Results of Proficiency Test
Biodiesel 100% FAME (B100)
May 2010

Organised by: Institute for Interlaboratory Studies
Spijkenisse, the Netherlands

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1 INTRODUCTION

Since 2001, a proficiency test for Fatty Acid Methyl Esters (FAME) used as Biodiesel B100 is organised every year by the Institute for Interlaboratory Studies (iis).
In this interlaboratory study 63 laboratories from 29 different countries have participated. See appendix 2 for a list of number of participants per country. In this report, the results of the Biodiesel B100 proficiency test are presented and discussed.

2 SET UP

In this proficiency test, Biodiesel B100 produced from Rapeseed Oil was used. Sample analyses for fit-for-use and homogeneity testing were subcontracted. It was decided to send two identical samples: 1* ½ litre and 1* 1 litre bottle of Biodiesel B100 (both labelled #1036) for the regular Biodiesel B100 round robin. Furthermore, 1 litre bottle Biodiesel B100 (labelled #1037) specifically for Total Contamination test and 1 bottle of 1 litre, labelled #1038 speciality for “Cold Soak Test”. The test scopes were set up according to both EN14214:09 and ASTM D6751:09 specifications.
Participants were requested to report the analytical results as "rounded and unrounded results" and to use the indicated units on the report form(s). The unrounded results were preferably used for statistical evaluation.

2.1 QUALITY SYSTEM

The Institute for Interlaboratory Studies in Spijkenisse, the Netherlands, has implemented a quality system based on ISO guide 43 and ILAC-G13:2007. This ensures 100% confidentially of participant’s data. Also customer’s satisfaction is measured on regular basis by the distribution of questionnaires.

2.2 PROTOCOL

The protocol followed in the organization of this proficiency test was the one as described for proficiency testing in the report ‘iis Interlaboratory Studies: Protocol for the Organization, Statistics and Evaluation’ of January 2010 (iis-protocol, version 3.2), which can be downloaded from www.iisnl.com.

2.3 CONFIDENTIALITY STATEMENT

All data present 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 210 litre bulk material of Biodiesel B100 type RME “Rapeseed Methyl Ester” was purchased from a European producer. After fit-for-use testing and homogenisation in a precleaned metal drum, the B100 was transferred to 90 brown glass bottles of 1 litre and 90 brown bottles of 500 mL and labelled 1036. The homogeneity of the subsamples was checked by the determination of Water in accordance with ISO12937:02 and Density in accordance with ASTM D4052:09 on 8 stratified randomly selected samples:

	Water in mg/kg	Density at 15ºC in kg/L
Sample #1036-1	329	0.88325
Sample #1036-2	325	0.88325
Sample #1036-3	328	0.88325
Sample #1036-4	321	0.88325
Sample #1036-5	323	0.88325
Sample #1036-6	319	0.88325
Sample #1036-7	316	0.88325
Sample #1036-8	317	0.88325

table 1: homogeneity test of subsamples #1036 and #1038

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

	Water in mg/kg	Density at 15ºC in kg/L
r (sample #1036)	14	0.00000
Reference test	ISO12937:02	D4052:09
$0.3*R_{(reference\ test)}$	37	0.00015

table 2: repeatabilities of subsamples

Each calculated repeatability was equal or less than 0.3 times the corresponding reproducibility of the respective reference method. Therefore, homogeneity of the subsamples was assumed.

For Total Contamination 50 litre of the bulk material was used. After homogenization, the material was subsequently divided over 45 amber glass bottles of 1L with inner and outer caps and labelled #1037. Each sample was spiked with 1 ml of a fresh prepared and well shaken, 25 g/kg particulate quartz material BCR-067 (ø 2.4-32 µm) in oil suspension.

The homogeneity was checked by weighing the bottles before and after addition of the spike.

For “Cold Soak Test” determination 30 bottles of 1 litre with the regular Biodiesel B100 were filled and labelled #1038. For homogeneity of subsamples #1038 see table 1.

Depending on the registration of the participant, one bottle of 1 litre and one bottle of 0.5 litre, labelled #1036, and/or one 1 litre bottle labelled #1037, and/or one 1 litre bottle labelled #1038 were dispatched to each of the participating laboratories on April 22, 2010.

2.5 STABILITY OF THE SAMPLES

The stability of the Biodiesel B100, packed in the brown glass bottles, was checked. The material was found sufficiently stable for the period of the proficiency test.

2.6 ANALYSES

The tests methods to be used by the participating laboratories should be in accordance with the requirements of EN14214:03/C1:07 and/or ASTM D6751:09, e.g.:

Parameter	EN14214/C1:07	Parameter	ASTM D6751:09
Acid Value	EN14104	Acid Number	ASTM D664
Carbon Residue	ISO10370	Carbon Residue	ASTM D4530
CFPP	EN116	--	
Copper Strip Corrosion	ISO2160	Copper Strip Corrosion	ASTM D130
Total Contamination	EN12662	--	
Density @ 15°C	ISO12185	--	
Flash Point	ISO3679	Flash Point	ASTM D93
Iodine Value	EN14111	--	
Kin. Visc. @ 40°C	ISO3104	Kin. Visc. @ 40°C	ASTM D445
Oxidation Stability	EN14112	Oxidation Stability	EN14112
Sulphated Ash	ISO3987	Sulphated Ash	ASTM D874
Sulphur	ISO20846	Sulphur	ASTM D5453
Water	ISO12937	Water and Sediment	ASTM D2709
Calcium + Magnesium	EN14538	Calcium + Magnesium	EN14538
Phosphorus	EN14107	Phosphorus	ASTM D4951
Potassium + Sodium	EN14108	Potassium + Sodium	EN14538
Methanol	EN14110	Methanol	EN14110
mono-, di-, tri-	EN14105	--	
Free + Total Glycerol	EN14105	Free + Total Glycerol	ASTM D6584
Ester	EN14103	--	
Linolenic Acid	EN14103	--	

table 3: requirements and test methods acc. to specifications EN14214/C1:07 and ASTM D6751:09

To get comparable results a detailed report form, on which the units were prescribed as well as some of the required standards, was sent together with each set of samples. Also a letter of instructions and a SDS were added to the package.

3 RESULTS

During four weeks after sample despatch, the results of the individual laboratories were gathered. The original data are tabulated per determination in the 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 the 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 Organization, Statistics and Evaluation' of January 2010 (iis-protocol, version 3.2).

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. After removal of outliers, this check was repeated. Not all data sets proved to have a normal distribution, in which cases the conclusions of statistical evaluation should be used with due care.
In accordance with ISO 5725 (1986 and 1994) the original results per determination were submitted subsequently to Dixon and Grubbs 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. Stragglers are marked by D(0.05) for the Dixon test, by G(0.05) or DG(0.05) for the Grubbs test. Both outliers and stragglers were not included in the calculations of averages and standard deviations.

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

3.2 GRAPHICS

In order to visualize the data against the reproducibilities from literature, Gauss plots were made, using the sorted data for one determination (see appendix 1). On the Y-axis the reported analysis results are plotted. The corresponding laboratory numbers are under the X-axis.
The straight horizontal line presents the consensus value (a trimmed mean). The four striped lines, parallel to the consensus value line, are the +3s, +2s, -2s and -3s target reproducibility limits of the selected standard. Outliers and other data, which were excluded from the calculations, are represented as a 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, nr.14-15).

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. The z-scores were calculated according to:

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

The $z_{(target)}$ scores for the average results of the samples #1036 and #1037 were listed in appendix 1.
The $z_{(target)}$ scores are listed in the result tables in appendix 1.
Absolute values for z<2 are very common and absolute values for z>3 are very rare. Therefore, the usual interpretation of z-scores is as follows:

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

4 EVALUATION

In this proficiency test, some problems were encountered during the execution. Four laboratories had trouble receiving the samples on time. In total, 63 laboratories in 29 countries participated; 12 laboratories reported after the deadline. Most laboratories reported results, but not all laboratories were able to perform all analyses requested. From 63 participants 1025 numerical results were received. Observed were 53 outlying results, which is 5.2% of the numerical results. In proficiency studies, outlier percentages of 3% - 7.5% are quite normal.

Not all original data sets proved to have a normal distribution. Not normal Gaussian distributions were found for the following determinations: Cold Filter Plugging Point, Cloud Point, Density, Kinematic Viscosity, Water, Phosphorus, Potassium, Methanol and Free Glycerol. In these cases, the results of the statistical evaluations should be used with care.

4.1 EVALUATION PER TEST

In this section, the results are discussed per test. The specified test methods and requirements acc. to EN14214:09 and ASTM D6751:09 were taken into account for explaining the observed differences when possible and applicable. These methods are also in the tables together with the original data in appendix 1. The abbreviations, used in these tables, are listed in appendix 3.

Acid Value: (EN)	This determination is problematic for one laboratory. Only one statistical outlier was observed and the calculated reproducibility, after rejection of the statistical outlier is in full agreement with the requirements of EN14104:03.
Acid Number (ASTM)	This determination is very problematic. Although, no statistical outlier was observed, four laboratories used ASTM D974, a method that is not equivalent to ASTM D664 and that may give deviating results and therefore these results were excluded from statistical evaluation. The calculated reproducibility, after exclusion of the four D974 results, is not at all in agreement with the requirements of ASTM D664:09a (method B).
Carbon Residue	This determination is very problematic. Two statistical outliers were observed. The calculated reproducibility, after rejection of the statistical outliers is not at all in agreement with the requirements of ISO10370:95. According to the EN14214:2003 specifications, it is required to perform the analysis on a sample reduced to 10% of its volume by distillation. However, ASTM D6751:2009 specifications require the analysis to be performed on an undistilled sample. In this study, it was requested to reduce the sample volume to 10% prior to the determination of the Carbon Residue. Perhaps not all participants fulfilled this request.
CFPP:	This determination is not problematic. No statistical outliers were observed and the calculated reproducibility is in full agreement with the requirements of EN116:97, although, according to EN14214:09, no reproducibility requirements are available for the EN116:97 method on Biodiesel B100.
Cloud Point:	This determination is not problematic. No statistical outliers were observed and the calculated reproducibility is in full agreement with the requirements of ASTM D2500:09 and EN23015/ISO3015.
Copper Corrosion:	No problems have been observed. All participants agree on a result of 1.
Density @15°C:	This determination is problematic for several laboratories. Three statistical outliers were observed. The calculated reproducibility, after rejection of the statistical outliers, is in good agreement with the requirements of ISO12185:96.
Flash Point (ISO3679):	This determination is not problematic. Only one statistical outlier was observed and the calculated reproducibility, after rejection of the statistical outlier, is in full agreement with the requirements of ISO3679:04.

Flash Point (D93): This determination is problematic. Only statistical outlier was observed. However, the calculated reproducibility, after rejection of the statistical outlier, is not in agreement with the requirements of ASTM D93:10 method A.

Iodine Number: This determination is problematic. Five statistical outliers were observed and the calculated reproducibility, after rejection of the statistical outliers, is not in agreement with the requirements of EN14111:03.

Kin.Visco. @ 40°C: This determination is problematic for several laboratories. Four statistical outliers were observed and the calculated reproducibility, after rejection of the statistical outliers, is almost in agreement with the requirements of ISO3104:96.

Oxidation Stability: This determination is problematic for two laboratories. Only two statistical outliers were detected and the calculated reproducibility, after rejection of the statistical outliers, is in good agreement with the requirements of EN14112:03.

Sulphur (ISO20846): All reported results were near or below the application range of ISO20846 (3 – 500 mg/kg), so no conclusions were drawn for this test. One false positive result was observed.

Sulphur (D5453): This determination is problematic for several laboratories. Five statistical outliers were detected. However, the calculated reproducibility, after rejection of the statistical outliers, is in good agreement with the requirements of ASTM D5453:09.

Sulphated Ash: All reported results were near or below the applicable lower limit of ASTM D874:07 and ISO3987:94 (0.005% M/M), so no conclusions were drawn.

Water: This determination is not problematic. Only one statistical outlier was observed. After the rejection of the statistical outlier, the calculated reproducibility is in good agreement with the requirements of ISO12937:00.

Calcium and Magnesuim: All reported results were near or below the applicable lower limit of EN14538:06 (1 – 10 mg/kg), so no conclusions were drawn.

Phosphorus: For this determination, all reporting participants agreed on a result below 4 mg/kg. The application range of EN14107:03 is 4 – 20 mg/kg.

Sodium: For this determination, all reporting participants agreed on a result below 1 mg/kg. The application range of EN14108:03 is >1 mg/kg.

Potassium: For this determination, all reporting participants, except two, agreed on a result below 0.5 mg/kg. The application range of EN14108:03 is >0.5 mg/kg. Two false positives test results were observed.

Methanol: This determination is problematic at this low level (0.01%M/M). Only one statistical outlier was observed. However, the calculated reproducibility, after rejection of the statistical outlier, is not in agreement with the requirements of EN14110:03.

mono-Glycerides: This determination is problematic for several laboratories. Three statistical outliers were observed. However, the calculated reproducibility, after rejection of the statistical outliers, is in good agreement with the requirements of EN14105:03.

di-Glycerides: This determination is problematic for two laboratories. Two statistical outliers were observed. However, the calculated reproducibility, after rejection of the statistical outliers, is in full agreement with the requirements of EN14105:03.

tri-Glycerides: This determination is problematic for several laboratories. Only one statistical outlier was observed. However, the calculated reproducibility, after rejection of the statistical outlier, is in agreement with the requirements of EN14105:03.

Free Glycerol: This determination is problematic for several laboratories. Three statistical outliers were observed. However, the calculated reproducibility, after rejection of the statistical outliers, is in full agreement with the requirements of EN14105:03.

Total Glycerol: This determination is problematic for several laboratories. Four statistical outliers were observed. However, the calculated reproducibility, after rejection of the statistical outliers, is in good agreement with the requirements of EN14105:03.

Total Ester content: This determination is not problematic. No statistical outliers were observed and the calculated reproducibility is in full agreement with the requirements of EN14103:03.

Linolenic Acid Methyl Ester: This determination is problematic for several laboratories. Three statistical outliers were observed. However, the calculated reproducibility, after rejection of the statistical outliers, is in good agreement with the requirements of EN14103:03.

Total Contamination: Serious analytical problems have been observed. The samples were spiked with 1 ml of a fresh prepared and well shaken, 25 g/kg particulate quartz material BCR-067 (ø 2.4-32 µm) in oil suspention. Therefore the minimal Total Contamination concentration to be found was known (added amount = 25.1 mg/kg). The laboratories should be able to find at least 17.6 mg/kg [25.1 $mg/kg_{(added\ amount)}$ – 7.5 $mg/kg_{(R\ EN12662)}$]. However, 9 of 31 laboratories reported lower amounts than 17.6 mg/kg and therefore the results were rejected prior to data analysis. The reason for the reported low TC concentrations is possibly insufficient homogenisation of the sample by the respective laboratory prior to sub sampling for analysis. After excluding the questionable data and three statistical outliers, the calculated reproducibility is not in agreement with the requirements of EN12662:08.

Cold Soak Filter test: This determination may be not problematic. No statistical outliers were observed and the calculated reproducibility is in agreement with the requirements of ASTM D6751:09.

Filter Blocking Tendency: This determination may be very problematic as the range of reported results is very large (1.03 – 6.08). However, as only five results were reported, it was difficult to draw significant conclusions.

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 laboratories that participated. The reproducibilities derived from literature standards (in casu the ASTM, EN and IP standards) and the calculated reproducibilities of the samples (see appendix 1) are compared in the next table.

Parameter	unit	n	average	R (Calc.)	R (lit)
Acid Value (EN14104)	mg KOH/g	38	0.138	0.054	0.060
Acid Number (D664)	mg KOH/g	23	0.136	0.066	0.021
Carbon Residue	%M/M	24	0.107	0.164	0.055
Cold Filter Plugging Point	°C	49	-21.5	3.7	4.8
Cloud Point	°C	31	-7.79	3.49	4.00
Density @ 15°C	kg/m^3	57	883.22	0.32	0.50
Flash Point (ISO3679)	°C	26	177.48	15.06	15.00
Flash Point PMcc (D93)	°C	31	173.94	15.51	12.35
Iodine Value	g I_2/100g	42	113.38	6.06	5.00
Kin. Viscosity @ 40°C	mm^2/s	54	4.5010	0.0495	0.0451
Oxidation Stability	hours	47	9.285	1.535	2.644
Sulphated Ash	%M/M	19	0.0015	0.0021	(0.0007)
Sulphur (ISO20846)	mg/kg	22	1.843	0.854	(1.326)
Sulphur (D5453)	mg/kg	17	1.745	0.554	0.880
Water	mg/kg	55	344.71	72.11	127.68
Calcium & Magnesium	mg/kg	17	0.20	0.14	(1.22)
Phosphorus	mg/kg	13	0.23	0.59	(0.07)
Sodium	mg/kg	25	0.40	0.56	(1.46)
Potassium	mg/kg	17	0.15	0.57	(2.02)
Methanol	%M/M	28	0.0096	0.0073	0.0051
mono-Glycerides	%M/M	36	0.575	0.182	0.204
di-Glycerides	%M/M	36	0.113	0.044	0.047
tri-Glycerides	%M/M	35	0.066	0.083	0.078
Free Glycerol	%M/M	23	0.0025	0.0041	0.0045
Total Glycerol	%M/M	35	0.169	0.040	0.066
Total Ester	%M/M	40	98.098	2.860	3.100
Linolenic Acid Methyl Ester	%M/M	38	9.610	0.346	3.009
Total Contamination	mg/kg	19	24.23	8.65	7.27
Cold Soak Filter Test	s	6	179.1	96.7	115.9
Filter Blocking Tendency		5	2.62	6.42	0.42

table 4: comparison of the observed and target reproducibilities of samples #1036, #1037 and #1038
Results between brackets were below the application range of the method, therefore results should be evaluated with care

Without further statistical calculations, it can be concluded that for many tests there is not a good compliance of the group of participating laboratories with the relevant standards. The problematic tests have been discussed in paragraph 4.1.

4.3 COMPARISON OF THE PROFICIENCY TEST OF MAY 2010 WITH PREVIOUS PT'S

	May 2010	October 2009	May 2009	October 2008
Type of FAME	Rapeseed	Rapeseed	Rapeseed	Palm Oil
Number of reporting labs	63	35	67	27
Number of results reported	1025	519	980	417
Statistical outliers	53	33	61	31
Percentage outliers	5.2%	6.4%	6.2%	7.4%

table 5: 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	May 2010	October 2009	May 2009	October 2008
Acid Value (EN14104)	+	-	+/-	+/-
Acid Number (D664)	--	--	+/-	++
Carbon Residue	--	--	--	--
Cold Filter Plugging Point	++	++	--	n.e.
Cloud Point	++	n.e.	n.e.	n.e.
Density @15°C	++	++	++	+/-
Flash Point PMcc (ISO3679)	+/-	+	--	++
Flash Point PMcc (D93)	--	--	--	--
Iodine Value	-	--	--	--
Kin. Viscosity @ 40°C	++	+	++	--
Oxidation Stability	++	++	++	++
Sulphated Ash	(--)	(--)	(--)	(--)
Sulphur (ISO20846)	(++)	(+/-)	(++)	(++)
Sulphur (D5453)	++	n.e.	+/-	(--)
Water	++	++	++	++
Calcium and Marnesium	++	--	(++)	n.d.
Phosphorus	(--)	(--)	(--)	n.d.
Potassium and Sodium	(++)	++	(++)	n.d.
Methanol	--	+	--	(++)
mono-Glycerides	++	--	+/-	(--)
di-Glycerides	+/-	--	-	(--)
tri-Glycerides	+/-	--	--	(++)
Free Glycerol	+/-	--	-	+/-
Total Glycerol	++	+	+/-	--
Total Ester	++	++	++	++
Linolenic Acid Methyl Ester	-	++	++	--
Total Contamination	-	(--)	+	--
Cold Soak Filter Test	++	n.e.	n.e.	n.e.
Filter Blocking Tendency	--	n.e.	n.e.	n.e.

table 6: comparison determinations against the standard requirements of sample #1036
Results between brackets were below the application range of the method

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

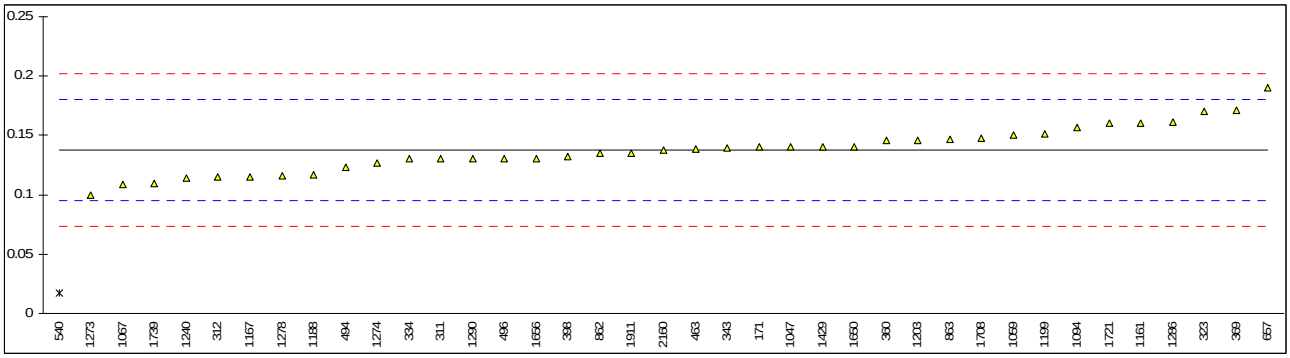
++:	group performed much better than the standard
+ :	group performed better than the standard
+/-:	group performance equals the standard
- :	group performed worse than the standard
-- :	group performed much worse than the standard
n.d.:	not determined
n.e.:	not evaluated

APPENDIX 1

Determination of Acid Value conform EN spec. on sample #1036; results in mg KOH/g

lab	method	value	mark	z(targ)	remarks
62		-----		-----	
150		-----		-----	
169		-----		-----	
171	EN14104	0.140		0.11	
311	EN14104	0.13		-0.36	
312	EN14104	0.1149		-1.06	
323	EN14104	0.17		1.51	
333		-----		-----	
334	EN14104	0.13		-0.36	
343	EN14104	0.1392		0.07	
360	EN14104	0.146		0.39	
369	EN14104	0.171		1.56	
398	EN14104	0.132		-0.26	
447		-----		-----	
463	EN14104	0.139		0.06	
494	EN14104	0.123		-0.68	
496	EN14104	0.13		-0.36	
540	EN14104	0.0168	G(0.01)	-5.64	
631		-----		-----	
657	EN14104	0.19		2.44	
663		-----		-----	
862	EN14104	0.135		-0.12	
863	EN14104	0.147		0.44	
886		-----		-----	
1017		-----		-----	
1033		-----		-----	
1047	EN14104	0.14		0.11	
1059	EN14104	0.15		0.58	
1067	EN14104	0.109		-1.34	
1080		-----		-----	
1094	EN14104	0.157		0.90	
1108		-----		-----	
1132		-----		-----	
1154		-----		-----	
1161	EN14104	0.160		1.04	
1167	EN14104	0.115		-1.06	
1188	EN14104	0.117		-0.96	
1199	EN14104	0.151		0.62	
1201		-----		-----	
1203	EN14104	0.146		0.39	
1231		-----		-----	
1240	EN14104	0.114		-1.10	
1263		-----		-----	
1268		-----		-----	
1273	EN14104	0.10		-1.76	
1274	EN14104	0.1267		-0.51	
1278	EN14104	0.1155		-1.03	
1286	EN14104	0.161		1.09	
1290	EN14104	0.13		-0.36	
1316		-----		-----	
1402		-----		-----	
1407		-----		-----	
1428		-----		-----	
1429	EN14104	0.14		0.11	
1650	EN14104	0.14		0.11	
1654		-----		-----	
1656	EN14104	0.13		-0.36	
1708	EN14104	0.148		0.48	
1721	EN14104	0.16		1.04	
1739	EN14104	0.11		-1.29	
1911	EN14104	0.135		-0.12	
1948		-----		-----	
2160	EN14104	0.138		0.02	

normality	OK
n	38
outliers	1
mean (n)	0.138
st.dev. (n)	0.0192
R(calc.)	0.054
R(EN14104:03)	0.060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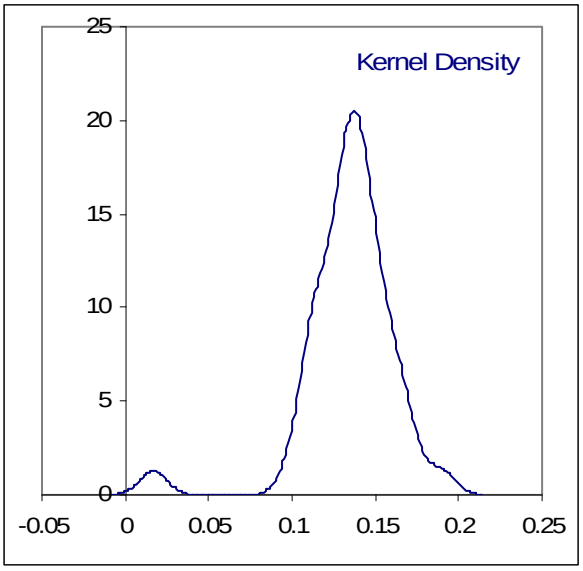
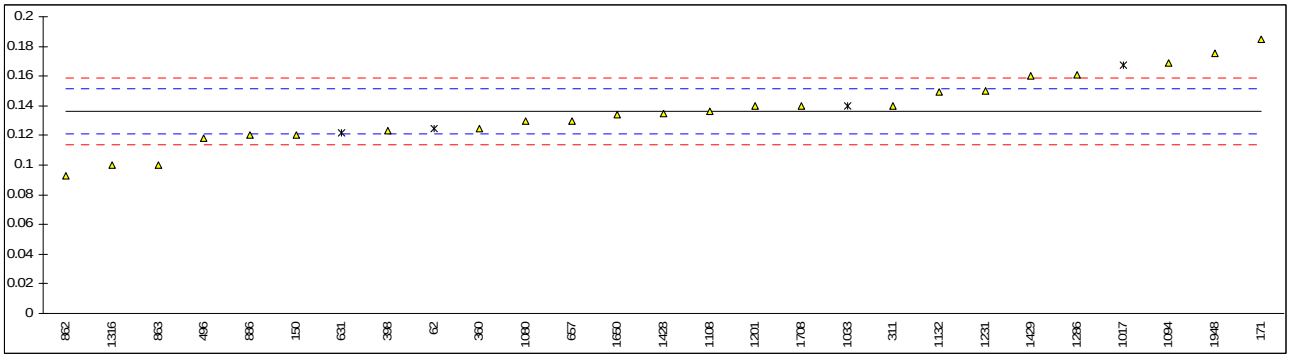
0.2
0.15
0.1
0.05
0
540 1273 1067 1739 1240 312 1167 1278 1188 494 1274 334 311 1290 496 1656 398 882 1911 2160 463 343 171 1047 1429 1650 360 1203 863 1708 1059 1199 1094 1721 1161 1286 323 369 657

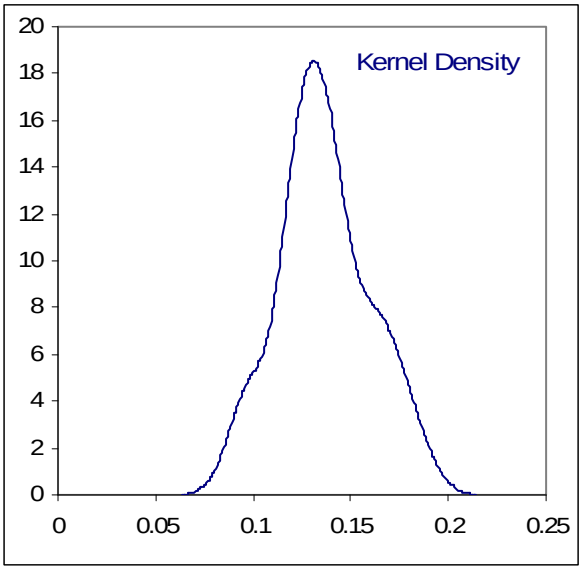

Kernel Density
25
20
15
10
5
0
-0.05 0 0.05 0.1 0.15 0.2 0.25

Determination of Acid Number conform ASTM spec. on sample #1036; results in mg KOH/g

lab	method	value	mark	z(targ)	remarks
62	D974	0.125	ex	-1.49	Result excluded, different test method
150	D664	0.120		-2.15	
169		-----		-----	
171	D664	0.185		6.47	
311	D664	0.14		0.50	
312		-----		-----	
323		-----		-----	
333		-----		-----	
334		-----		-----	
343		-----		-----	
360	D664	0.125		-1.49	
369		-----		-----	
398	D664	0.123		-1.76	
447		-----		-----	
463		-----		-----	
494		-----		-----	
496	D664	0.118		-2.42	
540		-----		-----	
631	D974	0.122	ex	-1.89	Result excluded, different test method
657	D664	0.13		-0.83	
663		-----		-----	
862	D664	0.093		-5.73	
863	D664	0.10		-4.81	
886	D664	0.120		-2.15	
1017	D974	0.1673	ex	4.12	Result excluded, different test method
1033	D974	0.14	ex	0.50	Result excluded, different test method
1047		-----		-----	
1059		-----		-----	
1067		-----		-----	
1080	D664	0.13		-0.83	
1094	D664	0.169		4.34	
1108	D664	0.136		-0.03	
1132	D664	0.149		1.69	
1154		-----		-----	
1161		-----		-----	
1167		-----		-----	
1188		-----		-----	
1199		-----		-----	
1201	D664	0.14		0.50	
1203		-----		-----	
1231	D664	0.150		1.82	
1240		-----		-----	
1263		-----		-----	
1268		-----		-----	
1273		-----		-----	
1274		-----		-----	
1278		-----		-----	
1286	D664	0.161		3.28	
1290		-----		-----	
1316	D664	0.10		-4.81	
1402		-----		-----	
1407		-----		-----	
1428	D664	0.135		-0.16	
1429	D664	0.16		3.15	
1650	D664	0.134		-0.30	
1654		-----		-----	
1656		-----		-----	
1708	D664	0.140		0.50	
1721		-----		-----	
1739		-----		-----	
1911		-----		-----	
1948	D664	0.1755		5.21	
2160		-----		-----	

normality	OK
n	23
outliers	4
mean (n)	0.136
st.dev. (n)	0.0237
R(calc.)	0.066
R(D664:09)	0.021

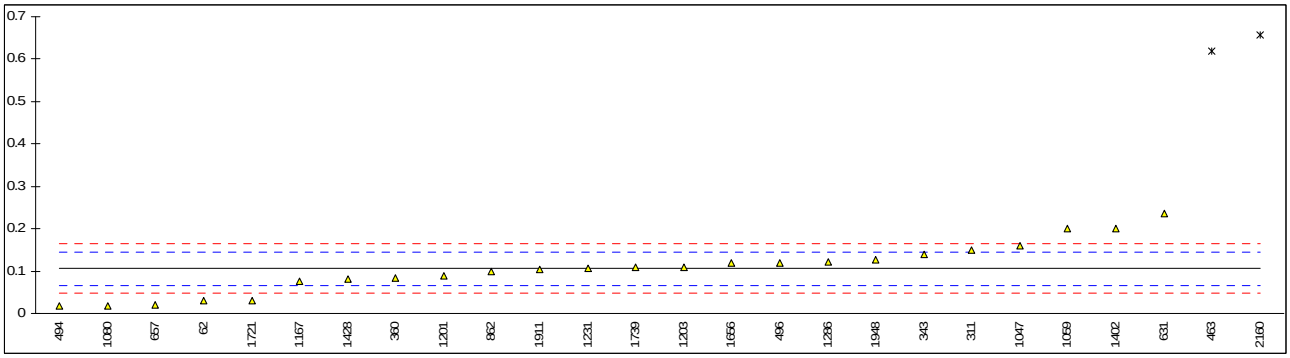

0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
882
1316
863
496
886
150
631
398
62
360
1060
657
1650
1428
1108
1201
1708
1033
311
1132
1231
1429
1296
1017
1094
1948
171

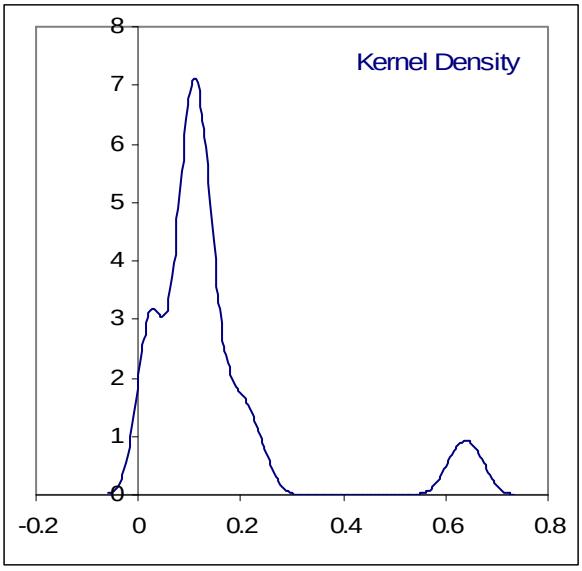

Kernel Density
20
18
16
14
12
10
8
6
4
2
0
0
0.05
0.1
0.15
0.2
0.25

Determination of Carbon Residue on 10% distillation residue on sample #1036; results in %M/M

lab	method	value	mark	z(targ)	remarks
62	D4530	0.03		-3.89	
150		-----		-----	
169		-----		-----	
171		-----		-----	
311	ISO10370	0.15		2.21	
312		-----		-----	
323	ISO10370	<0.10		<-0.33	
333		-----		-----	
334		-----		-----	
343	ISO10370	0.139		1.66	
360	ISO10370	0.084		-1.14	
369		-----		-----	
398		-----		-----	
447		-----		-----	
463	ISO10370	0.62	C,G(0.01)	26.12	First reported 0.565
494	ISO10370	0.017		-4.55	
496	ISO10370	0.12		0.69	
540		-----		-----	
631	D4530	0.237	C	6.64	First reported 0.802
657	ISO10370	0.02		-4.40	
663		-----		-----	
862	ISO10370	0.10		-0.33	
863		-----		-----	
886		-----		-----	
1017		-----		-----	
1033		-----		-----	
1047	ISO10370	0.16		2.72	
1059	ISO10370	0.20		4.76	
1067		-----		-----	
1080	D4530	0.019		-4.45	
1094		-----		-----	
1108		-----		-----	
1132		-----		-----	
1154		-----		-----	
1161		-----		-----	
1167	ISO10370	0.077		-1.50	
1188		-----		-----	
1199		-----		-----	
1201	ISO10370	0.09		-0.84	
1203	ISO10370	0.11		0.18	
1231	D4530	0.1064		0.00	
1240		-----		-----	
1263		-----		-----	
1268		-----		-----	
1273		-----		-----	
1274		-----		-----	
1278		-----		-----	
1286	ISO10370	0.122		0.79	
1290		-----		-----	
1316		-----		-----	
1402	ISO10370	0.20		4.76	
1407		-----		-----	
1428	ISO10370	0.082		-1.24	
1429		-----		-----	
1650		-----		-----	
1654		-----		-----	
1656	ISO10370	0.12		0.69	
1708		-----		-----	
1721	ISO10370	0.03		-3.89	
1739	ISO10370	0.11		0.18	
1911	ISO10370	0.105		-0.07	
1948	ISO10370	0.1265		1.02	
2160	ISO10370	0.658	G(0.01)	28.05	

normality	OK
n	24
outliers	2
mean (n)	0.1065
st.dev. (n)	0.05842
R(calc.)	0.1636
R(ISO10370:95)	0.0551


0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
494
1080
657
62
1721
1167
1428
360
1201
862
1911
1231
1739
1203
1656
496
1236
1948
343
311
1047
1059
1402
631
463
2160

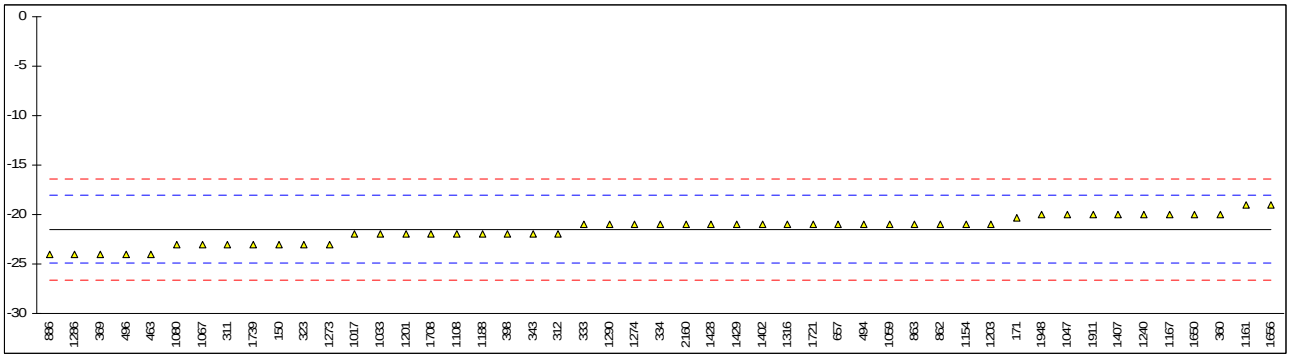

Kernel Density
8
7
6
5
4
3
2
1
0
-0.2
0
0.2
0.4
0.6
0.8

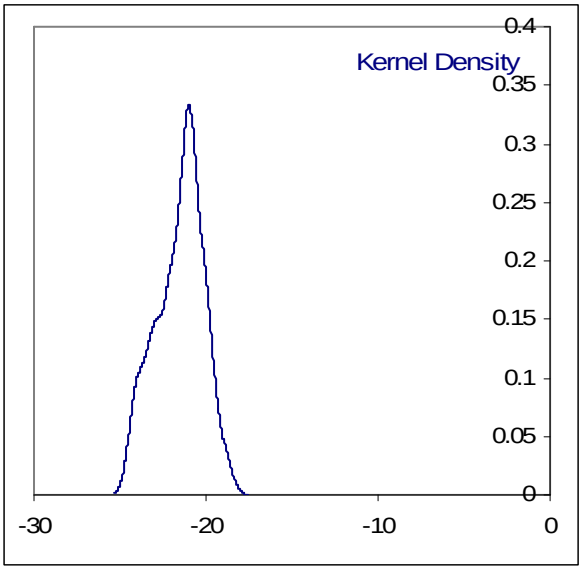
Determination of Cold Filter Plugging Point on sample #1036; results in °C

lab	method	value	mark	z(targ)	remarks
62		-----		-----	
150	EN116	-23		-0.87	
169		-----		-----	
171	EN116	-20.3		0.71	
311	EN116	-23		-0.87	
312	EN116	-22		-0.28	
323	EN116	-23		-0.87	
333	EN116	-21		0.30	
334	EN116	-21		0.30	
343	EN116	-22	C	-0.28	First reported -12
360	EN116	-20		0.89	
369	EN116	-24		-1.45	
398	EN116	-22		-0.28	
447		-----		-----	
463	EN116	-24		-1.45	
494	EN116	-21		0.30	
496	EN116	-24		-1.45	
540		-----		-----	
631		-----		-----	
657	EN116	-21		0.30	
663		-----		-----	
862	EN116	-21		0.30	
863	IP309	-21		0.30	
886	EN116	-24	C	-1.45	First reported -26
1017	EN116	-22.0		-0.28	
1033	IP309	-22		-0.28	
1047	EN116	-20		0.89	
1059	EN116	-21		0.30	
1067	EN116	-23		-0.87	
1080	EN116	-23		-0.87	
1094		-----		-----	
1108	EN116	-22		-0.28	
1132		-----		-----	
1154	EN116	-21		0.30	
1161	EN116	-19		1.47	
1167	EN116	-20		0.89	
1188	EN116	-22		-0.28	
1199		-----		-----	
1201	EN116	-22		-0.28	
1203	EN116	-21		0.30	
1231		-----		-----	
1240	EN116	-20.0		0.89	
1263		-----		-----	
1268		-----		-----	
1273	EN116	-23		-0.87	
1274	EN116	-21		0.30	
1278		-----		-----	
1286	EN116	-24		-1.45	
1290	EN116	-21		0.30	
1316	EN116	-21		0.30	
1402	EN116	-21.0		0.30	
1407	EN116	-20		0.89	
1428	EN116	-21		0.30	
1429	EN116	-21		0.30	
1650	EN116	-20.0		0.89	
1654		-----		-----	
1656	EN116	-19		1.47	
1708	EN116	-22		-0.28	
1721	EN116	-21		0.30	
1739	EN116	-23		-0.87	
1911	EN116	-20.0		0.89	
1948	EN116	-20		0.89	
2160	EN116	-21		0.30	

	normality	not OK
	n	49
	outliers	0
	mean (n)	-21.5
	st.dev. (n)	1.33
	R(calc.)	3.7
	R(EN116:97)*	4.8

* not applicable for B100 according to EN14214:03


0
-5
-10
-15
-20
-25
-30
895
1286
369
496
463
1080
1067
311
1739
150
323
1273
1017
1033
1201
1708
1108
1188
398
343
312
333
1290
1274
334
2160
1428
1429
1402
1316
1721
657
494
1059
863
862
1154
1203
171
1948
1047
1911
1407
1240
1167
1650
360
1161
1696

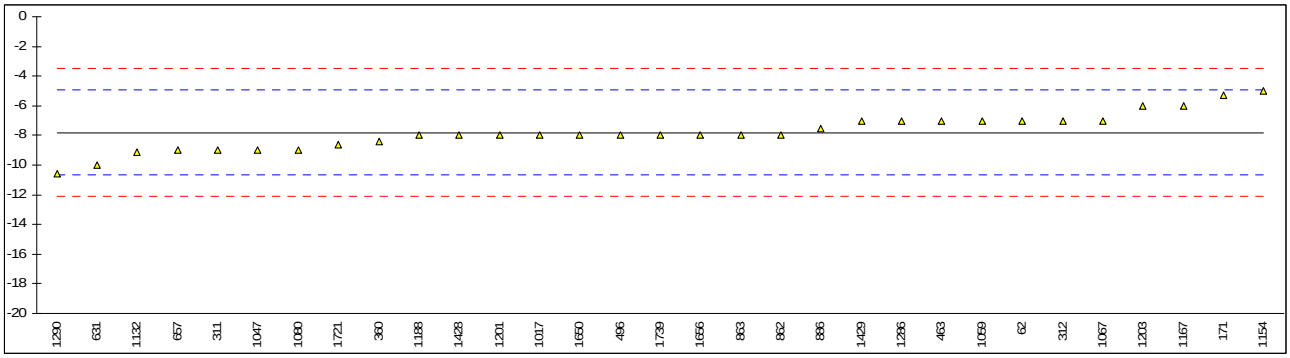

Kernel Density
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-30
-20
-10
0

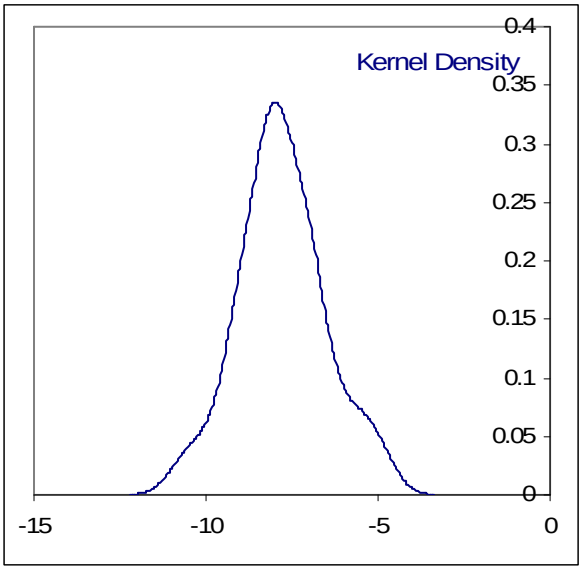
Determination of Cloud Point on sample #1036, results in °C

lab	method	value	mark	z(targ)	remarks
62	D2500-M	-7		0.55	
150		-----		-----	
169		-----		-----	
171	D2500-A	-5.3		1.74	
311	EN23015-A	-9		-0.85	
312	EN23015-A	-7		0.55	
323		-----		-----	
333		-----		-----	
334		-----		-----	
343		-----		-----	
360	EN23015-A	-8.4		-0.43	
369		-----		-----	
398		-----		-----	
447		-----		-----	
463	D2500	-7		0.55	
494		-----		-----	
496	EN23015-A	-8		-0.15	
540		-----		-----	
631	D2500-M	-10		-1.55	
657	D2500-M	-9		-0.85	
663		-----		-----	
862	D2500-A	-8		-0.15	
863	D2500-M	-8		-0.15	
886	D2500-A	-7.5		0.20	
1017	D2500-A	-8.0		-0.15	
1033		-----		-----	
1047	ISO3015-M	-9		-0.85	
1059	ISO3015-A	-7		0.55	
1067	D2500-A	-7		0.55	
1080	EN23015-A	-9		-0.85	
1094		-----		-----	
1108		-----		-----	
1132	D2500-A	-9.1		-0.92	
1154	EN23015-A	-5.0		1.95	
1161		-----		-----	
1167	EN23015-A	-6		1.25	
1188	EN23015-M	-8		-0.15	
1199		-----		-----	
1201	D2500-A	-8		-0.15	
1203	D2500-M	-6		1.25	
1231		-----		-----	
1240		-----		-----	
1263		-----		-----	
1268		-----		-----	
1273		-----		-----	
1274		-----		-----	
1278		-----		-----	
1286	D2500/EN23015M	-7		0.55	
1290	D2500-A	-10.59		-1.96	
1316		-----		-----	
1402		-----		-----	
1407		-----		-----	
1428	EN23015-A	-8		-0.15	
1429	D2500-M	-7	C	0.55	First reported 0.0
1650	D2500-A	-8.0		-0.15	
1654		-----		-----	
1656	EN23015-A	-8		-0.15	
1708		-----		-----	
1721	D2500-A	-8.6		-0.57	
1739	EN23015-A	-8		-0.15	
1911		-----		-----	
1948		-----		-----	
2160		-----		-----	

normality	not OK
n	31
outliers	0
mean (n)	-7.79
st.dev. (n)	1.246
R(calc.)	3.49
R(D2500:09)	4.00

Compare R(EN23015/ISO3015) – 4.00


0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
1290
631
1132
657
311
1047
1060
1721
360
1188
1428
1201
1017
1650
496
1739
1656
863
882
886
1429
1286
463
1059
62
312
1067
1208
1167
171
1154


Kernel Density
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-15
-10
-5
0

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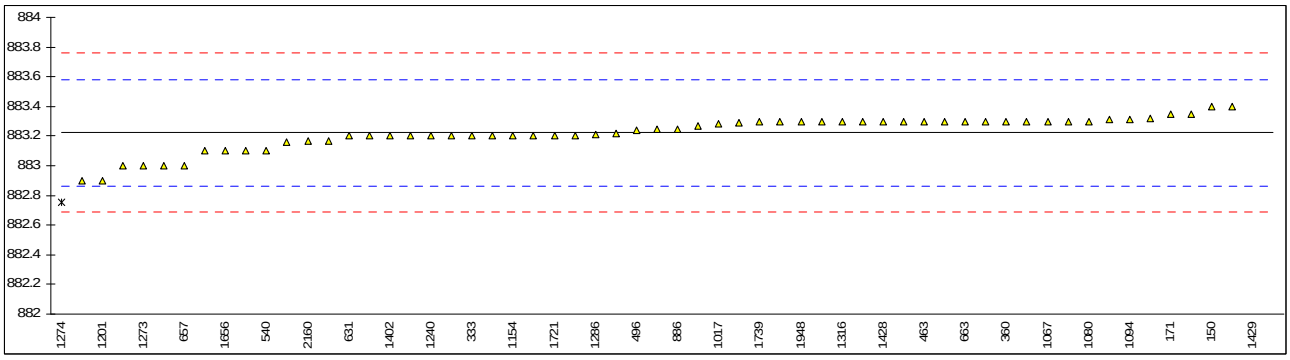
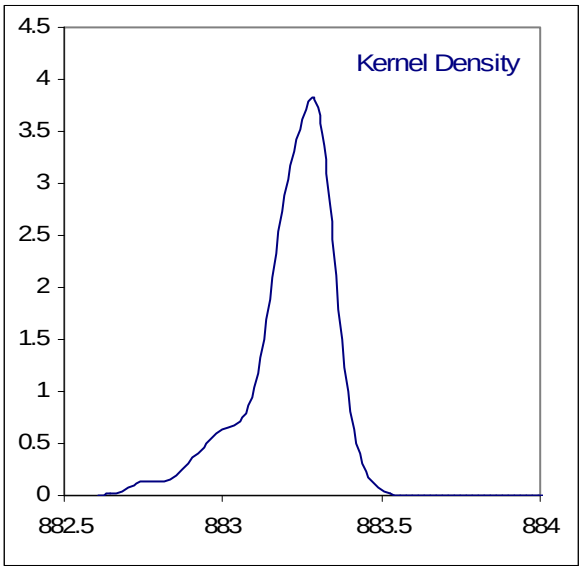
Determination of Copper Strip Corrosion 3 hrs/50°C on sample #1036

lab	method	value	mark	z(targ)	remarks
62	D130	1b		-----	
150	D130	1a		-----	
169	D130	1a		-----	
171	D130	1a		-----	
311	ISO2160	1		-----	
312	D130	1a		-----	
323		-----		-----	
333		-----		-----	
334		-----		-----	
343		1a		-----	
360	ISO2160	1a		-----	
369	ISO2160	1a		-----	
398		1a		-----	
447		-----		-----	
463	D130	1a		-----	
494	D130/ISO2160	1		-----	
496	ISO2160	1a		-----	
540	ISO2160	1a		-----	
631	D130	1a		-----	
657	D130	1a		-----	
663	D130	1a		-----	
862	D130	1a		-----	
863	D130	1a		-----	
886	D130	1a		-----	
1017	D130	1a		-----	
1033	IP154	1a		-----	
1047		1a		-----	
1059	ISO2160	1a		-----	
1067	D130	1a		-----	
1080	ISO2160	1a		-----	
1094	ISO2160	1a		-----	
1108	D130	1a		-----	
1132	D130	1a		-----	
1154		-----		-----	
1161	ISO2160	1b		-----	
1167	D130	1a		-----	
1188		-----		-----	
1199		-----		-----	
1201	D130	1a		-----	
1203		1		-----	
1231	D130	1a		-----	
1240		-----		-----	
1263		-----		-----	
1268		-----		-----	
1273		-----		-----	
1274		-----		-----	
1278	ISO2160	1a		-----	
1286	D130/ISO2160	1a		-----	
1290		-----		-----	
1316	D130	1a		-----	
1402	D130	1a		-----	
1407		-----		-----	
1428	ISO2160	1a		-----	
1429		1a		-----	
1650	D130/ISO2160	1a		-----	
1654		-----		-----	
1656	ISO2160	1a		-----	
1708		-----		-----	
1721		1a		-----	
1739	ISO2160	1a		-----	
1911	D130	1a		-----	
1948		-----		-----	
2160	ISO2160	1a		-----	
	normality	n.a.			
	n	46			
	outliers	0			
	mean (n)	1			
	st.dev. (n)	n.a.			
	R(calc.)	n.a.			
	R(D130:04e1)	n.a.			

Determination of Density @ 15°C conform ISO spec. on sample #1036; results in kg/m^3

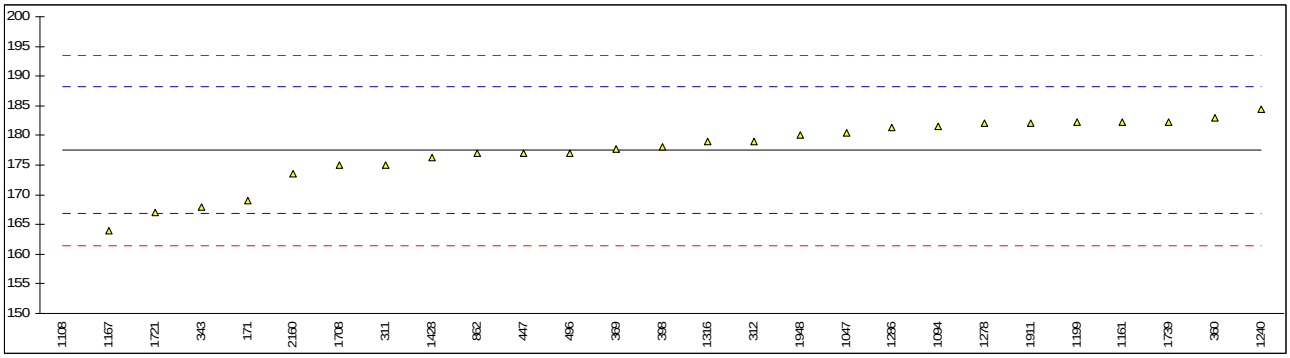
lab	method	value	mark	z(targ)	remarks
62	D4052	883.3		0.44	
150	ISO3672	883.4	C	1.00	First reported 882.80
169	D4052	883.2		-0.12	
171	D4052	883.35		0.72	
311	ISO12185	883.3		0.44	
312	D4052	883.0		-1.24	
323	ISO12185	883.1		-0.68	
333	ISO12185	883.2		-0.12	
334	ISO12185	883.2		-0.12	
343	ISO12185	883.22		-0.01	
360	ISO12185	883.3		0.44	
369	ISO12185	883.3		0.44	
398	ISO12185	883.2		-0.12	
447	D4052	883.27		0.27	
463	ISO12185	883.3		0.44	
494	ISO12185	883.3		0.44	
496	ISO12185	883.24		0.10	
540	D4052	883.1		-0.68	
631	D4052	883.2		-0.12	
657	ISO12185	883.0		-1.24	
663	ISO12185	883.3		0.44	
862	D4052	883.25		0.16	
863	D4052	883.31		0.49	
886	ISO12185	883.25		0.16	
1017	ISO12185	883.28		0.32	
1033	IP365	883.4		1.00	
1047	ISO12185	883.0		-1.24	
1059	ISO12185	883.2		-0.12	
1067	D4052	883.3		0.44	
1080	ISO12185	883.3		0.44	
1094	ISO12185	883.31		0.49	
1108	ISO12185	883.35		0.72	
1132	D4052	882.90		-1.80	
1154	ISO12185	883.2		-0.12	
1161	ISO12185	883.17		-0.29	
1167	ISO12185	883.2		-0.12	
1188	ISO12185	883.29		0.38	
1199		-----		-----	
1201	D4052	882.9		-1.80	
1203	ISO12185	883.2		-0.12	
1231	D4052	883.16		-0.35	
1240	ISO12185	883.2		-0.12	
1263	ISO12185	887.23	C,G(0.01)	22.44	First reported 883.8986
1268		-----		-----	
1273	In house	883.0		-1.24	
1274	ISO3675	882.757	G(0.01)	-2.60	
1278		-----		-----	
1286	ISO12185	883.207		-0.08	
1290	ISO12185	883.3		0.44	
1316	ISO12185	883.3		0.44	
1402	IP365	883.2		-0.12	
1407	ISO12185	883.3		0.44	
1428	ISO12185	883.3		0.44	
1429	ISO12185	885	C,G(0.01)	9.96	First reported 0.8847
1650	D4052	883.30		0.44	
1654	ISO12185	883.32		0.55	
1656	ISO12185	883.1		-0.68	
1708	ISO12185	883.1		-0.68	
1721	ISO12185	883.2		-0.12	
1739	ISO3675	883.3		0.44	
1911	ISO12185	883.30		0.44	
1948	ISO12185	883.3		0.44	
2160	ISO12185	883.17		-0.29	
	normality	not OK			
	n	57			
	outliers	3			
	mean (n)	883.22			
	st.dev. (n)	0.113			
	R(calc.)	0.32			
	R(ISO12185:96)	0.50			

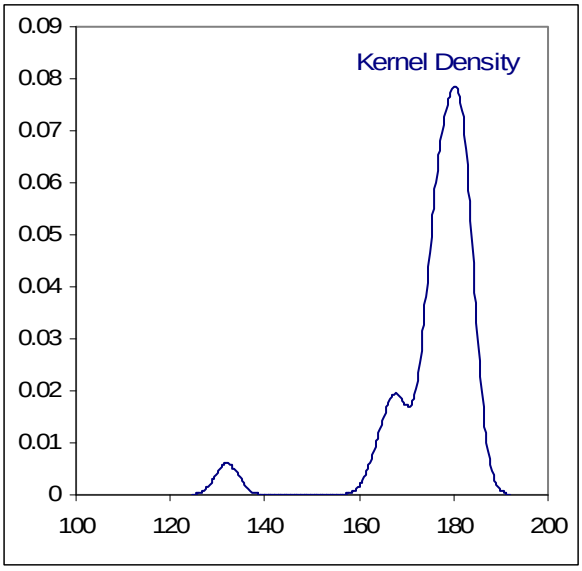

884
883.8
883.6
883.4
883.2
883
882.8
882.6
882.4
882.2
882
1274
1201
1273
657
1656
540
2160
631
1402
1240
333
1154
1721
1286
496
886
1017
1739
1948
1316
1428
463
663
360
1067
1080
1094
171
150
1429


Kernel Density
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
882.5
883
883.5
884

Determination of Flash Point conform EN spec on sample #1036; results in °C

lab	method	value	mark	z(targ)	remarks
62		-----		-----	
150		-----		-----	
169		-----		-----	
171	ISO3679	169.0		-1.58	
311	ISO3679	175		-0.46	
312	ISO3679	179.0		0.28	
323		-----		-----	
333		-----		-----	
334		-----		-----	
343	ISO3679	168		-1.77	
360	ISO3679	183.0		1.03	
369	ISO3679	177.8		0.06	
398	ISO3679	178		0.10	
447	ISO3679	177		-0.09	
463		-----		-----	
494		-----		-----	
496	ISO3679	177		-0.09	
540		-----		-----	
631		-----		-----	
657		-----		-----	
663		-----		-----	
862	ISO3679	177.0		-0.09	
863		-----		-----	
886		-----		-----	
1017		-----		-----	
1033		-----		-----	
1047	ISO3679	180.4		0.55	
1059		-----		-----	
1067		-----		-----	
1080		-----		-----	
1094	ISO3679	181.5		0.75	
1108	ISO3679	132	G(0.01)	-8.49	
1132		-----		-----	
1154		-----		-----	
1161	ISO3679	182.2		0.88	
1167	ISO3679	164		-2.52	
1188		-----		-----	
1199	ISO3679	182.2		0.88	
1201	ISO3679	>120		-----	
1203		-----		-----	
1231		-----		-----	
1240	ISO3679	184.5		1.31	
1263		-----		-----	
1268		-----		-----	
1273		-----		-----	
1274		-----		-----	
1278	ISO3679	182.0		0.84	
1286	ISO3679	181.4		0.73	
1290		-----		-----	
1316	ISO3679	179		0.28	
1402		-----		-----	
1407		-----		-----	
1428	ISO3679	176.3		-0.22	
1429	ISO3679	>120		-----	
1650		-----		-----	
1654		-----		-----	
1656		-----		-----	
1708	ISO3679	175.0		-0.46	
1721	ISO3679	167		-1.96	
1739	ISO3679	182.3		0.90	
1911	ISO3679	182.0		0.84	
1948	ISO3679	180.15		0.50	
2160	ISO3679	173.6		-0.72	
	normality	OK			
	n	26			
	outliers	1			
	mean (n)	177.48			
	st.dev. (n)	5.379			
	R(calc.)	15.06			
	R(ISO3679:04)	15.00			

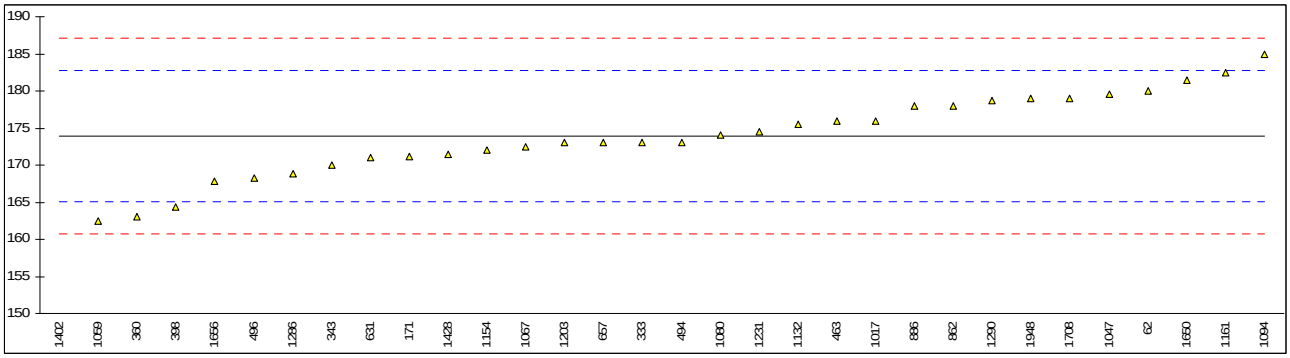

200
195
190
185
180
175
170
165
160
155
150
1108
1167
1721
343
171
2160
1708
311
1428
862
447
496
369
398
1316
312
1948
1047
1286
1094
1278
1911
1199
1161
1739
360
1240

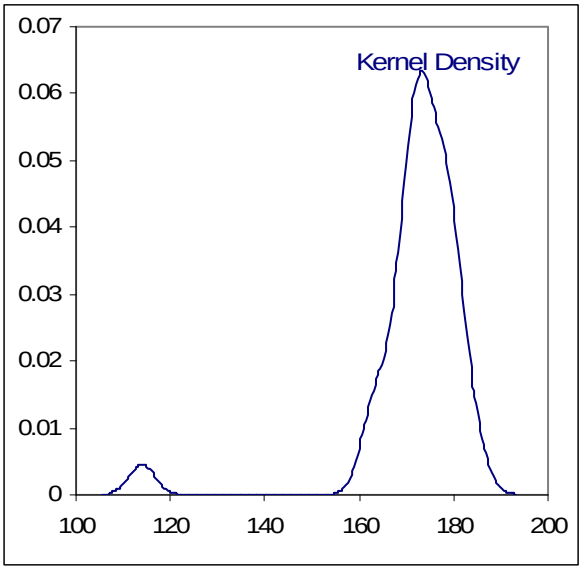

Kernel Density
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
100
120
140
160
180
200

Determination of Flash Point conform ASTM spec on sample #1036; results in °C

lab	method	value	mark	z(targ)	remarks
62	D93	180.0		1.37	
150		-----		-----	
169		-----		-----	
171	D93	171.1		-0.64	
311		-----		-----	
312		-----		-----	
323		-----		-----	
333	ISO2719	173.0		-0.21	
334		-----		-----	
343		170		-0.89	
360	D93	163.0		-2.48	
369		-----		-----	
398	D93-A	164.4		-2.16	
447		-----		-----	
463	D93-A	176		0.47	
494	D93/ISO2719	173.0		-0.21	
496	ISO2719	168.3		-1.28	
540		-----		-----	
631	D93	171.0		-0.67	
657	D93	173.0		-0.21	
663		-----		-----	
862	ISO2719	178.0		0.92	
863		-----		-----	
886	D93	178.0		0.92	
1017	ISO2719	176.0		0.47	
1033		-----		-----	
1047	ISO2719	179.5		1.26	
1059	ISO2719	162.5		-2.59	
1067	D93	172.5		-0.33	
1080	ISO2719	174.0		0.01	
1094	ISO2719	185.0		2.51	
1108		-----		-----	
1132	D93	175.5		0.35	
1154	ISO2719	172.0		-0.44	
1161	ISO2719	182.5		1.94	
1167		-----		-----	
1188		-----		-----	
1199		-----		-----	
1201	D93	>110		-----	
1203	D93	173		-0.21	
1231	D93	174.5		0.13	
1240		-----		-----	
1263		-----		-----	
1268		-----		-----	
1273		-----		-----	
1274		-----		-----	
1278		-----		-----	
1286	D93/ISO2719	168.9		-1.14	
1290	ISO2719	178.67		1.07	
1316		-----		-----	
1402	D93	114	G(0.01)	-13.59	
1407		-----		-----	
1428	ISO2719	171.5		-0.55	
1429		-----		-----	
1650	D93/ISO2719	181.4		1.69	
1654		-----		-----	
1656	ISO2719	167.8		-1.39	
1708	ISO2719	179.0		1.15	
1721		-----		-----	
1739		-----		-----	
1911		-----		-----	
1948		179		1.15	
2160		-----		-----	

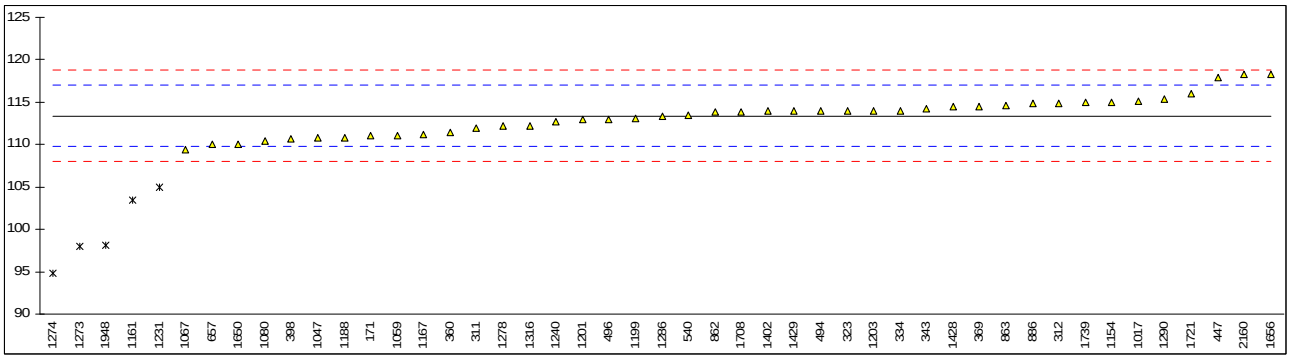
normality	OK
n	31
outliers	1
mean (n)	173.94
st.dev. (n)	5.540
R(calc.)	15.51
R(D93:10-A)	12.35

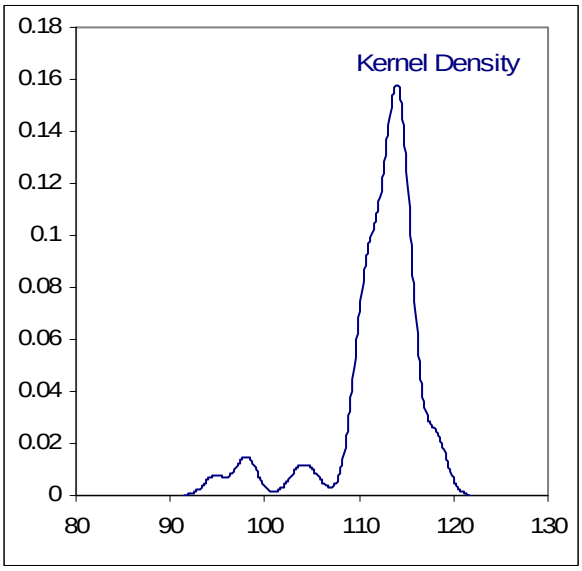

190
185
180
175
170
165
160
155
150
1402
1059
360
398
1656
496
1286
343
631
171
1428
1154
1067
1203
657
333
494
1060
1231
1132
463
1017
886
862
1290
1948
1708
1047
62
1690
1161
1094


Kernel Density
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
100
120
140
160
180
200

Determination of Iodine Value conform EN spec. on sample #1036; results in g I_2/100g

lab	method	value	mark	z(targ)	remarks
62		-----		-----	
150		-----		-----	
169		-----		-----	
171	EN14111	111		-1.33	
311	EN14111	112		-0.77	
312	EN14111	114.9		0.85	
323	EN14111	114		0.35	
333		-----		-----	
334	EN14111	114		0.35	
343	EN14111	114.2		0.46	
360	EN14111	111.4		-1.11	
369	EN14111	114.5		0.63	
398	EN14111	110.72		-1.49	
447	EN14111	117.9		2.53	
463		-----		-----	
494	EN14111	114		0.35	
496	EN14111	113		-0.21	
540	EN14111	113.474		0.05	
631		-----		-----	
657	EN14111	110		-1.89	
663		-----		-----	
862	EN14111	113.8		0.24	
863	EN14111	114.6		0.68	
886	EN14111	114.9		0.85	
1017	EN14111	115.05		0.94	
1033		-----		-----	
1047	EN14111	110.8		-1.44	
1059	EN14111	111		-1.33	
1067	EN14111	109.4		-2.23	
1080	ISO3961	110.48		-1.62	
1094		-----		-----	
1108		-----		-----	
1132		-----		-----	
1154	EN14111	115		0.91	
1161	EN14111	103.436	G(0.05)	-5.57	
1167	EN14111	111.2	C	-1.22	First reported 75.1
1188	EN14111	110.83		-1.43	
1199	EN14111	113.1		-0.16	
1201	EN14111	113		-0.21	
1203	EN14111	114		0.35	
1231	EN14111	105	C,G(0.05)	-4.69	First reported 101.5
1240	EN14111	112.7		-0.38	
1263		-----		-----	
1268		-----		-----	
1273	EN14111	98	G(0.05)	-8.61	
1274	EN14214	94.7646	G(0.01)	-10.42	
1278	EN14111	112.2		-0.66	
1286	EN14111	113.3		-0.04	
1290	EN14111	115.39		1.13	
1316	EN14111	112.22		-0.65	
1402	EN14111	114		0.35	
1407		-----		-----	
1428	EN14111	114.47		0.61	
1429	EN14111	114		0.35	
1650	EN14111	110.0		-1.89	
1654		-----		-----	
1656	EN14111	118.3	C	2.76	First reported 100.6
1708	EN14111	113.8		0.24	
1721	EN14111	116		1.47	
1739	EN14111	115		0.91	
1911		-----		-----	
1948	EN14111	98.09	C,G(0.01)	-8.56	First reported 106.28
2160	EN14111	118.24		2.72	
	normality	OK			
	n	42			
	outliers	5			
	mean (n)	113.38			
	st.dev. (n)	2.163			
	R(calc.)	6.06			
	R(EN14111:03)	5.00			

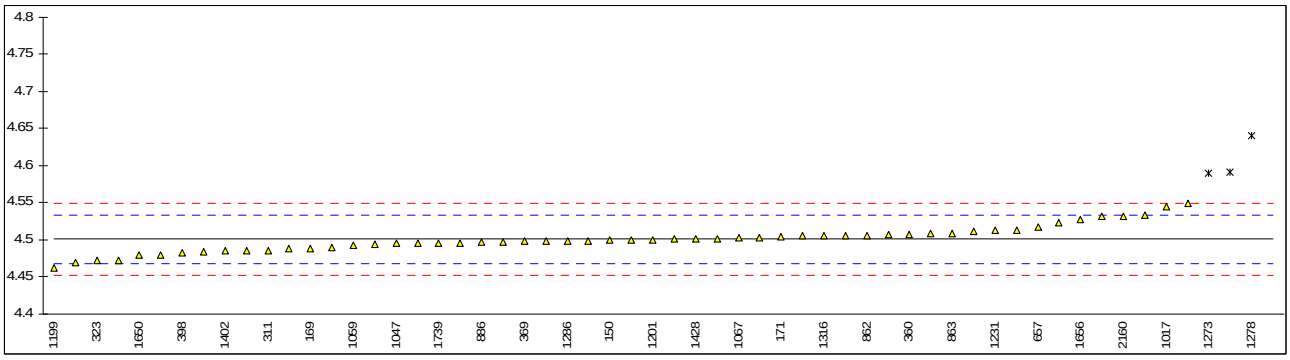

125
120
115
110
105
100
95
90
1274
1273
1948
1161
1231
1067
657
1650
1080
398
1047
1188
171
1059
1167
360
311
1278
1316
1240
1201
496
1199
1286
540
862
1708
1402
1429
494
323
1203
334
343
1428
369
863
886
312
1739
1154
1017
1290
1721
447
2160
1656

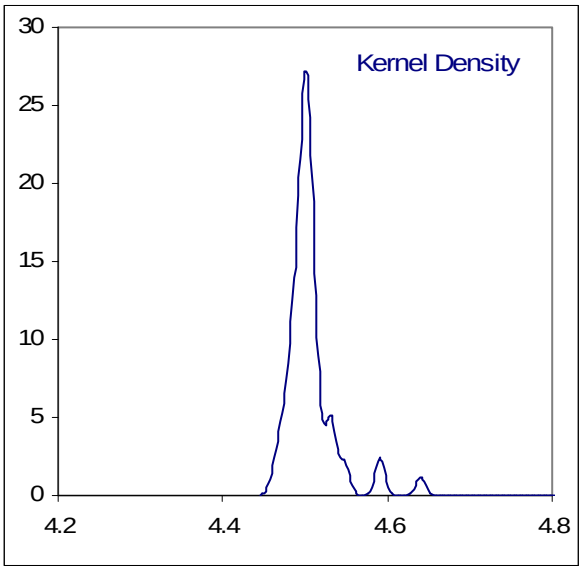

Kernel Density
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
80
90
100
110
120
130

Determination of Kinematic Viscosity @ 40°C on sample #1036; results in mm^2/s

lab	method	value	mark	z(targ)	remarks
62	D445	4.506		0.31	
150	D445	4.500		-0.06	
169	D445	4.4889		-0.75	
171	D445	4.504		0.19	
311	D445	4.486		-0.93	
312	D445	4.486		-0.93	
323	ISO3104	4.472		-1.80	
333	D445	4.499		-0.12	
334		-----		-----	
343		4.5034		0.15	
360	ISO3104	4.507		0.37	
369	ISO3104	4.4984		-0.16	
398		4.4821		-1.17	
447		-----		-----	
463	D445	4.5332		2.00	
494	D445/ISO3104	4.532		1.93	
496	D445/ISO3104	4.502		0.06	
540	D445	4.472		-1.80	
631	D445	4.523	C	1.37	First reported 4.758
657	D445	4.517	C	1.00	First reported 4.447
663	D445	4.507		0.37	
862	D445	4.5064		0.34	
863	D445	4.5092		0.51	
886	D445	4.497		-0.25	
1017	D445	4.5444		2.70	
1033	IP71	4.50		-0.06	
1047	ISO3104	4.495		-0.37	
1059	ISO3104	4.493		-0.49	
1067	D445	4.503		0.13	
1080	ISO3104	4.501		0.00	
1094	ISO3104	4.496		-0.31	
1108	D445	4.490		-0.68	
1132	D445	4.4985		-0.15	
1154	ISO3104	4.470		-1.92	
1161		-----		-----	
1167	ISO3104	5.355	C,G(0.01)	53.01	First reported 4.616
1188	ISO3104	4.4846		-1.02	
1199	ISO3104	4.4616		-2.44	
1201	D445	4.500		-0.06	
1203	D445/ISO3104	4.480		-1.30	
1231	D445	4.5125		0.72	
1240	ISO3104	4.494		-0.43	
1263		-----		-----	
1268		-----		-----	
1273	in house	4.5902	G(0.01)	5.54	
1274	ISO3104/D445	4.59148	G(0.01)	5.62	
1278	ISO3104	4.64	C,G(0.01)	8.63	First reported 6.340
1286	ISO3104D445	4.4987		-0.14	
1290	D7042	4.5499		3.04	
1316	D445/ISO3104	4.506		0.31	
1402	IP71	4.485		-0.99	
1407	ISO3104	4.513		0.75	
1428	ISO3104	4.502		0.06	
1429	D445/ISO3104	4.5058		0.30	
1650	D445	4.4797		-1.32	
1654	D445/ISO3104	4.4971		-0.24	
1656	ISO3104	4.528		1.68	
1708	ISO3104	4.5110		0.62	
1721	D445/ISO3104	4.488		-0.80	
1739	ISO3104	4.496		-0.31	
1911	D445/ISO3104	4.49543		-0.34	
1948	D445/ISO3104	4.509	C	0.50	First reported 4.411
2160	D445	4.532		1.93	

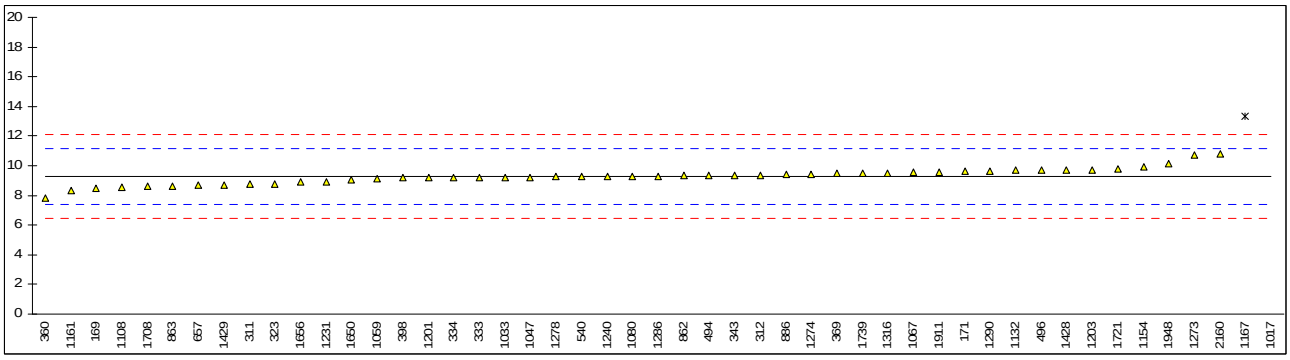
normality	not OK
n	54
outliers	4
mean (n)	4.5010
st.dev. (n)	0.01767
R(calc.)	0.0495
R(ISO3104:96)	0.0451

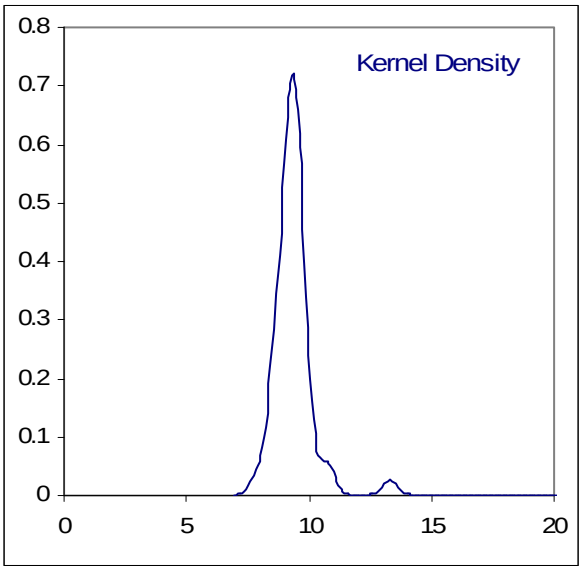

4.8
4.75
4.7
4.65
4.6
4.55
4.5
4.45
4.4
1199
323
1650
398
1402
311
169
1059
1047
1739
886
369
1286
150
1201
1428
1067
171
1316
862
360
863
1231
657
1656
2160
1017
1273
1278


Kernel Density
30
25
20
15
10
5
0
4.2
4.4
4.6
4.8

Determination of Oxidation Stability on sample #1036; results in hours

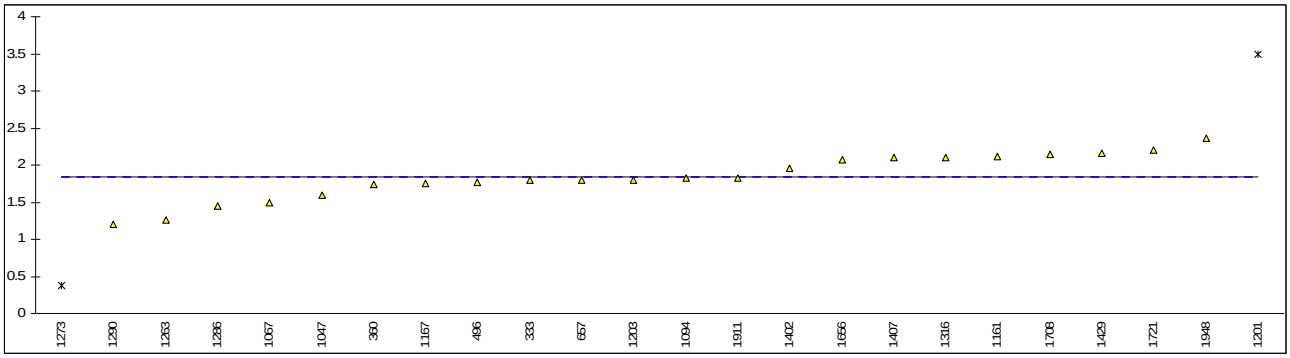
lab	method	value	mark	z(targ)	remarks
62		-----		-----	
150		-----		-----	
169	EN14112	8.48		-0.85	
171	EN14112	9.61		0.34	
311	EN14112	8.8		-0.51	
312	EN14112	9.38		0.10	
323	EN14112	8.8		-0.51	
333	EN14112	9.2		-0.09	
334	EN14112	9.2		-0.09	
343	EN14112	9.38		0.10	
360	EN14112	7.83		-1.54	
369	EN14112	9.49		0.22	
398	EN14112	9.17		-0.12	
447		-----		-----	
463		-----		-----	
494	EN14112	9.34		0.06	
496	EN14112	9.7		0.44	
540	EN14112	9.27		-0.02	
631		-----		-----	
657	EN14112	8.7		-0.62	
663		-----		-----	
862	EN14112	9.34		0.06	
863	EN14112	8.62		-0.70	
886	EN14112	9.4		0.12	
1017	EN14112	35.59	G(0.01)	27.85	
1033	EN14112	9.21		-0.08	
1047	EN14112	9.22		-0.07	
1059	EN14112	9.1		-0.20	
1067	EN14112	9.59		0.32	
1080	EN14112	9.3		0.02	
1094		-----		-----	
1108	EN14112	8.54		-0.79	
1132	EN14112	9.68		0.42	
1154	EN14112	9.90		0.65	
1161	EN14112	8.33		-1.01	
1167	EN14112	13.3	C,G(0.01)	4.25	First reported 17.2
1188		-----		-----	
1199		-----		-----	
1201	EN14112	9.2		-0.09	
1203	EN14112	9.73		0.47	
1231	EN14112	8.905		-0.40	
1240	EN14112	9.28		-0.01	
1263		-----		-----	
1268		-----		-----	
1273	in house	10.7		1.50	
1274	EN14112	9.42		0.14	
1278	EN14112	9.27		-0.02	
1286	EN14112	9.31		0.03	
1290	EN14112	9.67		0.41	
1316	EN14112	9.5		0.23	
1402		-----		-----	
1407		-----		-----	
1428	EN14112	9.71		0.45	
1429	EN14112	8.73		-0.59	
1650	EN14112	9.03		-0.27	
1654		-----		-----	
1656	EN14112	8.9		-0.41	
1708	EN14112	8.6		-0.73	
1721	EN14112	9.8		0.54	
1739	EN14112	9.5		0.23	
1911	EN14112	9.60		0.33	
1948	EN14112	10.15		0.92	
2160	EN14112	10.83		1.64	
	normality	OK			
	n	47			
	outliers	2			
	mean (n)	9.285			
	st.dev. (n)	0.5482			
	R(calc.)	1.535			
	R(EN14112:03)	2.644			

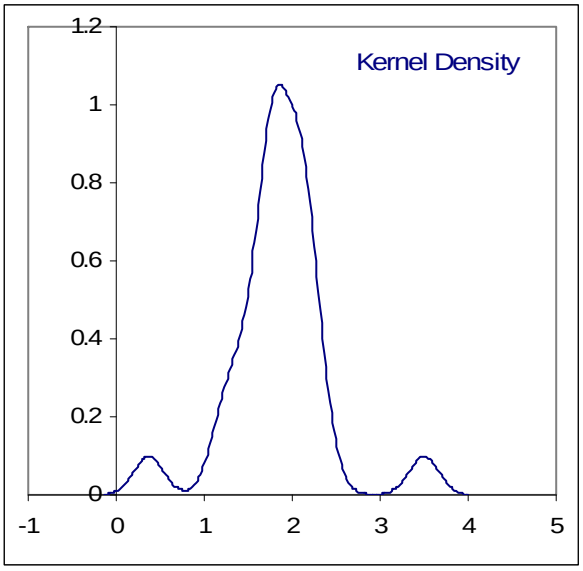

20
18
16
14
12
10
8
6
4
2
0
360
1161
169
1108
1708
863
657
1429
311
323
1656
1231
1650
1059
398
1201
334
333
1033
1047
1278
540
1240
1090
1286
862
494
343
312
886
1274
369
1739
1316
1067
1911
171
1290
1132
496
1428
1203
1721
1154
1948
1273
2160
1167
1017


Kernel Density
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
5
10
15
20

Determination of Sulphur conform ISO spec. on sample #1036; results in mg/kg

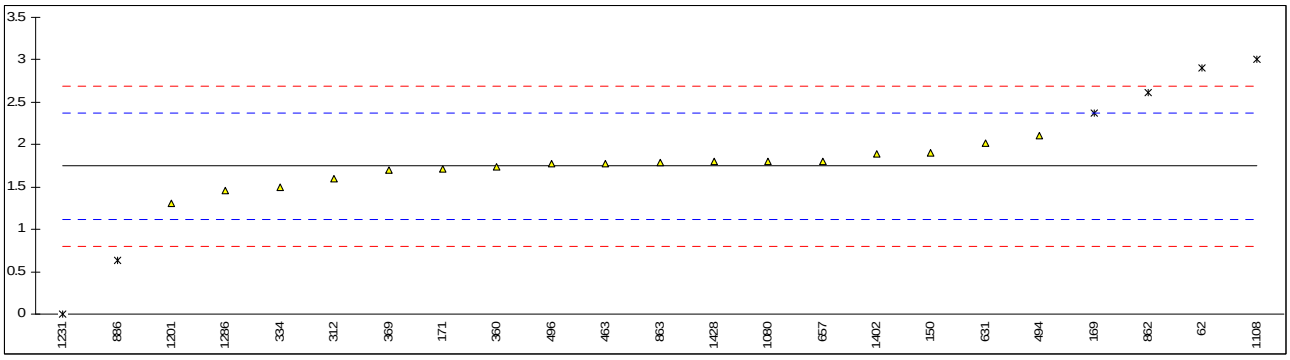
lab	method	value	mark	z(targ)	remarks
62		-----		-----	
150		-----		-----	
169		-----		-----	
171		-----		-----	
311	ISO20846	<3		-----	
312		-----		-----	
323		-----		-----	
333	ISO20846	1.8		-----	
334		-----		-----	
343	ISO20846	<3		-----	
360	ISO20846	1.74		-----	
369		-----		-----	
398		-----		-----	
447		-----		-----	
463		-----		-----	
494		-----		-----	
496	ISO20846	1.77		-----	
540		-----		-----	
631		-----		-----	
657	ISO20884	1.8		-----	
663		-----		-----	
862		-----		-----	
863		-----		-----	
886		-----		-----	
1017		-----		-----	
1033		-----		-----	
1047	ISO20846	1.6		-----	
1059	ISO20846	<3.0		-----	
1067	ISO20846	1.5		-----	
1080		-----		-----	
1094	ICP-OES	1.83		-----	
1108		-----		-----	
1132		-----		-----	
1154		-----		-----	
1161	ISO20846	2.11		-----	
1167	ISO20846	1.75		-----	
1188		-----		-----	
1199		-----		-----	
1201	D2622	3.5	G(0.05)	-----	False positive result?
1203	ISO20846	1.8		-----	
1231		-----		-----	
1240		-----		-----	
1263	ISO20846	1.262		-----	
1268		-----		-----	
1273	in house	0.37	G(0.01)	-----	
1274		-----		-----	
1278		-----		-----	
1286	ISO20846	1.454		-----	
1290	EN14538	1.205		-----	
1316	in house	2.1		-----	
1402	ISO20846	1.96		-----	
1407	ISO20846	2.1		-----	
1428	ISO20846	<3		-----	
1429	ISO20846	2.16		-----	
1650		-----		-----	
1654		-----		-----	
1656	ISO20846	2.07		-----	
1708	ISO20846	2.14		-----	
1721	ISO20846	2.2		-----	
1739		-----		-----	
1911	ISO20846	1.83		-----	
1948	ISO20846	2.36		-----	
2160	in house	<3		-----	
	normality	OK			
	n	22			
	outliers	2			
	mean (n)	1.843			
	st.dev. (n)	0.3051			
	R(calc.)	0.854			Compared with R(ISO20884) = 1.720
	R(EN14214:08)	(1.326)*			* Application lower limit is 3 mg/kg

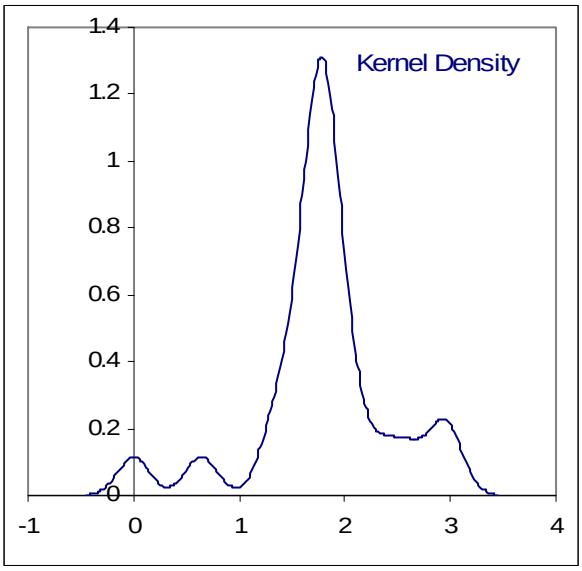

4
3.5
3
2.5
2
1.5
1
0.5
0
1273
1290
1263
1286
1067
1047
360
1167
496
333
657
1203
1094
1911
1402
1656
1407
1316
1161
1708
1429
1721
1948
1201


Kernel Density
1.2
1
0.8
0.6
0.4
0.2
0
-1
0
1
2
3
4
5

Determination of Sulphur conform ASTM spec. on sample #1036; results in mg/kg

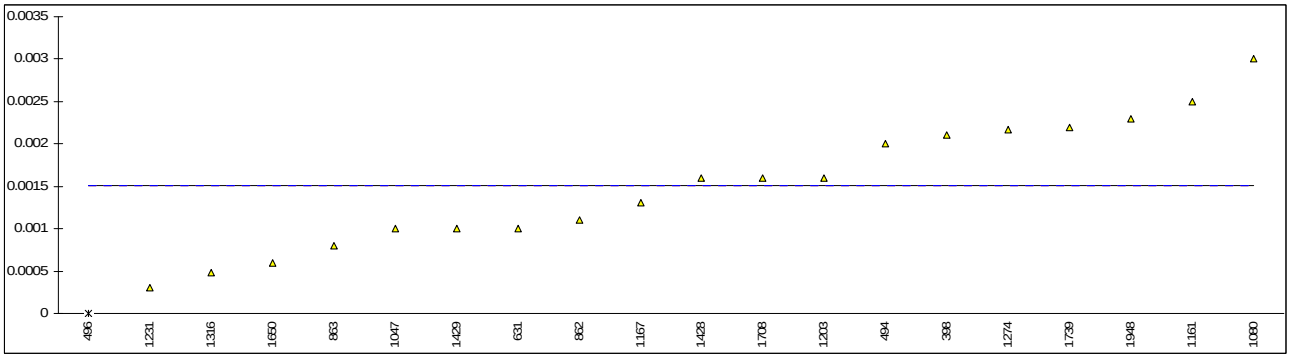
lab	method	value	mark	z(targ)	remarks
62	D5453	2.9	DG(0.05)	3.68	
150	D5453	1.9		0.49	
169	D5453	2.37	DG(0.05)	1.99	
171	D5453	1.715		-0.09	
311		-----		-----	
312	D5453	1.6		-0.46	
323		-----		-----	
333		-----		-----	
334	D5453	1.5		-0.78	
343		-----		-----	
360	D5453	1.74		-0.01	
369	D5453	1.70		-0.14	
398		-----		-----	
447		-----		-----	
463	D5453	1.78		0.11	
494	D5453	2.1		1.13	
496	D5453	1.77		0.08	
540		-----		-----	
631	D5453	2.02		0.88	
657	D5453	1.8		0.18	
663		-----		-----	
862	D5453	2.61	DG(0.05)	2.75	
863	D5453	1.79		0.14	
886	D5453	0.64	G(0.05)	-3.51	
1017		-----		-----	
1033		-----		-----	
1047		-----		-----	
1059	ISO20884	<5.0		-----	
1067		-----		-----	
1080	D5453	1.8		0.18	
1094		-----		-----	
1108	D5453	3.0	DG(0.05)	3.99	
1132		-----		-----	
1154		-----		-----	
1161		-----		-----	
1167		-----		-----	
1188		-----		-----	
1199		-----		-----	
1201	D5453	1.3		-1.41	
1203		-----		-----	
1231	D2622	0.00	ex	-5.55	Result excluded, not a real value
1240		-----		-----	
1263		-----		-----	
1268		-----		-----	
1273		-----		-----	
1274		-----		-----	
1278		-----		-----	
1286	D5453	1.454		-0.92	
1290		-----		-----	
1316		-----		-----	
1402	D5453	1.89		0.46	
1407		-----		-----	
1428	D5453	1.8		0.18	
1429		-----		-----	
1650		-----		-----	
1654		-----		-----	
1656		-----		-----	
1708		-----		-----	
1721		-----		-----	
1739		-----		-----	
1911		-----		-----	
1948		-----		-----	
2160		-----		-----	
	normality	OK			
	n	17			
	outliers	5			
	mean (n)	1.745			
	st.dev. (n)	0.1979			
	R(calc.)	0.554			
	R(D5453:09)	0.880			Range: 1 – 8000 mg/kg

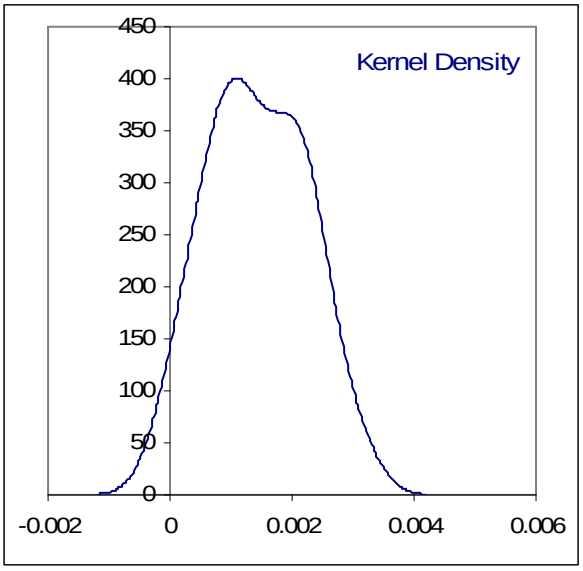

3.5
3
2.5
2
1.5
1
0.5
0
1231
886
1201
1286
334
312
369
171
360
496
463
863
1428
1080
657
1402
150
631
494
169
862
62
1108


Kernel Density
1.4
1.2
1
0.8
0.6
0.4
0.2
0
-1
0
1
2
3
4

Determination of Sulphated Ash on sample #1036; results in %M/M

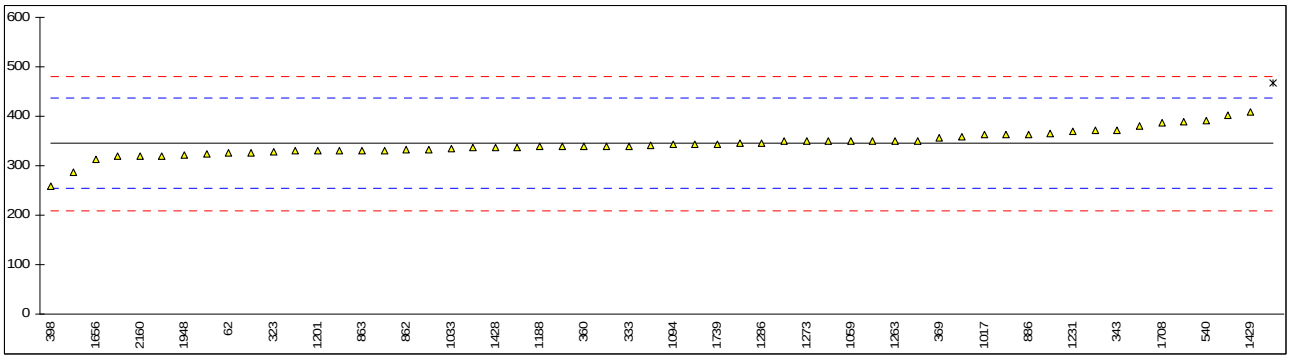
lab	method	value	mark	z(targ)	remarks
62	D874	<0.001		-----	
150	ISO3987	<0.0010		-----	
169		-----		-----	
171	D874	<0.0010		-----	
311		<0.01		-----	
312		-----		-----	
323		-----		-----	
333		-----		-----	
334		-----		-----	
343		<0.005		-----	
360		-----		-----	
369	ISO3987	<0.005		-----	
398		0.0021		-----	
447		-----		-----	
463		-----		-----	
494	D874/ISO3987	0.002		-----	
496	ISO3987	0.0000	ex	-----	Result excluded, not a real value
540	ISO3987	<0.02		-----	
631	D874	0.001		-----	
657	D874	<0.005		-----	
663		-----		-----	
862	D874	0.0011		-----	
863	D874	0.0008		-----	
886		-----		-----	
1017		-----		-----	
1033		-----		-----	
1047	ISO3987	0.001		-----	
1059		-----		-----	
1067		-----		-----	
1080	ISO3987	0.003		-----	
1094		-----		-----	
1108		-----		-----	
1132	D874	<0.005		-----	
1154		-----		-----	
1161	ISO3987	0.0025		-----	
1167	D874	0.0013		-----	
1188		-----		-----	
1199		-----		-----	
1201	D874	<0.005		-----	
1203	D874	0.0016		-----	
1231	D874	0.000299		-----	
1240		-----		-----	
1263		-----		-----	
1268		-----		-----	
1273		-----		-----	
1274	EN51207	0.00217		-----	
1278		-----		-----	
1286		-----		-----	
1290		-----		-----	
1316		0.00048		-----	
1402	D874	<0.001		-----	
1407		-----		-----	
1428	ISO3987	0.0016		-----	
1429	IP550	0.001		-----	
1650	D874/ISO3987	0.0006		-----	
1654		-----		-----	
1656	ISO3987	<0.01		-----	
1708	ISO3987	0.0016		-----	
1721		<0.001		-----	
1739	ISO3987	0.0022		-----	
1911		-----		-----	
1948		0.0023		-----	
2160		<0.005		-----	
	normality	OK			
	n	19			
	outliers	1			
	mean (n)	0.0015			
	st.dev. (n)	0.00075			
	R(calc.)	0.0021			Compared with R(D874) = 0.0009
	R(EN14214:03)	(0.0007)*			* applicable lower limit of 0.005%

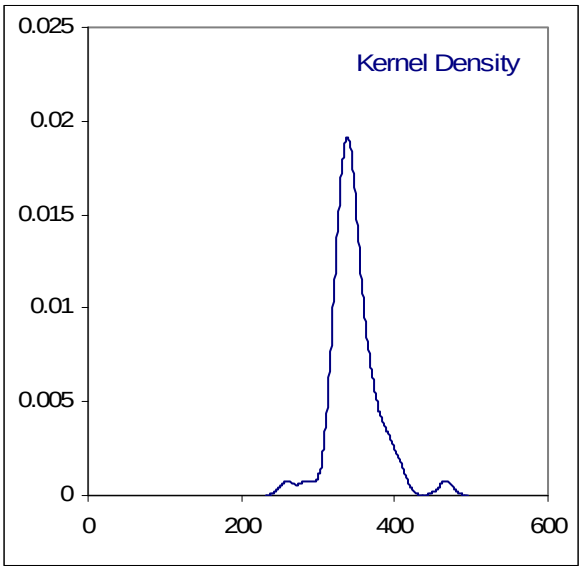

0.0035
0.003
0.0025
0.002
0.0015
0.001
0.0005
0
496
1231
1316
1650
863
1047
1429
631
862
1167
1428
1708
1203
494
398
1274
1739
1948
1161
1000


Kernel Density
450
400
350
300
250
200
150
100
50
0
-0.002
0
0.002
0.004
0.006

Determination of Water on sample #1036; results in mg/kg

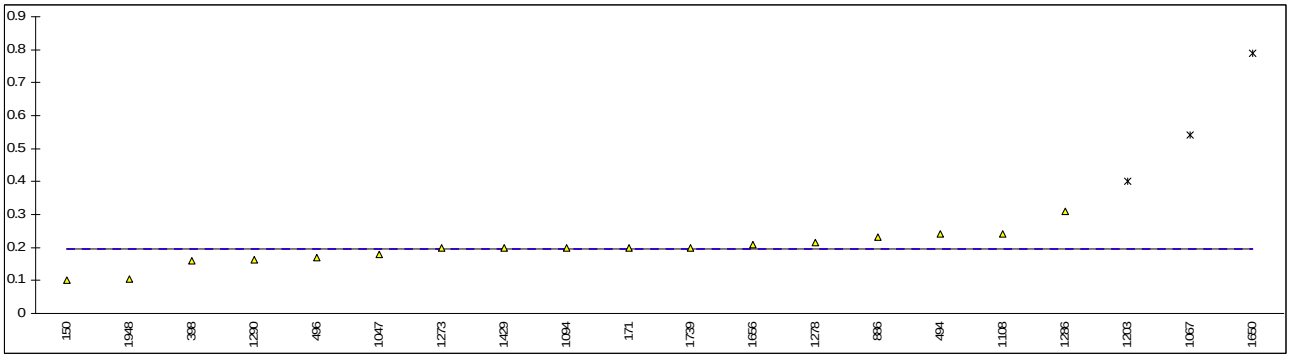
lab	method	value	mark	z(targ)	remarks
62	D6304	326		-0.41	
150	ISO12937	349		0.09	
169	E203	403		1.28	
171	ISO12937	350		0.12	
311	ISO12937	330		-0.32	
312	ISO12937	330		-0.32	
323	ISO12937	329		-0.34	
333	ISO12937	340		-0.10	
334	ISO12937	330		-0.32	
343	ISO12937	372		0.60	
360	ISO12937	339.3	C	-0.12	First reported 139.3
369	ISO12937	356.3		0.25	
398	ISO12937	259.7		-1.86	
447		-----		-----	
463	ISO12937	339.5		-0.11	
494	ISO12937	345		0.01	
496	ISO12937	371		0.58	
540	ISO12937	390.6		1.01	
631	D6304	343.4		-0.03	
657	ISO12937	380		0.77	
663	ISO12937	364		0.42	
862	D6304	333.0		-0.26	
863	D6304	330		-0.32	
886	ISO12937	364		0.42	
1017	ISO12937	362.0		0.38	
1033	IP438	334		-0.23	
1047	ISO12937	327		-0.39	
1059	ISO12937	350		0.12	
1067	ISO12937	338		-0.15	
1080	ISO12937	350		0.12	
1094	ISO12937	343.3		-0.03	
1108	ISO12937	365		0.44	
1132		-----		-----	
1154		-----		-----	
1161	ISO12937	358.73		0.31	
1167	ISO12937	324.7		-0.44	
1188	ISO12937	339.01		-0.12	
1199		-----		-----	
1201	ISO12937	330		-0.32	
1203	ISO12937	286		-1.29	
1231	ISO12937	370.5		0.57	
1240	ISO12937	341.2		-0.08	
1263	ISO12937	350.27		0.12	
1268		-----		-----	
1273	ISO12937	349		0.09	
1274	ISO12937	388.6		0.96	
1278	ISO12937	467	G(0.01)	2.68	
1286	ISO12937	345.73		0.02	
1290	ISO12937	339.03		-0.12	
1316	ISO12937	320		-0.54	
1402		-----		-----	
1407	ISO12937	333.5		-0.25	
1428	ISO12937	337		-0.17	
1429	ISO12937	408.55		1.40	
1650	ISO12937	350.5		0.13	
1654		-----		-----	
1656	ISO12937	313		-0.70	
1708	ISO12937	387.4		0.94	
1721	ISO12937	337		-0.17	
1739	ISO12937	344		-0.02	
1911	ISO12937	318.8		-0.57	
1948	ISO12937	322.33		-0.49	
2160	ISO12937	320		-0.54	
	normality	not OK			
	n	55			
	outliers	1			
	mean (n)	344.71			
	st.dev. (n)	25.753			
	R(calc.)	72.11			
	R(ISO12937:00)	127.68			

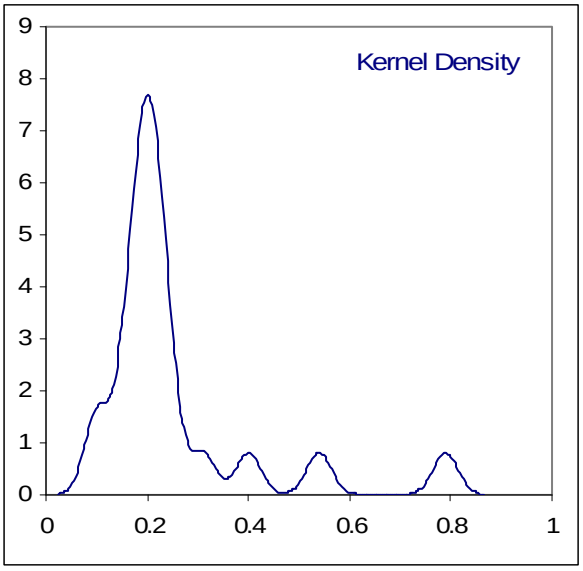

600
500
400
300
200
100
0
398
1656
2160
1948
62
323
1201
863
862
1033
1428
1188
360
333
1094
1739
1286
1273
1059
1263
369
1017
886
1231
343
1708
540
1429


Kernel Density
0.025
0.02
0.015
0.01
0.005
0
0
200
400
600

Determination of sum of Calcium and Magnesium on sample #1036; results in mg/kg

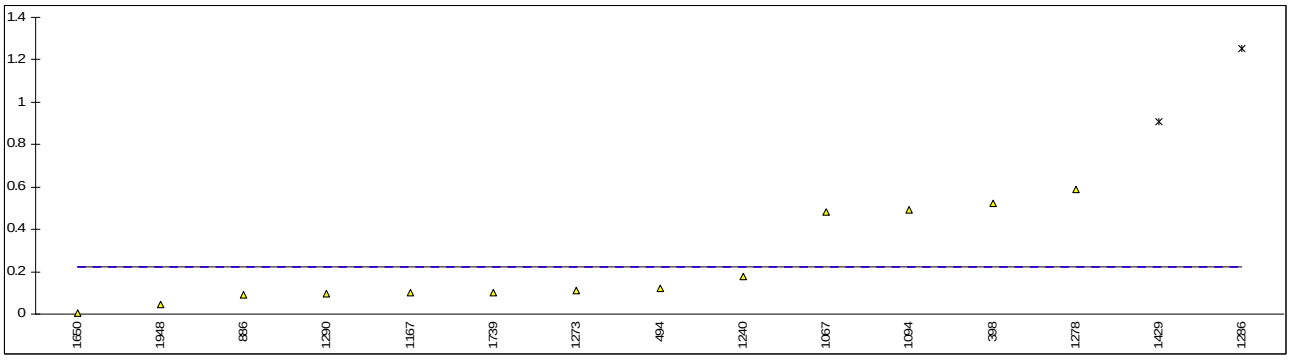
lab	method	value	mark	z(targ)	remarks
62	D3605	<0.1		-----	
150	EN14538	0.1		-----	
169		-----		-----	
171	EN14538	0.2		-----	
311	EN14538	<1.0		-----	
312		-----		-----	
323	EN14538	<2		-----	
333		-----		-----	
334		-----		-----	
343	EN14538	<2		-----	
360	EN14538	<1.0		-----	
369	EN14538	<1		-----	
398	EN14538	0.16		-----	
447		-----		-----	
463		-----		-----	
494	EN14538	0.24		-----	
496	EN14538	0.17		-----	
540	EN14538	<5		-----	
631		-----		-----	
657	EN14538	<1		-----	
663		-----		-----	
862	EN14538	<1		-----	
863	inh-018	<1		-----	
886	EN14538	0.23		-----	
1017		-----		-----	
1033		-----		-----	
1047	EN14538	0.18		-----	
1059		-----		-----	
1067	EN14538	0.54	G(0.01)	-----	
1080		-----		-----	
1094	EN14538	0.20		-----	
1108	In house	0.24		-----	
1132		-----		-----	
1154		-----		-----	
1161		-----		-----	
1167	EN14538	<1		-----	
1188		-----		-----	
1199		-----		-----	
1201	EN14538	<5		-----	
1203	in house	0.4	G(0.05)	-----	
1231	D5185	nil		-----	
1240	EN14538	<1.0		-----	
1263		-----		-----	
1268	EN14538	<1		-----	
1273	EN14538	0.20		-----	
1274		-----		-----	
1278	EN14538	0.215		-----	
1286	EN14538	0.31		-----	
1290	EN14538	0.1635		-----	
1316	In house	<0.25		-----	
1402		-----		-----	
1407		-----		-----	
1428	EN14538	<1		-----	
1429	EN14538	0.2		-----	
1650	EN14538	0.79	G(0.01)	-----	
1654		-----		-----	
1656	EN14538	0.21		-----	
1708	EN14538	<1.0		-----	
1721	EN14538	<1		-----	
1739	EN14538	0.2		-----	
1911		-----		-----	
1948	EN14538	0.103		-----	
2160	EN14538	<0.5		-----	
	normality	OK			
	n	17			
	outliers	3			
	mean (n)	0.20			
	st.dev. (n)	0.050			
	R(calc.)	0.14			
	R(EN14538:06)	(1.22)			Application range 1 – 10 mg/kg

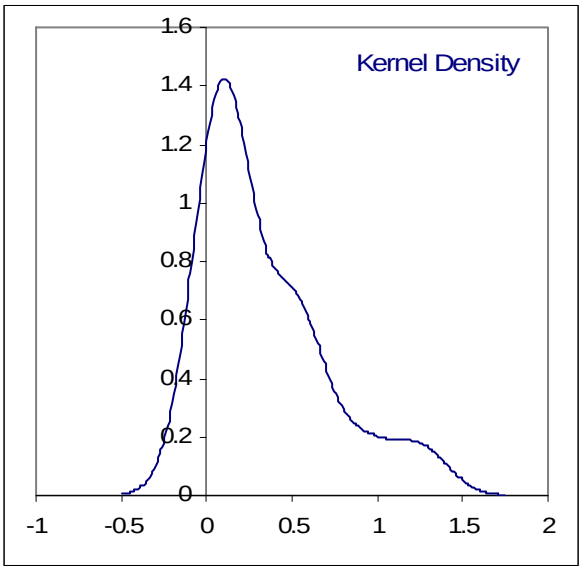

0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
150
1948
398
1290
496
1047
1273
1429
1094
171
1739
1696
1278
886
494
1108
1296
1203
1067
1650


Kernel Density
9
8
7
6
5
4
3
2
1
0
0
0.2
0.4
0.6
0.8
1

Determination of Phosphorus on sample #1036; results in mg/kg

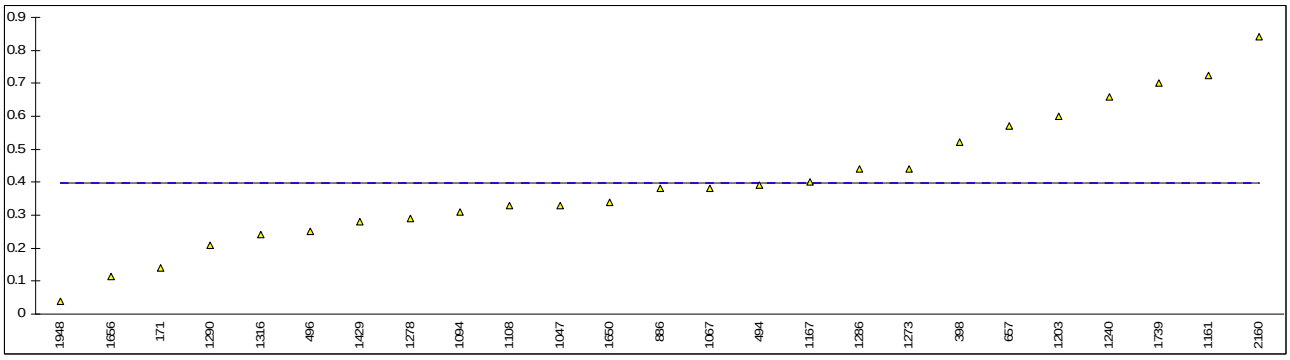
lab	method	value	mark	z(targ)	remarks
62		-----		-----	
150		-----		-----	
169		-----		-----	
171	EN14107	<0.1		-----	
311	EN14107	<4.0		-----	
312		-----		-----	
323	EN14107	<4		-----	
333		-----		-----	
334		-----		-----	
343	EN14107	<4		-----	
360	EN14107	<4.0		-----	
369	EN14107	<4		-----	
398	EN14107	0.52		-----	
447		-----		-----	
463		-----		-----	
494	EN14107	0.12		-----	
496	EN14107	<0.1		-----	
540	EN14107	<5		-----	
631		-----		-----	
657	EN14107	<1		-----	
663		-----		-----	
862	EN14107	<4		-----	
863	inh-018	<1		-----	
886	EN14538	0.09		-----	
1017		-----		-----	
1033		-----		-----	
1047	EN14107	<1.0		-----	
1059	in house	<3		-----	
1067	EN14107	0.48		-----	
1080		-----		-----	
1094	EN14107	0.49		-----	
1108		-----		-----	
1132		-----		-----	
1154		-----		-----	
1161		-----		-----	
1167	EN14107	0.1	C	-----	First reported 2.8
1188	in house	<1		-----	
1199		-----		-----	
1201	EN14538	<5		-----	
1203	in house	<1		-----	
1231	D5185	nil		-----	
1240	EN14107	0.18		-----	
1263		-----		-----	
1268	EN14107	<4		-----	
1273	EN14107	0.11		-----	
1274		-----		-----	
1278	EN14107	0.59		-----	
1286	EN14107	1.251	DG(0.05)	-----	
1290	EN14107	0.0966		-----	
1316	In house	<10		-----	
1402		-----		-----	
1407		-----		-----	
1428	EN14107	<4		-----	
1429	EN14107	0.91	DG(0.05)	-----	
1650	EN14107	0.006		-----	
1654		-----		-----	
1656	EN14107	<0.01		-----	
1708	EN14107	<4.0		-----	
1721	EN14107	<2		-----	
1739	EN14107	0.1		-----	
1911		-----		-----	
1948	EN14107	0.047		-----	
2160	EN14107	<2		-----	
	normality	not OK			
	n	13			
	outliers	2			
	mean (n)	0.23			
	st.dev. (n)	0.210			
	R(calc.)	0.59			
	R(EN14107:03)	(0.07)			Application range: 4 – 20 mg/kg

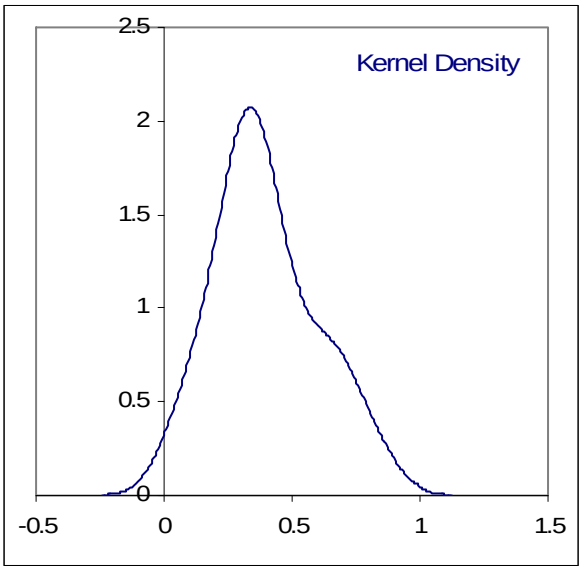

1.4
1.2
1
0.8
0.6
0.4
0.2
0
1650
1948
886
1290
1167
1739
1273
494
1240
1067
1094
398
1278
1429
1286


Kernel Density
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
-1
-0.5
0
0.5
1
1.5
2

Determination of Sodium on sample #1036; results in mg/kg

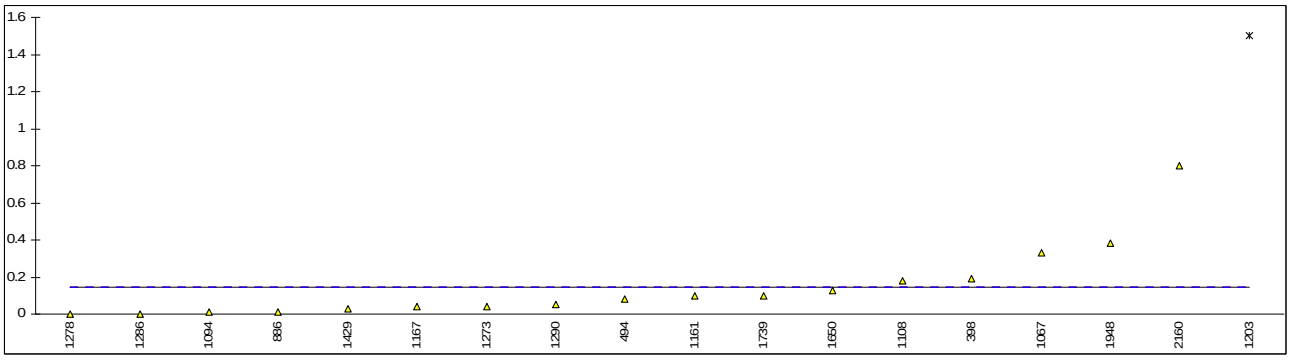
lab	method	value	mark	z(targ)	remarks
62	D3605	<0.1		-----	
150		-----		-----	
169		-----		-----	
171	EN14108	0.14		-----	
311	EN14108	<1.0		-----	
312		-----		-----	
323	EN14108	<1.0		-----	
333		-----		-----	
334		-----		-----	
343	EN14108	<1		-----	
360	EN14108	<1.0		-----	
369	EN14538	<1		-----	
398	EN14108	0.521		-----	
447		-----		-----	
463		-----		-----	
494	EN14538	0.39		-----	
496	EN14538	0.25		-----	
540	EN14538	<5		-----	
631		-----		-----	
657	EN14108	0.57		-----	
663		-----		-----	
862	EN14108	<1		-----	
863	inh-018	<1		-----	
886	EN14538	0.38		-----	
1017		-----		-----	
1033		-----		-----	
1047	EN14538	0.33		-----	
1059		-----		-----	
1067	EN14538	0.38		-----	
1080		-----		-----	
1094	EN14108	0.31		-----	
1108	EN14108	0.33		-----	
1132		-----		-----	
1154		-----		-----	
1161	EN14108	0.724		-----	
1167	EN14108	0.4		-----	
1188		-----		-----	
1199		-----		-----	
1201	EN14538	<5		-----	
1203	EN14108	0.6		-----	
1231	D5185	nil		-----	
1240	EN14538	0.66	C	-----	First reported 1.66
1263		-----		-----	
1268	EN14538	<1		-----	
1273	EN14538	0.44		-----	
1274		-----		-----	
1278	EN14538	0.29		-----	
1286	EN14538	0.44		-----	
1290	EN14538	0.2081		-----	
1316	In house	0.24		-----	
1402		-----		-----	
1407		-----		-----	
1428	EN14108	<1		-----	
1429	EN14108	0.28		-----	
1650	EN14108	0.34		-----	
1654		-----		-----	
1656	EN14108	0.113		-----	
1708	EN14108	<1.0		-----	
1721	EN14108	<1		-----	
1739	EN14538	0.7		-----	
1911		-----		-----	
1948	EN14108	0.040		-----	
2160	EN14108	0.84	C	-----	First reported 1.00
	normality	OK			
	n	25			
	outliers	0			
	mean (n)	0.40			
	st.dev. (n)	0.200			
	R(calc.)	0.56			
	R(EN14108:03)	(1.46)			Application range: > 1 mg/kg

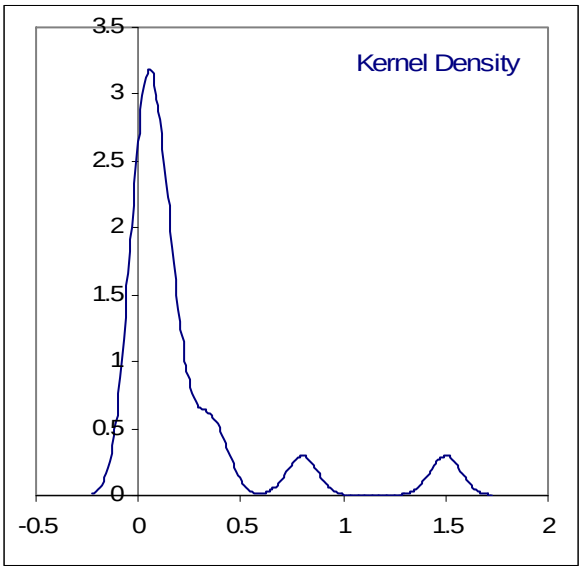

0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1948
1656
171
1290
1316
496
1429
1278
1094
1108
1047
1650
886
1067
494
1167
1286
1273
398
657
1203
1240
1739
1161
2160


Kernel Density
2.5
2
1.5
1
0.5
0
-0.5
0
0.5
1
1.5

Determination of Potassium on sample #1036; results in mg/kg

lab	method	value	mark	z(targ)	remarks
62		-----		-----	
150		-----		-----	
169		-----		-----	
171	EN14109	<0.1		-----	
311	EN14109	<1.0		-----	
312		-----		-----	
323	EN14109	<0.5		-----	
333		-----		-----	
334		-----		-----	
343	EN14109	<0.5		-----	
360	EN14109	<1.0		-----	
369	EN14538	<1		-----	
398	EN14109	0.189		-----	
447		-----		-----	
463		-----		-----	
494	EN14538	0.08		-----	
496	EN14538	<0.1		-----	
540	EN14538	<5		-----	
631		-----		-----	
657	EN14109	<0.5		-----	
663		-----		-----	
862	EN14109	<0.5		-----	
863	inh-018	<1		-----	
886	EN14538	0.01		-----	
1017		-----		-----	
1033		-----		-----	
1047	EN14538	<0.5		-----	
1059		-----		-----	
1067	EN14538	0.33		-----	
1080		-----		-----	
1094	EN14109	0.01		-----	
1108	EN14109	0.18		-----	
1132		-----		-----	
1154		-----		-----	
1161	EN14109	0.096		-----	
1167	EN14109	0.04		-----	
1188		-----		-----	
1199		-----		-----	
1201	EN14538	<5		-----	
1203	EN14109	1.5	G(0.01)	-----	False positive result?
1231	D5185	nil		-----	
1240	EN14538	<1.0		-----	
1263		-----		-----	
1268	EN14538	<1		-----	
1273	EN14538	0.04		-----	
1274		-----		-----	
1278	EN14538	0.0		-----	
1286	EN14538	0		-----	
1290	EN14538	0.0545		-----	
1316	In house	<0.1		-----	
1402		-----		-----	
1407		-----		-----	
1428	EN14109	<0.5		-----	
1429	EN14109	0.03		-----	
1650	EN14109	0.13		-----	
1654		-----		-----	
1656	EN14109	<0.001		-----	
1708	EN14109	<0.5		-----	
1721	EN14109	<1		-----	
1739	EN14538	0.1		-----	
1911		-----		-----	
1948	EN14109	0.385		-----	
2160	EN14109	0.80		-----	False positive result?
	normality	not OK			
	n	17			
	outliers	1			
	mean (n)	0.15			
	st.dev. (n)	0.202			
	R(calc.)	0.57			
	R(EN14214:08)	(2.02)			Application range: >0.5 mg/kg

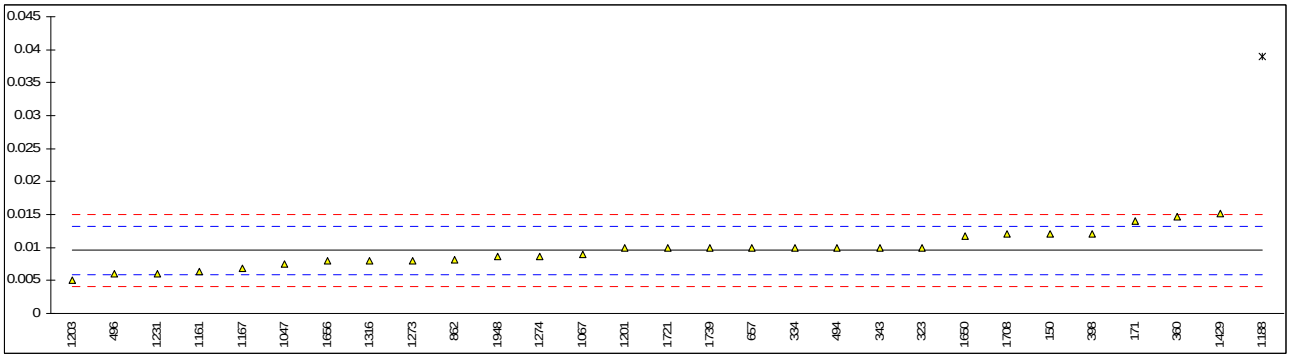

1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1278
1286
1094
886
1429
1167
1273
1290
494
1161
1739
1650
1108
398
1067
1948
2160
1203

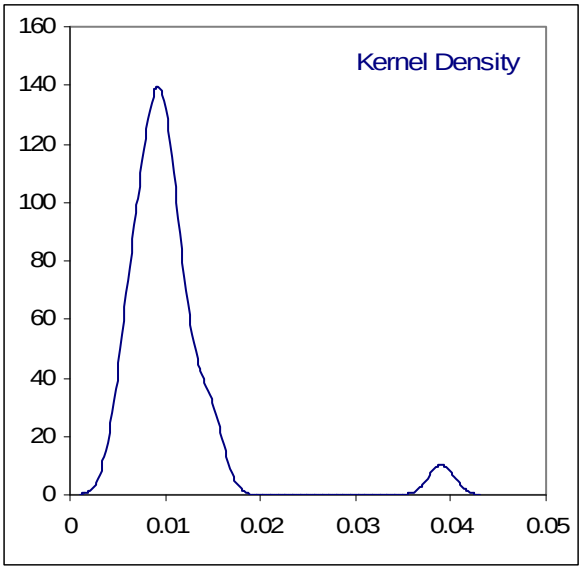

Kernel Density
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
0
0.5
1
1.5
2

Determination of Methanol on sample #1036; results in %M/M

lab	method	value	mark	z(targ)	remarks
62		-----		-----	
150	EN14110	0.012		1.34	
169		-----		-----	
171	EN14110-A	0.0140		2.44	
311	EN14110-B	<0.01		<0.24	
312		-----		-----	
323	EN14110-B	0.01		0.24	
333		-----		-----	
334	EN14110	0.01		0.24	
343	EN14110-B	0.01		0.24	
360	EN14110-B	0.0147		2.82	
369		-----		-----	
398	EN14110	0.012		1.34	
447		-----		-----	
463		-----		-----	
494	EN14110-A	0.01		0.24	
496	EN14110-B	0.006		-1.95	
540		-----		-----	
631		-----		-----	
657	EN14110-A	0.01	C	0.24	First reported 0.03
663		-----		-----	
862	EN14110-A	0.0081		-0.80	
863		-----		-----	
886		-----		-----	
1017		-----		-----	
1033		-----		-----	
1047	EN14110-A	0.0075		-1.13	
1059		-----		-----	
1067	EN14110-B	0.009		-0.30	
1080		-----		-----	
1094		-----		-----	
1108		-----		-----	
1132		-----		-----	
1154		-----		-----	
1161	EN14110	0.0063		-1.78	
1167	EN14110-A	0.0068		-1.51	
1188	EN14110-B	0.039	G(0.01)	16.13	
1199		-----		-----	
1201	EN14110-B	0.01		0.24	
1203	EN14110-A	0.005		-2.49	
1231	EN14110	0.006		-1.95	
1240	EN14110-A	<0.01		<0.24	
1263		-----		-----	
1268		-----		-----	
1273	EN14110	0.008		-0.85	
1274	EN14110-B	0.00857	C	-0.54	First reported 0.857
1278		-----		-----	
1286	EN14110-B	<0.01		<0.24	
1290		-----		-----	
1316	EN14110-B	0.008		-0.85	
1402		-----		-----	
1407		-----		-----	
1428		-----	W	-----	Result withdrawn, first reported 0.0299
1429	EN14110-B	0.0152		3.09	
1650	EN14110-mod	0.0118	C	1.23	First reported 0.0329
1654		-----		-----	
1656	EN14110-A	0.008		-0.85	
1708	EN14110-B	0.012		1.34	
1721	EN14110-B	0.01		0.24	
1739	EN14110-B	0.01		0.24	
1911		-----		-----	
1948	EN14110	0.00856		-0.54	
2160	EN14110-B	<0.01		<0.24	

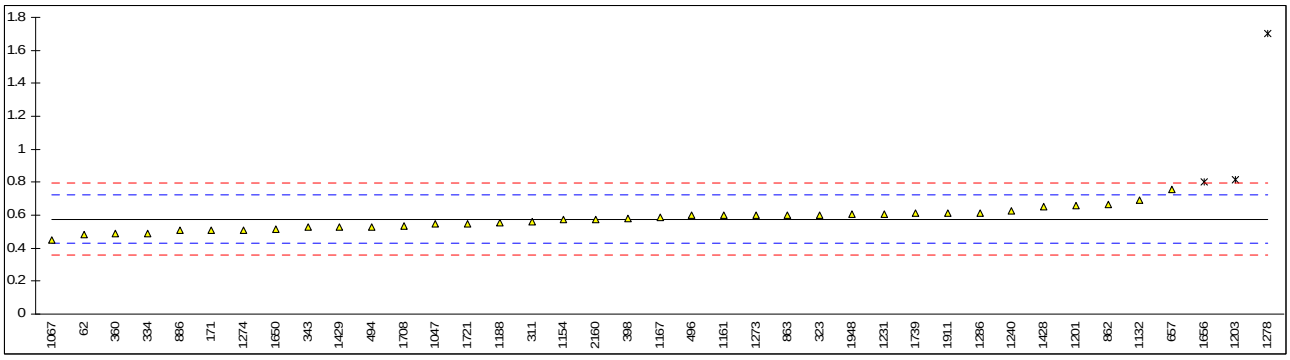
normality	not OK
n	28
outliers	1
mean (n)	0.0096
st.dev. (n)	0.00260
R(calc.)	0.0073
R(EN14110:03)	0.0051

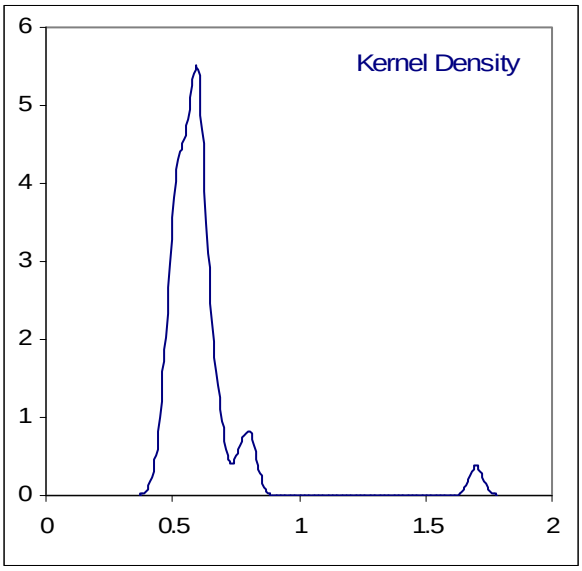

0.045
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
1203
496
1231
1161
1167
1047
1656
1316
1273
862
1948
1274
1067
1201
1721
1739
657
334
494
343
323
1690
1708
150
398
171
360
1429
1188


Kernel Density
160
140
120
100
80
60
40
20
0
0
0.01
0.02
0.03
0.04
0.05

Determination of mono-Glycerides on sample #1036; results in %M/M

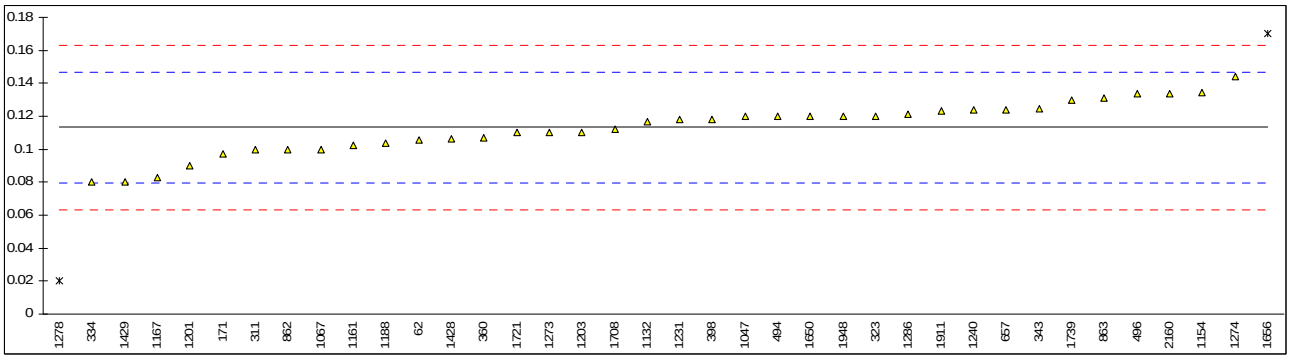
lab	method	value	mark	z(targ)	remarks
62	D6584	0.4834		-1.26	
150		-----		-----	
169		-----		-----	
171	EN14105	0.5099		-0.90	
311	EN14105	0.56		-0.21	
312		-----		-----	
323	EN14105	0.60		0.34	
333		-----		-----	
334	EN14105	0.49		-1.17	
343	EN14105	0.528		-0.65	
360	EN14105	0.489		-1.18	
369		-----		-----	
398	EN14105	0.581		0.08	
447		-----		-----	
463		-----		-----	
494	EN14105	0.53		-0.62	
496	EN14105	0.597		0.29	
540		-----		-----	
631		-----		-----	
657	EN14105	0.759		2.51	
663		-----		-----	
862	EN14105	0.667		1.25	
863	D6584	0.600		0.34	
886	EN14105	0.508		-0.92	
1017		-----		-----	
1033		-----		-----	
1047	EN14105	0.55		-0.35	
1059		-----		-----	
1067	EN14105	0.45		-1.72	
1080		-----		-----	
1094		-----		-----	
1108		-----		-----	
1132	EN14105	0.692		1.60	
1154	EN14105	0.57494		-0.01	
1161	EN14105	0.597		0.29	
1167	EN14105	0.590		0.20	
1188	EN14105	0.552		-0.32	
1199		-----		-----	
1201	EN14105	0.66		1.16	
1203	EN14105	0.813	DG(0.05)	3.25	
1231	EN14105	0.608		0.45	
1240	EN14105	0.628		0.72	
1263		-----		-----	
1268		-----		-----	
1273	EN14105	0.60		0.34	
1274	EN14105	0.5109		-0.88	
1278	EN14105	1.700	C,G(0.01)	15.41	First reported 1.769
1286	EN14105	0.615		0.54	
1290		-----		-----	
1316		-----		-----	
1402		-----		-----	
1407		-----		-----	
1428	EN14105	0.654		1.08	
1429	EN14105	0.53		-0.62	
1650	EN14105	0.512		-0.87	
1654		-----		-----	
1656	EN14105	0.80	DG(0.05)	3.08	
1708	EN14105	0.535		-0.55	
1721	EN14105	0.55		-0.35	
1739	EN14105	0.61		0.47	
1911	EN14105	0.615		0.54	
1948	EN14105	0.60530		0.41	
2160	EN14105	0.576		0.01	
	normality	OK			
	n	36			
	outliers	3			
	mean (n)	0.575			
	st.dev. (n)	0.0648			
	R(calc.)	0.182			
	R(EN14105:03)	0.204			

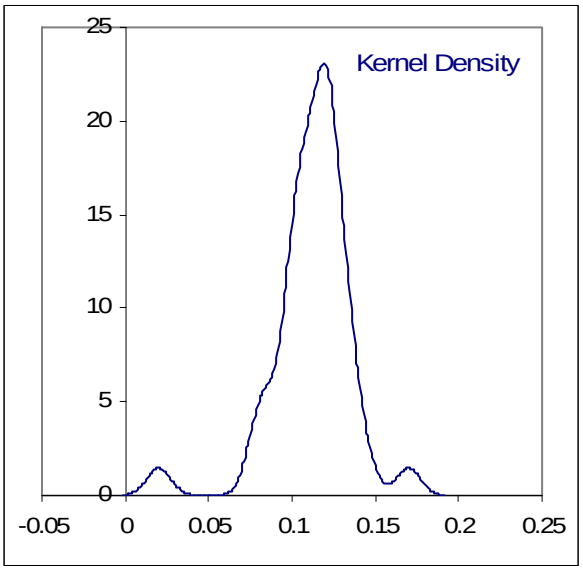

1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1067
62
360
334
886
171
1274
1650
343
1429
494
1708
1047
1721
1188
311
1154
2160
398
1167
496
1161
1273
863
323
1948
1231
1739
1911
1286
1240
1428
1201
862
1132
657
1656
1203
1278


Kernel Density
6
5
4
3
2
1
0
0
0.5
1
1.5
2

Determination of di-Glycerides on sample #1036; results in %M/M

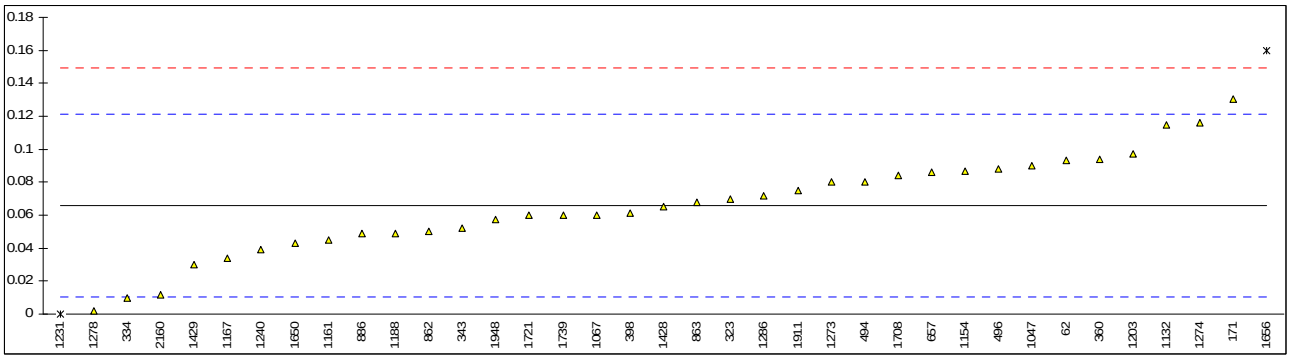
lab	method	value	mark	z(targ)	remarks
62	EN14105	0.1058		-0.44	
150		-----		-----	
169		-----		-----	
171	EN14105	0.0974		-0.95	
311	EN14105	0.10		-0.79	
312		-----		-----	
323	EN14105	0.12		0.41	
333		-----		-----	
334	EN14105	0.08		-1.99	
343	EN14105	0.1245		0.68	
360	EN14105	0.107		-0.37	
369		-----		-----	
398	EN14105	0.118		0.29	
447		-----		-----	
463		-----		-----	
494	EN14105	0.12		0.41	
496	EN14105	0.134		1.25	
540		-----		-----	
631		-----		-----	
657	EN14105	0.124		0.65	
663		-----		-----	
862	EN14105	0.100		-0.79	
863	D6584	0.131		1.07	
886		-----		-----	
1017		-----		-----	
1033		-----		-----	
1047	EN14105	0.12		0.41	
1059		-----		-----	
1067	EN14105	0.10		-0.79	
1080		-----		-----	
1094		-----		-----	
1108		-----		-----	
1132	EN14105	0.117		0.23	
1154	EN14105	0.13462		1.28	
1161	EN14105	0.1023		-0.65	
1167	EN14105	0.083		-1.81	
1188	EN14105	0.104		-0.55	
1199		-----		-----	
1201	EN14105	0.09		-1.39	
1203	EN14105	0.110		-0.19	
1231	EN14105	0.118		0.29	
1240	EN14105	0.124		0.65	
1263		-----		-----	
1268		-----		-----	
1273	EN14105	0.11		-0.19	
1274	EN14105	0.1440		1.85	
1278	EN14105	0.020	C,G(0.01)	-5.58	First reported 0.028
1286	EN14105	0.121		0.47	
1290		-----		-----	
1316		-----		-----	
1402		-----		-----	
1407		-----		-----	
1428	EN14105	0.106		-0.43	
1429	EN14105	0.08		-1.99	
1650	EN14105	0.120		0.41	
1654		-----		-----	
1656	EN14105	0.17	G(0.05)	3.40	
1708	EN14105	0.112		-0.07	
1721	EN14105	0.11		-0.19	
1739	EN14105	0.13		1.01	
1911	EN14105	0.123		0.59	
1948	EN14105	0.1200		0.41	
2160	EN14105	0.134		1.25	
	normality	OK			
	n	36			
	outliers	2			
	mean (n)	0.113			
	st.dev. (n)	0.0156			
	R(calc.)	0.044			
	R(EN14105:03)	0.047			

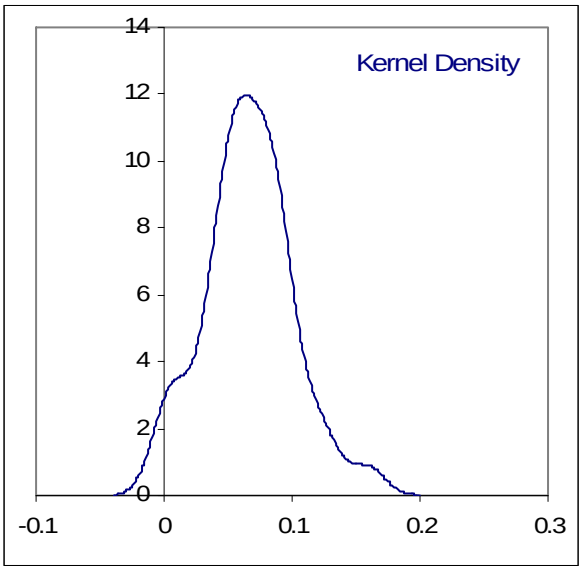

0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
1278 334 1429 1167 1201 171 311 862 1067 1161 1188 62 1428 360 1721 1273 1203 1708 1132 1231 398 1047 494 1650 1948 323 1286 1911 1240 657 343 1739 863 496 2160 1154 1274 1656


Kernel Density
25
20
15
10
5
0
-0.05 0 0.05 0.1 0.15 0.2 0.25

Determination of tri-Glycerides on sample #1036; results in %M/M

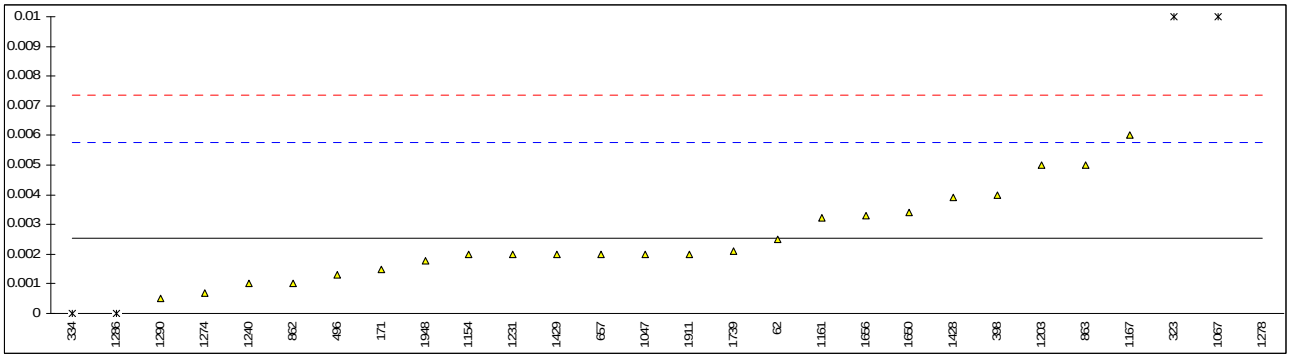
lab	method	value	mark	z(targ)	remarks
62	EN14105	0.0932		0.98	
150		-----		-----	
169		-----		-----	
171	EN14105	0.1305		2.32	
311	EN14105	<0.05		<-0.57	
312		-----		-----	
323	EN14105	0.07		0.15	
333		-----		-----	
334	EN14105	0.01		-2.01	
343	EN14105	0.0525		-0.48	
360	EN14105	0.094		1.01	
369		-----		-----	
398	EN14105	0.061		-0.17	
447		-----		-----	
463		-----		-----	
494	EN14105	0.08		0.51	
496	EN14105	0.088		0.80	
540		-----		-----	
631		-----		-----	
657	EN14105	0.086		0.72	
663		-----		-----	
862	EN14105	0.050		-0.57	
863	D6584	0.068		0.08	
886	EN14105	0.049		-0.61	
1017		-----		-----	
1033		-----		-----	
1047	EN14105	0.09		0.87	
1059		-----		-----	
1067	EN14105	0.06		-0.21	
1080		-----		-----	
1094		-----		-----	
1108		-----		-----	
1132	EN14105	0.115		1.77	
1154	EN14105	0.08654		0.74	
1161	EN14105	0.0452		-0.74	
1167	EN14105	0.034		-1.14	
1188	EN14105	0.049		-0.61	
1199		-----		-----	
1201	EN14105	<0.01		<-2.01	
1203	EN14105	0.097		1.12	
1231	EN14105	0.000	ex	-2.37	Result excluded, not a real value
1240	EN14105	0.039		-0.96	
1263		-----		-----	
1268		-----		-----	
1273	EN14105	0.08		0.51	
1274	EN14105	0.1162		1.81	
1278	EN14105	0.002		-2.29	
1286	EN14105	0.072		0.22	
1290		-----		-----	
1316		-----		-----	
1402		-----		-----	
1407		-----		-----	
1428	EN14105	0.065		-0.03	
1429	EN14105	0.03		-1.29	
1650	EN14105	0.043		-0.82	
1654		-----		-----	
1656	EN14105	0.16	G(0.05)	3.38	
1708	EN14105	0.084		0.65	
1721	EN14105	0.06		-0.21	
1739	EN14105	0.06		-0.21	
1911	EN14105	0.075		0.33	
1948	EN14105	0.0573		-0.31	
2160	EN14105	0.012		-1.93	
	normality	OK			
	n	35			
	outliers	1			
	mean (n)	0.066			
	st.dev. (n)	0.0295			
	R(calc.)	0.083			
	R(EN14105:03)	0.078			

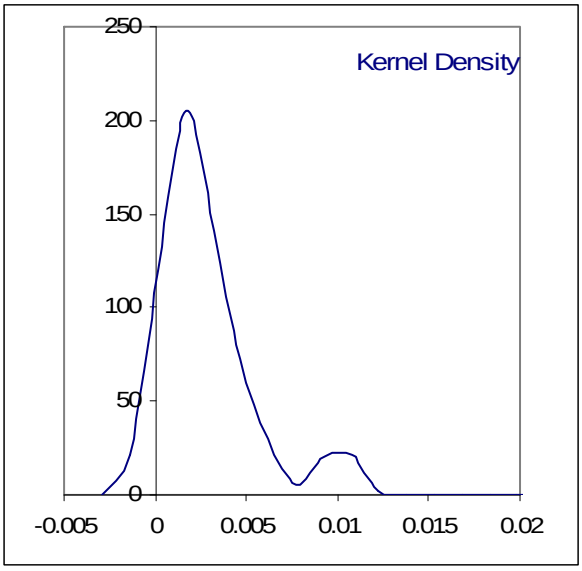

0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
1231
1278
334
2160
1429
1167
1240
1650
1161
886
1188
862
343
1948
1721
1739
1067
398
1428
863
323
1286
1911
1273
494
1708
657
1154
496
1047
62
360
1203
1132
1274
171
1656


Kernel Density
14
12
10
8
6
4
2
0
-0.1
0
0.1
0.2
0.3

Determination of Free Glycerol on sample #1036; results in %M/M

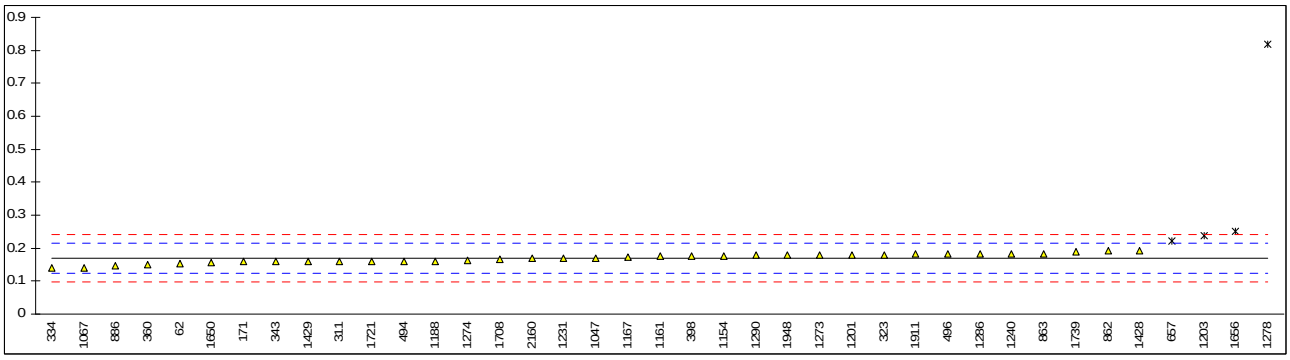
lab	method	value	mark	z(targ)	remarks
62	EN14105	0.0025		-0.02	
150		-----		-----	
169		-----		-----	
171	EN14105	0.0015		-0.64	
311	EN14105	<0.01		-----	
312		-----		-----	
323	EN14105	0.01	DG(0.01)	4.63	
333		-----		-----	
334	EN14105	0	ex	-1.57	Result excluded, not a real value
343	EN14105	<0.01		-----	
360	EN14105	<0.005		-----	
369		-----		-----	
398	EN14105	0.004		0.91	
447		-----		-----	
463		-----		-----	
494	EN14105	<0.01		-----	
496	EN14105	0.0013		-0.76	
540		-----		-----	
631		-----		-----	
657	EN14105	0.002		-0.33	
663		-----		-----	
862	EN14105	0.001		-0.95	
863	D6584	0.005		1.53	
886		-----		-----	
1017		-----		-----	
1033		-----		-----	
1047	EN14105	0.002		-0.33	
1059		-----		-----	
1067	EN14105	0.01	DG(0.01)	4.63	
1080		-----		-----	
1094		-----		-----	
1108		-----		-----	
1132	EN14105	<0.01		-----	
1154	EN14105	0.00198		-0.34	
1161	EN14105	0.00323		0.43	
1167	EN14105	0.006		2.15	
1188	EN14105	<0.005		-----	
1199		-----		-----	
1201	EN14105	<0.01		-----	
1203	EN14105	0.005		1.53	
1231	EN14105	0.002		-0.33	
1240	EN14105	0.001		-0.95	
1263		-----		-----	
1268		-----		-----	
1273	EN14105	<0.005		-----	
1274	EN14105	0.0007		-1.14	
1278	EN14105	0.380	C,G(0.01)	234.14	First reported 0.460
1286	EN14105	0.00	ex	-1.57	Result excluded, not a real value
1290	in house	0.0005		-1.26	
1316		-----		-----	
1402		-----		-----	
1407		-----		-----	
1428	EN14105	0.0039		0.85	
1429	EN14105	0.002		-0.33	
1650	EN14105	0.0034		0.54	
1654		-----		-----	
1656	EN14105	0.0033		0.48	
1708	EN14105	<0.005		-----	
1721	EN14105	<0.01		-----	
1739	EN14105	0.0021		-0.27	
1911	EN14105	0.002		-0.33	
1948	EN14105	0.00179		-0.46	
2160	EN14105	<0.005		-----	
	normality	not OK			
	n	23			
	outliers	3			
	mean (n)	0.0025			
	st.dev. (n)	0.00147			
	R(calc.)	0.0041			
	R(EN14105:03)	0.0045			

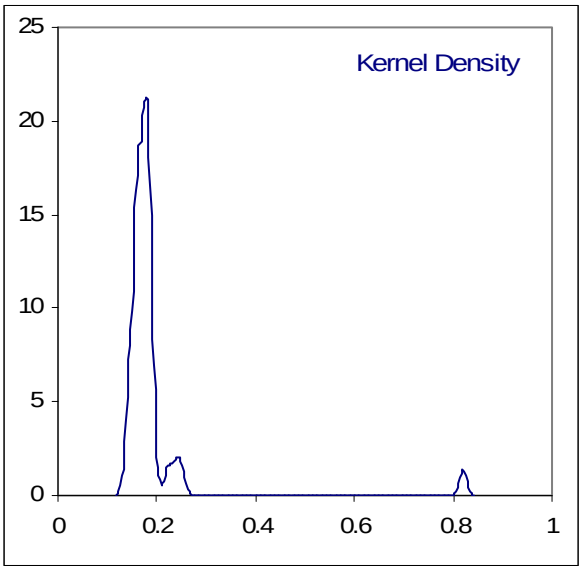

0.01
0.009
0.008
0.007
0.006
0.005
0.004
0.003
0.002
0.001
0
334
1286
1230
1274
1240
882
496
171
1948
1154
1231
1429
657
1047
1911
1739
62
1161
1696
1690
1428
398
1203
863
1167
323
1067
1278


Kernel Density
250
200
150
100
50
0
-0.005
0
0.005
0.01
0.015
0.02

Determination of Total Glycerol on sample #1036; results in %M/M

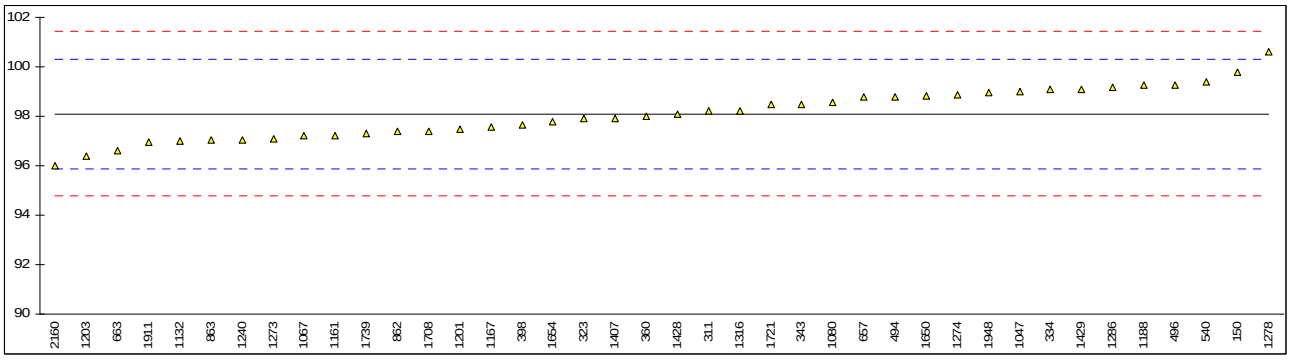
lab	method	value	mark	z(targ)	Remarks
62	EN14105	0.1532		-0.69	
150		-----		-----	
169		-----		-----	
171	EN14105	0.1591		-0.44	
311	EN14105	0.16		-0.40	
312		-----		-----	
323	EN14105	0.18		0.45	
333		-----		-----	
334	EN14105	0.14		-1.25	
343	EN14105	0.15954		-0.42	
360	EN14105	0.149		-0.87	
369		-----		-----	
398	EN14105	0.176		0.28	
447		-----		-----	
463		-----		-----	
494	EN14105	0.16		-0.40	
496	EN14105	0.182		0.54	
540		-----		-----	
631		-----		-----	
657	EN14105	0.223	G(0.05)	2.28	
663		-----		-----	
862	EN14105	0.191		0.92	
863	D6584	0.184		0.62	
886	EN14105	0.147		-0.95	
1017		-----		-----	
1033		-----		-----	
1047	EN14105	0.17		0.03	
1059		-----		-----	
1067	EN14105	0.14		-1.25	
1080		-----		-----	
1094		-----		-----	
1108		-----		-----	
1132	EN14105	<0.216		<1.99	
1154	EN14105	0.17715		0.33	
1161	EN14105	0.175		0.24	
1167	EN14105	0.172		0.11	
1188	EN14105	0.161		-0.36	
1199		-----		-----	
1201	EN14105	0.18		0.45	
1203	EN14105	0.238	G(0.05)	2.92	
1231	EN14105	0.170		0.03	
1240	EN14105	0.184		0.62	
1263		-----		-----	
1268		-----		-----	
1273	EN14105	0.18		0.45	
1274	EN14105	0.1640		-0.23	
1278	EN14105	0.820	C,G(0.01)	27.71	First reported 0.920
1286	EN14105	0.183		0.58	
1290	in house	0.1788		0.40	
1316		-----		-----	
1402		-----		-----	
1407		-----		-----	
1428	EN14105	0.193		1.01	
1429	EN14105	0.16		-0.40	
1650	EN14105	0.155		-0.61	
1654		-----		-----	
1656	EN14105	0.25	G(0.05)	3.43	
1708	EN14105	0.166		-0.14	
1721	EN14105	0.16		-0.40	
1739	EN14105	0.19		0.88	
1911	EN14105	0.181		0.49	
1948	EN14105	0.1795		0.43	
2160	EN14105	0.168		-0.06	
	normality	OK			
	n	35			
	outliers	4			
	mean (n)	0.169			
	st.dev. (n)	0.0142			
	R(calc.)	0.040			
	R(EN14105:03)	0.066			

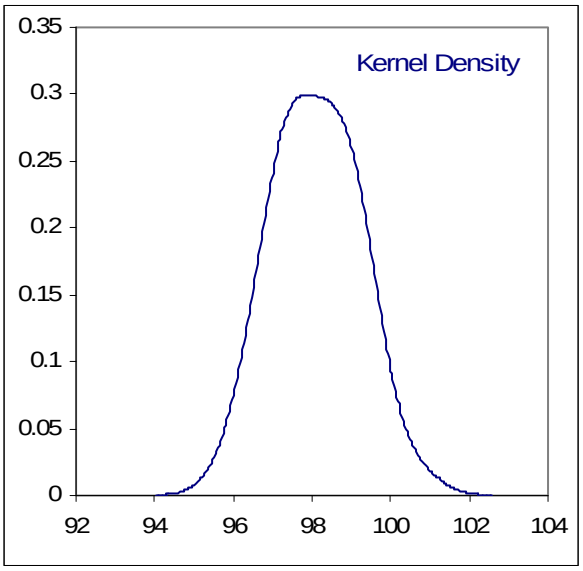

0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
334 1067 886 360 62 1650 171 343 1429 311 1721 494 1188 1274 1708 2160 1231 1047 1167 1161 398 1154 1290 1948 1273 1201 323 1911 496 1286 1240 863 1739 862 1428 657 1203 1656 1278


Kernel Density
25
20
15
10
5
0
0
0.2
0.4
0.6
0.8
1

Determination of Total Ester content on sample #1036; results in %M/M

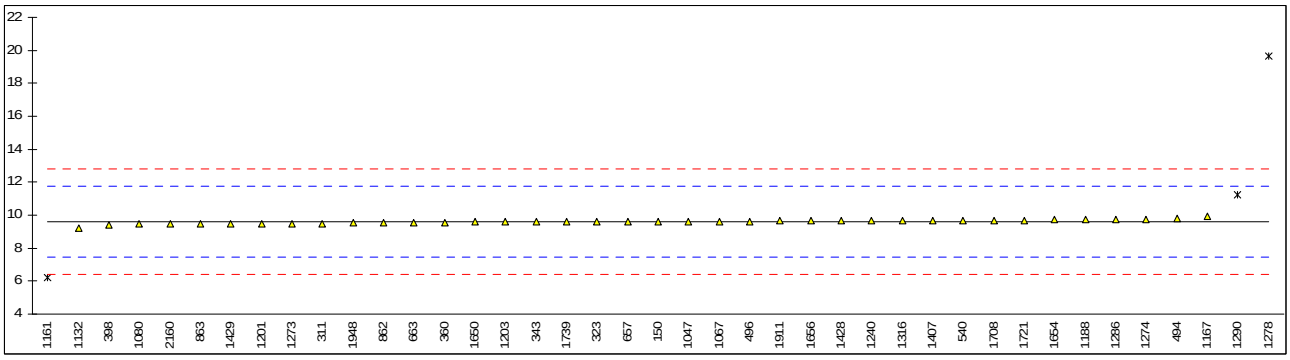
lab	method	value	mark	z(targ)	remarks
62		-----		-----	
150	EN14103	99.8		1.54	
169		-----		-----	
171		-----		-----	
311	EN14103	98.2		0.09	
312		-----		-----	
323	EN14103	97.9		-0.18	
333		-----		-----	
334	EN14103	99.1		0.91	
343	EN14103	98.5		0.36	
360	EN14103	97.98		-0.11	
369		-----		-----	
398	EN14103	97.657		-0.40	
447		-----		-----	
463		-----		-----	
494	EN14103	98.8		0.63	
496	EN14103	99.27		1.06	
540	EN14103	99.4		1.18	
631		-----		-----	
657	EN14103	98.8		0.63	
663	EN14103	96.59		-1.36	
862	EN14103	97.37		-0.66	
863	EN14103	97.04		-0.96	
886		-----		-----	
1017		-----		-----	
1033		-----		-----	
1047	EN14103	99.0		0.81	
1059		-----		-----	
1067	EN14103	97.2		-0.81	
1080	in house	98.56		0.42	
1094		-----		-----	
1108		-----		-----	
1132	EN14103	96.99		-1.00	
1154		-----		-----	
1161	EN14103	97.22		-0.79	
1167	EN14103	97.57		-0.48	
1188	EN14103	99.25		1.04	
1199		-----		-----	
1201	EN14103	97.5		-0.54	
1203	EN14103	96.4		-1.53	
1231		-----		-----	
1240	EN14103	97.05		-0.95	
1263		-----		-----	
1268		-----		-----	
1273	EN14103	97.1		-0.90	
1274	EN14103	98.8833	C	0.71	First reported 99.3971
1278	EN14103	100.62		2.28	
1286	EN14103	99.154		0.95	
1290		-----		-----	
1316	EN14103	98.221		0.11	
1402		-----		-----	
1407	EN14103	97.9		-0.18	
1428	EN14103	98.07		-0.03	
1429	EN14103	99.1		0.91	
1650	EN14103	98.83		0.66	
1654	EN14103	97.78		-0.29	
1656	EN14103	>99		-----	
1708	EN14103	97.4		-0.63	
1721	EN14103	98.5		0.36	
1739	EN14103	97.3		-0.72	
1911	EN14103	96.96		-1.03	
1948	EN14103	98.97		0.79	
2160	EN14103	95.98		-1.91	
	normality	OK			
	n	40			
	outliers	0			
	mean (n)	98.098			
	st.dev. (n)	1.0214			
	R(calc.)	2.860			
	R(EN14103:03)	3.100			

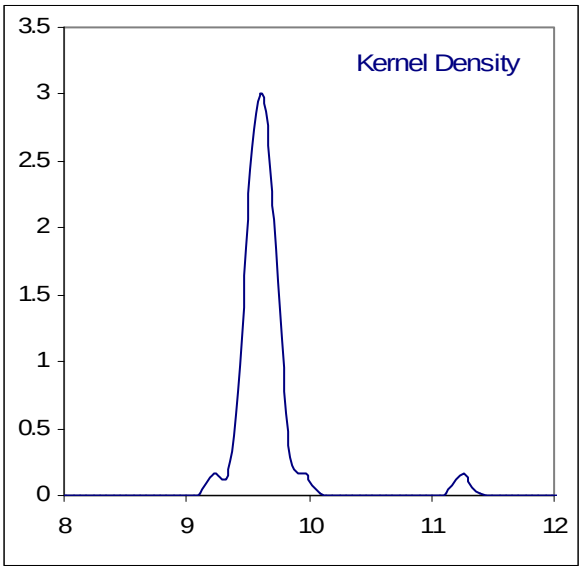

102
100
98
96
94
92
90
2160
1203
663
1911
1132
863
1240
1273
1067
1161
1739
862
1708
1201
1167
398
1654
323
1407
360
1428
311
1316
1721
343
1060
657
494
1650
1274
1948
1047
334
1429
1286
1188
496
540
150
1278


Kernel Density
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
92
94
96
98
100
102
104

Determination of Linolenic Acid Methyl Ester content on sample #1036; results in %M/M

lab	method	value	mark	z(targ)	remarks
62		-----		-----	
150	EN14103	9.6		-0.01	
169		-----		-----	
171		-----		-----	
311	EN14103	9.5		-0.10	
312		-----		-----	
323	EN14103	9.6		-0.01	
333		-----		-----	
334		-----		-----	
343	EN14103	9.6		-0.01	
360	EN14103	9.568		-0.04	
369		-----		-----	
398	EN14103	9.42		-0.18	
447		-----		-----	
463		-----		-----	
494	EN14103	9.8		0.18	
496	EN14103	9.61		0.00	
540	EN14103	9.7		0.08	
631		-----		-----	
657	EN14103	9.6		-0.01	
663	EN14103	9.56		-0.05	
862	EN14103	9.56		-0.05	
863	EN14103	9.495		-0.11	
886		-----		-----	
1017		-----		-----	
1033		-----		-----	
1047	EN14103	9.6		-0.01	
1059		-----		-----	
1067	EN14103	9.6		-0.01	
1080	in house	9.48		-0.12	
1094		-----		-----	
1108		-----		-----	
1132	EN14103	9.23		-0.35	
1154		-----		-----	
1161	EN14103	6.19	G(0.01)	-3.18	
1167	EN14103	9.96		0.33	
1188	EN14103	9.71		0.09	
1199		-----		-----	
1201	EN14103	9.5		-0.10	
1203	EN14103	9.6		-0.01	
1231		-----		-----	
1240	EN14103	9.68		0.07	
1263		-----		-----	
1268		-----		-----	
1273	EN14103	9.5		-0.10	
1274	EN14103	9.7639		0.14	
1278	EN14103	19.682	G(0.01)	9.37	
1286	EN14103	9.76		0.14	
1290	in house	11.25	G(0.01)	1.53	
1316	EN14103	9.681		0.07	
1402		-----		-----	
1407	EN14103	9.69		0.07	
1428	EN14103	9.675		0.06	
1429	EN14103	9.5		-0.10	
1650	EN14103	9.59		-0.02	
1654	EN14103	9.71		0.09	
1656	EN14103	9.66		0.05	
1708	EN14103	9.7		0.08	
1721	EN14103	9.7		0.08	
1739	EN14103	9.6		-0.01	
1911	EN14103	9.65		0.04	
1948	EN14103	9.53	C	-0.07	First reported 19.52
2160	EN14103	9.48		-0.12	
	normality	OK			
	n	38			
	outliers	3			
	mean (n)	9.610			
	st.dev. (n)	0.1235			
	R(calc.)	0.346			
	R(EN14103:03)	3.009			

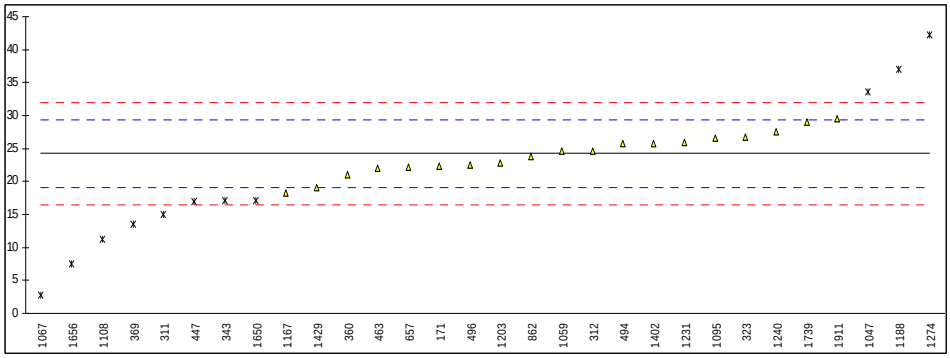

22
20
18
16
14
12
10
8
6
4
1161
1132
398
1080
2160
863
1429
1201
1273
311
1948
862
663
360
1650
1203
343
1739
323
657
150
1047
1067
496
1911
1656
1428
1240
1316
1407
540
1708
1721
1654
1188
1286
1274
494
1167
1290
1278

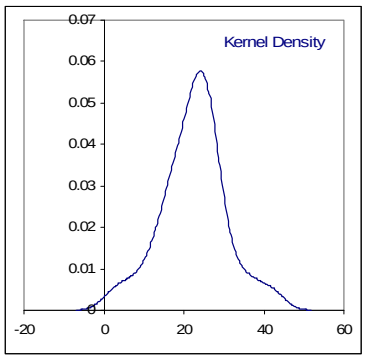

Kernel Density
3.5
3
2.5
2
1.5
1
0.5
0
8
9
10
11
12

Determination of total Contamination on sample #1037; results in mg/kg

lab	method	value	mark	z(targ)	remarks
171	EN12662	22.40		-0.70	
311	EN12662	15	ex	-3.55	Result excluded see paragraph 4.1
312	EN12662	24.7		0.18	
323	EN12662	26.7	C	0.95	First reported 6.7
333	EN12662	<6.0	ex	-----	False negative result? Result excluded see paragraph 4.1
343	EN12662	17.142	ex	-2.73	Result excluded see paragraph 4.1
360	EN12662	21.1		-1.20	
369	EN12662	13.5	C,ex	-4.13	First reported 3.5, Result excluded see paragraph 4.1
447	EN12662	17.0	ex	-2.78	Result excluded see paragraph 4.1
463	D6217	22.03		-0.85	
494	EN12662	25.8		0.61	
496	EN12662	22.5		-0.66	
657	EN12662	22.18		-0.79	
862	EN12662	23.8		-0.16	
1047	EN12662	33.62	G(0.01)	3.62	
1059	EN12662	24.6		0.14	
1067	EN12662	2.71	ex	-8.29	Result excluded see paragraph 4.1
1080		-----	W	-----	Result withdrawn, first reported 32.5
1095	EN12662	26.5		0.88	
1108	EN12662	11.2	ex	-5.02	Result excluded see paragraph 4.1
1154	EN12662	fail		-----	
1161		-----		-----	
1167	EN12662	18.2		-2.32	
1188	EN12662	37.02	G(0.01)	4.93	
1199		-----		-----	
1201		-----		-----	
1203	EN12662	22.9		-0.51	
1231	EN12662	26		0.68	
1240	EN12662	27.63	C	1.31	First reported 8.6
1274	EN12662	42.1544	G(0.01)	6.91	
1402	EN12662	25.81		0.61	
1428		-----	W	-----	Result withdrawn, first reported 12.1
1429	EN12662	19.0		-2.01	
1650	EN12662	17.19	C,ex	-2.71	First reported 13.94, Result excluded see paragraph 4.1
1656	EN12662	7.45	ex	-6.46	Result excluded see paragraph 4.1
1739	EN12662	29		1.84	
1911	EN12662	29.43		2.01	
1948		-----		-----	

normality	OK	
n	19	
outliers	3	Spike
mean (n)	24.23	25.1
st.dev. (n)	3.090	
R(calc.)	8.65	
R(EN12662:08)	7.27	

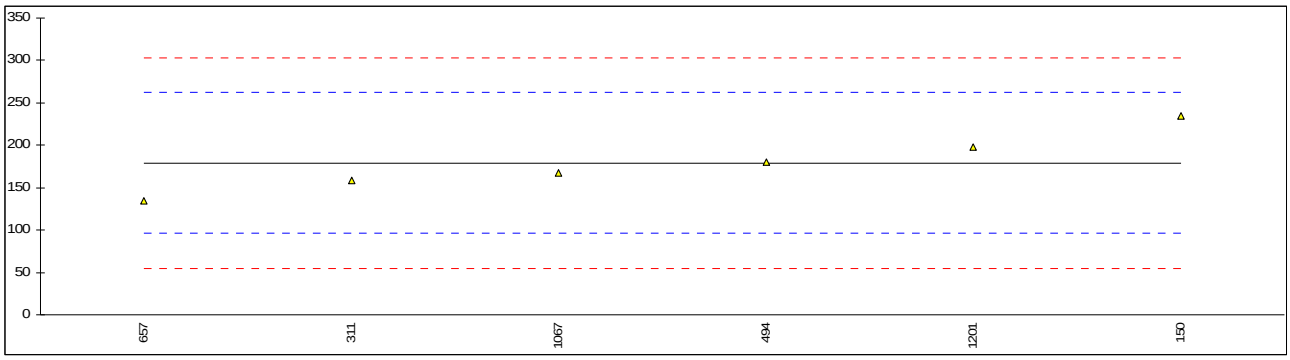




Determination of Cold Soak Filter Test on sample #1038; results in seconds

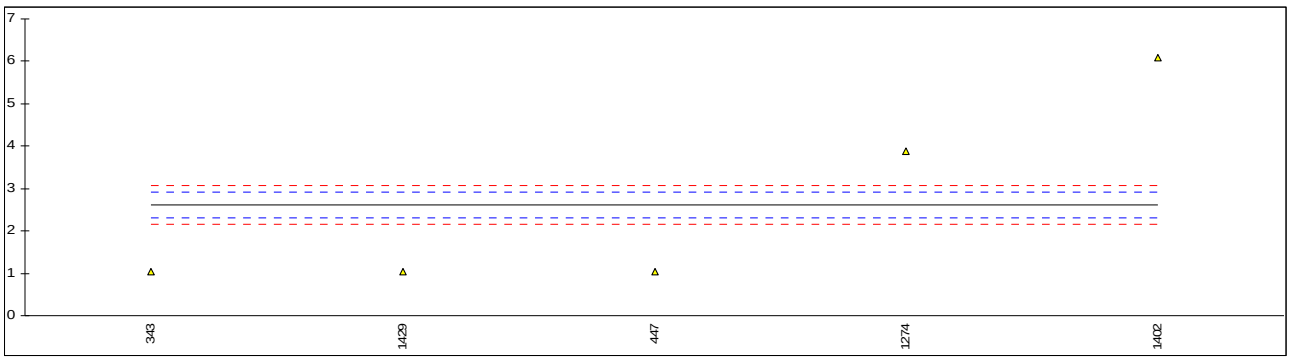
lab	method	value	mark	z(targ)	remarks
150	D6751	235		1.35	
171		-----		-----	
311	D6751	159		-0.49	
343		-----		-----	
447		-----		-----	
494	D6751	180.16		0.03	
657	D6751	135		-1.07	
1033		-----		-----	
1067	D6751	167.5		-0.28	
1154		-----		-----	
1201	D7501	198		0.46	
1240		-----		-----	
1274		-----		-----	
1402		-----		-----	
1429		-----		-----	
1650		-----		-----	

normality	OK
n	6
outliers	0
mean (n)	179.1
st.dev. (n)	34.54
R(calc.)	96.7
R(D6751:09)	115.9



Determination of Filter Blocking Tendency on sample #1038;

lab	method	value	mark	z(targ)	remarks
150		-----		-----	
171		-----		-----	
311		-----		-----	
343	IPPE IP387-B	1.03		-10.53	
447	IP387	1.05		-10.40	
494		-----		-----	
657		-----		-----	
1033		-----		-----	
1067		-----		-----	
1154		-----		-----	
1201		-----		-----	
1240		-----		-----	
1274	IP387	3.88		8.40	
1402	IPPE IP387-B	6.08		23.01	
1429	IPPE IP387	1.04		-10.47	
1650		-----		-----	
	normality	n.a.			
	n	5			
	outliers	0			
	mean (n)	2.62			
	st.dev. (n)	2.294			
	R(calc.)	6.42			
	R(IP387:07)	0.42			R of method B was used



APPENDIX 2

Number of participants per country

1 laboratory in	ARGENTINA
2 laboratories in	AUSTRIA
2 laboratories in	BELGIUM
1 laboratory in	BULGARIA
1 laboratory in	CANADA
1 laboratory in	CZECH REPUBLIC
1 laboratory in	ESTONIA
3 laboratories in	FRANCE
2 laboratories in	GERMANY
2 laboratories in	GREECE
2 laboratories in	HONG KONG
2 laboratories in	HUNGARY
1 laboratory in	ITALY
2 laboratories in	LATVIA
2 laboratories in	P.R. of CHINA
1 laboratory in	PHILIPPINES
4 laboratories in	POLAND
1 laboratory in	PORTUGAL
1 laboratory in	REPUBLIC OF MACEDONIA
1 laboratory in	SINGAPORE
1 laboratory in	SLOVENIA
5 laboratories in	SPAIN
2 laboratories in	SWEDEN
1 laboratory in	TAIWAN R.O.C.
3 laboratories in	THAILAND
4 laboratories in	THE NETHERLANDS
6 laboratories in	TURKEY
3 laboratories in	U.S.A.
5 laboratories in	UNITED KINGDOM

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
ex	= excluded from calculations
S	= scope of the reported method is not applicable
U	= reported in different unit
n.a.	= not applicable
SDS	= Safety Data Sheet

Literature:

1 iis Interlaboratory Studies, Protocol for the Organisation, Statistics & Evaluation, January 2010
2 ASTM E178-02
3 ASTM E1301-03
4 ISO13528-05
5 ISO 5725-86
6 ISO 5725, parts 1-6, 1994
7 M. Thompson and R. Wood, J. AOAC Int, 76, 926, (1993)
8 W.J. Youden and E.H. Steiner, Statistical Manual of the AOAC, (1975)
9 IP 367/84
10 DIN 38402 T41/42
11 P.L. Davies, Fr. Z. Anal. Chem, 331, 513, (1988)
12 J.N. Miller, Analyst, 118, 455, (1993)
13 Analytical Methods Committee Technical Brief, No4 January 2001
14 The Royal Society of Chemistry 2002, Analyst 2002, 127 page1359-1364, P.J. Lowthian and M. Thompson. (see http://www.rsc.org/suppdata/an/b2/b205600n/)
15 EN14214:2009 Annex B