - 7.5% are quite normal.

4.1   EVALUATION PER TEST

In this section, the results are discussed per sample and per test. The specified test methods and requirements were taken into account for explaining the observed differences when possible and applicable. These methods are also in the tables together with the reported data. The abbreviations, used in these tables, are listed in appendix 3.
In the iis PT reports, ASTM methods are referred to with a number (e.g. D2086) and an added designation for the year that the method was adopted or revised (e.g. D2086-08). If applicable, a designation in parentheses is added to designate the year of reapproval (e.g. D2086-08 (2013)). In the results tables of Appendix 1 only the method number and year of adoption or revision will be used.

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

Acidity: This determination was not problematic. Only one statistical outlier was observed and the calculated the reproducibility after rejection of the statistical outlier is in good agreement with the requirements of ASTM D1613:06(2012).

Anorg. Chloride: This determination was not problematic. Two test results were excluded as the used test methods were not equivalent to IMPCA002:98 (deviating matrix) but no statistical outliers were observed. The calculated reproducibility after rejection of the suspect data is in agreement with the requirements of IMPCA002:98. The average recovery of Anorganic Chloride (theoretical increment of 0.61 mg Cl/kg) may be good: "less than 110%" (the actual blank Anorganic Chloride content is unknown).

Appearance: No analytical problems were observed. All labs, agreed about the appearance of the sample #14160, which was bright, clear and free of suspended matter.

Carbonisable Substances: This determination was problematic for a number of laboratories. Four statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM E346:08e1.

Colour: This determination was not problematic. No statistical outliers were observed and the calculated reproducibility is in good agreement with the requirements of ASTM D1209:05(2011).

Density at 20°C: This determination was not problematic. No statistical outliers were observed and the calculated reproducibility is in good agreement with the requirements of ASTM D4052:02e1.

SG 20/20 ^{o}C/^{o}C: This determination was not problematic. No statistical outliers were observed and the calculated reproducibility is in good agreement with the requirements of ASTM D4052:02e1.

Distillation: No analytical problems were observed. In total three statistical outliers were observed, all for IBP. All calculated reproducibilities after rejection of the observed statistical outliers are in agreement with the respective requirements for automated and manual modes of ASTM D1078:11.
Remarkably six laboratories, did probably not correct for barometric pressure. Although the theoretical mid boiling point is 64.5 ºC (see table 3 of ASTM D1078), test results 64.2, 64.7 (2 times) and 63.8 ºC (3 times) were reported by a number of participants.

Water Miscibility: All laboratories, except two, reported the test as "pass". Two laboratories reported as result "fails".

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

PTT: All participants agreed on a result above 60 minutes.

As it is unknown whether a Permanganate Time Test of >60 minutes is in the applicability range, it is therefore difficult to draw any conclusions. Therefore, no z-scores were calculated. One statistical outlier was observed.

Purity: For the purity "as received" and "on dry basis", in total five statistical outliers were observed. Also the results for one laboratory were excluded as the reported result for "as received" was higher than the result for "on dry basis", which is impossible.

When the calculated reproducibilities are compared with the calculated reproducibilities of the proficiency test of 2013 iis13C06, both reproducibilities are in agreement with the reproducibilities found in the previous round, for "as received" 0.014 vs 0.012 and for "dry basis" 0.006 vs 0.005.

Acetone: This determination may be problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the strict reproducibility limits, estimated using the Horwitz equation. The average recovery of Acetone (theoretical increment of 15.6 mg Acetone/kg) may be good: "less than 128%" (the actual blank Acetone content is unknown).

Benzene: This determination was not problematic. Only one statistical outlier was observed and the calculated reproducibility after rejection of the statistical outlier is in agreement with the strict reproducibility limits, estimated using the Horwitz equation. The average recovery of Benzene (theoretical increment of 10.4 mg Benzene/kg) may be good: "less than 99%" (the actual blank Benzene content is unknown).

Ethanol: This determination was not problematic. No statistical outliers were observed and the calculated reproducibility is full in agreement with the strict reproducibility limits, estimated using the Horwitz equation. The average recovery of Ethanol (theoretical increment of 33.2 mg Ethanol/kg) may be good: "less than 100%" (the actual blank Ethanol content is unknown).

Toluene: No statistical conclusions were drawn, because the toluene content was near or below the detection limit.

Sulphur: No statistical conclusions were drawn, because all reported results were below the application range of ASTM D5453 (1 – 8000 mg/kg).

Total Iron: This determination was problematic. Only one statistical outlier was observed. However, the calculated reproducibility after rejection of the statistical outlier is not in agreement with the requirements of ASTM E394:09. The average recovery of Iron (theoretical increment of 0.025 mg Iron/kg) is unsatisfactory: "less than 72%" (the actual blank Iron content is unknown).

TMA: This determination may be very problematic. No statistical outliers were observed. However, the calculated reproducibility is not at all in agreement with the strict reproducibility estimated from the repeatability of ASTM E346:08e1 and the estimated reproducibility calculated using the Horwitz equation.
The average recovery of the TMA (theoretical increment of 40.1 μg TMA/kg) may be good, less than 104% (the actual blank TMA content is unknown). The low number of results may (partly) explain the large spread. One participant reported a false negative test result.

Water (coul.):   This determination was not problematic. Four statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM E1064:12.

Water (titr.):   This determination was not problematic. Two statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with the requirements of ASTM E203:08.

UV-Absorbance: A separation was made between the participants that used a 50mm and a 10mm cuvette. The determination (both cuvette sizes) was problematic for a number of laboratories. In total seventeen statistical outliers were observed and the results of one participant were excluded. The participant reported to have used a 50mm cuvette. However, the reported test results are more in agreement with the results of a 10mm cuvette.
For 50mm cuvette, only the calculated reproducibility for "UV at 268.5nm and 250nm" was not in agreement with the requirements of IMPCA004:08.
For the 10mm cuvette, the calculated reproducibility for "UV at 300nm" and "UV at 250nm" was not in agreement with the requirements of IMPCA004:08.
Regretfully, for "UV at 240nm and 230nm" no precision data are available.
All participants, except one (lab 1342) would reject the sample for UV-curve. This laboratory would pass the sample.

4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES

A comparison has been made between the reproducibility as declared by the relevant standard and the reproducibility as found for the group of participating laboratories. The average results per sample, calculated reproducibilities and reproducibilities derived from literature standards (in casu ASTM and IMPCA standards) are compared in the next tables.

Parameter	unit	n	average	2.8 * sd	R (lit)
Acidity as acetic acid	mg/kg	71	11.1	7.4	14.0
Anorganic Chloride as Cl	mg/kg	50	0.67	0.24	0.30
Appearance		71	Pass	n.a	n.a
Carbonisable Substances	Pt/Co	48	5.3	4.4	5.0
Colour	Pt/Co	57	2.1	2.9	7.0
Density at 20 ^{o}C	kg/L	71	0.7914	0.0002	0.0005
Specific Gravity 20/20 °C/°C		70	0.7928	0.0002	0.0005
Initial Boiling Point	°C	61	64.40	0.19	1.00
Mid Boiling Point	°C	61	64.52	0.27	0.44
Dry Point	°C	64	65.02	0.51	0.70
Water Miscibility		67	Pass	n.a.	n.a.
Nonvolatile Matter	mg/100 mL	39	0.29	0.19	0.13
Permanganate Time Test at 15°C	minutes	65	96	23	(24)*
Purity "as received"	%M/M	44	99.925	0.014	unknown
Purity on dry basis	%M/M	59	99.992	0.006	unknown
Acetone	mg/kg	57	19.9	6.9	5.7
Benzene	mg/kg	45	10.3	2.8	3.2
Ethanol	mg/kg	62	33.2	8.7	8.8
Toluene	mg/kg	44	<10	n.a.	n.a.
Sulphur	mg/kg	44	<1	n.a.	n.a.
Total Iron as Fe	mg/kg	43	0.018	0.014	0.010
Trimethylamine	µg/kg	8	42	63	16
Water (coulometric)	mg/kg	59	674	78	115
Water (titrimetric)	mg/kg	39	677	88	270

Table 6: Reproducibilities for sample #14160

*For the reproducibility value between brackets it is unknown whether the PTT meets the application range of >60 minutes.

Parameter	unit	n	average	2.8 * sd	R (lit)
UV absorbance at 300 nm (50 mm cell)		29	0.014	0.005	0.021
UV absorbance at 268.5 nm (50 mm cell)		30	0.047	0.018	0.013
UV absorbance at 250 nm (50 mm cell)		31	0.154	0.023	0.016
UV absorbance at 240 nm (50 mm cell)		25	0.250	0.031	unknown
UV absorbance at 230 nm (50 mm cell)		25	0.532	0.069	unknown
UV absorbance at 220 nm (50 mm cell)		31	1.124	0.155	0.322
UV absorbance at 300 nm (10 mm cell)		5	0.002	0.004	0.003
UV absorbance at 268.5 nm (10 mm cell)		4	0.010	0.001	0.003
UV absorbance at 250 nm (10 mm cell)		5	0.031	0.011	0.003
UV absorbance at 240 nm (10 mm cell)		5	0.048	0.015	unknown
UV absorbance at 230 nm (10 mm cell)		5	0.107	0.021	unknown
UV absorbance at 220 nm (10 mm cell)		5	0.234	0.042	0.067

Table 7: Reproducibilities for sample #14162

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

4.3 COMPARISON OF THE PROFICIENCY TEST OF SEPTEMBER 2014 WITH PREVIOUS PTS

	September 2014	September 2013	September 2012	September 2011
Number of reporting labs	78	73	73	70
Number of results reported	1360	1312	1280	1205
Statistical outliers	49	49	54	48
Percentage outliers	3.6%	3.7%	4.2%	4.0%

Table 8: comparison with previous proficiency tests.

In proficiency tests, outlier percentages of 3% - 7.5% are quite normal.
The performance of the determinations of the proficiency tests was compared against the requirements of the respective standards. The conclusions are given the following table:

	September 2014		September 2013		September 2012		September 2011	
Acidity as acetic acid	++		++		++		++	
Chloride as Cl	++		+		++		-	
Carbonisable Substances	+		+/-		+/-		--	
Colour	++		++		++		++	
Density at 20 ^{o}C	++		++		++		++	
Distillation	+		++		++		++	
Nonvolatile Matter	-		++		++		++	
Specific Gravity 20/20 °C	++		++		++		++	
Total Iron	+		--		--		--	
Water (coulometric)	+		-		--		--	
Water (titrimetric)	++		++		++		++	
Acetone	-		-		--		+/-	
Benzene	-		-		++		++	
Ethanol	+/-		-		--		--	
Trimethylamine	--		-		--		--	
UV absorbance 300nm *)	-	++	+/-	++	++	++	++	++
UV absorbance 268.5 nm *)	+	-	--	++	--	-	-	--
UV absorbance 250 nm *)	--	-	--	+	--	--	-	--
UV absorbance 220 nm *)	+	++	+	++	++	++	++	++

Table 9: comparison determinations against the standard requirements

*) split-up into respective 10 mm and 50 mm cell results

The performance of the determinations against the requirements of the respective standards is listed in the above table. The following performance categories were used:
  ++: group performed much better than the standard
  + : group performed better than the standard
  +/-: group performance equals the standard
  - : group performed worse than the standard
  -- : group performed much worse than the standard

APPENDIX 1
Determination of Acidity as Acetic Acid on sample #14160; results in mg/kg

lab	method	value	mark	z(targ)	remarks
53	D1613	11		-0.02	
150	D1613	14.8		0.74	
169	D1613	16.6		1.10	
171	D1613	7.585		-0.70	
174	D1613	9.7		-0.28	
193	D1613	12.06		0.19	
311	D1613	12		0.18	
316		-----		-----	
319	D1613	12.2		0.22	
323	D1613	12	C	0.18	First reported 22
333	D1613	9		-0.42	
334		-----		-----	
335		-----		-----	
343	D1613	7.6		-0.70	
344	D1613	12.1083		0.20	
345	D1613	12		0.18	
346	D1613	11.9		0.16	
347	D1613	11		-0.02	
357	D1613	9.1		-0.40	
372	D1613	13		0.38	
395	D1613	14.4		0.66	
444		-----		-----	
445	D1613	8.34		-0.55	
528	D1613	15.55		0.89	
529	D1613	14		0.58	
551	D1613	12.3		0.24	
554		-----		-----	
557		-----		-----	
608	D1613	11.9		0.16	
609	D1613	12		0.18	
646	D1613	8.78		-0.46	
657	D1613	14.08		0.60	
663	D1613	11.0		-0.02	
786	D1613	15.8		0.94	
823	D1613	10		-0.22	
824	D1613	9		-0.42	
825	D1613	7		-0.82	
840	D1613	13.4		0.46	
849		-----		-----	
852	D1613	9.8		-0.26	
853	D1613	10.3		-0.16	
855	D1613	10.2		-0.18	
857	D1613	10.2		-0.18	
858	D1613	10.9		-0.04	
859	D1613	11.0		-0.02	
860	D1613	10.8		-0.06	
861	D1613	9.5		-0.32	
862	D1613	11.2		0.02	
863	D1613	11.4		0.06	
864	D1613	9.7		-0.28	
866	D1613	9.9		-0.24	
870	D1613	9.6		-0.30	
902	D1613	15		0.78	
912	D1613	12.5		0.28	
913		-----		-----	
963	D1613	12		0.18	
974	D1613	11.26		0.03	
994	D1613	12.96		0.37	
1009	D1613	10.45		-0.13	
1010	D1613	11		-0.02	
1016	D1613	11		-0.02	
1029	D1613	4.7		-1.28	
1041	D1613	13.57		0.49	
1067		-----		-----	
1102	D1613	8.53		-0.51	
1120	D1613	12	C	0.18	First reported 32.85
1149		-----		-----	
1181		-----		-----	
1201	D1613	17		1.18	
1221		-----		-----	
1246	D1613	12.64		0.31	
1256	D1613	130	R(0.01)	23.78	
1263	D1613	10.99		-0.02	

1264		-----		-----	
1319	D1613	6.1		-1.00	
1342	D1613	15		0.78	
1373		-----		-----	
1386	D1613	10.0		-0.22	
1465	D1613	13.7		0.52	
1510	D1613	10		-0.22	
1615	D1613	3.9	C	-1.44	Reported 0.00039 %M/M
1656	INH-17	5		-1.22	
1728	D1613	14		0.58	
1767	D1613	10.7		-0.08	
1778		-----		-----	
1866		-----		-----	
1873	GB338	9.563		-0.31	
1886		-----		-----	
1893	D1613	8.7		-0.48	
		-----		-----	

normality	OK
n	71
outliers	1
mean (n)	11.10
st.dev. (n)	2.628
R(calc.)	7.36
R(D1613:06)	14.00

Kernel Density
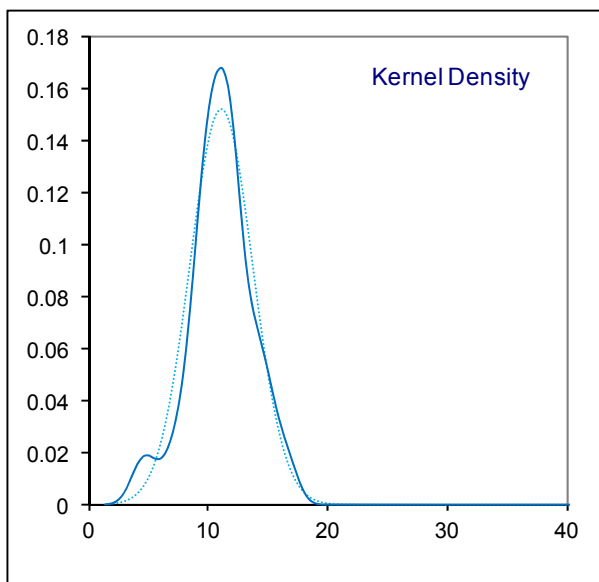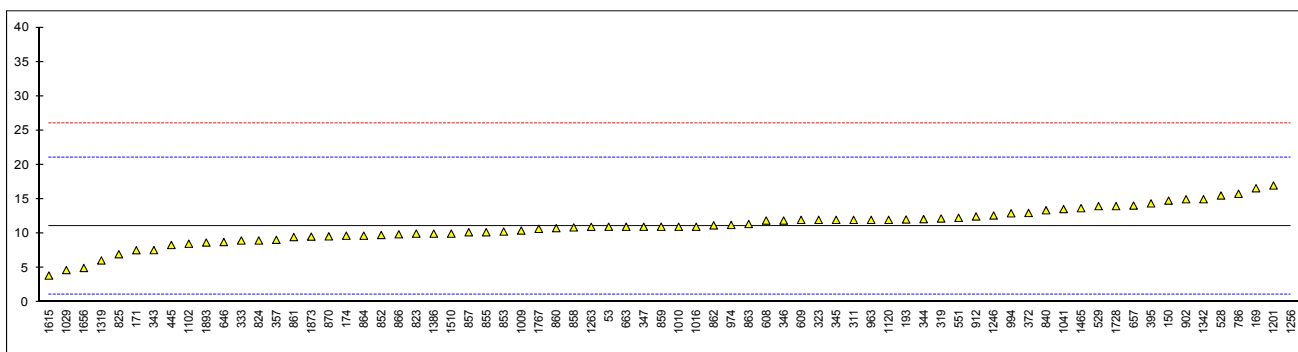
Determination of Anorganic Chloride as Cl on sample #14160; results in mg/kg

lab	method	value	mark	z(targ)	remarks
53	IMPCA002	0.71		0.37	
150	IMPCA002	0.843		1.61	
169		-----		-----	
171	IMPCA002	0.70		0.27	
174		0.50		-1.59	
193		-----		-----	
311	IMPCA002	0.67		-0.01	
316		-----		-----	
319	IMPCA002	0.68		0.09	
323	IMPCA002	0.7		0.27	
333	IMPCA002	0.7		0.27	
334	IMPCA002	0.7		0.27	
335		0.6		-0.66	
343	IMPCA002	<0.25		<-3.85	False negative result?
344	IMPCA002	0.581		-0.84	
345		-----		-----	
346	IMPCA002	0.480	C	-1.78	First reported 0.407
347	IMPCA002	0.47		-1.87	
357	IMPCA002	0.65		-0.19	
372	IMPCA002	0.66		-0.10	
395	IMPCA002	0.63		-0.38	
444		-----		-----	
445		-----		-----	
528		-----		-----	
529	E2469	0.512	ex	-1.48	Result excluded, see §4.1
551		-----		-----	
554		-----		-----	
557		-----		-----	
608	IMPCA002	0.605		-0.61	
609		-----		-----	
646	in house	0.5		-1.59	
657	IMPCA002	0.71		0.37	
663	IMPCA002	0.64		-0.29	
786	IMPCA002	0.79		1.11	
823	IMPCA002	0.65		-0.19	
824	IMPCA002	0.69		0.18	
825	IMPCA002	0.7		0.27	
840	IMPCA002	0.75		0.74	
849		-----		-----	
852	IMPCA002	0.70		0.27	
853	IMPCA002	0.72		0.46	
855	IMPCA002	0.74		0.65	
857	IMPCA002	0.71		0.37	
858	IMPCA002	0.73		0.55	
859	IMPCA002	0.72		0.46	
860	IMPCA002	0.70		0.27	
861	IMPCA002	0.75		0.74	
862	IMPCA002	0.68		0.09	
863	IMPCA002	0.67		-0.01	
864	IMPCA002	0.73		0.55	
866		-----		-----	
870	IMPCA002	0.72		0.46	
902		-----		-----	
912		-----		-----	
913		-----		-----	
963		0.61		-0.57	
974		-----		-----	
994		-----		-----	
1009		-----		-----	
1010		-----		-----	
1016		-----		-----	
1029	IMPCA002	0.6751		0.04	
1041	ISO10304	1.087	ex	3.88	Result excluded, see §4.1
1067	IMPCA002	0.63		-0.38	
1102	IMPCA002	0.646		-0.23	
1120		-----		-----	
1149		-----		-----	
1181		-----		-----	
1201	IMPCA002	0.60		-0.66	
1221		-----		-----	
1246		-----		-----	
1256	IMPCA002	0.6731		0.02	
1263		-----		-----	

1264		-----	-----	
1319	IMPCA002	0.68	0.09	
1342	IMPCA002	0.71	0.37	
1373		-----	-----	
1386	INH-2994	0.9646	2.74	
1465	in house	0.6881	0.16	
1510	IMPCA002	0.51	-1.50	
1615		-----	-----	
1656		<0.25	<-3.85	False negative result?
1728		-----	-----	
1767	IMPCA002	0.69	0.18	
1778		-----	-----	
1866		-----	-----	
1873		-----	-----	
1886		-----	-----	
1893	GB/T3050	0.588	-0.77	

normality	not OK			
n	50			
outliers	0	+ 2 excl	Spike	
mean (n)	0.67		0.61	<110% recovered
st.dev. (n)	0.087			
R(calc.)	0.24			
R(IMPCA002:98)	0.30			
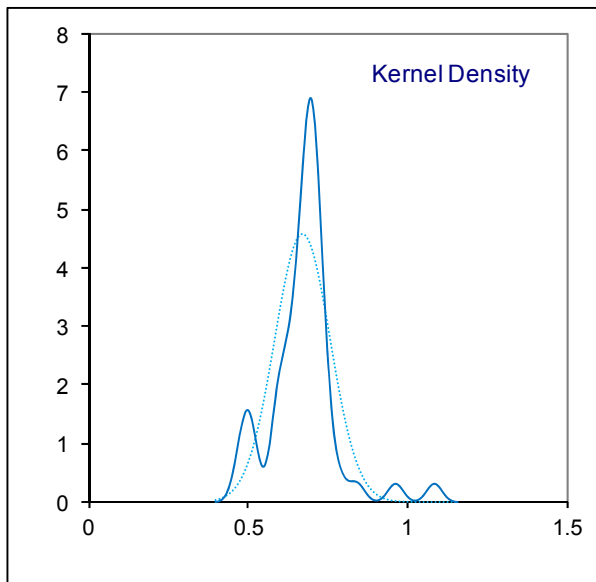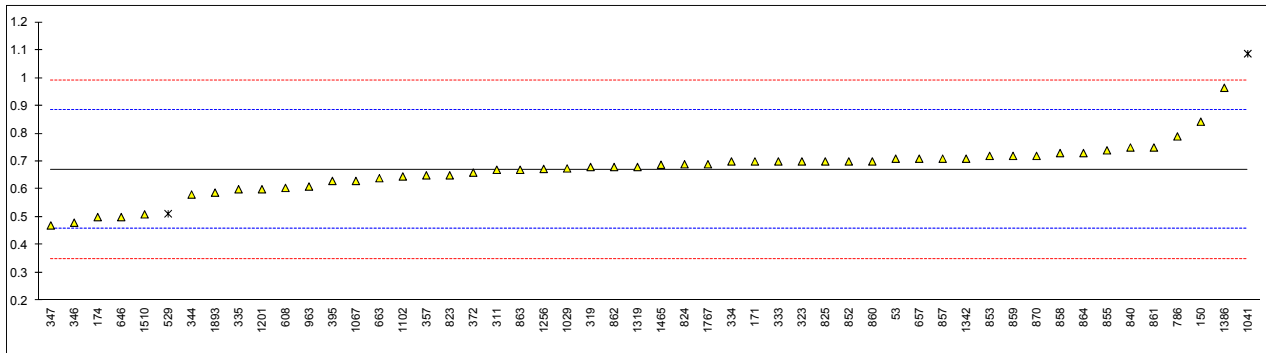
Determination of Appearance on sample #14160;

lab	method	value	mark	z(targ)	remarks
53	IMPCA003	Pass		-----	
150	IMPCA003	C&B		-----	
169		-----		-----	
171	IMPCA003	Pass		-----	
174		Pass		-----	
193	IMPCA003	CFSM		-----	
311	IMPCA003	CFSM		-----	
316		-----		-----	
319	IMPCA003	CFSM		-----	
323	IMPCA003	CFSM		-----	
333	IMPCA003	CFSM		-----	
334	IMPCA003	CFSM		-----	
335		C&B		-----	
343	INH-1608	C&B		-----	
344	E2680	Pass		-----	
345	IMPCA003	Pass		-----	
346		-----		-----	
347	IMPCA003	Pass		-----	
357	E2680	Pass		-----	
372	IMPCA003	CFSM		-----	
395	IMPCA003	Pass		-----	
444		-----		-----	
445	IMPCA003	CFSM		-----	
528	E2680	Pass		-----	
529	IMPCA003	CFSM		-----	
551	IMPCA003	CFSM		-----	
554		-----		-----	
557		-----		-----	
608	E2680	Pass		-----	
609	E2680	Pass		-----	
646	IMPCA003	C&F		-----	
657	IMPCA003	CFSM		-----	
663	IMPCA003	CFSM		-----	
786	IMPCA003	CFSM		-----	
823	IMPCA003	CFSM		-----	
824	IMPCA003	CFSM		-----	
825	IMPCA003	CFSM		-----	
840	E2680	Pass		-----	
849		-----		-----	
852	IMPCA003	Pass		-----	
853	IMPCA003	C&B		-----	
855	IMPCA003	CFSM		-----	
857	IMPCA003	Pass		-----	
858	IMPCA003	CFSM		-----	
859	IMPCA003	Pass		-----	
860	IMPCA003	C&B		-----	
861	IMPCA003	CFSM		-----	
862	E2680	Pass		-----	
863	IMPCA003	CFSM		-----	
864	IMPCA003	CFSM		-----	
866	IMPCA003	CFSM		-----	
870	IMPCA003	CFSM		-----	
902	IMPCA003	CFSM		-----	
912	IMPCA003	CFSM		-----	
913		-----		-----	
963	IMPCA003	CFSM		-----	
974	IMPCA003	CFSM		-----	
994	IMPCA003	Pass		-----	
1009		Pass		-----	
1010	IMPCA003	CFSM		-----	
1016		Pass		-----	
1029	IMPCA003	CFSM		-----	
1041	IMPCA003	CFSM		-----	
1067	IMPCA003	CFSM		-----	
1102	IMPCA003	CFSM		-----	
1120		Pass		-----	
1149		-----		-----	
1181		-----		-----	
1201	IMPCA003	C&F		-----	
1221		-----		-----	
1246	IMPCA003	Pass		-----	
1256	IMPCA003	Pass		-----	
1263		-----		-----	

1264		-----	-----
1319	IMPCA003	Pass	-----
1342	IMPCA003	CFSM	-----
1373		-----	-----
1386	IMPCA003	CFSM	-----
1465	IMPCA003	C&F	-----
1510	IMPCA003	CFSM	-----
1615	IMPCA003	CFSM	-----
1656	IMPCA003	Pass	-----
1728	Visual	Clear	-----
1767	IMPCA003	CFSM	-----
1778		-----	-----
1866		-----	-----
1873		-----	-----
1886		-----	-----
1893	Visual	CFSM	-----
		-----	-----

normality	n.a.
n	71
outliers	n.a.
mean (n)	Pass
st.dev. (n)	n.a.
R(calc.)	n.a.
R(E2680:09)	n.a.

Abbreviations:
C&B   = clear and bright
C&F   = clear and free
CFSM   = clear free from suspended matter

Determination of Carbonisable Substances Pt/Co on sample #14160;

lab	method	value	mark	z(targ)	remarks
53	E346	<5		-----	
150	E346	3	C	-1.30	First reported 25
169		-----		-----	
171	IP564	5		-0.18	
174		4.1		-0.68	
193	E346	5		-0.18	
311	E346	5		-0.18	
316		-----		-----	
319	E346	8		1.50	
323	E346	5		-0.18	
333	E346	5		-0.18	
334		-----		-----	
335		-----		-----	
343	E346	5		-0.18	
344	E346	<30		-----	
345		-----		-----	
346	E346	<10		-----	
347	E346	5		-0.18	
357	E346	5		-0.18	
372	E346	5		-0.18	
395	E346	5		-0.18	
444		-----		-----	
445		-----		-----	
528	E346	11.7	R(0.05)	3.57	
529	E346	5		-0.18	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608	E346	<10		-----	
609	E346	6		0.38	
646	E346	3		-1.30	
657	E346	5		-0.18	
663		-----		-----	
786	E346	10		2.62	
823	E346	6		0.38	
824	E346	5		-0.18	
825	E346	7		0.94	
840	E346	5		-0.18	
849		-----		-----	
852	E346	5		-0.18	
853	IP564	5		-0.18	
855	E346	5		-0.18	
857	E346	5		-0.18	
858	E346	6		0.38	
859	E346	7		0.94	
860	E346	5		-0.18	
861	E346	5		-0.18	
862	E346	4		-0.74	
863		5		-0.18	
864	E346	<10		-----	
866	E346	6		0.38	
870	E346	5		-0.18	
902	E346	5		-0.18	
912	E346	5		-0.18	
913		-----		-----	
963	E346	8		1.50	
974		-----		-----	
994	E346	6		0.38	
1009	E346	Pass		-----	
1010		-----		-----	
1016		-----		-----	
1029	E346	5.51325		0.11	
1041		-----		-----	
1067		-----		-----	
1102		-----		-----	
1120	E346	<10		-----	
1149		-----		-----	
1181		-----		-----	
1201	E346	5		-0.18	
1221		-----		-----	
1246	E346	4.9		-0.24	
1256	E346	10		2.62	
1263		-----		-----	

1264		-----		-----
1319	E346	5		-0.18
1342	E346	5		-0.18
1373		-----		-----
1386	E346	17.5	R(0.01)	6.82
1465	E346	2.5		-1.58
1510	E346	3		-1.30
1615	E346	2		-1.86
1656	E346	40	R(0.01)	19.42
1728	E346	8.5		1.78
1767	E346	15.5	R(0.01)	5.70
1778		-----		-----
1866		-----		-----
1873		-----		-----
1886		-----		-----
1893		-----		-----
		-----		-----

normality	not OK
n	48
outliers	4
mean (n)	5.3
st.dev. (n)	1.58
R(calc.)	4.4
R(E346:08e1)	5.0

Kernel Density
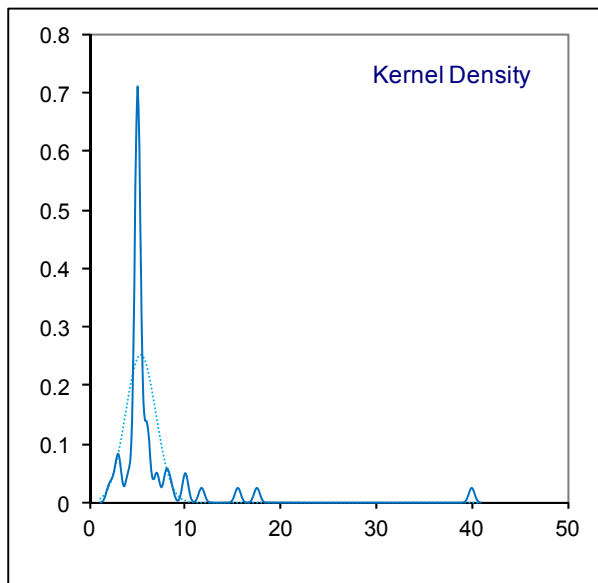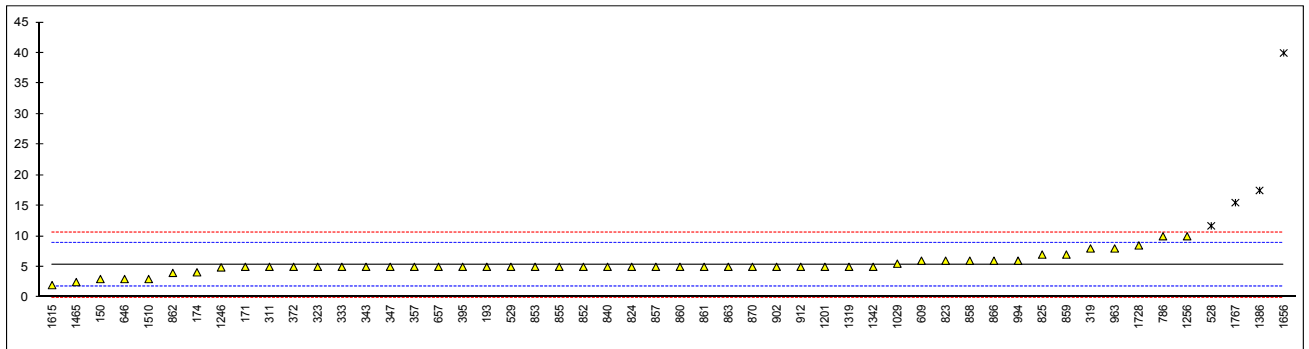
Determination of Colour as Pt/Co on sample #14160;

lab	method	value	mark	z(targ)	remarks
53	D1209	<5		-----	
150	D5386	0		-0.84	
169	D5386	1.7		-0.16	
171	D1209	2		-0.04	
174	D1209	1.7		-0.16	
193	D1209	2		-0.04	
311	D1209	<5		-----	
316		-----		-----	
319	D1209	<5		-----	
323	D1209	<5		-----	
333	D1209	2		-0.04	
334		-----		-----	
335	D1209	1		-0.44	
343	D1209	<5		-----	
344	D5386	1.5		-0.24	
345	D1209	2		-0.04	
346	D1209	<5		-----	
347	D5386	1		-0.44	
357	D1209	<5		-----	
372	D1209	2		-0.04	
395	D1209	<5		-----	
444		-----		-----	
445	D1209	3		0.36	
528	D5386	1.4		-0.28	
529	D1209	2		-0.04	
551	D1209	1		-0.44	
554		-----		-----	
557		-----		-----	
608	D1209	<5		-----	
609	D1209	2		-0.04	
646	D1209	3		0.36	
657	D1209	5		1.16	
663	D1209	5		1.16	
786	D1209	<5		-----	
823	D5386	2		-0.04	
824	D1209	2		-0.04	
825	D1209	2		-0.04	
840	D1209	2		-0.04	
849		-----		-----	
852	D1209	2		-0.04	
853	D1209	2		-0.04	
855	D1209	2		-0.04	
857	D1209	2		-0.04	
858	D1209	2		-0.04	
859	D1209	2		-0.04	
860	D1209	2		-0.04	
861	D1209	3		0.36	
862	D1209	2		-0.04	
863	D1209	3		0.36	
864	D1209	<5		-----	
866	D1209	3		0.36	
870	D1209	3		0.36	
902	D5386	2		-0.04	
912	D5386	2		-0.04	
913		-----		-----	
963	D1209	2		-0.04	
974	D1209	1		-0.44	
994	D1209	3		0.36	
1009	D1209	Pass		-----	
1010		-----		-----	
1016	D1209	1		-0.44	
1029	D1209	2.1451		0.02	
1041	D1209	5		1.16	
1067	D1209	<5		-----	
1102	D1209	2		-0.04	
1120	D1209	<5		-----	
1149		-----		-----	
1181		-----		-----	
1201	D1209	<5		-----	
1221		-----		-----	
1246	D1209	2.2		0.04	
1256	D1209	2		-0.04	
1263		-----		-----	

1264		-----	-----
1319	D1209	5	1.16
1342	D1209	2	-0.04
1373		-----	-----
1386	D1209	2	-0.04
1465	D1209	0	-0.84
1510	D1209	1	-0.44
1615	D1209	1	-0.44
1656	INH-19	1.5	-0.24
1728	D1209	2	-0.04
1767	D1209	2.0	-0.04
1778	GB/T3143	2	-0.04
1866		-----	-----
1873		-----	-----
1886		-----	-----
1893	D1209	1	-0.44
		-----	-----

normality	not OK
n	57
outliers	0
mean (n)	2.1
st.dev. (n)	1.03
R(calc.)	2.9
R(D1209:05)	7.0

Kernel Density
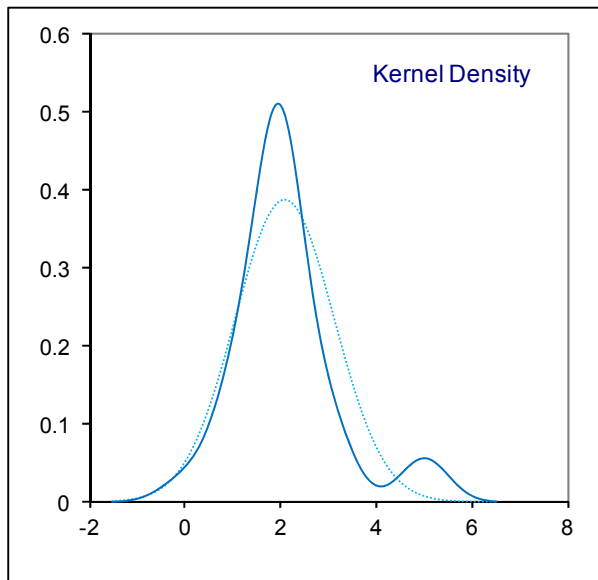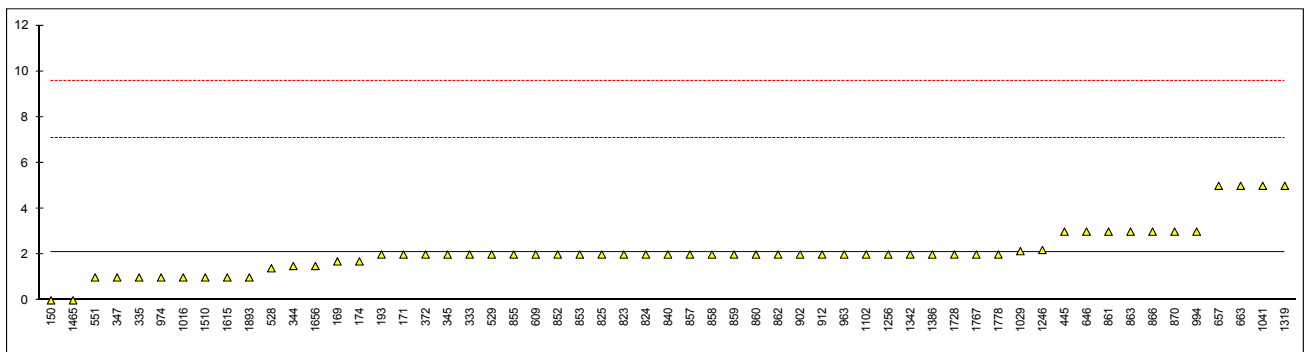
Determination of Density at 20°C on sample #14160; results in kg/L

lab	method	value	mark	z(targ)	remarks
53	D4052	0.7914		0.03	
150	D4052	0.7915		0.59	
169	D4052	0.7914		0.03	
171	D4052	0.79130		-0.53	
174	D4052	0.7913		-0.53	
193	D4052	0.7913		-0.53	
311	D4052	0.7914		0.03	
316		-----		-----	
319		-----		-----	
323	D4052	0.7913		-0.53	
333	D4052	0.7913		-0.53	
334		-----		-----	
335	D4052	0.7914		0.03	
343	D4052	0.7913	C	-0.53	First reported 0.7911
344	D4052	0.7915		0.59	
345	D4052	0.7916		1.15	
346	D1298	0.7914		0.03	
347	D4052	0.79127		-0.70	
357	D4052	0.79128		-0.64	
372	D4052	0.7914		0.03	
395	D4052	0.7913		-0.53	
444		-----		-----	
445	D4052	0.7914		0.03	
528	D4052	0.7914		0.03	
529	D4052	0.79135		-0.25	
551	D4052	0.7915		0.59	
554		-----		-----	
557		-----		-----	
608	D4052	0.7914		0.03	
609	D4052	0.79144		0.25	
646		-----		-----	
657	D4052	0.79136		-0.19	
663	D4052	0.7913		-0.53	
786	D4052	0.7914		0.03	
823	D4052	0.79144		0.25	
824	ISO12185	0.7914		0.03	
825	D4052	0.7914		0.03	
840	D4052	0.79153		0.76	
849		-----		-----	
852	D4052	0.7914		0.03	
853	D4052	0.7914		0.03	
855	D4052	0.79142		0.14	
857	D4052	0.79139		-0.03	
858	D4052	0.79140		0.03	
859	D4052	0.7914		0.03	
860	D4052	0.7914		0.03	
861	D4052	0.79146		0.37	
862	D4052	0.79134		-0.31	
863	D4052	0.79143		0.20	
864	D4052	0.79137		-0.14	
866	D4052	0.79143		0.20	
870	D4052	0.79141		0.09	
902	D4052	0.79150		0.59	
912	D4052	0.7914		0.03	
913		-----		-----	
963	D4052	0.7914		0.03	
974	D4052	0.7914		0.03	
994	D4052	0.7914		0.03	
1009		-----		-----	
1010	D4052	0.7914		0.03	
1016	D4052	0.7914		0.03	
1029	D4052	0.79139		-0.03	
1041		-----		-----	
1067	D4052	0.7914		0.03	
1102	D4052	0.7914		0.03	
1120		-----		-----	
1149		-----		-----	
1181		-----		-----	
1201	D4052	0.7915	C	0.59	First reported 0.7918
1221		-----		-----	
1246	D4052	0.79131		-0.47	
1256	D4052	0.7914		0.03	
1263	ISO12185	0.791425		0.17	

1264		-----		-----	
1319	D4052	0.7914		0.03	
1342	D4052	0.7913		-0.53	
1373	in house	0.7916		1.15	
1386	D4052	0.7913		-0.53	
1465	D4052	0.79144	C	0.25	First reported 0.79230
1510	D4052	0.7914		0.03	
1615	D4052	0.79135		-0.25	
1656	D4052	0.7913		-0.53	
1728	D4052	0.79138		-0.08	
1767	D4052	0.79139		-0.03	
1778	D4052	0.7915		0.59	
1866		-----		-----	
1873	GB4472	0.7913		-0.53	
1886		-----		-----	
1893	D4052	0.79140		0.03	
		-----		-----	

normality	OK	
n	71	
outliers	0	
mean (n)	0.79139	
st.dev. (n)	0.000069	
R(calc.)	0.00019	
R(D4052:02e1)	0.00050	

Kernel Density
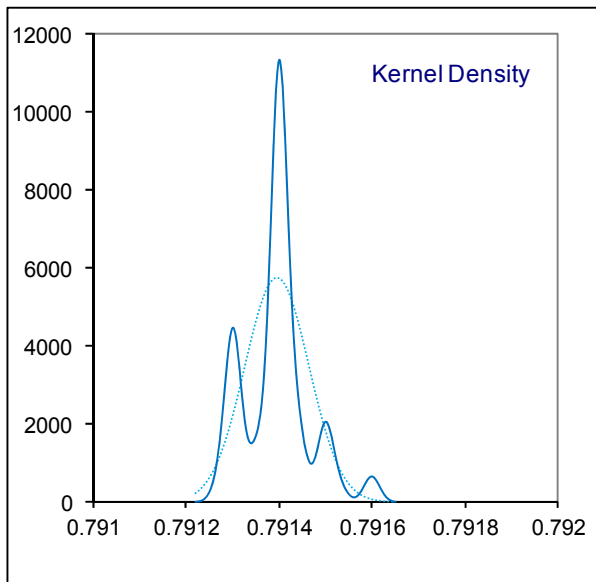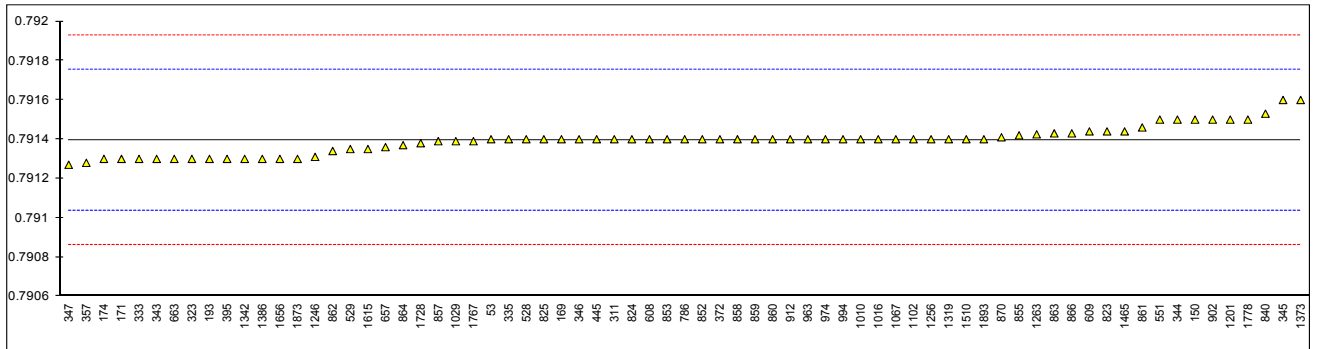
Determination of Specific Gravity 20/20 °C/°C on sample #14160;

lab	method	value	mark	z(targ)	remarks
53	D4052	0.7928		-0.03	
150	D4052	0.7929		0.53	
169	D4052	0.7928		-0.03	
171	D4052	0.7927		-0.59	
174	D4052	0.7927		-0.59	
193	D4052	0.7928		-0.03	
311	D4052	0.7928		-0.03	
316		-----		-----	
319	D4052	0.79278		-0.15	
323	D4052	0.7927		-0.59	
333	D4052	0.7927		-0.59	
334		-----		-----	
335	D4052	0.7928		-0.03	
343	D4052	0.7927	C	-0.59	First reported 0.7925
344	D4052	0.7929		0.53	
345	D4052	0.7929	C	0.53	First reported 0.45
346	D1298	0.7928		-0.03	
347	D4052	0.79271		-0.54	
357	D4052	0.79273		-0.43	
372	D4052	0.7928		-0.03	
395	D4052	0.7927		-0.59	
444		-----		-----	
445	D4052	0.7928		-0.03	
528	D4052	0.7929		0.53	
529	D4052	0.79275		-0.31	
551	D4052	0.7929		0.53	
554		-----		-----	
557		-----		-----	
608	D4052	0.7928		-0.03	
609	D4052	0.7929		0.53	
646	D4052	0.7927		-0.59	
657	D4052	0.7928		-0.03	
663	D4052	0.7927		-0.59	
786		-----		-----	
823	D4052	0.79287		0.36	
824	ISO12185	0.7928		-0.03	
825	D4052	0.7928		-0.03	
840	D4052	0.79296		0.86	
849		-----		-----	
852	D4052	0.7928		-0.03	
853	D4052	0.7928		-0.03	
855	D4052	0.79285		0.25	
857	D4052	0.79282		0.08	
858	D4052	0.79282		0.08	
859	D4052	0.7928		-0.03	
860	D4052	0.7928		-0.03	
861	D4052	0.79288		0.41	
862	D4052	0.79277		-0.20	
863	D4052	0.79286		0.30	
864	D4052Calc.	0.79280		-0.03	
866	D4052	0.79286		0.30	
870	D4052	0.79284		0.19	
902	D4052	0.79293		0.69	
912	D4052	0.7929		0.53	
913		-----		-----	
963	D4052	0.7928		-0.03	
974	D4052	0.7928		-0.03	
994	D4052	0.7928		-0.03	
1009	D4052	0.7928		-0.03	
1010	D4052	0.7928		-0.03	
1016	D4052	0.7928		-0.03	
1029	D4052	0.79281		0.02	
1041		-----		-----	
1067	D4052	0.7928		-0.03	
1102	D4052	0.7927		-0.59	
1120	D4052	0.79286		0.30	
1149		-----		-----	
1181		-----		-----	
1201	D4052	0.7929		0.53	
1221		-----		-----	
1246	D4052	0.79273		-0.43	
1256	D4052	0.7928		-0.03	
1263		-----		-----	

1264		-----		-----	
1319	D4052	0.7928		-0.03	
1342	D4052	0.7928		-0.03	
1373	in house	0.7930		1.09	
1386	D4052	0.7927		-0.59	
1465	D4052	0.79286	C	0.30	First reported 0.79373
1510		-----		-----	
1615	D4052	0.7928		-0.03	
1656	D4052	0.7927	C	-0.59	First reported 0.7928
1728	D4052	0.79278		-0.15	
1767	D4052	0.7928		-0.03	
1778		-----		-----	
1866		-----		-----	
1873		-----		-----	
1886		-----		-----	
1893	D4052	0.79283		0.13	
		-----		-----	

normality	OK
n	70
outliers	0
mean (n)	0.79281
st.dev. (n)	0.000068
R(calc.)	0.00019
R(D4052:02e1)	0.00050

Kernel Density
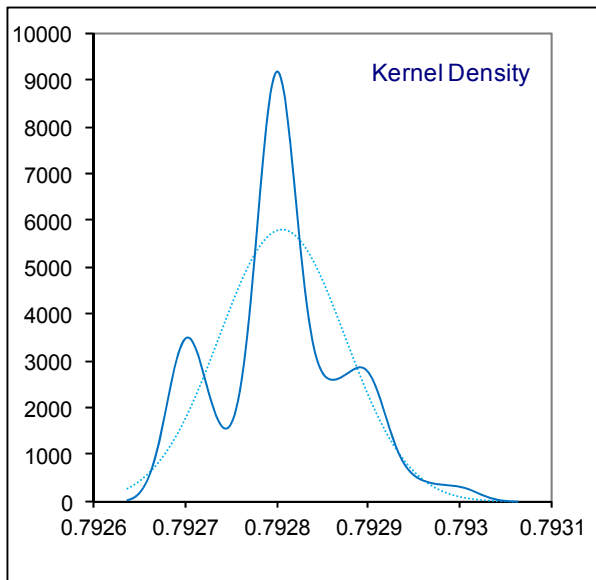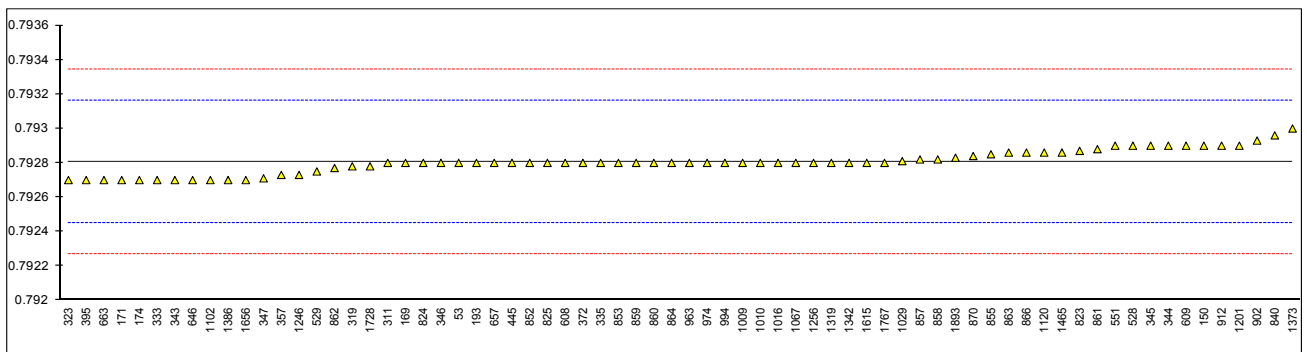
Determination of IBP, MBP and DP @ 760 mmHg on sample #14160; results in °C

lab	method	mode	IBP	mark	z(targ)	MBP	mark	z(targ)	DP	mark	z(targ)
53	D1078	Automated	64.5		0.29	64.6		0.50	65.4		1.53
150	D1078	Automated	64.3		-0.27	64.5		-0.13	65.0		-0.08
169	D1078	Automated	64.5		0.29	64.6		0.50	64.9		-0.48
171	D1078	Automated	64.5		0.29	64.6		0.50	65.2		0.73
174	D1078	Automated	64.3		-0.27	64.5		-0.13	64.9		-0.48
193	D1078	Automated	64.4		0.01	64.5		-0.13	65.3		1.13
311	D1078	Automated	64.4		0.01	64.5		-0.13	65.0		-0.08
316		-----	-----		-----	-----			-----	-----	-----
319	D1078	Automated	64.4		0.01	64.5		-0.13	65.2		0.73
323	D1078	Manual	64.4		0.01	64.6		0.50	64.9		-0.48
333	D1078	Automated	64.4		0.01	64.5		-0.13	65.0		-0.08
334		-----	-----		-----	-----			-----	-----	-----
335		-----	-----		-----	-----			-----	-----	-----
343		-----	-----		-----	-----			-----	-----	-----
344	D1078	Automated	64.4		0.01	64.5		-0.13	65.1		0.33
345	D1078	Manual	64.3		-0.27	64.4		-0.77	65.2		0.73
346		-----	-----		-----	-----			-----	-----	-----
347	D1078	Automated	64.4		0.01	64.4		-0.77	64.9		-0.48
357	D1078	Automated	64.4		0.01	64.5		-0.13	65.0		-0.08
372	D1078	Automated	64.4		0.01	64.5		-0.13	64.7		-1.28
395	D1078	Manual	64.4		0.01	64.5		-0.13	64.8		-0.88
444		-----	-----		-----	-----			-----	-----	-----
445	D1078	Manual	64.4		0.01	64.5		-0.13	65.3		1.13
528	D1078	Manual	64.4	fr 64.2	0.01	64.4		-0.77	65.2		0.73
529		Manual	-----		-----	-----		-----	-----		-----
551		-----	-----		-----	-----			-----	-----	-----
554		-----	-----		-----	-----			-----	-----	-----
557		-----	-----		-----	-----			-----	-----	-----
608		-----	-----		-----	-----			-----	-----	-----
609	D1078	Manual	64.2		-0.55	64.4		-0.77	64.7		-1.28
646	D1078	Manual	64.37		-0.08	-----		-----	64.67		-1.40
657	D1078	Manual	64.3		-0.27	64.5		-0.13	65.0		-0.08
663	D1078	Automated	64.4		0.01	64.5		-0.13	65.0		-0.08
786	D1078	Automated	64.3		-0.27	64.5		-0.13	64.6		-1.69
823		-----	-----		-----	-----			-----	-----	-----
824	D1078	Automated	64.4		0.01	64.5		-0.13	65.2		0.73
825	D1078	Automated	64.5		0.29	64.7	see §4.1	1.14	65.0		-0.08
840	D1078	Automated	64.35		-0.13	64.50		-0.13	65.16		0.57
849		-----	-----		-----	-----			-----	-----	-----
852	D1078	Manual	64.4		0.01	64.5		-0.13	65.0		-0.08
853	D1078	Manual	64.4		0.01	64.5		-0.13	65.0		-0.08
855	D1078	Manual	64.4		0.01	64.5		-0.13	65.0		-0.08
857	D1078	Manual	64.4		0.01	64.5		-0.13	65.0		-0.08
858	D1078	Manual	64.4		0.01	64.5		-0.13	65.0		-0.08
859	D1078	Manual	64.3		-0.27	64.5		-0.13	64.9		-0.48
860	D1078	Manual	64.4		0.01	64.5		-0.13	64.9		-0.48
861	D1078	Manual	64.4		0.01	64.5		-0.13	65.0		-0.08
862	D1078	Manual	64.3		-0.27	64.5		-0.13	64.9		-0.48
863	D1078	Manual	64.3		-0.27	64.5		-0.13	65.0		-0.08
864	D1078	Manual	64.4		0.01	64.5		-0.13	65.1		0.33
866	D1078	Manual	64.4		0.01	64.5		-0.13	64.8		-0.88
870	D1078	Manual	64.4		0.01	64.5		-0.13	65.0		-0.08
902	D1078	Manual	64.4		0.01	64.5		-0.13	64.8		-0.88
912	D1078	Manual	64.3		-0.27	64.5		-0.13	65.1		0.33
913		-----	-----		-----	-----			-----	-----	-----
963	D1078	Automated	64.1	R(0.05)	-0.83	64.2	see §4.1	-2.04	64.9		-0.48
974	D1078	Automated	64.4		0.01	64.5		-0.13	65.0		-0.08
994	D1078	Manual	64.4	fr 64.2	0.01	64.4		-0.77	64.8		-0.88
1009	D1078	Automated	64.5		0.29	-----		-----	65.5		1.94
1010		-----	-----		-----	-----			-----	-----	-----
1016		-----	-----		-----	-----			-----	-----	-----
1029	D1078	Automated	64.4		0.01	64.5		-0.13	65.0		-0.08
1041		-----	-----		-----	-----			-----	-----	-----
1067	D1078	Manual	64.5		0.29	64.6		0.50	65.0		-0.08
1102	D1078	Automated	64.4		0.01	64.5		-0.13	65.1		0.33
1120	D1078	Automated	64.5	fr 64.70	0.29	64.80	see §4.1	1.77	65		-0.08
1149		-----	-----		-----	-----			-----	-----	-----
1181		-----	-----		-----	-----			-----	-----	-----
1201	D1078	Automated	64.4		0.01	64.5		-0.13	65.0		-0.08
1221		-----	-----		-----	-----			-----	-----	-----
1246	D1078	-----	64.65	R(0.05)	0.71	64.78	see §4.1	1.64	65.38		1.45
1256	D1078	Automated	64.6		0.57	64.6		0.50	65.1		0.33
1263		-----	-----		-----	-----			-----	-----	-----

1264	-----	-----	-----		-----	-----		-----	-----	-----
1319	D1078	Manual	64.5		0.29	64.7	see §4.1	1.14	65.2	0.73
1342	D1078	Automated	64.4		0.01	64.5		-0.13	65.1	0.33
1373	D1078	Manual	64.33		-0.19	64.53		0.06	65.40	1.53
1386	D1078	Automated	64.35		-0.13	64.60		0.50	65.05	0.12
1465	D1078	Manual	63.78	R(0.01)	-1.72	-----		-----	64.78	-0.96
1510	D1078	Automated	64.4		0.01	64.5		-0.13	64.9	-0.48
1615	D1078	Automated	64.3		-0.27	64.4		-0.77	65.2	0.73
1656	D1078	Manual	64.5		0.29	64.6		0.50	64.7	-1.28
1728	D1078	Manual	64.4		0.01	64.5		-0.13	65.1	0.33
1767	D1078	Automated	64.42		0.06	64.48		-0.26	64.98	-0.16
1778	GB/T7534	-----	64.5		0.29	64.6		0.50	65.2	0.73
1866		-----	-----		-----	-----		-----	-----	-----
1873	GB/T7534	Automated	64.4	fr 64.8	0.01	64.8	see §4.1	1.77	65.0	-0.08
1886		-----	-----		-----	-----		-----	-----	-----
1893		-----	-----		-----	-----		-----	-----	-----
		-----	-----		-----	-----		-----	-----	-----

normality		OK		not OK		OK
n		61		61		64
outliers		3		0		0
mean (n)		64.40		64.52		65.02
st.dev. (n)		0.070		0.096		0.184
R(calc.)		0.19		0.27		0.51
R(D1078:11)	Automated	1.00		0.44		0.70
R(D1078:11)	Manual	0.69		0.42		0.85

Initial Boiling Point

Mid Boiling Point

Dry Point
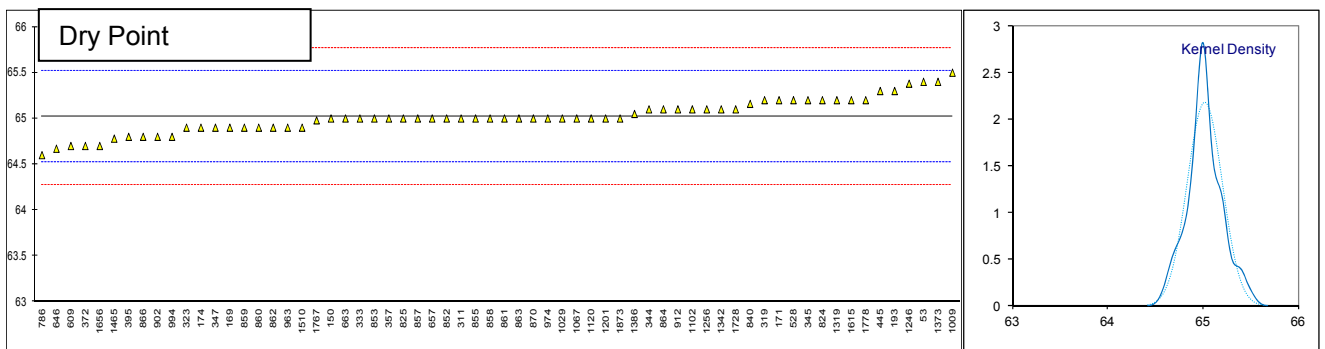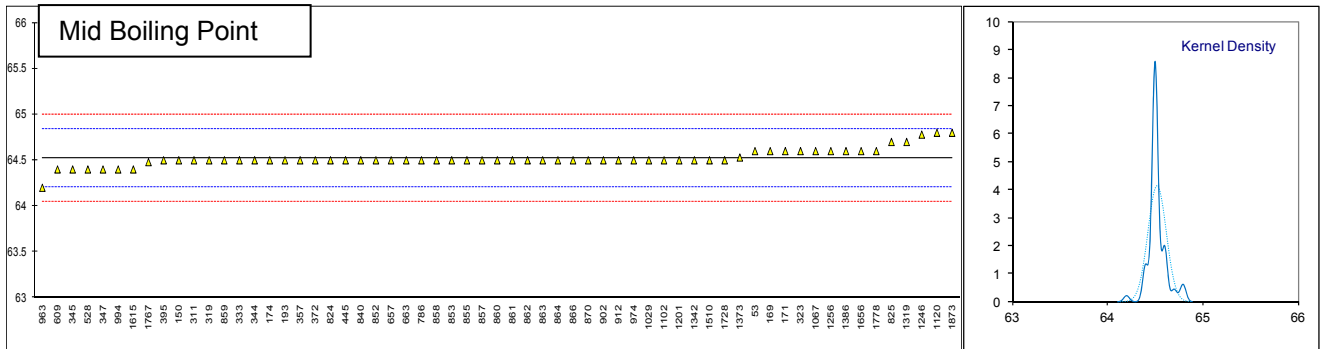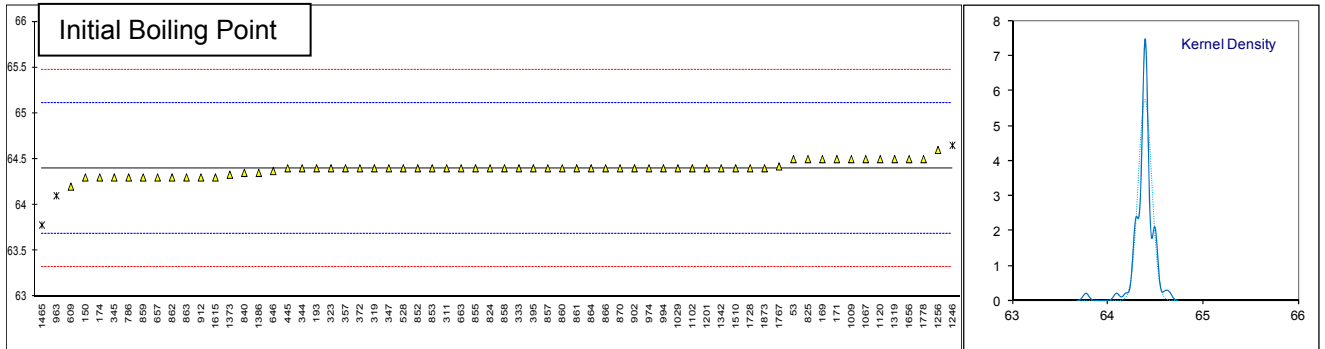
Determination of Water Miscibility on sample #14160;

lab	method	value	mark	z(targ)	remarks
53	D1722	Pass		-----	
150	D1722	Pass		-----	
169		-----		-----	
171	D1722	Pass		-----	
174	D1722	Pass		-----	
193	D1722	Pass		-----	
311	D1722	Pass		-----	
316		-----		-----	
319	D1722	Pass		-----	
323	D1722	Pass		-----	
333	D1722	Pass		-----	
334		-----		-----	
335		-----		-----	
343	D1722	Pass		-----	
344	D1722	Pass		-----	
345		-----		-----	
346	D1722	Pass		-----	
347	D1722	Pass		-----	
357	D1722	Pass		-----	
372	D1722	Pass		-----	
395	D1722	Pass		-----	
444		-----		-----	
445	D1722	Pass		-----	
528	D1722	Pass		-----	
529	D1722	Pass		-----	
551	D1722	Pass		-----	
554		-----		-----	
557		-----		-----	
608	D1722	Pass		-----	
609	D1722	Pass		-----	
646	D1722	Pass		-----	
657	D1722	Pass		-----	
663	D1722	Pass		-----	
786	D1722	Pass		-----	
823	D1722	Pass		-----	
824	D1722	Pass		-----	
825	D1722	Pass		-----	
840	D1722	Pass		-----	
849		-----		-----	
852	D1722	Pass		-----	
853	D1722	Pass		-----	
855	D1722	Pass		-----	
857	D1722	Pass		-----	
858	D1722	Pass		-----	
859	D1722	Pass		-----	
860	D1722	Pass		-----	
861	D1722	Pass		-----	
862	D1722	Pass		-----	
863	D1722	Pass		-----	
864	D1722	Pass		-----	
866	D1722	Pass		-----	
870	D1722	Pass		-----	
902	D1722	Pass		-----	
912	D1722	Pass		-----	
913		-----		-----	
963	D1722	Pass		-----	
974	D1722	Pass		-----	
994	D1722	Pass		-----	
1009		-----		-----	
1010	D1722	Pass		-----	
1016	D1722	Pass		-----	
1029	D1722	Pass		-----	
1041	D1722	Pass		-----	
1067	D1722	Pass		-----	
1102	D1722	Pass		-----	
1120	D1722	Pass		-----	
1149		-----		-----	
1181		-----		-----	
1201	D1722	Pass		-----	
1221		-----		-----	
1246	D1722	Pass		-----	
1256	D1722	Pass		-----	
1263		-----		-----	

1264		-----	-----	
1319	D1722	Pass	-----	
1342	D1722	Pass	-----	
1373		-----	-----	
1386	D1722	Fails	-----	False positive?
1465	D1722	Pass	-----	
1510	D1722	Pass	-----	
1615	D1722	Pass	-----	
1656	INH-21	Pass	-----	
1728	D1722	Pass	-----	
1767	D1722	Fails	-----	False positive?
1778	GB/T6324	Pass	-----	
1866		-----	-----	
1873		-----	-----	
1886		-----	-----	
1893	D1722	Pass	-----	
		-----	-----	

normality	n.a.	
n	67	
outliers	2	
mean (n)	Pass	Two reported: Fails
st.dev. (n)	n.a.	
R(calc.)	n.a.	
R(D1722:09)	n.a.	

Determination of Nonvolatile Matter on sample #14160; results in mg/100 mL

lab	method	value	mark	z(targ)	remarks
53	D1353	<5		-----	
150	D1353	<0.1		<-4.29	False negative result?
169	D1353	0.29		-0.11	
171	D1353	0.2		-2.09	
174	D1353	0.32		0.55	
193	D1353	0.70	R(0.01)	8.91	
311	D1353	<1		-----	
316		-----		-----	
319	D1353	0.32		0.55	
323	D1353	0.5		4.51	
333	D1353	<0.1		<-4.29	False negative result?
334		-----		-----	
335		-----		-----	
343		-----		-----	
344	D1353	0.341		1.01	
345	D1353	0.3		0.11	
346		-----		-----	
347	D1353	0.8	R(0.05)	11.11	
357	D1353	< 1		-----	
372	D1353	0.4		2.31	
395		-----		-----	
444		-----		-----	
445	D1353	0.67	R(0.01)	8.25	
528		-----		-----	
529	D1353	0.7	R(0.01)	8.91	
551	D1353	<0.1		<-4.29	False negative result?
554		-----		-----	
557		-----		-----	
608		-----		-----	
609	D1353	0.4		2.31	
646		-----		-----	
657	D1353	0.3		0.11	
663	D1353	0.35		1.21	
786	D1353	0.25		-0.99	
823	D1353	0.4		2.31	
824		-----		-----	
825	D1353	0.2		-2.09	
840	D1353	0.2		-2.09	
849		-----		-----	
852	D1353	0.3		0.11	
853	D1353	0.2		-2.09	
855	D1353	0.3		0.11	
857	D1353	0.2		-2.09	
858	D1353	0.3		0.11	
859	D1353	0.3		0.11	
860	D1353	0.3		0.11	
861	D1353	0.26		-0.77	
862	D1353	0.3		0.11	
863	D1353	0.28		-0.33	
864	D1353	0.3		0.11	
866	D1353	0.22		-1.65	
870	D1353	0.24		-1.21	
902	D1353	0.3		0.11	
912	D1353	0.3		0.11	
913		-----		-----	
963	D1353	0.4		2.31	
974	D1353	0.3		0.11	
994	D1353	0.28		-0.33	
1009	D1353	1.3	R(0.01)	22.12	
1010		-----		-----	
1016	D1353	-0.1	ex	-6.75	Result excluded, -0.1 is not a real result
1029	D1353	0.650	R(0.01)	7.81	
1041	D1353	<1		-----	
1067		-----		-----	
1102		-----		-----	
1120		-----		-----	
1149		-----		-----	
1181		-----		-----	
1201	D1353	<1		-----	
1221		-----		-----	
1246	D1353	0.2		-2.09	
1256	D1353	0.0	ex	-6.49	Result excluded, zero is not a real result
1263	D1353	<1x.0		-----	

1264		-----		-----
1319	D1353	0.4		2.31
1342	D1353	1	R(0.01)	15.52
1373	D1353	0.25		-0.99
1386	D1353	0.2		-2.09
1465	D1353	0	R(0.01)	-6.49
1510	D1353	0.3		0.11
1615	D1353	<1		-----
1656	D1353	<1		-----
1728	D1353	0.3		0.11
1767		-----		-----
1778		-----		-----
1866		-----		-----
1873		-----		-----
1886		-----		-----
1893		-----		-----
		-----		-----

normality	OK	
n	39	
outliers	8	+ 2 excl.
mean (n)	0.295	
st.dev. (n)	0.0691	
R(calc.)	0.193	
R(D1353:13)	0.129	

Kernel Density
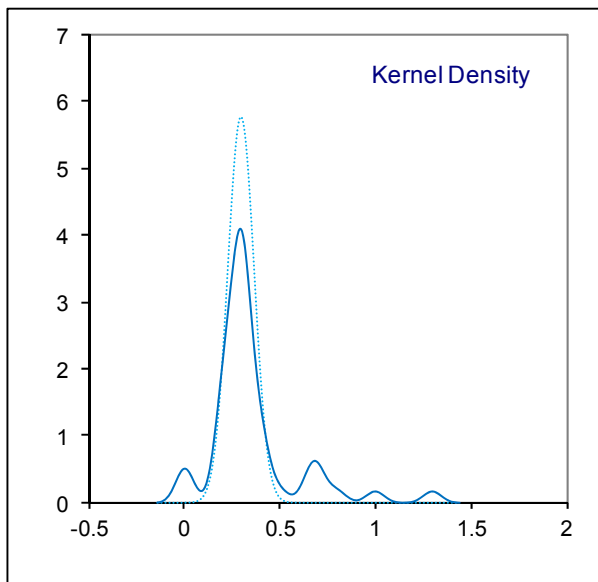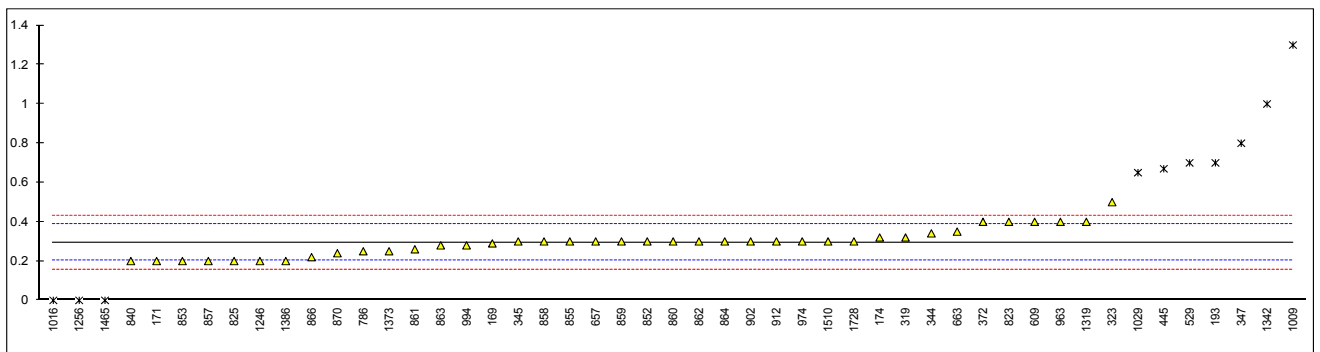
Determination of Permanganate Time Test @ 15°C on sample #14160; results in minutes

lab	method	value	mark	z(targ)	remarks
53	D1363	105		-----	
150	D1363	89.53		-----	
169		-----		-----	
171	D1363	90		-----	
174	D1363	106		-----	
193	D1363	130	R(0.05)	-----	
311	D1363	90		-----	
316		-----		-----	
319	D1363	105		-----	
323	D1363	92		-----	
333		-----		-----	
334		-----		-----	
335	D1363	>60		-----	
343	D1363	>30		-----	
344	D1363	93.42		-----	
345	D1363	105		-----	
346	D1363	87		-----	
347	D1363	86		-----	
357	D1363	95		-----	
372	D1363	114		-----	
395	D1363	99		-----	
444		-----		-----	
445	D1363	92		-----	
528	D1363	115	C	-----	First reported 130
529	D1363	110		-----	
551	D1363	80		-----	
554		-----		-----	
557		-----		-----	
608	D1363	103		-----	
609	D1363	117		-----	
646	D1363	93		-----	
657	D1363	101	C	-----	First reported 171
663	D1363	90		-----	
786	D1363	95		-----	
823	D1363	97		-----	
824	D1363	90		-----	
825	D1363	90		-----	
840	D1363	87		-----	
849		-----		-----	
852	D1363	97		-----	
853	D1363	93		-----	
855	D1363	95		-----	
857	D1363	91		-----	
858	D1363	95		-----	
859	D1363	95		-----	
860	D1363	96		-----	
861	D1363	90		-----	
862	D1363	97		-----	
863	D1363	98		-----	
864	D1363	94		-----	
866	D1363	90		-----	
870	D1363	95		-----	
902	D1363	85		-----	
912	D1363	100		-----	
913		-----		-----	
963	D1363	95		-----	
974	D1363	90		-----	
994	D1363	115		-----	
1009	D1363	96		-----	
1010	D1363	110		-----	
1016		-----		-----	
1029	D1363	90		-----	
1041	D1363	108		-----	
1067	D1363	90		-----	
1102	D1363	103		-----	
1120	D1363	98		-----	
1149		-----		-----	
1181		-----		-----	
1201	D1363	85		-----	
1221		-----		-----	
1246	D1363	79.2		-----	
1256	D1363	82		-----	
1263		-----		-----	

1264		-----	-----
1319	D1363	100	-----
1342	D1363	95	-----
1373		-----	-----
1386	D1363	100	-----
1465	D1363	100	-----
1510	D1363	100	-----
1615	D1363	90	-----
1656	D1363	100	-----
1728	D1363	100	-----
1767	D1363	95	-----
1778		-----	-----
1866		-----	-----
1873		-----	-----
1886		-----	-----
1893		-----	-----
		-----	-----

	normality	OK
	n	65
	outliers	1
	mean (n)	96.1
	st.dev. (n)	8.28
	R(calc.)	23.2
	R(D1363:06)	(24.2)

Kernel Density
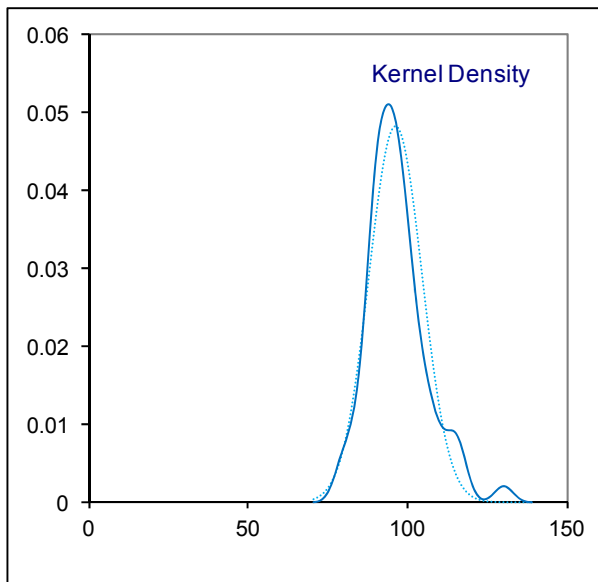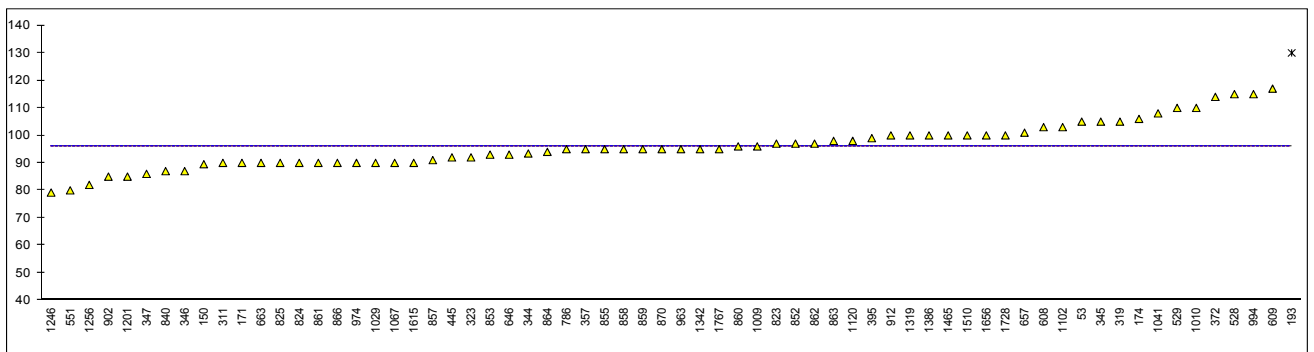
Determination of Purity "as received" on sample #14160; results in %M/M

lab	method	value	mark	z(targ)	remarks
53		99.93		-----	
150		99.921		-----	
169	IMPCA001	99.994	ex	-----	Result excluded as purity on dry basis < purity "as received"
171		-----		-----	
174		99.922		-----	
193		-----		-----	
311		-----		-----	
316		-----		-----	
319		-----		-----	
323		99.92		-----	
333	IMPCA001	99.92		-----	
334		-----		-----	
335		-----		-----	
343		99.92		-----	
344	IMPCA001	99.9292		-----	
345		-----		-----	
346		-----		-----	
347		-----		-----	
357	IMPCA001Calc.	99.923		-----	
372		99.92		-----	
395		-----		-----	
444		-----		-----	
445		-----		-----	
528		-----		-----	
529	IMPCA001	99.987	C,R(0.01)	-----	First reported 99.97
551	IMPCA001	99.92467		-----	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609	Calc.	99.929		-----	
646		-----		-----	
657	Calc.	99.9273		-----	
663		-----		-----	
786		99.9247		-----	
823	IMPCA001	99.9298		-----	
824		99.93		-----	
825		99.94		-----	
840	IMPCA001	99.924		-----	
849		-----		-----	
852		99.920		-----	
853	IMPCA001	99.926		-----	
855		99.926		-----	
857	IMPCA001	99.927		-----	
858	IMPCA001	99.925		-----	
859	GB338	99.925		-----	
860	GB338	99.922		-----	
861		99.925		-----	
862	IMPCA001	99.920		-----	
863		99.926		-----	
864	IMPCA001	99.924		-----	
866	IMPCA001	99.924		-----	
870	IMPCA001	99.928		-----	
902	IMPCA001	99.92		-----	
912		99.92		-----	
913		-----		-----	
963	IMPCA004Mod.	99.9278		-----	
974		-----		-----	
994		99.92		-----	
1009		-----		-----	
1010		99.9249	C	-----	First reported 99.9515
1016	in house	99.914	C	-----	First reported 99.99
1029		-----		-----	
1041		-----		-----	
1067		99.92		-----	
1102		-----		-----	
1120	E346	99.929		-----	
1149		-----		-----	
1181		-----		-----	
1201		-----		-----	
1221		-----		-----	
1246	IMPCA001	99.9156		-----	
1256		99.938		-----	
1263		-----		-----	

1264		-----		-----	
1319		-----		-----	
1342		99.947	R(0.01)	-----	
1373		-----		-----	
1386	Calc.	99.923		-----	
1465	IMPCA001Mod.	99.93102		-----	
1510		-----		-----	
1615	in house	99.9939	R(0.01)	-----	Probably reported purity on dry basis
1656	INH-20	99.93		-----	
1728		-----		-----	
1767		99.923		-----	
1778		-----		-----	
1866		-----		-----	
1873		-----		-----	
1886		-----		-----	
1893		-----		-----	
		-----		-----	

normality	suspect	
n	44	
outliers	3	+ 1 excl
mean (n)	99.9247	
st.dev. (n)	0.00509	
R(calc.)	0.0142	
R(lit)	unknown	Compare R(iis13C06) = 0.0119

Kernel Density
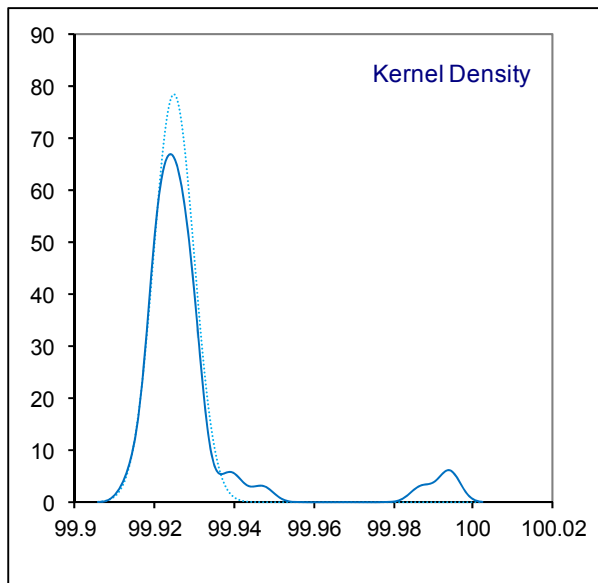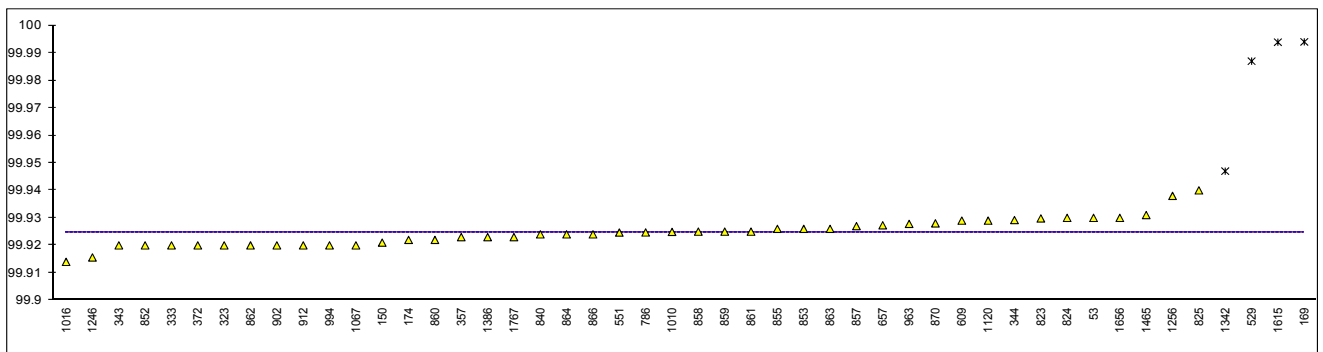
Determination of Purity on dry basis on sample #14160; results in %M/M

lab	method	value	mark	z(targ)	remarks
53	IMPCA001	99.99		-----	
150	IMPCA001	99.993		-----	
169	IMPCA001	99.923	ex	-----	Result excluded as purity on dry basis < purity "as received"
171	IMPCA001	99.995175		-----	
174		99.992		-----	
193		-----		-----	
311	IMPCA001	99.99		-----	
316		-----		-----	
319	IMPCA001	99.99		-----	
323	IMPCA001	99.99		-----	
333	IMPCA001	99.99		-----	
334	IMPCA001	99.99		-----	
335		-----		-----	
343	IMPCA001	99.99		-----	
344	IMPCA001	99.9940		-----	
345	IMPCA001	99.994		-----	
346		-----		-----	
347	IMPCA001	99.9945		-----	
357	IMPCA001	99.992		-----	
372	IMPCA001	99.99		-----	
395	IMPCA001	99.993		-----	
444		-----		-----	
445		-----		-----	
528		-----		-----	
529	IMPCA001	99.9954		-----	
551	IMPCA001	99.99467		-----	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609	IMPCA001	99.994		-----	
646	IMPCA001	99.986		-----	
657	IMPCA001	99.9935		-----	
663		-----		-----	
786	IMPCA001	99.993		-----	
823	IMPCA001	99.9928		-----	
824	IMPCA001	99.99		-----	
825	IMPCA001	99.99		-----	
840	IMPCA001	99.992		-----	
849		-----		-----	
852	IMPCA001	99.989		-----	
853	IMPCA001	99.993		-----	
855	IMPCA001	99.994		-----	
857	IMPCA001	99.993		-----	
858	IMPCA001	99.992		-----	
859	IMPCA001	99.993		-----	
860	IMPCA001	99.991		-----	
861	IMPCA001	99.993		-----	
862	IMPCA001	99.989		-----	
863	IMPCA001	99.994		-----	
864	IMPCA001	99.992		-----	
866	IMPCA001	99.993		-----	
870	IMPCA001	99.994		-----	
902	IMPCA001	99.99		-----	
912	IMPCA001	99.99		-----	
913		-----		-----	
963	IMPCA001	99.994		-----	
974		-----		-----	
994	IMPCA001	99.991		-----	
1009	IMPCA001	99.99		-----	
1010	IMPCA001	99.9933		-----	
1016	in house	99.99		-----	
1029	IMPCA001	99.9945		-----	
1041	IMPCA001	99.9910		-----	
1067	IMPCA001	99.99		-----	
1102	IMPCA001	99.9927		-----	
1120		99.991		-----	
1149		-----		-----	
1181		-----		-----	
1201	IMPCA001	99.9788	R(0.01)	-----	
1221		-----		-----	
1246	IMPCA001	99.9291	R(0.01)	-----	
1256	IMPCA001	99.993		-----	
1263		-----		-----	

1264		-----	-----
1319	IMPCA001	99.9948	-----
1342	IMPCA001	99.987	-----
1373		-----	-----
1386	IMPCA001	99.993	-----
1465	IMPCA001Mod.	99.99542	-----
1510		-----	-----
1615		-----	-----
1656		99.99	-----
1728		-----	-----
1767	IMPCA001	99.993	-----
1778		-----	-----
1866		-----	-----
1873		-----	-----
1886		-----	-----
1893	IMPCA001	99.993	-----
		-----	-----

normality	OK
n	59
outliers	2	+ 1 excl
mean (n)	99.9920
st.dev. (n)	0.00209
R(calc.)	0.0058
R(lit)	unknown	Compare R(iis13C06) = 0.0054

Kernel Density
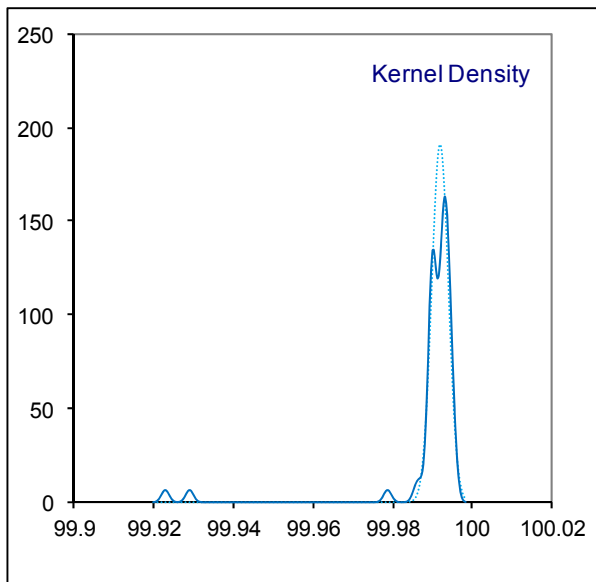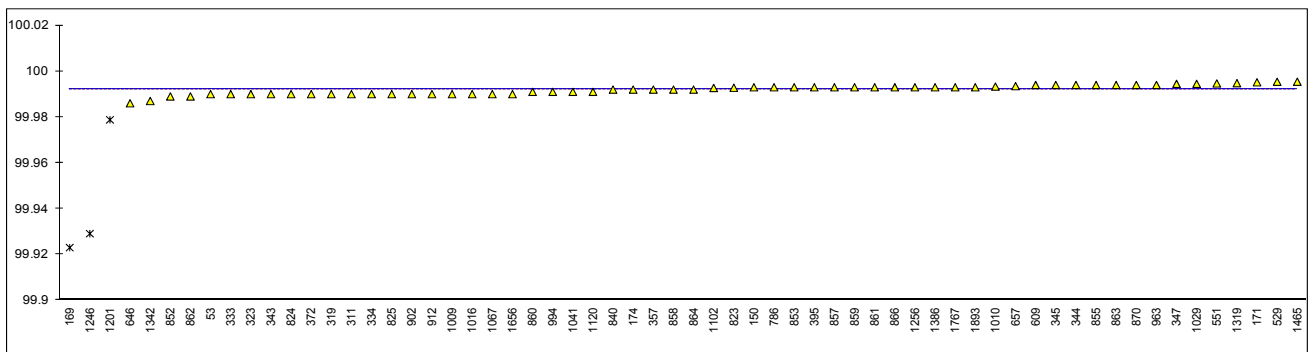
Determination of Acetone content on sample #14160; results in mg/kg

lab	method	value	mark	z(targ)	remarks
53	IMPCA001	25		2.50	
150	IMPCA001	21.5		0.78	
169		-----		-----	
171	IMPCA001	18.5351		-0.68	
174		20.4	C	0.24	First reported <10
193		-----		-----	
311	IMPCA001	23		1.52	
316		-----		-----	
319	IMPCA001	21		0.54	
323	IMPCA001	16		-1.93	
333	IMPCA001	21		0.54	
334	IMPCA001	16		-1.93	
335		-----		-----	
343	IMPCA001	23.2		1.62	
344	IMPCA001	16.66		-1.60	
345	IMPCA001	17.5		-1.19	
346		-----		-----	
347	IMPCA001	17.8		-1.04	
357	IMPCA001	18.5		-0.70	
372	IMPCA001	21		0.54	
395	IMPCA001	17.7		-1.09	
444		-----		-----	
445		-----		-----	
528	E346	<30	C	-----	Reported <0.0030 %M/M
529	IMPCA001	14.1		-2.86	
551	IMPCA001	18.39		-0.75	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609	E346	<30		-----	
646	IMPCA001	19.87		-0.02	
657	IMPCA001	19.7		-0.10	
663		-----		-----	
786	IMPCA001	22.4		1.22	
823	IMPCA001	20		0.04	
824	IMPCA001	19		-0.45	
825	IMPCA001	18		-0.94	
840	IMPCA001	18.6		-0.65	
849		-----		-----	
852	IMPCA001	18.9		-0.50	
853	IMPCA001	19.8		-0.06	
855	IMPCA001	18.8		-0.55	
857	IMPCA001	19.5		-0.20	
858	IMPCA001	20.2		0.14	
859	IMPCA001	21.2		0.63	
860	IMPCA001	20.8		0.44	
861	IMPCA001	21.7		0.88	
862	IMPCA001	20.8		0.44	
863	IMPCA001	17.5		-1.19	
864	IMPCA001	20.2		0.14	
866	IMPCA001	17.8		-1.04	
870	IMPCA001	20.2		0.14	
902	IMPCA001	16.6		-1.63	
912	IMPCA001	21		0.54	
913		-----		-----	
963	IMPCA001	20.74		0.41	
974		-----		-----	
994	IMPCA001	20.8		0.44	
1009	IMPCA001	19.04		-0.43	
1010	IMPCA001	20		0.04	
1016	in house	21.6		0.83	
1029	IMPCA001	19.44695		-0.23	
1041	IMPCA001	22.90		1.47	
1067	IMPCA001	19		-0.45	
1102	IMPCA001	32.19	R(0.01)	6.04	
1120	E346	22.07		1.06	
1149		-----		-----	
1181		-----		-----	
1201	IMPCA001	17		-1.43	
1221		-----		-----	
1246	IMPCA001	24.28		2.15	
1256	IMPCA001	19		-0.45	
1263		-----		-----	

1264		-----		-----	
1319	IMPCA001	16		-1.93	
1342	IMPCA001	27		3.49	
1373		-----		-----	
1386	IMPCA001	25.7		2.85	
1465	IMPCA001Mod.	20.21		0.15	
1510		-----		-----	
1615	IMPCA001	28.879	R(0.05)	4.41	
1656	INH-20	<1		<-9.31	False negative result?
1728		-----		-----	
1767	IMPCA001	20.4		0.24	
1778		-----		-----	
1866		-----		-----	
1873		-----		-----	
1886		-----		-----	
1893		-----		-----	
		-----		-----	

normality	OK			
n	57			
outliers	2	Spike		
mean (n)	19.913	15.6		<128% recovery
st.dev. (n)	2.4654			
R(calc.)	6.903			
R(Horwitz)	5.687			

Kernel Density
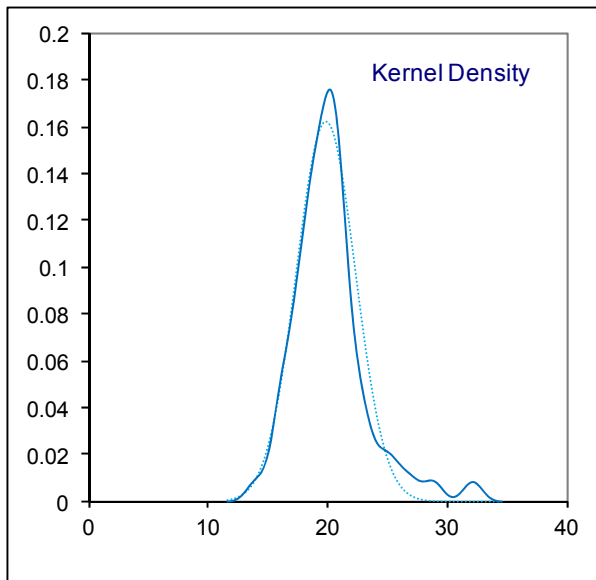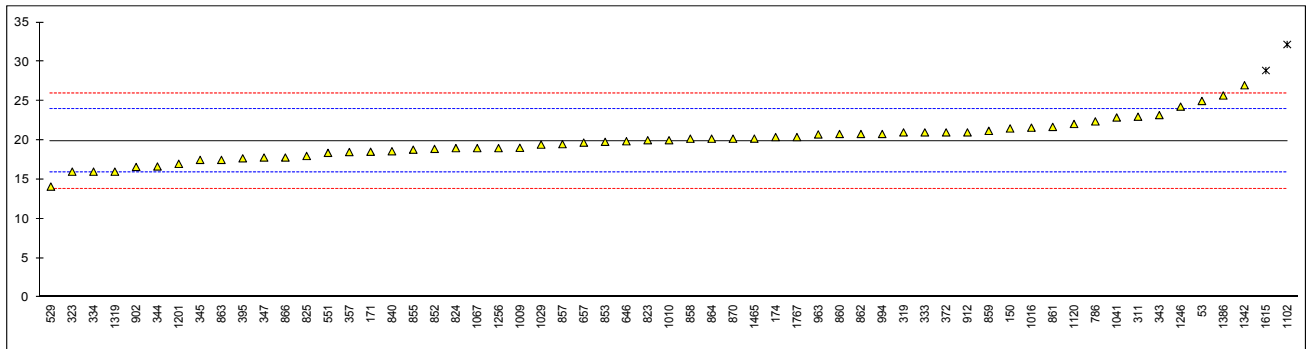
Determination of Benzene content on sample #14160; results in mg/kg

lab	method	value	mark	z(targ)	remarks
53		-----		-----	
150	IMPCA001	10.2		-0.06	
169		-----		-----	
171	IMPCA001	10.256		-0.01	
174		10.5		0.20	
193		-----		-----	
311	IMPCA001	11		0.63	
316		-----		-----	
319	IMPCA001	11		0.63	
323	IMPCA001	8		-1.96	
333	IMPCA001	11		0.63	
334	IMPCA001	8		-1.96	
335		-----		-----	
343	IMPCA001	11.1		0.72	
344	IMPCA001	10.45		0.16	
345	IMPCA001	10.3		0.03	
346		-----		-----	
347		-----		-----	
357	IMPCA001	8.9		-1.18	
372	IMPCA001	11		0.63	
395	IMPCA001	10.1		-0.14	
444		-----		-----	
445		-----		-----	
528		-----		-----	
529		-----		-----	
551	IMPCA001	16.6	C,R(0.01)	5.48	First reported 4.64
554		-----		-----	
557		-----		-----	
608		-----		-----	
609		-----		-----	
646	IMPCA001	8.7		-1.35	
657	IMPCA001	10.1		-0.14	
663		-----		-----	
786	IMPCA001	11.4		0.98	
823	IMPCA001	11		0.63	
824	IMPCA001	10		-0.23	
825	IMPCA001	9		-1.09	
840	IMPCA001	9.1		-1.01	
849		-----		-----	
852	IMPCA001	11.4		0.98	
853	IMPCA001	10.3		0.03	
855	IMPCA001	11.6		1.15	
857	IMPCA001	10.0		-0.23	
858	IMPCA001	10.8		0.46	
859	IMPCA001	10.2		-0.06	
860	IMPCA001	10.4		0.12	
861	IMPCA001	10.7		0.38	
862	IMPCA001	10.4		0.12	
863	IMPCA001	9.4		-0.75	
864	IMPCA001	10.1		-0.14	
866	IMPCA001	10.0		-0.23	
870	IMPCA001	11.3		0.89	
902		-----		-----	
912	IMPCA001	12		1.50	
913		-----		-----	
963	IMPCA001	10.03		-0.20	
974		-----		-----	
994	IMPCA001	11.3		0.89	
1009		-----		-----	
1010	IMPCA001	12		1.50	
1016		-----		-----	
1029		-----		-----	
1041	in house	9.11		-1.00	
1067	IMPCA001	11		0.63	
1102		-----		-----	
1120		-----		-----	
1149		-----		-----	
1181		-----		-----	
1201	IMPCA001	10		-0.23	
1221		-----		-----	
1246		-----		-----	
1256		-----		-----	
1263		-----		-----	

1264		-----		-----	
1319	IMPCA001	8		-1.96	
1342	IMPCA001	10		-0.23	
1373		-----		-----	
1386	IMPCA001	10.1		-0.14	
1465		-----		-----	
1510		-----		-----	
1615		-----		-----	
1656	INH-20	<1		<-8.01	False negative result?
1728		-----		-----	
1767	IMPCA001	10.7		0.38	
1778		-----		-----	
1866		-----		-----	
1873		-----		-----	
1886		-----		-----	
1893		-----		-----	
		-----		-----	

			Spike	
normality	OK			
n	45			
outliers	1			
mean (n)	10.265		10.4	<99% recovery
st.dev. (n)	0.9830			
R(calc.)	2.752			
R(Horwitz)	3.239			

Kernel Density
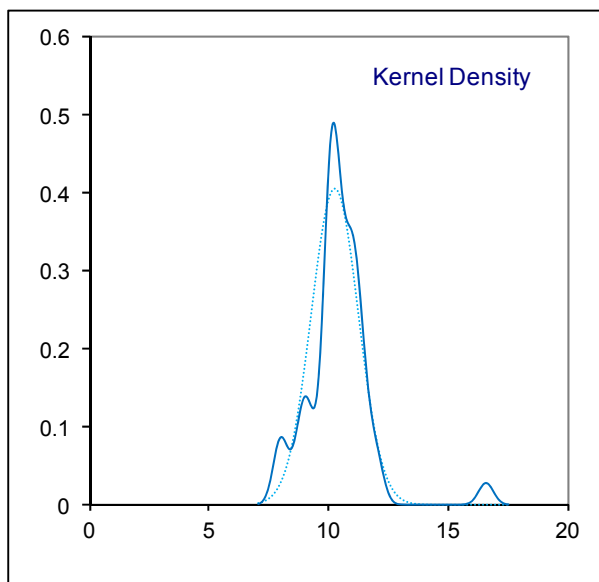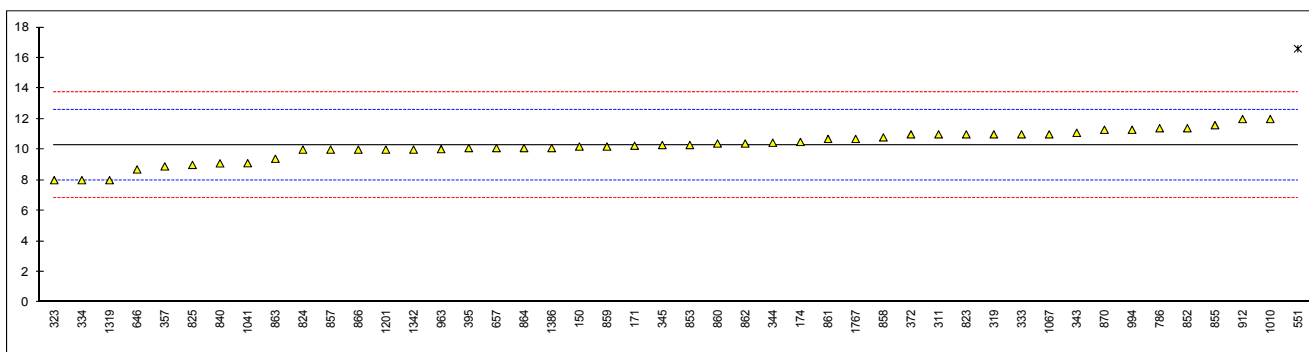
Determination of Ethanol content on sample #14160; results in mg/kg

lab	method	value	mark	z(targ)	remarks
53	IMPCA001	37		1.20	
150	IMPCA001	35.4		0.69	
169		-----		-----	
171	IMPCA001	35.3446		0.67	
174		33		-0.08	
193		-----		-----	
311	IMPCA001	35		0.56	
316		-----		-----	
319	IMPCA001	34		0.24	
323	IMPCA001	35		0.56	
333	IMPCA001	38		1.52	
334	IMPCA001	42		2.79	
335		-----		-----	
343	IMPCA001	26.5		-2.15	
344	IMPCA001	32.78		-0.15	
345	IMPCA001	31		-0.71	
346		-----		-----	
347	IMPCA001	36.8		1.13	
357	IMPCA001	32.5		-0.24	
372	IMPCA001	33		-0.08	
395	IMPCA001	30.4		-0.91	
444		-----		-----	
445		-----		-----	
528		-----		-----	
529	IMPCA001	31.94		-0.42	
551	IMPCA001	29.98		-1.04	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609	IMPCA001	35		0.56	
646	IMPCA001	34.2		0.30	
657	IMPCA001	34.6		0.43	
663		-----		-----	
786	IMPCA001	37.7		1.42	
823	IMPCA001	31		-0.71	
824	IMPCA001	30		-1.03	
825	IMPCA001	31		-0.71	
840	IMPCA001	34.7		0.46	
849		-----		-----	
852	IMPCA001	30.9		-0.75	
853	IMPCA001	34.3		0.34	
855	IMPCA001	32.3		-0.30	
857	IMPCA001	32.9		-0.11	
858	IMPCA001	34.2		0.30	
859	IMPCA001	33.4		0.05	
860	IMPCA001	33.8		0.18	
861	IMPCA001	32.4		-0.27	
862	IMPCA001	33.2		-0.01	
863	IMPCA001	32.3		-0.30	
864	IMPCA001	32.7		-0.17	
866	IMPCA001	32.0		-0.40	
870	IMPCA001	30.9		-0.75	
902	IMPCA001	26.9		-2.02	
912	IMPCA001	34		0.24	
913		-----		-----	
963	IMPCA001	30.98		-0.72	
974		-----		-----	
994	IMPCA001	38.2		1.58	
1009	IMPCA001	33.67		0.14	
1010	IMPCA001	35		0.56	
1016	in house	35.3		0.65	
1029	IMPCA001	35.9188		0.85	
1041	IMPCA001	34.24		0.32	
1067	IMPCA001	35		0.56	
1102	IMPCA001	24.58		-2.76	
1120	E346	27.59		-1.80	
1149		-----		-----	
1181		-----		-----	
1201	IMPCA001	29		-1.35	
1221		-----		-----	
1246	IMPCA001	34.71		0.47	
1256	IMPCA001	32		-0.40	
1263		-----		-----	

1264		-----	-----	
1319	IMPCA001	28	-1.67	
1342	IMPCA001	37	1.20	
1373		-----	-----	
1386	IMPCA001	37.2	1.26	
1465	IMPCA001Mod.	34.13	0.28	
1510		-----	-----	
1615	IMPCA001	32.365	-0.28	
1656	INH-20	<1	<-10.27	False negative result?
1728		-----	-----	
1767	IMPCA001	37.3	1.29	
1778	GB338	29.61	-1.16	
1866		-----	-----	
1873		-----	-----	
1886		-----	-----	
1893	IMPCA001	35.3	0.65	
		-----	-----	

		Spike	
normality	OK		
n	62		
outliers	0		
mean (n)	33.244	33.2	<100% recovery
st.dev. (n)	3.1115		
R(calc.)	8.712		
R(Horwitz)	8.789		
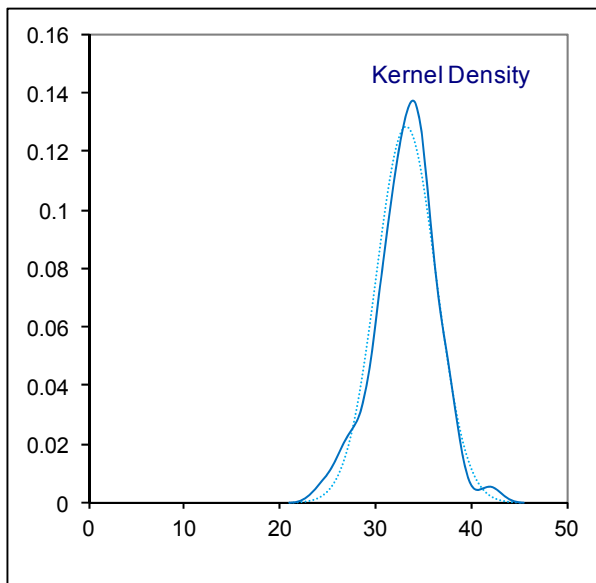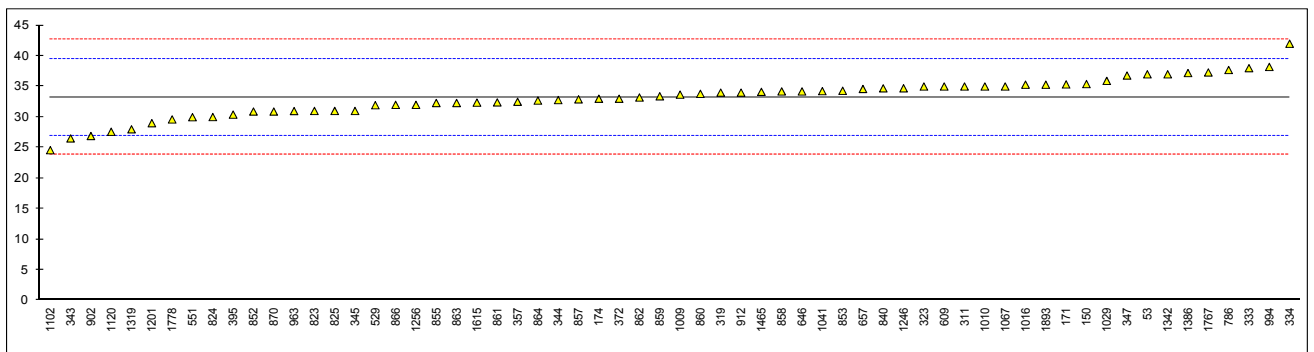
Determination of Toluene content on sample #14160; results in mg/kg

lab	method	value	mark	z(targ)	remarks
53		-----		-----	
150	IMPCA001	<5		-----	
169		-----		-----	
171	IMPCA001	<5		-----	
174		<10		-----	
193		-----		-----	
311	IMPCA001	<5		-----	
316		-----		-----	
319	IMPCA001	<10		-----	
323	IMPCA001	<10		-----	
333		-----		-----	
334	IMPCA001	0		-----	
335		-----		-----	
343	IMPCA001	<5		-----	
344	IMPCA001	<5		-----	
345		-----		-----	
346		-----		-----	
347		-----		-----	
357	IMPCA001	<5		-----	
372	IMPCA001	<5		-----	
395	IMPCA001	<10		-----	
444		-----		-----	
445		-----		-----	
528		-----		-----	
529		-----		-----	
551	IMPCA001	<5		-----	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609		-----		-----	
646	IMPCA001	<5		-----	
657	IMPCA001	<5		-----	
663		-----		-----	
786	IMPCA001	<5		-----	
823	IMPCA001	<5		-----	
824	IMPCA001	<5		-----	
825	IMPCA001	<5		-----	
840	IMPCA001	<1		-----	
849		-----		-----	
852	IMPCA001	<5		-----	
853	IMPCA001	<1		-----	
855	IMPCA001	<10		-----	
857	IMPCA001	<1		-----	
858	IMPCA001	<1		-----	
859	IMPCA001	<1		-----	
860	IMPCA001	<1		-----	
861	IMPCA001	<10		-----	
862	IMPCA001	0.2		-----	
863	IMPCA001	<10		-----	
864	IMPCA001	<10		-----	
866	IMPCA001	<10		-----	
870	IMPCA001	<10		-----	
902	IMPCA001	<10		-----	
912	IMPCA001	<5		-----	
913		-----		-----	
963	IMPCA001	<5		-----	
974		-----		-----	
994	IMPCA001	<5		-----	
1009		-----		-----	
1010	IMPCA001	<5		-----	
1016		-----		-----	
1029		-----		-----	
1041	in house	0.09		-----	
1067		-----		-----	
1102		-----		-----	
1120		-----		-----	
1149		-----		-----	
1181		-----		-----	
1201	IMPCA001	<5		-----	
1221		-----		-----	
1246		-----		-----	
1256		-----		-----	
1263		-----		-----	

1264		-----	-----
1319	IMPCA001	<5	-----
1342	IMPCA001	n.d.	-----
1373		-----	-----
1386	IMPCA001	1.3	-----
1465		-----	-----
1510		-----	-----
1615		-----	-----
1656		-----	-----
1728		-----	-----
1767	IMPCA001	1.2	-----
1778		-----	-----
1866		-----	-----
1873		-----	-----
1886		-----	-----
1893		-----	-----
		-----	-----

	normality	n.a
	n	44
	outliers	0
	mean (n)	<10
	st.dev. (n)	n.a.
	R(calc.)	n.a.
	R(lit)	n.a.

Determination of Sulphur on sample #14160; results in mg/kg

lab	method	value	mark	z(targ)	remarks
53	D5453	<0.5		-----	
150	D5453	0.09		-----	
169		-----		-----	
171	D5453	<1		-----	
174	D5453	0.5		-----	
193		-----		-----	
311	D5453	<1		-----	
316		-----		-----	
319	D3961	<0.5		-----	
323	D5453	<1		-----	
333	D5453	<0.5		-----	
334		-----		-----	
335		-----		-----	
343	D5453	<1		-----	
344	D5453	0.30		-----	
345	ISO20846	0.35		-----	
346		-----		-----	
347	D5453	0.21		-----	
357	D5453	<0.5		-----	
372	D5453	<1.0		-----	
395		-----		-----	
444		-----		-----	
445		-----		-----	
528		-----		-----	
529		-----		-----	
551	D5453	0.2		-----	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609	D5453	<0.25		-----	
646	D3961	<0.2		-----	
657	D5453	0.14		-----	
663		-----		-----	
786	D5453	0.19		-----	
823	D5453	0.13		-----	
824	D5453	<0.5		-----	
825	D5453	<1.0		-----	
840		-----		-----	
849		-----		-----	
852		-----		-----	
853		-----		-----	
855	D5453	0.2		-----	
857	D3961	<0.5		-----	
858		-----		-----	
859		-----		-----	
860		-----		-----	
861		-----		-----	
862	D5453	0.06		-----	
863	D5453	0.2		-----	
864	D5453	0.2		-----	
866		-----		-----	
870		-----		-----	
902		-----		-----	
912	D5453	0.1		-----	
913		-----		-----	
963	D5453	0.2		-----	
974		-----		-----	
994	D5453	<1.0		-----	
1009		-----		-----	
1010		-----		-----	
1016	ISO20846	0.01		-----	
1029	D5453	0.048		-----	
1041	D5453	<0.2		-----	
1067	D5453	0.2		-----	
1102	D5453	<0.5		-----	
1120		-----		-----	
1149		-----		-----	
1181		-----		-----	
1201	D5453	0.10		-----	
1221		-----		-----	
1246		-----		-----	
1256	D5453	0.05		-----	
1263		-----		-----	

1264		-----	-----
1319	D5453	0.06	-----
1342	D5453	0.05	-----
1373		-----	-----
1386	D7183	0.26	-----
1465	D5453	0.242	-----
1510		-----	-----
1615		-----	-----
1656	D5453	<0.25	-----
1728	D5453	0.2	-----
1767	D5453	0.24	-----
1778		-----	-----
1866		-----	-----
1873		-----	-----
1886		-----	-----
1893		-----	-----
		-----	-----

normality	n.a.
n	44
outliers	0
mean (n)	<1
st.dev. (n)	n.a.
R(calc.)	n.a.
R(D5453:09)	n.a.

Determination of Total Iron as Fe on sample #14160; results in mg/kg

lab	method	value	mark	z(targ)	remarks
53	E394	<0.02		-----	
150	E394	0.01829		0.07	
169		-----		-----	
171	E394	0.0177		-0.10	
174	E394	0.015		-0.88	
193	E394	<0.01		-----	
311	E394	0.02		0.56	
316		-----		-----	
319	E394	0.01595		-0.60	
323	E394	0.02		0.56	
333	E394	0.03		3.44	
334		-----		-----	
335		-----		-----	
343	E394	<0.10	C	-----	First reported 0.0399
344	E394	<0.1		-----	
345		-----		-----	
346		-----		-----	
347	E394	<0.1		-----	
357	E394	0.019		0.27	
372	E394	0.018		-0.01	
395		-----		-----	
444		-----		-----	
445		-----		-----	
528		-----		-----	
529	E394	0.00912		-2.57	
551	E394	<0.01		-----	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609	E394	0.019		0.27	
646	E394	0.015		-0.88	
657	E394	0.01		-2.31	
663		-----		-----	
786	E394	<0.01		-----	
823	E394	0.02		0.56	
824	E394	0.013		-1.45	
825		-----		-----	
840	E394	0.018		-0.01	
849		-----		-----	
852	E394	0.018		-0.01	
853	E394	0.016		-0.59	
855	E394	0.017		-0.30	
857	E394	0.016		-0.59	
858	E394	0.016		-0.59	
859	E394	0.016		-0.59	
860	E394	0.017		-0.30	
861	E394	0.018		-0.01	
862	E394	0.016		-0.59	
863	E394	0.020		0.56	
864	E394	<0.1		-----	
866	E394	0.022		1.14	
870	E394	0.021		0.85	
902		-----		-----	
912		-----		-----	
913		-----		-----	
963	E394	0.02		0.56	
974		-----		-----	
994	E394	0.023		1.42	
1009	E394	0.0162		-0.53	
1010		-----		-----	
1016		-----		-----	
1029	E394	0.02529		2.08	
1041	ISO11885	0.04	R(0.01)	6.31	
1067		-----		-----	
1102	E394	0.007		-3.18	
1120	in house	0.022		1.14	
1149		-----		-----	
1181		-----		-----	
1201	E394	0.007		-3.18	
1221		-----		-----	
1246	E394	0.0155		-0.73	
1256	E394	0.025		2.00	
1263	DIN38406	<0.3		-----	

1264		-----	-----	
1319	E394	0.02	0.56	
1342	E394	0.01	-2.31	
1373		-----	-----	
1386	E394	0.027	2.57	
1465	E394	0.019	0.27	
1510	E394	0.02	0.56	
1615		-----	-----	
1656	E394	<0.01	-----	
1728	E394	0.028	2.86	
1767		-----	-----	
1778		-----	-----	
1866		-----	-----	
1873		-----	-----	
1886		-----	-----	
1893		-----	-----	
		-----	-----	

|				
normality	OK			
n	43			
outliers	1	Spike		
mean (n)	0.0180	0.025		<72% recovery
st.dev. (n)	0.00500			
R(calc.)	0.0140			
R(E394:09)	0.0097			

Kernel Density
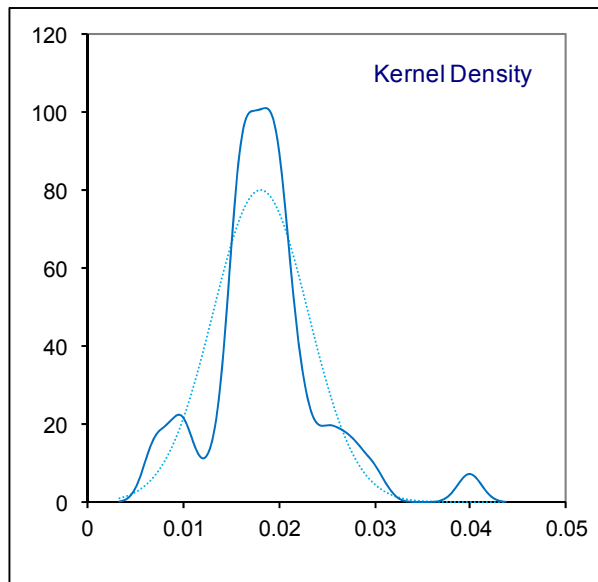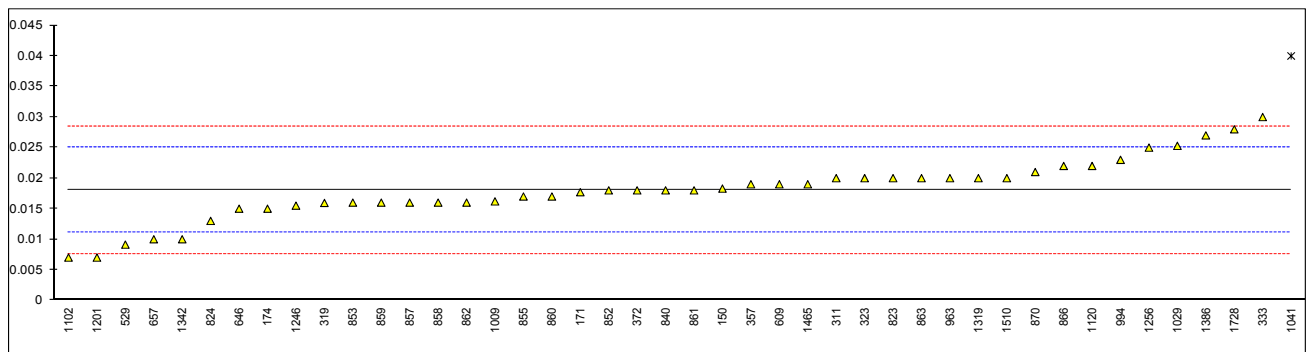
Determination of Trimethylamine on sample #14160; results in µg/kg

lab	method	value	mark	z(targ)	remarks
53		-----		-----	
150		-----		-----	
169		-----		-----	
171		-----		-----	
174		-----		-----	
193		-----		-----	
311		-----		-----	
316	INH-018	23.4027		-3.30	
319		-----		-----	
323		-----		-----	
333		-----		-----	
334		-----		-----	
335		-----		-----	
343		-----		-----	
344		-----		-----	
345		-----		-----	
346		-----		-----	
347		-----		-----	
357		-----		-----	
372		-----		-----	
395		-----		-----	
444		-----		-----	
445		-----		-----	
528		-----		-----	
529		-----		-----	
551		-----		-----	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609		-----		-----	
646		-----		-----	
657	E346	21.5		-3.64	
663		-----		-----	
786		-----		-----	
823		-----		-----	
824		-----		-----	
825		-----		-----	
840		-----		-----	
849		-----		-----	
852		-----		-----	
853		-----		-----	
855		-----		-----	
857		-----		-----	
858		-----		-----	
859	E346	<10		<-5.03	False negative result?
860		-----		-----	
861		-----		-----	
862	E346	32.7		-1.67	
863		-----		-----	
864		-----		-----	
866		-----		-----	
870		-----		-----	
902		-----		-----	
912		-----		-----	
913		-----		-----	
963	E346	50		1.36	
974		-----		-----	
994		-----		-----	
1009	E346	39.99		-0.40	
1010		-----		-----	
1016		-----		-----	
1029	E346	21.4697		-3.64	
1041	in house	<100		-----	
1067		-----		-----	
1102		-----		-----	
1120		-----		-----	
1149		-----		-----	
1181		-----		-----	
1201		-----		-----	
1221		-----		-----	
1246	E346	68.12		4.54	
1256		-----		-----	
1263		-----		-----	

1264	-----		-----
1319	-----		-----
1342	-----		-----
1373	-----		-----
1386	-----		-----
1465	-----		-----
1510	-----		-----
1615	in house	80.80	6.76
1656	-----		-----
1728	-----		-----
1767	-----		-----
1778	-----		-----
1866	-----		-----
1873	-----		-----
1886	-----		-----
1893	-----		-----
	-----		-----

normality	unknown		
n	8		
outliers	0	Spike	
mean (n)	42.25	40.08	<104% recovery
st.dev. (n)	22.454		
R(calc.)	62.87		
R(E346:08e1)*	15.97		Compare R(Horwitz) = 30.47

* = estimated reproducibility based on repeatability data of ASTM E346:08e1
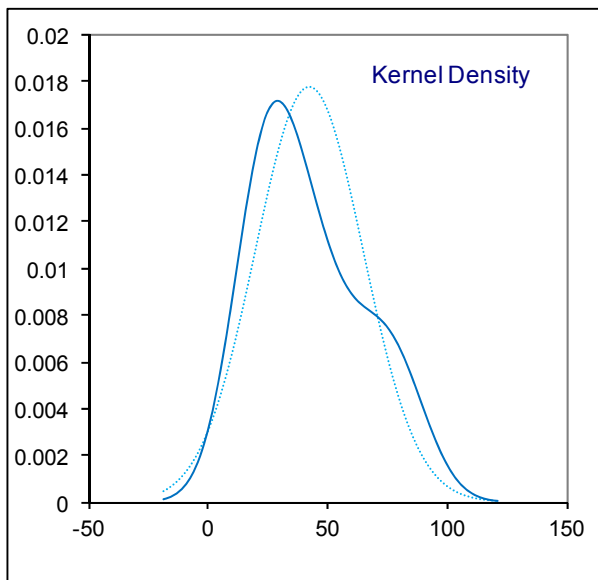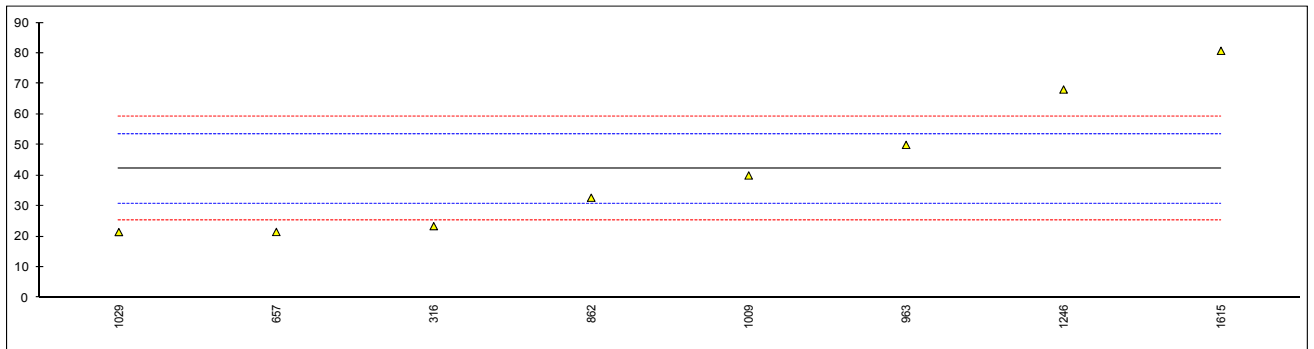
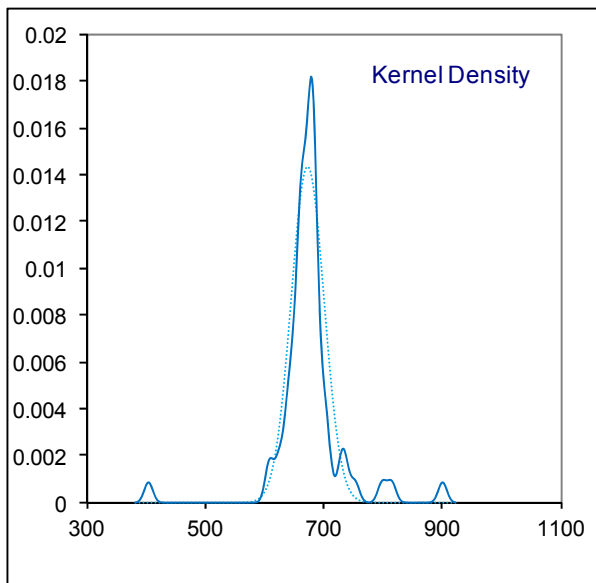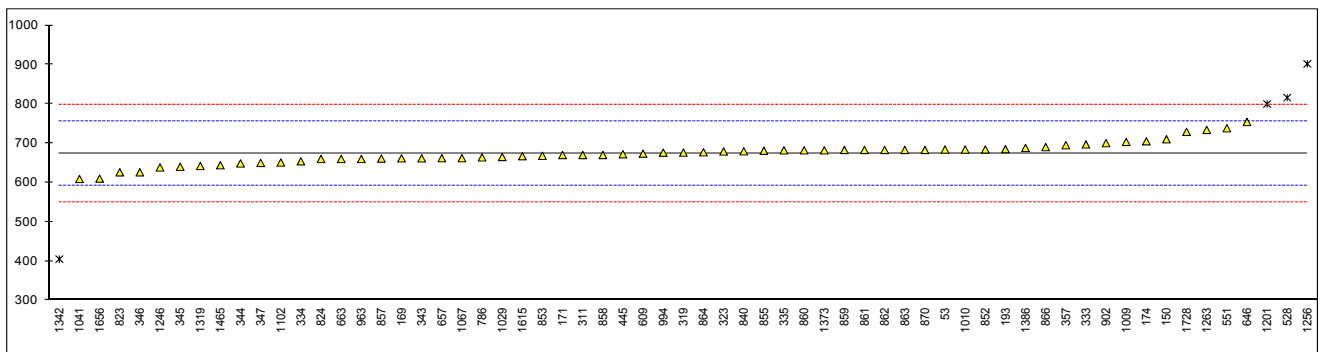Determination of Water content (coulometric) on sample #14160; results in mg/kg

lab	method	value	mark	z(targ)	remarks
53	E1064	684		0.25	
150	E1064	710.04		0.88	
169	E1064	661.5		-0.30	
171	E1064	670		-0.09	
174	E1064	705		0.76	
193	E1064	685	C	0.27	Reported 0.0685 (unit error?)
311	E1064	670		-0.09	
316		-----		-----	
319	E1064	676.2		0.06	
323	E1064	679		0.13	
333	E1064	697		0.56	
334	E1064	654		-0.48	
335	E1064	682		0.20	
343	E1064	661.5		-0.30	
344	E1064	648.6		-0.61	
345	E1064	640		-0.82	
346	E1064	626		-1.16	
347	E1064	650		-0.58	
357	E1064	695		0.51	
372		-----		-----	
395		-----		-----	
444		-----		-----	
445	E1064	672		-0.04	
528	E1064	816	C,R(0.01)	3.45	Reported 0.0816 (unit error?)
529		-----		-----	
551	E1064	738.2		1.56	
554		-----		-----	
557		-----		-----	
608		-----		-----	
609	E1064	673.55		-0.01	
646	E1064	754.1		1.95	
657	E1064	661.9		-0.29	
663	E1064	660		-0.34	
786	E1064	664		-0.24	
823	E1064	626		-1.16	
824	E1064	660		-0.34	
825		-----		-----	
840	E1064	679.6		0.14	
849		-----		-----	
852	E1064	684.1		0.25	
853	E1064	668		-0.14	
855	E1064	681.0		0.17	
857	E1064	661		-0.31	
858	E1064	670		-0.09	
859	E1064	683		0.22	
860	E1064	682		0.20	
861	E1064	683		0.22	
862	E1064	683		0.22	
863	E1064	683		0.22	
864	E1064	677		0.08	
866	E1064	690		0.39	
870	E1064	683.0		0.22	
902	E1064	700.2		0.64	
912		-----		-----	
913		-----		-----	
963	E1064	660		-0.34	
974		-----		-----	
994	E1064	676		0.05	
1009	E1064	703.29		0.72	
1010	E1064	684	C	0.25	First reported 418
1016		-----	W	-----	Result withdrawn, reported 762
1029	E1064	665		-0.22	
1041	E1064	609		-1.58	
1067	E1064	662		-0.29	
1102	E1064	651		-0.56	
1120		-----		-----	
1149		-----		-----	
1181		-----		-----	
1201	E1064	800	R(0.01)	3.07	
1221		-----		-----	
1246	E1064	638.38		-0.86	
1256	E1064	902	R(0.01)	5.54	
1263	ISO12937	734.0		1.46	

1264		-----		-----	
1319	E1064	642		-0.77	
1342	E1064	405	R(0.01)	-6.53	
1373	in house	682		0.20	
1386	E1064	688		0.34	
1465	E1064	644		-0.73	
1510		-----		-----	
1615	E1064	667	C	-0.17	First reported 0.0667
1656	E1064	610	C	-1.55	First reported 630
1728	E1064	729		1.34	
1767		-----		-----	
1778		-----		-----	
1866		-----		-----	
1873		-----		-----	
1886		-----		-----	
1893		-----		-----	
		-----		-----	

|	
normality	suspect
n	59
outliers	4
mean (n)	673.85
st.dev. (n)	27.742
R(calc.)	77.68
R(E1064:12)	115.23

Kernel Density

Determination of Water content (titrimetric) on sample #14160; results in mg/kg

lab	method	value	mark	z(targ)	remarks
53		-----		-----	
150	E203	723.0		0.48	
169	E203	705		0.29	
171	E203	608		-0.72	
174	E203	690		0.13	
193		-----		-----	
311	E203	670		-0.07	
316		-----		-----	
319		-----		-----	
323	E203	704		0.28	
333		-----		-----	
334	E203	660		-0.18	
335		-----		-----	
343		-----		-----	
344		-----		-----	
345	E203	676		-0.01	
346		-----		-----	
347		-----		-----	
357	E203	692		0.16	
372	E203	667		-0.10	
395	D1364	648.2		-0.30	
444		-----		-----	
445		-----		-----	
528		-----		-----	
529		-----		-----	
551	E203	700		0.24	
554		-----		-----	
557		-----		-----	
608	E203	694		0.18	
609		-----		-----	
646		-----		-----	
657	E203	652.4		-0.26	
663	E203	668		-0.09	
786		-----		-----	
823	E203	633		-0.46	
824	E203	660		-0.18	
825	E203	617		-0.62	
840		-----		-----	
849		-----		-----	
852		-----		-----	
853	E203	672		-0.05	
855	E203	690.0		0.13	
857	E203	646		-0.32	
858	E203	680		0.03	
859	E203	698		0.22	
860	E203	691		0.14	
861		-----		-----	
862	E203	682		0.05	
863		-----		-----	
864	E203	694		0.18	
866	E203	686		0.09	
870	E203	691.0		0.14	
902	E203	624.3		-0.55	
912	E203	709		0.33	
913		-----		-----	
963	E203	849	R(0.01)	1.78	
974		-----		-----	
994		-----		-----	
1009		-----		-----	
1010		-----		-----	
1016	in house	730		0.55	
1029		-----		-----	
1041		-----		-----	
1067		-----		-----	
1102		-----		-----	
1120	D1364	626	C	-0.53	First reported 0.0626
1149		-----		-----	
1181		-----		-----	
1201		-----	W	-----	Result withdrawn reported 1168.3
1221		-----		-----	
1246	E203	698.22		0.22	
1256	E203	545	R(0.01)	-1.37	
1263		-----		-----	

1264		-----	-----
1319	E203	654	-0.24
1342		-----	-----
1373		-----	-----
1386	E203	695	0.19
1465		-----	-----
1510		-----	-----
1615		-----	-----
1656	E203	630	-0.49
1728	E203	738	0.63
1767	E203	702.5	0.26
1778		-----	-----
1866		-----	-----
1873	GB/T6283	700	0.24
1886		-----	-----
1893		-----	-----
		-----	-----

normality	OK	
n	39	
outliers	2	
mean (n)	677.04	
st.dev. (n)	31.371	
R(calc.)	87.84	
R(E203:08)	270.00	
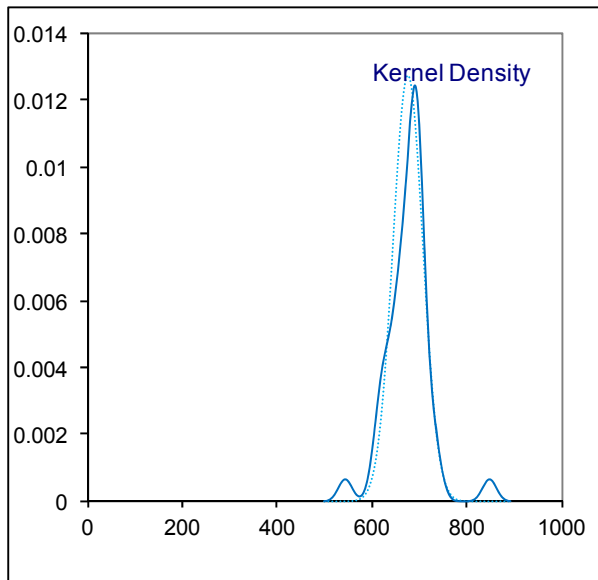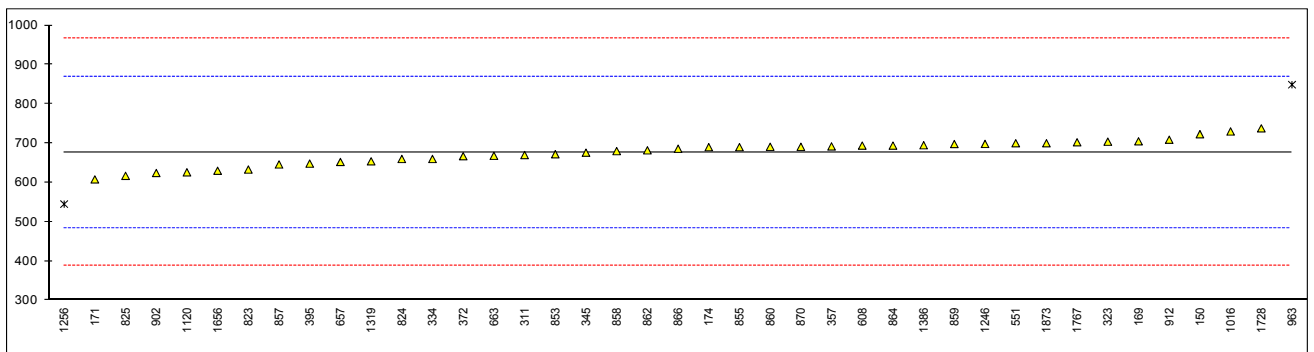
Determination of UV Absorbance (50 mm cuvette) on sample #14161

lab	method	300nm		268.5nm		250nm		240nm		230nm	220nm	Pass/Fail
150	IMPCA004	0.01444		0.05081		0.160915	C	-----	C	-----	1.16275	Fail
171		-----		-----		-----		-----		-----	-----	-----
311	IMPCA004	0.0106		0.0462		0.1533		0.2598		0.5634	1.212	Fail
319	IMPCA004	0.014		0.048		0.158		0.271		0.573	1.160	Fail
323	IMPCA004	0.0138		0.0503		0.1727		0.2707		0.5799	1.2387	Fail
334	IMPCA004	**0.006**		**0.0038**		0.163		-----		-----	1.212	Fail
343	IMPCA004	0.015	C	0.050	C	0.166		0.264		0.549	1.143	Fail
346	IMPCA004	0.0172		0.0510		0.1558		-----		-----	1.0943	Fail
347	IMPCA004	0.014		0.050		0.150		0.259		0.555	1.186	Fail
357	IMPCA004	0.012	C	0.048		0.154		0.253		0.531	1.134	Fail
372		-----		-----		-----		-----		-----	-----	Fail
395		-----		-----		-----		-----		-----	-----	---
444		-----		-----		-----		-----		-----	-----	n
445	IMPCA004	**0.0001**	C	0.0253	C	0.1385		0.2341		0.5211	1.1239	Fail
528		-----		-----		-----		-----		-----	-----	n
529		-----		-----		-----		-----		-----	-----	n
551		-----		-----		-----		-----		-----	-----	n
657	IMPCA004	0.012		0.039	C	0.132	C	-----		-----	1.052	Fail
663	IMPCA004	0.0132		0.0476		0.1506		-----		-----	1.0853	Fail
823		0.014		0.047		0.153		0.253		0.539	1.138	Fail
824		-----		-----		-----		-----		-----	-----	---
825		-----		-----		-----		-----		-----	-----	---
849		-----		-----		-----		-----		-----	-----	n
852	IMPCA004	0.015		0.049		0.148		0.240		0.501	1.082	Fail
853	IMPCA004	0.015		0.046		0.150		0.250		0.529	1.128	Fail
855	IMPCA004	0.016		0.050		0.150		0.243		0.513	1.059	Fail
857	IMPCA004	0.013		0.049		0.157		0.254		0.540	1.114	Fail
858	IMPCA004	0.015		0.049		0.146		0.232		0.504	1.091	Fail
859	IMPCA004	0.0160		0.0502		0.1531		0.2444		0.5081	1.0659	Fail
860	IMPCA004	0.014		0.046		0.150		0.241		0.509	1.049	Fail
861	IMPCA004	0.015		0.050		0.156		0.249		0.532	1.107	Fail
862	IMPCA004	0.012		0.046		0.148		0.239		0.499	1.040	Fail
863	IMPCA004	0.015		0.048		0.151		0.247		0.519	1.109	Fail
864	IMPCA004	0.015		0.047		0.151		0.242		0.510	1.088	Fail
866	IMPCA004	0.012		0.047		0.159		0.249		0.524	1.111	Fail
870	IMPCA004	0.013		0.047		0.155		0.246		0.521	1.056	Fail
913		-----		-----		-----		-----		-----	-----	n
963	IMPCA004	**0.0027**		**0.0099**		**0.0335**		**0.0527**		**0.1118**	**0.2357**	Fail
974		-----		-----		-----		-----		-----	-----	---
994		-----		-----		-----		-----		-----	-----	n
1041	IMPCA004	-----		**0.1545**		**0.046**		-----		-----	-----	n
1067	IMPCA004	0.015		0.053		0.166		0.266		0.572	1.22	Fail
1102	IMPCA004	0.0137		0.0298		0.1471		0.2541		0.5397	1.1776	Fail
1201	IMPCA004	0.016		0.055		0.166		0.260		0.559	1.196	Fail
1264		-----		-----		-----		-----		-----	-----	n
1319	IMPCA004	0.010		0.037		0.145		0.234		0.500	1.095	Fail
1342		-----		-----		-----		-----		-----	-----	---
1386	IMPCA004	0.0165		0.0525		0.1615		-----		-----	1.1255	Fail
1438		-----		-----		-----		-----		-----	-----	---
	normality	OK		not OK		OK		OK		OK	OK	
	n	29		30		31		25		25	31	
	outliers	3		3		2		1		1	1	
	mean (n)	0.0140		0.0468		0.1538		0.2502		0.5316	1.1244	
	st.dev. (n)	0.00172		0.00634		0.00838		0.0111		0.02463	0.05522	
	R(calc.)	0.0048		0.0178		0.0235		0.0311		0.0690	0.1546	
	R(IMPCA004:08)	0.0211		0.0127		0.0155		unknown		unknown	0.3223	

Bold and underlined test results are outliers acc. Grubs/Dixon/Rosner
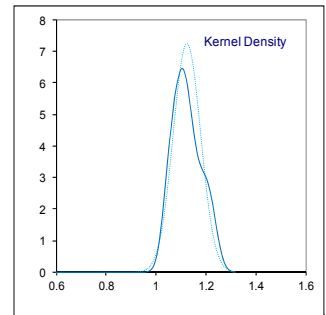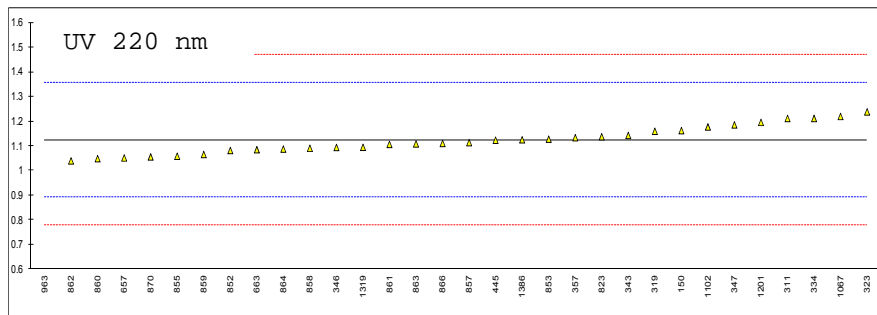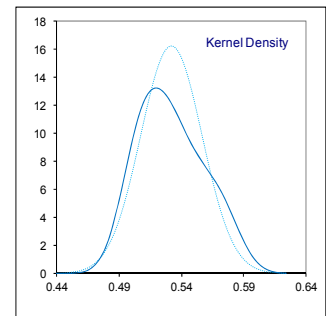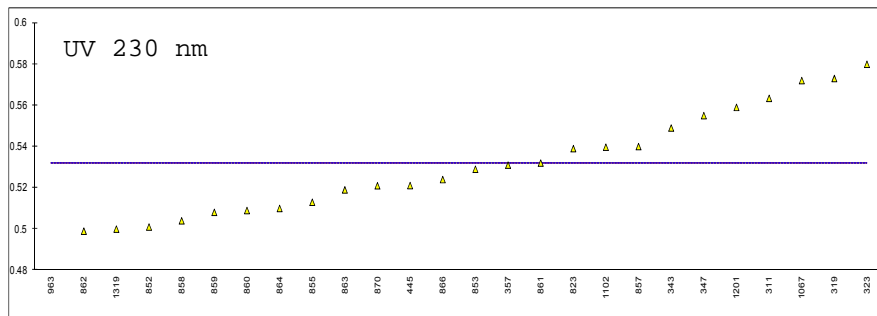
Corrected results for laboratories:

Lab 150: first reported 250 nm 0.1444, 240 nm 0.160915
Lab 343: first reported 300 nm 0.021, 268.5 nm 0.061
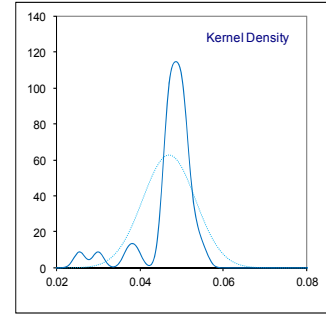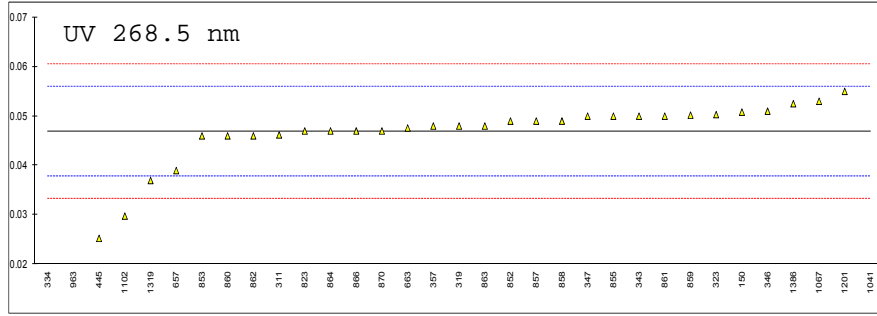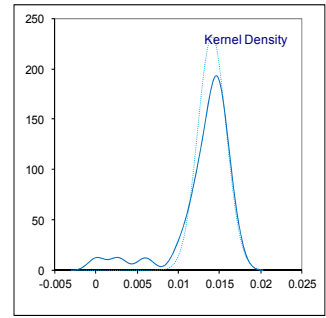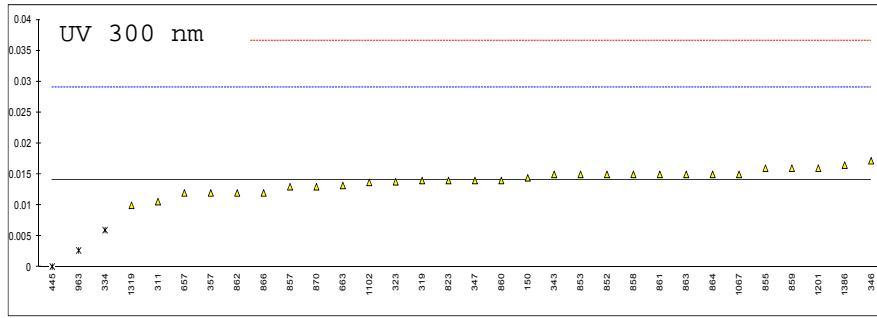Lab 357: first reported 300 nm 0.010
Lab 445: first reported 300 nm 0.0005, 268.5 nm 0.0297
Lab 657: first reported 268.5nm 0.026, 250 nm 0.125

UV 300 nm

UV 268.5 nm

UV 250 nm

UV 240 nm

UV 230 nm

UV 220 nm
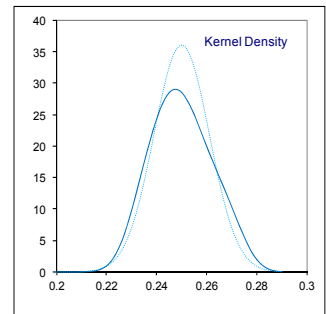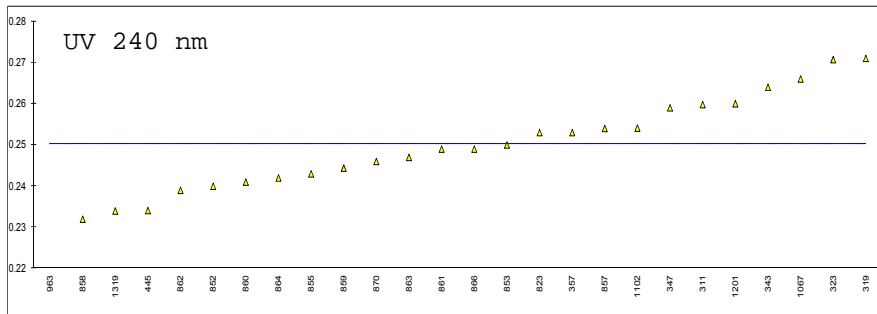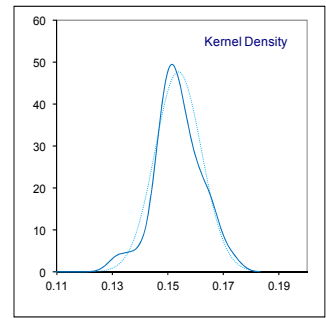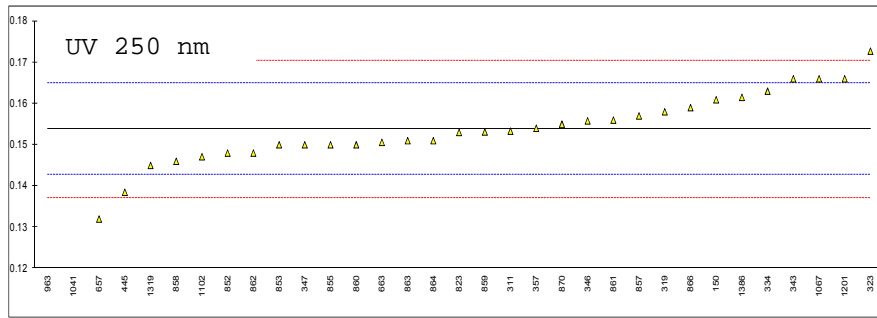
Determination of UV Absorbance (10 mm cuvette) on sample #14161

lab	method	300nm	268.5nm	250nm	240nm	230nm	220nm	Pass/Fail
150		-----	-----	-----	-----	-----	-----	----
171	IMPCA004	0.0018	0.00955	0.0333	0.0404	0.0989	0.2347	Fail
311		-----	-----	-----	-----	-----	-----	-----
319		-----	-----	-----	-----	-----	-----	-----
323		-----	-----	-----	-----	-----	-----	-----
334		-----	-----	-----	-----	-----	-----	-----
343		-----	-----	-----	-----	-----	-----	-----
346		-----	-----	-----	-----	-----	-----	-----
347		-----	-----	-----	-----	-----	-----	-----
357		-----	-----	-----	-----	-----	-----	-----
372		-----	-----	-----	-----	-----	-----	-----
395	IMPCA004	0.000	**0.003**	0.025	0.046	0.101	0.222	Fail
444		-----	-----	-----	-----	-----	-----	-----
445		-----	-----	-----	-----	-----	-----	-----
528		-----	-----	-----	-----	-----	-----	-----
529		-----	-----	-----	-----	-----	-----	-----
551		-----	-----	-----	-----	-----	-----	-----
657		-----	-----	-----	-----	-----	-----	-----
663		-----	-----	-----	-----	-----	-----	-----
823		-----	-----	-----	-----	-----	-----	-----
824	IMPCA004	0.0027	0.0096	0.0300	0.0502	0.1082	0.2303	Fail
825	IMPCA004	0.003	0.009	0.030	0.050	0.107	0.223	Fail
849		-----	-----	-----	-----	-----	-----	-----
852		-----	-----	-----	-----	-----	-----	-----
853		-----	-----	-----	-----	-----	-----	-----
855		-----	-----	-----	-----	-----	-----	-----
857		-----	-----	-----	-----	-----	-----	-----
858		-----	-----	-----	-----	-----	-----	-----
859		-----	-----	-----	-----	-----	-----	-----
860		-----	-----	-----	-----	-----	-----	-----
861		-----	-----	-----	-----	-----	-----	-----
862		-----	-----	-----	-----	-----	-----	-----
863		-----	-----	-----	-----	-----	-----	-----
864		-----	-----	-----	-----	-----	-----	-----
866		-----	-----	-----	-----	-----	-----	-----
870		-----	-----	-----	-----	-----	-----	-----
913		-----	-----	-----	-----	-----	-----	-----
963		-----	-----	-----	-----	-----	-----	-----
974	IMPCA004	-----	-----	**0.072**	**0.096**	**0.159**	0.283 ex	Fail
994		-----	-----	-----	-----	-----	-----	-----
1041		-----	-----	-----	-----	-----	-----	-----
1067		-----	-----	-----	-----	-----	-----	-----
1102		-----	-----	-----	-----	-----	-----	-----
1201		-----	-----	-----	-----	-----	-----	-----
1264		-----	-----	-----	-----	-----	-----	-----
1319		-----	-----	-----	-----	-----	-----	-----
1342	IMPCA004	0.003	0.010	0.035	0.055	0.118	0.259	Pass
1386		-----	-----	-----	-----	-----	-----	-----
1438		-----	-----	**0.05**	-----	**0.19**	-----	-----
	normality	unknown	unknown	unknown	unknown	unknown	unknown	
	n	5	4	5	5	5	5	
	outliers	0	1	2	1	2	0 + 1 excl.	
	mean (n)	0.0021	0.0095	0.0307	0.0483	0.1066	0.2338	
	st.dev. (n)	0.00127	0.00041	0.00383	0.00546	0.00747	0.01503	
	R(calc.)	0.0036	0.0012	0.0107	0.0153	0.0209	0.0421	
	R(IMPCA004:08)	0.0031	0.0026	0.0031	unknown	unknown	0.0671	

Bold and underlined test results are outliers acc. Grubs/Dixon/Rosner

z-scores UV absorbance

	50mm Cuvette						10mm Cuvette					
lab	300nm	268.5nm	250nm	240nm	230nm	220nm	300nm	268.5nm	250nm	240nm	230nm	220nm
150	0.05	0.88	1.28	-----	-----	0.33	-----	-----	-----	-----	-----	-----
171	-----	-----	-----	-----	-----	-----	-0.27	0.01	2.39	-----	-----	0.04
311	-0.46	-0.14	-0.09	-----	-----	0.76	-----	-----	-----	-----	-----	-----
319	-0.01	0.26	0.76	-----	-----	0.31	-----	-----	-----	-----	-----	-----
323	-0.03	0.77	3.41	-----	-----	0.99	-----	-----	-----	-----	-----	-----
334	-1.07	-9.49	1.66	-----	-----	0.76	-----	-----	-----	-----	-----	-----
343	0.13	0.70	2.20	-----	-----	0.16	-----	-----	-----	-----	-----	-----
346	0.42	0.92	0.36	-----	-----	-0.26	-----	-----	-----	-----	-----	-----
347	-0.01	0.70	-0.68	-----	-----	0.53	-----	-----	-----	-----	-----	-----
357	-0.27	0.26	0.04	-----	-----	0.08	-----	-----	-----	-----	-----	-----
372	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
395	-----	-----	-----	-----	-----	-----	-1.87	-7.08	-5.12	-----	-----	-0.49
444	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
445	-1.85	-4.75	-2.76	-----	-----	0.00	-----	-----	-----	-----	-----	-----
528	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
529	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
551	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
657	-0.27	-1.73	-3.93	-----	-----	-0.63	-----	-----	-----	-----	-----	-----
663	-0.11	0.17	-0.58	-----	-----	-0.34	-----	-----	-----	-----	-----	-----
823	-0.01	0.04	-0.14	-----	-----	0.12	-----	-----	-----	-----	-----	-----
824	-----	-----	-----	-----	-----	-----	0.53	0.07	-0.60	-----	-----	-0.15
825	-----	-----	-----	-----	-----	-----	0.80	-0.58	-0.60	-----	-----	-0.45
849	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
852	0.13	0.48	-1.04	-----	-----	-0.37	-----	-----	-----	-----	-----	-----
853	0.13	-0.18	-0.68	-----	-----	0.03	-----	-----	-----	-----	-----	-----
855	0.26	0.70	-0.68	-----	-----	-0.57	-----	-----	-----	-----	-----	-----
857	-0.14	0.48	0.58	-----	-----	-0.09	-----	-----	-----	-----	-----	-----
858	0.13	0.48	-1.40	-----	-----	-0.29	-----	-----	-----	-----	-----	-----
859	0.26	0.75	-0.12	-----	-----	-0.51	-----	-----	-----	-----	-----	-----
860	-0.01	-0.18	-0.68	-----	-----	-0.65	-----	-----	-----	-----	-----	-----
861	0.13	0.70	0.40	-----	-----	-0.15	-----	-----	-----	-----	-----	-----
862	-0.27	-0.18	-1.04	-----	-----	-0.73	-----	-----	-----	-----	-----	-----
863	0.13	0.26	-0.50	-----	-----	-0.13	-----	-----	-----	-----	-----	-----
864	0.13	0.04	-0.50	-----	-----	-0.32	-----	-----	-----	-----	-----	-----
866	-0.27	0.04	0.94	-----	-----	-0.12	-----	-----	-----	-----	-----	-----
870	-0.14	0.04	0.22	-----	-----	-0.59	-----	-----	-----	-----	-----	-----
913	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
963	-1.51	-8.15	-21.68	-----	-----	-7.71	-----	-----	-----	-----	-----	-----
974	-----	-----	-----	-----	-----	-----	-----	-----	37.38	-----	-----	2.05
994	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1041	-----	23.76	-19.43	-----	-----	-----	-----	-----	-----	-----	-----	-----
1067	0.13	1.36	2.20	-----	-----	0.83	-----	-----	-----	-----	-----	-----
1102	-0.05	-3.76	-1.21	-----	-----	0.46	-----	-----	-----	-----	-----	-----
1201	0.26	1.80	2.20	-----	-----	0.62	-----	-----	-----	-----	-----	-----
1264	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1319	-0.54	-2.17	-1.58	-----	-----	-0.25	-----	-----	-----	-----	-----	-----
1342	-----	-----	-----	-----	-----	-----	0.80	0.50	3.92	-----	-----	1.05
1386	0.33	1.25	1.39	-----	-----	0.01	-----	-----	-----	-----	-----	-----
1438	-----	-----	-----	-----	-----	-----	-----	-----	17.49	-----	-----	-----

APPENDIX 2

Number of participants per country

1 lab in	AUSTRIA
1 lab in	AZERBAIJAN
1 lab in	BELGIUM
3 labs in	BRAZIL
3 labs in	CANADA
19 labs in	CHINA, People's Republic
1 lab in	EGYPT
1 lab in	ESTONIA
1 lab in	FINLAND
3 labs in	FRANCE
2 labs in	GERMANY
2 labs in	INDIA
1 lab in	ISRAEL
1 lab in	ITALY
1 lab in	JAPAN
4 labs in	MALAYSIA
2 labs in	MEXICO
6 labs in	NETHERLANDS
2 labs in	NEW ZEALAND
1 lab in	NORWAY
1 lab in	PORTUGAL
1 lab in	ROMANIA
1 lab in	RUSSIAN FEDERATION
4 labs in	SAUDI ARABIA
1 lab in	SINGAPORE
3 labs in	SOUTH KOREA
5 labs in	SPAIN
1 lab in	THAILAND
1 lab in	TURKEY
2 labs in	UNITED ARAB EMIRATES
4 labs in	UNITED KINGDOM
7 labs in	UNITED STATES OF AMERICA
2 labs in	VENEZUELA
1 lab in	VIETNAM

APPENDIX 3

Abbreviations:

C	= final result after checking of first reported suspect result
D(0.01)	= outlier in Dixon's outlier test
D(0.05)	= straggler in Dixon's outlier test
G(0.01)	= outlier in Grubbs' outlier test
G(0.05)	= straggler in Grubbs' outlier test
DG(0.01)	= outlier in Double Grubbs' outlier test
DG(0.05)	= straggler in Double Grubbs' outlier test
R(0.01)	= outlier in Rosner outlier test
R(0.05)	= straggler in Rosner outlier test
E	= error in calculations
U	= reported in different unit
ex	= excluded from calculations
n.a.	= not applicable
W	= result withdrawn on request of participant

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