

Results of Proficiency Test
Fuel/Bio-ethanol
November 2014

Organised by: Institute for Interlaboratory Studies (iis)
Spijkenisse, the Netherlands

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Report: iis14C10

March 2015

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1 INTRODUCTION

Since 1995, a proficiency test for Fuel/Bio-Ethanol 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 Fuel/Bio-ethanol in agreement with EN15376:14 and ASTM D4806:14. In this interlaboratory study for Fuel/Bio-ethanol, 76 laboratories in 29 different countries have participated. See appendix 2 for the number of participants per country. In this report, the results of the Fuel/Bio-Ethanol 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 (iis) in Spijkenisse, the Netherlands, was the organiser of this proficiency test. Sample analyses for fit-for-use and homogeneity testing were subcontracted to an accredited laboratory. It was decided to send 2 samples of Ethanol 1 * 1 L bottle of Fuel/Bio Ethanol labelled #14230 and 1* 0.25 L bottle of Fuel/Bio Ethanol labelled #14231, especially for Gas Chromatography. Participants were requested to report rounded and unrounded results. The unrounded results were preferably used for statistical evaluation.

2.1 ACCREDITATION

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

2.2 PROTOCOL

The protocol followed in the 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 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 bulk material for samples #14230 and #14231 was obtained from a local trader. The bulk material was split in two for preparation of the samples.

Approximately 165 litre bulk sample was homogenised in a precleaned drum and divided over 110 amber glass bottles of 1L (labelled #14230). The homogeneity of the subsamples #14230 was checked by determination of Density in accordance with ASTM D4052 and Water in accordance with ASTM E203 on 8 stratified randomly selected samples.

	<i>Density @ 15°C in kg/L</i>	<i>Water in %M/M</i>
Sample #14230-1	0.79430	0.169
Sample #14230-2	0.79430	0.170
Sample #14230-3	0.79430	0.170
Sample #14230-4	0.79430	0.172
Sample #14230-5	0.79431	0.174
Sample #14230-6	0.79431	0.170
Sample #14230-7	0.79431	0.173
Sample #14230-8	0.79431	0.173

Table 1: Homogeneity tests results of subsamples #14230

From the test results of table 1, the repeatabilities were calculated and compared with 0.3 times the corresponding target reproducibility in agreement with the procedure of ISO 13528, Annex B2 in the next table:

	<i>Density @ 15 °C in kg/L</i>	<i>Water in %M/M</i>
r (Observed)	0.00001	0.005
reference method	ISO12185:96	E203:08
0.3 * R (ref. Method)	0.00015	0.023

Table 2: Repeatability of subsamples #14230

The second part of the batch, approximately 30 litres, was homogenised and divided over 110 amber glass bottles of 0.25 litres (labelled #14231). The homogeneity of the subsamples #14231 was checked by determination of Methanol in accordance with EN15721, proc. A.

	<i>Methanol in %M/M</i>
Sample #14231-1	0.0058
Sample #14231-2	0.0060
Sample #14231-3	0.0061
Sample #14231-4	0.0063
Sample #14231-5	0.0060
Sample #14231-6	0.0057
Sample #14231-7	0.0065
Sample #14231-8	0.0056

Table 3: Homogeneity tests results of subsamples #14231

From the test results of table 3, the repeatability was calculated and compared with 0.3 times the corresponding target reproducibility in agreement with the procedure of ISO 13528, Annex B2 in the next table:

	<i>Methanol in %M/M</i>
r (Observed)	0.0008
reference method	D5501:12e1
0.3 * R (ref. method)	0.0040

Table 4: Repeatability of subsamples #14231

The calculated repeatabilities of both samples are in agreement with the 0.3 times the reproducibility limits of the respective test methods. Therefore the homogeneity of the subsamples #14230 and #14231 was assumed.

To each of the participating laboratories: 1 * 1 L bottle (labelled #14230) and 1 * 0.25 L bottle (labelled #14231) were sent on November 12, 2014.

2.5 STABILITY OF THE SAMPLES

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

2.6 ANALYSES

The participants were asked to determine on sample #14230: Acidity (Total), Appearance, Copper, Density at 20 °C, Electrical conductivity at 25 °C, Inorganic Chloride as Cl, Involatile material content, Nitrogen, Phosphorus, Sulphate content, Sulphur (Total) and Water (coulometric and titrimetric).

On sample #14231 was asked to determine: Ethanol, Acetaldehyde, Acetal, Acetone, Benzene, Cyclohexane, Crotonaldehyde, DEG, Dioxane, Ethyl acetate, iso-Butanol, iso-Propanol, MEG, Methanol, 3-methyl-1-Butanol, 2-methyl-1-Butanol, sum of 3-methyl-1-Butanol and 2-methyl-1-Butanol, n-Amyl alcohol, n-Butanol, n-Propanol, sec-Amyl alcohol, sec-Butanol, tert-Amyl alcohol and tert-Butanol.

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 received. The original reported results are tabulated per determination in appendix 1 of this report. The laboratories are presented by their code numbers.

Directly after deadline, a reminder fax was sent to those laboratories that had not yet reported.

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 (raw data of the) reported results.

Additional or corrected results have been 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.16). 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 visualise the data against the reproducibilities from literature, Gauss plots were made, using the sorted data for each determination (see appendix 1). On the Y-axis the reported analysis results are plotted. The corresponding laboratory numbers are under the X-axis. The straight horizontal line presents the consensus value (a trimmed mean). The four striped lines, parallel to the consensus value line, are the +3s, +2s, -2s and -3s target reproducibility limits of the selected standard. Outliers and other data, which were excluded from the calculations, are represented as a cross. Accepted data are represented as a triangle. Furthermore, Kernel Density Graphs were made. This is a method for producing a smooth density approximation to a set of data that avoids some problems associated with histograms (see appendix 3; nos.14 and 15). Also a normal Gauss curve was projected over the Kernel Density Graph for reference.

3.3 Z-SCORES

To evaluate the performance of the participating laboratories the z-scores were calculated. As it was decided to evaluate the performance of the participants in this proficiency test (PT) against the literature requirements, e.g. 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:

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

The $Z_{(\text{target})}$ 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. Eight participants reported after the deadline and 15 participants did not report any result at all. Not all participants were able to report all requested parameters. Not all laboratories were able to perform all analyses requested. The 68 reporting laboratories did report 837 results. Observed were 41 outlying results, which is 4.9%. In proficiency studies, outlier percentages of 3% - 7.5% are 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.

For the components measured by Gas Chromatography, except Ethanol and Methanol, the observed spreads were compared against the (strict) reproducibility estimated from the Horwitz equation.

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 problematic for a number of laboratories. Four statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in full agreement with the requirements of EN15491:07 and ASTM D1613:12.

Appearance: This determination was not problematic. All participants agreed about the appearance of sample #14230 as clear and free of suspended matter.

Copper: Only seven laboratories reported a numerical result. All other reported a less than value. Therefore no statistical conclusions were drawn.

Density @20°C: This determination was problematic for a number of laboratories. Six statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with the requirements of ISO12185:96.

Electrical Conductivity: This determination was very problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not at all in agreement with the requirements of EN15938:10.

Inorganic chloride: The consensus value of the group was below application range of the methods EN15492:12 (1 – 30 mg/L), ASTM D7319:13 (0.75– 50 mg/L) and EN15484:07 (4 – 30 mg/L). Therefore no statistical conclusions were drawn.

Involatile matter: All test results, except one, were below the application range of the test method EN15691:09 (10 – 25 mg/100ml). Therefore no significant conclusions were drawn.

Nitrogen: This determination was very problematic. No statistical outliers were observed. However, the calculated reproducibility is not at all in agreement with the requirements of D4629:12.

Phosphorous: All test results were near or below the application range of method EN15487:07 (0.15 – 1.50 mg/kg). Therefore no statistical conclusions were drawn.

Sulphate: The consensus value of the group was below application range of the methods EN15492:12 (1 – 20 mg/L) and ASTM D7319:09 (1– 50 mg/L). Therefore no statistical conclusions were drawn.

Total Sulphur: Although the sulphur concentration was below the application ranges of the test methods EN15485:07 (7– 20 mg/kg) and EN15486:07 (5 – 20 mg/kg), this determination may not be problematic. No statistical outliers were observed and the calculated reproducibility is in good agreement with the requirements of EN15485:07 and EN15486:07, but not in agreement with the requirements of ASTM D5453:09. When the test results from ASTM D5453:09 are evaluated separately than the calculated reproducibility is also not in agreement with the requirements of ASTM D5453:09.

Water: The coulometric or the titrimetric Karl Fisher method can be used for this determination. In total three statistical outliers were observed. The calculated reproducibility for the coulometric method is in full agreement with the requirements of EN15489:07 and ASTM E1064:12. For the titrimetric Karl Fisher method the calculated reproducibility is in good agreement with the requirements of ASTM E203:08.

Ethanol: This determination may be problematic, depending on the method used. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not at all in agreement with the requirements of EN15721:13 but is in good agreement with the requirements of ASTM D5501:12e1 (20 – 100%).

- Acetaldehyde: This determination may be very problematic. Five statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not at all in agreement with the estimated reproducibility using the Horwitz equation.
- Acetal: This determination may be very problematic. One statistical outlier was observed. However, the calculated reproducibility after rejection of the statistical outlier is not at all in agreement with the estimated reproducibility using the Horwitz equation.
- Ethyl acetate: This determination was not problematic. Three statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the estimated reproducibility using the Horwitz equation.
- iso-Butanol: This determination may be problematic. No statistical outliers were observed. However, the calculated reproducibility is not in agreement with the estimated reproducibility using the Horwitz equation.
- Methanol: This determination was not problematic. Three statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with the requirements of ASTM D5501:12e1. When using standard EN15721:13 a negative value for the reproducibility was found at this concentration level.
- 3-Me-1-Butanol: This determination may be problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the estimated reproducibility using the Horwitz equation.
- 2-Me-1-Butanol: This determination may be very problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not at all in agreement with the estimated reproducibility using the Horwitz equation.
- Sum of 3-Me-1-Butanol and 2-Me-1-Butanol: This determination may be not problematic. Two statistical outliers were observed and one test result was excluded because the summation was not correct. Eight laboratories reported the sum but did not report the test results for the individual components. The calculated reproducibility after rejection of the suspect data is in agreement with the estimated reproducibility using the Horwitz equation.
- n-Butanol: 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 estimated reproducibility using the Horwitz equation.

n-Propanol: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with the estimated reproducibility using the Horwitz equation.

Other GC components: The concentrations of the components Acetone, Benzene, Cyclohexane, Crotonaldehyde, DEG, Dioxane, iso-Propanol, MEG, n-Amyl alcohol, sec-Amyl alcohol, sec-Butanol, tert-Amyl alcohol, and tert-Butanol, were all near or below the detection limit. Therefore no significant conclusions were drawn.

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 or EN standards) or the Horwitz equation are compared in the next table.

Parameter	unit	n	average	2.8 *sd _R	R (lit)
Acidity as Acetic acid	%M/M	53	0.0018	0.0014	0.0014
Appearance		53	B&C	n.a.	n.a
Copper	mg/kg	30	<0.07	n.a	n.a
Density @ 20°C	kg/L	57	0.7901	0.0003	0.0005
Electrical conductivity	µS/cm	28	1.34	0.49	0.23
Inorganic Chloride as Cl	mg/kg	21	0.25	0.47	(0.52)
Involatile material content	mg/100 mL	32	1.43	3.20	(0.26)
Nitrogen	mg/kg	21	2.30	2.51	1.24
Phosphorous	mg/L	6	0.02	0.07	(0.06)
Sulphate	mg/kg	23	0.89	0.80	(0.34)
Total Sulphur	mg/kg	29	0.83	0.67	3.32
Water coulometric	%M/M	53	0.180	0.023	0.022
Water titrimetric	%M/M	28	0.174	0.020	0.078

Table 5: Reproducibilities of sample #14230

results between brackets should be used with care, because the average was near or below the application range.

Parameter	Unit	n	average	2.8 *sd _R	R (lit)
Ethanol	%M/M	42	99.587	0.349	0.147
Acetaldehyde	%M/M	28	0.017	0.006	0.004
Acetal	%M/M	29	0.020	0.008	0.004
Acetone	%M/M	22	<0.01	n.a.	n.a.
Benzene	%M/M	23	<0.01	n.a.	n.a.
Cyclohexane	%M/M	17	<0.01	n.a.	n.a.
Crotonaldehyde	%M/M	12	<0.01	n.a.	n.a.
DEG	%M/M	10	<0.01	n.a.	n.a.
Dioxane	%M/M	12	<0.01	n.a.	n.a.
Ethyl acetate	%M/M	32	0.013	0.002	0.003
iso-Butanol	%M/M	41	0.051	0.011	0.009
iso-Propanol	%M/M	22	<0.01	n.a.	n.a.
Methanol	%M/M	42	0.006	0.003	0.013
3-Me-1-Butanol	%M/M	25	0.071	0.018	0.012
2-Me-1-Butanol	%M/M	24	0.021	0.011	0.004
Sum 2-Me-1-BuOH+3-Me-1-BuOH	%M/M	28	0.091	0.019	0.021
n-Butanol	%M/M	32	0.0015	0.0010	0.0004
n-Propanol	%M/M	39	0.072	0.013	0.012
sec-Butanol	%M/M	29	<0.01	n.a.	n.a.
n-Amylalcohol	%M/M	17	<0.01	n.a.	n.a.
sec-Amylalcohol	%M/M	11	<0.01	n.a.	n.a.
MEG	%M/M	10	<0.01	n.a.	n.a.
tert-Amylalcohol	%M/M	13	<0.01	n.a.	n.a.
tert-Butanol	%M/M	13	<0.01	n.a.	n.a.

Table 6: Reproducibilities of sample #14231

results between brackets should used with care, because the average was near or below the application range.

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

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

	<i>November 2014</i>	<i>November 2013</i>	<i>November 2012</i>	<i>November 2011</i>
Number of reporting labs	68	71	67	55
Number of results reported	817	880	845	805
Statistical outliers	42	41	52	45
Percentage outliers	5.1%	4.7%	6.2%	5.6%

Table 7: Comparison with previous proficiency tests.

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

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

Determination	November 2014	November 2013	November 2012	November 2011
Acidity as Acetic Acid	+/-	+	+/-	+/-
Density @ 20°C	++	+	++	++
Electric conductivity	--	--	--	--
Inorganic Chloride as Cl	+	-	(+)	--
Involatile Matter	(--)	(--)	(--)	--
Nitrogen	--	-	--	--
Phosphorus as P	(+/-)	(--)	(-)	(+/-)
Sulphate	(--)	(--)	++	(--)
Total Sulphur	++	++	++	++
Water coulometric	+/-	+	++	+
Water titrimetric	++	++	++	++
Ethanol	--	++	n.e.	n.e.
Acetal	--	--	--	+
Acetaldehyde	--	n.e.	n.e.	--
Acetone	n.e.	n.e.	n.e.	(--)
Benzene	n.e.	+/-	n.e.	n.e.
Cyclohexane	n.e.	n.e.	n.e.	n.e.
Crotonaldehyde	n.e.	n.e.	n.e.	n.e.
DEG	n.e.	n.e.	n.e.	n.e.
Dioxane	n.e.	n.e.	n.e.	n.e.
Ethylacetate	+	-	-	+/-
iso-Butanol	-	-	-	+/-
iso-Propanol	n.e.	n.e.	n.e.	n.e.
Methanol	++	++	++	+/-
3-Methyl-1-butanol	-	--	--	n.e.
2-Methyl-1-butanol	--	--	--	n.e.
Sum 3-Me- + 2-Me-1-BuOH	+	-	n.e.	n.e.
n-Butanol	--	-	--	--
n-Propanol	+/-	+/-	+	++
sec-Butanol	n.e.	n.e.	n.e.	(--)
n-Amyl alcohol	n.e.	n.e.	n.e.	n.e.
sec-Amyl alcohol	n.e.	n.e.	n.e.	n.e.
MEG	n.e.	n.e.	n.e.	n.e.
tert-Amyl alcohol	n.e.	n.e.	n.e.	n.e.
tert-Butanol	n.e.	n.e.	n.e.	n.e.

Table 8: comparison determinations against the standard results between brackets are compared with the spread of the previous round robin

The performance of the determinations against the requirements of the respective standards is listed in the above table. The following performance categories were used:

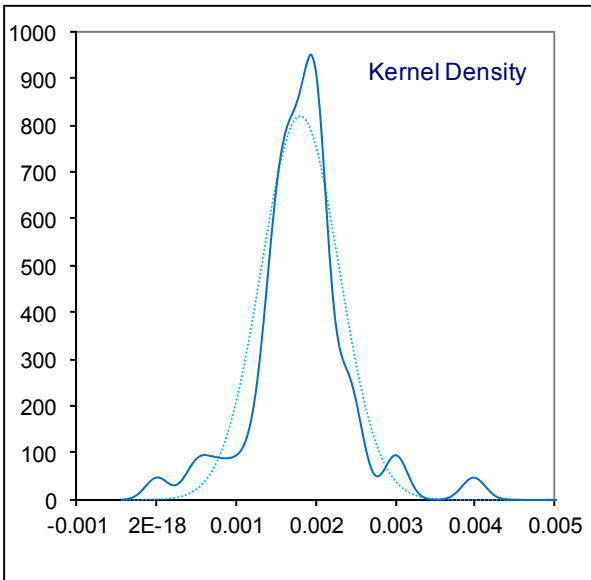
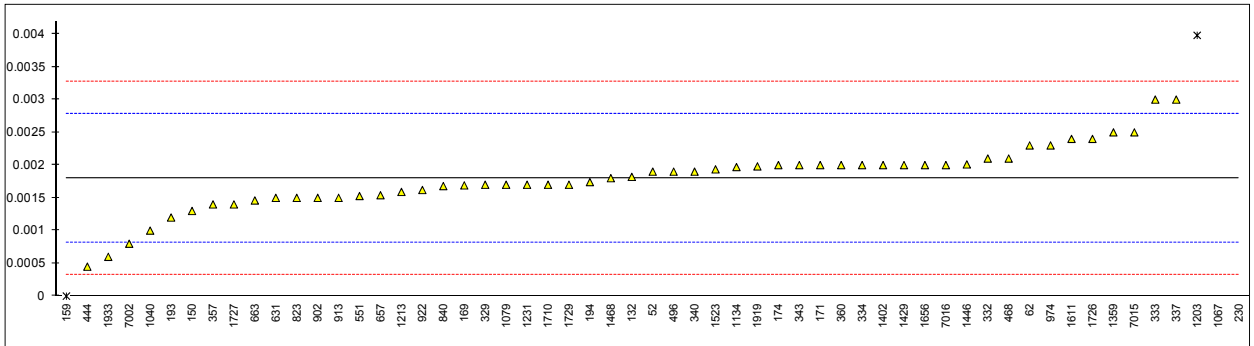
- ++: group performed much better than the standard
- + : group performed better than the standard
- +/-: group performance equals the standard
- : group performed worse than the standard
- : group performed much worse than the standard
- n.e.: not evaluated

APPENDIX 1**Determination of Acidity as Acetic Acid on sample #14230; results in %M/M**

lab	method	value	mark	z(targ)	remarks
52	EN15491	0.0019		0.21	
62	D1613	0.0023		1.03	
120		----		----	
131		----		----	
132	D7795	0.00182		0.04	
150	D1613	0.0013		-1.02	
159	EN15491	0.0	R(0.01)	-3.68	
169	D1613	0.00169		-0.22	
171	EN15491	0.0020		0.41	
174	EN15491	0.0020		0.41	
193	D1613	0.0012		-1.22	
194	D1613	0.00174		-0.12	
230	D1613	0.01389	R(0.01)	24.71	
311	EN15491	<0.003		----	
323	EN15491	<0.003		----	
329	EN15491	0.0017		-0.20	
332	EN15491	0.0021		0.62	
333	EN15491	0.003		2.46	
334	EN15491	0.002		0.41	
337	EN15491	0.003		2.46	
338		----		----	
340	EN15491	0.0019		0.21	
343	EN15491	0.002		0.41	
357	EN15491	0.0014		-0.81	
360	EN15491	0.0020		0.41	
441		----		----	
444	EN15491	0.00045		-2.76	
468	EN15491	0.0021		0.62	
496	EN15491	0.0019		0.21	
511		----		----	
541	EN15491	<0.003		----	
551	D1613	0.001528		-0.55	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631	D1613	0.0015		-0.61	
657	D1613	0.00154		-0.53	
663	D1613	0.00146		-0.69	
823	D1613	0.0015		-0.61	
840	D1613	0.00168		-0.24	
902	D1613	0.0015		-0.61	
913	D1613	0.0015		-0.61	
922	D1613	0.00162		-0.36	
974	EN15491	0.0023		1.03	
1040	EN15491	0.001		-1.63	
1067	EN15491	0.012	R(0.01)	20.85	
1079	EN15491	0.0017		-0.20	
1126		----		----	
1134	IP538	0.00197		0.35	
1161		----		----	
1201		----		----	
1203		0.00398	R(0.01)	4.46	
1213	D1613	0.00159		-0.43	
1231	D1613	0.0017	C	-0.20	probably unit error, reported:17
1263		----		----	
1359	EN15491	0.0025		1.43	
1402	EN15491	0.002		0.41	
1429	EN15491	0.002		0.41	
1446	EN15491	0.00201		0.43	
1459		----		----	
1468	EN15491	0.0018		0.00	
1523		0.001935		0.28	
1605		----		----	
1611	EN15491	0.0024		1.23	
1656	EN15491	0.002		0.41	
1710	EN15491	0.0017		-0.20	
1726	EN15491	0.0024		1.23	
1727		0.0014		-0.81	
1729	D1613	0.0017		-0.20	
1835	EN15491	<0.003		----	
1919	D1613	0.00198		0.37	
1933	EN15491	0.0006		-2.45	
7002	EN15491	0.0008		-2.04	
7015	EN15491	0.0025		1.43	
7016	EN15491	0.002		0.41	

normality	suspect
n	53
outliers	4
mean (n)	0.00180
st.dev. (n)	0.000488
R(calc.)	0.00137
R(EN15491:07)	0.00137
Compare	
R(D1613:12)	0.00140

Application range: 0.003 – 0.015 %M/M



Determination of Appearance on sample #14230;

lab	method	value	mark	z(targ)	Remarks
52	D4176	Pass		----	
62	D4176	C&B		----	
120		----		----	
131		----		----	
132	D4176	C&B		----	
150	EN15769	C&B		----	
159		Clear		----	
169	Visual	CFSM		----	
171	EN15769	C&F		----	
174	E2680	Pass		----	
193	D4176	C&B		----	
194	D4176	C&B		----	
230		Pass		----	
311	EN15769	C&C		----	
323	EN15769	CCL		----	
329	EN15769	C&B		----	
332	Visual	CCL		----	
333	EN15769	CCL		----	
334		----		----	
337		----		----	
338	Visual	C&B		----	
340	EN15769	CCL		----	
343	INH1608	C&B		----	
357	E2680	Pass		----	
360	EN15769	CCL		----	
441	EN15769	CCL		----	
444	EN15769	Pass		----	
468	EN15769	C&C		----	
496	EN15769	C&C		----	
511		----		----	
541	EN15769	C&B		----	
551	EN15769	C&B		----	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631	Visual	C&B		----	
657	E2680	Pass		----	
663	Visual	C&B		----	
823	E2680	Pass		----	
840	E2680	Pass		----	
902	EN15769	Pass		----	
913	Visual	CFSM		----	
922	Visual	CFSM		----	
974	Visual	C&B		----	
1040		----		----	
1067		C&B		----	
1079	Visual	C&B		----	
1126		----		----	
1134	IP573	C&C		----	
1161		----		----	
1201		----		----	
1203		----		----	
1213	D4176	C&B		----	
1231		C&B		----	
1263		----		----	
1359	in house	CCL		----	
1402	EN15769	C&C		----	
1429	EN15769	CCL		----	
1446	EN15769	CFSM		----	
1459		----		----	
1468	EN15769	CCL		----	
1523		----		----	
1605		----		----	
1611	EN15769	CCL		----	
1656	EN15769	Pass		----	
1710	EN15769	CCL		----	
1726	EN15769	C&C		----	
1727	Visual	Clear		----	
1729		----		----	
1835	EN15769	C&C		----	
1919		----		----	
1933		----		----	
7002		Clear		----	
7015		----		----	
7016		----		----	

normality	n.a.
n	53
outliers	n.a.
mean (n)	B&C

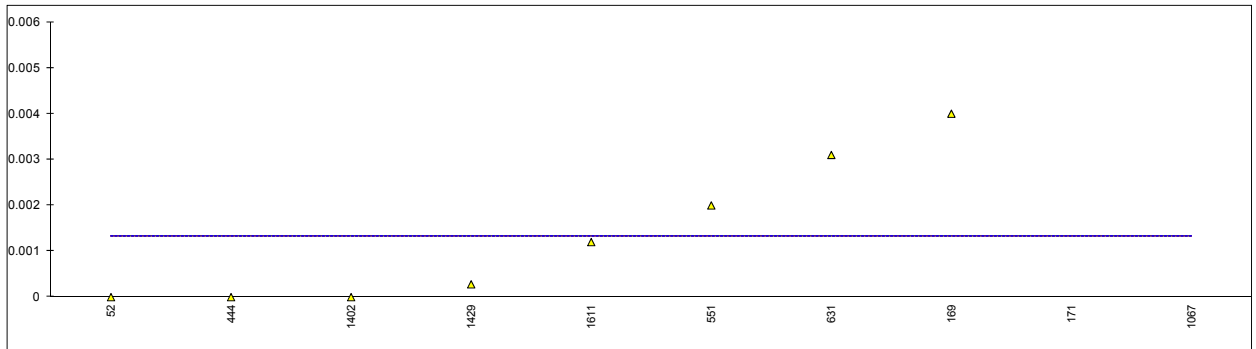
C&B = Clear and Bright
C&C = Clear and Coloured
CCL = Clear and Colourless Liquid
CFFSM = Clear Free from Suspended Matter

Determination of Copper on sample #14230; results in mg/kg

lab	method	value	mark	z(targ)	remarks
52	D1688	0		----	
62		----		----	
120		----		----	
131		----		----	
132	D1688	<0.05		----	
150	EN15488	<0.07		----	
159		----		----	
169	D1688	0.004		----	
171	EN15488	0.070		----	
174	D1688	<0.07		----	
193		----		----	
194		----		----	
230		----		----	
311	EN15837	<0.050		----	
323	EN15488	<0.070		----	
329	EN15488	<0.07		----	
332		----		----	
333	EN15488	<0.07		----	
334		----		----	
337		----		----	
338		----		----	
340		----		----	
343	EN15488	<0.007		----	
357		----		----	
360	EN15837	<0.050		----	
441		----		----	
444	EN15488	0		----	
468	EN15488	<0.07		----	
496		----		----	
511		----		----	
541		<0.01		----	
551	EN15488	0.002		----	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631	D1688	0.0031		----	
657		----		----	
663		----		----	
823	UOP389	<0.01		----	
840		----		----	
902		----		----	
913		----		----	
922	D1688	<0.05		----	
974		----		----	
1040		----		----	
1067	EN15488	1.2	G(0.01)	----	false positive test result?
1079	EN15488	<0.001		----	
1126		----		----	
1134		----		----	
1161		----		----	
1201		----		----	
1203	EN15837	<0.05		----	
1213	D1688	<0.1		----	
1231		----		----	
1263	DIN38406	<0.1		----	
1359	EN15488	<1		----	
1402	EN15488	0.000		----	
1429	EN15488	0.00028		----	
1446		----		----	
1459		----		----	
1468	EN15837	<0.1		----	
1523		----		----	
1605		----		----	
1611	EN15488	0.0012		----	
1656	D1688	<0.05		----	
1710		----		----	
1726		----		----	
1727		----		----	
1729		----		----	
1835		----		----	
1919		----		----	
1933		----		----	
7002		----		----	
7015		----		----	
7016		----		----	

normality n.a
n 30
outliers 1
mean (n) <0.07
st.dev. (n) n.a
R(calc.) n.a
R(EN15488:07) n.a

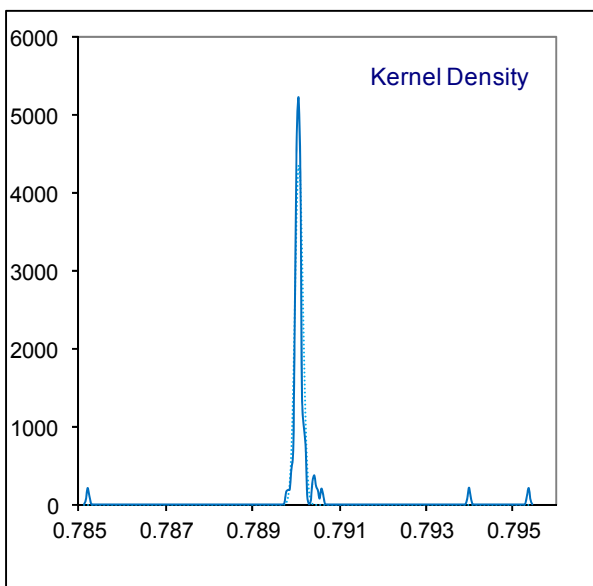
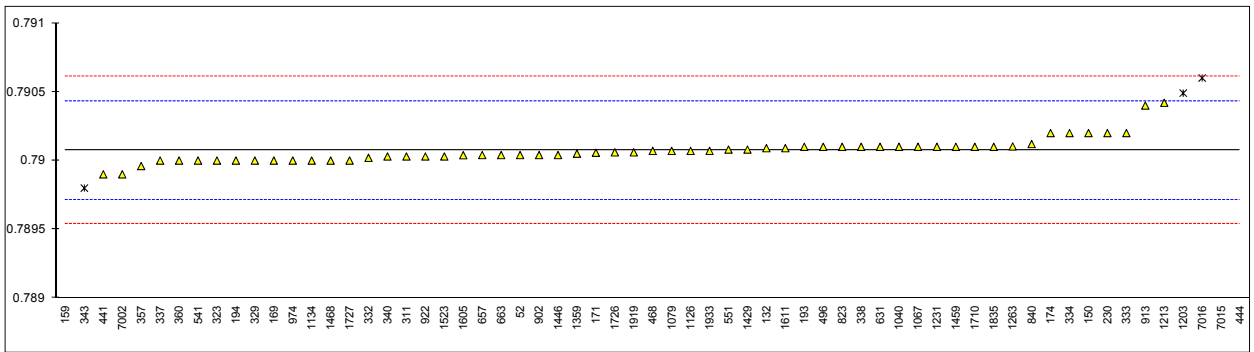
Application range: 0.07 – 0.20 mg/kg



Determination of Density @ 20°C on sample #14230; results in kg/L

lab	method	value	mark	z(targ)	remarks
52	ISO12185	0.79004		-0.18	
62		----		----	
120		----		----	
131		----		----	
132	D4052	0.79009		0.10	
150	ISO12185	0.7902		0.72	
159	ISO12185	0.7852	R(0.01)	-27.28	
169	D4052	0.7900		-0.40	
171	D4052	0.7900567		-0.09	
174	D4052	0.7902		0.72	
193	D4052	0.7901		0.16	
194	D4052	0.7900		-0.40	
230	D1298	0.7902		0.72	
311	D4052	0.79003		-0.24	
323	ISO12185	0.7900		-0.40	
329	D4052	0.7900		-0.40	
332	ISO12185	0.79002	C	-0.29	first reported: 790.02
333	ISO12185	0.7902		0.72	
334	ISO12185	0.7902		0.72	
337	ISO12185	0.7900		-0.40	
338	ISO12185	0.7901		0.16	
340	ISO12185	0.79003	C	-0.24	first reported:790.03 (kg/l)
343	ISO12185	0.7898	R(0.01)	-1.52	
357	ISO12185	0.78996		-0.63	
360	ISO12185	0.7900		-0.40	
441	D4052	0.7899		-0.96	
444	ISO12185	0.79537	R(0.01)	29.67	
468	ISO12185	0.79007		-0.01	
496	ISO12185	0.79010		0.16	
511		----		----	
541	ISO12185	0.7900		-0.40	
551	D4052	0.79008		0.04	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631	D4052	0.7901		0.16	
657	D4052	0.79004		-0.18	
663	D4052	0.79004		-0.18	
823	ISO12185	0.7901		0.16	
840	D4052	0.79012		0.27	
902	D4052	0.79004		-0.18	
913	D4052	0.7904		1.84	
922	D4052	0.79003		-0.24	
974	D4052	0.7900		-0.40	
1040	ISO12185	0.79010		0.16	
1067	ISO12185	0.7901		0.16	
1079	ISO12185	0.79007		-0.01	
1126	ISO12185	0.79007	C	-0.01	first reported:790.07
1134	IP365	0.7900		-0.40	
1161		----		----	
1201		----		----	
1203		0.79049	R(0.01)	2.34	
1213	D4052	0.79042		1.95	
1231	D4052	0.7901		0.16	
1263	ISO12185	0.790103		0.17	
1359	ISO12185	0.79005		-0.12	
1402		----		----	
1429	INH-35	0.79008		0.04	
1446	ISO12185	0.79004		-0.18	
1459	ISO12185	0.7901	C	0.16	first reported:790.1
1468	ISO12185	0.7900		-0.40	
1523	D4052	0.79003		-0.24	
1605	D4052	0.790039		-0.19	
1611	ISO12185	0.79009	C	0.10	first reported:790.09
1656		----		----	
1710	ISO12185	0.7901		0.16	
1726	D4052	0.79006		-0.07	
1727	D4052	0.7900		-0.40	
1729		----		----	
1835	D4052	0.7901		0.16	
1919	D4052	0.79006		-0.07	
1933	ISO12185	0.79007		-0.01	
7002	ISO12185	0.7899		-0.96	
7015	D891	0.794	R(0.01)	22.00	
7016	ISO12185	0.7906	R(0.01)	2.96	

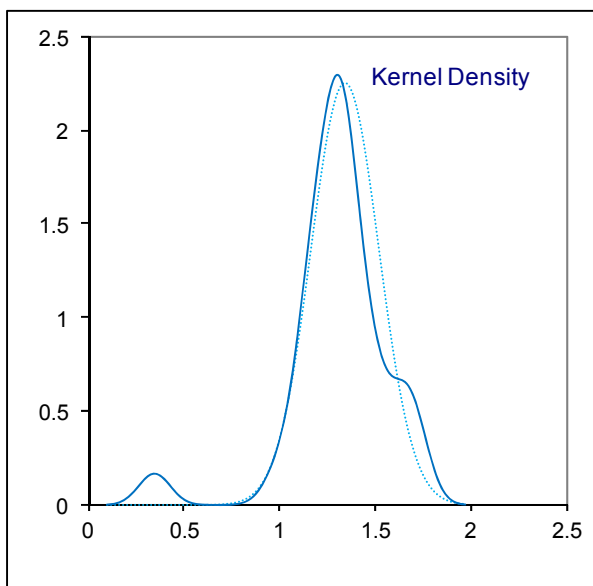
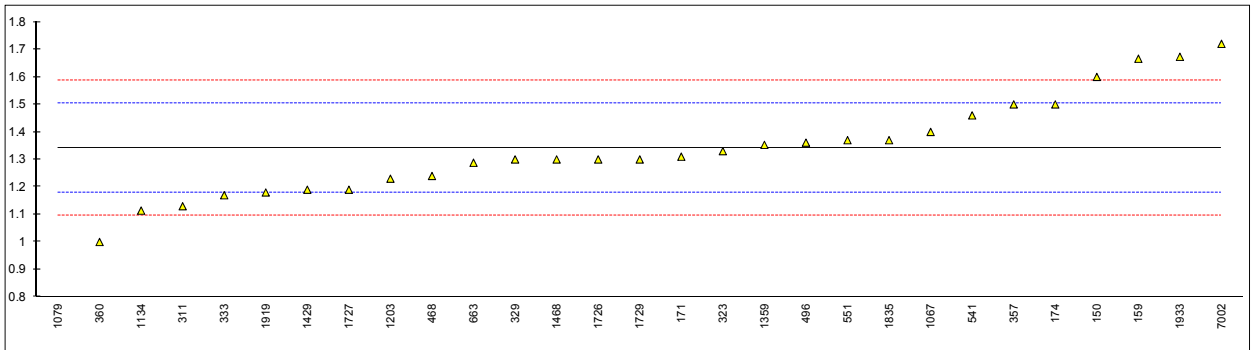
normality	not OK
n	57
outliers	6
mean (n)	0.79007
st.dev. (n)	0.000092
R(calc.)	0.00026
R(ISO12185:96)	0.00050



Determination of Electrical conductivity @ 25°C on sample #14230; results in $\mu\text{S}/\text{cm}$

lab	method	value	mark	z(targ)	remarks
52		----		----	
62		----		----	
120		----		----	
131		----		----	
132		----		----	
150	EN15938	1.6		3.18	
159	EN15938	1.666		3.99	
169		----		----	
171	EN15938	1.31	C	-0.38	first reported:0.14
174	EN15938	1.5		1.95	
193		----		----	
194		----		----	
230		----		----	
311	EN15938	1.13		-2.59	
323	EN15938	1.33		-0.13	
329	EN15938	1.30		-0.50	
332		----		----	
333	EN15938	1.17		-2.10	
334		----		----	
337		----		----	
338		----		----	
340		----		----	
343		----		----	
357	EN15938	1.50		1.95	
360	EN15938	1.00		-4.18	
441		----		----	
444		----		----	
468	EN15938	1.24		-1.24	
496	EN15938	1.361		0.25	
511		----		----	
541	INH-10547	1.46		1.46	
551	INH-10547	1.37		0.36	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631		----		----	
657		----		----	
663	D1125	1.288		-0.65	
823		----		----	
840		----		----	
902		----		----	
913		----		----	
922		----		----	
974		----		----	
1040		----		----	
1067	EN15938	1.40		0.73	
1079	EN15938	0.35	R(0.01)	-12.16	
1126		----		----	
1134	IP586	1.114		-2.78	
1161		----		----	
1201		----		----	
1203		1.230		-1.36	
1213		----		----	
1231		----		----	
1263		----		----	
1359	EN15938	1.353		0.15	
1402		----		----	
1429	EN15938	1.19		-1.85	
1446		----		----	
1459		----		----	
1468	EN15938	1.30		-0.50	
1523		----		----	
1605		----		----	
1611		----		----	
1656		----		----	
1710		----		----	
1726	EN15938	1.30		-0.50	
1727		1.19		-1.85	
1729	D5391	1.3		-0.50	
1835	EN15938	1.37		0.36	
1919	EN15938	1.18		-1.97	
1933	EN15938	1.673		4.07	
7002	EN15938	1.72		4.65	
7015		----		----	
7016		----		----	

normality	OK
n	28
outliers	1
mean (n)	1.341
st.dev. (n)	0.1767
R(calc.)	0.495
R(EN15938:10)	0.228



Determination of Inorganic Chlorides as Cl on sample #14230; results in mg/kg

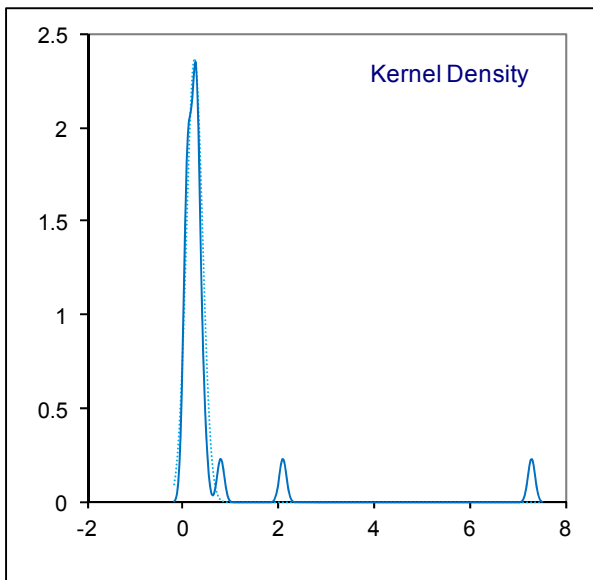
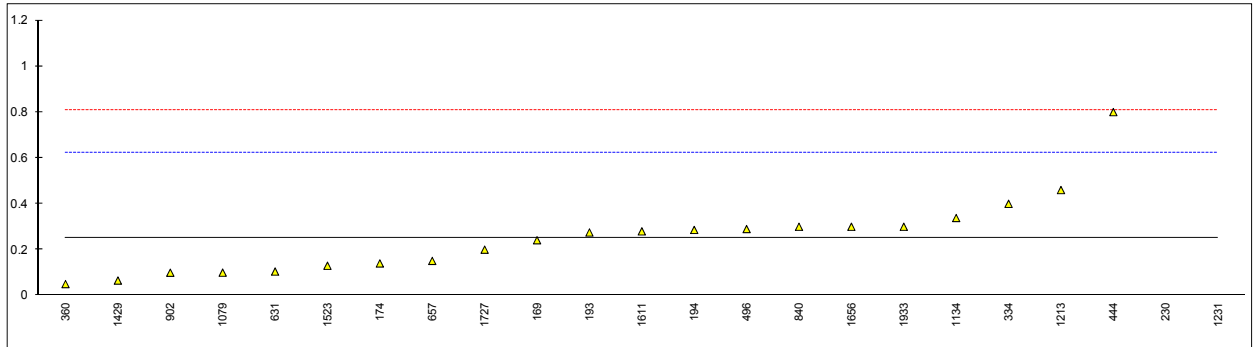
lab	method	value	mark	z(targ)	remarks
52		----		----	
62		----		----	
120		----		----	
131		----		----	
132	D7319	<1		----	
150	D7328	<0.75		----	
159		----		----	
169	D7319	0.241		----	
171		----		----	
174	EN15492	0.14		----	
193	D7319	0.275		----	
194	D7319	0.286		----	
230	D512	2.1	R(0.01)	----	false positive test result?
311	EN15492	<1.0		----	
323	EN15492	<1		----	
329	EN15492	<1		----	
332	EN15484	<4		----	
333	D7319	<1.0		----	
334	EN15492	0.4		----	
337		----		----	
338		----		----	
340	EN15484	<5		----	
343		----		----	
357	EN15492	<1		----	
360	EN15492	0.05		----	
441		----		----	
444	EN15492	0.8		----	
468	EN15492	<0.5		----	
496	EN15492	0.29		----	
511		----		----	
541		----		----	
551	EN15492	<1		----	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631	D512	0.1046		----	
657	D7328	0.151		----	
663	in house	<1		----	
823		----		----	
840	IMPCA002	0.30		----	
902	EN15492	0.0995		----	
913		----		----	
922	D7319	<1.0		----	
974		----		----	
1040		----		----	
1067	EN15492	<1		----	
1079	EN15492	0.1		----	
1126		----		----	
1134	IP563	0.338		----	
1161		----		----	
1201		----		----	
1203		<0,10		----	
1213	D7328	0.46		----	
1231	D512	7.3	R(0.01)	----	false positive test result?
1263	EN15492	<1.0		----	
1359	in house	<1		----	
1402	EN15492	<0.1		----	
1429	EN15492	0.0654		----	
1446		----		----	
1459		----		----	
1468	EN15492	<1,0		----	
1523	D7319	0.130		----	
1605		----		----	
1611	EN15484	0.28		----	
1656	EN15492	0.3		----	
1710		----		----	
1726		----		----	
1727	EN15492	0.2		----	
1729		----		----	
1835	EN15492	<1.0		----	
1919		----		----	
1933	EN15492	0.3		----	
7002		----		----	
7015		----		----	
7016		----		----	

normality not OK
 n 21
 outliers 2
 mean (n) 0.253
 st.dev. (n) 0.1685
 R(calc.) 0.472
 R(EN15492:12) (0.519)
 Compare
 R(D7319:13) (0.159)
 R(EN15484:07) (0.205)

Application range: 1 - 30 mg/kg

Application range: 0.75 – 50 mg/kg

Application range: 4 – 30 mg/kg

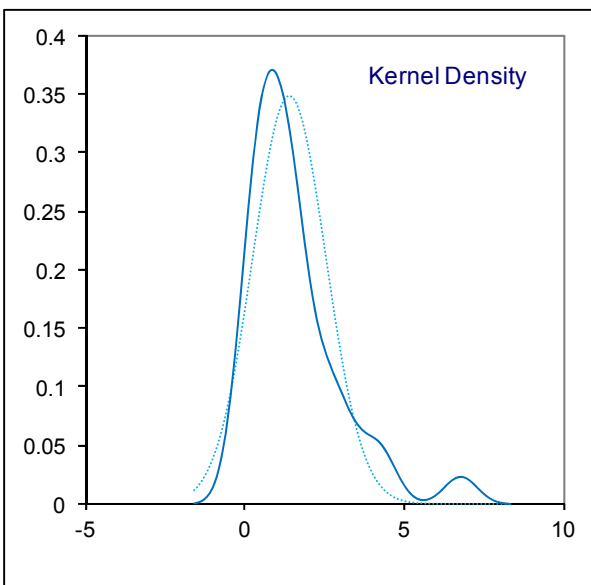
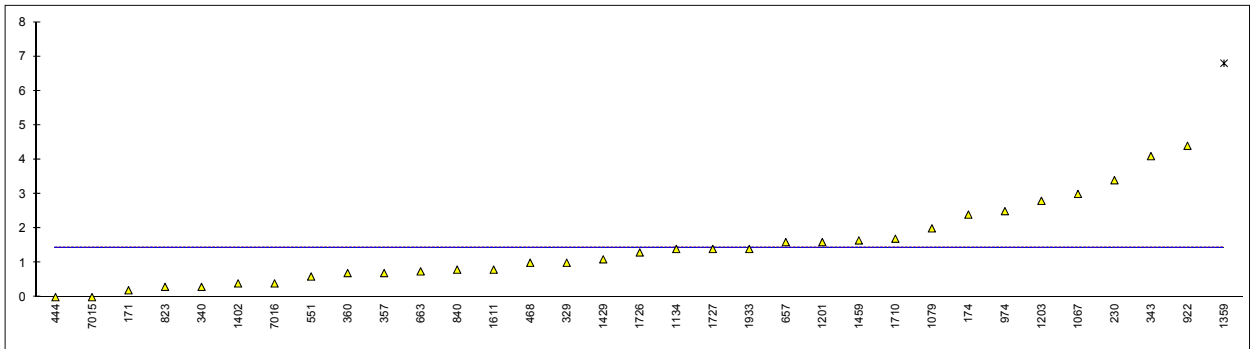


Determination of Involatile material content on sample #14230; results in mg/100mL

lab	method	value	mark	z(targ)	remarks
52		----		----	
62		----		----	
120		----		----	
131		----		----	
132		----		----	
150	D1353	<0.1		----	
159		----		----	
169		----		----	
171	EN15691	0.2		----	
174	EN15691	2.4		----	
193		----		----	
194		----		----	
230	D1353	3.4		----	
311	EN15691	<10		----	
323	EN15691	<10		----	
329	EN15691	1		----	
332		----		----	
333	EN15691	<10		----	
334		----		----	
337		----		----	
338		----		----	
340	EN15691	0.3		----	
343	EN15691	4.1		----	
357	EN15691	0.7		----	
360	EN15691	0.7		----	
441		----		----	
444	EN15691	0		----	
468	EN15691	1.0		----	
496		----		----	
511		----		----	
541	EN15691	<10		----	
551	D1353	0.6		----	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631		----		----	
657	D1353	1.6		----	
663	D1353	0.75	C	----	first reported:7.5
823	D1353	0.3		----	
840	D1353	0.8		----	
902	EN15691	<10		----	
913		----		----	
922	D1353	4.40		----	
974	EN15691	2.5		----	
1040		----		----	
1067	EN15691	3.0		----	
1079	EN15691	2.0		----	
1126		----		----	
1134	IP576	1.4		----	
1161		----		----	
1201	D1353	1.6		----	
1203		2.8		----	
1213	D1353	<1.0		----	
1231		----		----	
1263	D1353	<1.0		----	
1359	EN15691	6.8	R(0.01)	----	False positive test result?
1402	EN15691	0.4		----	
1429	EN15691	1.1		----	
1446		----		----	
1459	EN15691	1.65		----	
1468	EN15691	<1,0		----	
1523		----		----	
1605		----		----	
1611	EN15691	0.8		----	
1656	EN15691	<1		----	
1710	EN15691	1.7		----	
1726	EN15691	1.3		----	
1727		1.4		----	
1729		----		----	
1835	EN15691	<10		----	
1919		----		----	
1933	EN15691	1.40		----	
7002		----		----	
7015	D1353	0		----	
7016	EN15691	0.4		----	

normality	suspect
n	32
outliers	1
mean (n)	1.428
st.dev. (n)	1.1437
R(calc.)	3.202
R(EN15691:09)	(0.265)

Application range: 10 – 25 mg/100ml

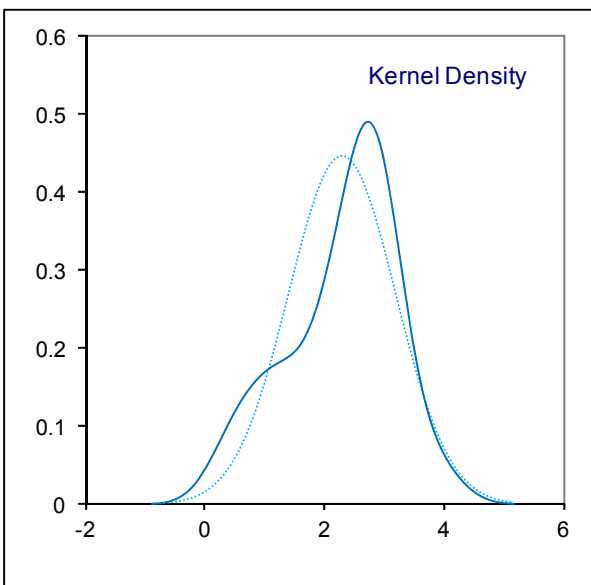
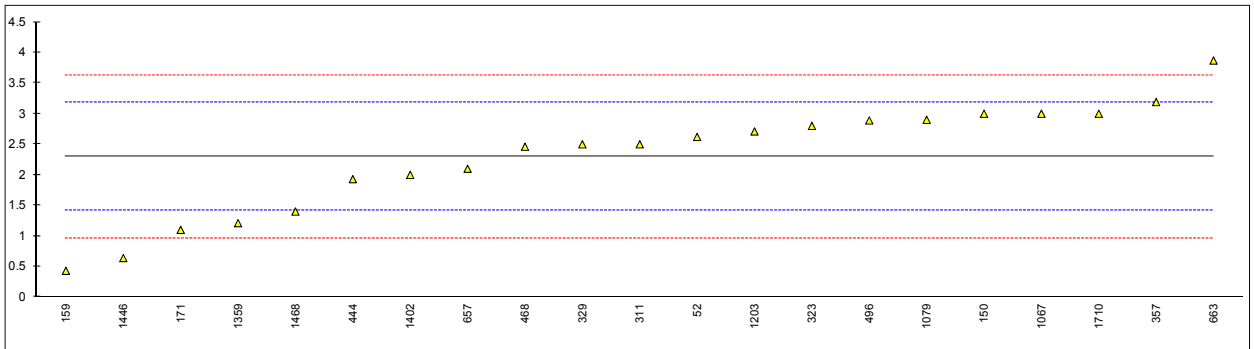


Determination of Nitrogen on sample #14230; results in mg/kg

lab	method	value	mark	z(targ)	remarks
52	D4629	2.62		0.73	
62		----		----	
120		----		----	
131		----		----	
132		----		----	
150	D4629	3.0		1.58	
159	D4629	0.43		-4.21	
169		----		----	
171	D4629	1.1		-2.70	
174		----		----	
193		----		----	
194		----		----	
230		----		----	
311	D4629	2.5		0.46	
323	D4629	2.8		1.13	
329	D4629	2.5		0.46	
332		----		----	
333		----		----	
334		----		----	
337		----		----	
338		----		----	
340		----		----	
343		----		----	
357	D4629	3.19		2.01	
360		----		----	
441		----		----	
444	D4629	1.93		-0.83	
468	D4629	2.46		0.37	
496	D4629	2.89		1.34	
511		----		----	
541		----		----	
551		----		----	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631		----		----	
657	D4629	2.1		-0.45	
663	D4629	3.87		3.54	
823		----		----	
840		----		----	
902		----		----	
913		----		----	
922		----		----	
974		----		----	
1040		----		----	
1067	D4629	3.0		1.58	
1079	D4629	2.9		1.36	
1126		----		----	
1134		----		----	
1161		----		----	
1201		----		----	
1203		2.71		0.93	
1213		----		----	
1231		----		----	
1263		----		----	
1359	in house	1.21		-2.45	
1402	D4629	2.0		-0.67	
1429		----		----	
1446	INH-660805	0.64		-3.74	
1459		----		----	
1468	D4629	1.4		-2.02	
1523		----		----	
1605		----		----	
1611		----		----	
1656		----		----	
1710	D4629	3.0		1.58	
1726		----		----	
1727		----		----	
1729		----		----	
1835	D4629	<1.0		<-2.93	false negative test result?
1919		----		----	
1933		----		----	
7002		----		----	
7015		----		----	
7016		----		----	

normality	OK
n	21
outliers	0
mean (n)	2.298
st.dev. (n)	0.8949
R(calc.)	2.506
R(D4629:12)	1.242

Application range: 0.3 – 100 mg/kg

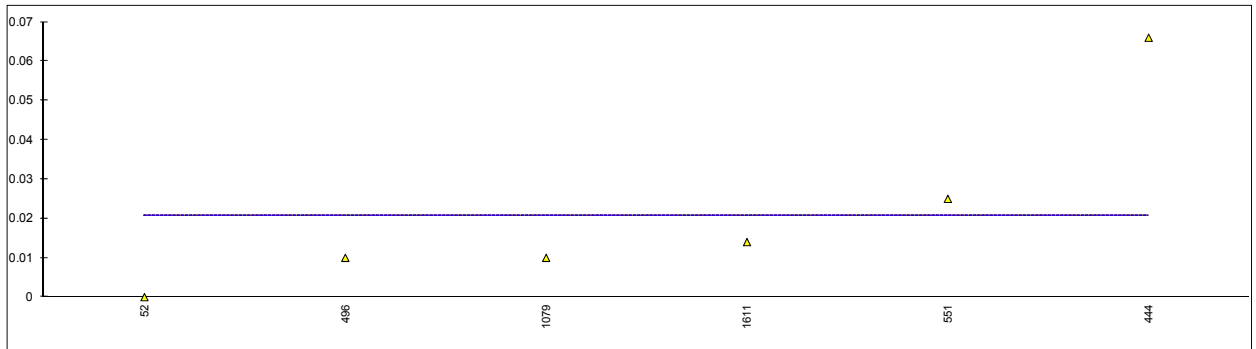


Determination of Phosphorus on sample #14230; results in mg/L

lab	method	Value	mark	z(targ)	remarks
52	EN15487	0		----	
62	D3231	<0.2		----	
120		----		----	
131		----		----	
132		----		----	
150	D3231	<0.15		----	
159		----		----	
169		----		----	
171	EN15487	<0.15		----	
174	EN15487	<0.15		----	
193		----		----	
194		----		----	
230		----		----	
311	EN15837	<0.13		----	
323	EN15487	<0.15		----	
329	EN15487	<0.15		----	
332		----		----	
333	EN15487	<0.19		----	
334		----		----	
337		----		----	
338		----		----	
340		----		----	
343		----		----	
357	EN15487	<0.15		----	
360	EN15837	<0.15		----	
441		----		----	
444	EN15487	0.066		----	
468	EN15487	<0.15		----	
496	EN15487	0.01		----	
511		----		----	
541	EN15487	<0.15		----	
551	EN15487	0.025		----	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631		----		----	
657		----		----	
663		----		----	
823	UOP389	<0.11		----	
840		----		----	
902		----		----	
913		----		----	
922		----		----	
974		----		----	
1040		----		----	
1067	EN15487	<0.01		----	
1079	EN15487	0.01		----	
1126		----		----	
1134		----		----	
1161		----		----	
1201		----		----	
1203		<0.15		----	
1213		----		----	
1231		----		----	
1263	EN15487	<0.1		----	
1359	EN15487	<0.1		----	
1402		----		----	
1429	EN15487	<0.15		----	
1446		----		----	
1459		----		----	
1468	EN15487	<0.1		----	
1523		----		----	
1605		----		----	
1611	EN15487	0.014		----	
1656	EN15487	<0.01		----	
1710		----		----	
1726	EN15487	<0.15		----	
1727		<0.01		----	
1729		----		----	
1835	EN15487	<0.15		----	
1919		----		----	
1933		----		----	
7002		----		----	
7015		----		----	
7016		----		----	

normality	unknown
n	6
outliers	0
mean (n)	0.021
st.dev. (n)	0.0235
R(calc.)	0.066
R(EN15487:07)	(0.062)

Application range: 0.15 – 1.50 mg/l



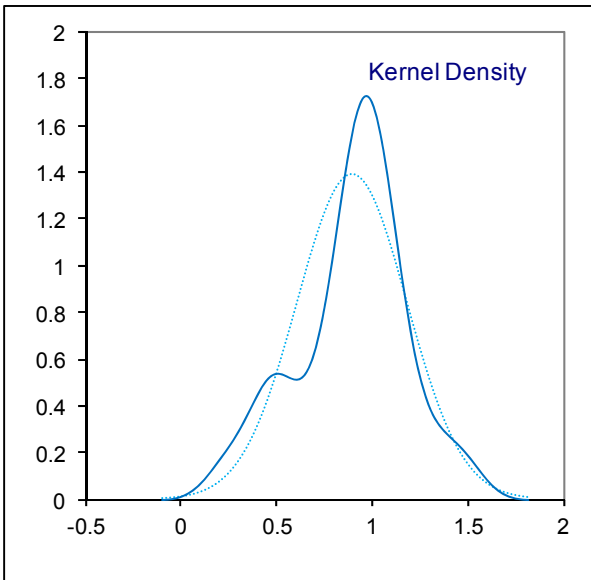
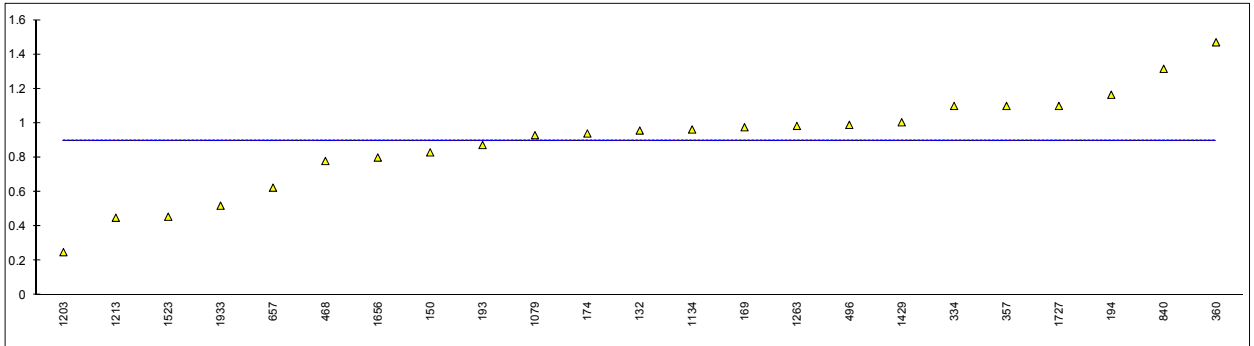
Determination of Sulphate on sample #14230; results in mg/kg

lab	method	value	mark	z(targ)	remarks
52		----		----	
62		----		----	
120		----		----	
131		----		----	
132	D7319	0.957		----	
150	D7328	0.83		----	
159		----		----	
169	D7319	0.976		----	
171		----		----	
174	EN15492	0.94		----	
193	D7319	0.873		----	
194	D7319	1.165		----	
230		----		----	
311	EN15492	<1.0		----	
323	EN15492	<1		----	
329	EN15492	<1		----	
332		----		----	
333	D7319	<1.0		----	
334	EN15492	1.1		----	
337		----		----	
338		----		----	
340		----		----	
343		----		----	
357	EN15492	1.1		----	
360	EN15492	1.47		----	
441		----		----	
444		----		----	
468	EN15492	0.78		----	
496	EN15492	0.99		----	
511		----		----	
541		----		----	
551	EN15492	<1		----	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631		----		----	
657	D7328	0.625		----	
663		----		----	
823		----		----	
840	D7318	1.316		----	
902		----		----	
913		----		----	
922	D7319	<1.0		----	
974		----		----	
1040		----		----	
1067	EN15492	<1		----	
1079	EN15492	0.93		----	
1126		----		----	
1134	IP563	0.963		----	
1161		----		----	
1201		----		----	
1203		0.25		----	
1213	D7328	0.45		----	
1231		----		----	
1263	EN15492	0.984		----	
1359	in house	<1		----	
1402		----		----	
1429	EN15492	1.0052		----	
1446		----		----	
1459		----		----	
1468	EN15492	<1.0		----	
1523	D7319	0.456		----	
1605		----		----	
1611		----		----	
1656	EN15492	0.8		----	
1710		----		----	
1726		----		----	
1727	EN15492	1.1		----	
1729		----		----	
1835	EN15492	<1.0		----	
1919		----		----	
1933		0.52		----	
7002		----		----	
7015		----		----	
7016		----		----	

normality OK
 n 23
 outliers 0
 mean (n) 0.895
 st.dev. (n) 0.2862
 R(calc.) 0.801
 R(EN15492:12) (0.338)
 Compare
 R(D7319:13) (1.328)

Application range: 1 - 20 mg/kg

Application range: 1 – 50 mg/kg

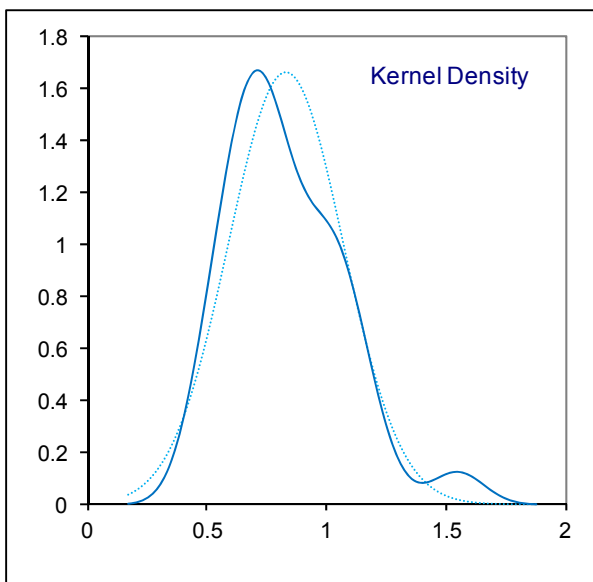
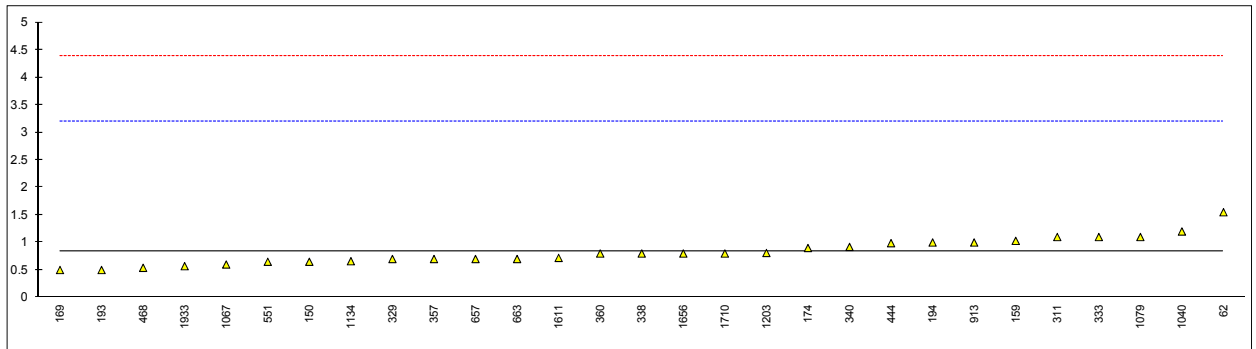


Determination of total Sulphur on sample #14230; results in mg/kg

lab	method	value	mark	z(targ)	remarks
52	EN15485	<1.0		----	
62	D5453	1.55		0.61	
120		----		----	
131		----		----	
132	D5453	<1		----	
150	D5453	0.65		-0.15	
159	EN15485	1.03		0.17	
169	D5453	0.5		-0.28	
171	D2622	<3		----	
174	D5453	0.9		0.06	
193	EN15485	0.5		-0.28	
194	D5453	1.0		0.14	
230		----		----	
311	D5453	1.1		0.23	
323	D5453	<1		----	
329	in house	0.7		-0.11	
332		----		----	
333	EN15486	1.1		0.23	
334		----		----	
337		----		----	
338	ISO20846	0.8		-0.03	
340	EN15486	0.92		0.08	
343		----		----	
357	D5453	0.7		-0.11	
360	EN15486	0.8		-0.03	
441		----		----	
444	EN15485	0.988		0.13	
468	EN15485	0.54		-0.25	
496	EN15485	<0.1		----	
511		----		----	
541		----		----	
551	D5453	0.6498		-0.15	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631		----		----	
657	D5453	0.70		-0.11	
663	D5453	0.7		-0.11	
823		----		----	
840		----		----	
902		----		----	
913	D5453	1.0		0.14	
922	D5453	<1.0		----	
974		----		----	
1040	ISO20846	1.20		0.31	
1067	EN15485	0.60		-0.19	
1079	D5453	1.1		0.23	
1126		----		----	
1134	IP554	0.66		-0.14	
1161		----		----	
1201		----		----	
1203		0.81		-0.02	
1213	D5453	<1.0		----	
1231		----		----	
1263		----		----	
1359	in house	<1		----	
1402		----		----	
1429	EN15485	<7.0		----	
1446		----		----	
1459		----		----	
1468	ISO20846	<3.0		----	
1523		----		----	
1605		----		----	
1611	EN15486	0.72		-0.09	
1656	EN15486	0.8		-0.03	
1710	EN15485	0.8		-0.03	
1726		----		----	
1727		----		----	
1729		----		----	
1835	EN15486	<5.0		----	
1919		----		----	
1933		0.57	C	-0.22	first reported:57
7002		----		----	
7015		----		----	
7016		----		----	

Only D5453 data

normality	suspect	not OK
n	29	13
outliers	0	0
mean (n)	0.831	0.874
st.dev. (n)	0.2398	0.2779
R(calc.)	0.671	0.778
R(EN15485:07)	3.318	0.524
Compare		
R(EN15486:07)	1.803	
R(D5453:09)	0.504	
	Application range: 7 – 20 mg/kg	
	Application range: 5 – 20 mg/kg	
	Application range: 1 – 8000 mg/kg	



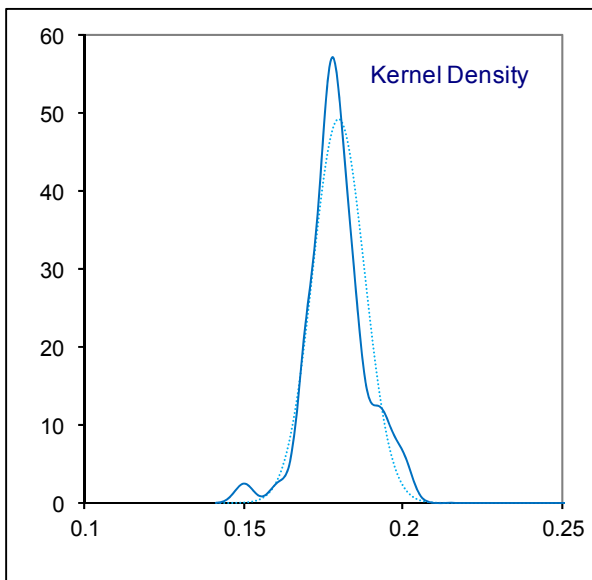
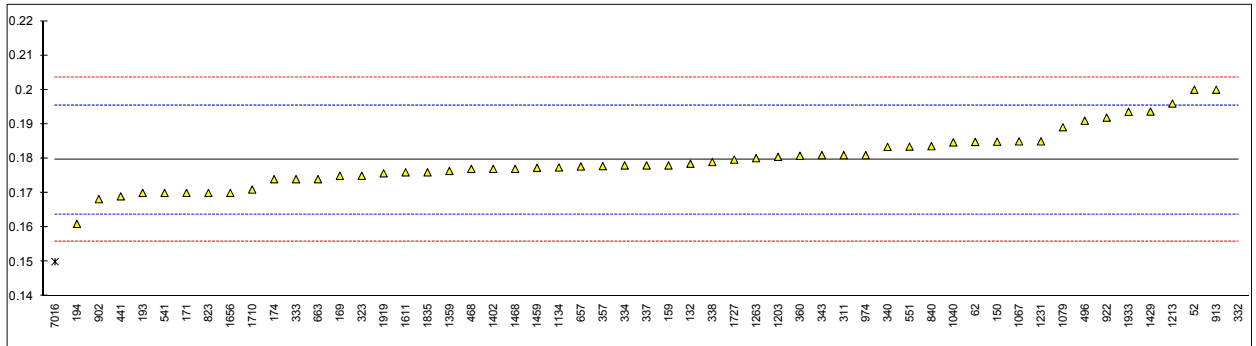
Determination of Water (coulometric) on sample #14230; results in %M/M

lab	method	value	mark	z(targ)	remarks
52	EN15489	0.2		2.57	
62	D6304	0.18484		0.65	
120		----		----	
131		----		----	
132	E1064	0.1785		-0.15	
150	E1064	0.1849		0.66	
159	EN15489	0.178		-0.21	
169	E1064	0.1750		-0.59	
171	EN15489	0.170		-1.22	
174	EN15489	0.174		-0.72	
193	E1064	0.170		-1.22	
194	E1064	0.161		-2.36	
230		----		----	
311	EN15489	0.181		0.17	
323	EN15489	0.175		-0.59	
329		----		----	
332	EN15489	0.30206	R(0.01)	15.45	
333	EN15489	0.174		-0.72	
334	EN15489	0.178		-0.21	
337	EN15489	0.178		-0.21	
338	E1064	0.179		-0.08	
340	EN15489	0.1834		0.47	
343	EN15489	0.181		0.17	
357	EN15489	0.1778		-0.24	
360	EN15489	0.1808		0.14	
441	EN15489	0.169		-1.35	
444		----		----	
468	EN15489	0.1770	C	-0.34	first reported:0.1510
496	EN15489	0.191		1.43	
511		----		----	
541	E1064	0.170		-1.22	
551	EN15489	0.18348		0.48	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631		----		----	
657	E1064	0.1777		-0.25	
663	E1064	0.1740		-0.72	
823	E1064	0.170		-1.22	
840	E1064	0.1836		0.50	
902	E1064	0.1682		-1.45	
913	E1064	0.20		2.57	
922	E1064	0.1919		1.54	
974	D6304	0.181		0.17	
1040	ISO12937	0.1847		0.64	
1067	EN15489	0.185		0.67	
1079	EN15489	0.1891		1.19	
1126		----		----	
1134	IP539	0.1774		-0.29	
1161		----		----	
1201		----		----	
1203		0.1805		0.11	
1213	D6304	0.196		2.06	
1231	D6304	0.185		0.67	
1263	ISO12937	0.1801		0.05	
1359	EN15489	0.1764		-0.41	
1402	EN15489	0.177		-0.34	
1429	EN15489	0.19366		1.77	
1446		----		----	
1459	EN15489	0.1773		-0.30	
1468	EN15489	0.177		-0.34	
1523		----		----	
1605		----		----	
1611	EN15489	0.176		-0.46	
1656	EN15489	0.17		-1.22	
1710	EN15489	0.171		-1.09	
1726		----		----	
1727		0.1797		0.00	
1729		----		----	
1835	EN15489	0.176		-0.46	
1919	EN15489	0.1757		-0.50	
1933		0.1936		1.76	
7002		----		----	
7015		----		----	
7016	EN15489	0.15	R(0.05)	-3.75	

normality OK
 n 53
 outliers 2
 mean (n) 0.1797
 st.dev. (n) 0.00811
 R(calc.) 0.0227
 R(EN15489:07) 0.0222
 Compare
 R(E1064:12) 0.0305

Application range: 0.039 - 0.050 %M/M

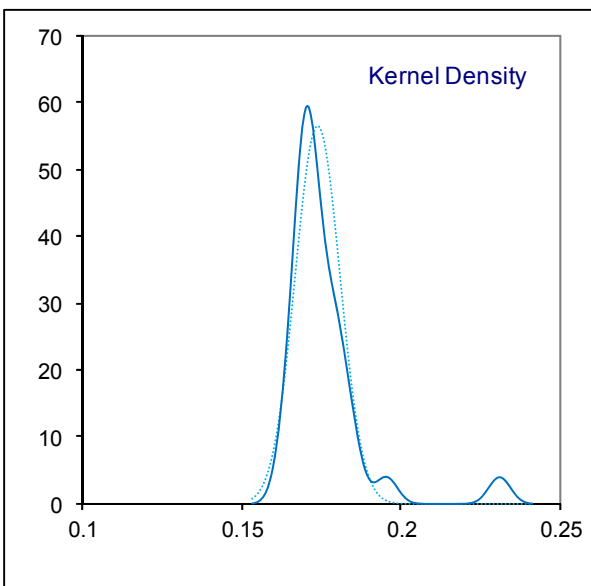
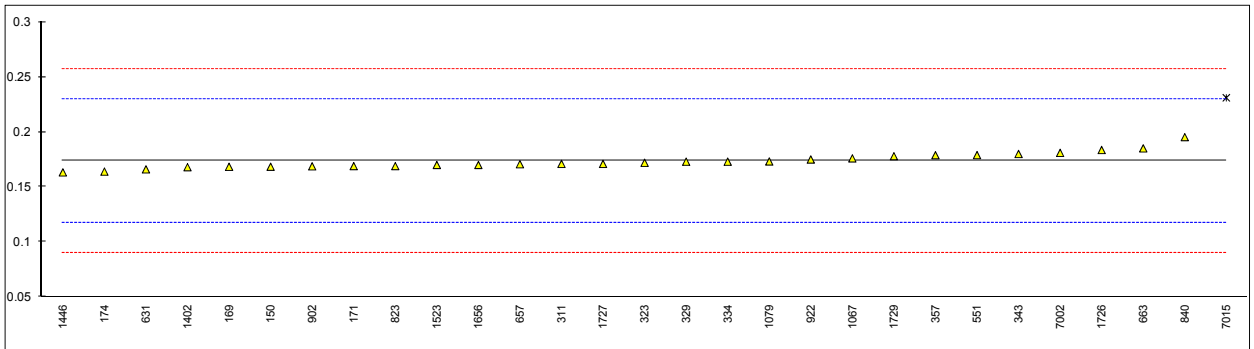
Application range: 0 - 2.0 %M/M



Determination of Water (titrimetric) on sample #14230; results in %M/M

lab	method	value	mark	z(targ)	remarks
52		----		----	
62		----		----	
120		----		----	
131		----		----	
132		----		----	
150	E203	0.1684		-0.19	
159		----		----	
169	E203	0.16837		-0.19	
171	E203	0.169		-0.16	
174	E203	0.164		-0.34	
193		----		----	
194		----		----	
230		----		----	
311	E203	0.171		-0.09	
323	E203	0.172		-0.06	
329	E203	0.173		-0.02	
332		----		----	
333		----		----	
334	E203	0.173		-0.02	
337		----		----	
338		----		----	
340		----		----	
343	E203	0.18		0.23	
357	E203	0.1789		0.19	
360		----		----	
441		----		----	
444		----		----	
468		----		----	
496		----		----	
511		----		----	
541		----		----	
551	E203	0.179		0.19	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631	E203	0.166		-0.27	
657	E203	0.1707		-0.10	
663	E203	0.1851		0.41	
823	D1364	0.169		-0.16	
840	E203	0.1953		0.78	
902	E203	0.1688		-0.17	
913		----		----	
922	E203	0.1750		0.05	
974		----		----	
1040		----		----	
1067	E203	0.176		0.09	
1079	E203	0.1732		-0.01	
1126		----		----	
1134		----		----	
1161		----		----	
1201		----		----	
1203		----		----	
1213		----		----	
1231		----		----	
1263		----		----	
1359		----		----	
1402	E203	0.168		-0.20	
1429		----		----	
1446	ISO760	0.1633		-0.37	
1459		----		----	
1468		----		----	
1523	E203	0.17		-0.13	
1605		----		----	
1611		----		----	
1656	E203	0.17		-0.13	
1710		----		----	
1726	EN15692	0.1836		0.36	
1727		0.1710		-0.09	
1729	E203	0.178		0.16	
1835		----		----	
1919		----		----	
1933		----		----	
7002	E203	0.181		0.27	
7015	E203	0.231	G(0.01)	2.06	
7016		----		----	

normality	not OK
n	28
outliers	1
mean (n)	0.1736
st.dev. (n)	0.00705
R(calc.)	0.0197
R(E203:08)	0.0780

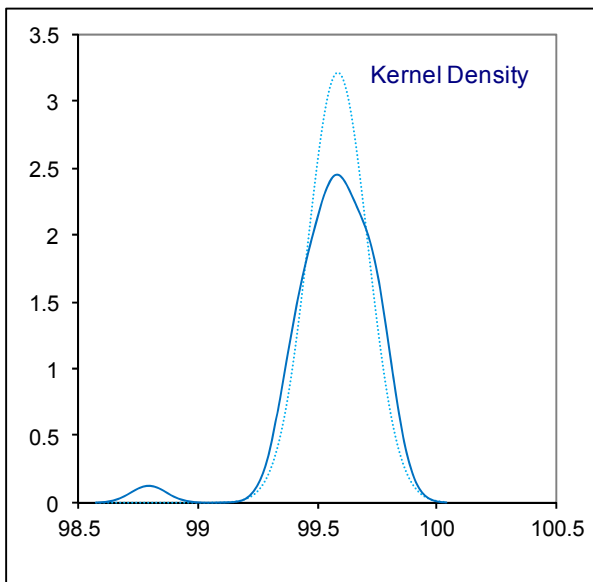
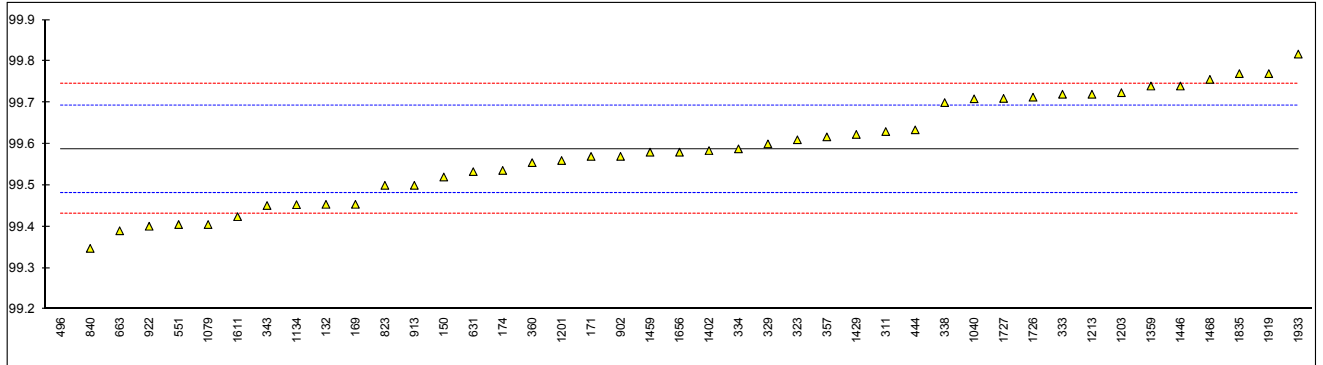


Determination of Ethanol on sample #14231 in %M/M

lab	method	value	mark	z(targ)	remarks
52		----		----	
62		----		----	
120		----		----	
131		----		----	
132	D5501	99.454		-2.54	
150	in house	99.52		-1.28	
159		----		----	
169	D5501	99.454		-2.54	
171	EN15721	99.5698		-0.33	
174	EN15721	99.536		-0.98	
193		----		----	
194		----		----	
230		----		----	
311	EN15721	99.63		0.82	
323	in house	99.61		0.44	
329	in house	99.60		0.24	
332		----		----	
333	EN15721	99.72		2.54	
334	INH-05001	99.588		0.01	
337		----		----	
338	INH-2870	99.70		2.15	
340		----		----	
343	EN15721	99.451		-2.60	
357	EN15721	99.6170		0.57	
360	EN15721	99.5547		-0.62	
441		----		----	
444	EN15721	99.634		0.89	
468		----		----	
496	EN15721	98.7942	R(0.01)	-15.14	
511		----		----	
541		----		----	
551	D5501	99.405		-3.48	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631	D5501	99.533		-1.04	
657		----		----	
663	INH-001	99.390		-3.77	
823	INH-0001	99.50		-1.67	
840	EN15721	99.3474		-4.58	
902	INH-0001	99.57		-0.33	
913	INH-0001	99.50		-1.67	
922	INH-001	99.4010		-3.56	
974		----		----	
1040	EN15721	99.7091		2.33	
1067		----		----	
1079	EN15721	99.4050		-3.48	
1126		----		----	
1134	EN15721	99.4532		-2.56	
1161		----		----	
1201	EN15721	99.560		-0.52	
1203		99.724		2.61	
1213	D5501	99.72		2.54	
1231		----		----	
1263		----		----	
1359	in house	99.74		2.92	
1402	EN15721	99.584		-0.06	
1429	EN15721	99.623		0.68	
1446	ISO12185	99.74		2.92	
1459	in house	99.58		-0.14	
1468	EN15721	99.756		3.22	
1523		----		----	
1605		----		----	
1611	EN15721	99.4242		-3.11	
1656	EN15721	99.58		-0.14	
1710		----		----	
1726	EN15721	99.7130		2.40	
1727		99.71		2.34	
1729		----		----	
1835	EN15721	99.770		3.49	
1919	in house	99.77		3.49	
1933		99.8173		4.39	
7002		----		----	
7015		----		----	
7016		----		----	

normality OK
 n 42
 outliers 1
 mean (n) 99.5872
 st.dev. (n) 0.12476
 R(calc.) 0.3493
 R(EN15721:13) 0.1466
 compare
 R(D5501:12e1) 0.9936

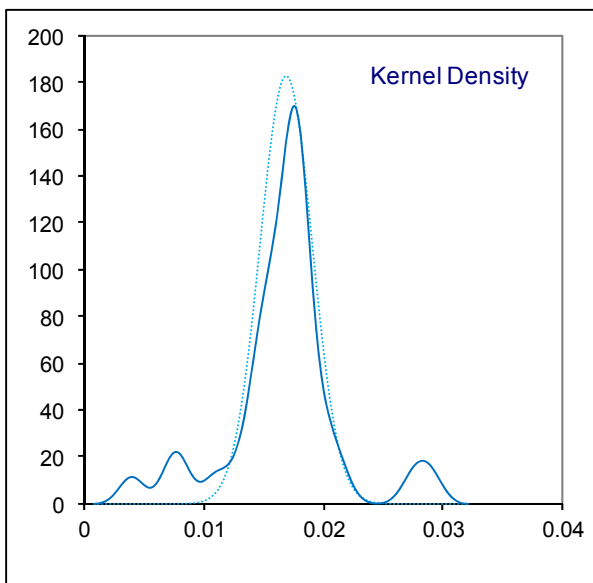
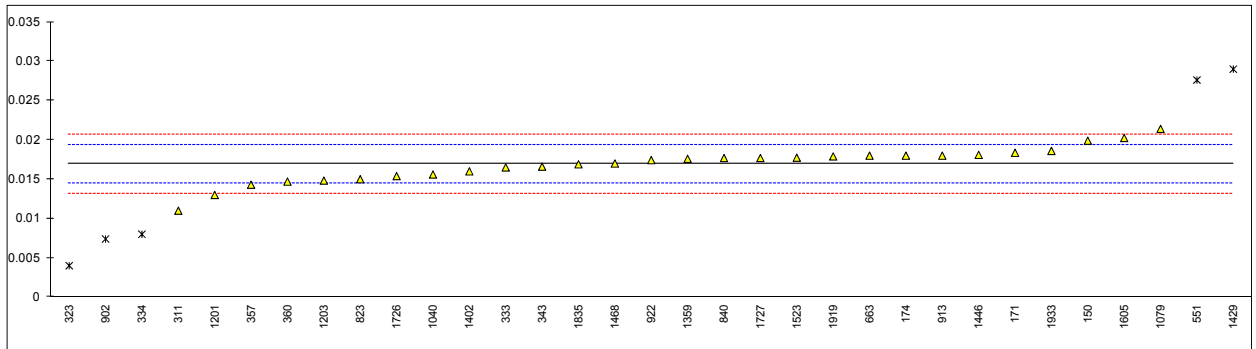
Application range: 20 – 100 %M/M



Determination of Acetaldehyde on sample #14231; results in %M/M

lab	method	value	mark	z(targ)	remarks
52		----		----	
62		----		----	
120		----		----	
131		----		----	
132		----		----	
150	in house	0.0199		2.39	
159		----		----	
169		----		----	
171	EN15721	0.018363		1.16	
174	EN15721	0.018		0.87	
193		----		----	
194		----		----	
230		----		----	
311	INH-529	0.011		-4.73	
323	in house	0.0040	R(0.05)	-10.33	
329		----		----	
332		----		----	
333	EN15721	0.0165		-0.33	
334	INH-05001	0.008	R(0.05)	-7.13	
337		----		----	
338		----		----	
340		----		----	
343		0.0166		-0.25	
357	INH-0001	0.0143		-2.09	
360	EN15721	0.0147	C	-1.77	first reported:0.0074
441		----		----	
444		----		----	
468		<0.001		<-12.72	false negative test result?
496		----		----	
511		----		----	
541		----		----	
551	INH-1313	0.02761	R(0.05)	8.56	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631		----		----	
657		----		----	
663	INH-001	0.018		0.87	
823	INH-0001	0.0150		-1.53	
840	INH-0001	0.0177		0.63	
902	INH-0001	0.0074	C,R(0.05)	-7.61	first reported:0.0058
913	INH-0001	0.0180		0.87	
922	INH-0001	0.01743		0.42	
974		----		----	
1040	EN15721	0.0156		-1.05	
1067		----		----	
1079	EN15721	0.0214		3.59	
1126		----		----	
1134		----		----	
1161		----		----	
1201	EN15721	0.0130	C	-3.13	first reported:0
1203		0.01483		-1.66	
1213		----		----	
1231		----		----	
1263		----		----	
1359	in house	0.0176		0.55	
1402	EN15721	0.016		-0.73	
1429	EN15721	0.0290	R(0.05)	9.67	
1446	EN15721	0.0181		0.95	
1459		----		----	
1468	EN15721	0.017		0.07	
1523	D5501	0.017737		0.66	
1605	in house	0.02024		2.66	
1611		----		----	
1656		----		----	
1710		----		----	
1726	EN15721	0.0154		-1.21	
1727		0.0177	C	0.63	first reported:0.0018
1729		----		----	
1835	in house	0.0169		-0.01	
1919	in house	0.0179		0.79	
1933		0.0186		1.35	
7002		----		----	
7015		----		----	
7016		----		----	

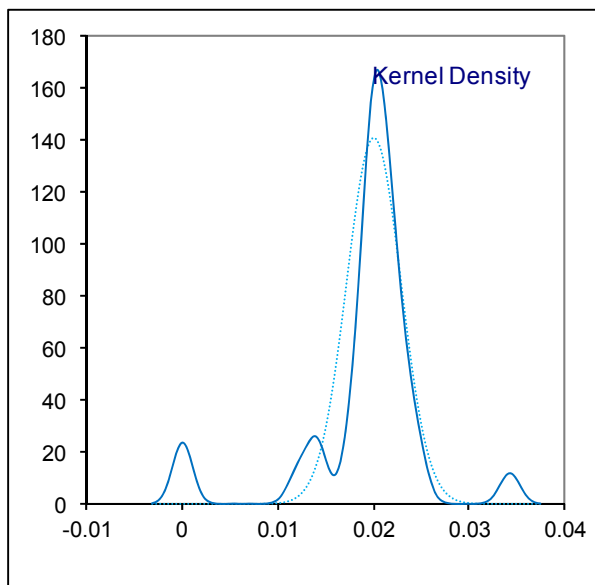
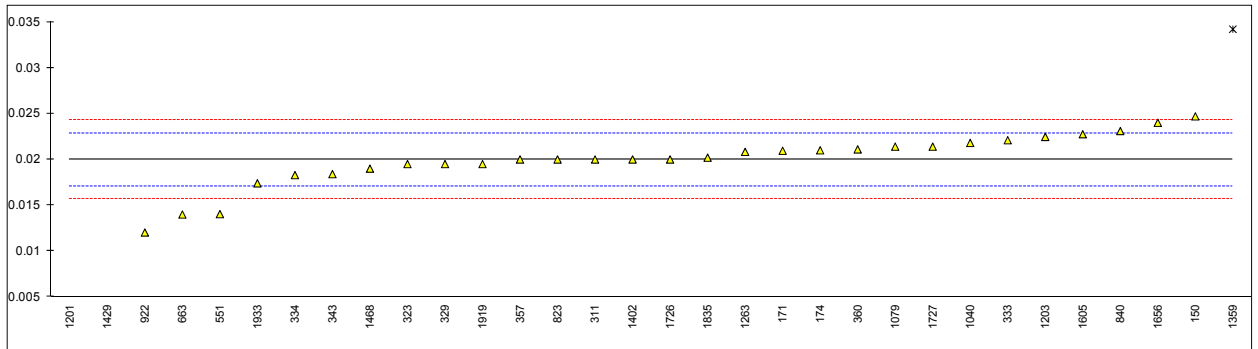
normality	suspect
n	28
outliers	5
mean (n)	0.0169
st.dev. (n)	0.00218
R(calc.)	0.0061
R(Horwitz)	0.0035



Determination of Acetal on sample #14231; results in %M/M

lab	method	value	mark	z(targ)	remarks
52		----		----	
62		----		----	
120		----		----	
131		----		----	
132		----		----	
150	in house	0.0247		3.28	
159		----		----	
169		----		----	
171	in house	0.020951		0.67	
174	EN15721	0.021		0.71	
193		----		----	
194		----		----	
230		----		----	
311	EN15721	0.020		0.01	
323	in house	0.0195		-0.33	
329	in house	0.0195		-0.33	
332		----		----	
333	EN15721	0.0221		1.47	
334	INH-05001	0.0183		-1.17	
337		----		----	
338		----		----	
340		----		----	
343		0.0184		-1.10	
357	INH-0001	0.0200	C	0.01	first reported:0.0321
360	EN15721	0.0211		0.78	
441		----		----	
444		----		----	
468		----		----	
496		----		----	
511		----		----	
541		----		----	
551	INH-1313	0.01404		-4.13	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631		----		----	
657		----		----	
663	INH-001	0.014		-4.15	
823	INH-0001	0.0200		0.01	
840	INH-0001	0.0231		2.16	
902		----		----	
913		----		----	
922	INH-0001	0.01204		-5.51	
974		----		----	
1040	EN15721	0.0218		1.26	
1067		----		----	
1079	EN15721	0.0214		0.98	
1126		----		----	
1134		----		----	
1161		----		----	
1201	EN15721	0	R(0.01)	-13.87	
1203		0.02246		1.72	
1213		----		----	
1231		----		----	
1263	D5501	0.02083		0.59	
1359	in house	0.0342	R(0.01)	9.87	
1402	EN15721	0.020		0.01	
1429	EN15721	0.000	R(0.01)	-13.87	
1446		----		----	
1459		----		----	
1468	EN15721	0.019		-0.68	
1523		----		----	
1605	in house	0.02275		1.92	
1611		----		----	
1656	EN15721	0.024		2.79	
1710		----		----	
1726	EN15721	0.0200		0.01	
1727		0.0214	C	0.98	first reported:0.0021
1729		----		----	
1835	in house	0.0202		0.15	
1919	in house	0.0195		-0.33	
1933		0.0174		-1.79	
7002		----		----	
7015		----		----	
7016		----		----	

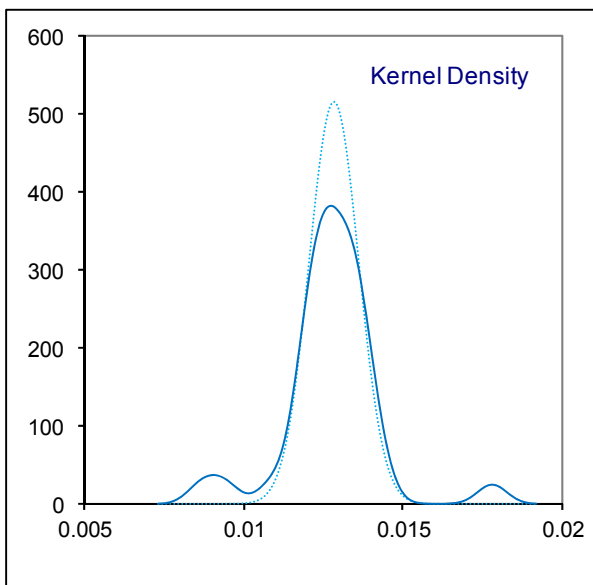
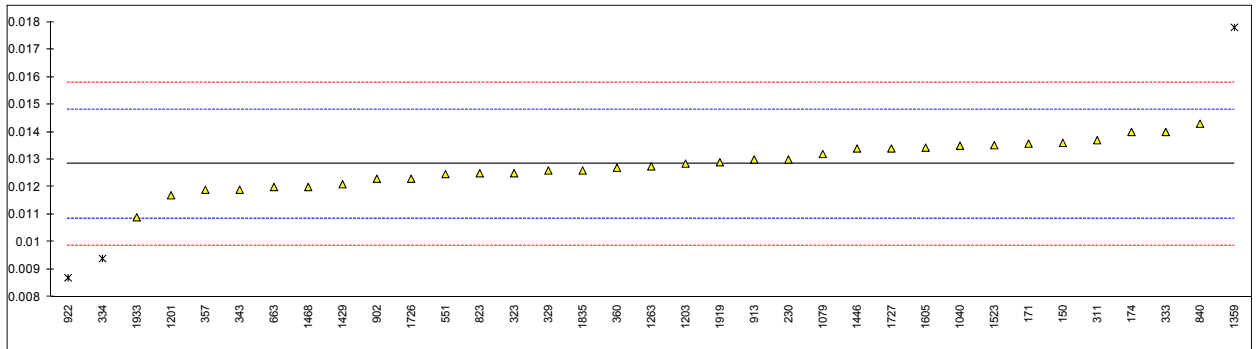
normality	suspect
n	29
outliers	3
mean (n)	0.01998
st.dev. (n)	0.002838
R(calc.)	0.00795
R(Horwitz)	0.00403



Determination of Ethyl acetate on sample #14231; results in %M/M

lab	method	value	mark	z(targ)	remarks
52		----		----	
62		----		----	
120		----		----	
131		----		----	
132		----		----	
150	in house	0.0136		0.78	
159		----		----	
169		----		----	
171	EN15721	0.0135763		0.75	
174	EN15721	0.014		1.18	
193		----		----	
194		----		----	
230	INH-0001	0.013		0.17	
311	INH-529	0.0137		0.88	
323	in house	0.0125		-0.33	
329	in house	0.0126		-0.23	
332		----		----	
333	EN15721	0.0140		1.18	
334	INH-05001	0.0094	R(0.01)	-3.47	
337		----		----	
338		----		----	
340		----		----	
343		0.0119		-0.94	
357	INH-0001	0.0119		-0.94	
360	EN15721	0.0127		-0.13	
441		----		----	
444		----		----	
468		----		----	
496		----		----	
511		----		----	
541		----		----	
551	INH-1313	0.01247		-0.37	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631		----		----	
657		----		----	
663	INH-001	0.012		-0.84	
823	INH-0001	0.0125		-0.33	
840	INH-0001	0.0143		1.49	
902	INH-0001	0.0123		-0.54	
913	INH-0001	0.0130		0.17	
922	INH-0001	0.0087	C,R(0.01)	-4.18	first reported:0.00395
974		----		----	
1040	EN15721	0.0135		0.68	
1067		----		----	
1079	EN15721	0.0132		0.37	
1126		----		----	
1134		----		----	
1161		----		----	
1201	EN15721	0.0117		-1.14	
1203		0.01285		0.02	
1213		----		----	
1231		----		----	
1263	D5501	0.01275		-0.08	
1359	in house	0.0178	R(0.01)	5.03	
1402		----		----	
1429	EN15721	0.0121		-0.74	
1446	EN15721	0.0134		0.58	
1459		----		----	
1468	EN15721	0.012		-0.84	
1523	D5501	0.013520		0.70	
1605	in house	0.01343		0.61	
1611		----		----	
1656		----		----	
1710		----		----	
1726	EN15721	0.0123		-0.54	
1727		0.0134		0.58	
1729		----		----	
1835	in house	0.0126		-0.23	
1919	in house	0.0129		0.07	
1933		0.0109		-1.95	
7002		----		----	
7015		----		----	
7016		----		----	

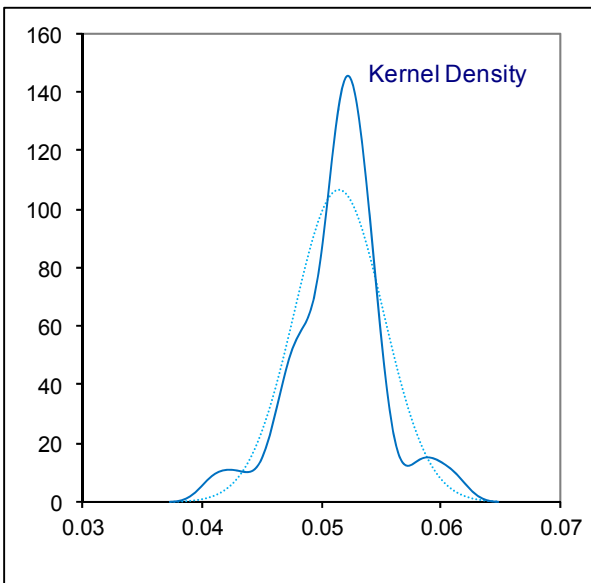
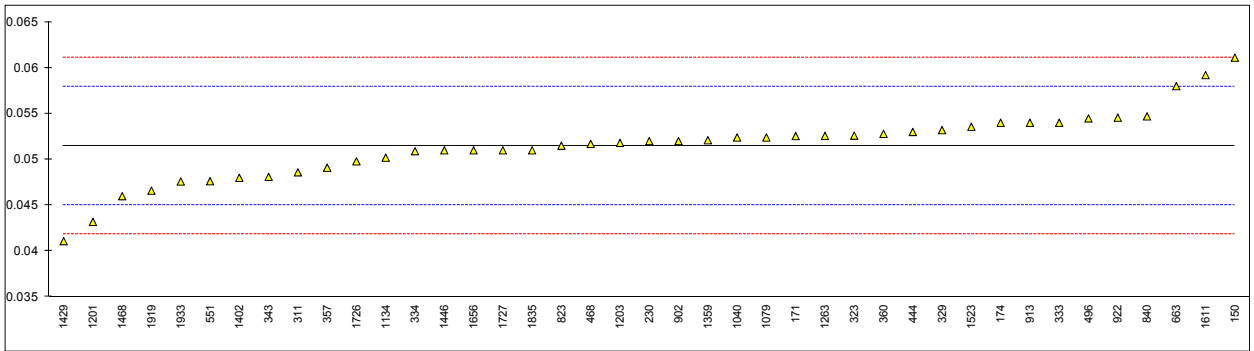
normality	OK
n	32
outliers	3
mean (n)	0.01283
st.dev. (n)	0.000775
R(calc.)	0.00217
R(Horwitz)	0.00277



Determination of iso-Butanol on sample #14231; results in %M/M

lab	method	value	mark	z(targ)	remarks
52		----		----	
62		----		----	
120		----		----	
131		----		----	
132		----		----	
150	in house	0.0611		2.99	
159		----		----	
169		----		----	
171	EN15721	0.0525502		0.33	
174	EN15721	0.054		0.78	
193		----		----	
194		----		----	
230	INH-001	0.052		0.16	
311	EN15721	0.0486		-0.90	
323	in house	0.0526		0.35	
329	in house	0.0532		0.53	
332		----		----	
333	EN15721	0.0540		0.78	
334	INH-05001	0.0509		-0.18	
337		----		----	
338		----		----	
340		----		----	
343		0.0481		-1.05	
357	EN15721	0.0491		-0.74	
360	EN15721	0.0528		0.41	
441		----		----	
444	EN15721	0.053		0.47	
468		0.0517		0.07	
496	EN15721	0.05448		0.93	
511		----		----	
541		----		----	
551	INH-1313	0.04763		-1.20	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631		----		----	
657		----		----	
663	INH-001	0.058		2.02	
823	INH-0001	0.0515		0.00	
840	INH-0001	0.0547		1.00	
902	INH-0001	0.0520		0.16	
913	INH-0001	0.0540		0.78	
922	INH-0001	0.05456		0.95	
974		----		----	
1040	EN15721	0.0524		0.28	
1067		----		----	
1079	EN15721	0.0524		0.28	
1126		----		----	
1134		0.0502		-0.40	
1161		----		----	
1201	EN15721	0.0432	C	-2.58	first reported:0.0425
1203		0.05181		0.10	
1213		----		----	
1231		----		----	
1263	D5501	0.05257		0.34	
1359	in house	0.0521		0.19	
1402	EN15721	0.048		-1.08	
1429	EN15721	0.0411		-3.23	
1446	EN15721	0.0510		-0.15	
1459		----		----	
1468	EN15721	0.046		-1.71	
1523	D5501	0.053564		0.64	
1605		----		----	
1611	EN15721	0.0592		2.40	
1656	EN15721	0.051		-0.15	
1710		----		----	
1726	EN15721	0.0498		-0.52	
1727		0.0510		-0.15	
1729		----		----	
1835	in house	0.0510		-0.15	
1919	in house	0.0466		-1.52	
1933		0.0476		-1.21	
7002		----		----	
7015		----		----	
7016		----		----	

normality	suspect
n	41
outliers	0
mean (n)	0.05149
st.dev. (n)	0.003753
R(calc.)	0.01051
R(Horwitz)	0.00901

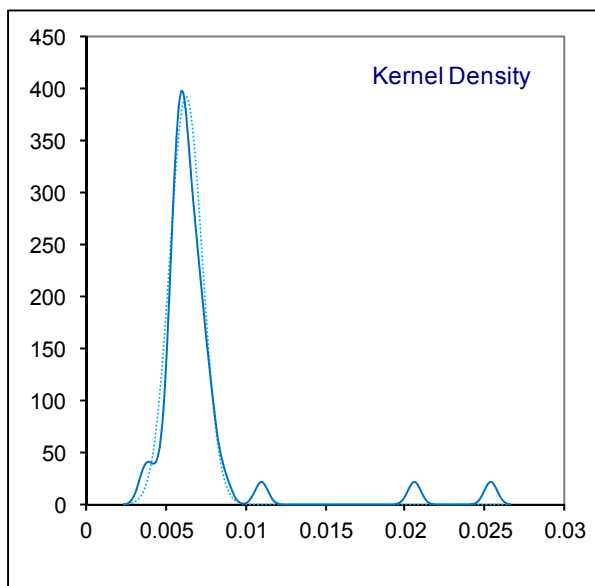
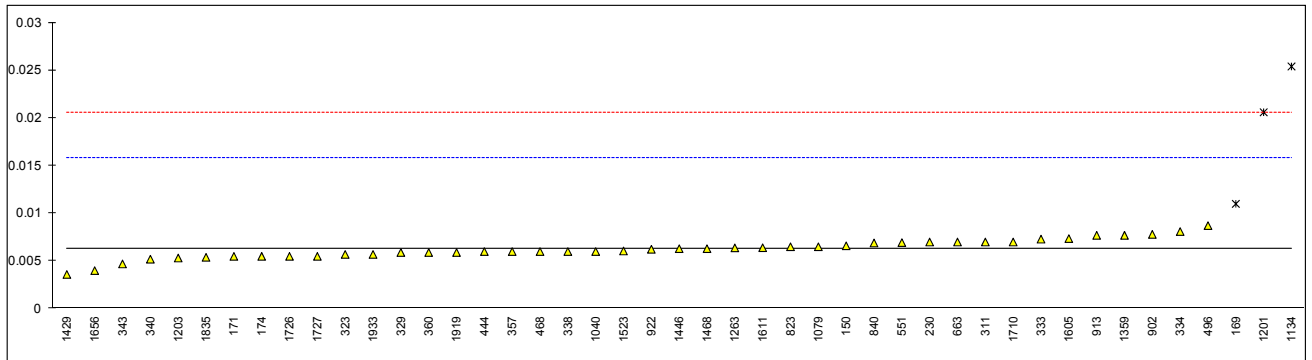


Determination of Methanol on sample #14231; results in %M/M

lab	method	value	mark	z(targ)	remarks
52		----		----	
62		----		----	
120		----		----	
131		----		----	
132		----		----	
150	in house	0.0066		0.07	
159		----		----	
169	D5501	0.011	R(0.01)	1.00	
171	EN15721	0.005494		-0.16	
174	EN15721	0.0055		-0.16	
193		----		----	
194		----		----	
230	INH-0001	0.007		0.15	
311	EN15721	0.007		0.15	
323	in house	0.0057		-0.12	
329	in house	0.0059		-0.08	
332		----		----	
333	EN15721	0.0073		0.22	
334	INH-05001	0.0081		0.39	
337		----		----	
338	INH-2870	0.006		-0.06	
340	EN15721	0.0052		-0.22	
343		0.0047		-0.33	
357	EN15721	0.0060		-0.06	
360	EN15721	0.0059		-0.08	
441		----		----	
444	EN15721	0.006		-0.06	
468		0.0060		-0.06	
496	EN15721	0.00872		0.52	
511		----		----	
541		----		----	
551	INH-1313	0.00694		0.14	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631		----		----	
657		----		----	
663	INH-001	0.007		0.15	
823	INH-0001	0.0065		0.05	
840	INH-0001	0.0069		0.13	
902	INH-0001	0.0078	C	0.32	first reported:0.0030
913	INH-0001	0.0077		0.30	
922	INH-0001	0.00624		-0.01	
974		----		----	
1040	EN15721	0.006		-0.06	
1067		----		----	
1079	EN15721	0.0065		0.05	
1126		----		----	
1134		0.0254	R(0.01)	4.03	
1161		----		----	
1201	EN15721	0.0206	C,R(0.01)	3.02	first reported:0.012
1203		0.00532		-0.20	
1213	D5501	<0.01		----	
1231		----		----	
1263	D5501	0.00639		0.03	
1359	in house	0.0077	C	0.30	first reported:77
1402	EN15721	<0.001		----	
1429	EN15721	0.0036		-0.56	
1446	EN15721	0.0063		0.01	
1459		----		----	
1468	EN15721	0.0063		0.01	
1523		0.006060		-0.04	
1605	in house	0.00736		0.23	
1611	EN15721	0.0064		0.03	
1656	EN15721	0.004		-0.48	
1710	EN15721	0.007	C	0.15	first reported:0.02
1726	EN15721	0.0055		-0.16	
1727		0.0055		-0.16	
1729		----		----	
1835	in house	0.0054		-0.18	
1919		0.0059		-0.08	
1933		0.0057		-0.12	
7002		----		----	
7015		----		----	
7016		----		----	

normality OK
 n 42
 outliers 3
 mean (n) 0.00626
 st.dev. (n) 0.001020
 R(calc.) 0.00286
 R(D5501:12e1) 0.01329

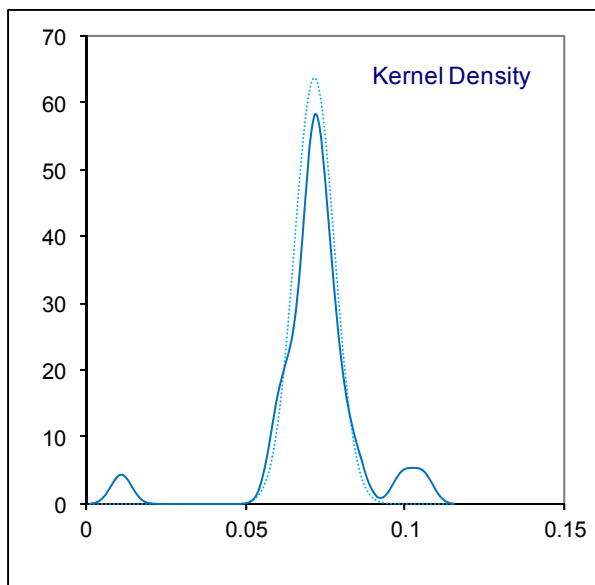
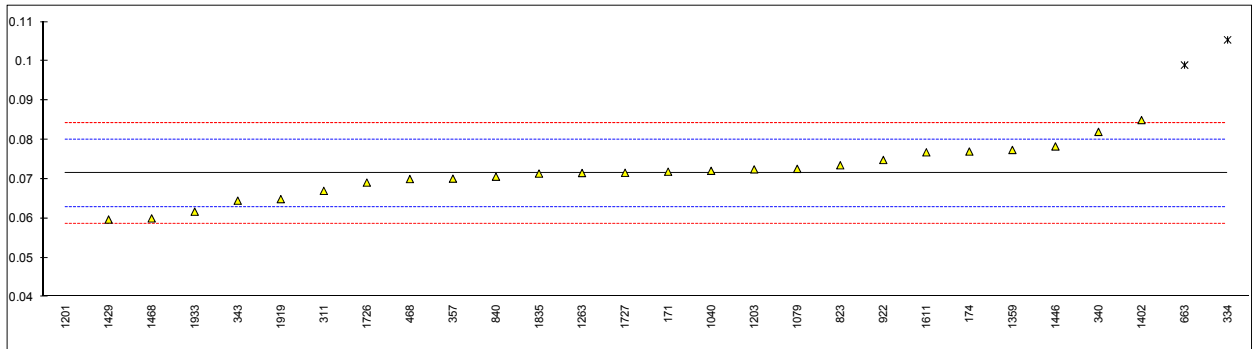
Compare R(EN15721) = -0.00420
 Compare R(Horwitz) = 0.00151



Determination of 3-Methyl-1-butanol on sample #14231; results in %M/M

lab	method	value	mark	z(targ)	remarks
52		----		----	
62		----		----	
120		----		----	
131		----		----	
132		----		----	
150		----		----	
159		----		----	
169		----		----	
171	EN15721	0.071869		0.10	
174	EN15721	0.077		1.31	
193		----		----	
194		----		----	
230		----		----	
311	EN15721	0.067	C	-1.04	first reported:0.018
323		----		----	
329		----		----	
332		----		----	
333		----		----	
334	INH-05001	0.1054	R(0.01)	7.99	
337		----		----	
338		----		----	
340	EN15721	0.082	C	2.48	first reported:0.0216
343		0.0645		-1.63	
357	EN15721	0.0701		-0.32	
360		----		----	
441		----		----	
444		----		----	
468		0.0700	C	-0.34	first reported:0.0194
496		----		----	
511		----		----	
541		----		----	
551		----		----	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631		----		----	
657		----		----	
663	INH-001	0.099	R(0.01)	6.48	
823	INH-0001	0.0735		0.48	
840	EN15721	0.0706		-0.20	
902		----		----	
913		----		----	
922	INH-0001	0.07486		0.80	
974		----		----	
1040	EN15721	0.0721		0.15	
1067		----		----	
1079	EN15721	0.0726		0.27	
1126		----		----	
1134		n.d.		----	
1161		----		----	
1201	EN15721	0.0111	C,R(0.01)	-14.19	first reported:0
1203		0.07246		0.24	
1213		----		----	
1231		----		----	
1263	D5501	0.07154		0.02	
1359	in house	0.0774	C	1.40	first reported:774
1402	EN15721	0.085		3.19	
1429	EN15721	0.0597		-2.76	
1446	EN15721	0.0783		1.61	
1459		----		----	
1468	EN15721	0.06	C	-2.69	first reported:0.015
1523		----		----	
1605		----		----	
1611	EN15721	0.0768		1.26	
1656		----		----	
1710		----		----	
1726	EN15721	0.0691		-0.55	
1727		0.0716		0.04	
1729		----		----	
1835	in house	0.0714		-0.01	
1919	in house	0.0649		-1.54	
1933		0.0617		-2.29	
7002		----		----	
7015		----		----	
7016		----		----	

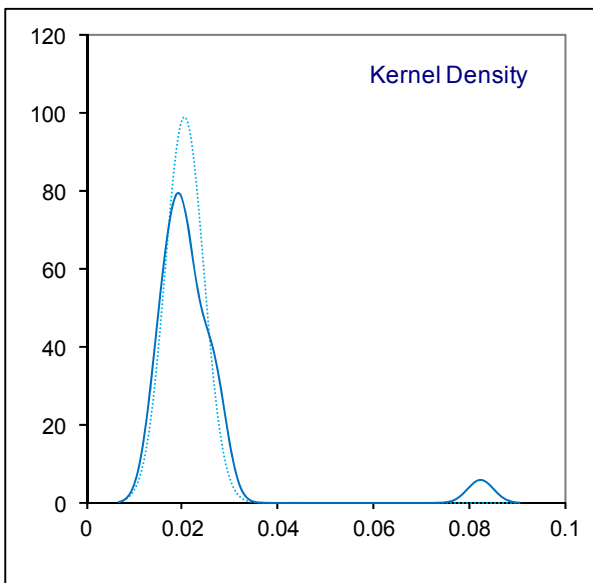
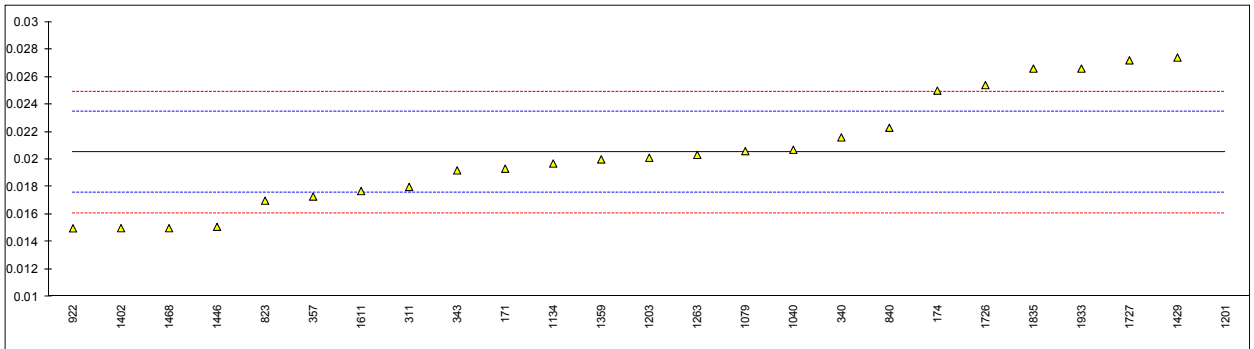
normality	OK
n	25
outliers	3
mean (n)	0.0714
st.dev. (n)	0.00626
R(calc.)	0.0175
R(Horwitz)	0.0119



Determination of 2-Methyl-1-butanol on sample #14231; results in %M/M

lab	method	value	mark	z(targ)	remarks
52		----		----	
62		----		----	
120		----		----	
131		----		----	
132		----		----	
150		----		----	
159		----		----	
169		----		----	
171	EN15721	0.019326		-0.80	
174	EN15721	0.025		3.05	
193		----		----	
194		----		----	
230		----		----	
311	EN15721	0.018	C	-1.70	first reported:0.067
323		----		----	
329		----		----	
332		----		----	
333		----		----	
334		----		----	
337		----		----	
338		----		----	
340	EN15721	0.0216	C	0.74	first reported:0.0820
343		0.0192		-0.89	
357	EN15721	0.0173		-2.18	
360		----		----	
441		----		----	
444		----		----	
468		----		----	
496		----		----	
511		----		----	
541		----		----	
551		----		----	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631		----		----	
657		----		----	
663		----		----	
823	INH-0001	0.0170		-2.38	
840	EN15721	0.0223		1.22	
902		----		----	
913		----		----	
922	INH-0001	0.01499		-3.75	
974		----		----	
1040	EN15721	0.0207		0.13	
1067		----		----	
1079	EN15721	0.0206		0.06	
1126		----		----	
1134		0.0197		-0.55	
1161		----		----	
1201	EN15721	0.0826	C, R(0.01)	42.17	first reported:0
1203		0.02012		-0.26	
1213		----		----	
1231		----		----	
1263	D5501	0.02033		-0.12	
1359	in house	0.0200	C	-0.34	
1402	EN15721	0.015		-3.74	
1429	EN15721	0.0274		4.68	
1446	EN15721	0.0151		-3.67	
1459		----		----	
1468	EN15721	0.015	C	-3.74	first reported:0.06
1523		----		----	
1605		----		----	
1611	EN15721	0.0177		-1.91	
1656		----		----	
1710		----		----	
1726	EN15721	0.0254		3.32	
1727		0.0272		4.55	
1729		----		----	
1835	in house	0.0266		4.14	
1919	in house	<0.01		<-6.99	false negative test result?
1933		0.0266		4.14	
7002		----		----	
7015		----		----	
7016		----		----	

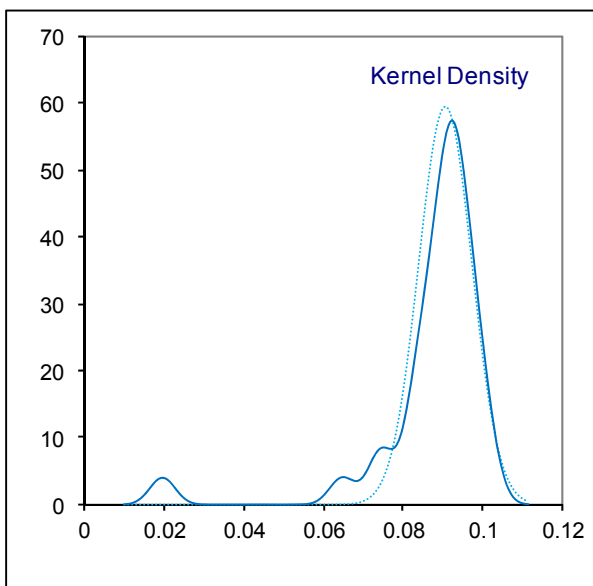
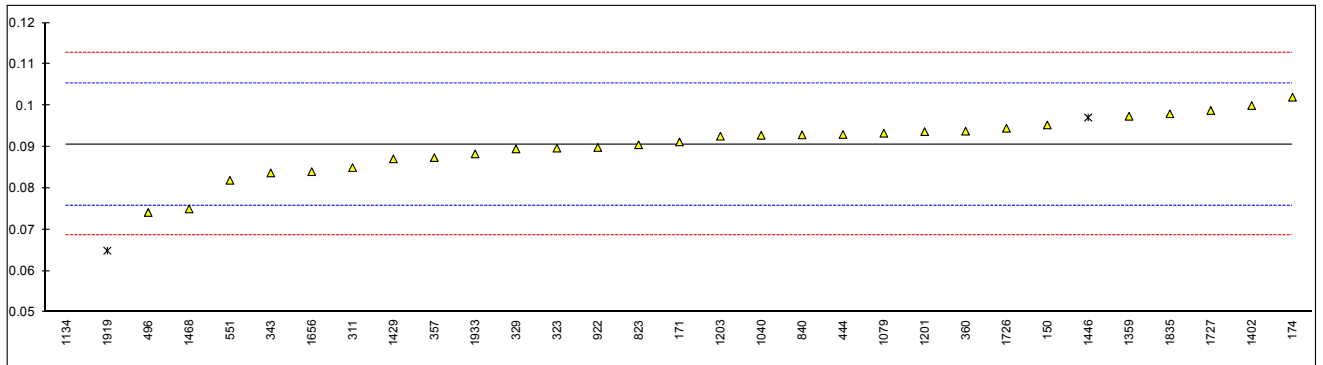
normality	OK
n	24
outliers	1
mean (n)	0.02051
st.dev. (n)	0.004045
R(calc.)	0.01133
R(Horwitz)	0.00412



Determination of sum 2-Methyl-1-butanol + 3-Methyl-1-butanol on sample #14231; results in %M/M

lab	method	value	mark	z(targ)	remarks
52		----		----	
62		----		----	
120		----		----	
131		----		----	
132		----		----	
150	in house	0.0953		0.65	
159		----		----	
169		----		----	
171	EN15721	0.091195		0.09	
174	EN15721	0.102		1.56	
193		----		----	
194		----		----	
230		----		----	
311	EN15721	0.085		-0.75	
323	in house	0.0897		-0.12	
329	in house	0.0895		-0.14	
332		----		----	
333		----		----	
334		----		----	
337		----		----	
338		----		----	
340		----		----	
343		0.0837		-0.93	
357	EN15721	0.0874		-0.43	
360	EN15721	0.0938		0.44	
441		----		----	
444	EN15721	0.093		0.33	
468		----		----	
496	EN15721	0.07413		-2.23	
511		----		----	
541		----		----	
551	INH-1313	0.08191		-1.17	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631		----		----	
657		----		----	
663		----		----	
823	INH-0001	0.0905		-0.01	
840	EN15721	0.0929		0.32	
902		----		----	
913		----		----	
922	INH-0001	0.08985		-0.10	
974		----		----	
1040	EN15721	0.0928		0.31	
1067		----		----	
1079	EN15721	0.0933		0.37	
1126		----		----	
1134		0.0197	R(0.01)	-9.64	
1161		----		----	
1201	EN15721	0.0937	C	0.43	first reported:0
1203		0.09258		0.28	
1213		----		----	
1231		----		----	
1263		----		----	
1359	in house	0.0974		0.93	
1402	EN15721	0.100		1.29	
1429		0.0871		-0.47	
1446	EN15721	0.0971	ex	0.89	result excluded, summation is not correct
1459		----		----	
1468	EN15721	0.075		-2.11	
1523		----		----	
1605		----		----	
1611		----		----	
1656	EN15721	0.084		-0.89	
1710		----		----	
1726	EN15721	0.0945		0.54	
1727		0.0988		1.12	
1729		----		----	
1835	in house	0.0980		1.01	
1919	in house	0.0649	R(0.05)	-3.49	
1933		0.0883		-0.31	
7002		----		----	
7015		----		----	
7016		----		----	

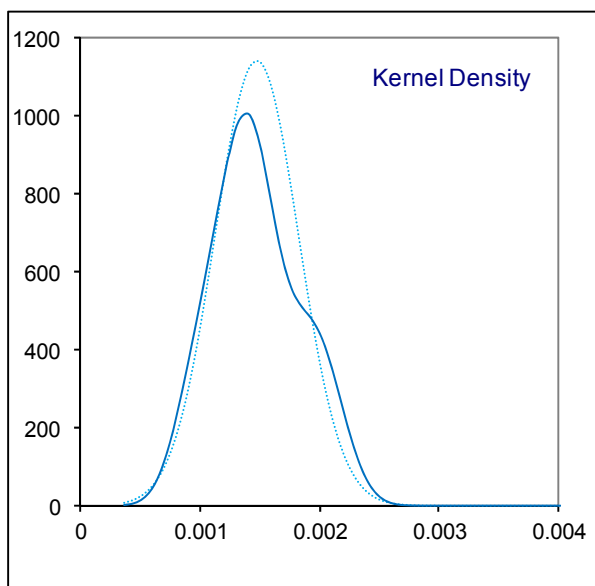
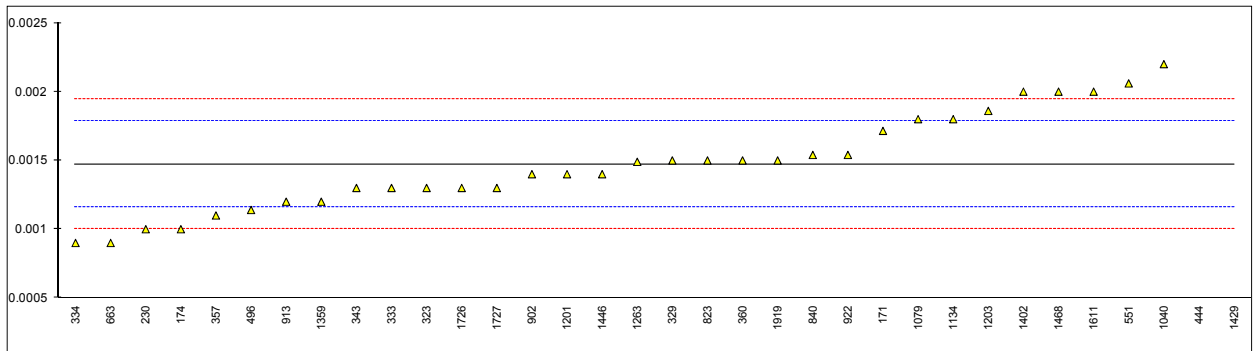
normality	OK
n	28
outliers	2 + 1 excl
mean (n)	0.09055
st.dev. (n)	0.006706
R(calc.)	0.01878
R(Horwitz)	0.02059



Determination of n-Butanol on sample #14231; results in %M/M

lab	method	value	mark	z(targ)	remarks
52		----		----	
62		----		----	
120		----		----	
131		----		----	
132		----		----	
150		----		----	
159		----		----	
169		----		----	
171	EN15721	0.001715		1.54	
174	EN15721	0.001		-3.01	
193		----		----	
194		----		----	
230	INH-0001	0.001		-3.01	
311	EN15721	<0.005		----	
323	in house	0.0013		-1.10	
329	in house	0.0015		0.17	
332		----		----	
333	EN15721	0.0013		-1.10	
334	INH-05001	0.0009	C	-3.65	first reported:9
337		----		----	
338		----		----	
340		----		----	
343		0.0013		-1.10	
357	EN15721	0.0011		-2.37	
360	EN15721	0.0015		0.17	
441		----		----	
444	EN15721	0.007	R(0.01)	35.15	
468		----		----	
496	EN15721	0.00114		-2.12	
511		----		----	
541		----		----	
551	INH-1313	0.00206		3.73	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631		----		----	
657		----		----	
663	INH-001	0.0009		-3.65	
823	INH-0001	0.0015		0.17	
840	INH-0001	0.00154		0.42	
902	INH-0001	0.0014		-0.47	
913	INH-0001	0.0012		-1.74	
922	INH-0001	0.00154		0.42	
974		----		----	
1040	EN15721	0.0022		4.62	
1067		----		----	
1079	EN15721	0.0018		2.08	
1126		----		----	
1134		0.0018		2.08	
1161		----		----	
1201	EN15721	0.0014		-0.47	
1203		0.00186		2.46	
1213		----		----	
1231		----		----	
1263	D5501	0.00149		0.11	
1359	in house	0.0012		-1.74	
1402	EN15721	0.002		3.35	
1429	EN15721	0.0221	R(0.01)	131.18	
1446	EN15721	0.0014		-0.47	
1459		----		----	
1468	EN15721	0.002		3.35	
1523		----		----	
1605		----		----	
1611	EN15721	0.002		3.35	
1656		----		----	
1710		----		----	
1726	EN15721	0.0013		-1.10	
1727		0.0013		-1.10	
1729		----		----	
1835	in house	<0.002		----	
1919	in house	0.0015		0.17	
1933		----		----	
7002		----		----	
7015		----		----	
7016		----		----	

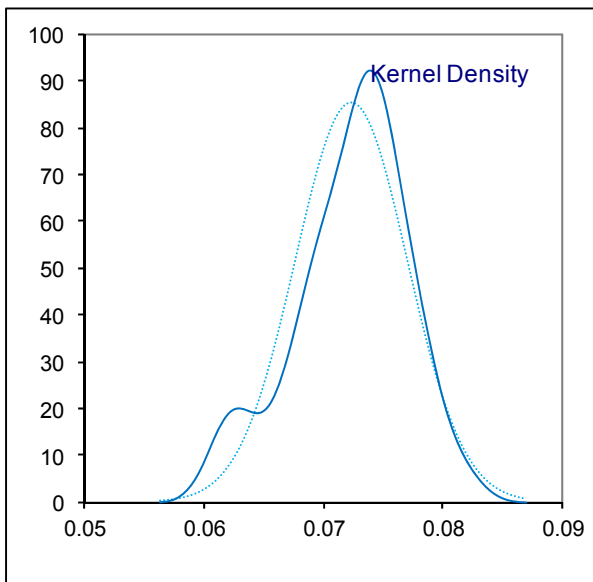
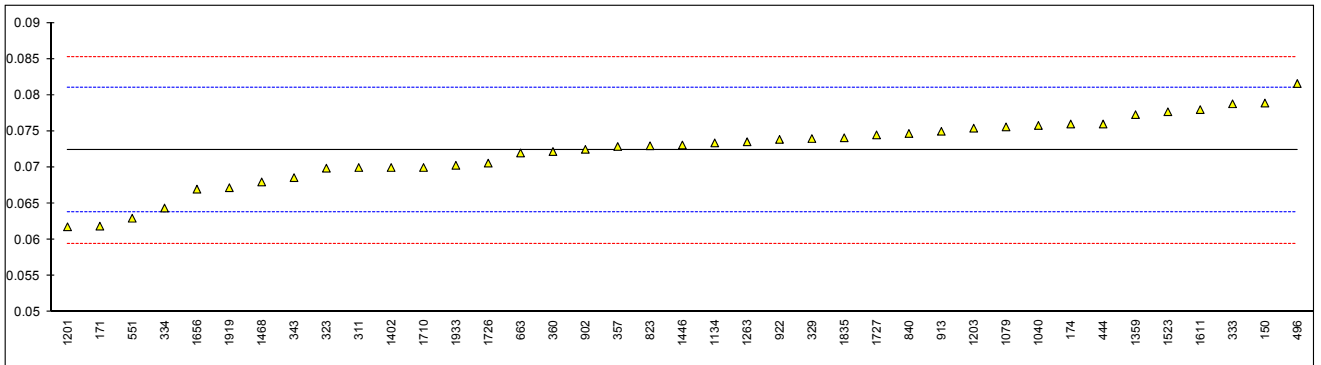
normality	OK
n	32
outliers	2
mean (n)	0.00147
st.dev. (n)	0.000351
R(calc.)	0.00098
R(Horwitz)	0.00044



Determination of n-Propanol on sample #14231; results in %M/M

lab	method	value	mark	z(targ)	remarks
52		----		----	
62		----		----	
120		----		----	
131		----		----	
132		----		----	
150	in house	0.0789		1.52	
159		----		----	
169		----		----	
171	EN15721	0.061900		-2.44	
174	EN15721	0.076		0.84	
193		----		----	
194		----		----	
230		----		----	
311	EN15721	0.070		-0.55	
323	in house	0.0699		-0.58	
329	in house	0.0740		0.38	
332		----		----	
333	EN15721	0.0788	C	1.49	first reported:0.788
334	INH-05001	0.0644		-1.86	
337		----		----	
338		----		----	
340		----		----	
343		0.0686		-0.88	
357	EN15721	0.0729		0.12	
360	EN15721	0.0722		-0.04	
441		----		----	
444	EN15721	0.076		0.84	
468		----		----	
496	EN15721	0.0816		2.15	
511		----		----	
541		----		----	
551	INH-1313	0.06299		-2.18	
554		----		----	
556		----		----	
558		----		----	
559		----		----	
631		----		----	
657		----		----	
663	INH-001	0.072		-0.09	
823	INH-0001	0.0730		0.15	
840	INH-0001	0.0747		0.54	
902	INH-0001	0.0725		0.03	
913	INH-0001	0.0750		0.61	
922	INH-0001	0.07388		0.35	
974		----		----	
1040	EN15721	0.0758		0.80	
1067		----		----	
1079	EN15721	0.0756		0.75	
1126		----		----	
1134		0.0734		0.24	
1161		----		----	
1201	EN15721	0.0618		-2.46	
1203		0.07543		0.71	
1213		----		----	
1231		----		----	
1263	D5501	0.07355		0.27	
1359	in house	0.0773		1.15	
1402	EN15721	0.070		-0.55	
1429		----		----	
1446	EN15721	0.0731		0.17	
1459		----		----	
1468	EN15721	0.068		-1.02	
1523	D5501	0.077697		1.24	
1605		----		----	
1611	EN15721	0.0780		1.31	
1656	EN15721	0.067		-1.25	
1710	EN15721	0.07		-0.55	
1726	EN15721	0.0706		-0.41	
1727		0.0745		0.49	
1729		----		----	
1835	in house	0.0741		0.40	
1919	in house	0.0672		-1.20	
1933		0.0703		-0.48	
7002		----		----	
7015		----		----	
7016		----		----	

normality	OK
n	39
outliers	0
mean (n)	0.07238
st.dev. (n)	0.004680
R(calc.)	0.01310
R(Horwitz)	0.01204



Determination of Acetone, Benzene, Cyclohexane and Crotonaldehyde on sample #14231; results in %M/M

lab	method	Acetone	mark	Benzene	mark	Cyclohexane	mark	Crotonaldehyde	mark
52		----		----		----		----	
62		----		----		----		----	
120		----		----		----		----	
131		----		----		----		----	
132		----		----		----		----	
150	in house	0.0008		<0.0005		<0.0005		<0.0005	
159		----		----		----		----	
169		----		----		----		----	
171	in house	0.000467		0.000158		0.00010454		<0.001	
174	EN15721	<0.01		<0.01		<0.01		<0.01	
193		----		----		----		----	
194		----		----		----		----	
230	INH-0001	<0.01		<0.01		<0.01		----	
311	EN15721	<0.001		<0.0005		<0.0005		<0.0005	
323	in house	0.0006		<0.0005		----		----	
329	in house	0.0005		<0.0005		<0.0005		----	
332		----		----		----		----	
333		----		----		----		----	
334	INH-05001	n.d.		0.0005	C	n.d.		----	
337		----		----		----		----	
338		----		----		----		----	
340		----		----		----		----	
343		----		----		----		----	
357	INH-0001	<0.001	C	<0.001		<0.001		<0.001	
360	EN15721	0.0003		----		----		----	
441		----		----		----		----	
444		----		----		----		----	
468		----		<0.001		----		----	
496		----		----		----		----	
511		----		----		----		----	
541		----		----		----		----	
551	INH-1313,1312,1346	0.00178		0.00023		0.000357		0.000144	
554		----		----		----		----	
556		----		----		----		----	
558		----		----		----		----	
559		----		----		----		----	
631		----		----		----		----	
657		----		----		----		----	
663	INH-001	n.d.		n.d.		n.d.		n.d.	
823	INH-0001	0.0005		<0.0005		<0.0005		<0.0005	
840	INH-0001	0.00033		0.00016		0.00011		<0.0002	
902	INH-0001	<0.001		<0.001		----		----	
913	INH-0001	<0.0005		<0.0001		<0.0005		<0.0005	
922	INH-0001	0.00062		0.00026		<0.0002		<0.0005	
974		----		----		----		----	
1040	EN15721	0		0.0006		0		0	
1067		----		----		----		----	
1079		----		----		----		----	
1126		----		----		----		----	
1134		----		----		----		----	
1161		----		----		----		----	
1201	EN15721	0		0		0		0	
1203		<0.0005		<0.0005		<0.0005		----	
1213		----		----		----		----	
1231		----		----		----		----	
1263	D5501	<0.001		----		----		----	
1359	in house	<0.0001		----		----		----	
1402		----		----		----		----	
1429		----		----		----		----	
1446		----		----		----		----	
1459		----		----		----		----	
1468	EN15721	<0.001		<0.001		----		----	
1523		----		----		----		----	
1605		----		----		----		----	
1611		----		----		----		----	
1656		----		----		----		----	
1710		----		----		----		----	
1726	in house	n.d.		0.0002		n.d.		n.d.	
1727		----		<0.0010		<0.0010		----	
1729		----		----		----		----	
1835	in house	n.d.		<0.001		<0.001		----	
1919	in house	<0.01		----		----		----	
1933		----		----		----		----	
7002		----		----		----		----	
7015		----		----		----		----	
7016		----		----		----		----	

normality	n.a	n.a	n.a	n.a
n	22	23	17	12
outliers	n.a	n.a	n.a	n.a
mean (n)	<0.01	<0.01	<0.01	<0.01
st.dev. (n)	n.a	n.a	n.a	n.a
R(calc.)	n.a	n.a	n.a	n.a
R(Lit)	n.a	n.a	n.a	n.a

Lab 334 first reported Benzene:5

Lab 357 first reported Aceton:0.0014

Determination of DEG, Dioxane and Isopropanol on sample #14231; results in %M/M

lab	method	DEG	mark	Dioxane	mark	Isopropanol	mark
52		----		----		----	
62		----		----		----	
120		----		----		----	
131		----		----		----	
132		----		----		----	
150	in house	<0.0005		<0.0005		<0.0005	
159		----		----		----	
169		----		----		----	
171	in house	<0.001		<0.001		<0.001	
174	EN15721	<0.01		<0.01		<0.01	
193		----		----		----	
194		----		----		----	
230		----		----		<0.01	
311	INH-270	<0.001		0.0012		<0.0005	
323	in house	----		----		<0.0005	
329	in house	----		----		<0.0005	
332		----		----		----	
333		----		----		----	
334		----		----		n.d.	
337		----		----		----	
338		----		----		----	
340		----		----		----	
343		----		----		----	
357		----		----		<0.001	
360		----		----		0.0002	
441		----		----		----	
444		----		----		----	
468		----		----		----	
496		----		----		----	
511		----		----		----	
541		----		----		----	
551	INH-1379	0.00000		0.001949		0.00027	
554		----		----		----	
556		----		----		----	
558		----		----		----	
559		----		----		----	
631		----		----		----	
657		----		----		----	
663	INH-001	n.d.		n.d.		n.d.	
823	INH-0001	<0.0005		<0.0005		<0.0005	
840	INH-0001	0.00026		<0.0002		0.00035	
902		----		----		<0.001	
913		----		<0.000001		<0.0005	
922	INH-0001	<0.0002		<0.0002		<0.0005	
974		----		----		----	
1040	EN15721	0		0		0.0004	
1067		----		----		----	
1079		----		----		----	
1126		----		----		----	
1134		----		----		----	
1161		----		----		----	
1201	EN15721	0		0		0	
1203		----		<0.0005		<0.0005	
1213		----		----		----	
1231		----		----		----	
1263	D5501	----		----		<0.001	
1359	in house	----		----		<0.0001	
1402		----		----		----	
1429		----		----		----	
1446		----		----		----	
1459		----		----		----	
1468		----		----		----	
1523		----		----		----	
1605		----		----		----	
1611		----		----		----	
1656		----		----		----	
1710		----		----		----	
1726	in house	n.d.		n.d.		n.d.	
1727		----		----		n.d.	
1729		----		----		----	
1835	in house	----		----		n.d.	
1919	in house	----		----		<0.01	
1933		----		----		0.0003	
7002		----		----		----	
7015		----		----		----	
7016		----		----		----	

normality	n.a	n.a	n.a
n	10	12	22
outliers	n.a	n.a	n.a
mean (n)	<0.01	<0.01	<0.01
st.dev. (n)	n.a	n.a	n.a
R(calc.)	n.a	n.a	n.a
R(Lit)	n.a	n.a	n.a

Determination of n-Amylalcohol, sec-Amylalcohol and on sample #14231; results in %M/M

lab	method	MEG	mark	n-Amylalcohol	mark	sec-Amylalcohol	mark
52		----		----		----	
62		----		----		----	
120		----		----		----	
131		----		----		----	
132		----		----		----	
150	in house	<0.0005		----		----	
159		----		----		----	
169	D5501	----		----		----	
171	EN15721	0.000106		<0.001		<0.001	
174	EN15721	<0.01		<0.01		<0.01	
193		----		----		----	
194		----		----		----	
230	INH-0001	----		<0.01		0.006	
311	EN15721	<0.001		<0.0005		<0.0005	
323	in house	----		<0.0005		<0.0005	
329	in house	----		<0.0005		<0.0005	
332		----		----		----	
333	EN15721	----		----		----	
334	INH-05001	----		0.0006		----	
337		----		----		----	
338	INH-2870	----		----		----	
340	EN15721	----		----		----	
343		----		----		----	
357	EN15721	----		<0.001		<0.001	
360	EN15721	----		----		----	
441		----		----		----	
444	EN15721	----		----		----	
468		----		----		----	
496	EN15721	----		----		----	
511		----		----		----	
541		----		----		----	
551	INH-1313	0.00059		----		----	
554		----		----		----	
556		----		----		----	
558		----		----		----	
559		----		----		----	
631		----		----		----	
657		----		----		----	
663	INH-001	n.d.		0.100	false pos?	----	
823	INH-0001	<0.0005		<0.0005		0.0185	false pos?
840	INH-0001	<0.0002		<0.0002		<0.0002	
902	INH-0001	----		<0.001		<0.001	
913	INH-0001	----		----		----	
922	INH-0001	<0.0002		<0.0005		----	
974		----		----		----	
1040	EN15721	0		0		0	
1067		----		----		----	
1079	EN15721	----		----		----	
1126		----		----		----	
1134		----		----		----	
1161		----		----		----	
1201	EN15721	0		0.0061		0	
1203		----		<0.0005		----	
1213	D5501	----		----		----	
1231		----		----		----	
1263	D5501	----		<0.001		----	
1359	in house	----		----		----	
1402	EN15721	----		----		----	
1429	EN15721	----		----		----	
1446	EN15721	----		0.0984	false pos?	----	
1459		----		----		----	
1468	EN15721	----		----		----	
1523		----		----		----	
1605	in house	----		----		----	
1611	EN15721	----		----		----	
1656	EN15721	----		----		----	
1710	EN15721	----		----		----	
1726	EN15721	n.d.		n.d.		n.d.	
1727		----		----		----	
1729		----		----		----	
1835	in house	----		----		----	
1919		----		0.0016		----	
1933		----		----		----	
7002		----		----		----	
7015		----		----		----	
7016		----		----		----	

normality	n.a	n.a	n.a
n	10	n.a	n.a
outliers	n.a	17	11
mean (n)	<0.01	n.a	n.a
st.dev. (n)	n.a	<0.01	<0.01
R(calc.)	n.a	n.a	n.a
R(Lit)	n.a	n.a	n.a

Determination of sec-Butanol, Tert-Amylcohol and tert-Butanol on sample #14231; results in %M/M

lab	method	sec-Butanol	mark	Tert-Amylcohol	mark	Tert-butanol	mark
52		----		----		----	
62		----		----		----	
120		----		----		----	
131		----		----		----	
132		----		----		----	
150	in house	<0.0005		----		----	
159		----		----		----	
169		----		----		----	
171	EN15721	<0.001		<0.001		<0.001	
174	EN15721	<0.01		<0.01		<0.01	
193		----		----		----	
194		----		----		----	
230	INH-0001	0.001		<0.01		<0.01	
311	EN15721	<0.005		<0.0005		<0.005	
323	in house	<0.0005		0.0063		<0.0005	
329	in house	<0.0005		0.0065		<0.0005	
332		----		----		----	
333		----		----		----	
334		----		----		----	
337		----		----		----	
338		----		----		----	
340		----		----		----	
343		<0.001		----		----	
357	EN15721	<0.001		----		<0.001	
360	EN15721	0.0009		----		----	
441		----		----		----	
444		----		----		----	
468		----		----		----	
496	EN15721	0.00011		----		----	
511		----		----		----	
541		----		----		----	
551	INH-1313	0.000000		----		----	
554		----		----		----	
556		----		----		----	
558		----		----		----	
559		----		----		----	
631		----		----		----	
657		----		----		----	
663	INH-001	n.d.		----		n.d.	
823	INH-0001	<0.0005		0.0070		<0.0005	
840	INH-0001	<0.0002		<0.0002		<0.0002	
902	INH-0001	<0.001		<0.001		----	
913	INH-0001	<0.0005		----		----	
922	INH-0001	<0.0005		----		<0.0005	
974		----		----		----	
1040	EN15721	0.0009		0		0	
1067		----		----		----	
1079	EN15721	0.0008		----		<0.001	
1126		----		----		----	
1134		0.0001		----		----	
1161		----		----		----	
1201	EN15721	0		0		0	
1203		<0.0005		<0.0005		<0.0005	
1213		----		----		----	
1231		----		----		----	
1263	D5501	<0.001		----		<0.001	
1359	in house	<0.0001		----		----	
1402	EN15721	<0.001		----		----	
1429	EN15721	0.0010		----		----	
1446	EN15721	0.0001		----		----	
1459		----		----		----	
1468	EN15721	<0.001		----		----	
1523		----		----		----	
1605		----		----		----	
1611	EN15721	0.000		----		----	
1656		----		----		----	
1710		----		----		----	
1726	in house	n.d.		n.d.		n.d.	
1727		----		----		----	
1729		----		----		----	
1835		----		----		----	
1919	in house	<0.01		<0.01		----	
1933		----		----		----	
7002		----		----		----	
7015		----		----		----	
7016		----		----		----	

normality	n.a	n.a	n.a
n	n.a	n.a	n.a
outliers	29	13	13
mean (n)	n.a	n.a	n.a
st.dev. (n)	<0.01	<0.01	<0.01
R(calc.)	n.a	n.a	n.a
R(Horwitz)	n.a	n.a	n.a

APPENDIX 2**Number of participating laboratories per country:**

1 lab in ARGENTINA
2 labs in AUSTRIA
4 labs in BELGIUM
5 labs in BRAZIL
1 lab in BULGARIA
2 labs in CANADA
1 lab in CZECH REPUBLIC
1 lab in FINLAND
8 labs in FRANCE
2 labs in GERMANY
2 labs in HUNGARY
1 lab in INDIA
3 labs in IRAN, Islamic Republic of
1 lab in MAURITIUS
6 labs in NETHERLANDS
2 labs in PAKISTAN
1 lab in PERU
1 lab in PHILIPPINES
1 lab in POLAND
1 lab in SINGAPORE
1 lab in SOUTH KOREA
4 labs in SPAIN
2 labs in SWEDEN
2 labs in THAILAND
2 labs in TURKEY
1 lab in UNITED ARAB EMIRATES
6 labs in UNITED KINGDOM
10 labs in UNITED STATES OF AMERICA
2 labs 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
ex	= excluded from calculations
n.a.	= not applicable
U	= unit error
SDS	= Safety Data Sheet

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