Results of Proficiency Test
Naphtha
March 2013

Organised by: Institute for Interlaboratory Studies
Spijkenisse, the Netherlands

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Report no.: iis13N01

June 2013

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1 INTRODUCTION

Since 1994, the Institute for Interlaboratory Studies organizes a proficiency test for the analysis of Naphtha every year. The interlaboratory study on Naphtha was extended with PT's for the determination for Mercury, Arsenic/Lead and Vapour Pressure.
In the annual proficiency testing program of 2012/2013, it was decided to continue the 4 PT's on Naphtha.
In the main PT, 88 laboratories in 34 different countries have participated; in the PT for Mercury, 45 laboratories in 21 different countries have participated; in the PT for Arsenic and Lead, 31 laboratories in 16 different countries have participated and in the PT for Vapour Pressure, 48 laboratories in 20 different countries have participated. See appendix 2 for the number of participants per country. In this report, the results of the proficiency test are presented and discussed.

2 SET UP

The Institute for Interlaboratory Studies (iis) in Spijkenisse, the Netherlands, was the organizer of this proficiency test. Sample analyses for fit-for-use and homogeneity testing were subcontracted. In this proficiency test, the participants received, depending on the registration, from one upto seven different samples of Naphtha, see table below.

Samples	Amount in mL	Purpose
#13031	500	For regular analysis
#13032	100	For GC analysis
#13033, #13034	500	For Mercury
#13035, #13036	500	For Arsenic and Lead
#13037	250	For DVPE

table 1: Seven different Naphtha samples used in iis13N01

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

2.1 ACCREDITATION

The Institute for Interlaboratory Studies in Spijkenisse, the Netherlands, is accredited in agreement with ISO/IEC 17043:2010 and ILAC-G:13:2007 (R007), since January 2000, by the Dutch Accreditation Council (Raad voor Accreditatie). This ensures strict adherence to protocols for sample preparation and statistical evaluation and 100% confidentially of participant's data. Feedback from the participants on the reported data is encouraged and customer's satisfaction is measured on regular basis by sending out questionnaires.

2.2 PROTOCOL

The protocol followed in the organisation was the one as described for proficiency testing in the report 'iis Interlaboratory Studies: Protocol for the Organisation, Statistics and

Evaluation' of January 2010 (iis-protocol, version 3.2). This protocol can be downloaded via the FAQ page of the iis website http://www.iisnl.com.

2.3 CONFIDENTIALITY STATEMENT

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

2.4 SAMPLES

One drum with approx. 200 litres Naphtha was obtained from a local refinery. Seven different samples were prepared. After homogenisation 100 brown glass bottles of 0.5 litre (labelled #13031) and 68 brown glass bottles of 250ml were filled (labelled #13037). The remaining Naphtha was used as shown in the table below. After homogenisation, the typical batches were filled in brown glass bottles of 500 mL and labelled.
Sample #13032 was prepared from old samples containing Methanol and MTBE due to lack of new material.

	Naphtha intake	Spike intake*	Theoretical addition conc.
Sample #13032			
Methanol	------	------	32.9 mg/kg
Methyl tert-butyl ether (MTBE)		------	35.4 mg/kg
Sample #13033			
$HgCl_2$ (84.125 mg Hg/L)	27.0 kg	277.6 µg	10.3 µg/kg
Conostan (100 mg Hg/kg)		272.8 µg	10.1 µg/kg
Sample #13034			
$HgCl_2$ (84.125 mg Hg/L)	27.0 kg	832.8 µg	30.9 µg/kg
Sample #13035			
Lead (Aviation Gasoline iis12B02 0.546 mg Pb/ml)	18.4 kg	1.29 mg	70.0 µg/kg
Arsenic Conostan (100 mg As/kg)		0.73 mg	39.4 µg/kg
Sample #13036			
Lead (Aviation Gasoline iis12B02 0.546 mg Pb /ml)	18.4 kg	3.87 mg	210.1 µg/kg
Arsenic Conostan (100 mg As/kg)		2.21 mg	119.8 µg/kg

table 2: Addition scheme for samples #13032, #13033, #13034, #13035 and #13036

*Via stock solutions

The homogeneity of subsamples #13031 was checked by determination of Density at 15°C in accordance with ASTM D4052:02e1 on 8 stratified randomly selected samples.

	Density @ 15°C in kg/L		Density @ 15°C in kg/L
sample #13031-1	0.72023	sample #13031-5	0.72024
sample #13031-2	0.72024	sample #13031-6	0.72027
sample #13031-3	0.72025	sample #13031-7	0.72022
sample #13031-4	0.72025	sample #13031-8	0.72027

table 3: homogeneity test results of subsamples #13031

The homogeneity of subsamples #13032 was checked by determination MTBE in accordance with an in-house method on 4 stratified randomly selected samples.

	MTBE in mg/kg
sample #13032-1	40
sample #13032-2	40
sample #13032-3	39
sample #13032-4	40

table 4: homogeneity test results of subsamples #13032

The homogeneity of the subsamples #13033 and #13034 was checked by determination of Mercury in accordance with test method UOP938 on 4 stratified randomly selected samples from each batch.

	Mercury in μg/kg		Mercury in μg/kg
sample #13033-1	20	sample #13034-1	27
sample #13033-2	20	sample #13034-2	27
sample #13033-3	19	sample #13034-3	27
sample #13033-4	19	sample #13034-4	27

table 5: homogeneity test results of subsamples #13033 and #13034

The homogeneity of the subsamples #13035 and #13036 was checked by determination of Lead in accordance with an in-house test method on 8 stratified randomly selected samples from each batch.

	Lead in µg/kg		Lead in µg/kg
sample #13035-1	108	sample #13036-1	233
sample #13035-2	107	sample #13036-2	235
sample #13035-3	107	sample #13036-3	247
sample #13035-4	111	sample #13036-4	229
sample #13035-5	103	sample #13036-5	246
sample #13035-6	106	sample #13036-6	244
sample #13035-7	105	sample #13036-7	251
sample #13035-8	105	sample #13036-8	223

table 6: homogeneity test results of subsamples #13035 and #13036

The homogeneity of subsamples #13037 was checked by determination of DVPE in accordance with ASTM D5191:12 on 8 stratified randomly selected samples.

	DVPE in kPa		DVPE in kPa
sample #13037-1	39.6	sample #13037-5	39.7
sample #13037-2	39.6	sample #13037-6	39.9
sample #13037-3	39.6	sample #13037-7	40.0
sample #13037-4	39.5	sample #13037-8	39.7

table 7: homogeneity test results of subsamples #13037

From the results in tables 3 - 7, the repeatabilities were calculated and compared with 0.3 times the corresponding reproducibilities of the target methods or with 0.3 times the reproducibility calculated using the Horwitz equation in agreement with the procedure of ISO 13528, Annex B2 in the next table;

	Density in kg/L	MTBE in mg/kg	Mercury in µg/kg	Lead in µg/kg	DVPE in kPa
r (#13031)	0.00005	--	--	--	--
r (#13032)	--	1.4	--	--	--
r (#13033)	--	--	1.4	--	--
r (#13034)	--	--	1.4	--	--
r (#13035)	--	--	--	6.7	--
r (#13036)	--	--	--	27.8	--
r (#13037)	--	--	--	--	0.1
0.3*R (ref.)	0.00015	2.0	1.8 – 2.2	20.1 – 40.1	0.8
reference	D4052:02e1	Horwitz	Horwitz	Horwitz	D5191:12

table 8: repeatabilities of subsamples #13031, #13032, #13033, #13034, #13035, #13036 and #13037

The repeatabilities of the results of the homogeneity tests for samples #13031, #13032, #13033, #13034, #13035, #13036 and #13037 are all in agreement with the requirements of standards or with the estimated repeatabilities calculated using the Horwitz equation. Therefore, homogeneity of all prepared subsamples was assumed.

To the participating laboratories, depending on its registration, one or more of the following samples were sent on March 13, 2013.

Bottle size	Sample id.	Determinations
1 x 0.5 liter	#13031	Regular tests
1 x 0.1 liter	#13032	PIONA/PONA only
2 x 0.5 liter	#13033 & #13034	Mercury only
2 x 0.5 liter	#13035 & #13036	Arsenic/Lead only
1 x 0.25 liter	#13037	Vapor Pressure only

table 9: bottle sizes, sample identification and determiations

2.5 STABILITY OF THE SAMPLES

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

2.6 ANALYSES

The participants were asked to determine on sample #13031 the following analyses: Colour Saybolt (Manual or Automated), Copper Corrosion 3hrs @ 50°C, Density @15°C, Distillation (IBP, 50% evaporated and FBP), Mercaptans and Sulphur. On sample #13032 the participants were requested to determine PONA / PIONA / PNA (n-Paraffines, i-Paraffines, Olefins, Naphthenes, Aromatics, C_4 & lighter hydrocarbons and Compounds with Boiling Point > 200°C), Methanol, MTBE, Organic Chlorides and Total Oxygenates. On samples #13033 and #13034 the participants were requested to determine Mercury. On samples #13035 and #13036 the participants were requested to determine Arsenic and Lead. On sample #13037 the participants were requested to determine only TVP / DVPE.

To get comparable results a detailed report form, on which the units were prescribed as were prepared and made available for download on the iis website (www.iisnl.com). A SDS and a form to confirm receipt of the samples were added to the sample package

3 RESULTS

During four weeks after sample despatch, the results of the individual laboratories were gathered. The original data are tabulated per determination in 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 Organisation, 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. In case a data set does not have a normal distribution, the (results of the) statistical evaluation should be used with due care.
In accordance to 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 and by G(0.01) or DG(0.01) for the Grubbs test. Stragglers are marked by D(0.05) for the Dixon test and by G(0.05) or DG(0.05) for the Grubbs test. Both outliers and stragglers were not included in the calculations of the averages and the standard deviations.

For each assigned value, the uncertainty was determined in accordance with ISO13528. Subsequently the calculated uncertainty was evaluated against the respective requirement based on the target reproducibility in accordance with ISO13528. When the uncertainty passed the evaluation, no remarks are made in the report. However, when the uncertainty failed the evaluation it is mentioned in the report and it will have consequences for the evaluation of the test results.

Finally, the reproducibilities were calculated from the standard deviations by multiplying these 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 method is for producing a smooth density approximation to a set of data that avoids some problems associated with histograms (see appendix 3; nos 14 and 15).

3.3 Z-SCORES

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

When a laboratory did use a test method with a reproducibility that is significantly different from the reproducibility of the reference test method used in this report, it is strongly

advised to recalculate the z-score, while using the reproducibility of the actual test method used, this in order to evaluate the fit-for-useness of the reported test result.
The z-scores were calculated according to:

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

The $z_{(target)}$ scores are listed in the tables in appendices 1 and 2.
Absolute values for z<2 are very common and absolute values for z>3 are very rare. The usual interpretation of z-scores is as follows:

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

4 EVALUATION

In this interlaboratory study, major problems with sample despatch were encountered during the execution. Laboratories in Brazil, Nigeria, Greece, India, Iran, Malaysia, Nigeria, Norway, India, Oman, Russia, Turkey , UAE and United Kingdom received the samples late or not at all due to several problems (i.e. courier, customs clearance). Most laboratories reported results, but not all laboratories were able to perform all the requested analyses. Finally, in total 72 participants reported 1339 numerical results. Observed were in total 101 outlying results, which is 7.5%. 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 distributions were found:
On sample #13031 for Colour Saybolt (Manual and Automated), Density @15°C, Distillation Automated (FBP), Other Oxygenates (MEK) and on sample #13032 for Aromatics (%V/V and %M/M).
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 methods, which are used by the various laboratories, are taken into account for explaining the observed differences when possible and applicable. These methods are also listed in the tables together with the original data in appendix 1. The abbreviations, used in these tables, are listed in appendix 3.

Evaluation for sample #13031:

Colour Saybolt: This determination was not problematic (both the manual and the automated mode). One statistical outlier was observed for the manual mode and one test result was excluded for the automated mode because the manual mode (ASTM D156:12) was mentioned instead of

the automated mode (ASTM D6045:12). A number of laboratories did not report conform ASTM D156:12 or ASTM D6045:12. Five participants used the ">" sign and eleven participants did not report the plus sign for (both the manual and the automated mode).
The calculated reproducibilities for both the manual and the automated mode are in good agreement with the respective requirements of ASTM D156:12 and ASTM D6045:12.

Copper Corrosion: No problems have been observed. All reporting participants agreed on a result of 1(A).

Density @ 15°C: This determination was problematic for a number of laboratories. Six statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers, is in good agreement with the requirements of ASTM D4052:02e1 and ISO12185:96. The current version of this method ASTM D4052:11 only gives reproducibilities being valid for gasolines, distillates, basestocks and lubricating oils. Therefore this 2011 version may not applicable to Naphtha.

Distillation: For the automated mode: This determination was not problematic. In total two statistical outliers were observed. The calculated reproducibilities after rejection of the statistical outliers are all in agreement with the requirements of ASTM D86:12.
For the manual mode: This determination was not problematic.Three statistical outliers were observed for FBP. The calculated reproducibilities are all in agreement with the requirements of ASTM D86:12.

Mercaptans: This determination was problematic. Four statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ASTM D3227:10.

Sulphur: This determination was not problematic. Three statistical outliers were observed. The calculated reproducibility, after rejection of the statistical outliers, is in agreement with ASTM D2622:10. Two laboratories possibly reported test results in mg/L.
When the test results from ASTM D2622 and ASTM D5453 are evaluated separately, both calculated reproducibilities of ASTM D2622 and D5453 data are in agreement with the precision data of respective test methods.

Evaluation for sample #13032:

Methanol: This determination may be very problematic at the concentration level of 78 mg/kg. The sample was spiked with Methanol, therefore the minimal Methanol concentration to be found was known (added amount = 32.9 mg/kg). Four statistical outliers were observed. The calculated reproducibility after rejection

of the statistical outliers is not at all in agreement with the strict estimated reproducibility calculated using the Horwitz equation. The variety of test methods used may explain for the relatively large spread.

MTBE: This determination may be problematic at the concentration level of 37 mg/kg. The samples were spiked with MTBE, therefore the minimal MTBE concentration to be found was known (added amount = 35.4 mg/kg). One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not in agreement with the strict estimated reproducibility calculated using the Horwitz equation. The average recovery of MTBE (theoretical increment of 35.4 mg MTBE/kg) may be good: “less then 106%” (the actual blank MTBE content is unknown). The variety of test methods used may explain for the relatively large spread.

Total Oxygenates: This determination may be problematic. Three statistical outliers were observed. The calculated reproducibility, after rejection of the statistical outliers is not in agreement with the strict estimated reproducibility, calculated using the Horwitz equation. The variety of test methods used may explain for the relatively large spread. Seven laboratories reported test results probably in a deviating unit.
Adding up the test results of individual Oxygen components should give the same result as the test result of the determination of the Total Oxygenates. This was problematic for two laboratories.

PONA/PIONA: This determination was problematic for (n- and i-) Paraffines, Naphthenes, Aromatics and C4 & lighters (in %V/V and %M/M). The test results for n-Paraffines and Naphthenes of laboratory 750 and the test results for Aromatics and Olefins of laboratory 995 were excluded due to the presence of outliers for all other components.
In total 45 statistical outliers were observed. None of the calculated reproducibilities, after excluding the suspect data, is in agreement with the requirements of ASTM D5443:09e1.
The determination of Olefins was not problematic. In total nine statistical outliers were observed. However, both calculated reproducibilities after rejection of the statistical outliers are in full agreement with the requirements of ASTM D6839:07.
Evaluation of the determinations should be used with care as:

- Fifteen laboratories reported to have used ASTM D5134, ASTM D6729 or ASTM D6730 for the PONA/PIONA determination in %V/V. These ASTM standards do not mention conversion formulae from %M/M to %V/V.
- ASTM D6293:98 was intended for low boiling gasolines only; this test method was withdrawn in 2009 and replaced by D6839.
- ASTM D6839:07 is intended for low boiling gasolines only.

Most observed reproducibilities are in agreement with the reproducibilities in previous rounds:

	2013	2012	2011	2010	2009	ASTM
n-paraffines	7.6%	5.7%	6.8%	5.1%	3.0%	3.2%
i-pararaffines	5.9%	4.0%	5.4%	4.0%	2.9%	3.1%
Olefins	225% *)	259% *)	271% *)	220% *)	26%	250%
naphthenes	3.4%	5.9%	13%	10%	5.9%	1.9%
aromatics	13%	8.8%	5.7%	12%	13%	8.9%
C4 & lighters	19%	19%	27%	38%	49%	17%

table 10: Comparison of observed relative target reproducibilities (%M/M)
*) probably to low olefins concentrations.

As in previous rounds, many participating labopratories did have problems with the determination of the Naphthenes. Several laboratories reported to have used ASTM D5134, ASTM D6729, and ASTM D6730. The difference between these tests methods and all others used (ASTM D5443, ASTM 6293 ASTM D6839 and ISO22854) is the performance of the chromatographic system. In the first mentioned methods ASTM D5134, ASTM D6729 and ASTM D6730, the chromatographic system is equipped with a fused silica capillary column, while in other tests methods multiple columns are used with multi dimensional column-coupling and column-switching sytems. All participants that did not use a multiple columns technique, may have encountered problems with the identification of high boiling components. These test results are all located in the left part of graphs and were excluded from the statistical evaluation.

Evaluation for sample #13033 and #13034:

In this proficiency test, it was decided to spike the samples #13033 and #13034 on two different concentration levels of mercury.

Mercury: This determination may not be problematic. In total, two statistical outliers were observed. Regretfully, besides the reference test method UOP938:10 (that does not provide reproducibility data, except for method B), no other reference method exists. When the calculated reproducibilities are compared with the estimated reproducibilities calculated using the Horwitz equation, the calculated reproducibilities are both in full agreement. The samples were spiked with Mercury. The minimal Mercury concentration of sample #13033 to be found was known (added amount (#13033) = 20.4 µg/kg). The average recovery of Mercury (theoretical increment of 20.4 µg Hg /kg) may be unsatisfactory: “less then 61%” for sample #13033.
The minimal Mercury concentration of sample #13034 to be found was also known (added amount (#13034) = 30.9 µg/kg). The average recovery of Mercury (theoretical increment of 30.9 µg Hg /kg) may be unsatisfactory: “less then 44%” for sample #13034.

Evaluation for sample #13035 and #13036:

In this proficiency test, it was decided to spike the samples #13035 and #13036 on two different concentration levels of arsenic and lead.

Arsenic:

This determination was very problematic. Arsenic was spiked in two different and measurable concentration levels (39.4 and 119.8 µg/kg). Regretfully, none of the laboratories reported positive results.
The cause for not recovering the spiked concentrations may be explained by the following: According to UOP946, arsenic components may stick to the glass wall under influence of light:
Quote
Collect samples in amber glass bottles, as samples must not be stored exposed to light during shipping and storage. Light promotes the loss of arsenic to the container walls. If amber bottles are not available, wrap clear bottles in dark paper or otherwise protect from exposure to light. Samples should be analyzed as quickly as possible to minimize possible analyte losses.When samples have been stored longer than two weeks, sample from the bottle and determine the arsenic content as described under Extraction. If the whole sample is taken, rinse the bottle with sodiumhypochlorite solution and sulfuric acid as described under Extraction. Use these rinses to perform the sample extraction and proceed with the decomposition and analysis.
Unquote

The laboratory that provided all homogeneity data did perform a stability test for Arsenic in naphtha before the start of the PT. For this stability test a naptha sample was spiked with Arsenic. After four weeks this sample was still significantly positive on Arsenic. Because none of participants reported positive test results during the PT, two of the eight homogeneity samples (#13035 and #13036) were again tested on Arsenic after the finish of the PT. No positive test results were found (!). After the determination of Arsenic, both empty bottles were rinsed according to UOP946. The rinsing solution gave clearly positive tests results on Arsenic for both sample bottles. The conclusion is that, remarkably, none of participants obviously did perform the determination of Arsenic according to UOP946.

Lead:

This determination was very problematic. In total, four statistical outliers were observed. The calculated reproducibility, after rejection of the statistical outliers is not at all in agreement with the strict estimated reproducibility, calculated using the Horwitz equation.
The samples were spiked with Lead. The minimal Lead concentration of sample #13035 to be found was known (added amount (#13035) = 70.0 µg Pb/kg). The average recovery of Lead (theoretical increment of 70.0 µg Pb/kg) may be unsatisfactory: “less then 74%” for sample #13035.
The minimal Lead concentration of sample #13036 to be found was also known (added amount (#13036) = 210.1 µg Pb/kg). The average recovery of

Lead (theoretical increment of 210.1 µg Pb/kg) may be unsatisfactory: “less then 59%” for sample #13036.

Evaluation for sample #13037:

TVP: This determination was not problematic. Four statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the estimated requirements of ASTM D5191:12.

DVPE: The conversion of the measured Total Vapour Pressure to the corresponding Dry Vapour Pressure Equivalent (DVPE) as described in the ASTM D5191:12, showed four statistical outliers, which are the same four labs as for the TVP determination. The calculated reproducibility after rejection of the statistical outliers is also in agreement with the requirements of ASTM D5191:12.

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

Parameters	unit	n	average	2.8 * sd	R (target)
Color Saybolt (manual)		40	29.8	1.2	2.0
Color Saybolt (automated)		29	29.9	0.6	1.2
Copper Corrosion		55	1(a)	n.a.	n.a.
Density @ 15°C	kg/L	64	0.7203	0.0004	0.0005
Initial Boiling Point (auto)	°C	42	40.58	4.96	5.46
50% evaporated (auto)	°C	43	107.40	1.81	1.88
Final Boiling Point (auto)	°C	42	178.15	6.53	6.78
Initial Boiling Point (manual)	°C	18	41.88	4.78	5.60
50% evaporated (manual)	°C	18	106.32	3.07	4.35
Final Boiling Point (manual)	°C	15	177.16	4.86	7.20
Mercaptans	mg/kg	46	76.68	7.70	6.32
Sulphur	mg/kg	52	333.5	48.3	45.0

Table 11: comparison of the observed and target reproducibilities of the samples #13031

Parameters	unit	n	average	2.8 * sd	R (lit)
Methanol	mg/kg	26	78.05	46.92	18.15
MTBE	mg/kg	38	37.41	12.26	9.72
Total Oxygenates	%M/M	17	0.012	0.005	0.004
n-Paraffins	%V/V	42	28.96	2.16	0.91
i-Paraffins	%V/V	41	32.17	1.84	0.96
Olefins	%V/V	28	0.10	0.22	0.25
Naphthenes	%V/V	29	31.29	1.21	0.62
Aromatics	%V/V	45	8.19	1.12	0.80
C_4 & lighter	%V/V	31	1.47	0.34	0.24
Compounds bp > 200 °C	%V/V	20	0.12	0.19	n.a.
n-Paraffins	%M/M	39	26.90	2.04	0.88
i-Paraffins	%M/M	38	30.46	1.80	0.94
Olefins	%M/M	28	0.10	0.22	0.25
Naphthenes	%M/M	27	33.40	1.13	0.64
Aromatics	%M/M	43	9.90	1.28	0.88
C_4 & lighter	%M/M	28	1.19	0.23	0.20
Compounds bp > 200 °C	%M/M	19	0.13	0.21	n.a.

Table 12: comparison of the observed and target reproducibilities of the sample #13032

Parameters	unit	n	average	2.8 * sd	R (lit)
Mercury as Hg #13033	µg/kg	30	12.2	11.1	10.6
Mercury as Hg #13034	µg/kg	25	13.6	12.6	11.6

Table 13: comparison of the observed and target reproducibilities of the samples #13033 and #13034

Parameters	unit	n	average	2.8 * sd	R (lit)
Arsenic as As #13035	µg/kg	9	<10	n.a.	n.a.
Arsenic as As #13036	µg/kg	9	<10	n.a.	n.a.
Lead as Pb #13035	µg/kg	18	51.8	77.9	36.2
Lead as Pb #13036	µg/kg	16	123.5	174.1	75.8

Table 14: comparison of the observed and target reproducibilities of the samples #13035 and #13036

Parameters	unit	n	average	2.8 * sd	R (lit)
TVP	psi	31	6.52	0.28	0.40
DVPE	psi	34	5.75	0.27	0.40

Table 15: comparison of the observed and target reproducibilities of the sample #13037

Without further statistical calculations, it can be concluded that for many tests there is not a reasonable 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 MARCH 2013 WITH PREVIOUS PTS

	March 2013	April 2012	April 2011	April 2010
Number of reporting labs	72	71	72	75
Number of results reported	1339	1147	1892	1294
Statistical outliers	101	75	120	57
Percentage outliers	7.5%	6.5%	6.3%	4.4%

Table 16: 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	March 2013	April 2012	April 2011	April 2010
Colour Saybolt	++	++	--	++
Density @ 15°C	+	++	++	++
Distillation automated	+	+	+/-	+
Distillation manual	+	-	++	++
Mercaptans	-	--	+/-	--
Sulphur	+/-	--	--	--
Methanol	--	--	--	--
Methyl tert-butyl ether (MTBE)	-	--	--	++
Total Oxygenates	-	-	--	--
n-Paraffins	--	--	--	--
i-Paraffins	--	--	--	--
Olefins	+	n.e.	n.e.	n.e.
Naphthenes	--	--	--	--
Aromatics	-	+	++	++
C_4 & lighter	-	+/-	--	--
Mercury	+/-	+	++	--
Arsenic	--	n.e.	--	++
Lead	--	n.e.	--	--
Total Vapour Pressure	+	--	++	++
DVPE acc. to D5191	+	--	++	++

Table 17: comparison determinations against the standard requirements

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

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

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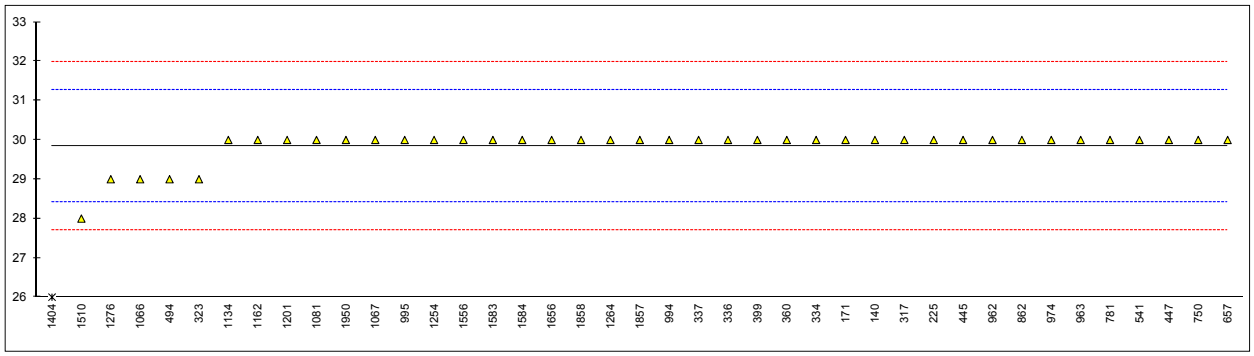
APPENDIX 1

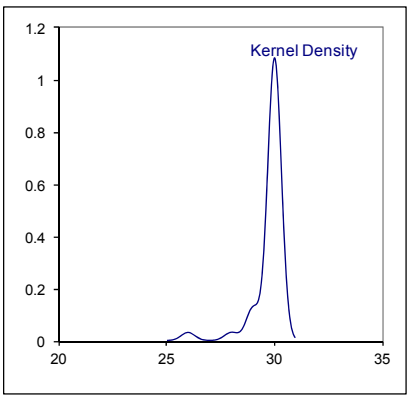
Determination of Color Saybolt (Manual) on sample #13031

lab	method	value	mark	z(targ)	Remarks
140	D156	+30		0.21	
150		-----		-----	
158		-----		-----	
171	D156	+30		0.21	
225	D156	+30		0.21	
237		-----		-----	
238		-----		-----	
311		-----		-----	
317	D156	+30		0.21	
323	D156	+29		-1.19	
329		-----		-----	
333		-----		-----	
334	D156	+30		0.21	
336	D156	+30		0.21	
337	D156	+30		0.21	
360	D156	+30		0.21	
371		-----		-----	
399	D156	+30		0.21	
444		-----		-----	
445	D156	+30		0.21	
447	D156	>30		0.21	see §4.1
494	D156	29		-1.19	see §4.1
529		-----		-----	
541	D156	+30		0.21	
608		-----		-----	
657	D156	+30		0.21	
750	D156	+30		0.21	
759		-----		-----	
781	D156	+30		0.21	
784		-----		-----	
855		-----		-----	
862	D156	+30		0.21	
868		-----		-----	
873		-----		-----	
875		-----		-----	
912		-----		-----	
962	D156	>+30		0.21	see §4.1
963	D156	+30		0.21	
974	D156	+30		0.21	
982		-----		-----	
994	D156	+30		0.21	
995	D156	+30		0.21	
1016		-----		-----	
1038		-----		-----	
1062		-----		-----	
1065		-----		-----	
1066	D156	+29		-1.19	
1067	D156	+30		0.21	
1081	D156	30		0.21	see §4.1
1082		-----		-----	
1107		-----		-----	
1108		-----		-----	
1134	D156	+30		0.21	
1145		-----		-----	
1162	D156	+30		0.21	
1167		-----		-----	
1191		-----		-----	
1200		-----		-----	
1201	D156	+30		0.21	
1229		-----		-----	
1254	D156	+30		0.21	
1257		-----		-----	
1264	D156	+30		0.21	
1276	D156	+29		-1.19	
1284		-----		-----	
1357		-----		-----	
1404	D156	+26	G(0.01)	-5.39	
1429		-----		-----	
1477		-----		-----	
1510	D156	28		-2.59	see §4.1
1556	D156	+30		0.21	
1583	D156	+30		0.21	
1584	D156	30		0.21	see §4.1
1603		-----		-----	
1616		-----		-----	

1653		-----	-----	
1656	D156	30	0.21	see §4.1
1737		-----	-----	
1842		-----	-----	
1854		-----	-----	
1857	D156	+30	0.21	
1858	D156	+30	0.21	
1950	D156	+30	0.21	
1951		-----	-----	
9054		-----	-----	
9057		-----	-----	
9058		-----	-----	
9061		-----	-----	

normality	not OK
n	40
outliers	1
mean (n)	29.8
st.dev. (n)	0.43
R(calc.)	1.2
R(D156:12)	2.0



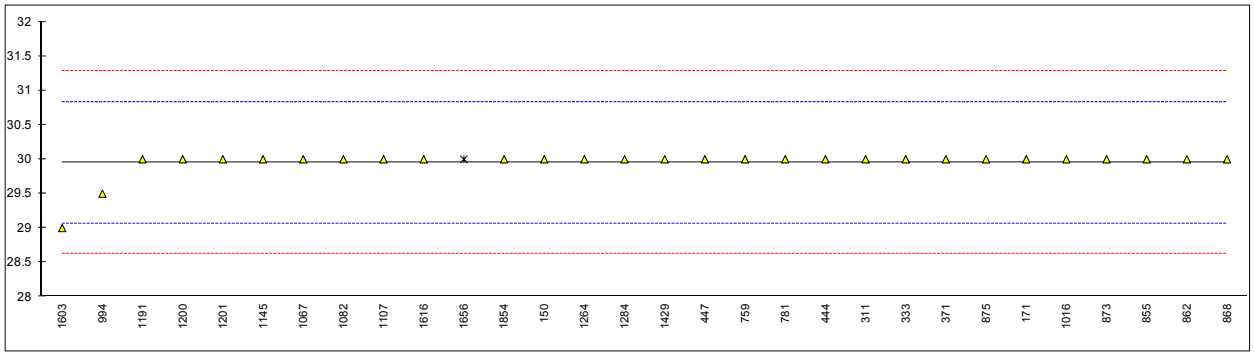


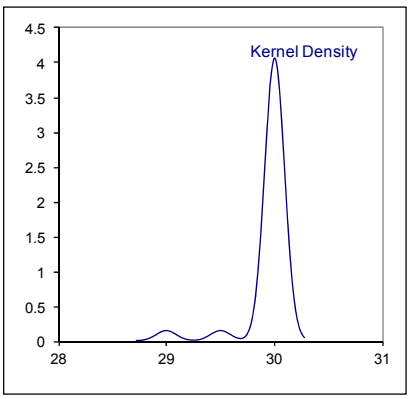
Determination of Color Saybolt (Automated) on sample #13031

lab	method	value	mark	z(targ)	Remarks
140		-----		-----	
150	D6045	+>30		0.12	see §4.1
158		-----		-----	
171	D6045	>30		0.12	see §4.1
225		-----		-----	
237		-----		-----	
238		-----		-----	
311	D6045	+30		0.12	
317		-----		-----	
323		-----		-----	
329		-----		-----	
333	D6045	30		0.12	see §4.1
334		-----		-----	
336		-----		-----	
337		-----		-----	
360		-----		-----	
371	D6045	+30		0.12	
399		-----		-----	
444	D6045	>+30		0.12	see §4.1
445		-----		-----	
447	D6045	30		0.12	see §4.1
494		-----		-----	
529		-----		-----	
541		-----		-----	
608		-----		-----	
657		-----		-----	
750		-----		-----	
759	D6045	+30		0.12	
781	D6045	+30		0.12	
784		-----		-----	
855	D6045	+30		0.12	
862	D6045	+30		0.12	
868	D6045	+30		0.12	
873	D6045	+30		0.12	
875	D6045	+30		0.12	
912		-----		-----	
962		-----		-----	
963		-----		-----	
974		-----		-----	
982		-----		-----	
994	D6045	+29.5		-1.01	
995		-----		-----	
1016	D6045	+30		0.12	
1038		-----		-----	
1062		-----		-----	
1065		-----		-----	
1066		-----		-----	
1067	D6045	+30		0.12	
1081		-----		-----	
1082	D6045	+30		0.12	
1107	D6045	+30		0.12	
1108		-----		-----	
1134		-----		-----	
1145	D6045	+30		0.12	
1162		-----		-----	
1167		-----		-----	
1191	D6045	30		0.12	see §4.1
1200	D6045	+30		0.12	
1201	D6045	+30		0.12	
1229		-----		-----	
1254		-----		-----	
1257		-----		-----	
1264	D6045	+30		0.12	
1276		-----		-----	
1284	D6045	+30		0.12	
1357		-----		-----	
1404		-----		-----	
1429	D6045	30		0.12	see §4.1
1477		-----		-----	
1510		-----		-----	
1556		-----		-----	
1583		-----		-----	
1584		-----		-----	
1603	in house	29		-2.14	see §4.1
1616	D6045	+30		0.12	

1653		-----		-----	
1656	D156	+30	ex	0.12	result excluded, see §4.1
1737		-----		-----	
1842		-----		-----	
1854	D6045	+30		0.12	
1857		-----		-----	
1858		-----		-----	
1950		-----		-----	
1951		-----		-----	
9054		-----		-----	
9057		-----		-----	
9058		-----		-----	
9061		-----		-----	

normality	not OK
n	29
outliers	0
mean (n)	29.95
st.dev. (n)	0.205
R(calc.)	0.57
R(D6045:12)	1.24





Determination of Copper Corrosion, 3hrs at 50°C on sample #13031

lab	method	value	mark	z(targ)	remarks
140	D130	1A		-----	
150	D130	1A		-----	
158		-----		-----	
171	D130	1A		-----	
225	D130	1A		-----	
237		-----		-----	
238		-----		-----	
311	D130	1A		-----	
317	D130	1A		-----	
323	D130	1A		-----	
329		-----		-----	
333	D130	1A		-----	
334		-----		-----	
336	D130	1A		-----	
337		-----		-----	
360	D130	1A		-----	
371	D130	1A		-----	
399	D130	1A		-----	
444		-----		-----	
445	D130	1A		-----	
447	D130	1A		-----	
494	D130	1A		-----	
529	D130	1A		-----	
541	D130	1		-----	
608		-----		-----	
657	D130	1A		-----	
750	D130	1A		-----	
759		-----		-----	
781	D130	1A		-----	
784		-----		-----	
855	D130	1A		-----	
862	D130	1A		-----	
868	D130	1A		-----	
873	D130	1A		-----	
875	D130	1A		-----	
912		-----		-----	
962	D130	1A		-----	
963		1A		-----	
974	D130	1A		-----	
982		-----		-----	
994		-----		-----	
995		-----		-----	
1016	D130	1A		-----	
1038	D130	1A		-----	
1062		-----		-----	
1065		-----		-----	
1066	D130	1A		-----	
1067	D130	1A		-----	
1081	D130	1A		-----	
1082	ISO2160	1A		-----	
1107	D130	1A		-----	
1108		-----		-----	
1134	D130	1A		-----	
1145		-----		-----	
1162	D130	1A		-----	
1167		-----		-----	
1191	ISO2160	1A		-----	
1200		-----		-----	
1201	D130	1A		-----	
1229	ISO2160	1A		-----	
1254	D130	1A		-----	
1257		-----		-----	
1264	D130	1A		-----	
1276	D130	1A		-----	
1284		-----		-----	
1357		-----		-----	
1404	D130	1A		-----	
1429	D130	1A		-----	
1477		-----		-----	
1510	D130	1B		-----	
1556	ISO2160	1A		-----	
1583		-----		-----	
1584	D130	1A		-----	
1603	in house	1A		-----	
1616	D130	1A		-----	

1653		-----	-----
1656	D130	1	-----
1737		-----	-----
1842		-----	-----
1854	D130	1A	-----
1857	D130	1A	-----
1858	D130	1A	-----
1950	D130	1A	-----
1951		-----	-----
9054		-----	-----
9057		-----	-----
9058		-----	-----
9061		-----	-----

normality	n.a
n	55
outliers	n.a
mean (n)	1 (1A)
st.dev. (n)	n.a
R(calc.)	n.a
R(D130:12)	n.a

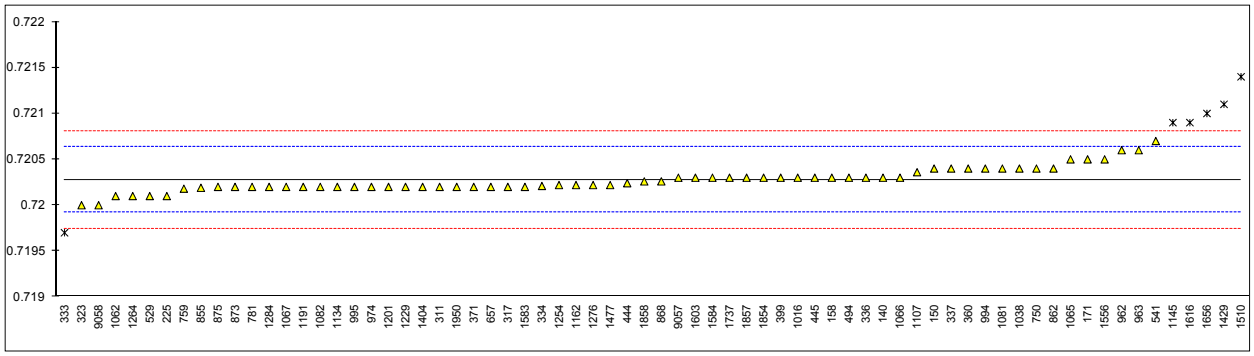
Determination of Density @ 15°C on sample #13031; results in kg/L

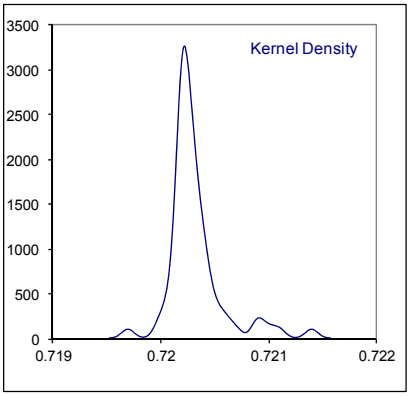
lab	method	value	mark	z(targ)	remarks
140	D4052	0.7203	U	0.14	probably unit error, reported :720.3 kg/L
150	D4052	0.7204		0.70	
158	D4052	0.7203	U	0.14	probably unit error, reported :720.3 kg/L
171	D4052	0.7205		1.26	
225	D4052	0.7201		-0.98	
237		-----		-----	
238		-----		-----	
311	D4052	0.7202		-0.42	
317	D4052	0.7202		-0.42	
323	D4052	0.7200		-1.54	
329		-----		-----	
333	D4052	0.7197	U,G(0.05)	-3.22	probably unit error, reported : 719.7 kg/L
334	D4052	0.72021		-0.36	
336	D4052	0.7203		0.14	
337	D4052	0.7204		0.70	
360	D4052	0.7204		0.70	
371	D4052	0.72020		-0.42	
399	D4052	0.7203		0.14	
444	D4052	0.72024		-0.20	
445	D4052	0.7203		0.14	
447		-----		-----	
494	D4052	0.7203		0.14	
529	D4052	0.7201		-0.98	
541	D4052	0.7207		2.38	
608		-----		-----	
657	D4052	0.7202		-0.42	
750	D4052	0.7204		0.70	
759	D4052	0.72018		-0.53	
781	D4052	0.7202		-0.42	
784		-----		-----	
855	D4052	0.72019		-0.48	
862	D4052	0.72040		0.70	
868	D4052	0.72026		-0.08	
873	D4052	0.7202		-0.42	
875	D4052	0.7202		-0.42	
912		-----		-----	
962	D4052	0.7206	C	1.82	first reported: 720.6
963	D4052	0.7206		1.82	
974	D4052	0.7202		-0.42	
982		-----		-----	
994	D4052	0.7204		0.70	
995	D4052	0.72020		-0.42	
1016	D4052	0.7203		0.14	
1038	D4052	0.7204		0.70	
1062	D4052	0.7201		-0.98	
1065	D4052	0.7205		1.26	
1066	D4052	0.7203		0.14	
1067	D4052	0.7202		-0.42	
1081	ISO12185	0.7204		0.70	
1082	ISO12185	0.7202		-0.42	
1107	D4052	0.72036		0.48	
1108		-----		-----	
1134	D4052	0.7202		-0.42	
1145	D4052	0.7209	G(0.01)	3.50	
1162	D4052	0.72022	C	-0.31	first reported: 720.22
1167		-----		-----	
1191	ISO12185	0.7202		-0.42	
1200		-----		-----	
1201	D4052	0.7202		-0.42	
1229	ISO12185	0.7202		-0.42	
1254	D4052	0.72022		-0.31	
1257		-----		-----	
1264	D4052	0.7201		-0.98	
1276	D4052	0.72022		-0.31	
1284	D4052	0.7202		-0.42	
1357		-----		-----	
1404	D4052	0.7202		-0.42	
1429	D4052	0.7211	G(0.05)	4.62	
1477	D4052	0.72022		-0.31	
1510	D4052	0.7214	G(0.01)	6.30	
1556	ISO12185	0.7205		1.26	
1583	D4052	0.7202		-0.42	
1584	D4052	0.7203		0.14	
1603	in house	0.72030	C	0.14	first reported: 720.3
1616	D4052	0.7209	G(0.05)	3.50	

1653		-----		-----
1656	D4052	0.7210	G(0.05)	4.06
1737	D4052	0.7203		0.14
1842		-----		-----
1854	D4052	0.7203		0.14
1857	D4052	0.7203		0.14
1858	D4052	0.72026		-0.08
1950	D4052	0.7202		-0.42
1951		-----		-----
9054		-----		-----
9057	D4052	0.7203		0.14
9058	D4052	0.7200		-1.54
9061		-----		-----

normality	not OK
n	64
outliers	6
mean (n)	0.72027
st.dev. (n)	0.000132
R(calc.)	0.00037
R(D4052:02e1)	0.00050

Compare R(ISO12185:96) = 0.00050

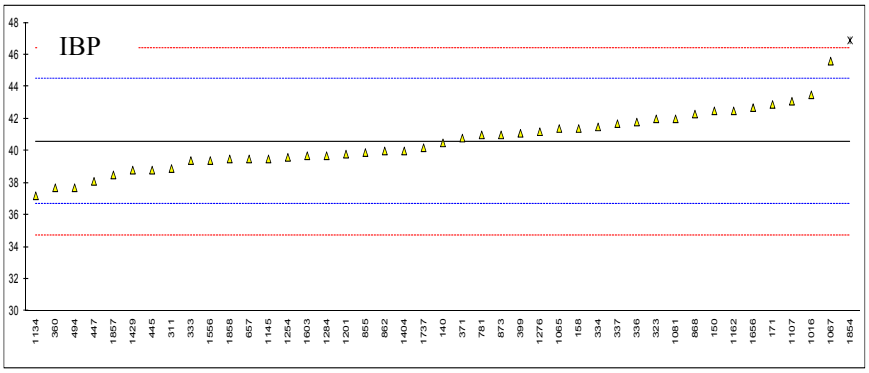


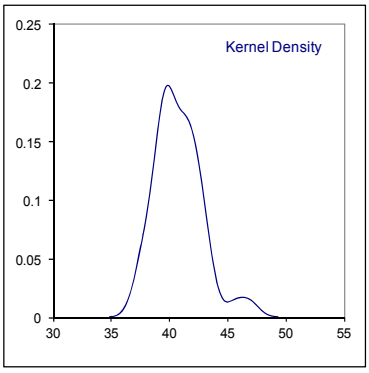


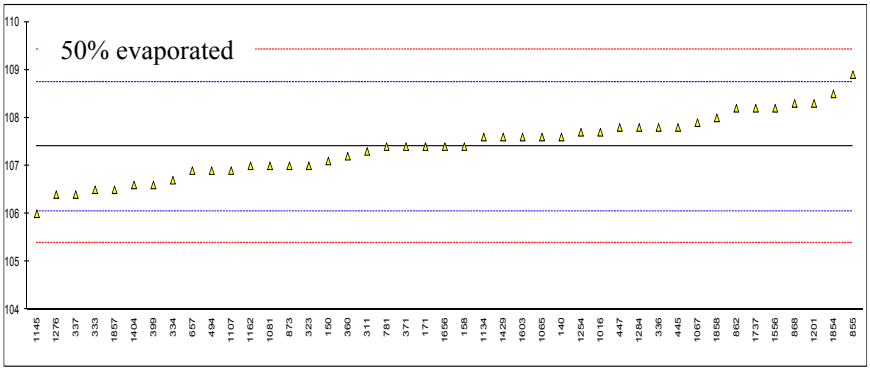
Determination of Distillation (automated mode) on sample #13031; results in °C

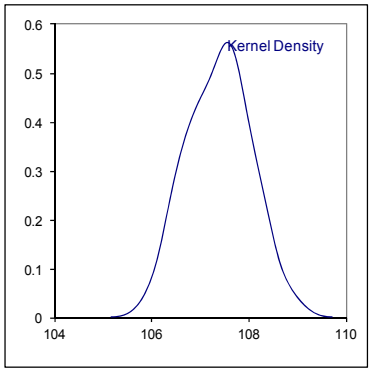
lab	method	IBP	mark	z(targ)	50%eva.	mark	z(targ)	FBP	mark	z(targ)	Remarks
140	D86	40.5		-0.04	107.6		0.30	177.9		-0.10	
150	D86-A	42.5		0.98	107.1		-0.44	177.2		-0.39	
158	D86	41.4		0.42	107.4		0.00	177.1		-0.43	
171	D86-A	42.9		1.19	107.4		0.00	177.7		-0.19	
225		-----		-----	-----		-----	-----		-----	
237		-----		-----	-----		-----	-----		-----	
238		-----		-----	-----		-----	-----		-----	
311	D86-A	38.9		-0.86	107.3		-0.15	181.4		1.34	
317		-----		-----	-----		-----	-----		-----	
323	D86-A	42.0		0.73	107.0		-0.59	176.5		-0.68	
329		-----		-----	-----		-----	-----		-----	
333	D86-A	39.4		-0.61	106.5		-1.34	180.7		1.05	
334	D86-A	41.5		0.47	106.7		-1.04	178.0		-0.06	
336	D86-A	41.8		0.63	107.8		0.60	178.1		-0.02	
337	D86-A	41.7		0.57	106.4		-1.49	182.1		1.63	
360	D86-A	37.7		-1.48	107.2		-0.29	176.8		-0.56	
371	D86-A	40.8		0.11	107.4		0.00	178.9		0.31	
399	D86-A	41.1		0.27	106.6		-1.19	174.9		-1.34	
444		-----		-----	-----		-----	-----		-----	
445	D86-A	38.8		-0.91	107.8		0.60	177.0		-0.47	
447	D86-A	38.1		-1.27	107.8		0.60	184.5		2.62	
494	D86-A	37.7		-1.48	106.9		-0.74	175.6		-1.05	
529		-----		-----	-----		-----	-----		-----	
541		-----		-----	-----		-----	-----		-----	
608		-----		-----	-----		-----	-----		-----	
657	D86-A	39.5		-0.55	106.9		-0.74	176.2		-0.81	
750		-----		-----	-----		-----	-----		-----	
759		-----		-----	-----		-----	-----		-----	
781	D86-A	41.0		0.21	107.4		0.00	178.8		0.27	
784		-----		-----	-----		-----	-----		-----	
855	D86-A	39.9		-0.35	108.9		2.24	180.6		1.01	
862	D86-A	40.0		-0.30	108.2		1.19	179.5		0.56	
868	D86-A	42.3		0.88	108.3		1.34	177.5		-0.27	
873	D86-A	41.0		0.21	107.0		-0.59	175.5		-1.09	
875		-----		-----	-----		-----	-----		-----	
912		-----		-----	-----		-----	-----		-----	
962		-----		-----	-----		-----	-----		-----	
963		-----		-----	-----		-----	-----		-----	
974		-----		-----	-----		-----	-----		-----	
982		-----		-----	-----		-----	-----		-----	
994		-----		-----	-----		-----	-----		-----	
995		-----		-----	-----		-----	-----		-----	
1016	D86-A	43.5		1.50	107.7		0.45	177.4		-0.31	
1038		-----		-----	-----		-----	-----		-----	
1062		-----		-----	-----		-----	-----		-----	
1065	D86-A	41.4		0.42	107.6		0.30	178.0		-0.06	
1066		-----		-----	-----		-----	-----		-----	
1067	D86-A	45.6		2.57	107.9		0.75	178.8		0.27	
1081	D86-A	42.0		0.73	107.0		-0.59	177.2		-0.39	
1082		-----		-----	-----		-----	-----		-----	
1107	D86-A	43.1		1.29	106.9		-0.74	176.2		-0.81	
1108		-----		-----	-----		-----	-----		-----	
1134	D86-A	37.2		-1.73	107.6		0.30	177.5		-0.27	
1145	D86-A	39.5		-0.55	106.0		-2.08	176.4		-0.72	
1162	D86-A	42.5		0.98	107.0		-0.59	175.2		-1.22	
1167		-----		-----	-----		-----	-----		-----	
1191		-----		-----	-----		-----	-----		-----	
1200		-----		-----	-----		-----	-----		-----	
1201	D86-A	39.8		-0.40	108.3		1.34	176.7		-0.60	
1229		-----		-----	-----		-----	-----		-----	
1254	D86-A	39.6		-0.50	107.7		0.45	182.0		1.59	
1257		-----		-----	-----		-----	-----		-----	
1264		-----		-----	-----		-----	-----		-----	
1276	D86-A	41.2		0.32	106.4		-1.49	184.3		2.54	
1284	D86-A	39.7		-0.45	107.8		0.60	182.1		1.63	
1357		-----		-----	-----		-----	-----		-----	
1404	D86-A	40.0		-0.30	106.6		-1.19	177.0		-0.47	
1429	D86	38.8		-0.91	107.6		0.30	177.3		-0.35	
1477		-----		-----	-----		-----	-----		-----	
1510		-----		-----	-----		-----	-----		-----	
1556	ISO3405-A	39.4		-0.61	108.2		1.19	176.2		-0.81	
1583		-----		-----	-----		-----	-----		-----	
1584		-----		-----	-----		-----	-----		-----	
1603	in house-A	39.7		-0.45	107.6		0.30	177.4		-0.31	
1616		-----		-----	-----		-----	-----		-----	

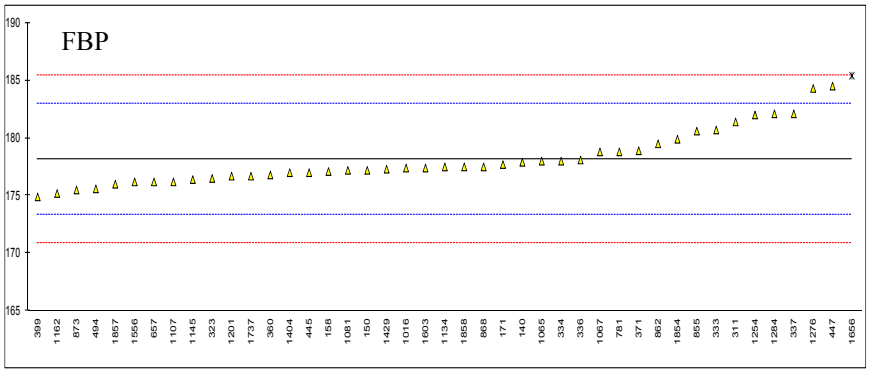
1653		-----		-----	-----	-----	-----		-----
1656	D86-A	42.7		1.09	107.4	0.00	185.4	G(0.05)	2.99
1737	D86-A	40.2		-0.20	108.2	1.19	176.7		-0.60
1842		-----		-----	-----	-----	-----		-----
1854	D86-A	46.9	G(0.05)	3.24	108.5	1.64	179.9		0.72
1857	D86-A	38.5		-1.07	106.5	-1.34	176.0		-0.89
1858	D86-A	39.5		-0.55	108.0	0.90	177.5		-0.27
1950		-----		-----	-----	-----	-----		-----
1951		-----		-----	-----	-----	-----		-----
9054		-----		-----	-----	-----	-----		-----
9057		-----		-----	-----	-----	-----		-----
9058		-----		-----	-----	-----	-----		-----
9061		-----		-----	-----	-----	-----		-----
	normality	OK			OK		not OK		
	n	42			43		42		
	outliers	1			0		1		
	mean (n)	40.58			107.40		178.15		
	st.dev. (n)	1.771			0.646		2.333		
	R(calc.)	4.96			1.81		6.53		
	R(D86:12)	5.46			1.88		6.78		

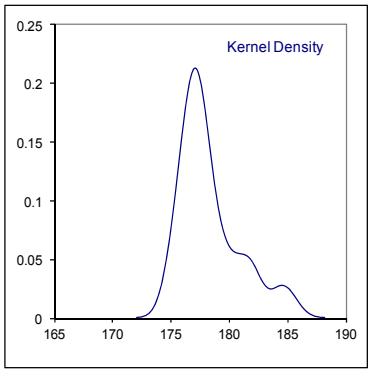








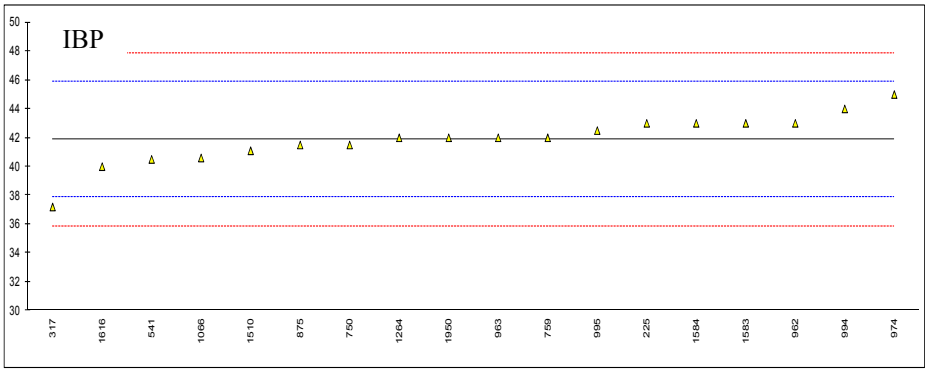


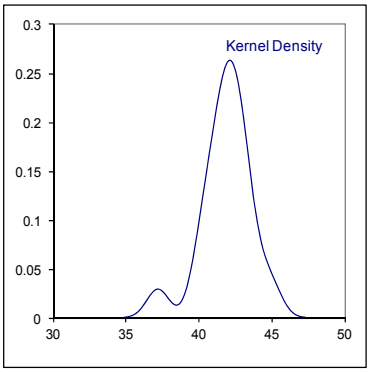


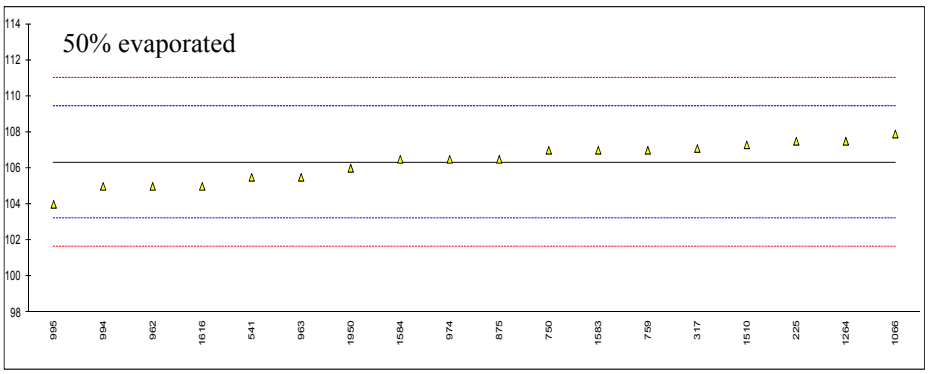
Determination of Distillation (manual mode) on sample #13031; results in °C

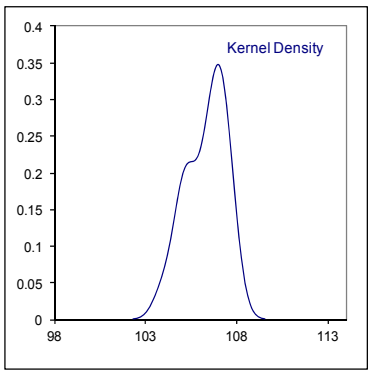
lab	method	IBP	mark	z(targ)	50%eva.	mark	z(targ)	FBP	mark	z(targ)	remarks
140		-----		-----	-----		-----	-----		-----	
150		-----		-----	-----		-----	-----		-----	
158		-----		-----	-----		-----	-----		-----	
171		-----		-----	-----		-----	-----		-----	
225	D86-M	43.0		0.56	107.5		0.76	195.0	DG(0.05)	6.94	
237		-----		-----	-----		-----	-----		-----	
238		-----		-----	-----		-----	-----		-----	
311		-----		-----	-----		-----	-----		-----	
317	D86-M	37.2		-2.34	107.1		0.50	175.3		-0.72	
323		-----		-----	-----		-----	-----		-----	
329		-----		-----	-----		-----	-----		-----	
333		-----		-----	-----		-----	-----		-----	
334		-----		-----	-----		-----	-----		-----	
336		-----		-----	-----		-----	-----		-----	
337		-----		-----	-----		-----	-----		-----	
360		-----		-----	-----		-----	-----		-----	
371		-----		-----	-----		-----	-----		-----	
399		-----		-----	-----		-----	-----		-----	
444		-----		-----	-----		-----	-----		-----	
445		-----		-----	-----		-----	-----		-----	
447		-----		-----	-----		-----	-----		-----	
494		-----		-----	-----		-----	-----		-----	
529		-----		-----	-----		-----	-----		-----	
541	D86-M	40.5		-0.69	105.5		-0.53	177.0		-0.06	
608		-----		-----	-----		-----	-----		-----	
657		-----		-----	-----		-----	-----		-----	
750	D86-M	41.5		-0.19	107.0		0.44	190.5	G(0.01)	5.19	
759	D86-M	42.0		0.06	107.0		0.44	179.5		0.91	
781		-----		-----	-----		-----	-----		-----	
784		-----		-----	-----		-----	-----		-----	
855		-----		-----	-----		-----	-----		-----	
862		-----		-----	-----		-----	-----		-----	
868		-----		-----	-----		-----	-----		-----	
873		-----		-----	-----		-----	-----		-----	
875	D86-M	41.5		-0.19	106.5		0.11	176.0		-0.45	
912		-----		-----	-----		-----	-----		-----	
962	D86-M	43.0		0.56	105.0		-0.85	177.0		-0.06	
963	D86-M	42.0		0.06	105.5		-0.53	178.0		0.33	
974	D86-M	45.0		1.56	106.5		0.11	177.5		0.13	
982		-----		-----	-----		-----	-----		-----	
994	D86-M	44.0		1.06	105.0		-0.85	176.5		-0.26	
995	D86-M	42.5		0.31	104.0		-1.49	175.0		-0.84	
1016		-----		-----	-----		-----	-----		-----	
1038		-----		-----	-----		-----	-----		-----	
1062		-----		-----	-----		-----	-----		-----	
1065		-----		-----	-----		-----	-----		-----	
1066	D86-M	40.6		-0.64	107.9		1.01	181.5		1.69	
1067		-----		-----	-----		-----	-----		-----	
1081		-----		-----	-----		-----	-----		-----	
1082		-----		-----	-----		-----	-----		-----	
1107		-----		-----	-----		-----	-----		-----	
1108		-----		-----	-----		-----	-----		-----	
1134		-----		-----	-----		-----	-----		-----	
1145		-----		-----	-----		-----	-----		-----	
1162		-----		-----	-----		-----	-----		-----	
1167		-----		-----	-----		-----	-----		-----	
1191		-----		-----	-----		-----	-----		-----	
1200		-----		-----	-----		-----	-----		-----	
1201		-----		-----	-----		-----	-----		-----	
1229		-----		-----	-----		-----	-----		-----	
1254		-----		-----	-----		-----	-----		-----	
1257		-----		-----	-----		-----	-----		-----	
1264	D86-M	42.0		0.06	107.5		0.76	191.0	DG(0.05)	5.38	
1276		-----		-----	-----		-----	-----		-----	
1284		-----		-----	-----		-----	-----		-----	
1357		-----		-----	-----		-----	-----		-----	
1404		-----		-----	-----		-----	-----		-----	
1429		-----		-----	-----		-----	-----		-----	
1477		-----		-----	-----		-----	-----		-----	
1510	D86-M	41.1		-0.39	107.3		0.63	178.1		0.37	
1556		-----		-----	-----		-----	-----		-----	
1583	D86-M	43.0		0.56	107.0		0.44	177.5		0.13	
1584	D86-M	43.0		0.56	106.5		0.11	177.5		0.13	
1603		-----		-----	-----		-----	-----		-----	

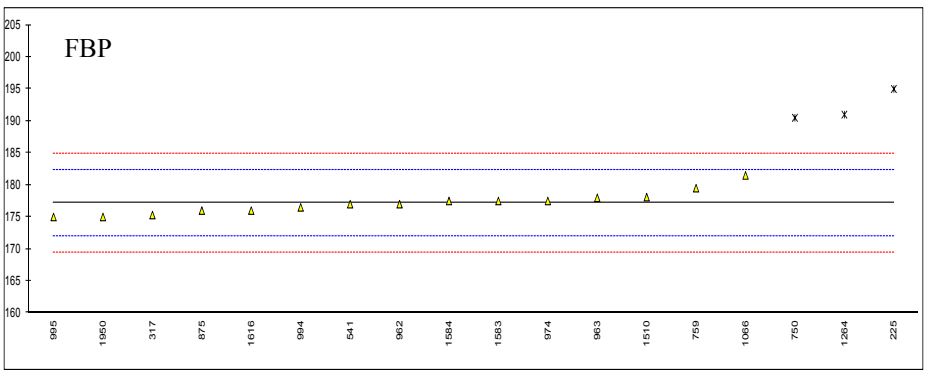
1616	D86-M	40.0	-0.94	105.0	-0.85	176.0	-0.45
1653		-----	-----	-----	-----	-----	-----
1656		-----	-----	-----	-----	-----	-----
1737		-----	-----	-----	-----	-----	-----
1842		-----	-----	-----	-----	-----	-----
1854		-----	-----	-----	-----	-----	-----
1857		-----	-----	-----	-----	-----	-----
1858		-----	-----	-----	-----	-----	-----
1950	D86-M	42.0	0.06	106.0	-0.21	175.0	-0.84
1951		-----	-----	-----	-----	-----	-----
9054		-----	-----	-----	-----	-----	-----
9057		-----	-----	-----	-----	-----	-----
9058		-----	-----	-----	-----	-----	-----
9061		-----	-----	-----	-----	-----	-----
	normality	OK		OK		OK	
	n	18		18		15	
	outliers	0		0		3	
	mean (n)	41.88		106.32		177.16	
	st.dev. (n)	1.708		1.095		1.736	
	R(calc.)	4.78		3.07		4.86	
	R(D86:12)	5.60		4.35		7.20	

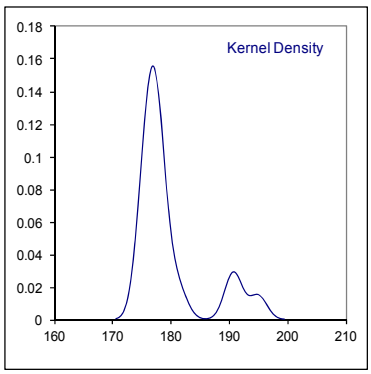










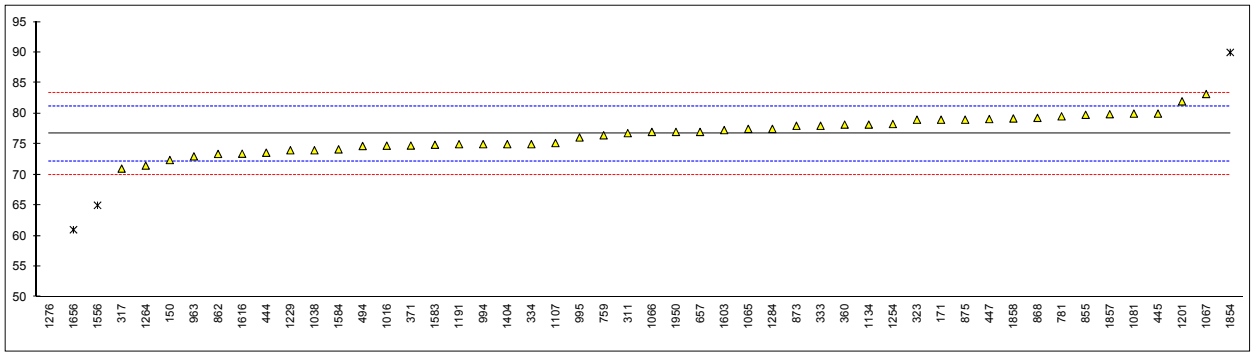


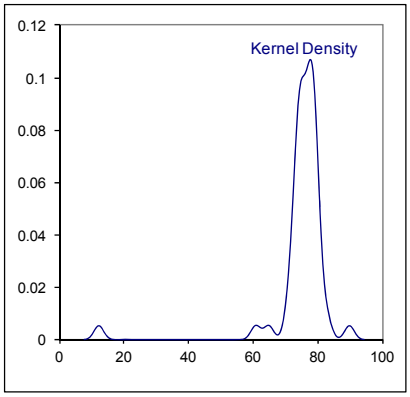
Determination of Mercaptans on sample #13031; results in mg/kg

lab	method	value	mark	z(targ)	Remarks
140		-----		-----	
150	D3227	72.4		-1.90	
158		-----		-----	
171	D3227	79		1.03	
225		-----		-----	
237		-----		-----	
238		-----		-----	
311	UOP163	76.8		0.05	
317	D3227	71		-2.52	
323	D3227	79		1.03	
329		-----		-----	
333	D3227	78		0.59	
334	D3227	75		-0.74	
336		-----		-----	
337		-----		-----	
360	D3227	78.2		0.67	
371	D3227	74.77		-0.85	
399		-----		-----	
444	UOP163	73.6		-1.36	
445	D3227	80		1.47	
447	D3227	79.1		1.07	
494	D3227	74.7		-0.88	
529		-----		-----	
541		-----		-----	
608		-----		-----	
657	D3227	77	C	0.14	first reported: 0.0077 mg/kg
750		-----		-----	
759	UOP163	76.45		-0.10	
781	UOP163	79.55		1.27	
784		-----		-----	
855	D3227	79.8		1.38	
862	D3227	73.4		-1.45	
868	D3227	79.3		1.16	
873	D3227	78		0.59	
875	D3227	79		1.03	
912		-----		-----	
962		-----		-----	
963	D3227	73		-1.63	
974		-----		-----	
982		-----		-----	
994	D3227	75.0		-0.74	
995	D3227	76.1		-0.26	
1016	D3227	74.75		-0.85	
1038	D3227	74	C	-1.19	first reported: 0.0074 mg/kg
1062		-----		-----	
1065	D3227	77.5		0.36	
1066	D3227	77		0.14	
1067	D3227	83.2		2.89	
1081	D3227	80		1.47	
1082		-----		-----	
1107	D3227	75.18		-0.66	
1108		-----		-----	
1134	IP342	78.2		0.67	
1145		-----		-----	
1162		-----		-----	
1167		-----		-----	
1191	ISO3012	75		-0.74	
1200		-----		-----	
1201	D3227	82		2.36	
1229	ISO3012	74		-1.19	
1254	D3227	78.29		0.71	
1257		-----		-----	
1264	D3227	71.5		-2.29	
1276	D3227	12.390	G(0.01)	-28.48	
1284	D3227	77.5		0.36	
1357		-----		-----	
1404	D3227	75		-0.74	
1429		-----		-----	
1477		-----		-----	
1510		-----		-----	
1556	UOP163	65	G(0.01)	-5.17	
1583	UOP163	74.9		-0.79	
1584	UOP163	74.15		-1.12	
1603	in house	77.3		0.28	
1616	D3227	73.44		-1.43	

1653		-----		-----	
1656	IP342	61	G(0.01)	-6.95	
1737		-----		-----	
1842		-----		-----	
1854	D3227	90	G(0.05)	5.90	
1857	UOP163	79.9		1.43	
1858	D3227	79.2		1.12	
1950	D3227	77	U	0.14	probably unit error, reported : 0.077 mg/kg
1951		-----		-----	
9054		-----		-----	
9057		-----		-----	
9058		-----		-----	
9061		-----		-----	

normality	OK
n	46
outliers	4
mean (n)	76.678
st.dev. (n)	2.7488
R(calc.)	7.697
R(D3227:10)	6.320



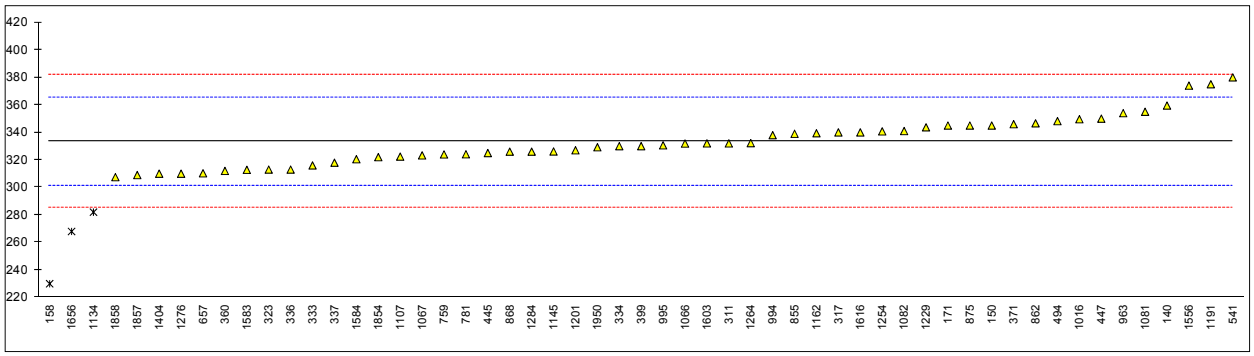


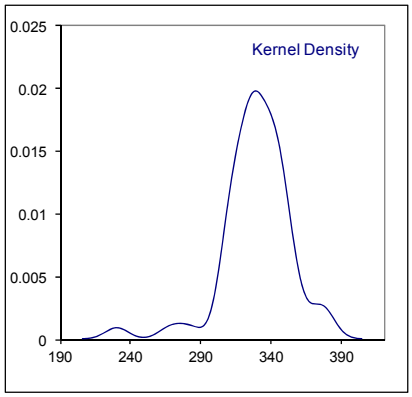
Determination of Sulphur on sample #13031; results in mg/kg

lab	method	value	mark	z(targ)	Remarks
140	D2622	359.5		1.62	
150	D2622	345		0.72	
158	D5453	230	G(0.01)	-6.44	Possibily reported in mg/L, see §4.1
171	D2622	345		0.72	
225		-----		-----	
237		-----		-----	
238		-----		-----	
311	D2622	332		-0.09	
317	D2622	340		0.41	
323	D2622	313		-1.27	
329		-----		-----	
333	D2622	316		-1.09	
334	D5453	330		-0.22	
336	ISO8754	313		-1.27	
337	D2622	318		-0.96	
360	D5453	312		-1.34	
371	D5453	346		0.78	
399	D4294	330		-0.22	
444		-----		-----	
445	D2622	325		-0.53	
447	IP336	350		1.03	
494	D5453	348.2		0.92	
529		-----		-----	
541	D5453	380		2.90	
608		-----		-----	
657	D5453	310.28		-1.44	
750		-----		-----	
759	D4294	324		-0.59	
781	D5453	324.1		-0.58	
784		-----		-----	
855	D4294	339		0.34	
862	D2622	346.6		0.82	
868	D3120	326		-0.47	
873		-----		-----	
875	D2622	345		0.72	
912		-----		-----	
962		-----		-----	
963	D4924	354		1.28	
974		-----		-----	
982		-----		-----	
994	D4294	338.0		0.28	
995	D4294	330.6		-0.18	
1016	D2622	349.6		1.00	
1038		-----		-----	
1062		-----		-----	
1065		-----		-----	
1066	D2622	331.9		-0.10	
1067	D2622	323.3		-0.63	
1081	D4294	355		1.34	
1082	ISO8754	341		0.47	
1107	D5453	322.4		-0.69	
1108		-----		-----	
1134	IP490	282.042	DG(0.05)	-3.20	
1145	D5453	326.15		-0.46	
1162	D5453	339.4		0.37	
1167		-----		-----	
1191	D7039	375		2.59	
1200		-----		-----	
1201	D2622	327		-0.40	
1229	D7039	343.7	C	0.64	first reported: 392
1254	D5453	340.74		0.45	
1257		-----		-----	
1264	D5453	332.2		-0.08	
1276	D2622	310		-1.46	
1284	D5453	326		-0.47	
1357		-----		-----	
1404	ISO20846	310		-1.46	
1429		-----		-----	
1477		-----		-----	
1510		-----		-----	
1556	ISO20846	374		2.52	
1583	D4294	312.8		-1.29	
1584	D4294	320.5		-0.81	
1603	in house	332		-0.09	
1616	D4294	340	C	0.41	first reported: 0.034 mg/kg

1653		-----		-----	
1656	D5453	268	DG(0.05)	-4.08	Possibily reported in mg/L, see §4.1
1737		-----		-----	
1842		-----		-----	
1854	ISO20846	322		-0.71	
1857	D4294	309		-1.52	
1858	D4294	307.5		-1.62	
1950	D2622	329.2		-0.27	
1951		-----		-----	
9054		-----		-----	
9057		-----		-----	
9058		-----		-----	
9061		-----		-----	

		Only D2622 data	Only D5453 data
normality	OK	OK	OK
n	52	17	13
outliers	3	0	1
mean (n)	333.474	332.712	333.652
st.dev. (n)	17.2546	14.3529	18.1630
R(calc.)	48.313	40.188	50.856
R(D2622:10)	44.975	44.892	45.256





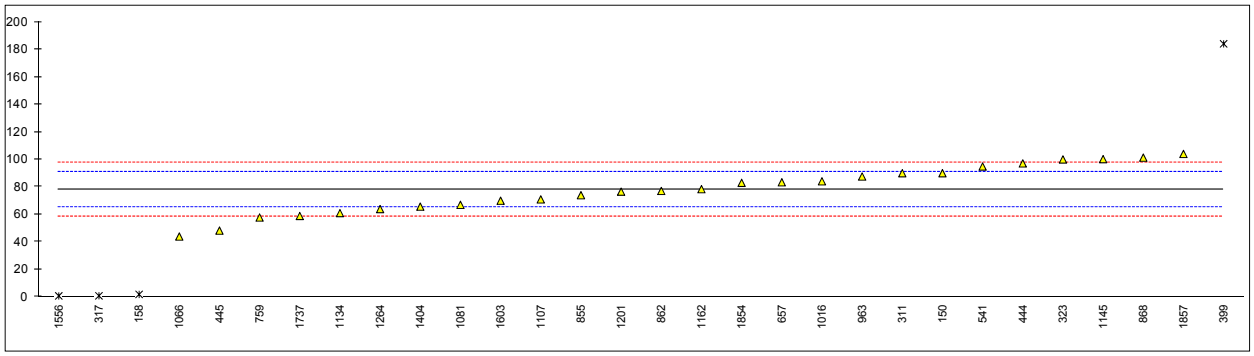
Determination of Methanol on sample #13032; result in mg/kg

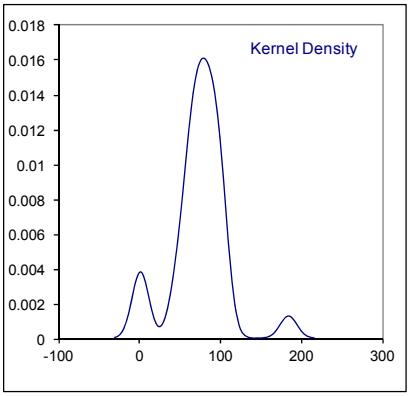
lab	method	value	mark	z(targ)	remarks
140		-----		-----	
150	D7423	90		1.84	
158	D7423	1.92	G(0.01)	-11.75	
171	D6729	<10	C	<-10.50	first reported: <0.001, false negative?
225		-----		-----	
237		-----		-----	
238		-----		-----	
311	INH-403	90	C	1.84	first reported:120
317	INH-200	0.9	DG(0.05)	-11.90	
323	INH-304	100		3.39	
329		-----		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
360		-----		-----	
371		-----		-----	
399	INH-002	184	G(0.05)	16.35	
444	in house	97.1		2.94	
445	INH-060	48.3		-4.59	
447		-----		-----	
494		-----		-----	
529		-----		-----	
541	D5441	94.87		2.60	
608		-----		-----	
657	INH-0130	83.40		0.83	
750		-----		-----	
759	D7423	57.8		-3.12	
781		-----		-----	
784		-----		-----	
855	INH-024	74.0		-0.62	
862	INH-024	77.1		-0.15	
868	INH-024	101.3		3.59	
873		-----		-----	
875		-----		-----	
912		-----		-----	
962		-----		-----	
963	D7423	87.61		1.47	
974		-----		-----	
982		-----		-----	
994		-----		-----	
995		-----		-----	
1016	in house	84.126		0.94	
1038		-----		-----	
1062		-----		-----	
1065		-----		-----	
1066	in house	44		-5.25	
1067		-----		-----	
1081	in house	67		-1.70	
1082		-----		-----	
1107	D7423	70.954		-1.09	
1108		-----		-----	
1134	in house	61.01		-2.63	
1145	INH-4815	100.22		3.42	
1162	in house	78.4		0.05	
1167		-----		-----	
1191		-----		-----	
1200		-----		-----	
1201	in house	76.59		-0.23	
1229		-----		-----	
1254		-----		-----	
1257		-----		-----	
1264	D7423	63.93		-2.18	
1276		-----		-----	
1284		-----		-----	
1357		-----		-----	
1404	in house	65.7	C	-1.91	first reported: 52.3
1429		-----		-----	
1477		-----		-----	
1510		-----		-----	
1556	D7423	0.8	DG(0.05)	-11.92	first reported: 142.1
1583		-----		-----	
1584		-----		-----	
1603	in house	70		-1.24	
1616		-----		-----	

1653		-----	-----
1656		-----	-----
1737	in house	58.9	-2.95
1842		-----	-----
1854	EN13132	83	0.76
1857	D7754	104	4.00
1858		-----	-----
1950		-----	-----
1951		-----	-----
9054		-----	-----
9057		-----	-----
9058		-----	-----
9061		-----	-----

normality	OK	Spike
n	26	
outliers	4	
mean (n)	78.050	32.9
st.dev. (n)	16.7576	
R(calc.)	46.921	
R(Horwitz)	18.148	

Compare (D4815:09) = 192





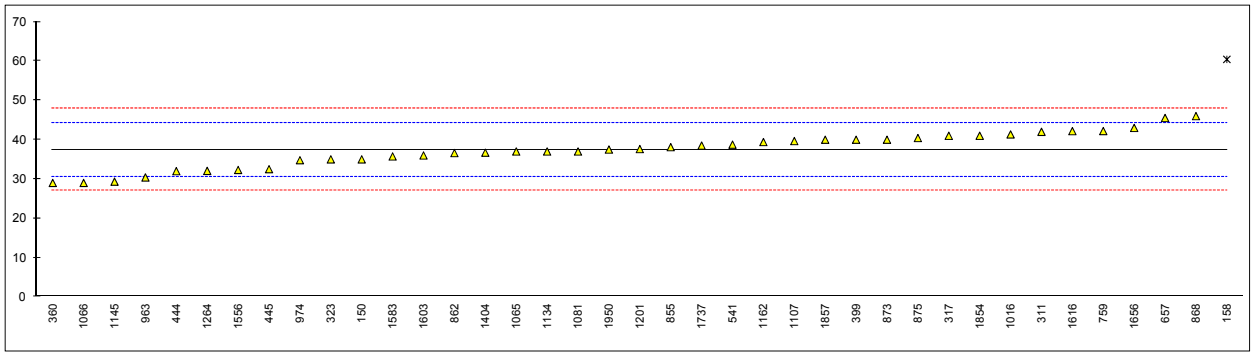
Determination of MTBE on sample #13032; result in mg/kg

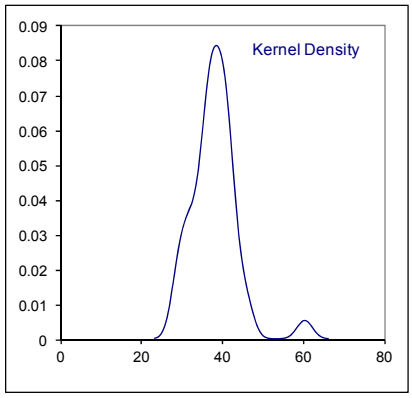
lab	method	value	mark	z(targ)	Remarks
140		-----		-----	
150	D7423	35		-0.69	
158	D7423	60.43	G(0.01)	6.63	
171	D6729	<10	C	<-7.70	first reported: <0.001, false negative?
225		-----		-----	
237		-----		-----	
238		-----		-----	
311	INH-403	42		1.32	
317	INH-200	41		1.03	
323	INH-304	35		-0.69	
329		-----		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
360	D7423Mod.	29		-2.42	
371		-----		-----	
399	INH-002	40		0.75	
444	in house	32.0		-1.56	
445	INH-060	32.5		-1.42	
447		-----		-----	
494		-----		-----	
529		-----		-----	
541	D5441	38.74		0.38	
608		-----		-----	
657	INH-0130	45.52		2.34	
750		-----		-----	
759	D7423	42.2		1.38	
781		-----		-----	
784		-----		-----	
855	INH-024	38.1		0.20	
862	INH-024	36.6		-0.23	
868	INH-024	46.0		2.48	
873	INH-52531	40		0.75	
875	INH-52531	40.42		0.87	
912		-----		-----	
962		-----		-----	
963	D7423	30.40		-2.02	
974	D7423	34.78		-0.76	
982		-----		-----	
994		-----		-----	
995		-----		-----	
1016	in house	41.343		1.13	
1038		-----		-----	
1062		-----		-----	
1065	in house	37		-0.12	
1066	in house	29		-2.42	
1067		-----		-----	
1081	in house	37		-0.12	
1082		-----		-----	
1107	D7423	39.651		0.65	
1108		-----		-----	
1134	in house	37.00		-0.12	
1145	INH-4815	29.33		-2.33	
1162	in house	39.4		0.57	
1167		-----		-----	
1191		-----		-----	
1200		-----		-----	
1201	in house	37.62		0.06	
1229		-----		-----	
1254		-----		-----	
1257		-----		-----	
1264	D7423	32.07		-1.54	
1276		-----		-----	
1284		-----		-----	
1357		-----		-----	
1404	in house	36.7	C	-0.20	first reported: 27.4
1429		-----		-----	
1477		-----		-----	
1510		-----		-----	
1556	D7423	32.3		-1.47	
1583	IP PM BG/91	35.74		-0.48	
1584		-----		-----	
1603	in house	36		-0.41	
1616	in house	42.18		1.37	

1653		-----	-----
1656	IP466Mod.	43	1.61
1737	in house	38.5	0.31
1842		-----	-----
1854	EN13132	41	1.03
1857	D7754	40	0.75
1858		-----	-----
1950	IP PM BG/91Mod.	37.5	0.03
1951		-----	-----
9054		-----	-----
9057		-----	-----
9058		-----	-----
9061		-----	-----

normality	OK	Spike
n	38	
outliers	1	
mean (n)	37.410	35.4
st.dev. (n)	4.3785	
R(calc.)	12.260	
R(Horwitz)	9.717	

Compare R (D4815:09) = 28.39





Determination of other oxygenates on sample #13032; result in mg/kg

lab	method	DIPE	mark	TAME	mark	MEK	mark	Acetone	mark
140		-----		-----		-----		-----	
150	D7423	<1		<1		2		1	
158	D7423	<1		0.59		4.89	G(0.01)	1.47	
171	D6729	<10	C	<10	C	<10	C	<10	C
225		-----		-----		-----		-----	
237		-----		-----		-----		-----	
238		-----		-----		-----		-----	
311	INH-403	<1		<1		<10		<10	
317	INH-200	<1		<1		3	DG(0.01)	1	
323	INH-304	<2		<2		-----		<2	
329		-----		-----		-----		-----	
333		-----		-----		-----		-----	
334		-----		-----		-----		-----	
336		-----		-----		-----		-----	
337		-----		-----		-----		-----	
360		-----		-----		-----		-----	
371		-----		-----		-----		-----	
399	INH-002	<1		<1		3	DG(0.01)	<1	
444		-----		-----		-----		0.8	
445	INH-060	<5		<5		-----		-----	
447		-----		-----		-----		-----	
494		-----		-----		-----		-----	
529		-----		-----		-----		-----	
541		-----		-----		-----		-----	
608		-----		-----		-----		-----	
657	INH-0130	<0.1		0.181		1.921		1.208	
750		-----		-----		-----		-----	
759	D7423	0.4		1.7		-----		1.1	
781		-----		-----		-----		-----	
784		-----		-----		-----		-----	
855	INH-024	<10		<10		<10		<10	
862	INH-024	<1		<1		1.9		<1	
868	INH-024	<1		<1		1.8		<1	
873		-----		-----		-----		-----	
875		-----		-----		-----		-----	
912		-----		-----		-----		-----	
962		-----		-----		-----		-----	
963	D7423	<0.5		0.36		1.33		<0.5	
974		-----		-----		-----		-----	
982		-----		-----		-----		-----	
994		-----		-----		-----		-----	
995		-----		-----		-----		-----	
1016		-----		-----		-----		-----	
1038		-----		-----		-----		-----	
1062		-----		-----		-----		-----	
1065		-----		-----		-----		-----	
1066	in house	1		<5		-----		-----	
1067		-----		-----		-----		-----	
1081	in house	0		0		-----		-----	
1082		-----		-----		-----		-----	
1107	D7423	<1.00		<1.00		1.711		<1.00	
1108		-----		-----		-----		-----	
1134	in house	<1		<1		1.87		<1	
1145		-----		0.13		-----		0.64	
1162	in house	<0.1		0.4		1.7		0.6	
1167		-----		-----		-----		-----	
1191		-----		-----		-----		-----	
1200		-----		-----		-----		-----	
1201	in house	<1.0		<1.0		<1.0		9.73	G(0.01)
1229		-----		-----		-----		-----	
1254		-----		-----		-----		-----	
1257		-----		-----		-----		-----	
1264		-----		1.14		1.52		0.85	
1276		-----		-----		-----		-----	
1284		-----		-----		-----		-----	
1357		-----		-----		-----		-----	
1404	in house	<1		<1		1.7	C	0.7	C
1429		-----		-----		-----		-----	
1477		-----		-----		-----		-----	
1510		-----		-----		-----		-----	
1556	D7423	<1		0.14		1.73		0.72	
1583		-----		-----		-----		-----	
1584		-----		-----		-----		-----	
1603	in house	<10		<10		<10		<10	
1616		-----		-----		-----		-----	

1653		-----	-----	-----	-----
1656		-----	-----	-----	-----
1737	in house	<0.5	<0.5	1.1	0.6
1842		-----	-----	-----	-----
1854		-----	-----	-----	-----
1857	D7754	n.d.	2	-----	-----
1858		-----	-----	-----	-----
1950		-----	-----	-----	-----
1951		-----	-----	-----	-----
9054		-----	-----	-----	-----
9057		-----	-----	-----	-----
9058		-----	-----	-----	-----
9061		-----	-----	-----	-----
	normality	n.a	n.a.	n.a.	n.a.
	n	25	10	12	12
	outliers	n.a	0	3	1
	mean (n)	<10	0.66	1.69	0.89
	st.dev. (n)	n.a	n.a.	n.a.	n.a.
	R(calc.)	n.a	n.a.	n.a.	n.a.
	R(Horwitz)	n.a	n.a.	n.a.	n.a.

first reported results:
lab 171: DIPE: <0.001
TAME: <0.001
MEK: <0.001
Acetone: <0.001
Lab 1404: MEK: 1.4
Acetone: 0.6

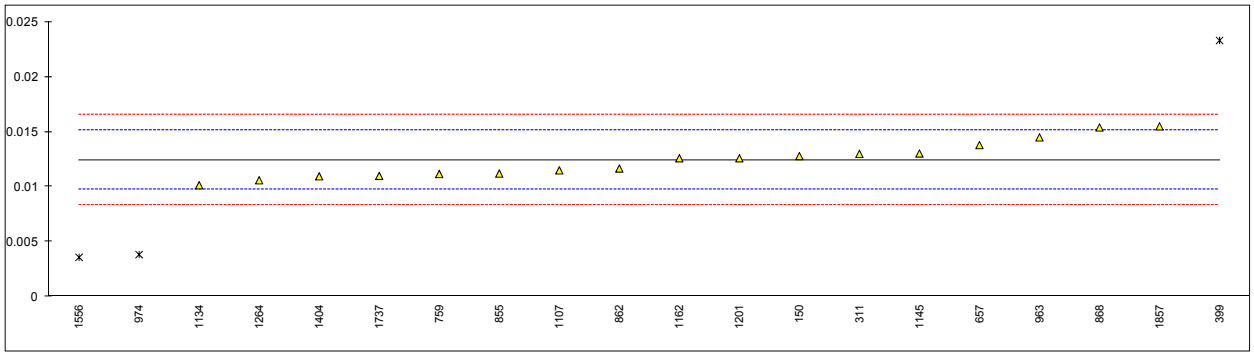
Determination of Total Oxygenates on sample #13032; result in %M/M

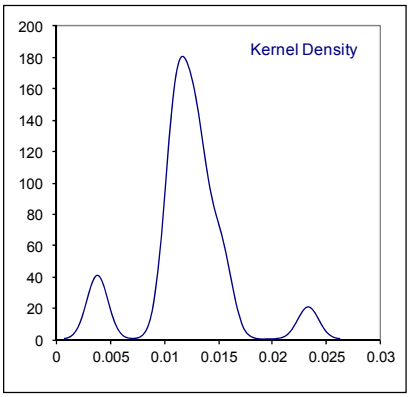
lab	method	value	Mark	z(targ)	remarks
140		-----		-----	
150	D7423	0.0128	U	0.26	probably unit error, reported: 128 %M/M
158		-----		-----	
171	D6729	<10	C	-----	first reported: <0.001 %M/M
225		-----		-----	
237		-----		-----	
238		-----		-----	
311	INH-403	0.013	C	0.41	first reported:170 %M/M
317	INH-200	<0.01		-----	
323		-----		-----	
329		-----		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
360		-----		-----	
371		-----		-----	
399	INH-002	0.0233	G(0.05)	7.97	
444		-----		-----	
445		-----		-----	
447		-----		-----	
494		-----		-----	
529		-----		-----	
541		-----		-----	
608		-----		-----	
657	INH-0130	0.0138	C	1.00	first reported: 138.1 %M/M
750		-----		-----	
759	D7423	0.01117	U	-0.93	probably unit error, reported: 111.17 %M/M
781		-----		-----	
784		-----		-----	
855	INH-024	0.01121		-0.90	
862	INH-024	0.01167	U	-0.57	probably unit error, reported: 116.7 %M/M
868	INH-024	0.0154		2.17	
873		-----		-----	
875		-----		-----	
912		-----		-----	
962		-----		-----	
963	D7423	0.0145		1.51	
974	D7423	0.00385	DG(0.01)	-6.31	
982		-----		-----	
994		-----		-----	
995		-----		-----	
1016		-----		-----	
1038		-----		-----	
1062		-----		-----	
1065		-----		-----	
1066		-----		-----	
1067		-----		-----	
1081		-----		-----	
1082		-----		-----	
1107	D7423	0.0115		-0.69	
1108		-----		-----	
1134	in house	0.010151	U	-1.68	probably unit error, reported: 101.51 %M/M
1145	INH-4815	0.013032	U	0.43	probably unit error, reported: 130.32 %M/M
1162	in house	0.0126		0.12	
1167		-----		-----	
1191		-----		-----	
1200		-----		-----	
1201	in house	0.0126		0.12	
1229		-----		-----	
1254		-----		-----	
1257		-----		-----	
1264	D7423	0.01060	U	-1.35	probably unit error, reported: 106.00 %M/M
1276		-----		-----	
1284		-----		-----	
1357		-----		-----	
1404	in house	0.01096	U	-1.09	probably unit error, reported: 109.6 %M/M
1429		-----		-----	
1477		-----		-----	
1510		-----		-----	
1556	D7423	0.0036	C,DG(0.01)	-6.49	first reported: 184.27 %M/M
1583		-----		-----	
1584		-----		-----	
1603		-----		-----	
1616		-----		-----	

1653		-----	-----
1656		-----	-----
1737	in house	0.011	-1.06
1842		-----	-----
1854		-----	-----
1857	Calc.	0.0155	2.25
1858		-----	-----
1950		-----	-----
1951		-----	-----
9054		-----	-----
9057		-----	-----
9058		-----	-----
9061		-----	-----

normality	OK
n	17
outliers	3
mean (n)	0.0124
st.dev. (n)	0.00163
R(calc.)	0.0046
R(Horwitz)	0.0038

Compare R(D4815:09) = 0.0064



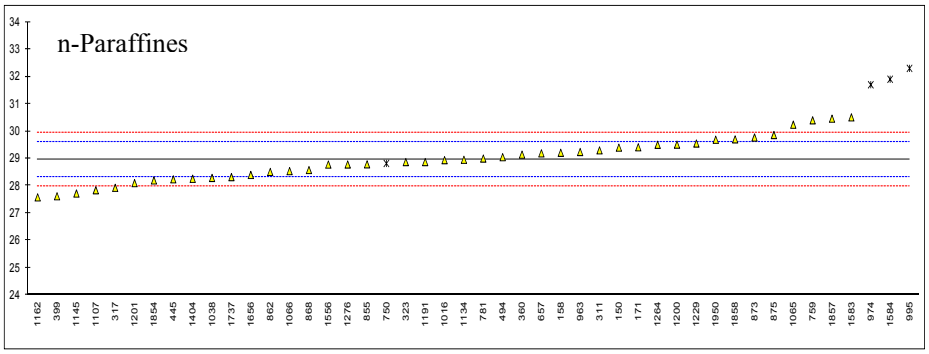


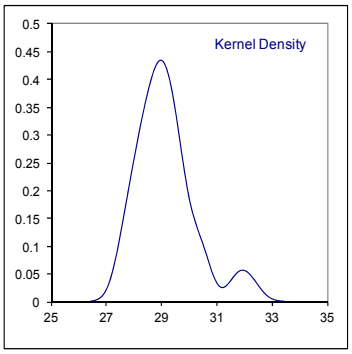
PONA/PIONA/PNA determination on sample #13032; results in %V/V

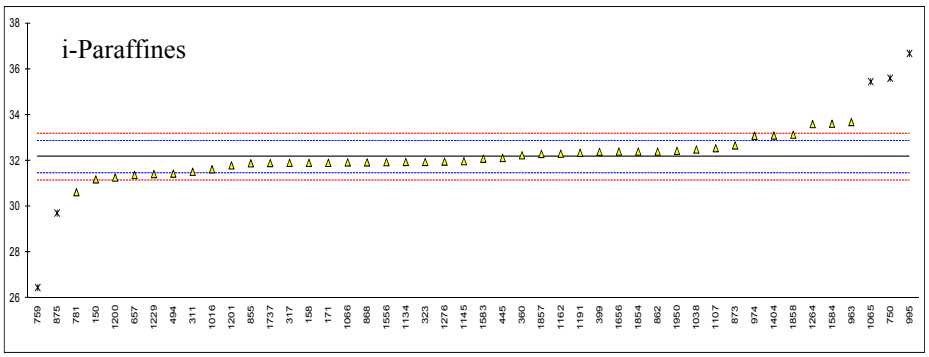
lab	method	n-paraf	mark	z(targ)	i-paraf	mark	z(targ)	Naphth.	mark	z(targ)	remarks
140		-----		-----	-----		-----	-----		-----	
150	D6729	29.40		1.35	31.19		-2.84	29.97	ex	-6.02	see §4.1
158	D6729	29.21		0.77	31.91		-0.74	26.59	ex	-21.40	see §4.1
171	D6729	29.413		1.39	31.911		-0.74	27.385	ex	-17.78	see §4.1
225		-----		-----	-----		-----	-----		-----	
237		-----		-----	-----		-----	-----		-----	
238		-----		-----	-----		-----	-----		-----	
311	D5443Mod.	29.30		1.05	31.52		-1.88	31.12	C	-0.78	
317	D5443	27.93	C	-3.15	31.91	C	-0.74	32.08	C	3.58	
323	D5443	28.87		-0.27	31.95		-0.63	31.16		-0.60	
329		-----		-----	-----		-----	-----		-----	
333		-----		-----	-----		-----	-----		-----	
334		-----		-----	-----		-----	-----		-----	
336		-----		-----	-----		-----	-----		-----	
337		-----		-----	-----		-----	-----		-----	
360	D6730	29.144		0.57	32.241		0.22	30.577	ex	-3.25	see §4.1
371		-----		-----	-----		-----	-----		-----	
399	D5443	27.62		-4.10	32.39		0.65	31.79		2.26	
444		-----		-----	-----		-----	-----		-----	
445	D5443	28.24		-2.20	32.12		-0.13	31.20		-0.42	
447		-----		-----	-----		-----	-----		-----	
494	ISO22854	29.05	C	0.28	31.44	C	-2.11	31.48	C	0.85	
529		-----		-----	-----		-----	-----		-----	
541		-----		-----	-----		-----	-----		-----	
608		-----		-----	-----		-----	-----		-----	
657	D6839	29.19		0.71	31.38		-2.28	31.35		0.26	
750	D5134	28.82	ex	-0.42	35.60	G(0.05)	9.97	29.76	ex	-6.97	see §4.1
759	INH-52714	30.40		4.41	26.47	G(0.01)	-16.54	33.62	G(0.05)	10.59	
781	INH-52714	29.00		0.13	30.63		-4.46	32.15		3.90	
784		-----		-----	-----		-----	-----		-----	
855	D6839	28.79		-0.52	31.89		-0.80	31.27		-0.10	
862	D6839	28.51		-1.37	32.40		0.68	30.89		-1.83	
868	D6839	28.58		-1.16	31.93		-0.69	31.15		-0.65	
873	INH-52714	29.77	C	2.48	32.67		1.46	28.81	C,G(0.01)	-11.30	
875	INH-52714	29.86		2.76	29.72	G(0.05)	-7.10	31.90		2.77	
912		-----		-----	-----		-----	-----		-----	
962		-----		-----	-----		-----	-----		-----	
963	D6730	29.239		0.86	33.686		4.41	27.305	ex	-18.14	see §4.1
974	D6730	31.70	G(0.05)	8.39	33.09		2.68	27.66	ex	-16.53	see §4.1
982		-----		-----	-----		-----	-----		-----	
994		-----		-----	-----		-----	-----		-----	
995	D6729	32.30	DG(0.05)	10.23	36.68	G(0.01)	13.11	22.62	G(0.05)	-39.46	
1016	ISO22854	28.94		-0.06	31.63		-1.56	31.16		-0.60	
1038	D6839	28.29		-2.05	32.49		0.94	31.10		-0.87	
1062		-----		-----	-----		-----	-----		-----	
1065	D6839	30.24		3.92	35.45	G(0.01)	9.54	26.47	G(0.01)	-21.94	
1066	ISO22854	28.54		-1.28	31.93		-0.69	31.37		0.35	
1067		-----		-----	-----		-----	-----		-----	
1081		-----		-----	-----		-----	-----		-----	
1082		-----		-----	-----		-----	-----		-----	
1107	D6839	27.84		-3.42	32.55		1.11	31.49		0.90	
1108		-----		-----	-----		-----	-----		-----	
1134	D5443	28.955		-0.01	31.950		-0.63	30.945		-1.58	
1145	D6293	27.72		-3.79	31.98		-0.54	31.77		2.17	
1162	D6293	27.58		-4.22	32.31		0.42	31.58		1.31	
1167		-----		-----	-----		-----	-----		-----	
1191	ISO22854	28.87		-0.27	32.35		0.53	30.60		-3.15	
1200	D5443	29.51		1.69	31.27		-2.60	31.16		-0.60	
1201	D6239	28.1		-2.63	31.8		-1.06	31.8		2.31	
1229	ISO22854	29.55		1.81	31.42		-2.17	31.10		-0.87	
1254		-----		-----	-----		-----	-----		-----	
1257		-----		-----	-----		-----	-----		-----	
1264	D6730	29.504		1.67	33.601		4.17	27.615	ex	-16.73	see §4.1
1276	D5134	28.782		-0.54	31.964		-0.59	30.311	ex	-4.47	see §4.1
1284		-----		-----	-----		-----	-----		-----	
1357		-----		-----	-----		-----	-----		-----	
1404	D5443	28.26		-2.14	33.10		2.71	30.54		-3.42	
1429		-----		-----	-----		-----	-----		-----	
1477		-----	*)	-----	-----	*)	-----	23.71	C,G(0.05)	-34.50	
1510		-----		-----	-----		-----	-----		-----	
1556	ISO22854	28.78	C	-0.55	31.94	C	-0.66	31.18		-0.51	
1583	D5134Mod.	30.507		4.74	32.091		-0.22	28.519	ex	-12.62	see §4.1
1584	D5134Mod.	31.902	DG(0.05)	9.01	33.614		4.20	27.039	ex	-19.35	see §4.1
1603		-----		-----	-----		-----	-----		-----	
1616		-----		-----	-----		-----	31.19		-0.47	

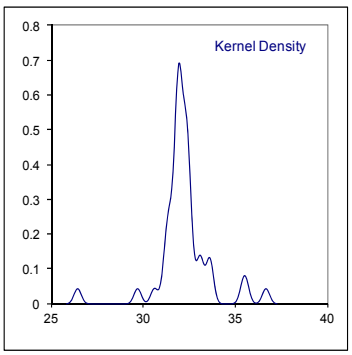
1653		-----	-----	-----	-----	-----		-----	
1656	D5443	28.4	-1.71	32.4	0.68	30.9		-1.78	
1737	in house	28.32	-1.95	31.90	-0.77	31.15		-0.65	
1842		-----	-----	-----	-----	-----		-----	
1854	D5443	28.2	-2.32	32.4	0.68	30.9		-1.78	
1857	D5134Mod.	30.46	4.60	32.30	0.39	28.44	ex	-12.98	see §4.1
1858	D5134	29.7039	2.28	33.1398	2.83	28.2245	ex	-13.96	see §4.1
1950	D5134Mod.	29.689	2.24	32.432	0.77	29.548	ex	-7.94	see §4.1
1951		-----	-----	-----	-----	-----		-----	
9054		-----	-----	-----	-----	-----		-----	
9057		-----	-----	-----	-----	-----		-----	
9058		-----	-----	-----	-----	-----		-----	
9061		-----	-----	-----	-----	-----		-----	
	normality	OK		OK		not OK			
	n	42		41		29			
	outliers	3		5		5			
	mean (n)	28.958		32.166		31.292			
	st.dev. (n)	0.7697		0.6585		0.4004			
	R(calc.)	2.155		1.844		1.121			
	R(D5443:09e1)	0.915		0.964		0.615			

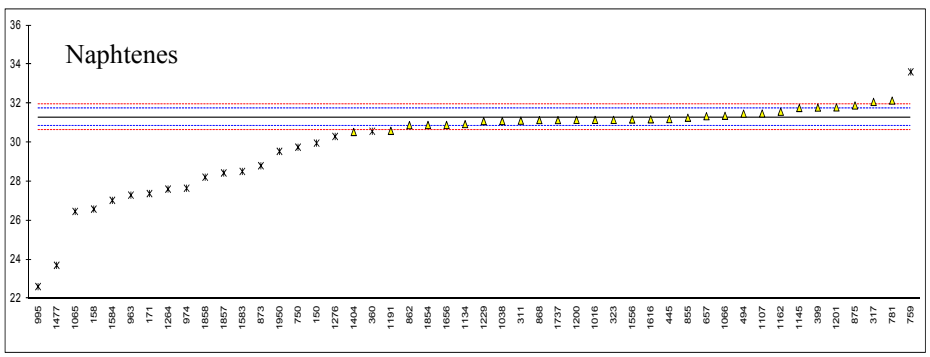
*) lab 1477 reported 68.45 (=sum n- + i-paraffines)
first reported results:
lab 311: napthalenes: 34.13
lab 317: n-paraffines: 27.89, i-paraffines : 31.88, napthalenes: 32.14
lab 494: n-paraffines: 27.00, i-paraffines : 29.74, napthalenes: 33.58
lab 873: n-paraffines: 29.77, napthalenes:28.81
lab 1474: napthalenes: 28.99
lab 1556: n-paraffines: 29.77, i-paraffines : 30.95

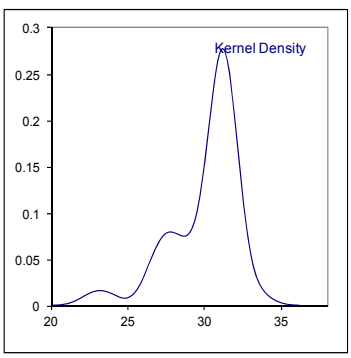












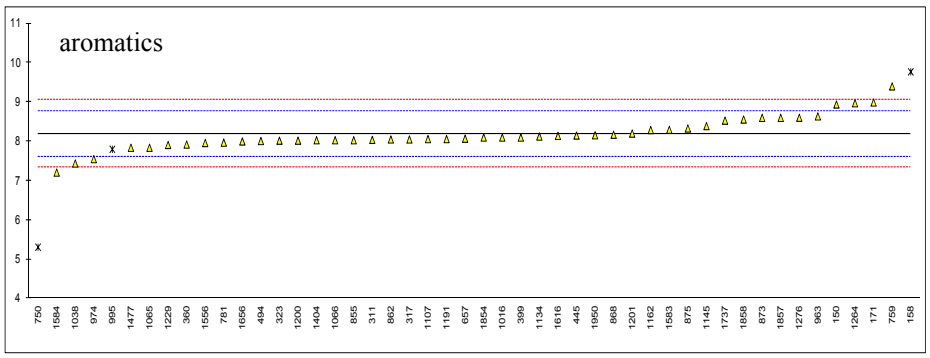
PONA/PIONA/PNA determination on sample #13032; results in %V/V (continued)

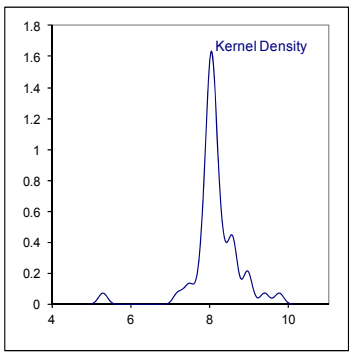
lab	method	Aromat.	Mark	z(targ)	C4&lighters	mark	z(targ)	bp>200	mark	z(targ)	remarks
140		-----		-----	-----		-----	-----		-----	
150	D6729	8.94		2.63	1.521		0.60	-----		-----	
158	D6729	9.77	G(0.05)	5.53	1.29		-2.14	-----		-----	
171	D6729	8.991		2.80	<0.001	false neg?	<-16.89	-----		-----	
225		-----		-----	-----		-----	-----		-----	
237		-----		-----	-----		-----	-----		-----	
238		-----		-----	-----		-----	-----		-----	
311	D5443	8.04		-0.52	1.58		1.30	0.11		-----	
317	D5443	8.05	C	-0.48	0.40	C,DG(0.05)	-12.70	0.02	C	-----	
323	D5443	8.02		-0.59	1.42		-0.60	0.10		-----	
329		-----		-----	-----		-----	-----		-----	
333		-----		-----	-----		-----	-----		-----	
334		-----		-----	-----		-----	-----		-----	
336		-----		-----	-----		-----	-----		-----	
337		-----		-----	-----		-----	-----		-----	
360	D6730	7.921		-0.94	1.462		-0.10	0.106		-----	
371		-----		-----	-----		-----	-----		-----	
399	D5443	8.10		-0.31	-----		-----	0.06		-----	
444		-----		-----	-----		-----	-----		-----	
445	D5443	8.15		-0.13	1.00	DG(0.05)	-5.58	0.20		-----	
447		-----		-----	-----		-----	-----		-----	
494	ISO22854	8.01	C	-0.62	1.52		0.59	-----		-----	
529		-----		-----	-----		-----	-----		-----	
541		-----		-----	-----		-----	-----		-----	
608		-----		-----	-----		-----	-----		-----	
657	D6839	8.07		-0.41	1.43		-0.48	0.10		-----	
750	D5134	5.31	G(0.01)	-10.06	-----		-----	-----		-----	
759	INH-52714	9.40		4.23	1.35		-1.43	-----		-----	
781	INH-52714	7.97		-0.76	1.37		-1.19	-----		-----	
784		-----		-----	-----		-----	-----		-----	
855	D6839	8.03		-0.55	1.49		0.24	-----		-----	
862	D6839	8.05		-0.48	1.48		0.12	-----		-----	
868	D6839	8.17		-0.06	1.53		0.71	0.14		-----	
873	INH-52714	8.60		1.44	-----		-----	-----		-----	
875	INH-52714	8.33		0.49	1.54		0.83	-----		-----	
912		-----		-----	-----		-----	-----		-----	
962		-----		-----	-----		-----	-----		-----	
963	D6730	8.638		1.57	1.445		-0.30	-----		-----	
974	D6730	7.55		-2.23	-----		-----	-----		-----	
982		-----		-----	-----		-----	-----		-----	
994		-----		-----	-----		-----	-----		-----	
995	D6729	7.8	ex	-1.36	-----		-----	-----		-----	
1016	ISO22854	8.10		-0.31	1.44		-0.36	0.08		-----	
1038	D6839	7.44		-2.62	-----		-----	-----		-----	
1062		-----		-----	-----		-----	-----		-----	
1065	D6839	7.84		-1.22	7.74	G(0.01)	74.42	0		-----	
1066	ISO22854	8.03		-0.55	1.3		-2.02	0.12		-----	
1067		-----		-----	-----		-----	-----		-----	
1081		-----		-----	-----		-----	-----		-----	
1082		-----		-----	-----		-----	-----		-----	
1107	D6839	8.06		-0.45	0.56	G(0.01)	-10.80	-----		-----	
1108		-----		-----	-----		-----	-----		-----	
1134	D5443	8.125		-0.22	1.445		-0.30	0.810	G(0.01)	-----	
1145	D6293	8.39		0.70	0.25	DG(0.05)	-14.48	0.14		-----	
1162	D6293	8.29		0.35	0.54	G(0.05)	-11.04	0.24		-----	
1167		-----		-----	-----		-----	-----		-----	
1191	ISO22854	8.06		-0.45	1.13	DG(0.05)	-4.04	0.09		-----	
1200	D5443	8.02		-0.59	1.19		-3.33	0.06		-----	
1201	D6239	8.2	C	0.04	1.2		-3.21	<0.1		-----	
1229	ISO22854	7.91		-0.97	1.55		0.95	0.14		-----	
1254		-----		-----	-----		-----	-----		-----	
1257		-----		-----	-----		-----	-----		-----	
1264	D6730	8.970		2.73	1.510		0.47	0.272		-----	
1276	D5134	8.602		1.44	1.480		0.12	-----		-----	
1284		-----		-----	-----		-----	-----		-----	
1357		-----		-----	-----		-----	-----		-----	
1404	D5443	8.03		-0.55	1.51		0.47	-----		-----	
1429		-----		-----	-----		-----	-----		-----	
1477	D5443	7.84	C	-1.22	-----		-----	-----		-----	
1510		-----		-----	-----		-----	-----		-----	
1556	ISO22854	7.96		-0.80	1.52		0.59	0.12	C	-----	
1583	D5134Mod.	8.297		0.38	1.643		2.05	-----		-----	
1584	D5134Mod.	7.208		-3.43	-----		-----	-----		-----	
1603		-----		-----	-----		-----	-----		-----	
1616	D6839	8.14		-0.17	1.57		1.18	0.09	C	-----	

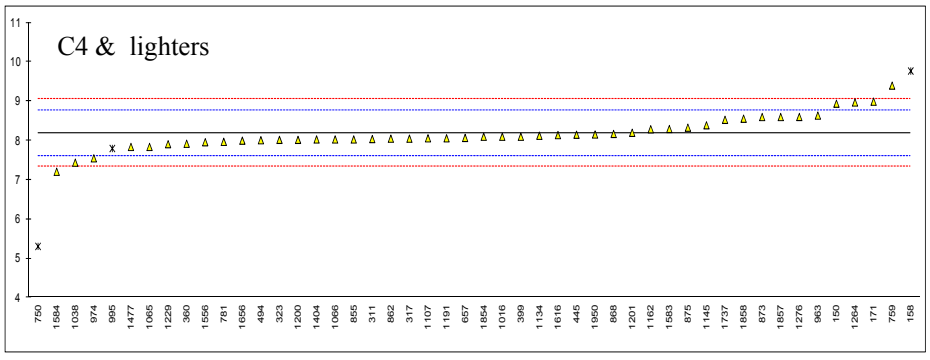
1653		-----	-----	-----		-----	-----	-----
1656	D5443	8.0	-0.66	0.4	G(0.05)	-12.70	0.2	-----
1737	in house	8.53	1.19	1.66		2.25	-----	-----
1842		-----	-----	-----		-----	-----	-----
1854	D5443	8.1	-0.31	1.4		-0.83	-----	-----
1857	D5134Mod.	8.60	1.44	1.405		-0.77	-----	-----
1858	D5134	8.5586	1.29	1.7126		2.88	-----	-----
1950	D5134Mod.	8.156	-0.11	1.612		1.68	-----	-----
1951		-----	-----	-----		-----	-----	-----
9054		-----	-----	-----		-----	-----	-----
9057		-----	-----	-----		-----	-----	-----
9058		-----	-----	-----		-----	-----	-----
9061		-----	-----	-----		-----	-----	-----

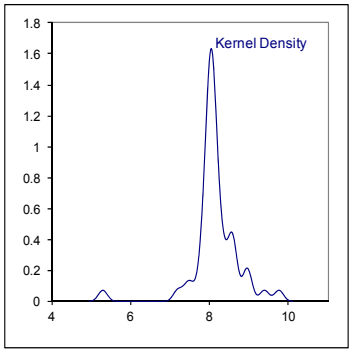
	normality	not OK	OK	OK
	n	45	31	20
	outliers	2	8	1
	mean (n)	8.189	1.470	0.119
	st.dev. (n)	0.4016	0.1219	0.0679
	R(calc.)	1.124	0.341	0.190
	R(D5443:09e1)	0.801	0.236	n.a

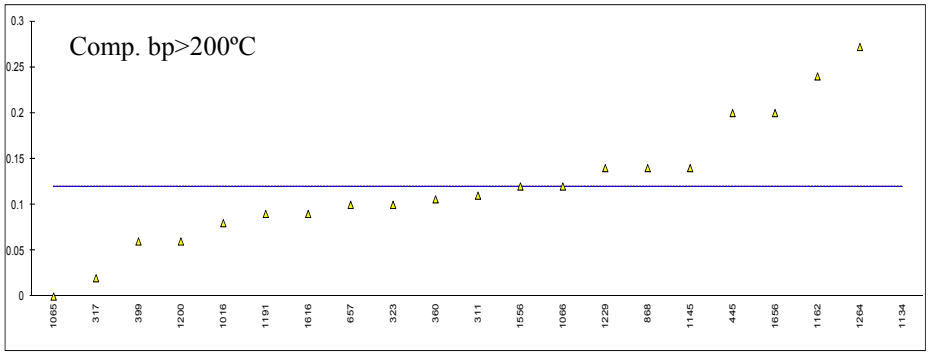
first reported results:
lab 317: aromatics: 8.07, C-lights: 0.23, highers: <0.05
lab 494: aromatics: 9.66
lab 1201: aromatics: 0.1
lab 1477: aromatics: 7.83
lab 1556: highers: 0.42
lab 1616: highers:0.46

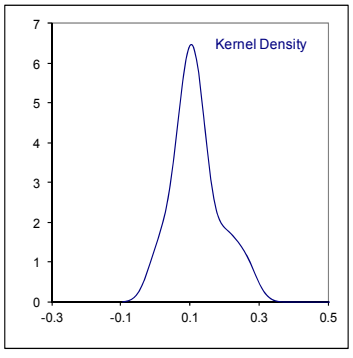












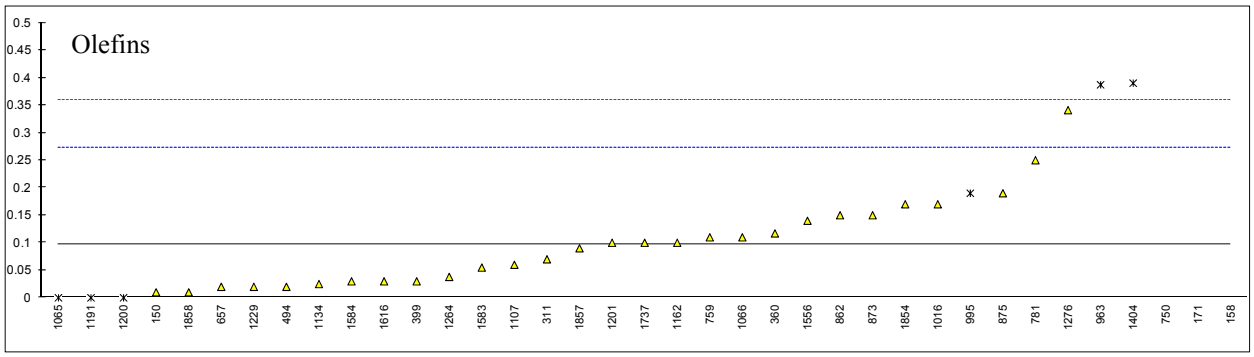
PONA/PIONA/PNA determination on sample #13032; results in %V/V (continued)

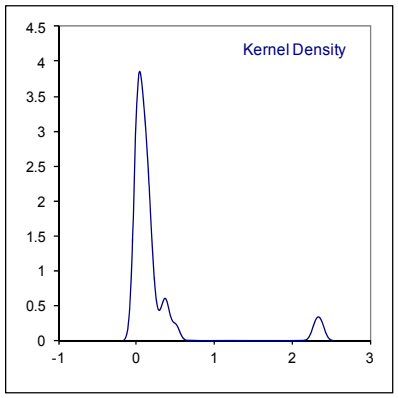
lab	method	Olefins	mark	z(targ)	remarks
140		-----		-----	
150	D6729	0.01		-0.99	
158	D6729	2.37	G(0.01)	25.90	
171	D6729	2.300	G(0.01)	25.10	
225		-----		-----	
237		-----		-----	
238		-----		-----	
311	D5443Mod.	0.07		-0.30	
317	D6839	<0.10	C	-----	first reported: <0.05
323	D5443	<0.10		-----	
329		-----		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
360	D6730	0.117		0.23	
371		-----		-----	
399	D5453	0.03		-0.76	
444		-----		-----	
445	D5443	<0.05		-----	
447		-----		-----	
494	ISO22854	0.02		-0.87	
529		-----		-----	
541		-----		-----	
608		-----		-----	
657	D6839	0.02		-0.87	
750	D5134	0.51	G(0.05)	4.71	
759	INH-52714	0.11		0.15	
781	INH-52714	0.25		1.75	
784		-----		-----	
855	D6839	<0.1		-----	
862	D6839	0.15		0.61	
868	D6839	<0.1		-----	
873	INH-52714	0.15		0.61	
875	INH-52714	0.19		1.06	
912		-----		-----	
962		-----		-----	
963	D6730	0.387	DG(0.05)	3.31	
974	D6730	<0.01		-----	
982		-----		-----	
994		-----		-----	
995	D6729	0.19	ex	1.06	result excluded, see §4.1
1016	ISO22854	0.17		0.84	
1038		-----		-----	
1062		-----		-----	
1065	D6839	0.00	ex	-1.10	result excluded, zero is not a real value
1066	ISO22854	0.11		0.15	
1067		-----		-----	
1081		-----		-----	
1082		-----		-----	
1107	D6839	0.06		-0.42	
1108		-----		-----	
1134	D5443	0.025		-0.82	
1145	D6293	n.d.		-----	
1162	D6293	0.10		0.04	
1167		-----		-----	
1191	ISO22854	0	ex	-1.10	result excluded, zero is not a real value
1200	D5443	0.00	ex	-1.10	result excluded, zero is not a real value
1201	D6239	0.1	C	0.04	first reported: 8.2
1229	ISO22854	0.02		-0.87	
1254		-----		-----	
1257		-----		-----	
1264	D6730	0.038		-0.67	
1276	D5134	0.341		2.78	
1284		-----		-----	
1357		-----		-----	
1404	in house	0.39	DG(0.05)	3.34	
1429		-----		-----	
1477		-----		-----	
1510		-----		-----	
1556	ISO22854	0.14		0.49	
1583	D5134Mod.	0.055		-0.47	
1584	D5134Mod.	0.03		-0.76	
1603		-----		-----	
1616	D6839	0.03		-0.76	

1653		-----	-----
1656	D5443	<0.1	-----
1737	in house	0.10	0.04
1842		-----	-----
1854	D5443	0.17	0.84
1857	D5134Mod.	0.09	-0.08
1858	D5134	0.0100	-0.99
1950	D5134Mod.	<0.01	-----
1951		-----	-----
9054		-----	-----
9057		-----	-----
9058		-----	-----
9061		-----	-----

normality	OK
n	28
outliers	5
mean (n)	0.097
st.dev. (n)	0.0792
R(calc.)	0.222
R(D6839:07)	0.246

Compare R(D6293:03e1) = 0.045



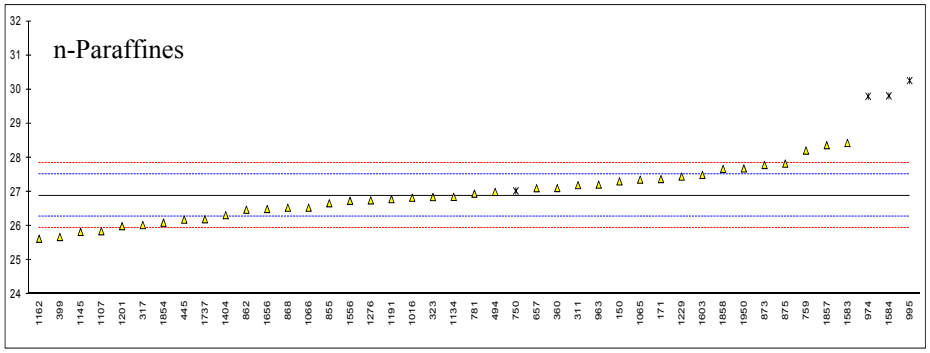


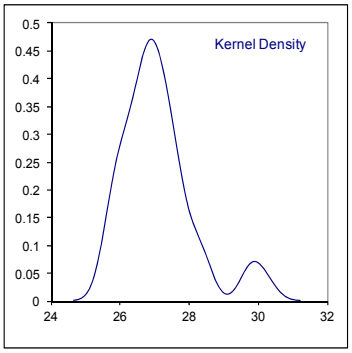
PONA/PIONA/PNA determination on sample #13032; results in %M/M

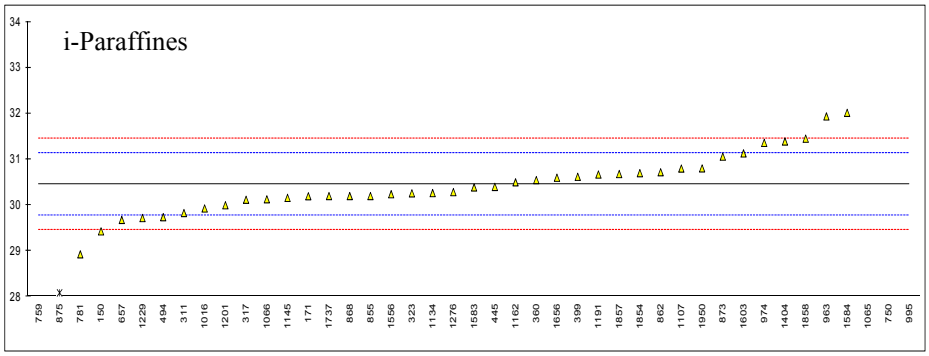
lab	method	n-paraf	mark	z(targ)	i-paraf	mark	z(targ)	Naphth.	mark	z(targ)	Remarks
140		-----		-----	-----		-----	-----		-----	
150	D6729	27.31		1.31	29.43		-3.06	31.96	ex	-6.35	see, §4.1
158		-----		-----	-----		-----	-----		-----	
171	D6729	27.376		1.52	30.196		-0.77	29.212	ex	-18.45	see, §4.1
225		-----		-----	-----		-----	-----		-----	
237		-----		-----	-----		-----	-----		-----	
238		-----		-----	-----		-----	-----		-----	
311	D5443Mod.	27.20		0.96	29.83		-1.87	33.27	C	-0.58	
317	D5443	26.03	C	-2.75	30.12	C	-1.00	34.15	C	3.30	
323	D5443	26.85		-0.15	30.26		-0.58	33.23		-0.75	
329		-----		-----	-----		-----	-----		-----	
333		-----		-----	-----		-----	-----		-----	
334		-----		-----	-----		-----	-----		-----	
336		-----		-----	-----		-----	-----		-----	
337		-----		-----	-----		-----	-----		-----	
360	D6730	27.115		0.69	30.549		0.28	32.655	ex	-3.28	see, §4.1
371		-----		-----	-----		-----	-----		-----	
399	D5443	25.68		-3.86	30.62		0.49	33.88		2.11	
444		-----		-----	-----		-----	-----		-----	
445	D5443	26.19		-2.24	30.40		-0.16	33.28		-0.53	
447		-----		-----	-----		-----	-----		-----	
494	ISO22854	27.00	C	0.33	29.74	C	-2.13	33.58	C	0.79	
529		-----		-----	-----		-----	-----		-----	
541		-----		-----	-----		-----	-----		-----	
608		-----		-----	-----		-----	-----		-----	
657	D6839	27.11		0.68	29.68		-2.31	33.49		0.39	
750	D5134	27.03	ex	0.42	34.45	G(0.01)	11.92	31.54	ex	-8.20	see, §4.1
759	INH-52714	28.21		4.17	24.71	G(0.01)	-17.15	35.69	G(0.01)	10.08	
781	INH-52714	26.95		0.17	28.93		-4.55	34.25		3.74	
784		-----		-----	-----		-----	-----		-----	
855	D6839	26.67		-0.72	30.20		-0.76	33.45		0.22	
862	D6839	26.48		-1.32	30.72		0.79	32.94		-2.03	
868	D6839	26.54		-1.13	30.20		-0.76	33.25		-0.66	
873	INH-52714	27.79	C	2.84	31.06		1.81	30.43	C,G(0.01)	-13.08	
875	INH-52714	27.83		2.96	28.09	G(0.05)	-7.06	33.81		1.80	
912		-----		-----	-----		-----	-----		-----	
962		-----		-----	-----		-----	-----		-----	
963	D6730	27.214		1.01	31.937		4.42	29.218	ex	-18.42	see, §4.1
974	D6730	29.80	G(0.05)	9.22	31.36		2.70	29.65	ex	-16.52	see, §4.1
982		-----		-----	-----		-----	-----		-----	
994		-----		-----	-----		-----	-----		-----	
995	D6729	30.26	DG(0.05)	10.68	35.32	G(0.01)	14.52	24.60	G(0.05)	-38.76	
1016	ISO22854	26.83		-0.21	29.93		-1.57	33.31		-0.40	
1038		-----		-----	-----		-----	-----		-----	
1062		-----		-----	-----		-----	-----		-----	
1065	D6839	27.36		1.47	34.37	G(0.01)	11.68	28.68	G(0.01)	-20.79	
1066	ISO22854	26.54		-1.13	30.13		-0.97	33.42		0.08	
1067		-----		-----	-----		-----	-----		-----	
1081		-----		-----	-----		-----	-----		-----	
1082		-----		-----	-----		-----	-----		-----	
1107	D6839	25.85		-3.32	30.80		1.03	33.61		0.92	
1108		-----		-----	-----		-----	-----		-----	
1134	D5443	26.855		-0.13	30.265		-0.57	33.080		-1.41	
1145	D6293	25.83		-3.39	30.16		-0.88	33.75		1.54	
1162	D6293	25.63		-4.02	30.50		0.13	33.66		1.14	
1167		-----		-----	-----		-----	-----		-----	
1191	ISO22854	26.79		-0.34	30.67		0.64	32.72		-3.00	
1200		-----		-----	-----		-----	-----		-----	
1201	D6239	26.0		-2.85	30.0		-1.36	34.0		2.64	
1229	ISO22854	27.45		1.76	29.72		-2.19	33.28		-0.53	
1254		-----		-----	-----		-----	-----		-----	
1257		-----		-----	-----		-----	-----		-----	
1264		-----		-----	-----		-----	-----		-----	
1276	D5134	26.754		-0.45	30.286		-0.50	32.345	ex	-4.65	see, §4.1
1284		-----		-----	-----		-----	-----		-----	
1357		-----		-----	-----		-----	-----		-----	
1404	D5443	26.32		-1.83	31.39		2.79	32.57		-3.66	
1429		-----		-----	-----		-----	-----		-----	
1477		-----	C	-----	-----	C	-----	25.56	C,G(0.01)	-34.53	
1510		-----		-----	-----		-----	-----		-----	
1556	ISO22854	26.74	C	-0.50	30.24	C	-0.64	33.29		-0.49	
1583	D5134Mod.	28.433		4.88	30.388		-0.20	30.494	ex	-12.80	see, §4.1
1584	D5134Mod.	29.812	DG(0.05)	9.26	32.014		4.65	29.139	ex	-18.77	see, §4.1
1603	in house	27.50		1.92	31.13		2.01	30.40	G(0.05)	-13.22	
1616		-----		-----	-----		-----	33.33		-0.31	

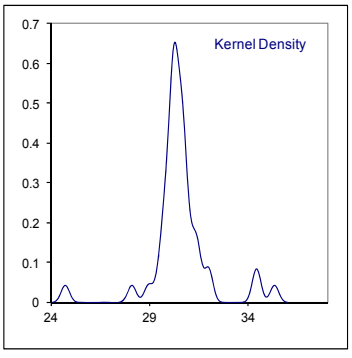
1653		-----	-----	-----	-----	-----		-----	
1656	D5443	26.5	-1.26	30.6	0.43	33.0		-1.77	
1737	in house	26.20	-2.21	30.20	-0.76	33.22		-0.80	
1842		-----	-----	-----	-----	-----		-----	
1854	D5443	26.1	-2.53	30.7	0.73	33.0		-1.77	
1857	D5134Mod.	28.37	4.68	30.68	0.67	30.38	ex	-13.30	see, §4.1
1858	D5134	27.6745	2.47	31.4513	2.97	30.1237	ex	-14.43	see, §4.1
1950	D5134Mod.	27.688	2.51	30.804	1.04	31.457	ex	-8.56	see, §4.1
1951		-----	-----	-----	-----	-----		-----	
9054		-----	-----	-----	-----	-----		-----	
9057		-----	-----	-----	-----	-----		-----	
9058		-----	-----	-----	-----	-----		-----	
9061		-----	-----	-----	-----	-----		-----	
	normality	OK		OK		OK			
	n	39		38		27			
	outliers	3		5		6			
	mean (n)	26.896		30.455		33.401			
	st.dev. (n)	0.7303		0.6428		0.4048			
	R(calc.)	2.045		1.800		1.134			
	R(D5443:09e1)	0.882		0.938		0.636			

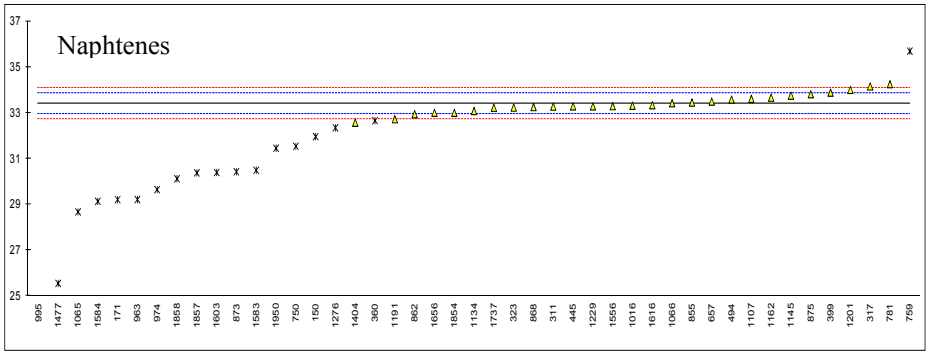
*) lab 1477 reported 64.90 (=sum n- + i-paraffines)
first reported results:
lab 311: napthalenes: 36.55
lab 317: n-paraffines: 26.01, i-paraffines : 30.07, napthalenes: 34.20
lab 494: n-paraffines: 29.05, i-paraffines : 31.44, napthalenes: 31.48
lab 873: n-paraffines: 29.79, napthalenes: 30.13
lab 1477: n-paraffines: 59.39, i-paraffines : 59.39, napthalenes: 31.13
lab 1556: n-paraffines: 27.75, i-paraffines : 29.23

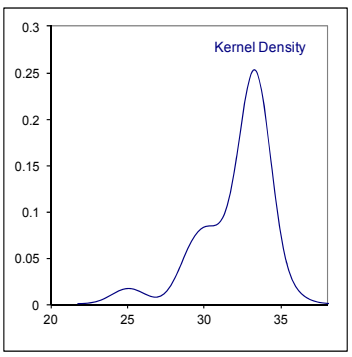












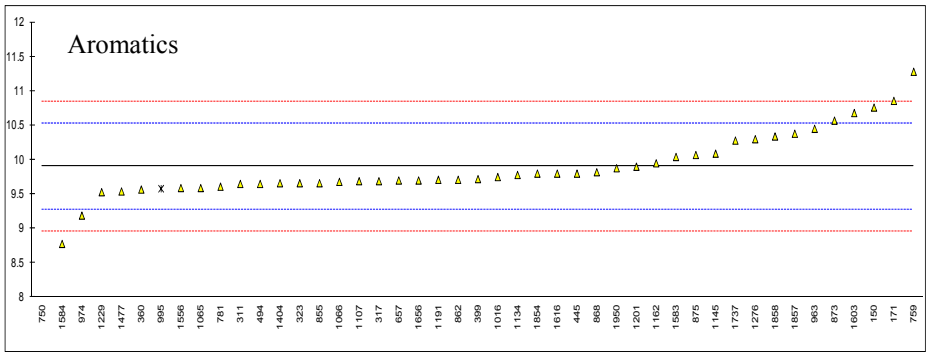
PONA/PIONA/PNA determination on sample #13032; results in %M/M (continued)

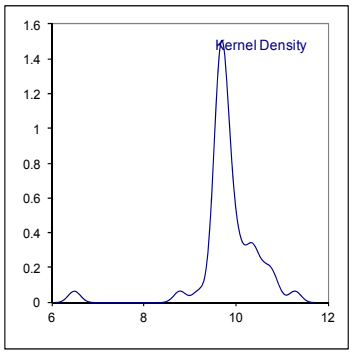
lab	method	Aromat.	Mark	z(targ)	C4& lighters	mark	z(targ)	bp>200	mark	z(targ)	remarks
140		-----		-----	-----		-----	-----		-----	
150	D6729	10.76		2.72	1.209		0.33	-----		-----	
158		-----		-----	-----		-----	-----		-----	
171	D6729	10.857		3.03	<0.001	false neg?	<-16.30	-----		-----	
225		-----		-----	-----		-----	-----		-----	
237		-----		-----	-----		-----	-----		-----	
238		-----		-----	-----		-----	-----		-----	
311	D5443	9.65		-0.81	1.24		0.77	0.13		-----	
317	D5443	9.69	C	-0.68	0.32	CG(0.05)	-12.34	0.02		-----	
323	D5443	9.66		-0.77	1.14		-0.66	0.10		-----	
329		-----		-----	-----		-----	-----		-----	
333		-----		-----	-----		-----	-----		-----	
334		-----		-----	-----		-----	-----		-----	
336		-----		-----	-----		-----	-----		-----	
337		-----		-----	-----		-----	-----		-----	
360	D6730	9.568		-1.07	1.166		-0.28	0.120		-----	
371		-----		-----	-----		-----	-----		-----	
399	D5443	9.72		-0.58	-----		-----	0.07		-----	
444		-----		-----	-----		-----	-----		-----	
445	D5443	9.80		-0.33	0.79	G(0.01)	-5.64	0.14		-----	
447		-----		-----	-----		-----	-----		-----	
494	ISO22854	9.65	C	-0.81	1.23		0.63	-----		-----	
529		-----		-----	-----		-----	-----		-----	
541		-----		-----	-----		-----	-----		-----	
608		-----		-----	-----		-----	-----		-----	
657	D6839	9.70		-0.65	1.13		-0.80	0.10		-----	
750	D5134	6.48	G(0.01)	-10.88	-----		-----	-----		-----	
759	INH-52714	11.28		4.37	1.07		-1.65	-----		-----	
781	INH-52714	9.61		-0.93	1.10		-1.23	-----		-----	
784		-----		-----	-----		-----	-----		-----	
855	D6839	9.66		-0.77	1.18		-0.09	-----		-----	
862	D6839	9.71		-0.62	1.19		0.06	-----		-----	
868	D6839	9.82		-0.27	1.20		0.20	0.17		-----	
873	INH-52714	10.57		2.12	-----		-----	-----		-----	
875	INH-52714	10.07		0.53	1.22		0.48	-----		-----	
912		-----		-----	-----		-----	-----		-----	
962		-----		-----	-----		-----	-----		-----	
963	D6730	10.451		1.74	1.162		-0.34	-----		-----	
974	D6730	9.19		-2.27	-----		-----	-----		-----	
982		-----		-----	-----		-----	-----		-----	
994		-----		-----	-----		-----	-----		-----	
995	D6729	9.58	ex	-1.03	-----		-----	-----		-----	
1016	ISO22854	9.75		-0.49	1.14		-0.66	0.09		-----	
1038		-----		-----	-----		-----	-----		-----	
1062		-----		-----	-----		-----	-----		-----	
1065	D6839	9.59		-1.00	6.31	G(0.01)	73.00	0		-----	
1066	ISO22854	9.68		-0.71	1.05		-1.94	0.13		-----	
1067		-----		-----	-----		-----	-----		-----	
1081		-----		-----	-----		-----	-----		-----	
1082		-----		-----	-----		-----	-----		-----	
1107	D6839	9.69		-0.68	0.44	G(0.01)	-10.63	-----		-----	
1108		-----		-----	-----		-----	-----		-----	
1134	D5443	9.780		-0.39	1.145		-0.58	0.850	G(0.01)	-----	
1145	D6293	10.09		0.59	0.20	DG(0.05)	-14.05	0.17		-----	
1162	D6293	9.95		0.15	0.42	G(0.01)	-10.91	0.28		-----	
1167		-----		-----	-----		-----	-----		-----	
1191	ISO22854	9.71		-0.62	-----		-----	0.11		-----	
1200		-----		-----	-----		-----	-----		-----	
1201	D6239	9.9	C	-0.01	1.0		-2.65	<0.1		-----	
1229	ISO22854	9.53		-1.19	-----		-----	0.16		-----	
1254		-----		-----	-----		-----	-----		-----	
1257		-----		-----	-----		-----	-----		-----	
1264		-----		-----	-----		-----	-----		-----	
1276	D5134	10.300		1.26	1.186		0.00	-----		-----	
1284		-----		-----	-----		-----	-----		-----	
1357		-----		-----	-----		-----	-----		-----	
1404	D5443	9.66		-0.77	1.20		0.20	-----		-----	
1429		-----		-----	-----		-----	-----		-----	
1477	D5443	9.54	C	-1.16	-----		-----	-----		-----	
1510		-----		-----	-----		-----	-----		-----	
1556	ISO22854	9.59		-1.00	1.22		0.48	0.13	C	-----	
1583	D5134Mod.	10.042		0.44	1.313		1.81	-----		-----	
1584	D5134Mod.	8.778		-3.58	-----		-----	-----		-----	
1603	in house	10.68		2.47	1.19		0.06	0.30		-----	
1616	D6839	9.80		-0.33	1.24		0.77	0.10	C	-----	

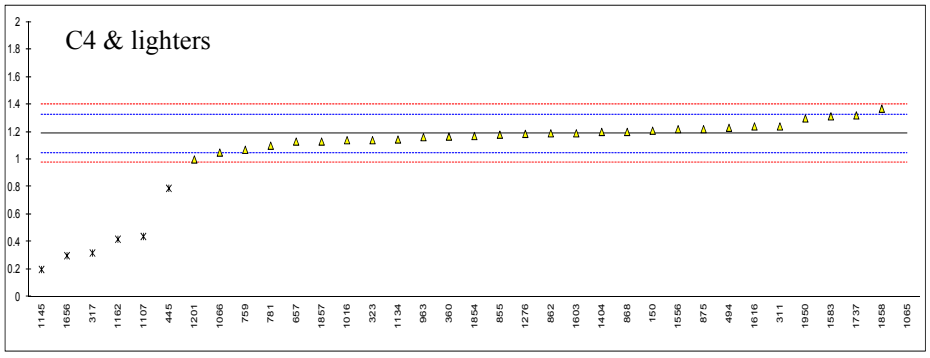
1653		-----	-----	-----		-----	-----	-----
1656	D5443	9.7	-0.65	0.3	DG(0.05)	-12.62	0.2	-----
1737	in house	10.28	1.20	1.32		1.91	-----	-----
1842		-----	-----	-----		-----	-----	-----
1854	D5443	9.8	-0.33	1.17		-0.23	-----	-----
1857	D5134Mod.	10.38	1.51	1.13		-0.80	-----	-----
1858	D5134	10.3397	1.39	1.3687		2.60	-----	-----
1950	D5134Mod.	9.878	-0.08	1.298		1.60	-----	-----
1951		-----	-----	-----		-----	-----	-----
9054		-----	-----	-----		-----	-----	-----
9057		-----	-----	-----		-----	-----	-----
9058		-----	-----	-----		-----	-----	-----
9061		-----	-----	-----		-----	-----	-----

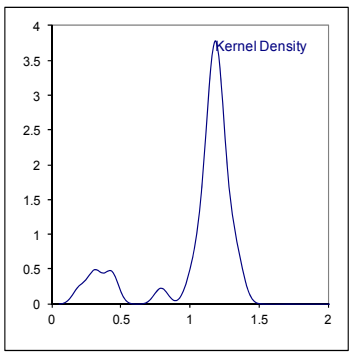
normality	not OK	OK	OK
n	43	28	19
outliers	1	7	1
mean (n)	9.904	1.186	0.133
st.dev. (n)	0.4589	0.0813	0.0737
R(calc.)	1.285	0.228	0.206
R(D5443:09e1)	0.881	0.197	n.a

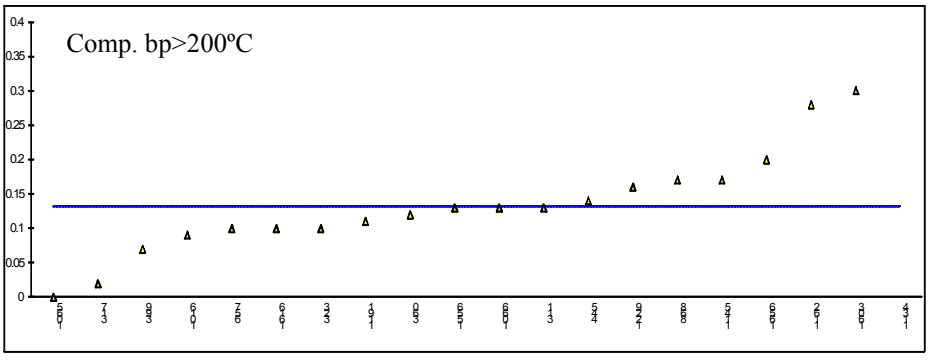
first reported results:
lab 317: aromatics: 9.70, i-paraffines : 0.18, highers: <0.05
lab 494: aromatics: 8.01
lab 1201: aromatics: 0.1
lab 1477: aromatics: 9.49
lab 1556: highers: 0.52
lab 1616: highers:0.53

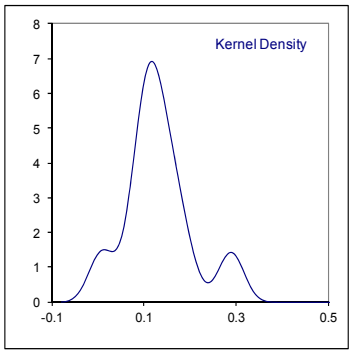












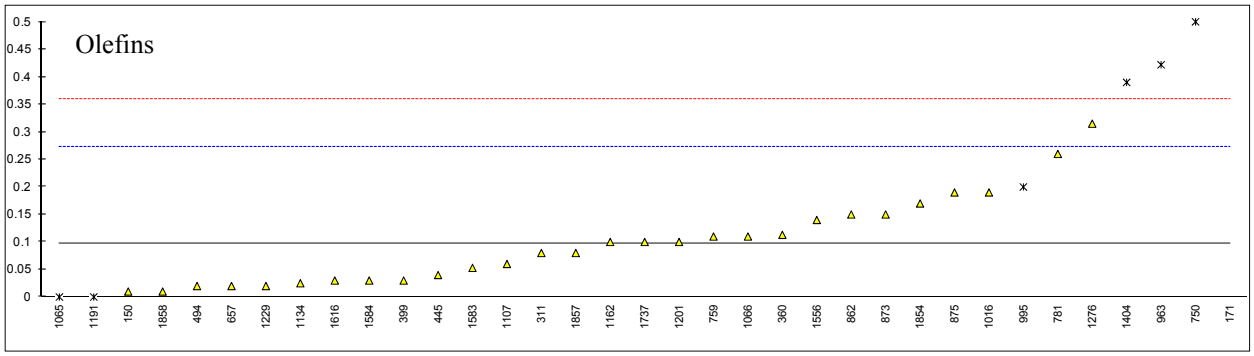
PONA/PIONA/PNA determination on sample #13032; results in %M/M (continued)

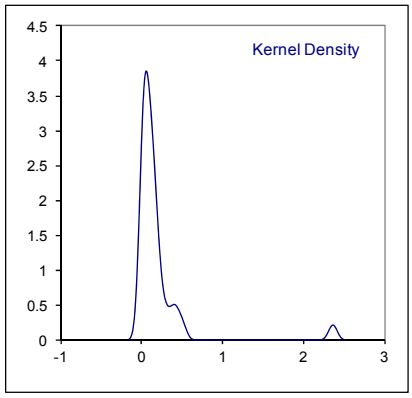
lab	method	Olefins	mark	z(targ)	Remarks
140		-----		-----	
150	D6729	0.01		-0.99	
158		-----		-----	
171	D6729	2.360	G(0.01)	25.79	
225		-----		-----	
237		-----		-----	
238		-----		-----	
311	D5443Mod.	0.08		-0.19	
317	D6839	<0.1	C	-----	first reported: <0.05
323	D5443	<0.10		-----	
329		-----		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
360	D6730	0.113		0.19	
371		-----		-----	
399	D5443	0.03		-0.76	
444		-----		-----	
445	D5443	0.04		-0.65	
447		-----		-----	
494	ISO22854	0.02		-0.87	
529		-----		-----	
541		-----		-----	
608		-----		-----	
657	D6839	0.02		-0.87	
750	D5134	0.50	DG(0.01)	4.60	
759	INH-52714	0.11		0.15	
781	INH-52714	0.26		1.86	
784		-----		-----	
855	D6839	<0.1		-----	
862	D6839	0.15		0.61	
868	D6839	<0.1		-----	
873	INH-52714	0.15		0.61	
875	INH-52714	0.19		1.06	
912		-----		-----	
962		-----		-----	
963	D6730	0.422	DG(0.01)	3.71	
974	D6730	<0.01		-----	
982		-----		-----	
994		-----		-----	
995	D6729	0.20	ex	1.18	see §4.1
1016	ISO22854	0.19		1.06	
1038		-----		-----	
1062		-----		-----	
1065	D6839	0.00	ex	-1.10	result excluded, zero is not a real value
1066	ISO22854	0.11		0.15	
1067		-----		-----	
1081		-----		-----	
1082		-----		-----	
1107	D6839	0.06		-0.42	
1108		-----		-----	
1134	D5443	0.025		-0.82	
1145	D6293	n.d.		-----	
1162	D6293	0.10		0.04	
1167		-----		-----	
1191	ISO22854	0	ex	-1.10	result excluded, zero is not a real value
1200		-----		-----	
1201	D6239	0.1	C	0.04	first reported: 9.9
1229	ISO22854	0.02		-0.87	
1254		-----		-----	
1257		-----		-----	
1264		-----		-----	
1276	D5134	0.315		2.49	
1284		-----		-----	
1357		-----		-----	
1404	in house	0.39	G(0.05)	3.34	
1429		-----		-----	
1477		-----		-----	
1510		-----		-----	
1556	ISO22854	0.14		0.49	
1583	D5134Mod.	0.053		-0.50	
1584	D5134Mod.	0.03		-0.76	
1603		-----		-----	
1616	D6839	0.03		-0.76	

1653		-----	-----
1656	D5443	<0.1	-----
1737	in house	0.10	0.04
1842		-----	-----
1854	D5443	0.17	0.84
1857	D5134Mod.	0.08	-0.19
1858	D5134	0.0100	-0.99
1950	D5134Mod.	<0.01	-----
1951		-----	-----
9054		-----	-----
9057		-----	-----
9058		-----	-----
9061		-----	-----

normality	OK
n	28
outliers	4
mean (n)	0.097
st.dev. (n)	0.0778
R(calc.)	0.218
R(D6839:07)	0.246

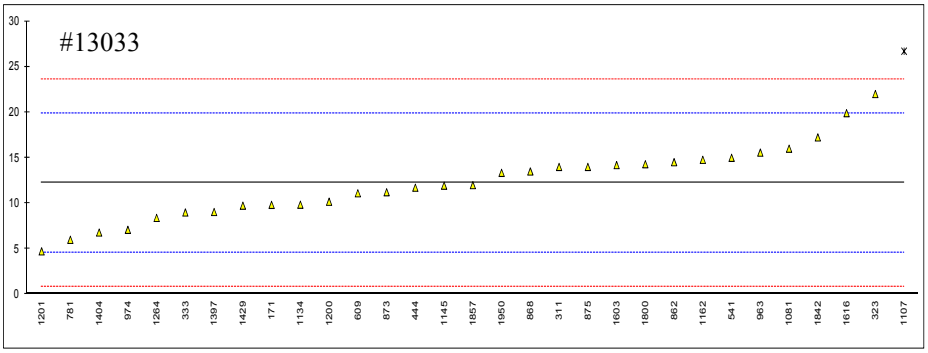
Compare R(D6293:03e1) = 0.045

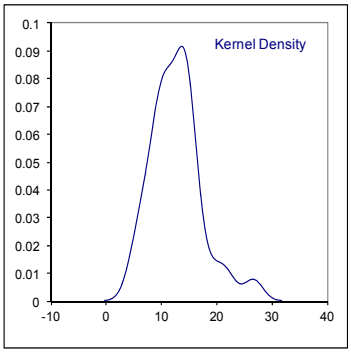


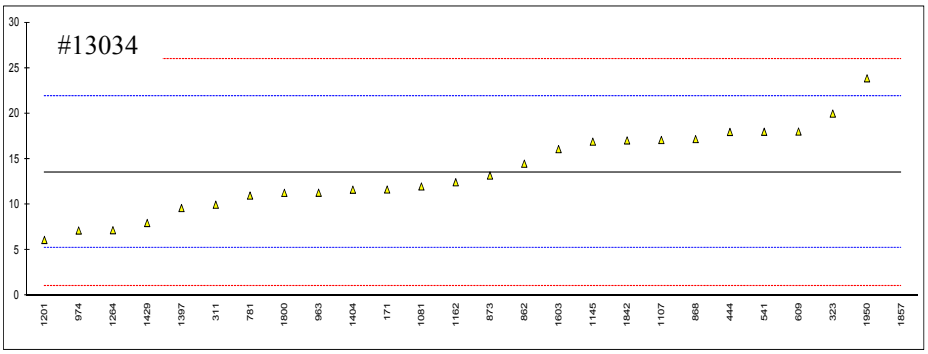


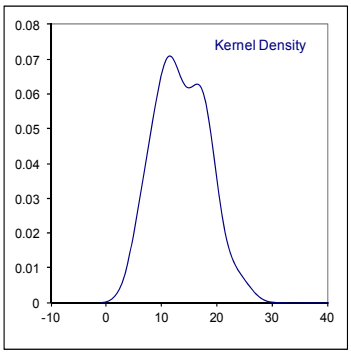
Determination of Mercury content as Hg on sample #13033 and #13034; results in µg/kg

lab	method	#13033	mark	z(targ)	#13034	mark	z(targ)	remarks
150		-----		-----	-----		-----	
171	UOP938	9.8355		-0.63	11.6670		-0.46	
311	UOP938	14		0.46	10		-0.86	
317		-----		-----	-----		-----	
323	UOP938	22		2.57	20		1.55	
333	UOP779	9		-0.85	-----		-----	
360		-----		-----	-----		-----	
444	UOP938	11.72		-0.14	17.99		1.06	
541	INH-244	15		0.73	18		1.07	
609	UOP938	11.107		-0.30	18.028		1.07	
657		-----		-----	-----		-----	
781	INH-001	6		-1.64	11		-0.62	
855		-----		-----	-----		-----	
862	UOP938	14.52		0.60	14.50		0.22	
868	UOP938	13.5		0.33	17.2		0.87	
873	UOP938	11.22		-0.27	13.20		-0.09	
875	INH-01	14		0.46	-----		-----	
912		-----		-----	-----		-----	
963	UOP938	15.57		0.88	11.31		-0.55	
974	UOP938	7.09		-1.35	7.16		-1.55	
1067		-----		-----	-----		-----	
1081	in house	16		0.99	12		-0.38	
1107	in house	26.7	G(0.05)	3.81	17.1		0.85	
1134	in house	9.85		-0.63	-----		-----	
1145	UOP938	11.94		-0.08	16.92		0.81	
1162	in house	14.78		0.67	12.46		-0.27	
1200	UOP938	10.1806		-0.54	-----		-----	
1201	in house	4.73		-1.98	6.13		-1.79	
1264	in house	8.40		-1.01	7.20		-1.54	
1357		-----		-----	-----		-----	
1397	in house	9.05		-0.84	9.63		-0.95	
1404	UOP938	6.80		-1.43	11.64		-0.47	
1429	INH-02	9.75		-0.65	7.99		-1.35	
1603	in house	14.2		0.52	16.1		0.61	
1616	in house	19.9		2.02	-----		-----	
1653		-----		-----	-----		-----	
1800	D7623Mod.	14.3		0.54	11.3		-0.55	
1842	UOP938	17.242		1.32	17.052		0.84	
1857	INH-116	12		-0.06	50	G(0.01)	8.78	
1858		-----		-----	-----		-----	
1950	UOP938Mod.	13.35		0.29	23.87		2.48	
1951		-----		-----	-----		-----	
9055		-----		-----	-----		-----	
9057	in house	<32		-----	<32		-----	
9061		-----		-----	-----		-----	
	normality	OK	Spike		OK	Spike		
	n	30			25			
	outliers	1			1			
	mean (n)	12.235	20.4		13.578	30.9		
	st.dev. (n)	3.9484			4.5055			
	R(calc.)	11.055			12.615			
	R(Horwitz)	10.634			11.618			Compare R(UOP938:10-B) = 1.15/1.28


#13033
x
30
25
20
15
10
5
0
1201 781 1404 974 1264 333 1397 1429 171 1134 1200 609 873 444 1145 1857 1950 868 311 875 1603 1800 862 1162 541 963 1081 1842 1616 323 1107


Kernel Density
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
-10 0 10 20 30 40


#13034
30
25
20
15
10
5
0
1201 974 1264 1429 1397 311 781 1800 963 1404 171 1081 1162 873 862 1603 1145 1842 1107 868 444 541 609 323 1950 1857

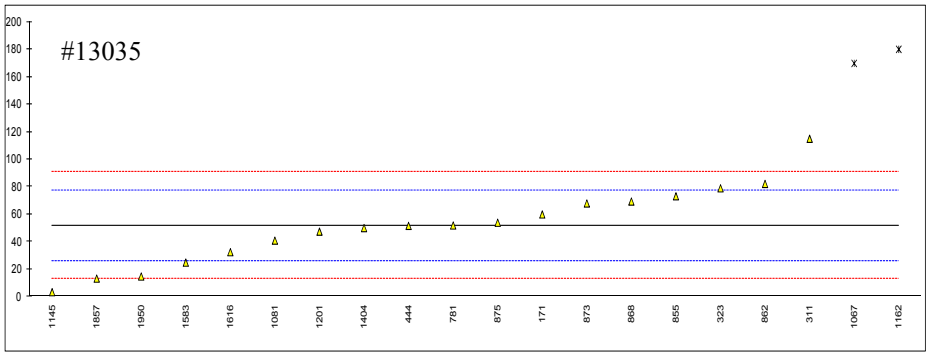

Kernel Density
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
-10 0 10 20 30 40

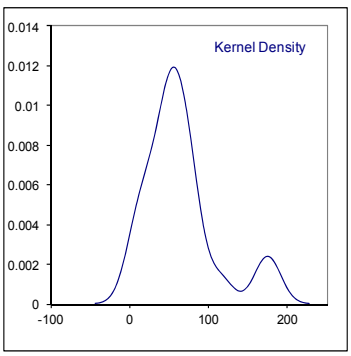
Determinations of Arsenic content as As on sample #13035 and #13036; results in µg/kg

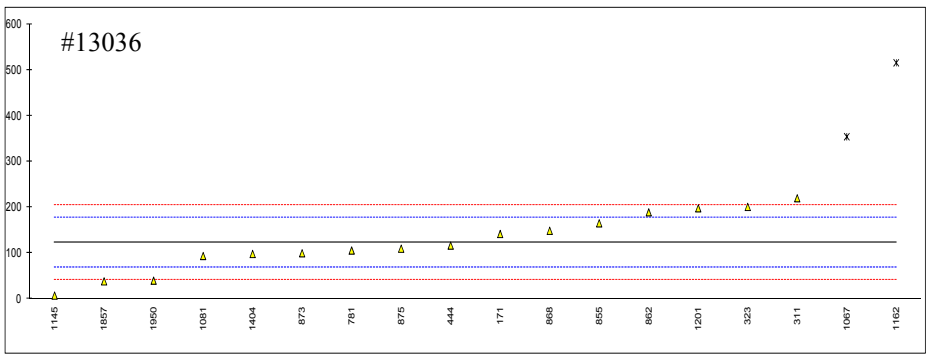
lab	Method	#13035	mark	z(targ)	#13036	mark	z(targ)	remarks
150		-----		-----	-----		-----	
171	INH-014	<5		-----	<5		-----	
311	INH-006	<10		-----	<10		-----	
323	INH-018	<10		-----	<10		-----	
360		-----		-----	-----		-----	
444		-----		-----	-----		-----	
445	INH-024	1.1		-----	5.8		-----	
541		-----		-----	-----		-----	
609		-----		-----	-----		-----	
781		-----		-----	-----		-----	
855	in house	<10		-----	<10		-----	
862	in house	<10		-----	<10		-----	
868		-----		-----	-----		-----	
873		-----		-----	-----		-----	
875		-----		-----	-----		-----	
912		-----		-----	-----		-----	
963		-----		-----	-----		-----	
1067		-----		-----	-----		-----	
1081	in house	<10		-----	<10		-----	
1134		-----		-----	-----		-----	
1145	INH-9312	0.952		-----	1.827		-----	
1162	in house	0.88		-----	2.26		-----	
1201		-----		-----	-----		-----	
1357		-----		-----	-----		-----	
1404		-----		-----	-----		-----	
1583		-----		-----	-----		-----	
1616		-----		-----	-----		-----	
1653		-----		-----	-----		-----	
1842		-----		-----	-----		-----	
1857		-----		-----	-----		-----	
1858		-----		-----	-----		-----	
1950		-----		-----	-----		-----	
	normality	n.a	Spike		n.a	Spike		
	n	9			9			
	outliers	n.a			0			
	mean (n)	<10	39.4		<10	119.8		
	st.dev. (n)	n.a			n.a			
	R(calc.)	n.a			n.a			
	R(Horwitz)	n.a			n.a			

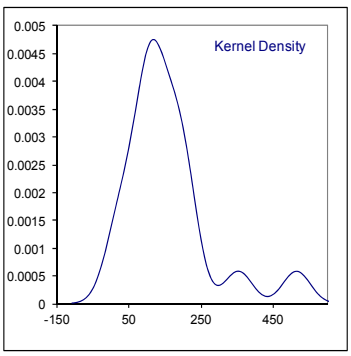
Determinations of Lead content as Pb on sample #13035 and #13036; results in µg/kg

lab	Method	#13035	mark	z(targ)	#13036	mark	z(targ)	remarks
150		-----		-----	-----		-----	
171	INH-014	60		0.63	142		0.68	
311	INH-003	115		4.88	220		3.56	
323	INH-002	79		2.10	201		2.86	
360		-----		-----	-----		-----	
444	UOP952	51.71		-0.01	116.69		-0.25	
445		-----		-----	-----		-----	
541	D3237	<3500		-----	<3500		-----	
609		-----		-----	-----		-----	
781	UOP952	52		0.02	106		-0.65	
855	INH-242	73.2		1.65	165.3		1.54	
862	UOP952	82.2		2.35	189.3		2.43	
868	UOP952	69.4		1.36	149.0		0.94	
873	UOP952	68		1.25	100		-0.87	
875	UOP952	54		0.17	110		-0.50	
912		-----		-----	-----		-----	
963		-----		-----	-----		-----	
1067	INH-19	169.8	DG(0.01)	9.12	354	G(0.05)	8.51	
1081	in house	41	C	-0.83	94	C	-1.09	#13035 first rep: 30, 13036 first rep: 68
1134		-----		-----	-----		-----	
1145	INH-9406	3.499		-3.73	7.752		-4.28	
1162	in house	180.0	DG(0.01)	9.91	515.3	G(0.01)	14.47	
1201	in house	47.5		-0.33	198		2.75	
1357		-----		-----	-----		-----	
1404	IP224	50.1		-0.13	98.4		-0.93	
1583	IP224	25		-2.07	-----		-----	
1616	IP224	32.59		-1.48	-----		-----	
1653		-----		-----	-----		-----	
1842		-----		-----	-----		-----	
1857	INH-19	13.4		-2.97	38.8		-3.13	
1858		-----		-----	-----		-----	
1950	UOP952	14.9		-2.85	40.3		-3.07	
	normality	OK	Spike		OK	Spike		
	n	18			16			
	outliers	2			2			
	mean (n)	51.81	70.0		123.53	210.1		
	st.dev. (n)	27.818			62.193			
	R(calc.)	77.89			174.14			
	R(Horwitz)	36.24			75.82			





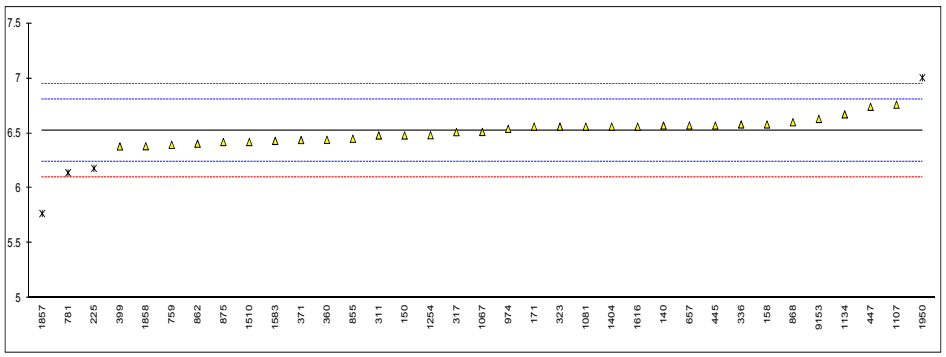


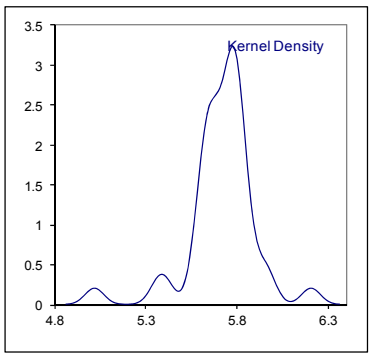


Determination of Total Vapour Pressure on sample #13037; results in psi

lab	method	value	mark	z(targ)	remarks
140	D5191	6.57		0.32	
150	D5191	6.48		-0.31	
158	D5191	6.58		0.39	
171	D5191	6.56		0.25	
225	D5191	6.18	DG(0.05)	-2.41	
237		-----		-----	
238		-----		-----	
311	D5191	6.48		-0.31	
317	D5191	6.51		-0.10	
323	D5191	6.56		0.25	
329		-----		-----	
336	D5191	6.58		0.39	
360	D5191	6.44		-0.59	
371	D5191	6.438		-0.60	
399	D5191	6.38		-1.01	
445	IP394	6.57		0.32	
447	D5191	6.74		1.51	
657	D5191	6.57		0.32	
759	D5191	6.395		-0.90	
781	D5191	6.14	DG(0.05)	-2.69	
784		-----		-----	
855	D5191	6.45		-0.52	
862	D5191	6.405		-0.83	
868	D5191	6.60		0.53	
875	D5191	6.42		-0.73	
974	D5191	6.54		0.11	
1038		-----		-----	
1065		-----		-----	
1067	D5191	6.512		-0.08	
1081	D5191	6.56		0.25	
1107	D5191	6.76		1.65	
1108		-----		-----	
1134	D5191	6.6717		1.04	
1167		-----		-----	
1254	D5191	6.482		-0.29	
1257		-----		-----	
1276		-----		-----	
1284		-----		-----	
1404	D5191	6.56		0.25	
1510	D5191	6.42		-0.73	
1583	D5191	6.43		-0.66	
1616	D5191	6.56		0.25	
1653		-----		-----	
1857	D5191	5.77	G(0.01)	-5.28	
1858	D5191	6.382		-0.99	
1950	D5191	7.005	G(0.05)	3.37	
9054		-----		-----	
9058		-----		-----	
9153	D5191	6.63		0.74	

normality	OK
n	31
outliers	4
mean (n)	6.524
st.dev. (n)	0.0981
R(calc.)	0.275
R(D5191:12)	0.400

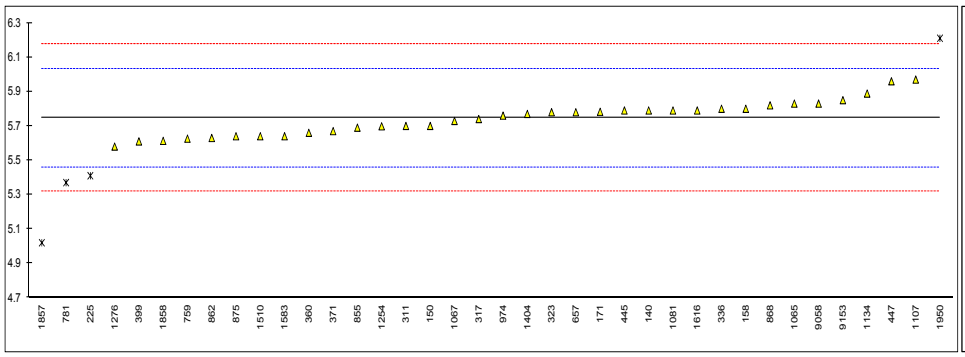


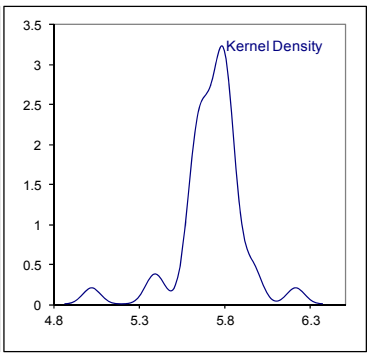


Determination of DVPE acc. D5191 on sample #13037; results in psi

lab	Method	value	mark	z(targ)	remarks
140	D5191	5.79		0.31	
150	D5191	5.70		-0.32	
158	D5191	5.80		0.38	
171	D5191	5.7824		0.26	
225	D5191	5.41	DG(0.05)	-2.35	
237		-----		-----	
238		-----		-----	
311	D5191	5.70		-0.32	
317	D5191	5.74		-0.04	
323	D5191	5.78		0.24	
329		-----		-----	
336	D5191	5.80		0.38	
360	D5191	5.66		-0.60	
371	D5191	5.670		-0.53	
399	D5191	5.61		-0.95	
445	IP394	5.79		0.31	
447	D5191	5.96		1.50	
657	D5191	5.78		0.24	
759	D5191	5.626		-0.84	
781	D5191	5.37	DG(0.05)	-2.63	
784		-----		-----	
855	D5191	5.69		-0.39	
862	D5191	5.63		-0.81	
868	D5191	5.82		0.52	
875	D5191	5.64		-0.74	
974	D5191	5.76		0.10	
1038		-----		-----	
1065	D5191	5.83		0.59	
1067	D5191	5.729		-0.12	
1081	D5191	5.79		0.31	
1107	D5191	5.97		1.57	
1108		-----		-----	
1134	D5191	5.8885		1.00	
1167		-----		-----	
1254	D5191	5.698		-0.33	
1257		-----		-----	
1276	D5191	5.58		-1.16	
1284		-----		-----	
1404	D5191	5.77		0.17	
1510	D5191	5.64		-0.74	
1583	D5191	5.64		-0.74	
1616	D5191	5.79		0.31	
1653		-----		-----	
1857	D5191	5.02	G(0.01)	-5.08	
1858	D5191	5.613		-0.93	
1950	D5191	6.210	G(0.05)	3.25	
9054		-----		-----	
9058	D5191	5.83		0.59	
9153	D5191	5.85		0.73	

normality	OK
n	34
outliers	4
mean (n)	5.745
st.dev. (n)	0.0974
R(calc.)	0.273
R(D5191:12)	0.400





APPENDIX 2

Number of participants per country

iis13N01

1 lab in	ARGENTINA
1 lab in	AUSTRALIA
1 lab in	AZERBAIJAN
4 labs in	BELGIUM
1 lab in	BRAZIL
1 lab in	BULGARIA
1 lab in	CÔTE D'IVOIRE
3 labs in	FINLAND
6 labs in	FRANCE
1 lab in	GEORGIA
2 labs in	GERMANY
2 labs in	GREECE
1 lab in	INDIA
1 lab in	IRAN
1 lab in	ISRAEL
1 lab in	ITALY
2 labs in	LATVIA
1 lab in	MALAYSIA
1 lab in	MEXICO
2 labs in	NIGERIA
1 lab in	NORWAY
4 labs in	P.R. of CHINA
3 labs in	QATAR
11 labs in	RUSSIA
4 labs in	SAUDI ARABIA
1 lab in	SINGAPORE
1 lab in	SULTANATE of OMAN
1 lab in	SWEDEN
1 lab in	THAILAND
9 labs in	THE NETHERLANDS
2 labs in	TURKEY
2 labs in	U.A.E.
4 labs in	U.S.A.
10 labs in	UNITED KINGDOM
1 lab in	ARGENTINA

iis13N01Hg

1 lab in	ARGENTINA
2 labs in	BELGIUM
1 lab in	BRAZIL
1 lab in	BULGARIA
1 lab in	CROATIA
2 labs in	FRANCE
1 lab in	GERMANY
1 lab in	INDIA
1 lab in	MALAYSIA
1 lab in	NORWAY
4 labs in	P.R. of CHINA
1 lab in	QATAR
6 labs in	RUSSIA
4 labs in	SAUDI ARABIA
1 lab in	SINGAPORE
1 lab in	SULTANATE of OMAN
1 lab in	THAILAND
6 labs in	THE NETHERLANDS
1 lab in	U.A.E.
2 labs in	U.S.A.
7 labs in	UNITED KINGDOM

iis13N01AsPb

1 lab in	ARGENTINA
1 lab in	BELGIUM
1 lab in	BRAZIL
1 lab in	BULGARIA
1 lab in	FRANCE
1 lab in	INDIA
1 lab in	MALAYSIA
4 labs in	P.R. of CHINA
1 lab in	QATAR
7 labs in	RUSSIA
1 lab in	SAUDI ARABIA
1 lab in	SULTANATE of OMAN
1 lab in	THAILAND
4 labs in	THE NETHERLANDS
2 labs in	U.S.A.
3 labs in	UNITED KINGDOM

iis13N01DVPE

1 lab in	AUSTRALIA
3 labs in	BELGIUM
1 lab in	BRAZIL
1 lab in	BULGARIA
1 lab in	CÔTE D'IVOIRE
2 labs in	FRANCE
1 lab in	GREECE
1 lab in	ISRAEL
1 lab in	ITALY
2 labs in	LATVIA
2 labs in	NIGERIA
3 labs in	P.R. of CHINA
2 labs in	QATAR
7 labs in	RUSSIA
1 lab in	SINGAPORE
5 labs in	THE NETHERLANDS

APPENDIX 3

Abbreviations:

C	= corrected 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
fr	= first reported
ex	= excluded from calculations
w	= withdrawn on request participant
E	= error in calculations
S	= scope of the reported method is not applicable
U	= reported in a deviating unit
n.a.	= not applicable
n.e.	= not evaluated
SDS	= Safety Data Sheet
RSD	= Relative Standard Deviation

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