Results of Proficiency Test
Naphtha
April 2020

Organized by: Institute for Interlaboratory Studies
Spijkenisse, the Netherlands

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1 INTRODUCTION

Since 1994 the Institute for Interlaboratory Studies organizes a proficiency test (PT) for the analysis of Naphtha every year. The interlaboratory study on Naphtha was extended with PTs for the determination for Mercury, Arsenic/Lead and Vapour Pressure.In the annual proficiency testing program of 2019/2020, it was decided to continue the 4 PTs on Naphtha.

In this interlaboratory study registered for participation:
- 103 laboratories in 39 countries on Naphtha (iis20N01),
- 58 laboratories in 25 countries for Mercury in Naphtha (iis20N01Hg),
- 39 laboratories in 17 countries for Arsenic and Lead in Naphtha (iis20N01AsPb),
- 60 laboratories in 23 countries for Vapour Pressure (iis20N01DVPE).

In total 110 laboratories in 40 countries registered for one or more PTs. See appendix 2 for the number of participants per country.
In this report the results of the proficiency test are presented and discussed. This report is also electronically available through the iis website www.iisnl.com.

2 SET UP

The Institute for Interlaboratory Studies (iis) in Spijkenisse, the Netherlands, was the organizer of this proficiency test (PT). Sample analyzes for fit-for-use and homogeneity testing were subcontracted to an ISO/IEC17025 accredited laboratory. In this proficiency test the participants received the appropriate set of samples depending on the registration. See table below for the list of PT samples. As the Mercury and Arsenic/Lead determination was problematic in previous round robins it was decided to prepare also artificial Naphtha with a known amount of Lead and artificial Naphtha with a known amount of Mercury.

Samples	Type of bottle	Purpose	Matrix
#20035	0.5L	For regular analyzes	Real Naphtha
#20036	30mL	For GC analyzes	Real Naphtha
#20037	0.5L	For Mercury	Artificial Naphtha
#20038	0.5L	For Mercury	Real Naphtha
#20039	0.5L	For Arsenic and Lead	Artificial Naphtha
#20040	0.5L	For Arsenic and Lead	Real Naphtha
#20041	0.25L	For DVPE	Real Naphtha

Table 1: Seven different Naphtha samples used in iis20N01

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

2.1 ACCREDITATION

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

2.2 PROTOCOL

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

2.3 CONFIDENTIALITY STATEMENT

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

2.4 SAMPLES

A batch of approximately 200L Naphtha was obtained from a local refinery. This batch was used to prepare four different PT samples: #20035, #20038, #20040 and #20041. Approximately 70 liters of the above mentioned batch was spiked with Chloroform and after homogenization divided over 140 amber glass bottles of 0.5L and labelled #20035. The homogeneity of the subsamples was checked by determination of Density at 15°C in accordance with ASTM D4052 on 8 stratified randomly selected subsamples.

	Density at 15°C in kg/L
sample #20035-1	0.71879
sample #20035-2	0.71876
sample #20035-3	0.71876
sample #20035-4	0.71877
sample #20035-5	0.71877
sample #20035-6	0.71875
sample #20035-7	0.71876
sample #20035-8	0.71876

Table 2: homogeneity test results of subsamples #20035

From the above test results the repeatability was calculated and compared with 0.3 times the reproducibility of the reference test method in agreement with the procedure of ISO13528, Annex B2 in the next table.

	Density at 15°C in kg/L
r (observed)	0.00003
reference test method	ISO12185:96
0.3 * R (reference test method)	0.00015

Table 3: evaluation of the repeatability of subsamples #20035

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

For the preparation of sample #20036 another batch of approximately 15L Naphtha was selected. This batch was especially prepared for GC analyses. After homogenization 140 amber glass bottles of 30mL were filled and labelled #20036. The homogeneity of the subsamples was checked by determination of Density at 15°C in accordance with ASTM D4052 on 8 stratified randomly selected subsamples.

	Density at 15°C in kg/L
sample #20036-1	0.72922
sample #20036-2	0.72922
sample #20036-3	0.72926
sample #20036-4	0.72923
sample #20036-5	0.72923
sample #20036-6	0.72922
sample #20036-7	0.72926
sample #20036-8	0.72922

Table 4: homogeneity test results of subsamples #20036

From the above test results the repeatability was calculated and compared with 0.3 times the reproducibility of the reference method in agreement with the procedure of ISO13528, Annex B2 in the next table.

	Density at 15°C in kg/L
r (observed)	0.00005
reference test method	ISO12185:96
0.3 * R (reference test method)	0.00015

Table 5: evaluation of the repeatability of subsamples #20036

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

Approximately 45L Naphtha taken from the first batch was spiked with Mercury Chloride and a Mercury Conostan standard especially for the Mercury determination. After homogenization 80 amber glass bottles of 0.5L were filled and labelled #20038.
The homogeneity of the subsamples was checked by determination of Mercury in accordance with UOP938-B on 4 stratified randomly selected subsamples.

	Mercury in µg/kg
sample #20038-1	61.0
sample #20038-2	57.7
sample #20038-3	62.2
sample #20038-4	59.9

Table 6: homogeneity test results of subsamples #20038

From the above test results the repeatability was calculated and compared with 0.3 times the reproducibility of the reference method in agreement with the procedure of ISO13528, Annex B2 in the next table.

	Mercury in µg/kg
r (observed)	5.36
reference method	Horwitz
0.3 * R (reference method)	12.4

Table 7: evaluation of the repeatability of subsamples #20038

The calculated repeatability was in agreement with 0.3 times the estimated reproducibility using the Horwitz equation. Therefore, homogeneity of the subsamples was assumed.

Approximately 45L Naphtha taken from the first batch and spiked with Lead and Arsenic especially for the Arsenic and Lead determination. After homogenization 56 amber glass bottles of 0.5L were filled and labelled #20040. The homogeneity of the subsamples was checked by determination of Lead in accordance with an in-house test method on 4 stratified randomly selected subsamples.

	Lead in µg/kg
sample #20040-1	90
sample #20040-2	90
sample #20040-3	90
sample #20040-4	90

Table 8: homogeneity test results of subsamples #20040

From the above test results the repeatability was calculated and compared with 0.3 times the reproducibility of the reference method in agreement with the procedure of ISO13528, Annex B2 in the next table.

	Lead in µg/kg
r (observed)	0.0
reference method	Horwitz
0.3 * R (reference method)	17.4

Table 9: evaluation of the repeatability of subsamples #20040

The calculated repeatability was in agreement with 0.3 times the estimated reproducibility using the Horwitz equation. Therefore, homogeneity of the subsamples was assumed.

Approximately 25L Naphtha taken from the first batch especially for DVPE determination and after homogenization divided over 90 amber glass bottles of 0.25L and labelled #20041.
The homogeneity of the subsamples was checked by determination of DVPE in accordance with ASTM D5191 on 8 stratified randomly selected subsamples.

	DVPE in psi
sample #20041-1	6.31
sample #20041-2	6.29
sample #20041-3	6.29
sample #20041-4	6.29
sample #20041-5	6.29
sample #20041-6	6.29
sample #20041-7	6.28
sample #20041-8	6.28

Table 10: homogeneity test results of subsamples #20041

From the above test results the repeatability was calculated and compared with 0.3 times the reproducibility of the reference test method in agreement with the procedure of ISO13528, Annex B2 in the next table.

	DVPE in psi
r (observed)	0.03
reference test method	D5191:19
0.3 * R (reference test method)	0.07

Table 11: evaluation of the repeatability of subsamples #20041

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

Furthermore, a batch of approximately 45L artificial Naphtha was prepared and spiked with Mercury Chloride and Mercury Conostan especially for Mercury determination. After homogenization 80 amber glass bottles of 0.5L were filled and labelled #20037.
The homogeneity of the subsamples was checked by determination of Mercury in accordance with UOP938-B on 4 stratified randomly selected subsamples.

	Mercury in µg/kg
sample #20037-1	10.3
sample #20037-2	9.8
sample #20037-3	10.4
sample #20037-4	10.1

Table 12: homogeneity test results of subsamples #20037

From the above test results the repeatability was calculated and compared with 0.3 times the reproducibility of the reference method in agreement with the procedure of ISO13528, Annex B2 in the next table.

	Mercury in µg/kg
r (observed)	0.74
reference method	Horwitz
0.3 * R (reference method)	2.7

Table 13: evaluation of the repeatability of subsamples #20037

The calculated repeatability was in agreement with 0.3 times the estimated reproducibility using the Horwitz equation. Therefore, homogeneity of the subsamples was assumed.

Another batch of approximately 33L artificial Naphtha was prepared and spiked with Lead and Arsenic especially for Arsenic and Lead determination. After homogenization 60 amber glass bottles of 0.5L were filled and labelled #20039. The homogeneity of the subsamples was checked by determination of Lead in accordance with an in-house test method on 4 stratified randomly selected subsamples.

	Lead in µg/kg
sample #20039-1	50
sample #20039-2	50
sample #20039-3	50
sample #20039-4	50

Table 14: homogeneity test results of subsamples #20039

From the above test results the repeatability was calculated and compared with 0.3 times the reproducibility of the reference method in agreement with the procedure of ISO13528, Annex B2 in the next table.

	Lead in µg/kg
r (observed)	0.0
reference method	Horwitz
0.3 * R (reference method)	10.5

Table 15: evaluation of the repeatability of subsamples #20039

The calculated repeatability was in agreement with 0.3 times the estimated reproducibility using the Horwitz equation. Therefore, homogeneity of the subsamples was assumed.

To each of the participating laboratories, depending on the registration, the appropriate set of samples mentioned in table 16 were sent on April 17, 2020. An SDS was added to the sample package.

Samples	Bottle size	Determination
#20035	1x 0.5L	Regular tests
#20036	1x 0.03L	Oxygenates/PIONA/PNA/DHA
#20037 and #20038	1x 0.5L, each	Mercury only
#20039 and #20040	1x 0.5L, each	Arsenic and Lead only
#20041	1x 0.25L	Vapour Pressure only

Table 16: bottle sizes, sample identification and determinations

2.5 STABILITY OF THE SAMPLES

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

2.6 ANALYZES

The participants were asked to determine the following analyzes:
on sample #20035: Organic Chlorides, Color Saybolt (Manual and/or Automated), Copper Corrosion 3hrs at 50°C, Density at 15°C, Distillation (IBP, 50% recovered and FBP), Mercaptan Sulfur as S and Sulfur;
on sample #20036: Oxygenates; Acetone, DIPE, MEK, Methanol, Ethanol, MTBE, TAME, Total Oxygenates, PIONA / PNA GC Determination (Total Paraffins, n-Paraffins, i-Paraffins, Olefins, Naphthenes, Aromatics, C4 and lighter hydrocarbons and Compounds with BP > 200°C) and Detail Hydrocarbon Analysis (DHA) (Pentane, Benzene, Cyclohexane, 2- and 3-Methylpentane, Heptane, Toluene and Octane);
on samples #20037 and #20038: Mercury only;
on samples #20039 and #20040: Arsenic and Lead only;
on sample #20041: TVP / DVPE only.

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

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

3 RESULTS

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

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

3.1 STATISTICS

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

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

According to ISO5725 the original test results per determination were submitted to Dixon's, Grubbs' and/or Rosner's outlier tests. Outliers are marked by D(0.01) for the Dixon's test, by G(0.01) or DG(0.01) for the Grubbs' test and by R(0.01) for the Rosner's test. Stragglers are marked by D(0.05) for the Dixon's test, by G(0.05) or DG(0.05) for the Grubbs' test and by R(0.05) for the Rosner's test. Both outliers and stragglers were not included in the calculations of averages and standard deviations.

For each assigned value, the uncertainty was determined in accordance with ISO13528. Subsequently the calculated uncertainty was evaluated against the respective requirement based on the target reproducibility in accordance with ISO13528. In this PT, the criterion of ISO13528, paragraph 9.2.1 was met for all evaluated tests, therefore, the uncertainty of all assigned values may be negligible and need not be included in the PT report.
Finally, the reproducibilities were calculated from the standard deviations by multiplying them with a factor of 2.8.

3.2 GRAPHICS

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

3.3 Z-SCORES

To evaluate the performance of the participating laboratories the z-scores were calculated. As it was decided to evaluate the performance of the participants in this proficiency test (PT) against the literature requirements, e.g. ASTM or IP reproducibilities, the z-scores were calculated using a target standard deviation. This results in an evaluation independent of the variation of this interlaboratory study.
The target standard deviation was calculated from the literature reproducibility by division with 2.8. In case no literature reproducibility was available, other targets values were used. In some cases a reproducibility based on former iis proficiency tests could be used.

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

The z-scores were calculated according to:

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

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

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

4 EVALUATION

During the execution of this proficiency test serious problems occurred. Due to COVID-19 outbreak thirty participants were not able to participate in this proficiency test because of restricted dispatch to some countries. It was decided that for those participants the deadline was extended with 13 weeks. After closure of the round an extra round was created on the Data Entry Portal to enable participants to report the test results at a later moment. The test results of the extra round were not added to the evaluation data of this report but will be evaluated separately compared to this PT report. Not all laboratories were able to perform all analyzes requested.

Finally reported: 69 participants for sample #20035, 41 participants for sample #20036, 33 participants for sample #20037 and #20038, 17 participants for sample #20039 and #20040 and 39 participants for sample #20041.
In total 74 participants reported 1446 numerical test results. Observed were 130 outlying test results, which is 9.0%. In proficiency studies, outlier percentages of 3% - 7.5% are quite normal.

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

4.1 EVALUATION PER SAMPLE AND PER TEST

In this section the reported test results are discussed per sample and per test. The test methods, which are used by the various laboratories, are taken into account for explaining the observed differences where possible and applicable. These test methods are also in the tables together with the reported test results. The abbreviations, used in these tables, are explained in appendix 3.

Unfortunately, a suitable reference test method providing the precision data is not available for all determinations. For the tests that have no available precision data the calculated reproducibility was compared against the reproducibility estimated from the Horwitz equation.

In the iis PT reports, ASTM test methods are referred to with a number e.g. D5134 and an added designation for the year that the test method was adopted or revised e.g. D5134:13. If applicable, a designation in parentheses is added to designate the year of reapproval e.g. D5134:13(2017). In the test results tables of appendix 1 only the test method number and year of adoption or revision e.g. D5134:13 will be used.

Up till 2019 the PIONA and PNA analyzes was combined in the PT. From 2020 on the PIONA and PNA are requested and reported separately.

Sample #20035

Organic Chlorides: This determination was very problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not at all in agreement with the requirement of UOP779:08, nor in agreement with the requirements of ASTM D5808:18 and the reproducibility estimated from the Horwitz equation.

Color Saybolt: This determination was very problematic for the automated mode and was problematic for the manual mode. No statistical outliers were observed. However, the calculated reproducibilities for the automated and the manual modes are both not in agreement with the respective requirements of ASTM D6045:12(2017) and ASTM D156:15.

Copper Corrosion: This determination was not problematic. All reporting laboratories agreed on a result of 1 (1A, 1B).

Density at 15°C: This determination was problematic for some laboratories. Two statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is almost in agreement with the requirement of ISO12185:96.

Distillation: This determination was not problematic for 50% recovered and FBP but problematic for IBP of the automated mode. In total five statistical outliers were observed. However, the calculated reproducibilities after rejection of the statistical outliers are in agreement with the requirements of ASTM D86:19 (both automated and manual mode) for 50% recovered and FBP but not for IBP (automated mode).

Mercaptan Sulfur: This determination was problematic. Four statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirement of ASTM D3227:16.

Sulfur: This determination was problematic dependent on the test method used. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirement of ASTM D4294:16e1 but not with ASTM D2622:16 or ASTM D5453:19a.
When the test results are evaluated per type of analysis; the calculated reproducibility of WD XRF is in agreement with the requirements of the respective test method but ED XRF and UV F are both not in agreement with the requirements of the respective test methods.

Sample #20036 - Oxygenates

Acetone: This determination was very problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not in agreement with the estimated reproducibility from the Horwitz equation, nor with the strict requirements of ASTM D7423:17.

DIPE: This determination may not be problematic. Almost all reporting laboratories agreed on a value less than 10 mg/kg. Therefore, no z-scores were calculated.

MEK: This determination was very problematic. Six laboratories found values of less than 20 mg/kg while five laboratories found values of a few hundred mg/kg of MEK. After consulting an expert, it appeared that MEK was not present in the sample. There could be a mix-up with Ethyl Acetate which is very close in the chromatogram. Therefore, laboratories that reported a positive test value were excluded. Furthermore, it was decided not to calculate z-scores because the remaining six laboratories agreed on a value less than 20 mg/kg.

Methanol: This determination may not be problematic. Almost all reporting laboratories agreed on a value less than 10 mg/kg. Therefore, no z-scores were calculated.

Ethanol: This determination may not be problematic. Almost all reporting laboratories agreed on a value less than 10 mg/kg. Therefore, no z-scores were calculated.

MTBE: This determination may be problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not in agreement with the estimated reproducibility from the Horwitz equation nor with the strict requirements of ASTM D7423:17.

TAME: This determination was not problematic. Three statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the estimated reproducibility from the Horwitz equation nor with the strict requirements of ASTM D7423:17.

Total Oxygenates: This determination may be problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the estimated reproducibility from the Horwitz equation (based on 5 components) and ASTM D7423:17 nor with the strict requirements of ASTM D7423:17.

PIONA %V/V

Total Paraffins: This determination was problematic for some laboratories. Five statistical outliers were observed and three other test results were excluded. However, the calculated reproducibility after rejection of the suspect data is in agreement with the requirements of ASTM D6839:18.

n-Paraffins: This determination was problematic for some laboratories. Six statistical outliers were observed and two other test results were excluded. However, the calculated reproducibility after rejection of the suspect data is in full agreement with the requirements of ASTM D6839:18.

i-Paraffins: This determination was problematic for some laboratories. Four statistical outliers were observed and three other test results were excluded. However, the calculated reproducibility after rejection of the suspect data is in full agreement with the requirements of ASTM D6839:18.

Olefins: This determination was not problematic. Three statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in full agreement with the requirements of ASTM D6839:18.

Aromatics: 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 D6839:18.

Naphthenes: This determination was not problematic. Five statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D6839:18.

C4 and lighter: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ASTM D6839:18.

PIONA %M/M

Total Paraffins: This determination was not problematic. Four statistical outliers were observed and three other test results were excluded. However, the calculated reproducibility after rejection of the suspect data is in agreement with the estimated reproducibility from the Horwitz equation based on 2 components.

n-Paraffins: This determination was not problematic. Six statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the estimated reproducibility from the Horwitz equation based on 2 components.

i-Paraffins: This determination was not problematic. Five statistical outliers were observed and one other test result was excluded. However, the calculated reproducibility after rejection of the suspect data is in agreement with the estimated reproducibility from the Horwitz equation based on 2 components.

Olefins: This determination may be problematic. Two statistical outliers were observed. The reproducibility in the test results was very high. Therefore, no z-scores were calculated.

Aromatics: This determination was not problematic. Three statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the estimated reproducibility from the Horwitz equation based on 2 components.

Naphthenes: This determination was not problematic. Three statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the estimated reproducibility from the Horwitz equation based on 2 components.

C4 and lighter: This determination may be problematic. One statistical outlier was observed. The reproducibility in the test results was very high. Therefore, no z-scores were calculated.

PNA %V/V

No precision data is available for the determination of PNA in %V/V. It was decided not to make use of the Horwitz equation as this formula is intended for mass concentrations and not for volume. Therefore, no z-scores were calculated.

PNA %M/M

Total Paraffins: This determination was not problematic. Three statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D5443:14.

n-Paraffins and i-Paraffins: Test method ASTM D5443 is not intended to separate n-Paraffins and i-Paraffins. Only when a lab use a modification on the equipment it is possible to separate these two groups, but this is no longer in line with test method ASTM D5443. Therefore, no precision data is available for this determination in test method ASTM D5443. Due to low amount of reporting participants it was decided not to calculate z-scores.

Naphthenes: This determination was problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ASTM D5443:14.

Aromatics: This determination was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ASTM D5443:14.

C4 and lighter: This determination was not problematic. Two statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D5443:14.

BP>200°C: One statistical outlier was observed for the test results in %M/M. Method ASTM D5443:17 covers the determination up to 200°C or less Therefore, no z-scores were calculated.

DHA

Pentane: This determination was problematic. Five statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ASTM D5134:13(2017)

Benzene: This determination was problematic. Three statistical outliers were observed. The calculated reproducibility is not in agreement with the requirement of ASTM D5134:13(2017).

Cyclohexane: This determination was problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirement of ASTM D5134:13(2017).

2-Methylpentane: This determination was very problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirement of ASTM D5134:13(2017). Therefore, no z-scores were calculated.

3-Methylpentane: This determination was very problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirement of ASTM D5134:13(2017). Therefore, no z-scores were calculated.

Heptane: When the test results were evaluated against the very strict requirements of ASTM D5134:13(2017) this determination was very problematic. In PT of 2016 (iis16N01) it was observed that the raw data of the interlaboratory study RR:D02-1265 by ASTM to calculate the precision of n-Heptane do not match, see report iis16N01. The estimated reproducibility using the Horwitz equation describes the reproducibility of n-Heptane much better. Therefore, the estimated reproducibility from the Horwitz equation was used to calculate the z-scores.

The determination of n-Heptane was not problematic. Two statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the estimated reproducibility using the Horwitz equation.

Toluene: When the test results were evaluated against the very strict requirements of ASTM D5134:13(2017) this determination was very problematic. Therefore, analogue to the approach with n-Heptane the estimated reproducibility using the Horwitz equation was used to calculate z-scores.
This determination was not problematic. Three statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the estimated reproducibility using the Horwitz equation.

Octane: This determination was very problematic. One statistical outlier was observed. The calculated reproducibility is not at all in agreement with the requirements of ASTM D5134:13(2017).

Samples #20037 and #20038

Mercury: This determination was not problematic for both samples. For each sample two statistical outlier were observed. However, the calculated reproducibilities after rejection of the statistical outliers are in agreement with the estimated reproducibilities using the Horwitz equation.

Samples #20039 and #20040

Arsenic: This determination for sample #20039 and #20040 was very problematic. Both samples were spiked with Arsenic but the laboratories did not find Arsenic in the samples. All participants agreed on a test result less than 50 µg/kg. Therefore, no z-scores were calculated.
It is assumed that Arsenic had adsorbed to the wall of the glass bottle. It is recommended to rinse with strong acid for this determination.

Lead: This determination may be problematic for both samples. For sample #20039 no statistical outliers were observed. For sample #20040 two statistical outliers were observed. Both calculated reproducibilities after rejection of the statistical outliers are not in agreement with the estimated reproducibilities using the Horwitz equation.

Sample #20041

TVP: This determination was problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ASTM D5191:19.

DVPE: This determination was problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not in agreement with the requirements of ASTM D5191:19.

4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES

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

Parameter	unit	n	average	2.8 * sd	R(lit)
Organic Chlorides	mg/kg	33	6.1	3.8	1.4
Color Saybolt (automated)		29	28.7	3.0	1.2
Color Saybolt (manual)		27	28.3	3.4	2
Copper Corrosion		43	1(1A,1B)	n.a.	n.a.
Density at 15°C	kg/L	64	0.7189	0.0006	0.0005
Initial Boiling Point	°C	61	37.4	5.6	4.7
50% recovered	°C	60	107.6	2.3	4.1
Final Boiling Point	°C	56	165.7	5.8	7.1
Mercaptan Sulfur as S	mg/kg	30	74.9	9.4	6.2
Sulfur	mg/kg	57	255.1	48.7	68.3

Table 17: reproducibilities of tests on sample #20035

Parameter	unit	n	average	2.8 * sd	R(lit)
Acetone	mg/kg	11	273.1	82.7	52.6
DIPE	mg/kg	12	<10	n.a.	n.a.
MEK	mg/kg	6	<20	n.a.	n.a.
Methanol	mg/kg	11	<10	n.a.	n.a.
Ethanol	mg/kg	11	<10	n.a.	n.a.
MTBE	mg/kg	15	934.8	210.8	150.0
TAME	mg/kg	13	66.4	11.7	15.8
Total Oxygenates	%M/M	11	0.290	0.196	0.087
PIONA					
Total Paraffins	%V/V	22	61.6	1.5	1.6
n-Paraffins	%V/V	24	28.3	1.7	1.6
i-Paraffins	%V/V	24	33.3	1.5	1.6
Olefins	%V/V	29	0.18	0.28	0.33
Aromatics	%V/V	30	6.1	0.7	0.6
Naphthenes	%V/V	27	31.9	1.4	1.6
C4 and lighter	%V/V	27	1.1	0.9	1.4
Total Paraffins	%M/M	23	58.3	1.6	5.0
n-Paraffins	%M/M	27	26.8	2.5	2.6
i-Paraffins	%M/M	26	31.8	2.0	3.0

Parameter	unit	n	average	2.8 * sd	R(lit)
Olefins	%M/M	30	0.17	0.25	(0.04)
Aromatics	%M/M	31	7.4	0.83	0.87
Naphthenes	%M/M	30	33.9	2.2	3.2
C4 and lighter	%M/M	28	0.9	0.7	(0.01)
PNA					
Total Paraffins	%V/V	12	61.6	0.7	n.a.
n-Paraffins	%V/V	4	28.5	2.9	n.a.
i-Paraffins	%V/V	5	35.0	5.4	n.a.
Naphthenes	%V/V	13	32.3	1.4	n.a.
Aromatics	%V/V	14	6.2	0.5	n.a.
C4 and lighter	%V/V	10	1.4	0.2	n.a.
Bp>200°C	%V/V	3	0.31	0.03	n.a.
Total Paraffins	%M/M	11	58.1	0.8	1.3
n-Paraffins	%M/M	4	26.7	2.8	n.a.
i-Paraffins	%M/M	5	33.4	5.4	n.a.
Naphthenes	%M/M	11	34.4	0.8	0.6
Aromatics	%M/M	13	7.4	0.6	0.8
C4 and lighter	%M/M	9	1.1	0.2	0.2
Bp>200°C	%M/M	3	0.39	0.03	n.a.
DHA					
Pentane	%M/M	14	4.17	0.64	0.36
Benzene	%M/M	21	0.29	0.06	0.04
Cyclohexane	%M/M	16	2.64	0.30	0.26
2-Methylpentane	%M/M	18	2.99	0.27	(0.10)
3-Methylpentane	%M/M	18	2.10	0.19	(0.07)
Heptane	%M/M	18	5.57	0.48	0.48
Toluene	%M/M	19	1.28	0.10	0.14
Octane	%M/M	17	5.70	0.96	0.40

Table 18: reproducibilities of tests on sample #20036

Parameter	unit	n	average	2.8 * sd	R(lit)
Mercury as Hg #20037	µg/kg	31	10.9	5.4	9.6
Mercury as Hg #20038	µg/kg	30	40.1	20.2	29.2

Table 19: reproducibilities of tests on sample #20037 and #20038

Parameter	unit	n	average	2.8 * sd	R(lit)
Arsenic as As #20039	µg/kg	13	<50	n.a.	n.a.
Arsenic as As #20040	µg/kg	9	<50	n.a.	n.a.
Lead as Pb #20039	µg/kg	15	44.7	53.1	31.9
Lead as Pb #20040	µg/kg	12	59.6	64.1	40.8

Table 20: reproducibilities of tests on sample #20039 and #20040

Parameter	unit	n	average	2.8 * sd	R(lit)
TVP	psi	30	7.04	0.29	0.23
DVPE	psi	38	6.23	0.33	0.23

Table 21: reproducibilities of tests on sample #20041

For R(lit) given between brackets no z-scores were calculated, see discussion in paragraph 4.1.

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

4.3 COMPARISON OF THE PROFICIENCY TEST OF APRIL 2020 WITH PREVIOUS PTS

	April 2020	April 2019	April 2018	April 2017	April 2016
Number of reporting laboratories	74	93	104	100	93
Number of test results	1446	1635	1831	1723	1664
Number of statistical outliers	130	73	88	84	88
Percentage of statistical outliers	9.0%	4.5%	4.8%	4.9%	5.3%

Table 22: 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 reference test methods. The conclusions are given in the following table.

Parameter	April 2020	April 2019	April 2018	April 2017	April 2016
Organic Chlorides	--	--	n.e.	+/-	--
Color Saybolt	--	+	--	++	--
Density at 15°C	+/-	+	+	+/-	+/-
Distillation	+/-	+/-	+/-	+/-	-
Mercaptan Sulfur as S	-	-	--	-	-
Sulfur	+	+	+	+/-	+/-
Oxygenates	-	-	+/-	-	+/-
PIONA *)	+	-	-	-	-
PNA *)	+	n.e.	n.e.	n.e.	n.e.
DHA	-	+	+/-	+	+/-
Mercury	+	+	+	++	+
Arsenic	--	+/-	+/-	+/-	+
Lead	-	+/-	+/-	-	+/-
Total Vapour Pressure	-	-	+	++	+
DVPE acc. to D5191	-	-	+	+	+

Table 23: comparison determinations against the reference test methods

*) Up till 2019 PIONA and PNA was combined in the PT

The following performance categories were used:

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

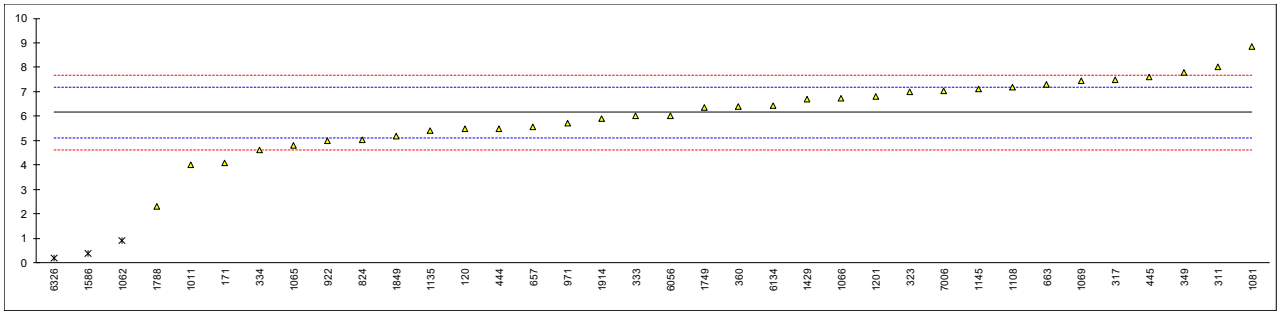
APPENDIX 1

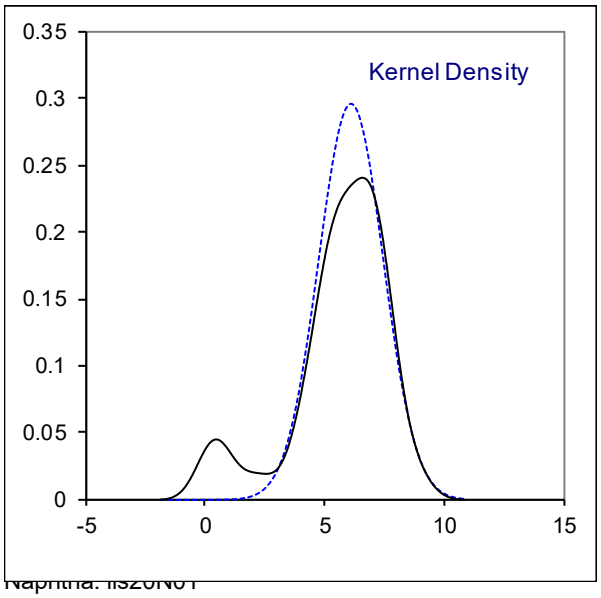
Determination of Organic Chlorides on sample #20035; results in mg/kg

lab	method	value	mark	z(targ)	remarks
120	D5808	5.48		-1.30	
140		-----		-----	
150		-----		-----	
158		-----		-----	
171	D5808	4.1		-3.99	
225		-----		-----	
237		-----		-----	
238		-----		-----	
311	D5808	8		3.61	
317	UOP779	7.5		2.63	
323	UOP779	7		1.66	
333	D5808	6.0		-0.29	
334	D5808	4.6		-3.01	
336		-----		-----	
337		-----		-----	
349	UOP588	7.8		3.22	
360	UOP779	6.38		0.45	
399		-----		-----	
444	IP510	5.48		-1.30	
445	IP510	7.60		2.83	
541		-----		-----	
608		-----		-----	
657	UOP779	5.573		-1.12	
663	D5808	7.3		2.24	
750		-----		-----	
751		-----		-----	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824	UOP779	5.05		-2.14	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922	D4929-A	5.0		-2.23	
962		-----		-----	
963		-----		-----	
971	UOP779	5.70		-0.87	
974		-----		-----	
982		-----		-----	
994		-----		-----	
995		-----		-----	
997		-----		-----	
1011	D5808	4		-4.18	
1012		-----		-----	
1016		-----		-----	
1026		-----	W	-----	test result withdrawn. first reported 12
1062	UOP779	0.9	R(0.05)	-10.22	
1065	D4929	4.80		-2.62	
1066	UOP779	6.75		1.17	
1069	D7359	7.45		2.54	
1081	D5808	8.853		5.27	
1097		-----		-----	
1108	D7536	7.2		2.05	
1135	UOP779	5.4		-1.46	
1145	D5808	7.10		1.85	
1201	UOP779	6.8		1.27	
1284		-----		-----	
1381		-----		-----	
1397		-----		-----	
1429	D7359	6.69		1.06	
1544		-----		-----	
1556		-----		-----	
1585		-----		-----	
1586	UOP779	0.4	R(0.05)	-11.19	

lab	method	value	mark	z(targ)	remarks
1603		-----		-----	
1656		-----		-----	
1737		-----		-----	
1749		6.37		0.43	
1776		-----		-----	
1788	D5808	2.32		-7.45	
1796		-----		-----	
1849	D7359	5.18		-1.88	
1857		-----		-----	
1914	UOP779	5.9		-0.48	
1949		-----		-----	
1950		-----		-----	
1960		-----		-----	
1967		-----		-----	
1982		-----		-----	
1995		-----		-----	
6016		-----		-----	
6056	NSA377010	6.03		-0.23	
6134	D5808	6.44		0.57	
6198		-----		-----	
6201	UOP779	<0.1		<-11.77	possibly a false negative test result?
6262		-----		-----	
6299		-----		-----	
6326	UOP779	0.21	R(0.05)	-11.56	
7006	D4929	7.03		1.72	
9057		-----		-----	
9058		-----		-----	
9142		-----		-----	
9143		-----		-----	

	normality	OK	
	n	33	
	outliers	3	
	mean (n)	6.148	
	st.dev. (n)	1.3514	
	R(calc.)	3.784	
	st.dev.(UOP779:08)	0.5136	
	R(UOP779:08)	1.438	application range 0.3 – 1000 mg/kg
Compare			
	D(D5808:18)	1.3	application range 1 – 25 mg/kg
	R(Horwitz)	2.095	





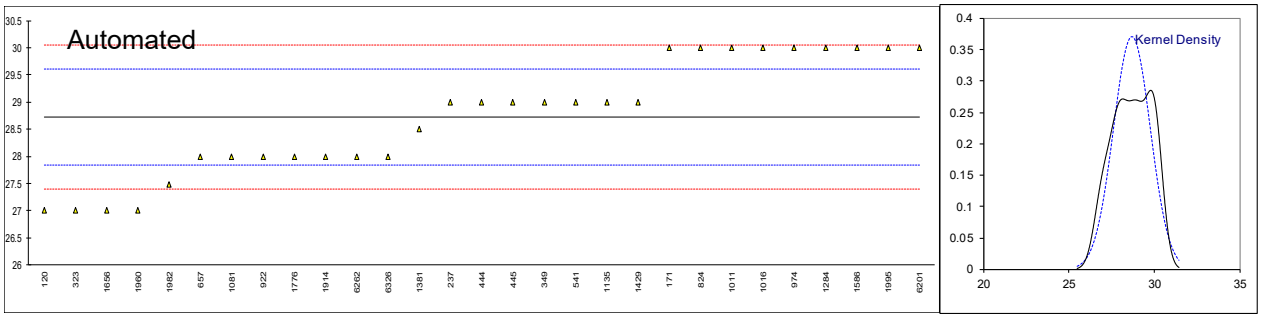
Determination of Color Saybolt (automated and manual) on sample #20035

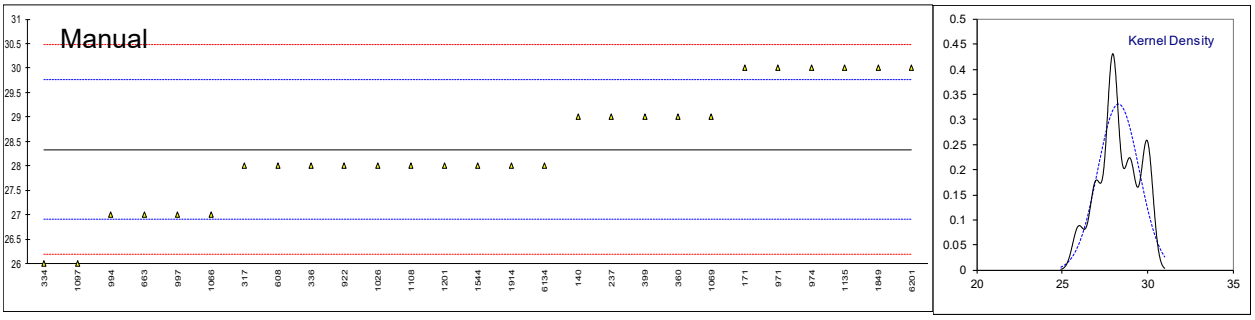
lab	automatic	cuvette	value	mark	z(targ)	manual	filter	value	mark	z(targ)
120	D6045		27		-3.89			-----		-----
140			-----		-----	D156		29		0.93
150	D6045	100	>30		-----			-----		-----
158			-----		-----			-----		-----
171	D6045	33	30		2.88	D156	1	30		2.33
225			-----		-----			-----		-----
237	D6045	50	29		0.62	D156	1	29		0.93
238			-----		-----			-----		-----
311			-----		-----			-----		-----
317			-----		-----	D156		28		-0.47
323	D6045	50	27		-3.89			-----		-----
333			-----		-----			-----		-----
334			-----		-----	D156	0.5	26		-3.27
336			-----		-----	D156		28		-0.47
337			-----		-----			-----		-----
349	D6045		29		0.62			-----		-----
360			-----		-----	D156	0.5	29		0.93
399			-----		-----	D156		29		0.93
444	D6045		29		0.62			-----		-----
445	D6045	50	29		0.62			-----		-----
541	D6045	100	29		0.62			-----		-----
608			-----		-----	D156		28		-0.47
657	D6045	100	28		-1.63			-----		-----
663			-----		-----	D156		27		-1.87
750			-----		-----			-----		-----
751			-----		-----			-----		-----
753			-----		-----			-----		-----
754			-----		-----			-----		-----
779			-----		-----			-----		-----
781			-----		-----			-----		-----
785			-----		-----			-----		-----
798			-----		-----			-----		-----
824	D6045	50	30		2.88			-----		-----
855			-----		-----			-----		-----
862			-----		-----			-----		-----
864			-----		-----			-----		-----
868			-----		-----			-----		-----
872			-----		-----			-----		-----
873			-----		-----			-----		-----
874			-----		-----			-----		-----
875			-----		-----			-----		-----
912			-----		-----			-----		-----
914			-----		-----			-----		-----
922	D6045	100	28		-1.63	D156	0.5	28		-0.47
962			-----		-----			-----		-----
963			-----		-----			-----		-----
971			-----		-----	D156		30		2.33
974	D6045	100	30		2.88	D156	0.5	30		2.33
982			-----		-----			-----		-----
994			-----		-----	D156	1	27.0		-1.87
995			-----		-----			-----		-----
997			-----		-----	D156		27		-1.87
1011	D6045	100	30		2.88			-----		-----
1012			-----		-----			-----		-----
1016	D6045	100	30		2.88			-----		-----
1026			-----		-----	D156		28		-0.47
1062			-----		-----			-----		-----
1065			-----		-----			-----		-----
1066			-----		-----	D156		27		-1.87
1069			-----		-----	D156		29		0.93
1081	D6045	100	28		-1.63			-----		-----
1097			-----		-----	NF M 07-003		26		-3.27
1108			-----		-----	D156		28		-0.47
1135	D6045	100	29		0.62	D156	0.5	30		2.33
1145			-----		-----			-----		-----
1201			-----		-----	D156		28		-0.47
1284	D6045	100	30		2.88			-----		-----
1381	D6045	50	28.5		-0.50			-----		-----
1397			-----		-----			-----		-----
1429	D6045	50	29		0.62			-----		-----
1544			-----		-----	D156		28	C	-0.47
1556			-----		-----			-----		-----
1585			-----		-----			-----		-----
1586	D6045	50	30		2.88			-----		-----
1603			-----		-----			-----		-----
1656	D5386	50	27		-3.89			-----		-----

lab	automatic	cuvette	value	mark	z(targ)	manual	filter	value	mark	z(targ)
1737			-----		-----			-----		-----
1749			-----		-----			-----		-----
1776	D6045		28.0		-1.63			-----		-----
1788			-----		-----			-----		-----
1796			-----		-----			-----		-----
1849			-----		-----	TS2991	0.5	30		2.33
1857			-----		-----			-----		-----
1914	D6045	100	28		-1.63	D156	0.5	28		-0.47
1949			-----		-----			-----		-----
1950			-----		-----			-----		-----
1960	D6045		27		-3.89			-----		-----
1967			-----		-----			-----		-----
1982	D1500	50	27.48		-2.81			-----		-----
1995	D6045		30	C	2.88			-----		-----
6016			-----		-----			-----		-----
6056			-----		-----			-----		-----
6134			-----		-----	D156		28		-0.47
6198			-----		-----			-----		-----
6201	D6045	50	30		2.88	D156	0.5	30		2.33
6262	D6045	50	28		-1.63			-----		-----
6299			-----		-----			-----		-----
6326	D6045	100	28		-1.63			-----		-----
7006			-----		-----			-----		-----
9057			-----		-----			-----		-----
9058			-----		-----			-----		-----
9142			-----		-----			-----		-----
9143			-----		-----			-----		-----

normality	OK	normality	OK
n	29	n	27
outliers	0	outliers	0
mean (n)	28.723	mean (n)	28.333
st.dev. (n)	1.0748	st.dev. (n)	1.2089
R(calc.)	3.009	R(calc.)	3.385
st.dev.(D6045:12)	0.4429	st.dev.(D156:15	0.7143
R(D6045:12)	1.24	R(D156:15)	2

Lab 1544 first reported 24
Lab 1995 first reported 26





Determination of Copper Corrosion 3 hrs at 50°C on sample #20035

lab	method	value	mark	z(targ)	remarks
120		-----		-----	
140	D130	1a		-----	
150		-----		-----	
158	D130	1a		-----	
171	D130	1a		-----	
225		-----		-----	
237	D130	1A		-----	
238		-----		-----	
311	D130	1A		-----	
317	D130	1A		-----	
323		-----		-----	
333		-----		-----	
334	D130	1A		-----	
336	D130	1		-----	
337		-----		-----	
349		-----		-----	
360	ISO2160	1A		-----	
399	D130	1A		-----	
444		-----		-----	
445	D130	1a		-----	
541	D130	1a		-----	
608	D130	1a		-----	
657	D130	1A		-----	
663	D130	1a		-----	
750		-----		-----	
751	D130	1a		-----	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824	D130	1a		-----	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922	D130	1A		-----	
962		-----		-----	
963		-----		-----	
971	D130	1a		-----	
974	D130	1a		-----	
982		-----		-----	
994	D130	1a		-----	
995	D130	1a		-----	
997		-----		-----	
1011	D130	1a		-----	
1012		-----		-----	
1016	D130	1A		-----	
1026	D130	1A		-----	
1062		-----		-----	
1065		-----		-----	
1066	D130	1A		-----	
1069		-----		-----	
1081		-----		-----	
1097	ISO2160	1a		-----	
1108	ISO2160	1		-----	
1135	D130	1A		-----	
1145		-----		-----	
1201	D130	1A		-----	
1284		-----		-----	
1381		-----		-----	
1397		-----		-----	
1429	D130	1A		-----	
1544	ISO2160	1A		-----	
1556	ISO2160	1a		-----	
1585		-----		-----	
1586	D130	1b		-----	

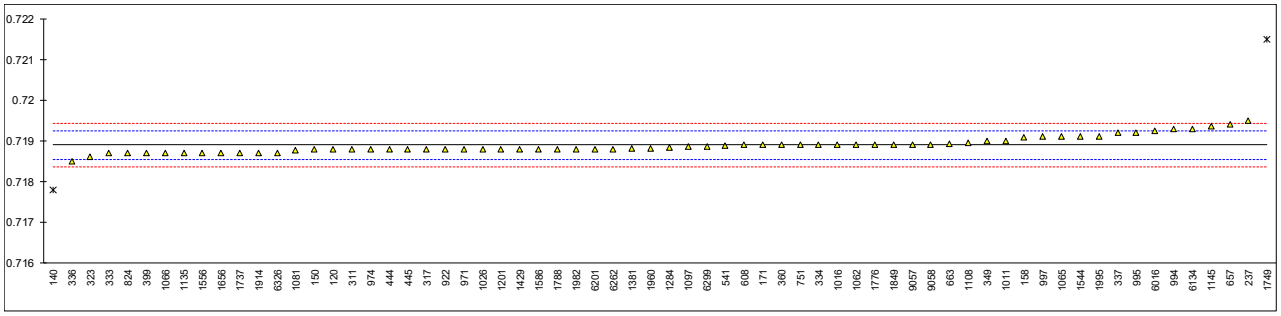
lab	method	value	mark	z(targ)	remarks
1603		-----		-----	
1656	IP154	1		-----	
1737		-----		-----	
1749		-----		-----	
1776		-----		-----	
1788		-----		-----	
1796		-----		-----	
1849	ISO2160	1A		-----	
1857		-----		-----	
1914	D130	1a		-----	
1949		-----		-----	
1950		-----		-----	
1960		-----		-----	
1967		-----		-----	
1982		-----		-----	
1995	D130	1A		-----	
6016		-----		-----	
6056		-----		-----	
6134	D130	1A		-----	
6198		-----		-----	
6201	D130	1A		-----	
6262	D130	1A		-----	
6299	ISO2160	1a		-----	
6326	D130	1A		-----	
7006		-----		-----	
9057		-----		-----	
9058		-----		-----	
9142		-----		-----	
9143		-----		-----	
	n	43			
	mean (n)	1 (1A, 1B)			

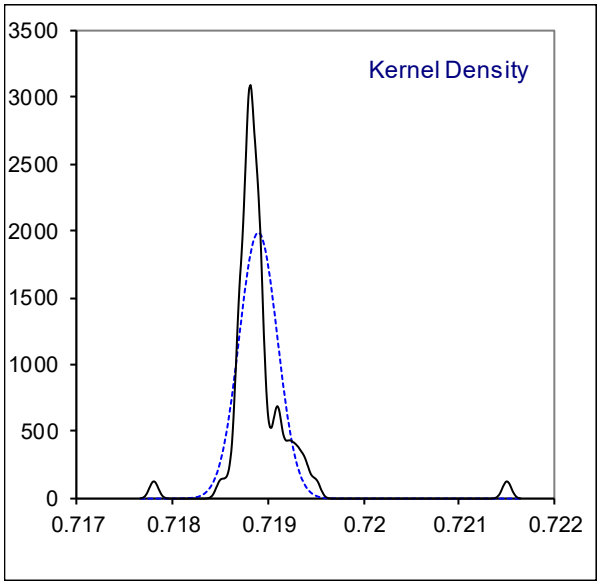
Determination of Density at 15°C on sample #20035; results in kg/L

lab	method	value	mark	z(targ)	remarks
120	D4052	0.7188		-0.53	
140	D4052	0.7178	R(0.01)	-6.13	
150	D4052	0.7188		-0.53	
158	D4052	0.71908		1.04	
171	D4052	0.7189		0.03	
225		-----		-----	
237	D4052	0.7195		3.39	
238		-----		-----	
311	ISO12185	0.7188		-0.53	
317	ISO12185	0.7188		-0.53	
323	D4052	0.7186		-1.65	
333	ISO12185	0.7187		-1.09	
334	ISO12185	0.7189		0.03	
336	ISO12185	0.7185		-2.21	
337	ISO12185	0.7192		1.71	
349	D4052	0.7190	C	0.59	first reported 0.7198
360	ISO12185	0.7189		0.03	
399	D4052	0.7187		-1.09	
444	D4052	0.7188		-0.53	
445	IP365	0.7188		-0.53	
541	ISO12185	0.71889		-0.03	
608	D4052	0.7189		0.03	
657	ISO12185	0.7194		2.83	
663	D4052	0.71892		0.14	
750		-----		-----	
751	D4052	0.7189		0.03	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824	ISO12185	0.7187		-1.09	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922	D4052	0.7188		-0.53	
962		-----		-----	
963		-----		-----	
971	D4052	0.7188		-0.53	
974	D4052	0.7188		-0.53	
982		-----		-----	
994	ISO12185	0.7193		2.27	
995	ISO12185	0.7192		1.71	
997	D4052	0.7191		1.15	
1011	ISO12185	0.7190		0.59	
1012		-----		-----	
1016	D4052	0.7189		0.03	
1026	D4052	0.7188		-0.53	
1062	D4052	0.7189		0.03	
1065	D4052	0.7191		1.15	
1066	D4052	0.7187		-1.09	
1069		-----		-----	
1081	D4052	0.71876		-0.76	
1097	ISO12185	0.71885		-0.25	
1108	ISO12185	0.71895		0.31	
1135	ISO12185	0.7187		-1.09	
1145	D4052	0.71937		2.66	
1201	D4052	0.7188		-0.53	
1284	D4052	0.71883		-0.36	
1381	ISO12185	0.71881		-0.48	
1397		-----		-----	
1429	ISO12185	0.7188		-0.53	
1544	ISO12185	0.7191		1.15	
1556	ISO12185	0.7187		-1.09	
1585		-----		-----	
1586	D4052	0.7188		-0.53	

lab	method	value	mark	z(targ)	remarks
1603		-----		-----	
1656	D4052	0.7187		-1.09	
1737	D4052	0.7187		-1.09	
1749	ISO12185	0.7215	C,R(0.01)	14.59	first reported 0.7198
1776	ISO12185	0.7189		0.03	
1788	D4052	0.71880		-0.53	
1796		-----		-----	
1849	ISO12185	0.7189		0.03	
1857		-----		-----	
1914	D4052	0.7187		-1.09	
1949		-----		-----	
1950		-----		-----	
1960	D4052	0.718811		-0.47	
1967		-----		-----	
1982	D4052	0.7188		-0.53	
1995	D4052	0.7191		1.15	
6016	D4052	0.71924		1.93	
6056		-----		-----	
6134	D4052	0.7193		2.27	
6198		-----		-----	
6201	ISO12185	0.7188		-0.53	
6262	ISO12185	0.7188		-0.53	
6299	ISO12185	0.71886		-0.20	
6326	D4052	0.7187		-1.09	
7006		-----		-----	
9057		0.7189		0.03	
9058		0.7189		0.03	
9142		-----		-----	
9143		-----		-----	

normality	not OK
n	64
outliers	2
mean (n)	0.718895
st.dev. (n)	0.0002002
R(calc.)	0.000561
st.dev.(ISO12185:96)	0.0001786
R(ISO12185:96)	0.0005





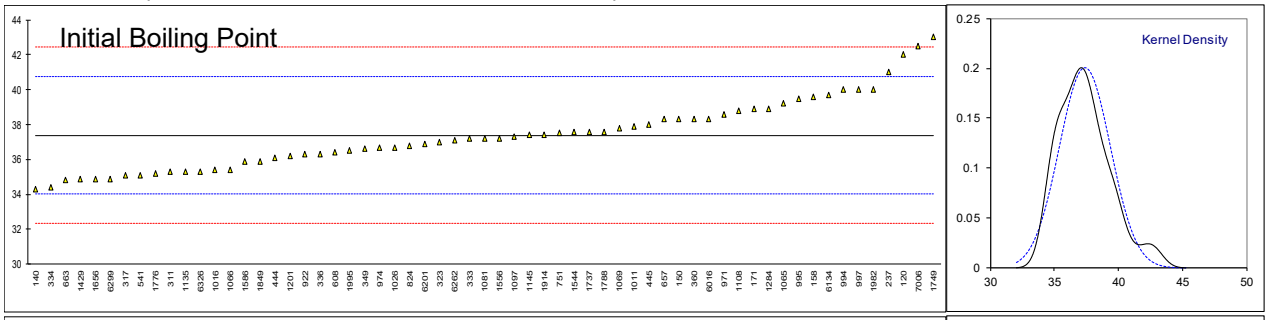
Determination of Distillation at 760 mmHg on sample #20035; results in °C

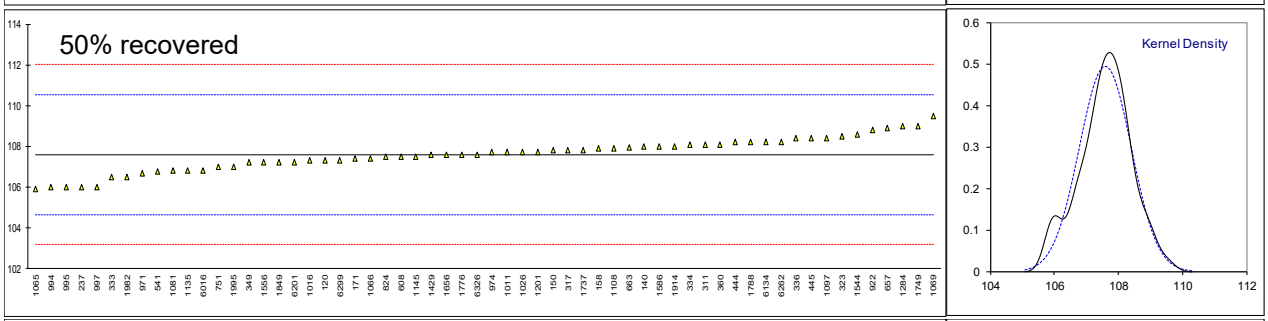
lab	method	IBP	mark	z(targ)	50%rec	mark	z(targ)	FBP	mark	z(targ)
120	D86-automated	42.0		2.75	107.3		-0.20	177.8	C,R(0.01)	4.78
140	D86-automated	34.3		-1.84	108.0		0.28	165.3		-0.15
150	D86-automated	38.3		0.55	107.8		0.14	164.5		-0.47
158	D86-automated	39.6		1.32	107.9		0.21	164.0		-0.66
171	D86-automated	38.9		0.90	107.4		-0.13	164.2		-0.59
225		-----		-----	-----		-----	-----		-----
237	D86-manual	41.0		2.16	106.0		-1.08	166.0		0.12
238		-----		-----	-----		-----	-----		-----
311		35.3		-1.24	108.1		0.34	164.9		-0.31
317	D86-automated	35.1		-1.36	107.8		0.14	167.3		0.64
323	D86-automated	37.0		-0.23	108.5		0.62	167.7		0.80
333	D86-automated	37.2		-0.11	106.5		-0.74	164.5		-0.47
334	D86-automated	34.4		-1.78	108.1		0.34	163.8		-0.74
336	ISO3405-automated	36.3		-0.64	108.4		0.55	164.8		-0.35
337		-----		-----	-----		-----	-----		-----
349		36.6		-0.47	107.2		-0.27	164.9		-0.31
360	D86-automated	38.3		0.55	108.1		0.34	164.3		-0.55
399		-----		-----	-----		-----	-----		-----
444	D86-automated	36.1		-0.76	108.2		0.41	165.8		0.05
445	D86-automated	38.0		0.37	108.4		0.55	164.2		-0.59
541	D86-automated	35.10		-1.36	106.75		-0.57	163.80		-0.74
608	D86-automated	36.4		-0.59	107.5		-0.06	166.4		0.28
657	D86-automated	38.3		0.55	108.9		0.89	170.3		1.82
663	D86-automated	34.80		-1.54	107.95		0.24	164.45		-0.49
750		-----		-----	-----		-----	-----		-----
751	D86-manual	37.5		0.07	107.0		-0.40	166.5	C	0.32
753		-----		-----	-----		-----	-----		-----
754		-----		-----	-----		-----	-----		-----
779		-----		-----	-----		-----	-----		-----
781		-----		-----	-----		-----	-----		-----
785		-----		-----	-----		-----	-----		-----
798		-----		-----	-----		-----	-----		-----
824	D86-automated	36.8		-0.35	107.5		-0.06	164.5		-0.47
855		-----		-----	-----		-----	-----		-----
862		-----		-----	-----		-----	-----		-----
864		-----		-----	-----		-----	-----		-----
868		-----		-----	-----		-----	-----		-----
872		-----		-----	-----		-----	-----		-----
873		-----		-----	-----		-----	-----		-----
874		-----		-----	-----		-----	-----		-----
875		-----		-----	-----		-----	-----		-----
912		-----		-----	-----		-----	-----		-----
914		-----		-----	-----		-----	-----		-----
922	D86-automated	36.3		-0.64	108.8		0.82	165.9		0.09
962		-----		-----	-----		-----	-----		-----
963		-----		-----	-----		-----	-----		-----
971	D86-automated	38.6		0.73	106.7		-0.61	164.2		-0.59
974	D86-automated	36.7		-0.41	107.7		0.07	166.1		0.16
982		-----		-----	-----		-----	-----		-----
994	D86-manual	40.0		1.56	106.0		-1.08	169.0		1.31
995	D86-manual	39.5		1.26	106.0		-1.08	163.0		-1.06
997		40.0		1.56	106.0		-1.08	164.0		-0.66
1011	ISO3405-automated	37.9		0.31	107.7		0.07	164		-0.66
1012		-----		-----	-----		-----	-----		-----
1016	D86-automated	35.4		-1.18	107.3		-0.20	165.6		-0.03
1026	ISO3405-automated	36.7		-0.41	107.7		0.07	168.0		0.91
1062		-----		-----	-----		-----	-----		-----
1065		39.2		1.08	105.9		-1.15	166.4		0.28
1066	D86-automated	35.4		-1.18	107.4		-0.13	162.4		-1.29
1069		37.8		0.25	109.5		1.30	167.3		0.64
1081		37.2		-0.11	106.8		-0.54	165.2		-0.19
1097	ISO3405-automated	37.3		-0.05	108.4		0.55	163.4		-0.90
1108	D86-automated	38.8		0.84	107.9		0.21	175.3	R(0.01)	3.79
1135	D86-automated	35.3		-1.24	106.8		-0.54	168.5		1.11
1145		37.40		0.01	107.50		-0.06	168.20		0.99
1201	D86-automated	36.2		-0.70	107.7		0.07	166.0		0.12
1284	D86-automated	38.9		0.90	109.0		0.96	168.0		0.91
1381		-----		-----	-----		-----	-----		-----
1397		-----		-----	-----		-----	-----		-----
1429	D86-automated	34.9		-1.48	107.6		0.00	164.5		-0.47
1544	D86-automated	37.6		0.13	108.6		0.68	165.3		-0.15
1556		37.2		-0.11	107.2		-0.27	176.0	R(0.01)	4.07
1585		-----		-----	-----		-----	-----		-----
1586		35.9		-0.88	108.0		0.28	166.7		0.40
1603		-----		-----	-----		-----	-----		-----
1656	IP123-automated	34.9		-1.48	107.6		0.00	173.1	R(0.05)	2.92

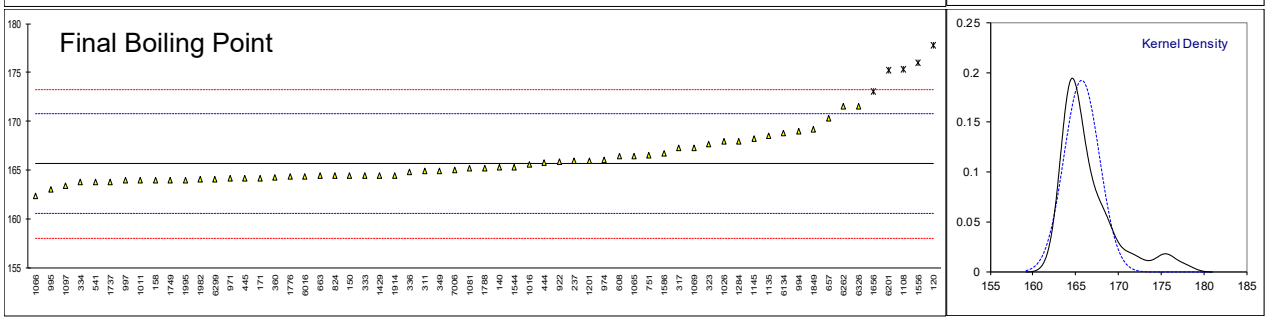
lab	method	IBP	mark	z(targ)	50%rec	mark	z(targ)	FBP	mark	z(targ)
1737		37.6		0.13	107.8		0.14	163.8		-0.74
1749	ISO3405-manual	43.0		3.35	109.0		0.96	164.0		-0.66
1776	ISO3405-automated	35.2		-1.30	107.6		0.00	164.4		-0.51
1788		37.6		0.13	108.2		0.41	165.2		-0.19
1796		-----		-----	-----		-----	-----		-----
1849	ISO3405-automated	35.9		-0.88	107.2		-0.27	169.2		1.39
1857	D86-automated	-----		-----	-----		-----	-----		-----
1914	D86-automated	37.4		0.01	108.0		0.28	164.5		-0.47
1949		-----		-----	-----		-----	-----		-----
1950		-----		-----	-----		-----	-----		-----
1960		-----		-----	-----		-----	-----		-----
1967		-----		-----	-----		-----	-----		-----
1982	D86-automated	40.01		1.57	106.50		-0.74	164.04		-0.65
1995	D86-automated	36.5		-0.53	107		-0.40	164		-0.66
6016		38.3		0.55	106.8		-0.54	164.4	C	-0.51
6056		-----		-----	-----		-----	-----		-----
6134	D86-automated	39.7		1.38	108.2		0.41	168.8	C	1.23
6198		-----		-----	-----		-----	-----		-----
6201	D86-automated	36.9		-0.29	107.2		-0.27	175.2	R(0.01)	3.75
6262	D86-automated	37.1		-0.17	108.2		0.41	171.5		2.29
6299	ISO3405-automated	34.9		-1.48	107.3		-0.20	164.1		-0.62
6326	D86-automated	35.3		-1.24	107.6		0.00	171.5		2.29
7006		42.5		3.05	-----		-----	165		-0.27
9057		-----		-----	-----		-----	-----		-----
9058		-----		-----	-----		-----	-----		-----
9142		-----		-----	-----		-----	-----		-----
9143		-----		-----	-----		-----	-----		-----
	normality	OK			OK			suspect		
	n	61			60			56		
	outliers	0			0			5		
	mean (n)	37.38			107.60			165.68		
	st.dev. (n)	1.987			0.805			2.073		
	R(calc.)	5.56			2.25			5.80		
	st.dev.(D86-A:19)	1.679			1.470			2.536		
	R(D86-A:19)	4.7			4.12			7.1		
Compare										
	R(D86-M:19)	5.6			4.23			7.2		

Lab 120 first reported 180.3
Lab 751 first reported 176.5

Lab 6016 first reported 152.4
Lab 6134 first reported 173.7





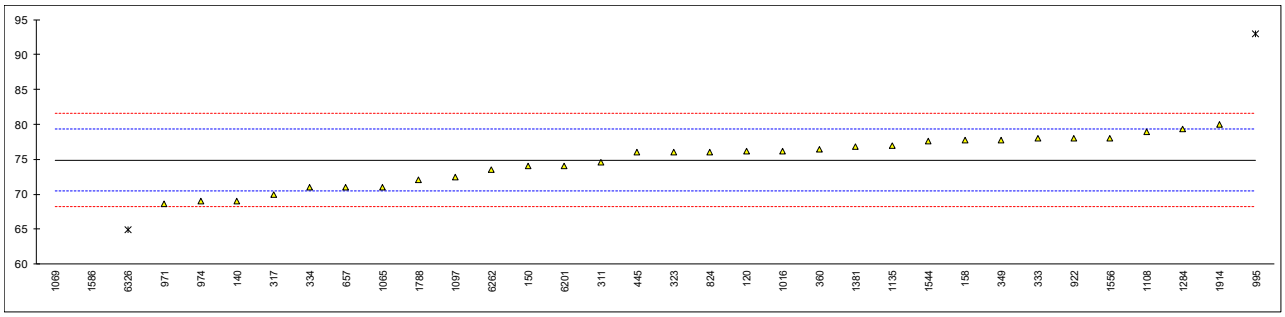


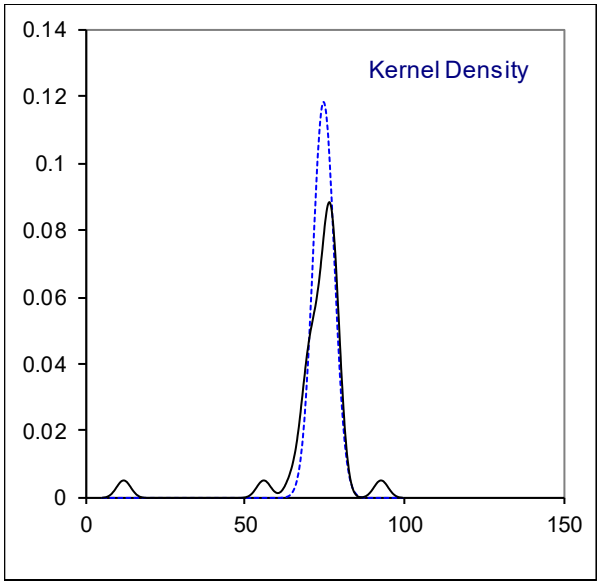
Determination of Mercaptan Sulfur as S on sample #20035; results in mg/kg

lab	method	value	mark	z(targ)	remarks
120	D3227	76.2		0.59	
140	D3227	69		-2.64	
150	D3227	74		-0.39	
158	D3227	77.75		1.29	
171	D3227	<3		<-32.23	possibly a false negative test result?
225		-----		-----	
237		-----		-----	
238		-----		-----	
311	UOP163	74.6		-0.12	
317	UOP163	70		-2.19	
323	UOP163	76		0.50	
333	D3227	78		1.40	
334	D3227	71		-1.74	
336		-----		-----	
337		-----		-----	
349	UOP163	77.8		1.31	
360	D3227	76.4	C	0.68	first reported 54.5
399		-----		-----	
444		-----		-----	
445	D3227	76		0.50	
541		-----		-----	
608		-----		-----	
657	D3227	71		-1.74	
663		-----		-----	
750		-----		-----	
751		-----		-----	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824	D3227	76	C	0.50	first reported 83
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922	D3227	78		1.40	
962		-----		-----	
963		-----		-----	
971	D3227	68.6		-2.81	
974	D3227	69		-2.64	
982		-----		-----	
994		-----		-----	
995	D3227	93	C,R(0.01)	8.13	first reported 83
997		-----		-----	
1011		-----		-----	
1012		-----		-----	
1016	UOP163	76.2		0.59	
1026		-----		-----	
1062		-----		-----	
1065	D3227	71		-1.74	
1066		-----		-----	
1069	D5623	11.8	R(0.01)	-28.28	
1081		-----		-----	
1097	ISO3012	72.5		-1.07	
1108	D3227	79		1.85	
1135	D3227	77		0.95	
1145		-----		-----	
1201		-----		-----	
1284	D3227	79.3		1.98	
1381	UOP163	76.86		0.89	
1397		-----		-----	
1429		-----		-----	
1544	UOP163	77.6		1.22	
1556	UOP163	78		1.40	
1585		-----		-----	
1586	D3227	56	R(0.01)	-8.46	

lab	method	value	mark	z(targ)	remarks
1603		-----		-----	
1656		-----		-----	
1737		-----		-----	
1749		-----		-----	
1776		-----		-----	
1788	D3227	72		-1.29	
1796		-----		-----	
1849		-----		-----	
1857		-----		-----	
1914	D3227	80		2.30	
1949		-----		-----	
1950		-----		-----	
1960		-----		-----	
1967		-----		-----	
1982		-----		-----	
1995		-----		-----	
6016		-----		-----	
6056		-----		-----	
6134		-----		-----	
6198		-----		-----	
6201	D3227	74		-0.39	
6262	D3227	73.5		-0.62	
6299		-----		-----	
6326	D3227	64.92	R(0.01)	-4.46	
7006		-----		-----	
9057		-----		-----	
9058		-----		-----	
9142		-----		-----	
9143		-----		-----	

normality	OK
n	30
outliers	4
mean (n)	74.877
st.dev. (n)	3.3688
R(calc.)	9.433
st.dev.(D3227:16)	2.2303
R(D3227:16)	6.245





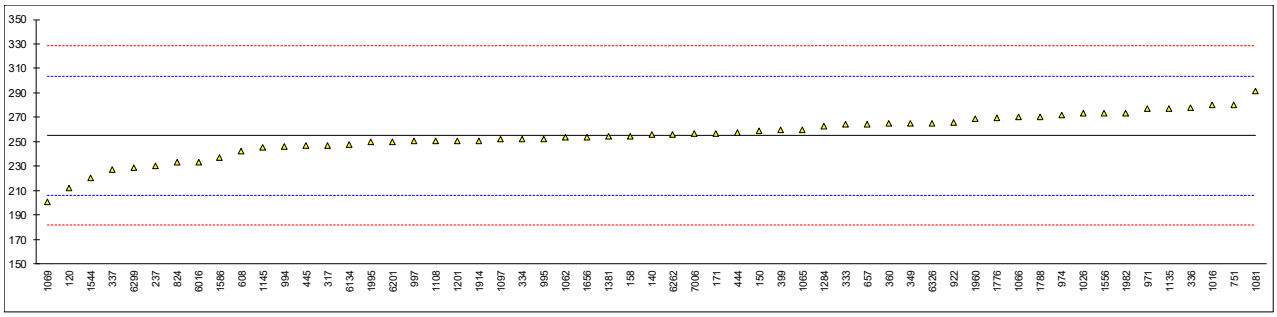
Determination of Sulfur on sample #20035; results in mg/kg

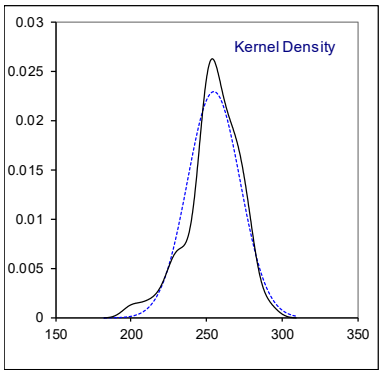
lab	method	value	mark	z(targ)	remarks
120	D4294	212.1	C	-1.76	first reported 181.2
140	D2622	256		0.04	
150	D2622	259		0.16	
158	D2622	254.75		-0.02	
171	D2622	257		0.08	
225		-----		-----	
237	D5453	230		-1.03	
238		-----		-----	
311		-----		-----	
317	D5453	247		-0.33	
323		-----		-----	
333	D4294	264		0.36	
334	ISO8754	252		-0.13	
336	ISO20846	278		0.94	
337	D2622	227		-1.15	
349	D7039	265		0.40	
360	D5453	265		0.40	
399	D4294	260		0.20	
444	D5453	257.7		0.11	
445	D4294	247		-0.33	
541		-----		-----	
608	D5453	242.0		-0.54	
657	D4294	264		0.36	
663		-----		-----	
750		-----		-----	
751	D4294	280		1.02	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824	D5453	233		-0.91	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922	D4294	266		0.45	
962		-----		-----	
963		-----		-----	
971	D4294	277		0.90	
974	D4294	272		0.69	
982		-----		-----	
994	D4294	246		-0.37	
995	D4294	252		-0.13	
997	D4294	251		-0.17	
1011		-----		-----	
1012		-----		-----	
1016	D2622	279.8		1.01	
1026	D2622	273	C	0.73	first reported 300
1062	D4294	254		-0.05	
1065	D4294	260		0.20	
1066	D2622	270		0.61	
1069	D7183	200.8		-2.23	
1081	D4294	291.3		1.48	
1097	D5453	251.99		-0.13	
1108	D5453	251		-0.17	
1135	D4294	277		0.90	
1145	D5453	245.59		-0.39	
1201	D4294	251		-0.17	
1284	D2622	263		0.32	
1381	D4294	254.6		-0.02	
1397		-----		-----	
1429		-----		-----	
1544	D5453	220.7		-1.41	
1556	ISO8754	273.0		0.73	
1585		-----		-----	
1586	D5453	237		-0.74	

lab	method	value	mark	z(targ)	remarks
1603		-----		-----	
1656	IP336	254		-0.05	
1737		-----		-----	
1749		-----		-----	
1776	D5453	269.61		0.59	
1788	D5453	270		0.61	
1796		-----		-----	
1849		-----	W	-----	test result withdrawn. first reported 330
1857		-----		-----	
1914	D5453	251		-0.17	
1949		-----		-----	
1950		-----		-----	
1960	D5453	269		0.57	
1967		-----		-----	
1982	D5453	273.1		0.74	
1995	D4294	250	C	-0.21	first reported 0.0250 mg/kg
6016	D4294	233.1		-0.90	
6056		-----		-----	
6134	D5453	247.4		-0.32	
6198		-----		-----	
6201	D4294	250		-0.21	
6262	D2622	256		0.04	
6299	D5453	229		-1.07	
6326	D5453	265.21		0.41	
7006	D5453	256.7		0.06	
9057		-----		-----	
9058		-----		-----	
9142		-----		-----	
9143		-----		-----	

			ED XRF only	WD XRF only	UV F only
			D4294 and IP336	D2622	D5453 and ISO20846
	normality	suspect	suspect	not OK	OK
	n	57	22	10	21
	outliers	0	0	0	0
	mean (n)	255.131	257.550	259.555	251.905
	st.dev. (n)	17.3751	16.8294	14.2463	16.1403
	R(calc.)	48.650	47.122	39.890	45.193
	st.dev.(D4294:16e1)	24.3857	--	--	--
	R(D4294:16e1)	68.280	68.697	--	--
Compare					
	R(D2622:16)	36.287	--	36.791	--
	R(D5453:19a)	37.006	--	--	36.655

ED XRF = Energy dispersion X-ray Fluorescence Spectroscopy
WD XRF = wavelength dispersion X-ray Fluorescence Spectroscopy
UV F = ultra violet Fluorescence



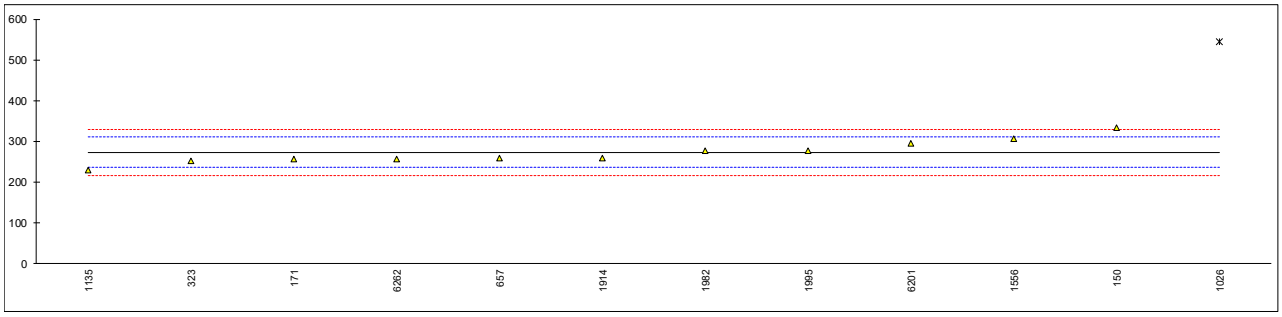


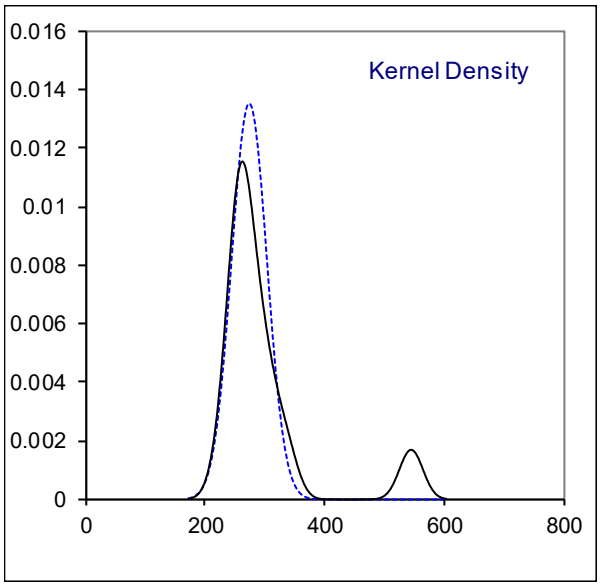
Determination of Acetone on sample #20036; results in mg/kg

lab	method	value	mark	z(targ)	remarks
120		-----		-----	
140		-----		-----	
150	D7423	334.3		3.26	
158		-----		-----	
171	D7423	255.6		-0.93	
225		-----		-----	
237		-----		-----	
238		-----		-----	
311		-----		-----	
317		-----		-----	
323	In house	253		-1.07	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
349		-----		-----	
360		-----		-----	
399		-----		-----	
444		-----		-----	
445		-----		-----	
541		-----		-----	
608		-----		-----	
657	In house	258		-0.80	
663		-----		-----	
750		-----		-----	
751		-----		-----	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824	D7423	>100		-----	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
971		-----		-----	
974		-----		-----	
982		-----		-----	
994		-----		-----	
995		-----		-----	
997		-----		-----	
1012		-----		-----	
1016		-----		-----	
1026	D7423	544.17	C,D(0.01)	14.44	first reported 2.7729
1062		-----		-----	
1065		-----		-----	
1066		-----		-----	
1069		-----		-----	
1081		-----		-----	
1097		-----		-----	
1108		-----		-----	
1135	D7423	230		-2.29	
1145		-----		-----	
1201		-----		-----	
1284		-----		-----	
1381		-----		-----	
1397		-----		-----	
1429		-----		-----	
1544		-----		-----	
1556	D7423	306.7		1.79	
1585		-----		-----	
1586		-----		-----	
1603		-----		-----	

lab	method	value	mark	z(targ)	remarks
1656		-----		-----	
1737		-----		-----	
1749		-----		-----	
1776		-----		-----	
1788		-----		-----	
1796		-----		-----	
1849		-----		-----	
1857		-----		-----	
1914	D7754	258		-0.80	
1949		-----		-----	
1950		-----		-----	
1960		-----		-----	
1967		-----		-----	
1982	D7754	277		0.21	
1995	D7423	277.87		0.26	
6016		-----		-----	
6056		-----		-----	
6134		-----		-----	
6198		-----		-----	
6201	D7423	296.1		1.23	
6262	D7423	257		-0.85	
6299		-----		-----	
6326	D7423	<1		<-14.49	possibly a false negative test result?
7006		-----		-----	
9057		-----		-----	
9058		-----		-----	
9142		-----		-----	
9143		-----		-----	

	normality	OK
	n	11
	outliers	1
	mean (n)	273.052
	st.dev. (n)	29.5372
	R(calc.)	82.704
	st.dev.(Horwitz)	18.7791
	R(Horwitz)	52.581
Compare		
	R(D7423:17)	12.703





Determination of DIPE on sample #20036; results in mg/kg

lab	method	value	mark	z(targ)	remarks
120		-----		-----	
140		-----		-----	
150	D7423	<0.5		-----	
158		-----		-----	
171	D7423	861.67		-----	possibly a false positive test result?
225		-----		-----	
237		-----		-----	
238		-----		-----	
311		-----		-----	
317		-----		-----	
323	In house	<2		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
349		<10		-----	
360		-----		-----	
399		-----		-----	
444		-----		-----	
445		-----		-----	
541		-----		-----	
608		-----		-----	
657	In house	<0.1		-----	
663		-----		-----	
750		-----		-----	
751		-----		-----	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824		-----		-----	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
971		-----		-----	
974		-----		-----	
982		-----		-----	
994		-----		-----	
995		-----		-----	
997		-----		-----	
1012		-----		-----	
1016		-----		-----	
1026	D7423	0.76	C	-----	first reported <0.1
1062		-----		-----	
1065		-----		-----	
1066		-----		-----	
1069		-----		-----	
1081		-----		-----	
1097		-----		-----	
1108		-----		-----	
1135		-----		-----	
1145		-----		-----	
1201		-----		-----	
1284		-----		-----	
1381		-----		-----	
1397		-----		-----	
1429		-----		-----	
1544		-----		-----	
1556	D7423	1.4		-----	
1585		-----		-----	
1586		-----		-----	
1603		-----		-----	

lab	method	value	mark	z(targ)	remarks
1656		-----		-----	
1737		-----		-----	
1749		-----		-----	
1776		-----		-----	
1788		-----		-----	
1796		-----		-----	
1849		-----		-----	
1857		-----		-----	
1914	D7754	<10		-----	
1949		-----		-----	
1950		-----		-----	
1960		-----		-----	
1967		-----		-----	
1982	D7754	1		-----	
1995	D7423	0		-----	
6016		-----		-----	
6056		-----		-----	
6134		-----		-----	
6198		-----		-----	
6201	D7423	<0.5		-----	
6262	D7423	0		-----	
6299		-----		-----	
6326	D7423	<1		-----	
7006		-----		-----	
9057		-----		-----	
9058		-----		-----	
9142		-----		-----	
9143		-----		-----	
	n	12			
	mean (n)	<10			

Determination of MEK on sample #20036; results in mg/kg

lab	method	value	mark	z(targ)	remarks
120		-----		-----	
140		-----		-----	
150	D7423	<0.5		-----	
158		-----		-----	
171	D7423	<0.5		-----	
225		-----		-----	
237		-----		-----	
238		-----		-----	
311		-----		-----	
317		-----		-----	
323	In house	<20		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
349		-----		-----	
360		-----		-----	
399		-----		-----	
444		-----		-----	
445		-----		-----	
541		-----		-----	
608		-----		-----	
657	In house	<1	C	-----	first reported 1015.2
663		-----		-----	
750		-----		-----	
751		-----		-----	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824		-----		-----	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
971		-----		-----	
974		-----		-----	
982		-----		-----	
994		-----		-----	
995		-----		-----	
997		-----		-----	
1012		-----		-----	
1016		-----		-----	
1026	D7423	1314.80		-----	possibly a false positive test result?
1062		-----		-----	
1065		-----		-----	
1066		-----		-----	
1069		-----		-----	
1081		-----		-----	
1097		-----		-----	
1108		-----		-----	
1135		-----		-----	
1145		-----		-----	
1201		-----		-----	
1284		-----		-----	
1381		-----		-----	
1397		-----		-----	
1429		-----		-----	
1544		-----		-----	
1556	D7423	1128.8		-----	possibly a false positive test result?
1585		-----		-----	
1586		-----		-----	
1603		-----		-----	

lab	method	value	mark	z(targ)	remarks
1656		-----		-----	
1737		-----		-----	
1749		-----		-----	
1776		-----		-----	
1788		-----		-----	
1796		-----		-----	
1849		-----		-----	
1857		-----		-----	
1914	D7754	<10 [2]		-----	
1949		-----		-----	
1950		-----		-----	
1960		-----		-----	
1967		-----		-----	
1982		-----	W	-----	test result withdrawn. first reported 1124
1995	D7423	1201.6		-----	possibly a false positive test result?
6016		-----		-----	
6056		-----		-----	
6134		-----		-----	
6198		-----		-----	
6201	D7423	1093.4		-----	possibly a false positive test result?
6262	D7423	1235		-----	possibly a false positive test result?
6299		-----		-----	
6326	D7423	2.52		-----	
7006		-----		-----	
9057		-----		-----	
9058		-----		-----	
9142		-----		-----	
9143		-----		-----	
	n	6			
	mean (n)	<20			

Determination of Methanol on sample #20036; results in mg/kg

lab	method	value	mark	z(targ)	remarks
120		-----		-----	
140		-----		-----	
150		-----		-----	
158		-----		-----	
171	D7423	<0.5		-----	
225		-----		-----	
237		-----		-----	
238		-----		-----	
311		-----		-----	
317		-----		-----	
323	In house	<2		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
349		<10		-----	
360		-----		-----	
399		-----		-----	
444		-----		-----	
445		-----		-----	
541		-----		-----	
608		-----		-----	
657	In house	0.8		-----	
663		-----		-----	
750		-----		-----	
751		-----		-----	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824	D7423	0.46		-----	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
971		-----		-----	
974		-----		-----	
982		-----		-----	
994		-----		-----	
995		-----		-----	
997		-----		-----	
1012		-----		-----	
1016	ISO22854-A	>100		-----	possibly a false positive test result?
1026		-----	W	-----	test result withdrawn. first reported 40.5429
1062		-----		-----	
1065		-----		-----	
1066		-----		-----	
1069	UOP 569-79	0.5		-----	
1081		-----		-----	
1097		-----		-----	
1108		-----		-----	
1135		-----		-----	
1145		-----		-----	
1201		-----		-----	
1284		-----		-----	
1381		-----		-----	
1397		-----		-----	
1429		-----		-----	
1544		-----		-----	
1556	D7423	<1		-----	
1585		-----		-----	
1586		-----		-----	
1603		-----		-----	

lab	method	value	mark	z(targ)	remarks
1656		-----		-----	
1737		-----		-----	
1749		-----		-----	
1776		-----		-----	
1788		-----		-----	
1796		-----		-----	
1849		-----		-----	
1857		-----		-----	
1914	D7754	<10		-----	
1949		-----		-----	
1950		-----		-----	
1960		-----		-----	
1967		-----		-----	
1982	D7754	n.d.		-----	
1995	D7423	0		-----	
6016		-----		-----	
6056		-----		-----	
6134		-----		-----	
6198		-----		-----	
6201	D7423	165.2		-----	possibly a false positive test result?
6262	D7423	3.0		-----	
6299		-----		-----	
6326	D7423	<1		-----	
7006		-----		-----	
9057		-----		-----	
9058		-----		-----	
9142		-----		-----	
9143		-----		-----	
	n	11			
	mean (n)	<10			

Determination of Ethanol on sample #20036; results in mg/kg

lab	method	value	mark	z(targ)	remarks
120		-----		-----	
140		-----		-----	
150	D7423	13.0		-----	
158		-----		-----	
171	D7423	3.38		-----	
225		-----		-----	
237		-----		-----	
238		-----		-----	
311		-----		-----	
317		-----		-----	
323	In house	9		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
349		-----		-----	
360		-----		-----	
399		-----		-----	
444		-----		-----	
445		-----		-----	
541		-----		-----	
608		-----		-----	
657	In house	3.9		-----	
663		-----		-----	
750		-----		-----	
751		-----		-----	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824	D7423	3.4		-----	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
971		-----		-----	
974		-----		-----	
982		-----		-----	
994		-----		-----	
995		-----		-----	
997		-----		-----	
1012		-----		-----	
1016		-----		-----	
1026	D7423	12.29	C	-----	first reported 0.6256
1062		-----		-----	
1065		-----		-----	
1066		-----		-----	
1069		-----		-----	
1081		-----		-----	
1097		-----		-----	
1108		-----		-----	
1135	D7423	6		-----	
1145		-----		-----	
1201		-----		-----	
1284		-----		-----	
1381		-----		-----	
1397		-----		-----	
1429		-----		-----	
1544		-----		-----	
1556	D7423	6.3		-----	
1585		-----		-----	
1586		-----		-----	
1603		-----		-----	

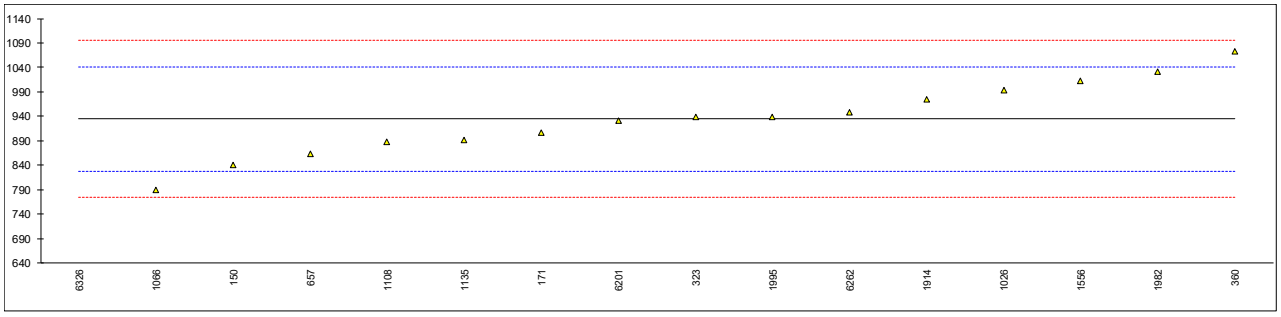
lab	method	value	mark	z(targ)	remarks
1656		-----		-----	
1737		-----		-----	
1749		-----		-----	
1776		-----		-----	
1788		-----		-----	
1796		-----		-----	
1849		-----		-----	
1857		-----		-----	
1914	D7754	12		-----	
1949		-----		-----	
1950		-----		-----	
1960		-----		-----	
1967		-----		-----	
1982	D7754	9		-----	
1995	D7423	5.3		-----	
6016		-----		-----	
6056		-----		-----	
6134		-----		-----	
6198		-----		-----	
6201	D7423	7.1		-----	
6262	D7423	7.4		-----	
6299		-----		-----	
6326	D7423	3.66		-----	
7006		-----		-----	
9057		-----		-----	
9058		-----		-----	
9142		-----		-----	
9143		-----		-----	
	n	11			
	mean (n)	<10			

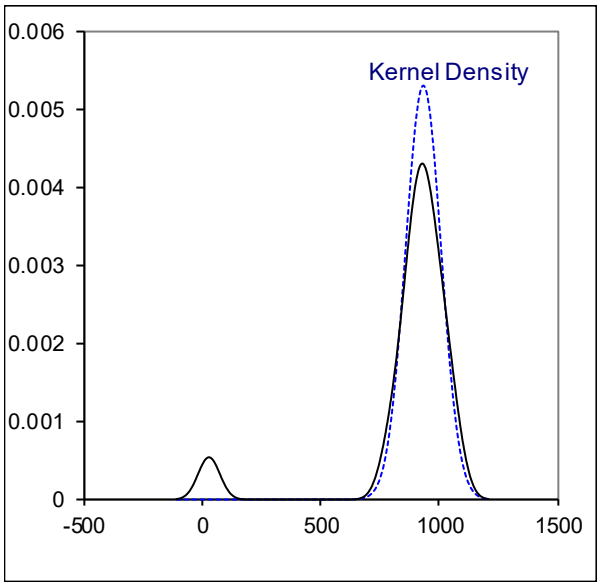
Determination of MTBE on sample #20036; results in mg/kg

lab	method	value	mark	z(targ)	remarks
120		-----		-----	
140		-----		-----	
150	D7423	840.6		-1.76	
158		-----		-----	
171	D7423	906.53		-0.53	
225		-----		-----	
237		-----		-----	
238		-----		-----	
311		-----		-----	
317		-----		-----	
323	In house	938		0.06	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
349		-----		-----	
360	D7423	1072.0		2.57	
399		-----		-----	
444		-----		-----	
445		-----		-----	
541		-----		-----	
608		-----		-----	
657	In house	863.6		-1.33	
663		-----		-----	
750		-----		-----	
751		-----		-----	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824	D7423	>100		-----	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
971		-----		-----	
974		-----		-----	
982		-----		-----	
994		-----		-----	
995		-----		-----	
997		-----		-----	
1012		-----		-----	
1016	ISO22854-A	>100		-----	
1026	D7423	994.03	C	1.11	first reported 0.1270
1062		-----		-----	
1065		-----		-----	
1066	D6729	790		-2.71	
1069		-----		-----	
1081		-----		-----	
1097		-----		-----	
1108	D7423	887		-0.89	
1135	D7423	892		-0.80	
1145		-----		-----	
1201		-----		-----	
1284		-----		-----	
1381		-----		-----	
1397		-----		-----	
1429		-----		-----	
1544		-----		-----	
1556	D7423	1013.2		1.47	
1585		-----		-----	
1586		-----		-----	
1603		-----		-----	

lab	method	value	mark	z(targ)	remarks
1656		-----		-----	
1737		-----		-----	
1749		-----		-----	
1776		-----		-----	
1788		-----		-----	
1796		-----		-----	
1849		-----		-----	
1857		-----		-----	
1914	D7754	974		0.73	
1949		-----		-----	
1950		-----		-----	
1960		-----		-----	
1967		-----		-----	
1982	D7754	1031		1.80	
1995	D7423	939.45		0.09	
6016		-----		-----	
6056		-----		-----	
6134		-----		-----	
6198		-----		-----	
6201	D7423	931.4		-0.06	
6262	D7423	949		0.27	
6299		-----		-----	
6326	D7423	26.44	D(0.01)	-17.00	
7006		-----		-----	
9057		-----		-----	
9058		-----		-----	
9142		-----		-----	
9143		-----		-----	

	normality	OK
	n	15
	outliers	1
	mean (n)	934.787
	st.dev. (n)	75.2808
	R(calc.)	210.786
	st.dev.(Horwitz)	53.4190
	R(Horwitz)	149.573
Compare		
	R(D7423:17)	182.585



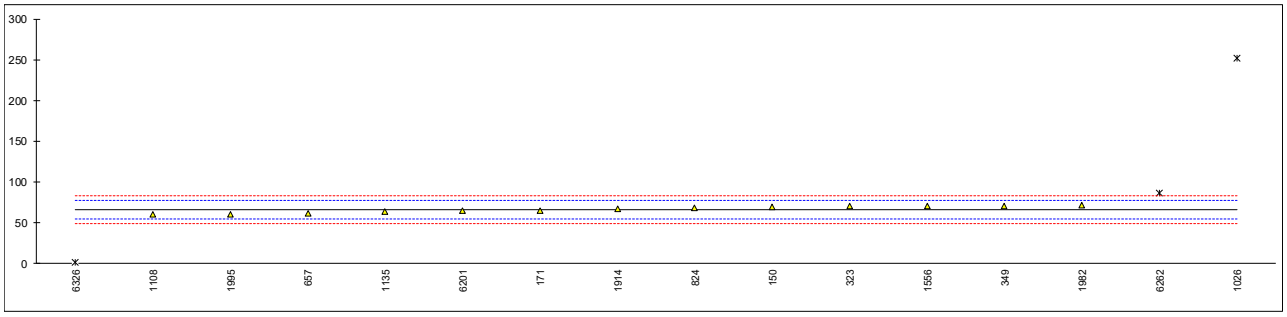


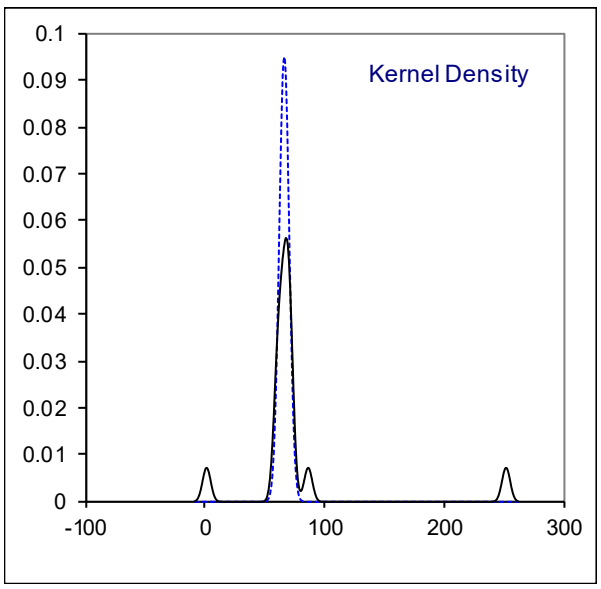
Determination of TAME on sample #20036; results in mg/kg

lab	method	value	mark	z(targ)	remarks
120		-----		-----	
140		-----		-----	
150	D7423	69.9	C	0.61	first reported <0.5
158		-----		-----	
171	D7423	64.85		-0.28	
225		-----		-----	
237		-----		-----	
238		-----		-----	
311		-----		-----	
317		-----		-----	
323	In house	70		0.63	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
349		71		0.81	
360		-----		-----	
399		-----		-----	
444		-----		-----	
445		-----		-----	
541		-----		-----	
608		-----		-----	
657	In house	61.2		-0.92	
663		-----		-----	
750		-----		-----	
751		-----		-----	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824	D7423	68.2		0.31	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
971		-----		-----	
974		-----		-----	
982		-----		-----	
994		-----		-----	
995		-----		-----	
997		-----		-----	
1012		-----		-----	
1016		-----		-----	
1026	D7423	252.28	C,D(0.01)	32.88	first reported <0.1
1062		-----		-----	
1065		-----		-----	
1066		-----		-----	
1069		-----		-----	
1081		-----		-----	
1097		-----		-----	
1108	D7423	60.2		-1.10	
1135	D7423	64		-0.43	
1145		-----		-----	
1201		-----		-----	
1284		-----		-----	
1381		-----		-----	
1397		-----		-----	
1429		-----		-----	
1544		-----		-----	
1556	D7423	70.2		0.67	
1585		-----		-----	
1586		-----		-----	
1603		-----		-----	

lab	method	value	mark	z(targ)	remarks
1656		-----		-----	
1737		-----		-----	
1749		-----		-----	
1776		-----		-----	
1788		-----		-----	
1796		-----		-----	
1849		-----		-----	
1857		-----		-----	
1914	D7754	67		0.10	
1949		-----		-----	
1950		-----		-----	
1960		-----		-----	
1967		-----		-----	
1982	D7754	72		0.99	
1995	D7423	60.2		-1.10	
6016		-----		-----	
6056		-----		-----	
6134		-----		-----	
6198		-----		-----	
6201	D7423	64.8		-0.29	
6262	D7423	86.5	D(0.05)	3.55	
6299		-----		-----	
6326	D7423	1.40	D(0.01)	-11.51	
7006		-----		-----	
9057		-----		-----	
9058		-----		-----	
9142		-----		-----	
9143		-----		-----	

	normality	OK
	n	13
	outliers	3
	mean (n)	66.427
	st.dev. (n)	4.1873
	R(calc.)	11.724
	st.dev.(Horwitz)	5.6516
	R(Horwitz)	15.825
Compare		
	R(D7423:17)	5.353



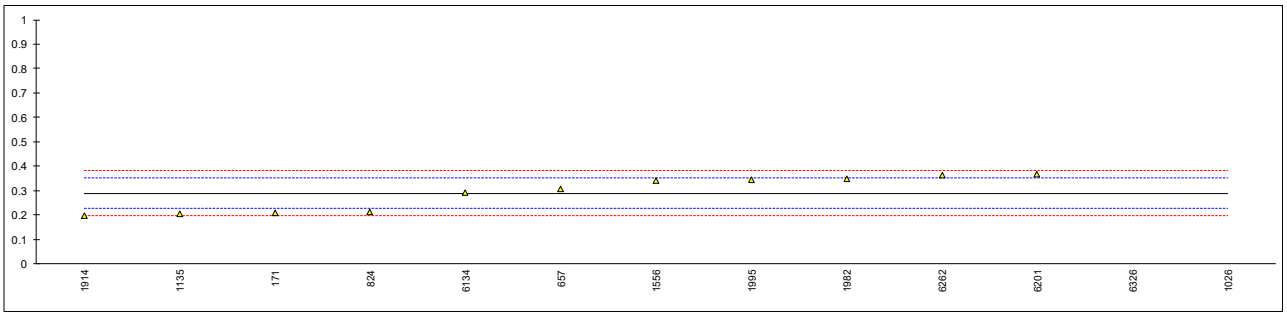


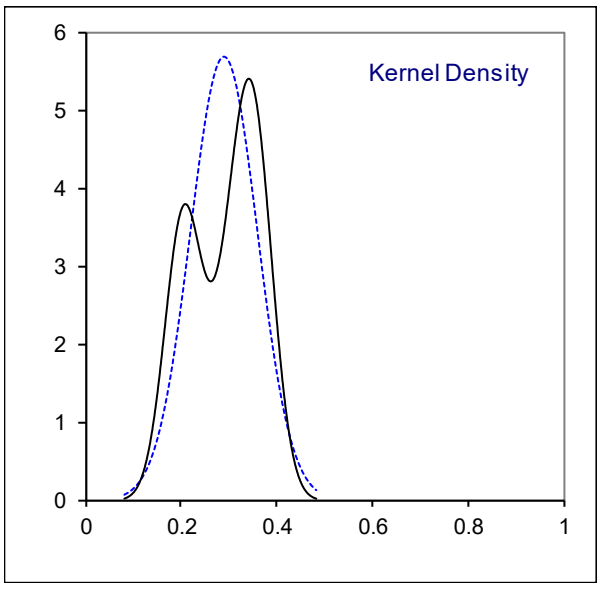
Determination of Total Oxygenates on sample #20036; results in %M/M

lab	method	value	mark	z(targ)	remarks
120		-----		-----	
140		-----		-----	
150		-----		-----	
158		-----		-----	
171	D7423	0.2092		-2.58	
225		-----		-----	
237		-----		-----	
238		-----		-----	
311		-----		-----	
317		-----		-----	
323		-----		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
349		-----		-----	
360		-----		-----	
399		-----		-----	
444		-----		-----	
445		-----		-----	
541		-----		-----	
608		-----		-----	
657	In house	0.30789		0.58	
663		-----		-----	
750		-----		-----	
751		-----		-----	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824	D7423	0.211		-2.52	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
971		-----		-----	
974		-----		-----	
982		-----		-----	
994		-----		-----	
995		-----		-----	
997		-----		-----	
1012		-----		-----	
1016		-----		-----	
1026	D7423	45.2517	D(0.01)	1439.89	
1062		-----		-----	
1065		-----		-----	
1066		-----		-----	
1069		-----		-----	
1081		-----		-----	
1097		-----		-----	
1108		-----		-----	
1135	D7423	0.2038	C	-2.75	reported 2038 %M/M
1145		-----		-----	
1201		-----		-----	
1284		-----		-----	
1381		-----		-----	
1397		-----		-----	
1429		-----		-----	
1544		-----		-----	
1556	D7423	0.34		1.61	
1585		-----		-----	
1586		-----		-----	
1603		-----		-----	

lab	method	value	mark	z(targ)	remarks
1656		-----		-----	
1737		-----		-----	
1749		-----		-----	
1776		-----		-----	
1788		-----		-----	
1796		-----		-----	
1849		-----		-----	
1857		-----		-----	
1914	D7754	0.1981		-2.93	
1949		-----		-----	
1950		-----		-----	
1960		-----		-----	
1967		-----		-----	
1982	D7754	0.3498		1.92	
1995	D7423	0.345119	C	1.77	reported 3451.19 %M/M
6016		-----		-----	
6056		-----		-----	
6134	In house	0.2935		0.12	
6198		-----		-----	
6201	D7423	0.36612	C	2.45	reported 3661.2 %M/M
6262	D7423	0.3625	C	2.33	reported 3625 %M/M
6299		-----		-----	
6326	D7423	39.59	D(0.01)	1258.58	
7006		-----		-----	
9057		-----		-----	
9058		-----		-----	
9142		-----		-----	
9143		-----		-----	

	normality	OK
	n	11
	outliers	2
	mean (n)	0.290
	st.dev. (n)	0.0701
	R(calc.)	0.196
	st.dev.(Horwitz 5 comp.)	0.0312
	R(Horwitz 5 comp.)	0.087
Compare		
	R(D7423:17)	0.019



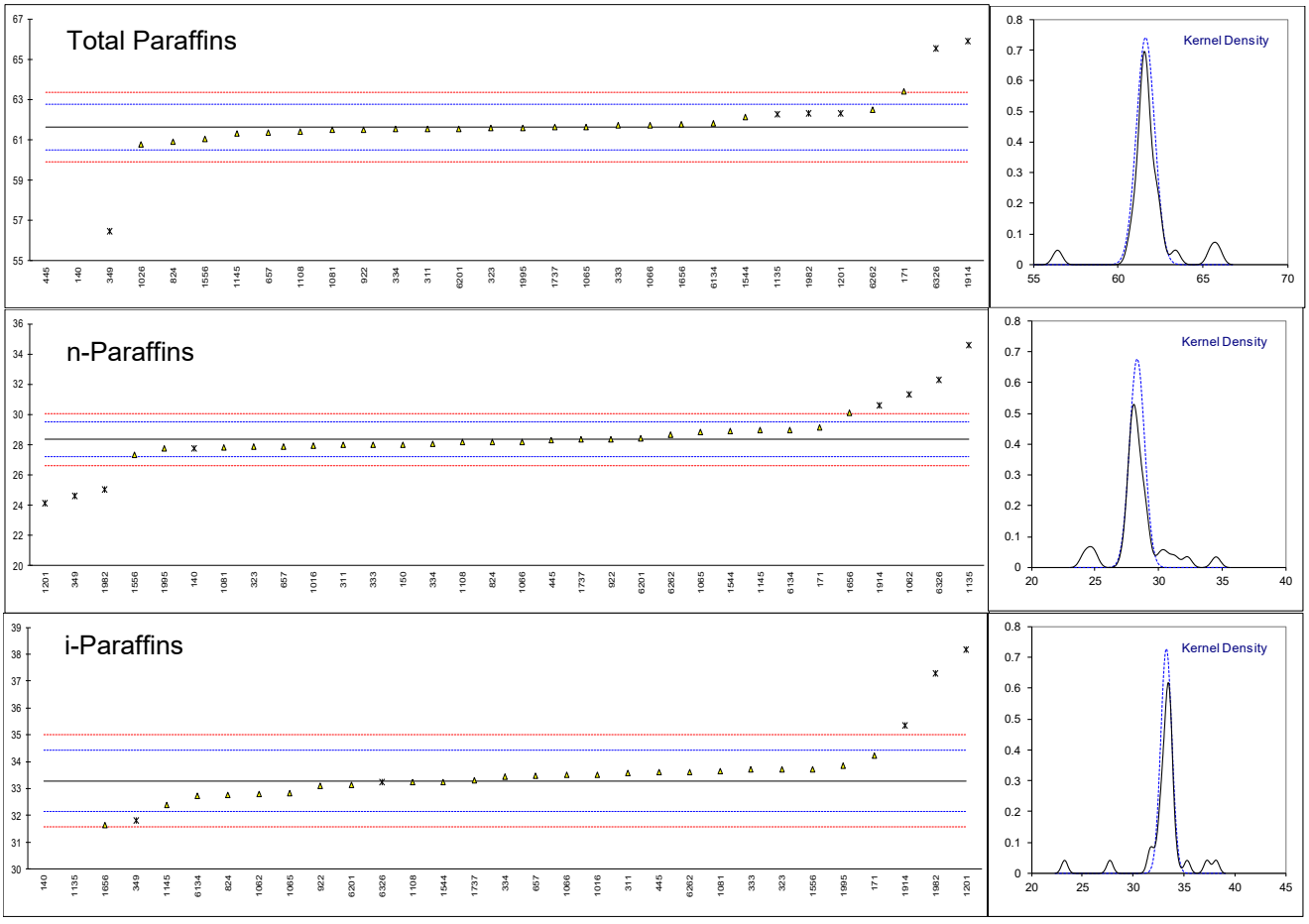


Determination of PIONA - Total Paraffins, n-Paraffins, i-Paraffins on sample #20036; results in %V/V

lab	method	Total P	mark	z(targ)	n-Paraf.	mark	z(targ)	i-Paraf.	mark	z(targ)
120		-----		-----	-----		-----	-----		-----
140	D5443	51.01	R(0.01)	-18.58	27.77	ex	-1.00	23.24	R(0.01)	-17.57
150	D6729	-----		-----	28.02		-0.56	-----		-----
158		-----		-----	-----		-----	-----		-----
171	D6729	63.392		3.09	29.169		1.45	34.223		1.65
225		-----		-----	-----		-----	-----		-----
237		-----		-----	-----		-----	-----		-----
238		-----		-----	-----		-----	-----		-----
311	D5443 mod	61.53		-0.17	27.97		-0.65	33.56		0.49
317		-----		-----	-----		-----	-----		-----
323	D6839	61.57		-0.10	27.86		-0.84	33.71		0.76
333	D6839	61.7		0.13	28.0		-0.60	33.7		0.74
334	ISO22854-A	61.53		-0.17	28.08		-0.46	33.45		0.30
336		-----		-----	-----		-----	-----		-----
337		-----		-----	-----		-----	-----		-----
349	ISO22854-A	56.44	R(0.01)	-9.08	24.62	R(0.05)	-6.51	31.82	ex	-2.55
360	D5443	-----		-----	-----		-----	-----		-----
399		-----		-----	-----		-----	-----		-----
444	D5443	-----		-----	-----		-----	-----		-----
445	D6839	50.80	E,R(0.01)	-18.95	28.31		-0.05	33.61	C	0.58
541		-----		-----	-----		-----	-----		-----
608		-----		-----	-----		-----	-----		-----
657	D5443	61.34		-0.50	27.87		-0.82	33.47		0.34
663		-----		-----	-----		-----	-----		-----
750		-----		-----	-----		-----	-----		-----
751		-----		-----	-----		-----	-----		-----
753		-----		-----	-----		-----	-----		-----
754		-----		-----	-----		-----	-----		-----
779		-----		-----	-----		-----	-----		-----
781		-----		-----	-----		-----	-----		-----
785		-----		-----	-----		-----	-----		-----
798		-----		-----	-----		-----	-----		-----
824	D5443	60.92	C	-1.24	28.16	C	-0.32	32.76	C	-0.91
855		-----		-----	-----		-----	-----		-----
862		-----		-----	-----		-----	-----		-----
864		-----		-----	-----		-----	-----		-----
868		-----		-----	-----		-----	-----		-----
872		-----		-----	-----		-----	-----		-----
873		-----		-----	-----		-----	-----		-----
874		-----		-----	-----		-----	-----		-----
875		-----		-----	-----		-----	-----		-----
912		-----		-----	-----		-----	-----		-----
914		-----		-----	-----		-----	-----		-----
922	D6730	61.490		-0.24	28.383		0.07	33.107		-0.30
962		-----		-----	-----		-----	-----		-----
963		-----		-----	-----		-----	-----		-----
971		-----		-----	-----		-----	-----		-----
974		-----		-----	-----		-----	-----		-----
982		-----		-----	-----		-----	-----		-----
994		-----		-----	-----		-----	-----		-----
995		-----		-----	-----		-----	-----		-----
997		-----		-----	-----		-----	-----		-----
1012		-----		-----	-----		-----	-----		-----
1016	ISO22854-A	-----		-----	27.93		-0.72	33.51		0.41
1026	ISO22854-A	60.76	C	-1.52	-----	W	-----	-----	W	-----
1062	D5443	-----		-----	31.3	R(0.05)	5.18	32.79		-0.85
1065	In house	61.641		0.02	28.811		0.82	32.83		-0.78
1066	ISO22854-A	61.7		0.13	28.2		-0.25	33.5		0.39
1069	D5134	-----		-----	-----		-----	-----		-----
1081	ISO22854-A	61.47		-0.27	27.83		-0.89	33.64		0.63
1097		-----		-----	-----		-----	-----		-----
1108	D6839	61.4		-0.40	28.15		-0.33	33.23		-0.08
1135	D6839	62.26	ex	1.11	34.55	R(0.05)	10.87	27.71	R(0.01)	-9.74
1145	D6293	61.32		-0.54	28.94		1.05	32.38		-1.57
1201	ISO22854-A	62.32	ex	1.21	24.14	ex	-7.35	38.18	R(0.01)	8.58
1284		-----		-----	-----		-----	-----		-----
1381		-----		-----	-----		-----	-----		-----
1397		-----		-----	-----		-----	-----		-----
1429		-----		-----	-----		-----	-----		-----
1544	D5134	62.130		0.88	28.883		0.95	33.247		-0.05
1556	ISO22854-A	61.03		-1.04	27.32		-1.79	33.71		0.76
1585		-----		-----	-----		-----	-----		-----
1586		-----		-----	-----		-----	-----		-----
1603		-----		-----	-----		-----	-----		-----
1656	D5443	61.77		0.25	30.13		3.13	31.64		-2.87
1737	In house	61.64		0.02	28.35		0.02	33.29		0.02

lab	method	Total P	mark	z(targ)	n-Paraf.	mark	z(targ)	i-Paraf.	mark	z(targ)
1749		-----		-----	-----		-----	-----		-----
1776	ISO22854-A	-----		-----	-----		-----	-----		-----
1788		-----		-----	-----		-----	-----		-----
1796		-----		-----	-----		-----	-----		-----
1849		-----		-----	-----		-----	-----		-----
1857	ISO22854-A	-----		-----	-----		-----	-----		-----
1914	D6729	65.91	R(0.01)	7.50	30.58	R(0.05)	3.92	35.33	ex	3.59
1949		-----		-----	-----		-----	-----		-----
1950		-----		-----	-----		-----	-----		-----
1960		-----		-----	-----		-----	-----		-----
1967		-----		-----	-----		-----	-----		-----
1982	D6839	62.30	ex	1.18	25.01	R(0.05)	-5.83	37.29	R(0.01)	7.02
1995	D5443	61.6		-0.05	27.76		-1.02	33.84		0.98
6016		-----		-----	-----		-----	-----		-----
6056		-----		-----	-----		-----	-----		-----
6134	D6839	61.83	E	0.36	28.96		1.08	32.73		-0.96
6198		-----		-----	-----		-----	-----		-----
6201	D6839	61.53		-0.17	28.40		0.10	33.13		-0.26
6262	D6839	62.50		1.53	28.68		0.59	33.62		0.60
6299		-----		-----	-----		-----	-----		-----
6326	D6839	65.51	R(0.01)	6.80	32.29	R(0.05)	6.91	33.22	ex	-0.10
7006		-----		-----	-----		-----	-----		-----
9057		-----		-----	-----		-----	-----		-----
9058		-----		-----	-----		-----	-----		-----
9142		-----		-----	-----		-----	-----		-----
9143		-----		-----	-----		-----	-----		-----
	normality	not OK			not OK			not OK		
	n	22			24			24		
	outliers	5+(3ex)			6+(2ex)			4+(3ex)		
	mean (n)	61.6270			28.3403			33.2782		
	st.dev. (n)	0.53961			0.59129			0.54848		
	R(calc.)	1.5109			1.6556			1.5357		
	st.dev.(D6839:18)	0.57143			0.57143			0.57143		
	R(D6839:18)	1.6			1.6			1.6		

Lab 445 calculation error; iis calculated 61.92, first reported 22.49
Lab 824 first reported 60.59, 27.06 and 33.53 respectively
Lab 1026 first reported 42.51, 18.70, 23.81 respectively (withdrawn two test results)
Lab 6134 calculation error; iis calculated 61.69
ex = test result is excluded when of the three reported test results n Paraffins and/or i-Paraffins is an outlier.

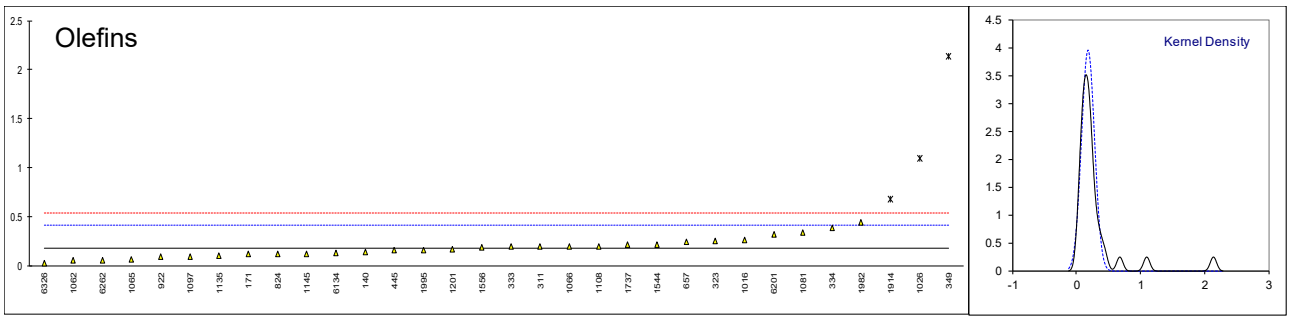


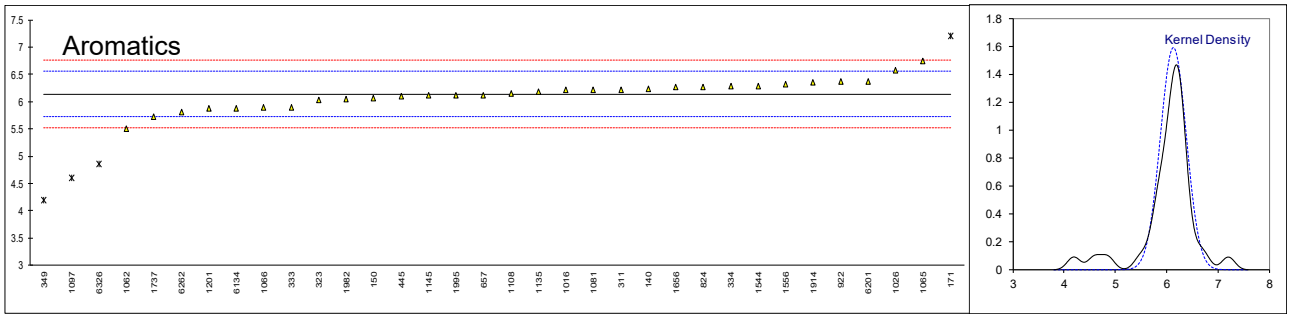
Determination of PIONA - Olefins and Aromatics on sample #20036; results in %V/V

lab	method	Olefins	mark	z(targ)	Aromatics	mark	z(targ)
120		-----		-----	-----		-----
140	D5443	0.14		-0.38	6.23		0.44
150	D6729	<0.05		-----	6.07		-0.33
158		-----		-----	-----		-----
171	D6729	0.120		-0.55	7.208	R(0.01)	5.15
225		-----		-----	-----		-----
237		-----		-----	-----		-----
238		-----		-----	-----		-----
311	D5443 mod	0.20		0.13	6.22		0.39
317		-----		-----	-----		-----
323	D6839	0.26		0.64	6.03		-0.52
333	D6839	0.2		0.13	5.9		-1.15
334	ISO22854-A	0.39		1.74	6.28		0.68
336		-----		-----	-----		-----
337		-----		-----	-----		-----
349	ISO22854-A	2.14	R(0.01)	16.54	4.20	R(0.05)	-9.34
360		-----		-----	-----		-----
399		-----		-----	-----		-----
444		-----		-----	-----		-----
445	D6839	0.16		-0.21	6.09		-0.23
541		-----		-----	-----		-----
608		-----		-----	-----		-----
657	D5443	0.25		0.55	6.12		-0.09
663		-----		-----	-----		-----
750		-----		-----	-----		-----
751		-----		-----	-----		-----
753		-----		-----	-----		-----
754		-----		-----	-----		-----
779		-----		-----	-----		-----
781		-----		-----	-----		-----
785		-----		-----	-----		-----
798		-----		-----	-----		-----
824	D5443	0.12		-0.55	6.27	C	0.63
855		-----		-----	-----		-----
862		-----		-----	-----		-----
864		-----		-----	-----		-----
868		-----		-----	-----		-----
872		-----		-----	-----		-----
873		-----		-----	-----		-----
874		-----		-----	-----		-----
875		-----		-----	-----		-----
912		-----		-----	-----		-----
914		-----		-----	-----		-----
922	D6730	0.099		-0.72	6.369		1.11
962		-----		-----	-----		-----
963		-----		-----	-----		-----
971		-----		-----	-----		-----
974		-----		-----	-----		-----
982		-----		-----	-----		-----
994		-----		-----	-----		-----
995		-----		-----	-----		-----
997		-----		-----	-----		-----
1012		-----		-----	-----		-----
1016	ISO22854-A	0.27		0.72	6.21		0.34
1026	ISO22854-A	1.1	C, R(0.01)	7.74	6.58	C	2.13
1062	D5443	0.06		-1.05	5.50		-3.08
1065	In house	0.065		-1.01	6.741		2.90
1066	ISO22854-A	0.2		0.13	5.9		-1.15
1069		-----		-----	-----		-----
1081	ISO22854-A	0.34		1.31	6.21		0.34
1097		0.1		-0.72	4.6	R(0.05)	-7.42
1108	D6839	0.2		0.13	6.14		0.01
1135	D6839	0.11		-0.63	6.19		0.25
1145	D6293	0.12		-0.55	6.11		-0.14
1201	ISO22854-A	0.17		-0.12	5.87		-1.29
1284		-----		-----	-----		-----
1381		-----		-----	-----		-----
1397		-----		-----	-----		-----
1429		-----		-----	-----		-----
1544	D5134	0.223		0.32	6.290		0.73
1556	ISO22854-A	0.19		0.04	6.31		0.83
1585		-----		-----	-----		-----
1586		-----		-----	-----		-----
1603		-----		-----	-----		-----
1656	D5443	<0.1		-----	6.26		0.58
1737	In house	0.22		0.30	5.72		-2.02

lab	method	Olefins	mark	z(targ)	Aromatics	mark	z(targ)
1749		-----		-----	-----		-----
1776		-----		-----	-----		-----
1788		-----		-----	-----		-----
1796		-----		-----	-----		-----
1849		-----		-----	-----		-----
1857		-----		-----	-----		-----
1914	D6729	0.68	R(0.01)	4.19	6.35		1.02
1949		-----		-----	-----		-----
1950		-----		-----	-----		-----
1960		-----		-----	-----		-----
1967		-----		-----	-----		-----
1982	D6839	0.45		2.24	6.04		-0.48
1995	D5443	0.16		-0.21	6.11		-0.14
6016		-----		-----	-----		-----
6056		-----		-----	-----		-----
6134	D6839	0.13		-0.46	5.88		-1.25
6198		-----		-----	-----		-----
6201	D6839	0.32		1.14	6.37		1.11
6262	D6839	0.06		-1.05	5.80		-1.63
6299		-----		-----	-----		-----
6326	D6839	0.03		-1.31	4.86	R(0.01)	-6.16
7006		-----		-----	-----		-----
9057		-----		-----	-----		-----
9058		-----		-----	-----		-----
9142		-----		-----	-----		-----
9143		-----		-----	-----		-----
	normality	OK			suspect		
	n	29			30		
	outliers	3			4		
	mean (n)	0.1847			6.1387		
	st.dev. (n)	0.10076			0.25067		
	R(calc.)	0.2821			0.7019		
	st.dev.(D6839:18)	0.11824			0.20750		
	R(D6839:18)	0.3311			0.5810		

Lab 824 first reported 6.18
Lab 1026 first reported <0.1 and 9.43 respectively



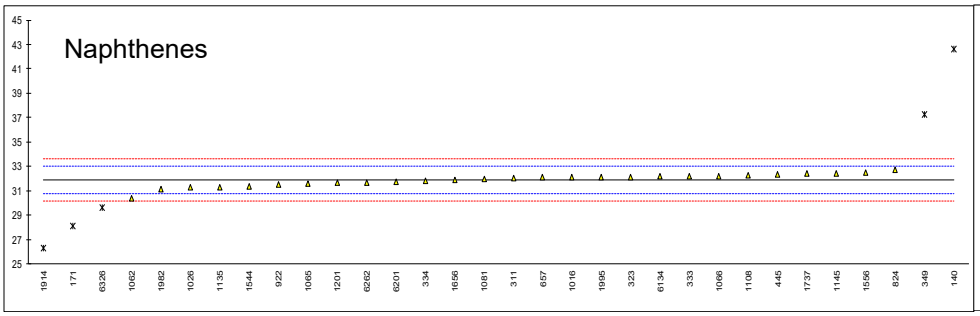


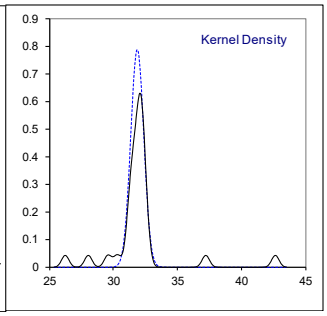
Determination of PIONA - Naphthenes and C4 and lighter hydrocarbons on sample #20036; results in %V/V

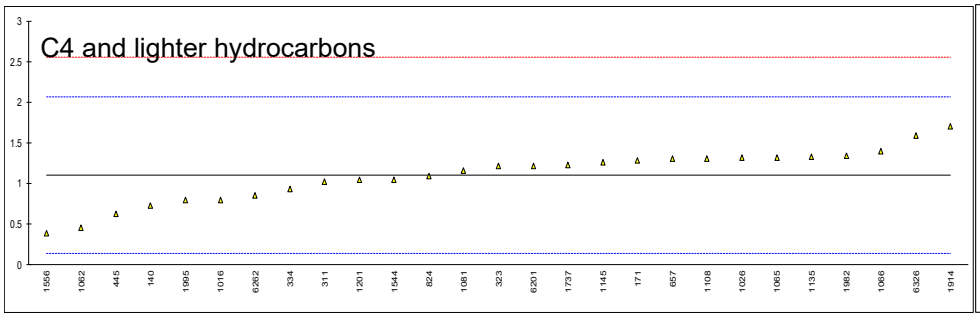
lab	method	Naphthenes	mark	z(targ)	≤C4	mark	z(targ)
120		-----		-----	-----		-----
140	D5443	42.63	R(0.01)	18.79	0.73		-0.77
150		-----		-----	-----		-----
158		-----		-----	-----		-----
171	D6729	28.084	R(0.01)	-6.66	1.281		0.37
225		-----		-----	-----		-----
237		-----		-----	-----		-----
238		-----		-----	-----		-----
311	D5443 mod	32.06		0.29	1.02		-0.17
317		-----		-----	-----		-----
323	D6839	32.15		0.45	1.21		0.23
333	D6839	32.2		0.54	-----		-----
334	ISO22854-A	31.81		-0.14	0.93		-0.35
336		-----		-----	-----		-----
337		-----		-----	-----		-----
349	ISO22854-A	37.22	R(0.01)	9.32	-----		-----
360		-----		-----	-----		-----
399		-----		-----	-----		-----
444		-----		-----	-----		-----
445	D6839	32.34	C	0.78	0.63		-0.98
541		-----		-----	-----		-----
608		-----		-----	-----		-----
657	D5443	32.08		0.33	1.30		0.41
663		-----		-----	-----		-----
750		-----		-----	-----		-----
751		-----		-----	-----		-----
753		-----		-----	-----		-----
754		-----		-----	-----		-----
779		-----		-----	-----		-----
781		-----		-----	-----		-----
785		-----		-----	-----		-----
798		-----		-----	-----		-----
824	D5443	32.69	C	1.40	1.09	C	-0.02
855		-----		-----	-----		-----
862		-----		-----	-----		-----
864		-----		-----	-----		-----
868		-----		-----	-----		-----
872		-----		-----	-----		-----
873		-----		-----	-----		-----
874		-----		-----	-----		-----
875		-----		-----	-----		-----
912		-----		-----	-----		-----
914		-----		-----	-----		-----
922	D6730	31.532		-0.63	-----		-----
962		-----		-----	-----		-----
963		-----		-----	-----		-----
971		-----		-----	-----		-----
974		-----		-----	-----		-----
982		-----		-----	-----		-----
994		-----		-----	-----		-----
995		-----		-----	-----		-----
997		-----		-----	-----		-----
1012		-----		-----	-----		-----
1016	ISO22854-A	32.08		0.33	0.80		-0.62
1026	ISO22854-A	31.32	C	-1.00	1.32	C	0.45
1062	D5443	30.35		-2.70	0.45		-1.35
1065	In house	31.554		-0.59	1.32		0.45
1066	ISO22854-A	32.2		0.54	1.4		0.62
1069		-----		-----	-----		-----
1081	ISO22854-A	31.98		0.15	1.16		0.12
1097		-----		-----	-----		-----
1108	D6839	32.29		0.70	1.30		0.41
1135	D6839	31.32		-1.00	1.33		0.48
1145	D6293	32.45		0.98	1.26		0.33
1201	ISO22854-A	31.63		-0.46	1.04		-0.13
1284		-----		-----	-----		-----
1381		-----		-----	-----		-----
1397		-----		-----	-----		-----
1429		-----		-----	-----		-----
1544	D5134	31.357		-0.94	1.040		-0.13
1556	ISO22854-A	32.47		1.01	0.39		-1.47
1585		-----		-----	-----		-----
1586		-----		-----	-----		-----
1603		-----		-----	-----		-----
1656	D5443	31.89		0.00	-----		-----
1737	In house	32.42		0.92	1.23		0.27

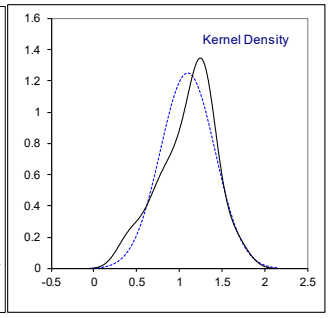
lab	method	Naphthenes	mark	z(targ)	≤C4	mark	z(targ)
1749		-----		-----	-----		-----
1776		-----		-----	-----		-----
1788		-----		-----	-----		-----
1796		-----		-----	-----		-----
1849		-----		-----	-----		-----
1857		-----		-----	-----		-----
1914	D6729	26.29	R(0.01)	-9.80	1.70		1.24
1949		-----		-----	-----		-----
1950		-----		-----	-----		-----
1960		-----		-----	-----		-----
1967		-----		-----	-----		-----
1982	D6839	31.17		-1.26	1.34		0.50
1995	D5443	32.13		0.42	0.79		-0.64
6016		-----		-----	-----		-----
6056		-----		-----	-----		-----
6134	D6839	32.19		0.52	-----		-----
6198		-----		-----	-----		-----
6201	D6839	31.77		-0.21	1.22		0.25
6262	D6839	31.65		-0.42	0.85		-0.52
6299		-----		-----	-----		-----
6326	D6839	29.61	R(0.01)	-3.99	1.59		1.01
7006		-----		-----	-----		-----
9057		-----		-----	-----		-----
9058		-----		-----	-----		-----
9142		-----		-----	-----		-----
9143		-----		-----	-----		-----
	normality	suspect			OK		
	n	27			27		
	outliers	5			0		
	mean (n)	31.8920			1.1008		
	st.dev. (n)	0.50615			0.31976		
	R(calc.)	1.4172			0.8953		
	st.dev.(D6839:18)	0.57143			0.48214		
	R(D6839:18)	1.6			1.35		

Lab 445 first reported 42.95
Lab 824 first reported 33.10 and 0.19 respectively
Lab 1026 first reported 48.05 and 0.04 respectively







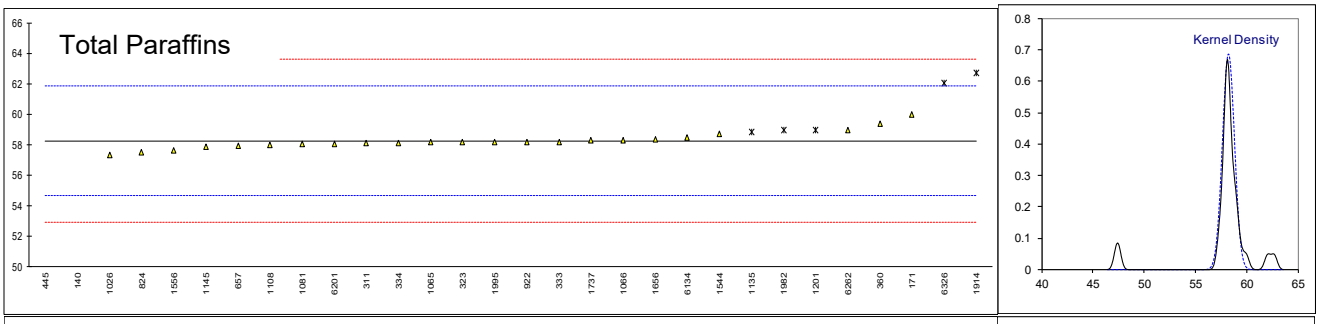


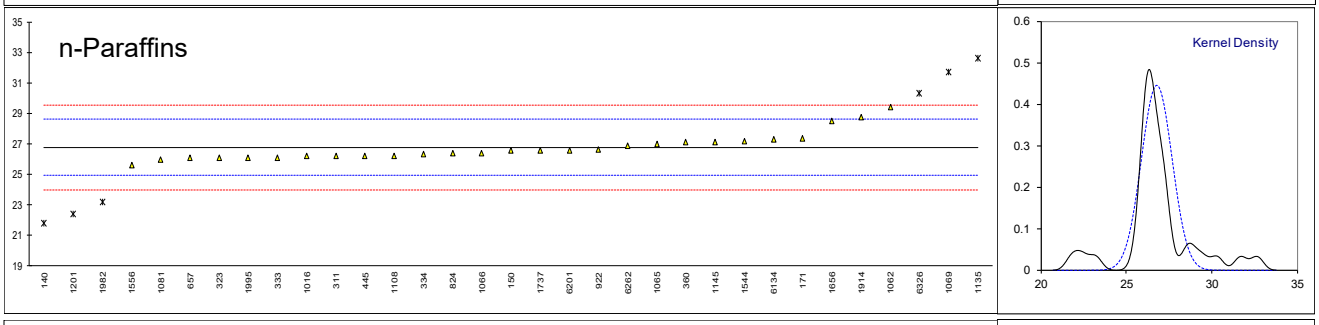
Determination of PIONA - Total Paraffins, n-Paraffins, i-Paraffins on sample #20036; results in %M/M

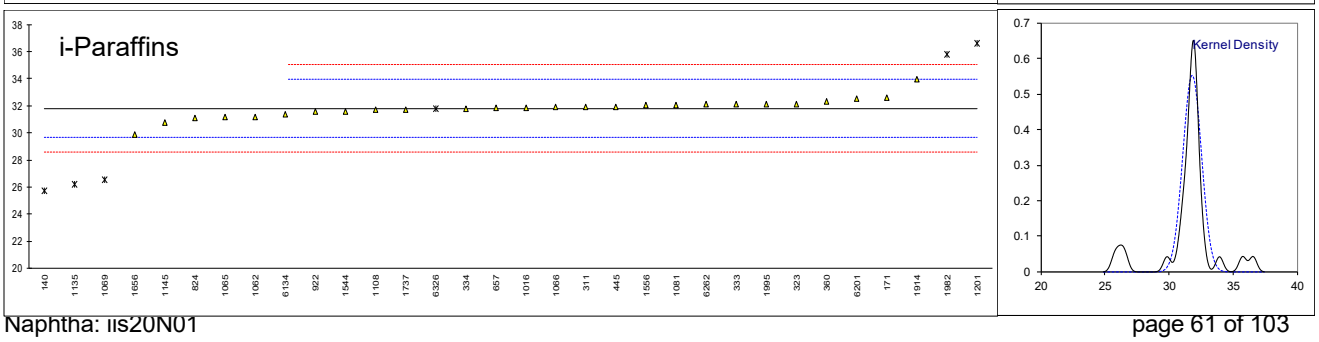
lab	method	Total P	mark	z(targ)	n-Paraf.	mark	z(targ)	i-Paraf.	mark	z(targ)
120		-----		-----	-----		-----	-----		-----
140	D5443	47.55	R(0.01)	-5.99	21.81	R(0.05)	-5.37	25.74	DG(0.05	-5.68
150		-----		-----	26.55		-0.24	-----		-----
158		-----		-----	-----		-----	-----		-----
171	D6729	59.985		0.97	27.359		0.64	32.626		0.76
225		-----		-----	-----		-----	-----		-----
237		-----		-----	-----		-----	-----		-----
238		-----		-----	-----		-----	-----		-----
311	D5443 mod	58.13		-0.07	26.23		-0.58	31.90		0.08
317		-----		-----	-----		-----	-----		-----
323	D6839	58.18		-0.04	26.07		-0.76	32.11		0.28
333	D6839	58.2		-0.03	26.1		-0.72	32.1		0.27
334	ISO22854-A	58.13		-0.07	26.33		-0.47	31.80		-0.01
336		-----		-----	-----		-----	-----		-----
337		-----		-----	-----		-----	-----		-----
349		-----		-----	-----		-----	-----		-----
360	D5443	59.40		0.64	27.11		0.37	32.29		0.45
399		-----		-----	-----		-----	-----		-----
444		-----		-----	-----		-----	-----		-----
445	D6839	47.34	E,R(0.01	-6.11	26.23		-0.58	31.94	C	0.12
541		-----		-----	-----		-----	-----		-----
608		-----		-----	-----		-----	-----		-----
657	D5443	57.91		-0.20	26.07		-0.76	31.84		0.03
663		-----		-----	-----		-----	-----		-----
750		-----		-----	-----		-----	-----		-----
751		-----		-----	-----		-----	-----		-----
753		-----		-----	-----		-----	-----		-----
754		-----		-----	-----		-----	-----		-----
779		-----		-----	-----		-----	-----		-----
781		-----		-----	-----		-----	-----		-----
785		-----		-----	-----		-----	-----		-----
798		-----		-----	-----		-----	-----		-----
824	D5443	57.48	C	-0.44	26.36	C	-0.44	31.12	C	-0.64
855		-----		-----	-----		-----	-----		-----
862		-----		-----	-----		-----	-----		-----
864		-----		-----	-----		-----	-----		-----
868		-----		-----	-----		-----	-----		-----
872		-----		-----	-----		-----	-----		-----
873		-----		-----	-----		-----	-----		-----
874		-----		-----	-----		-----	-----		-----
875		-----		-----	-----		-----	-----		-----
912		-----		-----	-----		-----	-----		-----
914		-----		-----	-----		-----	-----		-----
922	D6730	58.195		-0.04	26.649		-0.13	31.546		-0.25
962		-----		-----	-----		-----	-----		-----
963		-----		-----	-----		-----	-----		-----
971		-----		-----	-----		-----	-----		-----
974		-----		-----	-----		-----	-----		-----
982		-----		-----	-----		-----	-----		-----
994		-----		-----	-----		-----	-----		-----
995		-----		-----	-----		-----	-----		-----
997		-----		-----	-----		-----	-----		-----
1012		-----		-----	-----		-----	-----		-----
1016		-----		-----	26.18		-0.64	31.84		0.03
1026	ISO22854-A	57.33	C	-0.52	-----	W	-----	-----	W	-----
1062		-----		-----	29.41		2.86	31.19		-0.58
1065	In house	58.155		-0.06	26.982		0.23	31.173		-0.60
1066	ISO22854-A	58.3		0.02	26.4		-0.40	31.9		0.08
1069		-----		-----	31.68	R(0.05)	5.32	26.55	G(0.05)	-4.92
1081	ISO22854-A	58.03		-0.13	25.97		-0.86	32.06		0.23
1097		-----		-----	-----		-----	-----		-----
1108	D6839	58.0		-0.15	26.23		-0.58	31.7		-0.10
1135	D6839	58.81	ex	0.31	32.64	R(0.05)	6.36	26.17	DG(0.05	-5.28
1145	D6293	57.87		-0.22	27.12		0.38	30.75		-0.99
1201	ISO22854-A	58.98	ex	0.40	22.40	R(0.05)	-4.73	36.58	G(0.01)	4.46
1284		-----		-----	-----		-----	-----		-----
1381		-----		-----	-----		-----	-----		-----
1397		-----		-----	-----		-----	-----		-----
1429		-----		-----	-----		-----	-----		-----
1544	D5134	58.726		0.26	27.153		0.42	31.573		-0.22
1556	ISO22854-A	57.63		-0.35	25.61		-1.25	32.02		0.20
1585		-----		-----	-----		-----	-----		-----
1586		-----		-----	-----		-----	-----		-----
1603		-----		-----	-----		-----	-----		-----
1656	D5443	58.34		0.04	28.50		1.88	29.84		-1.84
1737	In house	58.29		0.02	26.55		-0.24	31.74		-0.06

lab	method	Total P	mark	z(targ)	n-Paraf.	mark	z(targ)	i-Paraf.	mark	z(targ)
1749		-----		-----	-----		-----	-----		-----
1776		-----		-----	-----		-----	-----		-----
1788		-----		-----	-----		-----	-----		-----
1796		-----		-----	-----		-----	-----		-----
1849		-----		-----	-----		-----	-----		-----
1857		-----		-----	-----		-----	-----		-----
1914	D6729	62.72	R(0.01)	2.50	28.77		2.17	33.95		2.00
1949		-----		-----	-----		-----	-----		-----
1950		-----		-----	-----		-----	-----		-----
1960		-----		-----	-----		-----	-----		-----
1967		-----		-----	-----		-----	-----		-----
1982	D6839	58.94	ex	0.38	23.18	R(0.05)	-3.89	35.76	G(0.01)	3.70
1995	D5443	58.19		-0.04	26.09		-0.73	32.10		0.27
6016		-----		-----	-----		-----	-----		-----
6056		-----		-----	-----		-----	-----		-----
6134	D6839	58.47	E	0.12	27.27		0.54	31.34		-0.44
6198		-----		-----	-----		-----	-----		-----
6201	D6839	58.06	E	-0.11	26.56		-0.23	32.50		0.65
6262	D6839	58.98		0.40	26.89		0.13	32.09		0.26
6299		-----		-----	-----		-----	-----		-----
6326	D6839	62.07	R(0.01)	2.13	30.29	R(0.05)	3.81	31.78	ex	-0.03
7006		-----		-----	-----		-----	-----		-----
9057		-----		-----	-----		-----	-----		-----
9058		-----		-----	-----		-----	-----		-----
9142		-----		-----	-----		-----	-----		-----
9143		-----		-----	-----		-----	-----		-----
	normality	not OK			not OK			not OK		
	n	23			27			26		
	outliers	4+(3ex)			6			5+(1ex)		
	mean (n)	58.2600			26.7683			31.8092		
	st.dev. (n)	0.58126			0.89351			0.72290		
	R(calc.)	1.6275			2.5018			2.0241		
	st.dev.(Horwitz 2 comp)	1.78744			0.92324			1.06898		
	R(Horwitz 2 comp)	5.0048			2.5851			2.9931		

Lab 445 calculation error; iis calculated 58.17, first reported 21.11
Lab 824 first reported 57.19, 25.38, 31.81 respectively
Lab 1026 first reported 39.42, 17.11 and 22.31 respectively (withdrawn two test results)
Lab 6134 calculation error; iis calculated 58.61
Lab 6201 calculation error; iis calculated 59.06
ex = test result is excluded when of the three reported test results n Paraffins and/or i-Paraffins is an outlier.





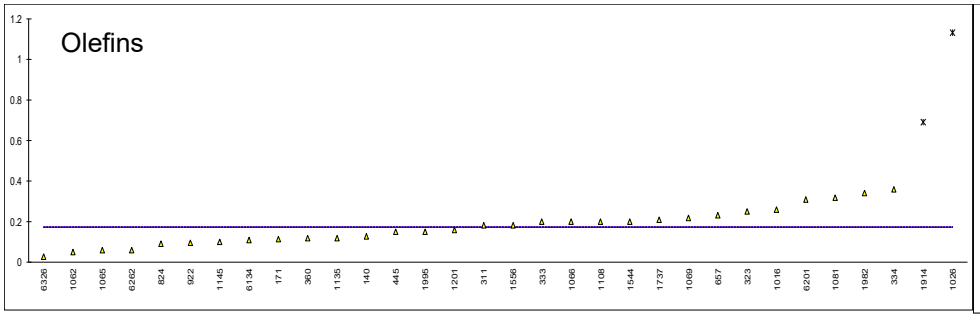


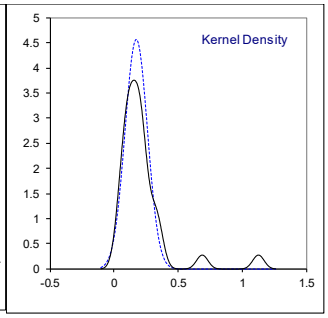
Determination of PIONA - Olefins and Aromatics on sample #20036; results in %M/M

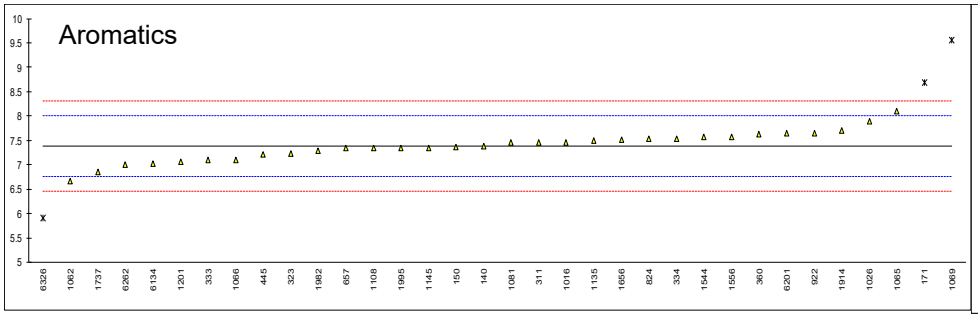
lab	method	Olefins	mark	z(targ)	Aromatics	mark	z(targ)
120		-----		-----	-----		-----
140	D5443	0.13		-----	7.38		-0.01
150	D6729	<0.05		-----	7.37		-0.04
158		-----		-----	-----		-----
171	D6729	0.116		-----	8.692	R(0.01)	4.24
225		-----		-----	-----		-----
237		-----		-----	-----		-----
238		-----		-----	-----		-----
311	D5443 mod	0.18		-----	7.46		0.25
317		-----		-----	-----		-----
323	D6839	0.25		-----	7.23		-0.49
333	D6839	0.2		-----	7.1		-0.91
334	ISO22854-A	0.36		-----	7.54		0.51
336		-----		-----	-----		-----
337		-----		-----	-----		-----
349	ISO22854-A	-----		-----	-----		-----
360	D5443	0.12		-----	7.62		0.77
399		-----		-----	-----		-----
444	D5443	-----		-----	-----		-----
445	D6839	0.15		-----	7.22		-0.53
541		-----		-----	-----		-----
608		-----		-----	-----		-----
657	D5443	0.23		-----	7.34		-0.14
663		-----		-----	-----		-----
750		-----		-----	-----		-----
751		-----		-----	-----		-----
753		-----		-----	-----		-----
754		-----		-----	-----		-----
779		-----		-----	-----		-----
781		-----		-----	-----		-----
785		-----		-----	-----		-----
798		-----		-----	-----		-----
824	D5443	0.09	C	-----	7.53	C	0.48
855		-----		-----	-----		-----
862		-----		-----	-----		-----
864		-----		-----	-----		-----
868		-----		-----	-----		-----
872		-----		-----	-----		-----
873		-----		-----	-----		-----
874		-----		-----	-----		-----
875		-----		-----	-----		-----
912		-----		-----	-----		-----
914		-----		-----	-----		-----
922	D6730	0.097		-----	7.653		0.87
962		-----		-----	-----		-----
963		-----		-----	-----		-----
971		-----		-----	-----		-----
974		-----		-----	-----		-----
982		-----		-----	-----		-----
994		-----		-----	-----		-----
995		-----		-----	-----		-----
997		-----		-----	-----		-----
1012		-----		-----	-----		-----
1016	ISO22854-A	0.26		-----	7.46		0.25
1026	ISO22854-A	1.13	C,R(0.01)	-----	7.9	C	1.67
1062	D5443	0.05		-----	6.67		-2.31
1065	In house	0.060		-----	8.100		2.32
1066	ISO22854-A	0.2		-----	7.1		-0.91
1069	D5134	0.22		-----	9.56	R(0.01)	7.04
1081	ISO22854-A	0.32		-----	7.45		0.22
1097		-----		-----	-----		-----
1108	D6839	0.2		-----	7.34		-0.14
1135	D6839	0.12		-----	7.49		0.35
1145	D6293	0.10		-----	7.35		-0.11
1201	ISO22854-A	0.16		-----	7.06		-1.04
1284		-----		-----	-----		-----
1381		-----		-----	-----		-----
1397		-----		-----	-----		-----
1429		-----		-----	-----		-----
1544	D5134	0.200		-----	7.570		0.61
1556	ISO22854-A	0.18		-----	7.57		0.61
1585		-----		-----	-----		-----
1586		-----		-----	-----		-----
1603		-----		-----	-----		-----
1656	D5443	<0.1		-----	7.51		0.41
1737	In house	0.21		-----	6.86		-1.69

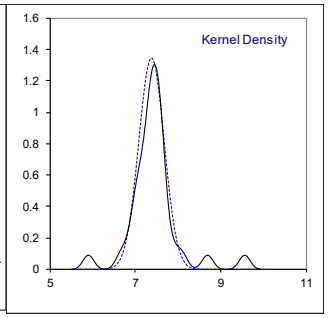
lab	method	Olefins	mark	z(targ)	Aromatics	mark	z(targ)
1749		-----		-----	-----		-----
1776	ISO22854-A	-----		-----	-----		-----
1788		-----		-----	-----		-----
1796		-----		-----	-----		-----
1849		-----		-----	-----		-----
1857	ISO22854-A	-----		-----	-----		-----
1914	D6729	0.69	R(0.01)	-----	7.70		1.03
1949		-----		-----	-----		-----
1950		-----		-----	-----		-----
1960		-----		-----	-----		-----
1967		-----		-----	-----		-----
1982	D6839	0.34	C	-----	7.28		-0.33
1995	D5443	0.15		-----	7.34		-0.14
6016		-----		-----	-----		-----
6056		-----		-----	-----		-----
6134	D6839	0.11		-----	7.02		-1.17
6198		-----		-----	-----		-----
6201	D6839	0.31		-----	7.65		0.86
6262	D6839	0.06		-----	7.00		-1.24
6299		-----		-----	-----		-----
6326	D6839	0.03		-----	5.91	R(0.01)	-4.76
7006		-----		-----	-----		-----
9057		-----		-----	-----		-----
9058		-----		-----	-----		-----
9142		-----		-----	-----		-----
9143		-----		-----	-----		-----
	normality	OK			OK		
	n	30			31		
	outliers	2			3		
	mean (n)	0.1734			7.3827		
	st.dev. (n)	0.08741			0.29634		
	R(calc.)	0.2448			0.8298		
	st.dev.(Horwitz 2 comp)	(0.01277)			0.30911		
	R(Horwitz 2 comp)	(0.0358)			0.8655		

Lab 824 first reported 0.12 and 7.41 respectively
Lab 1026 first reported <0.1, 10.99 respectively
Lab 1982 first reported 0.44







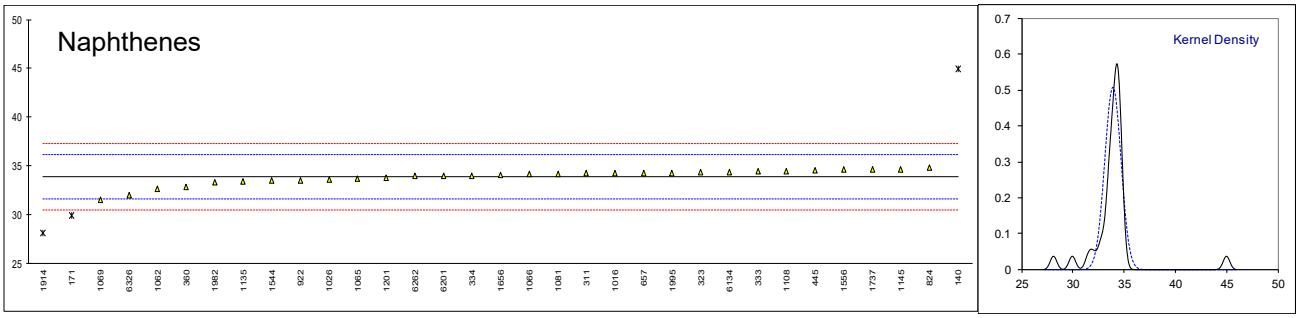


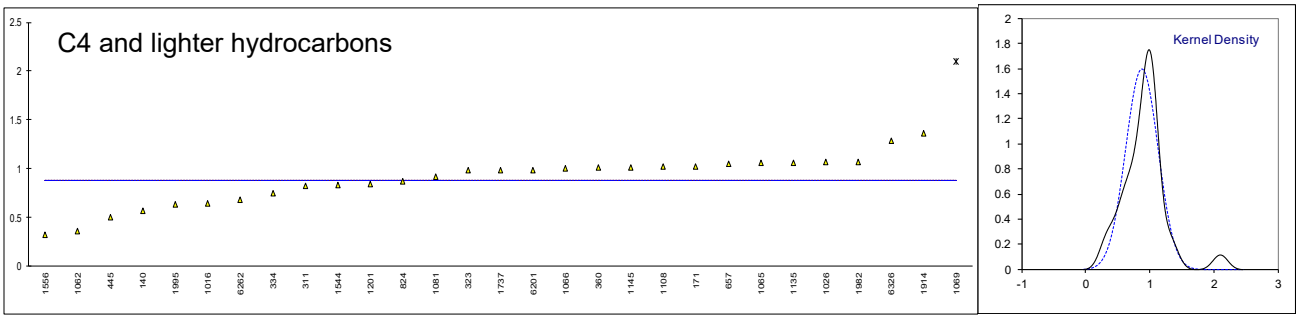
Determination of PIONA - Naphthenes and C4 and lighter hydrocarbons on sample #20036; results in %M/M

lab	method	Naphthenes	mark	z(targ)	≤ C4	mark	z(targ)
120		-----		-----	-----		-----
140	D5443	44.95	R(0.01)	9.81	0.57		-----
150		-----		-----	-----		-----
158		-----		-----	-----		-----
171	D6729	29.927	R(0.01)	-3.51	1.021		-----
225		-----		-----	-----		-----
237		-----		-----	-----		-----
238		-----		-----	-----		-----
311	D5443 mod	34.23		0.31	0.82		-----
317		-----		-----	-----		-----
323	D6839	34.35		0.42	0.98		-----
333	D6839	34.5		0.55	-----		-----
334	ISO22854-A	33.97		0.08	0.75		-----
336		-----		-----	-----		-----
337		-----		-----	-----		-----
349		-----		-----	-----		-----
360	D5443	32.83		-0.93	1.01		-----
399		-----		-----	-----		-----
444		-----		-----	-----		-----
445	D6839	34.54	C	0.58	0.50		-----
541		-----		-----	-----		-----
608		-----		-----	-----		-----
657	D5443	34.26		0.34	1.05		-----
663		-----		-----	-----		-----
750		-----		-----	-----		-----
751		-----		-----	-----		-----
753		-----		-----	-----		-----
754		-----		-----	-----		-----
779		-----		-----	-----		-----
781		-----		-----	-----		-----
785		-----		-----	-----		-----
798		-----		-----	-----		-----
824	D5443	34.87	C	0.88	0.87	C	-----
855		-----		-----	-----		-----
862		-----		-----	-----		-----
864		-----		-----	-----		-----
868		-----		-----	-----		-----
872		-----		-----	-----		-----
873		-----		-----	-----		-----
874		-----		-----	-----		-----
875		-----		-----	-----		-----
912		-----		-----	-----		-----
914		-----		-----	-----		-----
922	D6730	33.560		-0.28	-----		-----
962		-----		-----	-----		-----
963		-----		-----	-----		-----
971		-----		-----	-----		-----
974		-----		-----	-----		-----
982		-----		-----	-----		-----
994		-----		-----	-----		-----
995		-----		-----	-----		-----
997		-----		-----	-----		-----
1012		-----		-----	-----		-----
1016	ISO22854-A	34.26		0.34	0.64		-----
1026	ISO22854-A	33.58	C	-0.27	1.07	C	-----
1062	D5443	32.67		-1.07	0.36		-----
1065	In house	33.685		-0.17	1.06		-----
1066	ISO22854-A	34.2		0.28	1.00		-----
1069	D5134	31.50		-2.11	2.10	R(0.01)	-----
1081	ISO22854-A	34.20		0.28	0.92		-----
1097		-----		-----	-----		-----
1108	D6839	34.5		0.55	1.02		-----
1135	D6839	33.45		-0.38	1.06		-----
1145	D6293	34.69		0.72	1.01		-----
1201	ISO22854-A	33.81		-0.06	0.84		-----
1284		-----		-----	-----		-----
1381		-----		-----	-----		-----
1397		-----		-----	-----		-----
1429		-----		-----	-----		-----
1544	D5134	33.503		-0.34	0.833		-----
1556	ISO22854-A	34.62		0.66	0.32		-----
1585		-----		-----	-----		-----
1586		-----		-----	-----		-----
1603		-----		-----	-----		-----
1656	D5443	34.07		0.17	-----		-----

lab	method	Naphthenes	mark	z(targ)	≤ C4	mark	z(targ)
1737	In house	34.64		0.67	0.98		-----
1749		-----		-----	-----		-----
1776		-----		-----	-----		-----
1788		-----		-----	-----		-----
1796		-----		-----	-----		-----
1849		-----		-----	-----		-----
1857		-----		-----	-----		-----
1914	D6729	28.09	R(0.01)	-5.13	1.36		-----
1949		-----		-----	-----		-----
1950		-----		-----	-----		-----
1960		-----		-----	-----		-----
1967		-----		-----	-----		-----
1982	D6839	33.33		-0.49	1.07		-----
1995	D5443	34.31		0.38	0.63		-----
6016		-----		-----	-----		-----
6056		-----		-----	-----		-----
6134	D6839	34.4		0.46	-----		-----
6198		-----		-----	-----		-----
6201	D6839	33.96		0.07	0.98		-----
6262	D6839	33.95		0.06	0.68		-----
6299		-----		-----	-----		-----
6326	D6839	31.99		-1.68	1.29		-----
7006		-----		-----	-----		-----
9057		-----		-----	-----		-----
9058		-----		-----	-----		-----
9142		-----		-----	-----		-----
9143		-----		-----	-----		-----
	normality	not OK			OK		
	n	30			28		
	outliers	3			1		
	mean (n)	33.8809			0.8819		
	st.dev. (n)	0.78743			0.25038		
	R(calc.)	2.2048			0.7011		
	st.dev.(Horwitz 2 comp)	1.12784			(0.050849)		
	R(Horwitz 2 comp)	3.1580			(0.1424)		

Lab 445 first reported 45.30
Lab 824 first reported 35.28 and 0.15 respectively
Lab1026 first reported 49.59 and 0.03 respectively

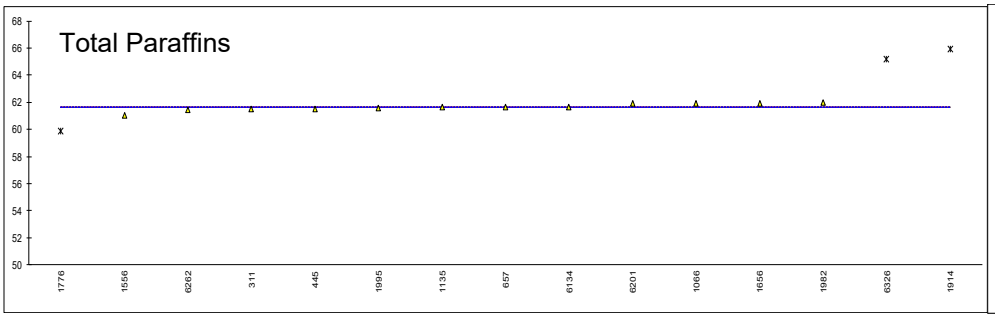


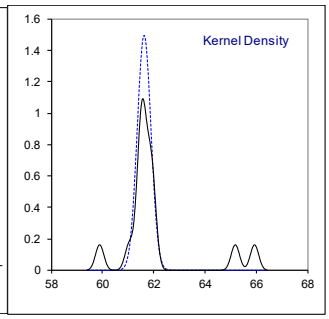


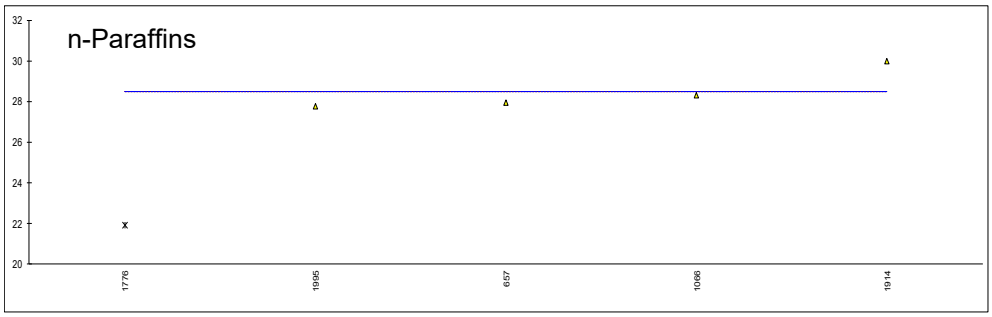
Determination of PNA - Total Paraffins, n-Paraffins, i-Paraffins on sample #20036; results in %V/V

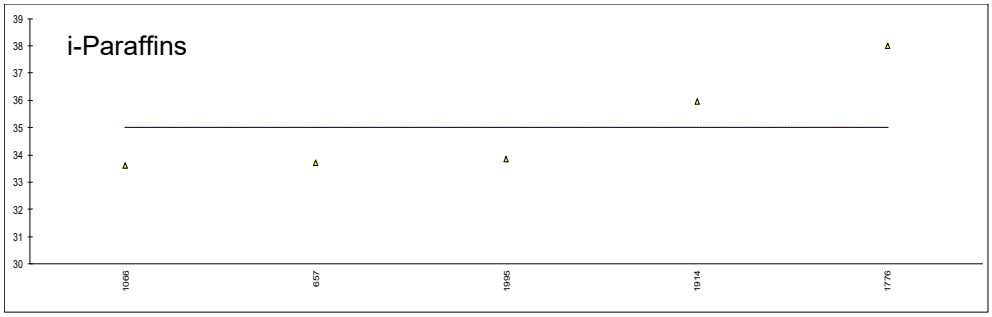
lab	method	Total P.	mark	z(targ)	n-Paraf.	mark	z(targ)	i-Paraf.	mark	z(targ)
120		-----		-----	-----		-----	-----		-----
140		-----		-----	-----		-----	-----		-----
150		-----		-----	-----		-----	-----		-----
158		-----		-----	-----		-----	-----		-----
171		-----		-----	-----		-----	-----		-----
225		-----		-----	-----		-----	-----		-----
237		-----		-----	-----		-----	-----		-----
238		-----		-----	-----		-----	-----		-----
311	D5443	61.5		-----	-----		-----	-----		-----
317		-----		-----	-----		-----	-----		-----
323		-----		-----	-----		-----	-----		-----
333		-----		-----	-----		-----	-----		-----
334		-----		-----	-----		-----	-----		-----
336		-----		-----	-----		-----	-----		-----
337		-----		-----	-----		-----	-----		-----
349		-----		-----	-----		-----	-----		-----
360		-----		-----	-----		-----	-----		-----
399		-----		-----	-----		-----	-----		-----
444		-----		-----	-----		-----	-----		-----
445	D5443	61.51		-----	-----		-----	-----		-----
541		-----		-----	-----		-----	-----		-----
608		-----		-----	-----		-----	-----		-----
657	D5443	61.63		-----	27.92		-----	33.71		-----
663		-----		-----	-----		-----	-----		-----
750		-----		-----	-----		-----	-----		-----
751		-----		-----	-----		-----	-----		-----
753		-----		-----	-----		-----	-----		-----
754		-----		-----	-----		-----	-----		-----
779		-----		-----	-----		-----	-----		-----
781		-----		-----	-----		-----	-----		-----
785		-----		-----	-----		-----	-----		-----
798		-----		-----	-----		-----	-----		-----
824		-----		-----	-----		-----	-----		-----
855		-----		-----	-----		-----	-----		-----
862		-----		-----	-----		-----	-----		-----
864		-----		-----	-----		-----	-----		-----
868		-----		-----	-----		-----	-----		-----
872		-----		-----	-----		-----	-----		-----
873		-----		-----	-----		-----	-----		-----
874		-----		-----	-----		-----	-----		-----
875		-----		-----	-----		-----	-----		-----
912		-----		-----	-----		-----	-----		-----
914		-----		-----	-----		-----	-----		-----
922		-----		-----	-----		-----	-----		-----
962		-----		-----	-----		-----	-----		-----
963		-----		-----	-----		-----	-----		-----
971		-----		-----	-----		-----	-----		-----
974		-----		-----	-----		-----	-----		-----
982		-----		-----	-----		-----	-----		-----
994		-----		-----	-----		-----	-----		-----
995		-----		-----	-----		-----	-----		-----
997		-----		-----	-----		-----	-----		-----
1012		-----		-----	-----		-----	-----		-----
1016		-----		-----	-----		-----	-----		-----
1026		-----		-----	-----		-----	-----		-----
1062		-----		-----	-----		-----	-----		-----
1065		-----		-----	-----		-----	-----		-----
1066	ISO22854-A	61.9		-----	28.3		-----	33.6		-----
1069		-----		-----	-----		-----	-----		-----
1081		-----		-----	-----		-----	-----		-----
1097		-----		-----	-----		-----	-----		-----
1108		-----		-----	-----		-----	-----		-----
1135	D6839	61.62		-----	-----		-----	-----		-----
1145		-----		-----	-----		-----	-----		-----
1201		-----		-----	-----		-----	-----		-----
1284		-----		-----	-----		-----	-----		-----
1381		-----		-----	-----		-----	-----		-----
1397		-----		-----	-----		-----	-----		-----
1429		-----		-----	-----		-----	-----		-----
1544		-----		-----	-----		-----	-----		-----
1556	ISO22854-A	61.05		-----	N/A		-----	N/A		-----
1585		-----		-----	-----		-----	-----		-----
1586		-----		-----	-----		-----	-----		-----
1603		-----		-----	-----		-----	-----		-----
1656	D5443	61.92		-----	-----		-----	-----		-----
1737		-----		-----	-----		-----	-----		-----

lab	method	Total P.	mark	z(targ)	n-Paraf.	mark	z(targ)	i-Paraf.	mark	z(targ)
1749		-----		-----	-----		-----	-----		-----
1776	ISO22854-A	59.90	D(0.01)	-----	21.91	D(0.05)	-----	37.99		-----
1788		-----		-----	-----		-----	-----		-----
1796		-----		-----	-----		-----	-----		-----
1849		-----		-----	-----		-----	-----		-----
1857		-----		-----	-----		-----	-----		-----
1914	D5134	65.94	D(0.01)	-----	30.00		-----	35.94		-----
1949		-----		-----	-----		-----	-----		-----
1950		-----		-----	-----		-----	-----		-----
1960		-----		-----	-----		-----	-----		-----
1967		-----		-----	-----		-----	-----		-----
1982	D6839	62.00		-----	-----		-----	-----		-----
1995	D5443	61.54		-----	27.76		-----	33.84		-----
6016		-----		-----	-----		-----	-----		-----
6056		-----		-----	-----		-----	-----		-----
6134	D6839	61.63		-----	-----		-----	-----		-----
6198		-----		-----	-----		-----	-----		-----
6201	D5443	61.89		-----	N/A		-----	N/A		-----
6262	D6839	61.42		-----	N/A		-----	N/A		-----
6299		-----		-----	-----		-----	-----		-----
6326	D6839	65.19	D(0.01)	-----	-----		-----	-----		-----
7006		-----		-----	-----		-----	-----		-----
9057		-----		-----	-----		-----	-----		-----
9058		-----		-----	-----		-----	-----		-----
9142		-----		-----	-----		-----	-----		-----
9143		-----		-----	-----		-----	-----		-----
	normality	OK			unknown			unknow		
	n	12			4			5		
	outliers	3			1			0		
	mean (n)	61.6342			28.4950			35.0160		
	st.dev. (n)	0.26651			1.02858			1.92303		
	R(calc.)	0.7462			2.8800			5.3845		
	st.dev.(lit)	n.a.			n.a.			n.a.		
	R(lit)	n.a.			n.a.			n.a.		





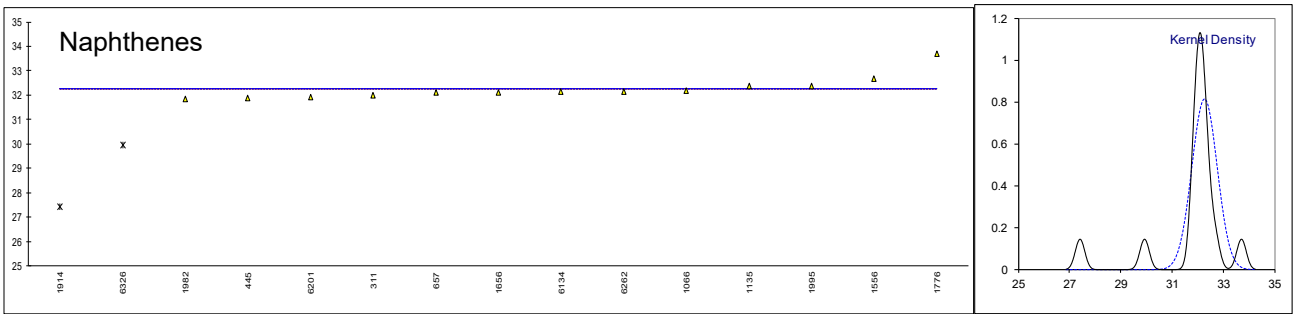


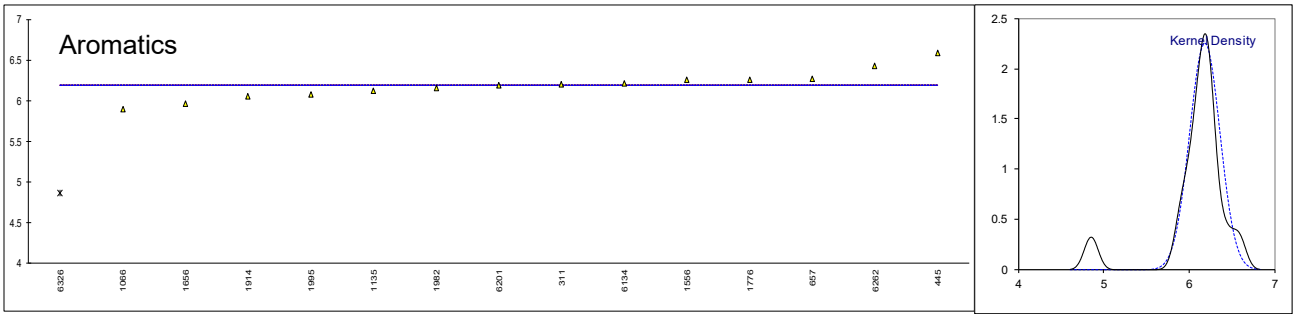


Determination of PNA - Naphthenes and Aromatics on sample #20036; results in %V/V

lab	method	Naphthenes	mark	z(targ)	Aromatics	mark	z(targ)
120		-----		-----	-----		-----
140		-----		-----	-----		-----
150		-----		-----	-----		-----
158		-----		-----	-----		-----
171		-----		-----	-----		-----
225		-----		-----	-----		-----
237		-----		-----	-----		-----
238		-----		-----	-----		-----
311	D5443	32.0		-----	6.2		-----
317		-----		-----	-----		-----
323		-----		-----	-----		-----
333		-----		-----	-----		-----
334		-----		-----	-----		-----
336		-----		-----	-----		-----
337		-----		-----	-----		-----
349		-----		-----	-----		-----
360		-----		-----	-----		-----
399		-----		-----	-----		-----
444		-----		-----	-----		-----
445	D5443	31.90		-----	6.59		-----
541		-----		-----	-----		-----
608		-----		-----	-----		-----
657	D5443	32.10		-----	6.27		-----
663		-----		-----	-----		-----
750		-----		-----	-----		-----
751		-----		-----	-----		-----
753		-----		-----	-----		-----
754		-----		-----	-----		-----
779		-----		-----	-----		-----
781		-----		-----	-----		-----
785		-----		-----	-----		-----
798		-----		-----	-----		-----
824		-----		-----	-----		-----
855		-----		-----	-----		-----
862		-----		-----	-----		-----
864		-----		-----	-----		-----
868		-----		-----	-----		-----
872		-----		-----	-----		-----
873		-----		-----	-----		-----
874		-----		-----	-----		-----
875		-----		-----	-----		-----
912		-----		-----	-----		-----
914		-----		-----	-----		-----
922		-----		-----	-----		-----
962		-----		-----	-----		-----
963		-----		-----	-----		-----
971		-----		-----	-----		-----
974		-----		-----	-----		-----
982		-----		-----	-----		-----
994		-----		-----	-----		-----
995		-----		-----	-----		-----
997		-----		-----	-----		-----
1012		-----		-----	-----		-----
1016		-----		-----	-----		-----
1026		-----		-----	-----		-----
1062		-----		-----	-----		-----
1065		-----		-----	-----		-----
1066	ISO22854-A	32.2		-----	5.9		-----
1069		-----		-----	-----		-----
1081		-----		-----	-----		-----
1097		-----		-----	-----		-----
1108		-----		-----	-----		-----
1135	D6839	32.37		-----	6.12		-----
1145		-----		-----	-----		-----
1201		-----		-----	-----		-----
1284		-----		-----	-----		-----
1381		-----		-----	-----		-----
1397		-----		-----	-----		-----
1429		-----		-----	-----		-----
1544		-----		-----	-----		-----
1556	ISO22854-A	32.69		-----	6.26		-----
1585		-----		-----	-----		-----
1586		-----		-----	-----		-----
1603		-----		-----	-----		-----
1656	D5443	32.12		-----	5.96		-----
1737		-----		-----	-----		-----

lab	method	Naphthenes	mark	z(targ)	Aromatics	mark	z(targ)
1749		-----		-----	-----		-----
1776	ISO22854-A	33.71		-----	6.26		-----
1788		-----		-----	-----		-----
1796		-----		-----	-----		-----
1849		-----		-----	-----		-----
1857		-----		-----	-----		-----
1914	D5134	27.43	G(0.01)	-----	6.05		-----
1949		-----		-----	-----		-----
1950		-----		-----	-----		-----
1960		-----		-----	-----		-----
1967		-----		-----	-----		-----
1982	D6839	31.85		-----	6.15		-----
1995	D5443	32.38		-----	6.08		-----
6016		-----		-----	-----		-----
6056		-----		-----	-----		-----
6134	D6839	32.16		-----	6.21		-----
6198		-----		-----	-----		-----
6201	D5443	31.91		-----	6.19		-----
6262	D6839	32.16		-----	6.43		-----
6299		-----		-----	-----		-----
6326	D6839	29.94	G(0.01)	-----	4.86	D(0.01)	-----
7006		-----		-----	-----		-----
9057		-----		-----	-----		-----
9058		-----		-----	-----		-----
9142		-----		-----	-----		-----
9143		-----		-----	-----		-----
	normality	not OK			suspect		
	n	13			14		
	outliers	2			1		
	mean (n)	32.2731			6.1907		
	st.dev. (n)	0.48890			0.17748		
	R(calc.)	1.3689			0.4969		
	st.dev.(lit)	n.a.			n.a.		
	R(lit)	n.a.			n.a.		

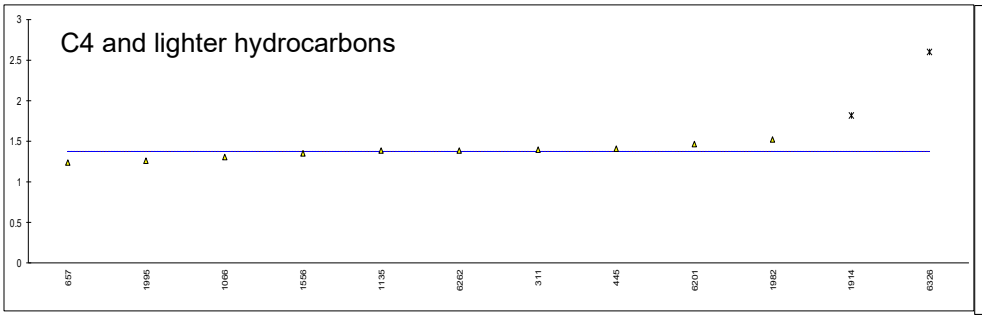


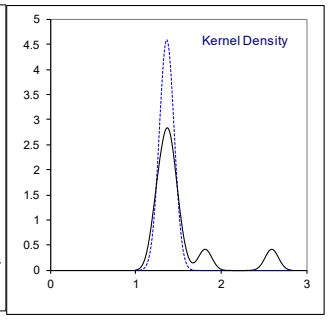


Determination of PNA - C4 and lighter and Compounds with bp >200°C on sample #20036; results in %V/V

lab	method	≤ C4	mark	z(targ)	bp >200°C	mark	z(targ)
120		-----		-----	-----		-----
140		-----		-----	-----		-----
150		-----		-----	-----		-----
158		-----		-----	-----		-----
171		-----		-----	-----		-----
225		-----		-----	-----		-----
237		-----		-----	-----		-----
238		-----		-----	-----		-----
311	D5443	1.4		-----	0.3		-----
317		-----		-----	-----		-----
323		-----		-----	-----		-----
333		-----		-----	-----		-----
334		-----		-----	-----		-----
336		-----		-----	-----		-----
337		-----		-----	-----		-----
349		-----		-----	-----		-----
360		-----		-----	-----		-----
399		-----		-----	-----		-----
444		-----		-----	-----		-----
445	D5443	1.41		-----	-----		-----
541		-----		-----	-----		-----
608		-----		-----	-----		-----
657	D5443	1.24		-----	-----		-----
663		-----		-----	-----		-----
750		-----		-----	-----		-----
751		-----		-----	-----		-----
753		-----		-----	-----		-----
754		-----		-----	-----		-----
779		-----		-----	-----		-----
781		-----		-----	-----		-----
785		-----		-----	-----		-----
798		-----		-----	-----		-----
824		-----		-----	-----		-----
855		-----		-----	-----		-----
862		-----		-----	-----		-----
864		-----		-----	-----		-----
868		-----		-----	-----		-----
872		-----		-----	-----		-----
873		-----		-----	-----		-----
874		-----		-----	-----		-----
875		-----		-----	-----		-----
912		-----		-----	-----		-----
914		-----		-----	-----		-----
922		-----		-----	-----		-----
962		-----		-----	-----		-----
963		-----		-----	-----		-----
971		-----		-----	-----		-----
974		-----		-----	-----		-----
982		-----		-----	-----		-----
994		-----		-----	-----		-----
995		-----		-----	-----		-----
997		-----		-----	-----		-----
1012		-----		-----	-----		-----
1016		-----		-----	-----		-----
1026		-----		-----	-----		-----
1062		-----		-----	-----		-----
1065		-----		-----	-----		-----
1066	ISO22854-A	1.3		-----	0.12.1		-----
1069		-----		-----	-----		-----
1081		-----		-----	-----		-----
1097		-----		-----	-----		-----
1108		-----		-----	-----		-----
1135	D6839	1.38		-----	0.31		-----
1145		-----		-----	-----		-----
1201		-----		-----	-----		-----
1284		-----		-----	-----		-----
1381		-----		-----	-----		-----
1397		-----		-----	-----		-----
1429		-----		-----	-----		-----
1544		-----		-----	-----		-----
1556	ISO22854-A	1.35		-----	0.32		-----
1585		-----		-----	-----		-----
1586		-----		-----	-----		-----
1603		-----		-----	-----		-----
1656		-----		-----	-----		-----

lab	method	≤ C4	mark	z(targ)	bp >200°C	mark	z(targ)
1737		-----		-----	-----		-----
1749		-----		-----	-----		-----
1776		-----		-----	-----		-----
1788		-----		-----	-----		-----
1796		-----		-----	-----		-----
1849		-----		-----	-----		-----
1857		-----		-----	-----		-----
1914	D5134	1.82	D(0.05)	-----	-----		-----
1949		-----		-----	-----		-----
1950		-----		-----	-----		-----
1960		-----		-----	-----		-----
1967		-----		-----	-----		-----
1982	D6839	1.52		-----	-----		-----
1995	D5443	1.26		-----	-----		-----
6016		-----		-----	-----		-----
6056		-----		-----	-----		-----
6134		-----		-----	-----		-----
6198		-----		-----	-----		-----
6201	D5443	1.46		-----	N/A		-----
6262	D6839	1.39		-----	N/A		-----
6299		-----		-----	-----		-----
6326	D6839	2.60	D(0.01)	-----	-----		-----
7006		-----		-----	-----		-----
9057		-----		-----	-----		-----
9058		-----		-----	-----		-----
9142		-----		-----	-----		-----
9143		-----		-----	-----		-----
	normality	OK			unknown		
	n	10			3		
	outliers	2			0		
	mean (n)	1.3710			0.3100		
	st.dev. (n)	0.08685			0.01000		
	R(calc.)	0.2432			0.0280		
	st.dev.(lit)	n.a.			n.a.		
	R(lit)	n.a.			n.a.		

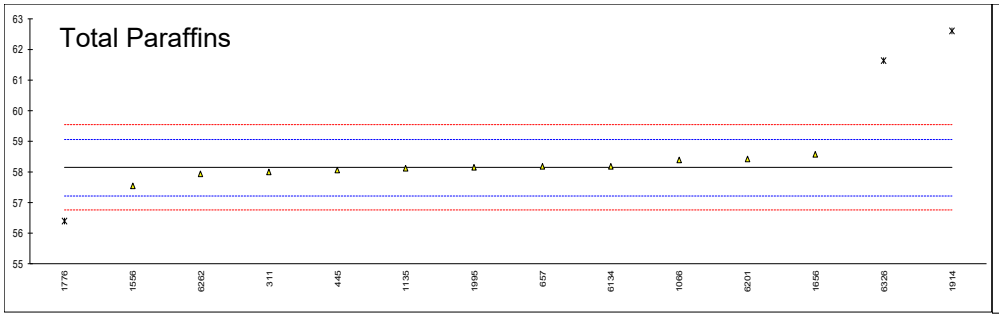


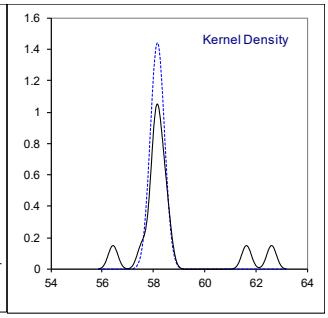


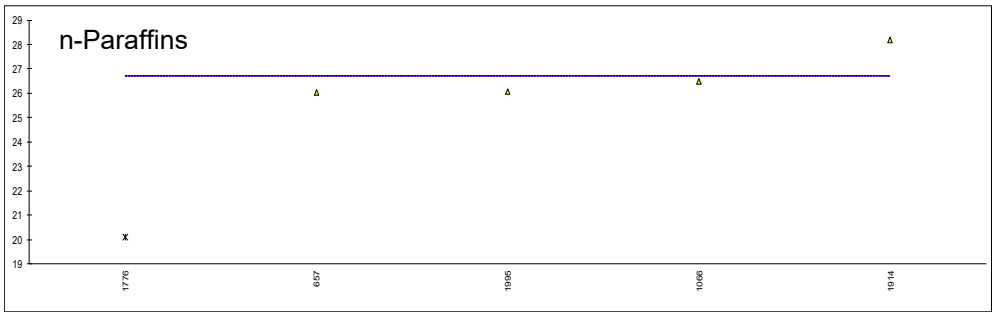
Determination of PNA - Total Paraffins, n-Paraffins, i-Paraffins on sample #20036; results in %M/M

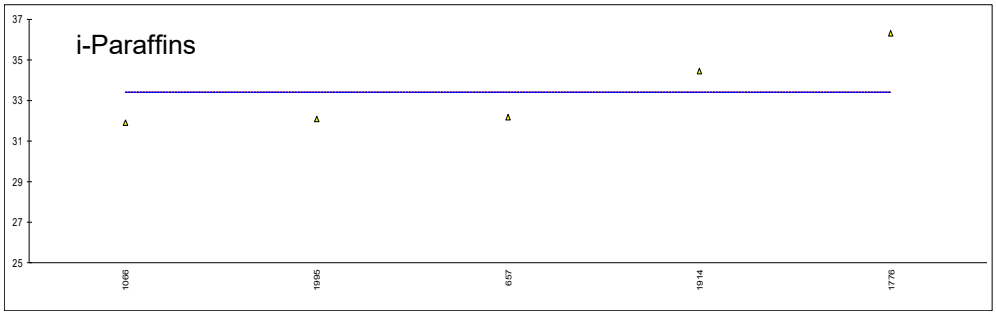
lab	method	Total P	mark	z(targ)	n-Paraf.	mark	z(targ)	i-Paraf.	mark	z(targ)
120		-----		-----	-----		-----	-----		-----
140		-----		-----	-----		-----	-----		-----
150		-----		-----	-----		-----	-----		-----
158		-----		-----	-----		-----	-----		-----
171		-----		-----	-----		-----	-----		-----
225		-----		-----	-----		-----	-----		-----
237		-----		-----	-----		-----	-----		-----
238		-----		-----	-----		-----	-----		-----
311	D5443	58.0		-0.31	-----		-----	-----		-----
317		-----		-----	-----		-----	-----		-----
323		-----		-----	-----		-----	-----		-----
333		-----		-----	-----		-----	-----		-----
334		-----		-----	-----		-----	-----		-----
336		-----		-----	-----		-----	-----		-----
337		-----		-----	-----		-----	-----		-----
349		-----		-----	-----		-----	-----		-----
360		-----		-----	-----		-----	-----		-----
399		-----		-----	-----		-----	-----		-----
444		-----		-----	-----		-----	-----		-----
445	D5443	58.06		-0.18	-----		-----	-----		-----
541		-----		-----	-----		-----	-----		-----
608		-----		-----	-----		-----	-----		-----
657	D5443	58.18		0.08	26.03		-----	32.15		-----
663		-----		-----	-----		-----	-----		-----
750		-----		-----	-----		-----	-----		-----
751		-----		-----	-----		-----	-----		-----
753		-----		-----	-----		-----	-----		-----
754		-----		-----	-----		-----	-----		-----
779		-----		-----	-----		-----	-----		-----
781		-----		-----	-----		-----	-----		-----
785		-----		-----	-----		-----	-----		-----
798		-----		-----	-----		-----	-----		-----
824		-----		-----	-----		-----	-----		-----
855		-----		-----	-----		-----	-----		-----
862		-----		-----	-----		-----	-----		-----
864		-----		-----	-----		-----	-----		-----
868		-----		-----	-----		-----	-----		-----
872		-----		-----	-----		-----	-----		-----
873		-----		-----	-----		-----	-----		-----
874		-----		-----	-----		-----	-----		-----
875		-----		-----	-----		-----	-----		-----
912		-----		-----	-----		-----	-----		-----
914		-----		-----	-----		-----	-----		-----
922		-----		-----	-----		-----	-----		-----
962		-----		-----	-----		-----	-----		-----
963		-----		-----	-----		-----	-----		-----
971		-----		-----	-----		-----	-----		-----
974		-----		-----	-----		-----	-----		-----
982		-----		-----	-----		-----	-----		-----
994		-----		-----	-----		-----	-----		-----
995		-----		-----	-----		-----	-----		-----
997		-----		-----	-----		-----	-----		-----
1012		-----		-----	-----		-----	-----		-----
1016		-----		-----	-----		-----	-----		-----
1026		-----		-----	-----		-----	-----		-----
1062		-----		-----	-----		-----	-----		-----
1065		-----		-----	-----		-----	-----		-----
1066	ISO22854-A	58.4		0.55	26.5		-----	31.9		-----
1069		-----		-----	-----		-----	-----		-----
1081		-----		-----	-----		-----	-----		-----
1097		-----		-----	-----		-----	-----		-----
1108		-----		-----	-----		-----	-----		-----
1135	D6839	58.12		-0.05	-----		-----	-----		-----
1145		-----		-----	-----		-----	-----		-----
1201		-----		-----	-----		-----	-----		-----
1284		-----		-----	-----		-----	-----		-----
1381		-----		-----	-----		-----	-----		-----
1397		-----		-----	-----		-----	-----		-----
1429		-----		-----	-----		-----	-----		-----
1544		-----		-----	-----		-----	-----		-----
1556	ISO22854-A	57.54		-1.30	N/A		-----	N/A		-----
1585		-----		-----	-----		-----	-----		-----
1586		-----		-----	-----		-----	-----		-----
1603		-----		-----	-----		-----	-----		-----
1656	D5443	58.57		0.92	-----		-----	-----		-----
1737		-----		-----	-----		-----	-----		-----

lab	method	Total P	mark	z(targ)	n-Paraf.	mark	z(targ)	i-Paraf.	mark	z(targ)
1749		-----		-----	-----		-----	-----		-----
1776	ISO22854-A	56.41	D(0.05)	-3.74	20.10	D(0.05)	-----	36.31		-----
1788		-----		-----	-----		-----	-----		-----
1796		-----		-----	-----		-----	-----		-----
1849		-----		-----	-----		-----	-----		-----
1857		-----		-----	-----		-----	-----		-----
1914	D5134	62.60	D(0.01)	9.63	28.18		-----	34.42		-----
1949		-----		-----	-----		-----	-----		-----
1950		-----		-----	-----		-----	-----		-----
1960		-----		-----	-----		-----	-----		-----
1967		-----		-----	-----		-----	-----		-----
1982		-----		-----	-----		-----	-----		-----
1995	D5443	58.14		-0.01	26.09		-----	32.10		-----
6016		-----		-----	-----		-----	-----		-----
6056		-----		-----	-----		-----	-----		-----
6134	D6839	58.19		0.10	-----		-----	-----		-----
6198		-----		-----	-----		-----	-----		-----
6201	D5443	58.43		0.62	N/A		-----	N/A		-----
6262	D6839	57.95		-0.42	N/A		-----	N/A		-----
6299		-----		-----	-----		-----	-----		-----
6326	D6839	61.62	D(0.01)	7.51	-----		-----	-----		-----
7006		-----		-----	-----		-----	-----		-----
9057		-----		-----	-----		-----	-----		-----
9058		-----		-----	-----		-----	-----		-----
9142		-----		-----	-----		-----	-----		-----
9143		-----		-----	-----		-----	-----		-----
	normality	suspect			unknow			unknown		
	n	11			4			5		
	outliers	3			1			0		
	mean (n)	58.1436			26.7000			33.3760		
	st.dev. (n)	0.27623			1.00853			1.93702		
	R(calc.)	0.7735			2.8239			5.4236		
	st.dev.(D5443:14)	0.46296			n.a.			n.a.		
	R(D5443:14)	1.2963			n.a.			n.a.		





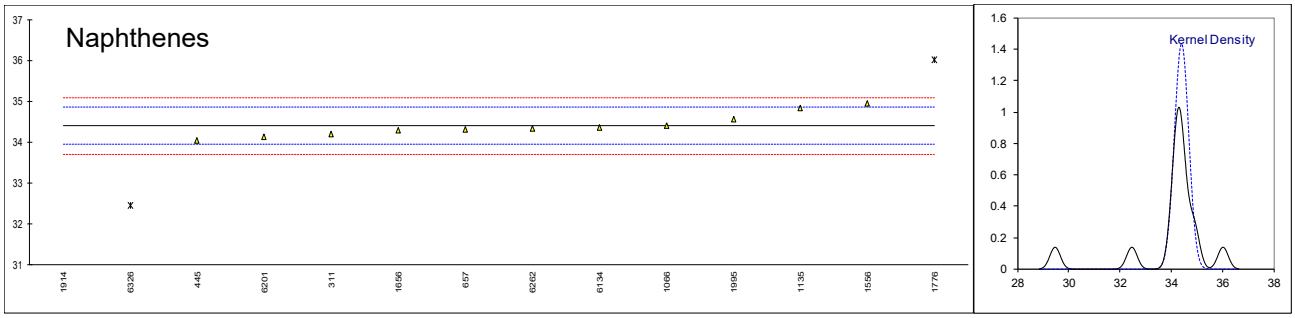


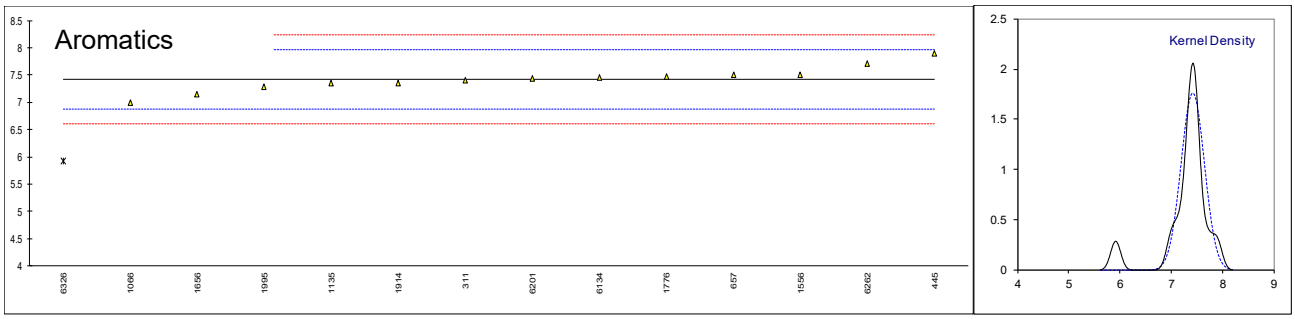


Determination of PNA - Naphthenes and Aromatics on sample #20036; results in %M/M

lab	method	Naphthenes	mark	z(targ)	Aromatics	mark	z(targ)
120		-----		-----	-----		-----
140		-----		-----	-----		-----
150		-----		-----	-----		-----
158		-----		-----	-----		-----
171		-----		-----	-----		-----
225		-----		-----	-----		-----
237		-----		-----	-----		-----
238		-----		-----	-----		-----
311	D5443	34.2		-0.87	7.4		-0.09
317		-----		-----	-----		-----
323		-----		-----	-----		-----
333		-----		-----	-----		-----
334		-----		-----	-----		-----
336		-----		-----	-----		-----
337		-----		-----	-----		-----
349		-----		-----	-----		-----
360		-----		-----	-----		-----
399		-----		-----	-----		-----
444		-----		-----	-----		-----
445	D5443	34.05		-1.52	7.90		1.74
541		-----		-----	-----		-----
608		-----		-----	-----		-----
657	D5443	34.31		-0.39	7.50		0.28
663		-----		-----	-----		-----
750		-----		-----	-----		-----
751		-----		-----	-----		-----
753		-----		-----	-----		-----
754		-----		-----	-----		-----
779		-----		-----	-----		-----
781		-----		-----	-----		-----
785		-----		-----	-----		-----
798		-----		-----	-----		-----
824		-----		-----	-----		-----
855		-----		-----	-----		-----
862		-----		-----	-----		-----
864		-----		-----	-----		-----
868		-----		-----	-----		-----
872		-----		-----	-----		-----
873		-----		-----	-----		-----
874		-----		-----	-----		-----
875		-----		-----	-----		-----
912		-----		-----	-----		-----
914		-----		-----	-----		-----
922		-----		-----	-----		-----
962		-----		-----	-----		-----
963		-----		-----	-----		-----
971		-----		-----	-----		-----
974		-----		-----	-----		-----
982		-----		-----	-----		-----
994		-----		-----	-----		-----
995		-----		-----	-----		-----
997		-----		-----	-----		-----
1012		-----		-----	-----		-----
1016		-----		-----	-----		-----
1026		-----		-----	-----		-----
1062		-----		-----	-----		-----
1065		-----		-----	-----		-----
1066	ISO22854-A	34.4		0.00	7.0		-1.56
1069		-----		-----	-----		-----
1081		-----		-----	-----		-----
1097		-----		-----	-----		-----
1108		-----		-----	-----		-----
1135	D6839	34.83		1.86	7.35		-0.27
1145		-----		-----	-----		-----
1201		-----		-----	-----		-----
1284		-----		-----	-----		-----
1381		-----		-----	-----		-----
1397		-----		-----	-----		-----
1429		-----		-----	-----		-----
1544		-----		-----	-----		-----
1556	ISO22854-A	34.95		2.38	7.51		0.31
1585		-----		-----	-----		-----
1586		-----		-----	-----		-----
1603		-----		-----	-----		-----
1656	D5443	34.29		-0.48	7.14		-1.04
1737		-----		-----	-----		-----

lab	method	Naphthenes	mark	z(targ)	Aromatics	mark	z(targ)
1749		-----		-----	-----		-----
1776	ISO22854-A	36.02	D(0.05)	7.03	7.47		0.17
1788		-----		-----	-----		-----
1796		-----		-----	-----		-----
1849		-----		-----	-----		-----
1857		-----		-----	-----		-----
1914	D5134	29.46	D(0.01)	-21.44	7.35		-0.27
1949		-----		-----	-----		-----
1950		-----		-----	-----		-----
1960		-----		-----	-----		-----
1967		-----		-----	-----		-----
1982		-----		-----	-----		-----
1995	D5443	34.56		0.69	7.29		-0.49
6016		-----		-----	-----		-----
6056		-----		-----	-----		-----
6134	D6839	34.35		-0.22	7.46		0.13
6198		-----		-----	-----		-----
6201	D5443	34.13		-1.18	7.44		0.06
6262	D6839	34.34		-0.26	7.71		1.05
6299		-----		-----	-----		-----
6326	D6839	32.46	D(0.01)	-8.42	5.92	D(0.01)	-5.52
7006		-----		-----	-----		-----
9057		-----		-----	-----		-----
9058		-----		-----	-----		-----
9142		-----		-----	-----		-----
9143		-----		-----	-----		-----
	normality	OK			suspect		
	n	11			13		
	outliers	3			1		
	mean (n)	34.4009			7.4246		
	st.dev. (n)	0.27833			0.22641		
	R(calc.)	0.7793			0.6339		
	st.dev.(D5443:14)	0.23042			0.27248		
	R(D5443:14)	0.6452			0.7629		

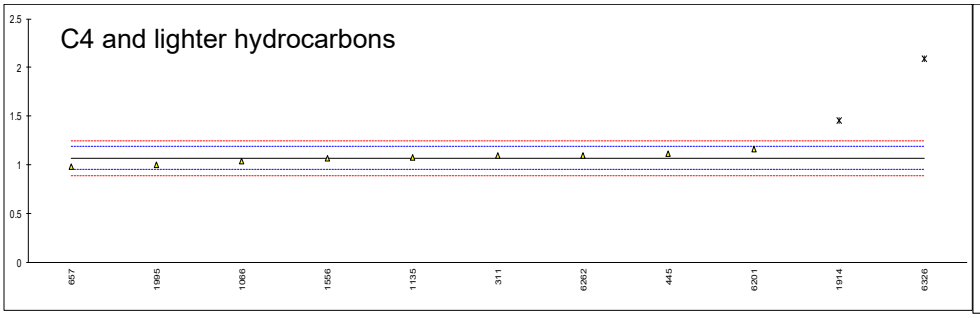


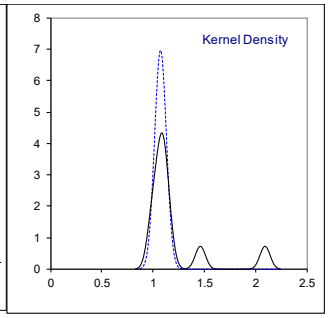


Determination of PNA - C4 and lighter and Compounds with bp >200°C on sample #20036; results in %M/M

lab	method	≤ C4	mark	z(targ)	bp >200°C	mark	z(targ)
120		-----		-----	-----		-----
140		-----		-----	-----		-----
150		-----		-----	-----		-----
158		-----		-----	-----		-----
171		-----		-----	-----		-----
225		-----		-----	-----		-----
237		-----		-----	-----		-----
238		-----		-----	-----		-----
311	D5443	1.1		0.46	0.4		-----
317		-----		-----	-----		-----
323		-----		-----	-----		-----
333		-----		-----	-----		-----
334		-----		-----	-----		-----
336		-----		-----	-----		-----
337		-----		-----	-----		-----
349		-----		-----	-----		-----
360		-----		-----	-----		-----
399		-----		-----	-----		-----
444		-----		-----	-----		-----
445	D5443	1.12		0.80	-----		-----
541		-----		-----	-----		-----
608		-----		-----	-----		-----
657	D5443	0.98		-1.54	-----		-----
663		-----		-----	-----		-----
750		-----		-----	-----		-----
751		-----		-----	-----		-----
753		-----		-----	-----		-----
754		-----		-----	-----		-----
779		-----		-----	-----		-----
781		-----		-----	-----		-----
785		-----		-----	-----		-----
798		-----		-----	-----		-----
824		-----		-----	-----		-----
855		-----		-----	-----		-----
862		-----		-----	-----		-----
864		-----		-----	-----		-----
868		-----		-----	-----		-----
872		-----		-----	-----		-----
873		-----		-----	-----		-----
874		-----		-----	-----		-----
875		-----		-----	-----		-----
912		-----		-----	-----		-----
914		-----		-----	-----		-----
922		-----		-----	-----		-----
962		-----		-----	-----		-----
963		-----		-----	-----		-----
971		-----		-----	-----		-----
974		-----		-----	-----		-----
982		-----		-----	-----		-----
994		-----		-----	-----		-----
995		-----		-----	-----		-----
997		-----		-----	-----		-----
1012		-----		-----	-----		-----
1016		-----		-----	-----		-----
1026		-----		-----	-----		-----
1062		-----		-----	-----		-----
1065		-----		-----	-----		-----
1066	ISO22854-A	1.04		-0.54	0.1	D(0.01)	-----
1069		-----		-----	-----		-----
1081		-----		-----	-----		-----
1097		-----		-----	-----		-----
1108		-----		-----	-----		-----
1135	D6839	1.08		0.13	0.38		-----
1145		-----		-----	-----		-----
1201		-----		-----	-----		-----
1284		-----		-----	-----		-----
1381		-----		-----	-----		-----
1397		-----		-----	-----		-----
1429		-----		-----	-----		-----
1544		-----		-----	-----		-----
1556	ISO22854-A	1.07		-0.04	0.39		-----
1585		-----		-----	-----		-----
1586		-----		-----	-----		-----
1603		-----		-----	-----		-----
1656		-----		-----	-----		-----

lab	method	≤ C4	mark	z(targ)	bp >200°C	mark	z(targ)
1737		-----		-----	-----		-----
1749		-----		-----	-----		-----
1776		-----		-----	-----		-----
1788		-----		-----	-----		-----
1796		-----		-----	-----		-----
1849		-----		-----	-----		-----
1857		-----		-----	-----		-----
1914	D5134	1.46	D(0.01)	6.46	-----		-----
1949		-----		-----	-----		-----
1950		-----		-----	-----		-----
1960		-----		-----	-----		-----
1967		-----		-----	-----		-----
1982		-----		-----	-----		-----
1995	D5443	1.00		-1.20	-----		-----
6016		-----		-----	-----		-----
6056		-----		-----	-----		-----
6134		-----		-----	-----		-----
6198		-----		-----	-----		-----
6201	D5443	1.16		1.46	N/A		-----
6262	D6839	1.10		0.46	N/A		-----
6299		-----		-----	-----		-----
6326	D6839	2.09	D(0.05)	16.96	-----		-----
7006		-----		-----	-----		-----
9057		-----		-----	-----		-----
9058		-----		-----	-----		-----
9142		-----		-----	-----		-----
9143		-----		-----	-----		-----
	normality	OK			unknown		
	n	9			3		
	outliers	2			1		
	mean (n)	1.0722			0.3900		
	st.dev. (n)	0.05740			0.01000		
	R(calc.)	0.1607			0.0280		
	st.dev.(Horwitz 2 comp.)	0.06002			n.a.		
	R(Horwitz 2 comp.)	0.1681			n.a.		



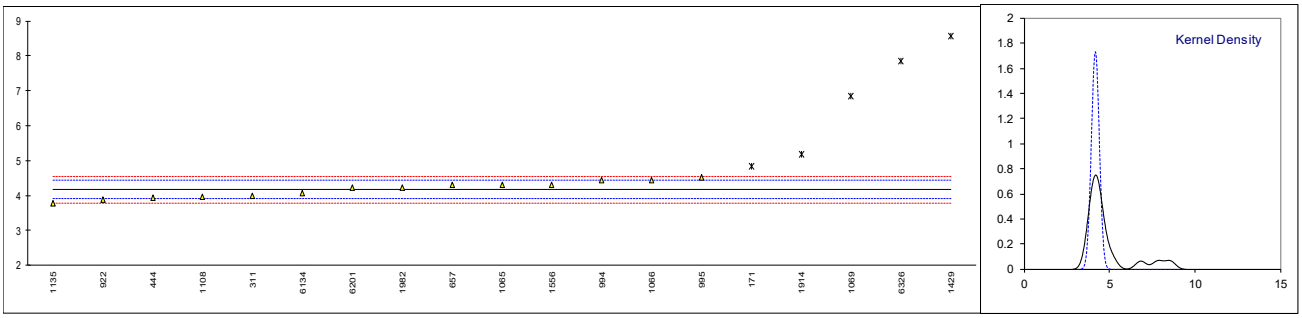


Determination of Pentane on sample #20036; results in %M/M

lab	method	value	mark	z(targ)	remarks
120		-----		-----	
140		-----		-----	
150		-----		-----	
158		-----		-----	
171	D5134	4.845	DG(0.05)	5.22	
225		-----		-----	
237		-----		-----	
238		-----		-----	
311	D5134	3.99	C	-1.36	first reported 4.23
317		-----		-----	
323		-----		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
349		-----		-----	
360		-----		-----	
399		-----		-----	
444	D5134	3.932		-1.80	
445		-----		-----	
541		-----		-----	
608		-----		-----	
657	D6730	4.293	C	0.97	first reported 7.938
663		-----		-----	
750		-----		-----	
751		-----		-----	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824		-----		-----	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922	D6730	3.88		-2.20	
962		-----		-----	
963		-----		-----	
971		-----		-----	
974		-----		-----	
982		-----		-----	
994	D5134	4.43		2.03	
995	D5134	4.52		2.72	
997		-----		-----	
1012		-----		-----	
1016		-----		-----	
1026		-----	W	-----	withdrawn test result, first reported 3.56
1062		-----		-----	
1065	In house	4.295		0.99	
1066	D6729	4.435		2.07	
1069		6.84	G(0.01)	20.55	
1081		-----		-----	
1097		-----		-----	
1108	D5134	3.96		-1.59	
1135	D5134	3.79		-2.89	
1145		-----		-----	
1201		-----		-----	
1284		-----		-----	
1381		-----		-----	
1397		-----		-----	
1429	D5134	8.568	G(0.05)	33.84	
1544		-----		-----	
1556	D6729	4.31		1.10	
1585		-----		-----	
1586		-----		-----	
1603		-----		-----	
1656		-----		-----	
1737		-----		-----	

lab	method	value	mark	z(targ)	remarks
1749		-----		-----	
1776		-----		-----	
1788		-----		-----	
1796		-----		-----	
1849		-----		-----	
1857		-----		-----	
1914	D6729	5.18	DG(0.05)	7.79	
1949		-----		-----	
1950		-----		-----	
1960		-----		-----	
1967		-----		-----	
1982	D6730	4.218		0.40	
1995		-----	W	-----	test result withdrawn. first reported 7.24
6016		-----		-----	
6056		-----		-----	
6134	D6730	4.06		-0.82	
6198		-----		-----	
6201	D6730	4.216		0.38	
6262		-----		-----	
6299		-----		-----	
6326	D5134	7.84	G(0.01)	28.24	
7006		-----		-----	
9057		-----		-----	
9058		-----		-----	
9142		-----		-----	
9143		-----		-----	

	normality	OK
	n	14
	outliers	5
	mean (n)	4.1664
	st.dev. (n)	0.23016
	R(calc.)	0.6444
	st.dev.(D5134:13)	0.1301
	R(D5134:13)	0.3642
Compare		
	R(Horwitz)	0.3764

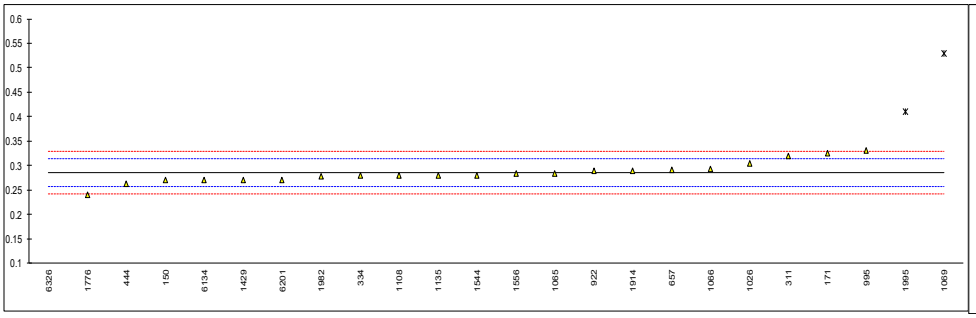


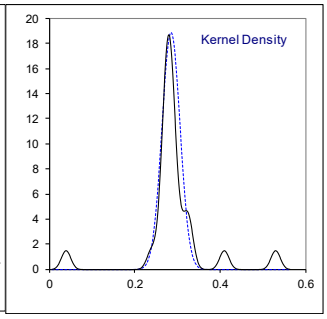
Determination of Benzene on sample #20036; results in %M/M

lab	method	value	mark	z(targ)	remarks
120		-----		-----	
140		-----		-----	
150	D5134	0.27		-1.09	
158		-----		-----	
171	D5134	0.325		2.79	
225		-----		-----	
237		-----		-----	
238		-----		-----	
311	D5134	0.32	C	2.44	first reported 0.34
317		-----		-----	
323		-----		-----	
333		-----		-----	
334	D5134	0.28		-0.38	
336		-----		-----	
337		-----		-----	
349		-----		-----	
360		-----		-----	
399		-----		-----	
444	D5134	0.263		-1.58	
445		-----		-----	
541		-----		-----	
608		-----		-----	
657	D6730	0.291		0.39	
663		-----		-----	
750		-----		-----	
751		-----		-----	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824		-----		-----	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922	D6730	0.29		0.32	
962		-----		-----	
963		-----		-----	
971		-----		-----	
974		-----		-----	
982		-----		-----	
994		-----		-----	
995	D5134	0.33		3.14	
997		-----		-----	
1012		-----		-----	
1016		-----		-----	
1026	UOP551	0.3052	C	1.39	first reported <0.1
1062		-----		-----	
1065	In house	0.284		-0.10	
1066	D6729	0.293		0.53	
1069		0.53	R(0.01)	17.24	
1081		-----		-----	
1097		-----		-----	
1108	D5134	0.28		-0.38	
1135	D5134	0.28		-0.38	
1145		-----		-----	
1201		-----		-----	
1284		-----		-----	
1381		-----		-----	
1397		-----		-----	
1429	D5134	0.271		-1.02	
1544	D5134	0.28	C	-0.38	first reported 0.380
1556	D6729	0.283		-0.17	
1585		-----		-----	
1586		-----		-----	
1603		-----		-----	
1656		-----		-----	
1737		-----		-----	

lab	method	value	mark	z(targ)	remarks
1749		-----		-----	
1776	ISO22854-A	0.24		-3.20	
1788		-----		-----	
1796		-----		-----	
1849		-----		-----	
1857		-----		-----	
1914	D6729	0.29		0.32	
1949		-----		-----	
1950		-----		-----	
1960		-----		-----	
1967		-----		-----	
1982	D6730	0.278		-0.52	
1995		0.41	C,R(0.01)	8.78	first reported 0.38
6016		-----		-----	
6056		-----		-----	
6134	D6730	0.27		-1.09	
6198		-----		-----	
6201	D6730	0.271		-1.02	
6262		-----		-----	
6299		-----		-----	
6326	D5134	0.04	R(0.01)	-17.30	
7006		-----		-----	
9057		-----		-----	
9058		-----		-----	
9142		-----		-----	
9143		-----		-----	

	normality	OK
	n	21
	outliers	3
	mean (n)	0.2854
	st.dev. (n)	0.02111
	R(calc.)	0.0591
	st.dev.(D5134:13)	0.0142
	R(D5134:13)	0.0397
Compare		
	R(Horwitz)	0.0386



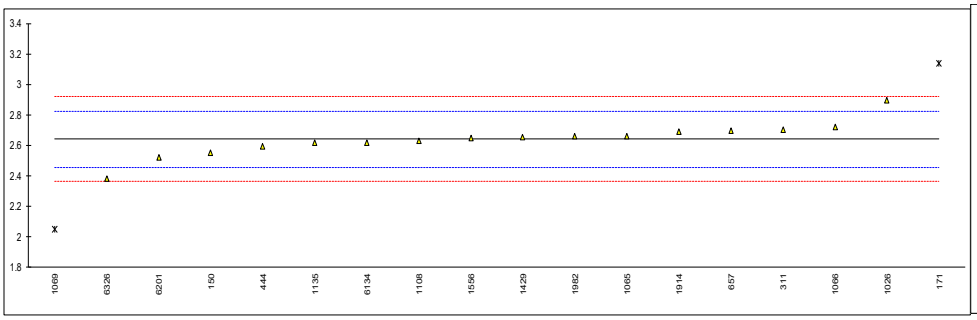


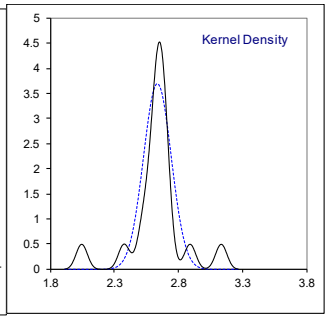
Determination of Cyclohexane on sample #20036; results in %M/M

lab	method	value	mark	z(targ)	remarks
120		-----		-----	
140		-----		-----	
150	D5134	2.55		-0.96	
158		-----		-----	
171	D5134	3.137	G(0.01)	5.36	
225		-----		-----	
237		-----		-----	
238		-----		-----	
311	D5134	2.70		0.65	
317		-----		-----	
323		-----		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
349		-----		-----	
360		-----		-----	
399		-----		-----	
444	D5134	2.591		-0.52	
445		-----		-----	
541		-----		-----	
608		-----		-----	
657	D6730	2.698		0.63	
663		-----		-----	
750		-----		-----	
751		-----		-----	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824		-----		-----	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922		-----		-----	
962		-----		-----	
963		-----		-----	
971		-----		-----	
974		-----		-----	
982		-----		-----	
994		-----		-----	
995		-----		-----	
997		-----		-----	
1012		-----		-----	
1016		-----		-----	
1026	UOP551	2.8941	C	2.74	first reported 10.3718
1062		-----		-----	
1065	In house	2.661		0.23	
1066	D6729	2.717		0.84	
1069		2.05	G(0.05)	-6.35	
1081		-----		-----	
1097		-----		-----	
1108	D5134	2.63		-0.10	
1135	D5134	2.62		-0.21	
1145		-----		-----	
1201		-----		-----	
1284		-----		-----	
1381		-----		-----	
1397		-----		-----	
1429	D5134	2.655		0.17	
1544		-----		-----	
1556	D6729	2.65		0.11	
1585		-----		-----	
1586		-----		-----	
1603		-----		-----	
1656		-----		-----	
1737		-----		-----	

lab	method	value	mark	z(targ)	remarks
1749		-----		-----	
1776		-----		-----	
1788		-----		-----	
1796		-----		-----	
1849		-----		-----	
1857		-----		-----	
1914	D6729	2.69		0.54	
1949		-----		-----	
1950		-----		-----	
1960		-----		-----	
1967		-----		-----	
1982	D6730	2.657		0.19	
1995		-----		-----	
6016		-----		-----	
6056		-----		-----	
6134	D6730	2.62		-0.21	
6198		-----		-----	
6201	D6730	2.518		-1.31	
6262		-----		-----	
6299		-----		-----	
6326	D5134	2.38		-2.79	
7006		-----		-----	
9057		-----		-----	
9058		-----		-----	
9142		-----		-----	
9143		-----		-----	

	normality	not OK
	n	16
	outliers	2
	mean (n)	2.6394
	st.dev. (n)	0.10798
	R(calc.)	0.3023
	st.dev.(D5134:13)	0.09284
	R(D5134:13)	0.2599
Compare		
	R(Horwitz)	0.2554



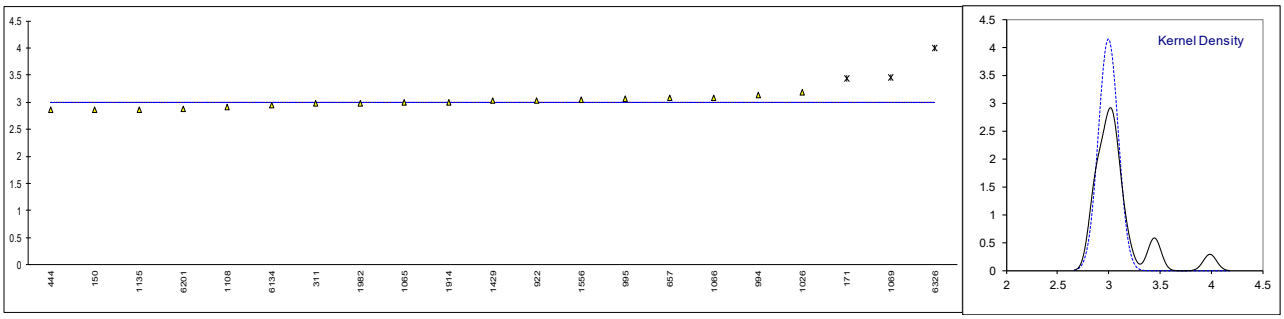


Determination of 2-Methylpentane on sample #20036; results in %M/M

lab	method	value	mark	z(targ)	remarks
120		-----		-----	
140		-----		-----	
150	D5134	2.86		-----	
158		-----		-----	
171	D5134	3.440	R(0.01)	-----	
225		-----		-----	
237		-----		-----	
238		-----		-----	
311	D5134	2.98		-----	
317		-----		-----	
323		-----		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
349		-----		-----	
360		-----		-----	
399		-----		-----	
444	D5134	2.853		-----	
445		-----		-----	
541		-----		-----	
608		-----		-----	
657	D6730	3.072		-----	
663		-----		-----	
750		-----		-----	
751		-----		-----	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824		-----		-----	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922	D6730	3.03		-----	
962		-----		-----	
963		-----		-----	
971		-----		-----	
974		-----		-----	
982		-----		-----	
994	D5134	3.13		-----	
995	D5134	3.07		-----	
997		-----		-----	
1012		-----		-----	
1016		-----		-----	
1026	UOP551	3.185	C	-----	first reported 2.1734
1062		-----		-----	
1065	In house	2.998		-----	
1066	D6729	3.0738		-----	
1069		3.45	R(0.01)	-----	
1081		-----		-----	
1097		-----		-----	
1108	D5134	2.91		-----	
1135	D5134	2.86		-----	
1145		-----		-----	
1201		-----		-----	
1284		-----		-----	
1381		-----		-----	
1397		-----		-----	
1429	D5134	3.022		-----	
1544		-----		-----	
1556	D6729	3.04		-----	
1585		-----		-----	
1586		-----		-----	
1603		-----		-----	
1656		-----		-----	
1737		-----		-----	

lab	method	value	mark	z(targ)	remarks
1749		-----		-----	
1776		-----		-----	
1788		-----		-----	
1796		-----		-----	
1849		-----		-----	
1857		-----		-----	
1914	D6729	3.00		-----	
1949		-----		-----	
1950		-----		-----	
1960		-----		-----	
1967		-----		-----	
1982	D6730	2.986		-----	
1995		-----		-----	
6016		-----		-----	
6056		-----		-----	
6134	D6730	2.94		-----	
6198		-----		-----	
6201	D6730	2.876		-----	
6262		-----		-----	
6299		-----		-----	
6326	D5134	3.99	R(0.01)	-----	
7006		-----		-----	
9057		-----		-----	
9058		-----		-----	
9142		-----		-----	
9143		-----		-----	

	normality	OK
	n	18
	outliers	3
	mean (n)	2.9937
	st.dev. (n)	0.09622
	R(calc.)	0.2694
	st.dev.(D5134:13)	(0.0364)
	R(D5134:13)	(0.1018)
Compare		
	R(Horwitz)	0.2843

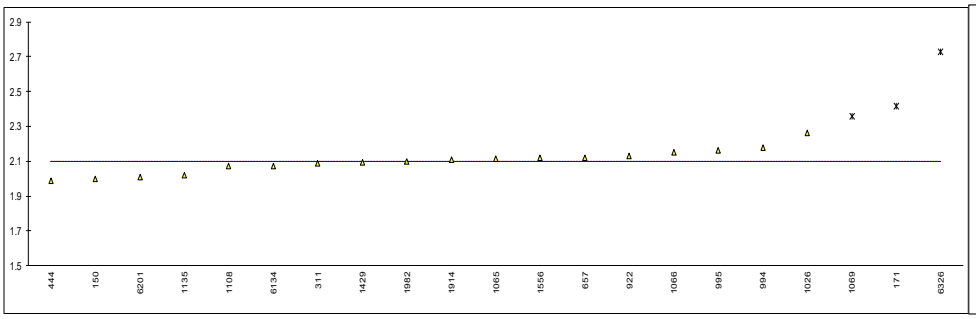


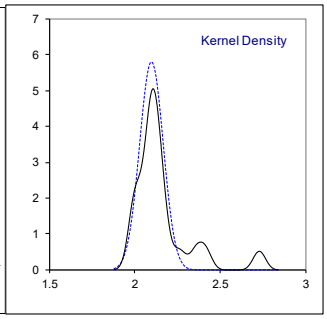
Determination of 3-Methylpentane on sample #20036; results in %M/M

lab	method	value	mark	z(targ)	remarks
120		-----		-----	
140		-----		-----	
150	D5134	2.00		-----	
158		-----		-----	
171	D5134	2.416	R(0.05)	-----	
225		-----		-----	
237		-----		-----	
238		-----		-----	
311	D5134	2.09		-----	
317		-----		-----	
323		-----		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
349		-----		-----	
360		-----		-----	
399		-----		-----	
444	D5134	1.990		-----	
445		-----		-----	
541		-----		-----	
608		-----		-----	
657	D6730	2.121		-----	
663		-----		-----	
750		-----		-----	
751		-----		-----	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824		-----		-----	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922	D6730	2.13		-----	
962		-----		-----	
963		-----		-----	
971		-----		-----	
974		-----		-----	
982		-----		-----	
994	D5134	2.18		-----	
995	D5134	2.16		-----	
997		-----		-----	
1012		-----		-----	
1016		-----		-----	
1026	UOP551	2.2638	C	-----	first reported 0.8899
1062		-----		-----	
1065	In house	2.113		-----	
1066	D6729	2.1531		-----	
1069		2.36	R(0.05)	-----	
1081		-----		-----	
1097		-----		-----	
1108	D5134	2.07		-----	
1135	D5134	2.02		-----	
1145		-----		-----	
1201		-----		-----	
1284		-----		-----	
1381		-----		-----	
1397		-----		-----	
1429	D5134	2.091		-----	
1544		-----		-----	
1556	D6729	2.12		-----	
1585		-----		-----	
1586		-----		-----	
1603		-----		-----	
1656		-----		-----	
1737		-----		-----	

lab	method	value	mark	z(targ)	remarks
1749		-----		-----	
1776		-----		-----	
1788		-----		-----	
1796		-----		-----	
1849		-----		-----	
1857		-----		-----	
1914	D6729	2.11		-----	
1949		-----		-----	
1950		-----		-----	
1960		-----		-----	
1967		-----		-----	
1982	D6730	2.097		-----	
1995		-----		-----	
6016		-----		-----	
6056		-----		-----	
6134	D6730	2.07		-----	
6198		-----		-----	
6201	D6730	2.007		-----	
6262		-----		-----	
6299		-----		-----	
6326	D5134	2.73	R(0.01)	-----	
7006		-----		-----	
9057		-----		-----	
9058		-----		-----	
9142		-----		-----	
9143		-----		-----	

	normality	OK
	n	18
	outliers	3
	mean (n)	2.0992
	st.dev. (n)	0.06894
	R(calc.)	0.1930
	st.dev.(D5134:13)	(0.0255)
	R(D5134:13)	(0.0714)
Compare		
	R(Horwitz)	0.2103



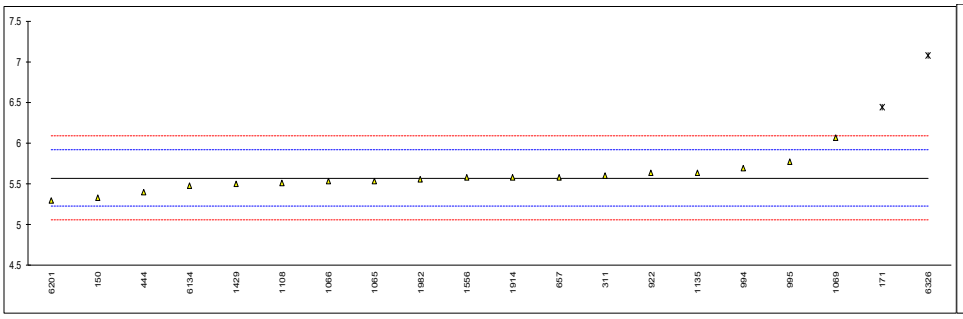


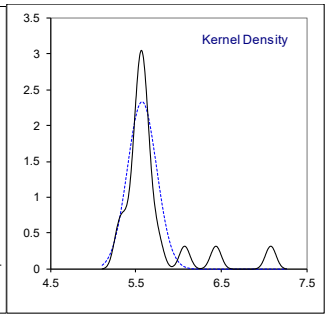
Determination of Heptane on sample #20036; results in %M/M

lab	method	value	mark	z(targ)	remarks
120		-----		-----	
140		-----		-----	
150	D5134	5.33		-1.40	
158		-----		-----	
171	D5134	6.437	R(0.01)	5.03	
225		-----		-----	
237		-----		-----	
238		-----		-----	
311	D5134	5.60		0.17	
317		-----		-----	
323		-----		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
349		-----		-----	
360		-----		-----	
399		-----		-----	
444	D5134	5.403		-0.97	
445		-----		-----	
541		-----		-----	
608		-----		-----	
657	D6730	5.583		0.07	
663		-----		-----	
750		-----		-----	
751		-----		-----	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824		-----		-----	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922	D6730	5.63		0.34	
962		-----		-----	
963		-----		-----	
971		-----		-----	
974		-----		-----	
982		-----		-----	
994	D5134	5.69		0.69	
995	D5134	5.77		1.16	
997		-----		-----	
1012		-----		-----	
1016		-----		-----	
1026		-----		-----	
1062		-----		-----	
1065	In house	5.533		-0.22	
1066	D6729	5.533		-0.22	
1069		6.07		2.90	
1081		-----		-----	
1097		-----		-----	
1108	D5134	5.51		-0.35	
1135	D5134	5.63		0.34	
1145		-----		-----	
1201		-----		-----	
1284		-----		-----	
1381		-----		-----	
1397		-----		-----	
1429	D5134	5.505		-0.38	
1544		-----		-----	
1556	D6729	5.58		0.05	
1585		-----		-----	
1586		-----		-----	
1603		-----		-----	
1656		-----		-----	
1737		-----		-----	

lab	method	value	mark	z(targ)	remarks
1749		-----		-----	
1776		-----		-----	
1788		-----		-----	
1796		-----		-----	
1849		-----		-----	
1857		-----		-----	
1914	D6729	5.58		0.05	
1949		-----		-----	
1950		-----		-----	
1960		-----		-----	
1967		-----		-----	
1982	D6730	5.556		-0.09	
1995		-----	W	-----	test result withdrawn. first reported 10.84
6016		-----		-----	
6056		-----		-----	
6134	D6730	5.48		-0.53	
6198		-----		-----	
6201	D6730	5.290		-1.63	
6262		-----		-----	
6299		-----		-----	
6326	D5134	7.08	R(0.01)	8.77	
7006		-----		-----	
9057		-----		-----	
9058		-----		-----	
9142		-----		-----	
9143		-----		-----	

	normality	not OK
	n	18
	outliers	2
	mean (n)	5.5707
	st.dev. (n)	0.17074
	R(calc.)	0.4781
	st.dev.(Horwitz)	0.1721
	R(Horwitz)	0.4818
Compare		
	R(D5134:13)	0.0708



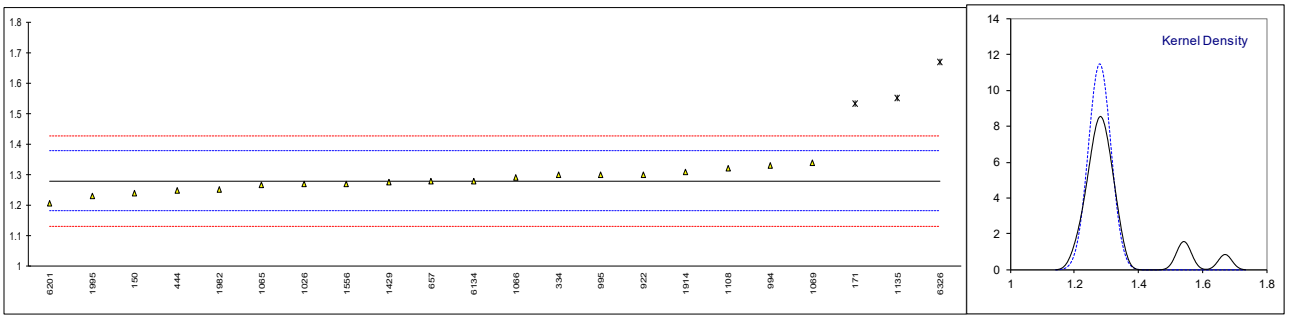


Determination of Toluene on sample #20036; results in %M/M

lab	method	value	mark	z(targ)	remarks
120		-----		-----	
140		-----		-----	
150	D5134	1.24		-0.80	
158		-----		-----	
171	D5134	1.533	R(0.01)	5.14	
225		-----		-----	
237		-----		-----	
238		-----		-----	
311		-----		-----	
317		-----		-----	
323		-----		-----	
333		-----		-----	
334	D5134	1.30		0.42	
336		-----		-----	
337		-----		-----	
349		-----		-----	
360		-----		-----	
399		-----		-----	
444	D5134	1.247		-0.66	
445		-----		-----	
541		-----		-----	
608		-----		-----	
657	D6730	1.279		-0.01	
663		-----		-----	
750		-----		-----	
751		-----		-----	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824		-----		-----	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922	D6730	1.30		0.42	
962		-----		-----	
963		-----		-----	
971		-----		-----	
974		-----		-----	
982		-----		-----	
994	D5134	1.33		1.03	
995	D5134	1.30		0.42	
997		-----		-----	
1012		-----		-----	
1016		-----		-----	
1026	UOP551	1.27		-0.19	
1062		-----		-----	
1065	In house	1.268		-0.23	
1066	D6729	1.291		0.23	
1069		1.34		1.23	
1081		-----		-----	
1097		-----		-----	
1108	D5134	1.32		0.82	
1135	D5134	1.55	C,R(0.05)	5.49	first reported 1.44
1145		-----		-----	
1201		-----		-----	
1284		-----		-----	
1381		-----		-----	
1397		-----		-----	
1429	D5134	1.276		-0.07	
1544		-----		-----	
1556	D6729	1.27		-0.19	
1585		-----		-----	
1586		-----		-----	
1603		-----		-----	
1656		-----		-----	
1737		-----		-----	

lab	method	value	mark	z(targ)	remarks
1749		-----		-----	
1776		-----		-----	
1788		-----		-----	
1796		-----		-----	
1849		-----		-----	
1857		-----		-----	
1914	D6729	1.31		0.62	
1949		-----		-----	
1950		-----		-----	
1960		-----		-----	
1967		-----		-----	
1982	D6730	1.252		-0.56	
1995		1.23		-1.00	
6016		-----		-----	
6056		-----		-----	
6134	D6730	1.28		0.01	
6198		-----		-----	
6201	D6730	1.206		-1.49	
6262		-----		-----	
6299		-----		-----	
6326	D5134	1.67	R(0.05)	7.92	
7006		-----		-----	
9057		-----		-----	
9058		-----		-----	
9142		-----		-----	
9143		-----		-----	

	normality	OK
	n	19
	outliers	3
	mean (n)	1.2794
	st.dev. (n)	0.03474
	R(calc.)	0.0973
	st.dev.(Horwitz)	0.0493
	R(Horwitz)	0.1381
Compare		
	R(D5134:13)	0.0397

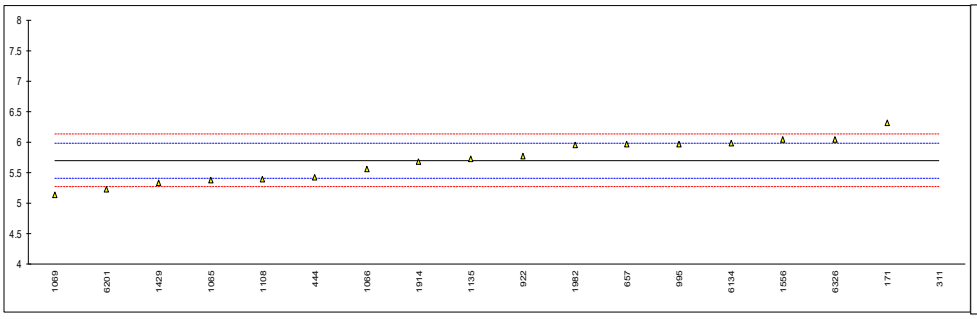


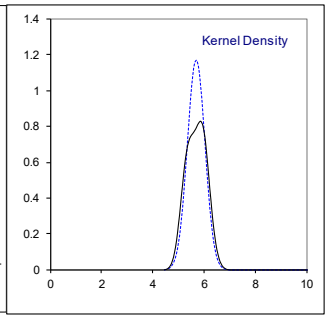
Determination of Octane on sample #20036; results in %M/M

lab	method	value	mark	z(targ)	remarks
120		-----		-----	
140		-----		-----	
150		-----		-----	
158		-----		-----	
171	D5134	6.310		4.28	
225		-----		-----	
237		-----		-----	
238		-----		-----	
311	D5134	23.9	C,D(0.01)	127.70	first reported 25.09
317		-----		-----	
323		-----		-----	
333		-----		-----	
334		-----		-----	
336		-----		-----	
337		-----		-----	
349		-----		-----	
360		-----		-----	
399		-----		-----	
444	D5134	5.429		-1.91	
445		-----		-----	
541		-----		-----	
608		-----		-----	
657	D6730	5.962		1.83	
663		-----		-----	
750		-----		-----	
751		-----		-----	
753		-----		-----	
754		-----		-----	
779		-----		-----	
781		-----		-----	
785		-----		-----	
798		-----		-----	
824		-----		-----	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
912		-----		-----	
914		-----		-----	
922	D6730	5.77		0.49	
962		-----		-----	
963		-----		-----	
971		-----		-----	
974		-----		-----	
982		-----		-----	
994		-----		-----	
995	D5134	5.97		1.89	
997		-----		-----	
1012		-----		-----	
1016		-----		-----	
1026		-----		-----	
1062		-----		-----	
1065	In house	5.379		-2.26	
1066	D6729	5.555		-1.02	
1069		5.14		-3.93	
1081		-----		-----	
1097		-----		-----	
1108	D5134	5.40		-2.11	
1135	D5134	5.72		0.14	
1145		-----		-----	
1201		-----		-----	
1284		-----		-----	
1381		-----		-----	
1397		-----		-----	
1429	D5134	5.340		-2.53	
1544		-----		-----	
1556	D6729	6.05		2.45	
1585		-----		-----	
1586		-----		-----	
1603		-----		-----	
1656		-----		-----	
1737		-----		-----	

lab	method	value	mark	z(targ)	remarks
1749		-----		-----	
1776		-----		-----	
1788		-----		-----	
1796		-----		-----	
1849		-----		-----	
1857		-----		-----	
1914	D6729	5.68		-0.15	
1949		-----		-----	
1950		-----		-----	
1960		-----		-----	
1967		-----		-----	
1982	D6730	5.953		1.77	
1995		-----	W	-----	test result withdrawn. first reported 12.02
6016		-----		-----	
6056		-----		-----	
6134	D6730	5.98		1.96	
6198		-----		-----	
6201	D6730	5.224		-3.34	
6262		-----		-----	
6299		-----		-----	
6326	D5134	6.05		2.45	
7006		-----		-----	
9057		-----		-----	
9058		-----		-----	
9142		-----		-----	
9143		-----		-----	

	normality	OK
	n	17
	outliers	1
	mean (n)	5.7007
	st.dev. (n)	0.34132
	R(calc.)	0.9557
	st.dev.(D5134:13)	0.1425
	R(D5134:13)	0.3990
Compare		
	R(Horwitz)	0.4913

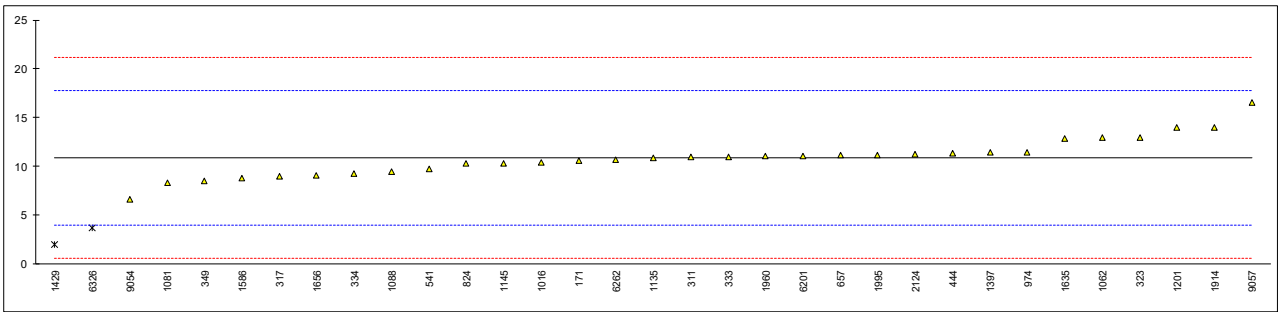


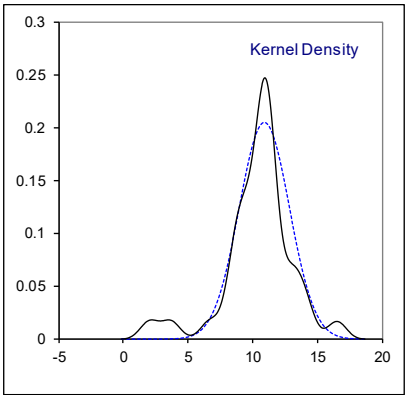


Determination of Mercury as Hg on sample #20037 and #20038; results in µg/kg

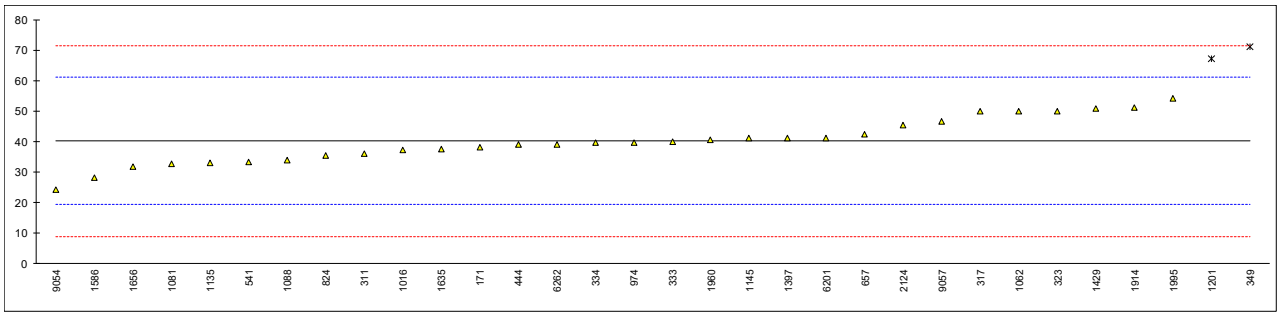
lab	method	#20037	mark	z(targ)	#20038	mark	z(targ)	remarks
140		-----		-----	-----		-----	
171	UOP938	10.6		-0.08	38.2		-0.19	
311	UOP938	11.0		0.03	36.0		-0.40	
317	SGS LP/LAB/A/003	9		-0.55	50		0.95	
323	UOP938	13		0.62	50		0.95	
333	EPA 7423	11		0.03	40		-0.01	
334	In house	9.3		-0.46	39.7		-0.04	
349	UOP938	8.48		-0.70	71.06	R(0.05)	2.97	
444	UOP938	11.33		0.13	38.96		-0.11	
541	SGS ME244	9.7		-0.34	33.3		-0.66	
657	UOP938	11.2		0.09	42.5		0.23	
663		-----		-----	-----		-----	
750		-----		-----	-----		-----	
754		-----		-----	-----		-----	
781		-----		-----	-----		-----	
798		-----		-----	-----		-----	
824	UOP938	10.308		-0.17	35.438		-0.45	
855		-----		-----	-----		-----	
862		-----		-----	-----		-----	
868		-----		-----	-----		-----	
873		-----		-----	-----		-----	
874		-----		-----	-----		-----	
912		-----		-----	-----		-----	
922		-----		-----	-----		-----	
963		-----		-----	-----		-----	
974	UOP938	11.42		0.16	39.76		-0.04	
1016	UOP938	10.4		-0.14	37.2		-0.28	
1062	UOP938	13		0.62	50		0.95	
1066		-----		-----	-----		-----	
1081	In house	8.33		-0.74	32.69		-0.71	
1088	D6350	9.42		-0.43	33.99		-0.59	
1135	UOP938	10.9		0.00	33.1		-0.67	
1145	UOP938	10.34		-0.16	41.10		0.09	
1201	UOP938	14.0		0.91	67.3	R(0.05)	2.61	
1397	In house	11.4		0.15	41.3		0.11	
1429	In house	2.0	R(0.05	-2.58	50.7		1.01	
1586	UOP938	8.8		-0.61	28.3		-1.14	
1603		-----		-----	-----		-----	
1635	In house	12.83		0.57	37.43		-0.26	
1656	UOP938	9.1		-0.52	31.7		-0.81	
1857		-----		-----	-----		-----	
1914	AAS-Hydride	14		0.91	51		1.04	
1949		-----		-----	-----		-----	
1950		-----		-----	-----		-----	
1960	UOP938	11.1		0.06	40.6		0.05	
1995	UOP938	11.2		0.09	54.2		1.35	
2124	UOP938	11.3		0.12	45.40		0.51	
6016		-----		-----	-----		-----	
6134		-----		-----	-----		-----	
6201	UOP938	11.1		0.06	41.3		0.11	
6262	UOP938	10.7		-0.05	39.1		-0.10	
6277		-----		-----	-----		-----	
6315		-----		-----	-----		-----	
6326	UOP938	3.66	R(0.05	-2.10	-----		-----	
9054	UOP938	6.67		-1.23	24.23		-1.53	
9055		-----		-----	-----		-----	
9057		16.50		1.63	46.71		0.63	
9058		-----		-----	-----		-----	
	normality	suspect			OK			
	n	31			30			
	outliers	2			2			
	mean (n)	10.885			40.130			
	st.dev. (n)	1.9417			7.2280			
	R(calc.)	5.437			20.238			
	st.dev.(Horwitz)	3.4390			10.4181			
	R(Horwitz)	9.629			29.171			

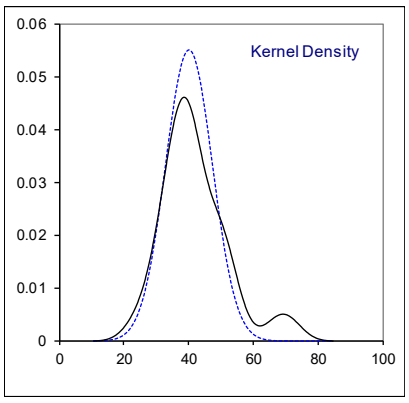
Sample #20037





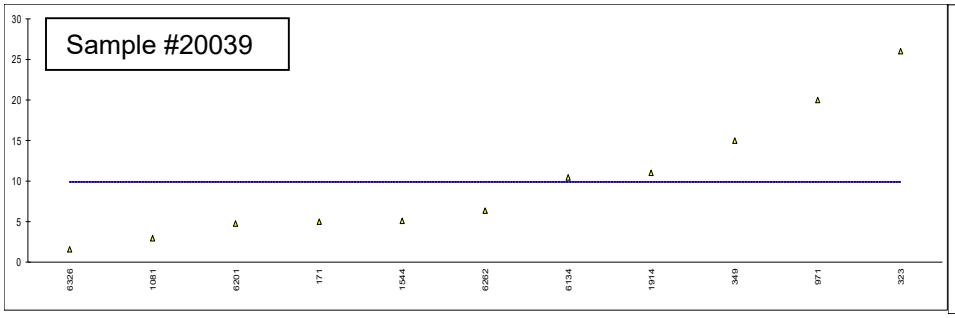
Sample #20038

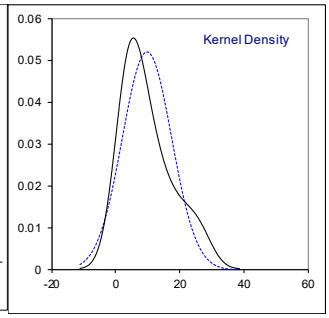


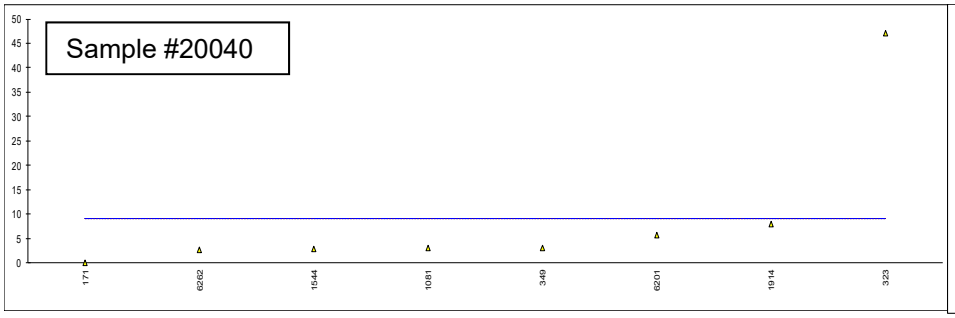


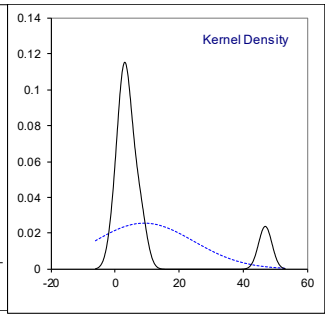
Determination of Arsenic as As on sample #20039 and #20040; results in µg/kg

lab	method	#20039	mark	z(targ)	#20040	mark	z(targ)	remarks
140		-----		-----	-----		-----	
150		-----		-----	-----		-----	
171	INH-014	5		-----	0		-----	
237		-----		-----	-----		-----	
311		-----		-----	-----		-----	
317		-----		-----	-----		-----	
323	In house	26		-----	47		-----	
349	IFP9312	15		-----	3		-----	
360		-----		-----	-----		-----	
444		-----		-----	-----		-----	
445		-----		-----	-----		-----	
657	In house	<10		-----	<10		-----	
750		-----		-----	-----		-----	
781		-----		-----	-----		-----	
824		-----		-----	-----		-----	
855		-----		-----	-----		-----	
862		-----		-----	-----		-----	
864		-----		-----	-----		-----	
868		-----		-----	-----		-----	
874		-----		-----	-----		-----	
912		-----		-----	-----		-----	
963		-----		-----	-----		-----	
971	UOP946	20		-----	-----		-----	
1026	In house	<5		-----	-----		-----	
1066		-----		-----	-----		-----	
1081	In house	3		-----	3		-----	
1135		-----		-----	-----		-----	
1544	In house	5.13		-----	2.78		-----	
1603		-----		-----	-----		-----	
1857		-----		-----	-----		-----	
1914	UOP946	11		-----	8		-----	
1949		-----		-----	-----		-----	
1950		-----		-----	-----		-----	
6134	In house	10.4		-----	-----		-----	
6198		-----		-----	-----		-----	
6201	In house	4.8		-----	5.7		-----	
6262	In house	6.4		-----	2.7		-----	
6315		-----		-----	-----		-----	
6326		1.646		-----	-----		-----	
	n	13			9			
	mean (n)	<50			<50			



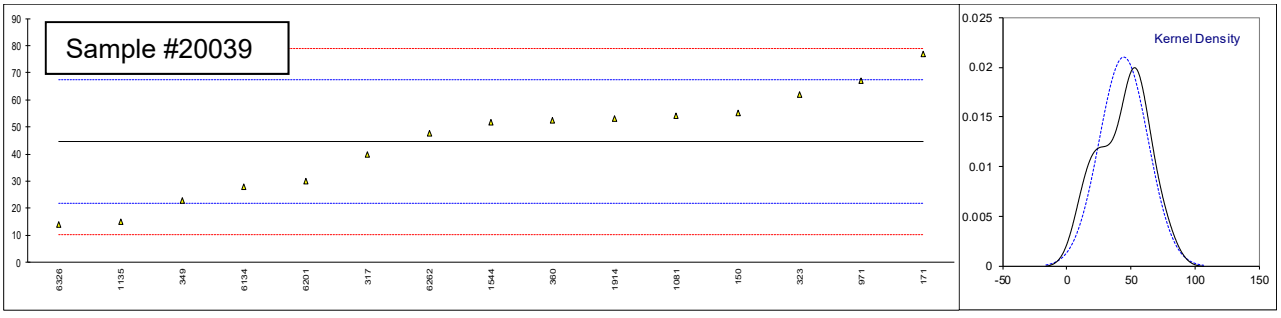


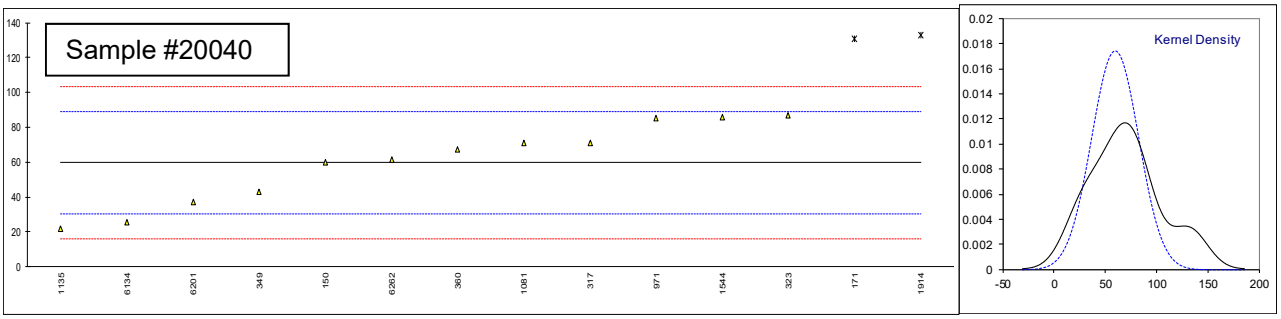




Determination of Lead as Pb on sample #20039 and #20040; results in µg/kg

lab	method	#20039	mark	z(targ)	#20040	mark	z(targ)	remarks
140		-----		-----	-----		-----	
150	UOP952	55		0.91	60		0.03	
171	INH-014	77		2.84	131	D(0.01)	4.90	
237		-----		-----	-----		-----	
311		-----		-----	-----		-----	
317	In house	40		-0.41	71		0.78	
323	In house	62		1.52	87		1.88	
349	UOP952	23		-1.90	43		-1.14	
360	In house	52.34		0.67	67.06		0.51	
444		-----		-----	-----		-----	
445		-----		-----	-----		-----	
657		-----		-----	-----		-----	
750		-----		-----	-----		-----	
781		-----		-----	-----		-----	
824		-----		-----	-----		-----	
855		-----		-----	-----		-----	
862		-----		-----	-----		-----	
864		-----		-----	-----		-----	
868		-----		-----	-----		-----	
874		-----		-----	-----		-----	
912		-----		-----	-----		-----	
963		-----		-----	-----		-----	
971	UOP952	67		1.96	85		1.74	
1026	In house	<5		<-3.48	-----		-----	possibly a false negative test result?
1066		-----		-----	-----		-----	
1081	In house	53.98		0.82	70.76		0.76	
1135	In house	15		-2.60	22		-2.58	
1544	In house	51.76		0.62	85.91		1.80	
1603		-----		-----	-----		-----	
1857		-----		-----	-----		-----	
1914	IP224	53		0.73	133	D(0.01)	5.03	
1949		-----		-----	-----		-----	
1950		-----		-----	-----		-----	
6134	In house	28.10		-1.45	25.39		-2.35	
6198		-----		-----	-----		-----	
6201	In house	30		-1.28	37		-1.55	
6262	In house	47.5		0.25	61.2		0.11	
6315		-----		-----	-----		-----	
6326		14.01		-2.69	-----		-----	
	normality	OK			OK			
	n	15			12			
	outliers	0			2			
	mean (n)	44.65			59.61			
	st.dev. (n)	18.946			22.906			
	R(calc.)	53.05			64.14			
	st.dev.(Horwitz)	11.406			14.580			
	R(Horwitz)	31.94			40.83			

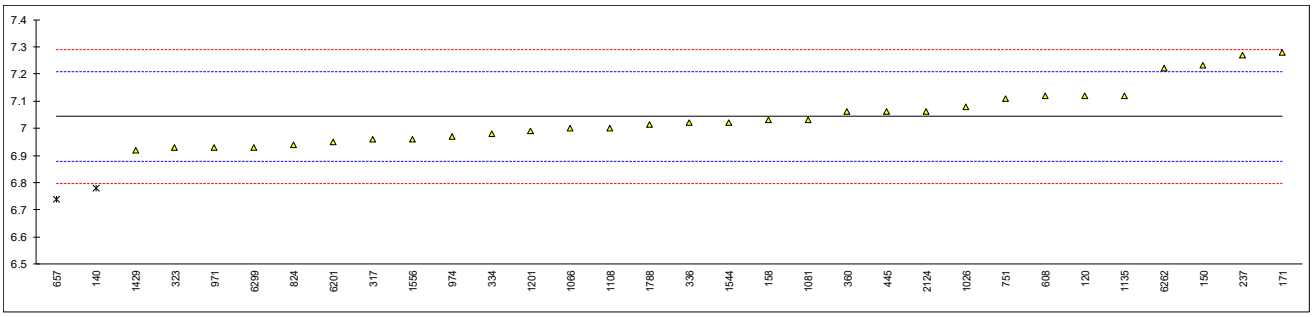


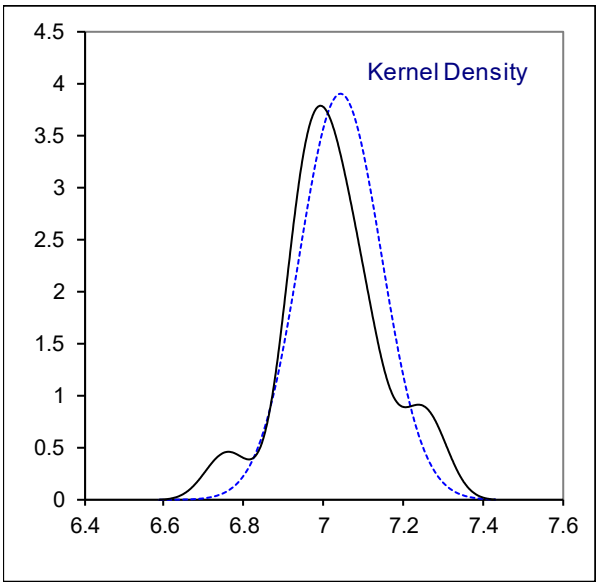


Determination of Total Vapour Pressure on sample #20041; results in psi

lab	method	value	mark	z(targ)	remarks
120	D5191	7.12		0.93	
140	D5191	6.78	R(0.01)	-3.21	
150	D5191	7.23		2.27	
158	D5191	7.03		-0.16	
171	D5191	7.28		2.88	
237	D5191	7.27		2.76	
238		-----		-----	
317	D5191	6.96		-1.02	
323	D5191	6.93	C	-1.38	first reported 42.3 kPa
334	D5191	6.98		-0.77	
336	D5191	7.02		-0.29	
360	D5191	7.06		0.20	
399		-----		-----	
445	D5191	7.06		0.20	
541		-----		-----	
608	D5191	7.1199		0.93	
657	D5191	6.74	R(0.01)	-3.69	
750		-----		-----	
751	D5191	7.11		0.81	
753		-----		-----	
754		-----		-----	
779		-----		-----	
785		-----		-----	
798		-----		-----	
824	D5191	6.94		-1.26	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
963		-----		-----	
971	D5191	6.93		-1.38	
974	D5191	6.97		-0.89	
1011		-----		-----	
1026	D5191	7.08		0.44	
1066	D5191	7.0		-0.53	
1081	D5191	7.03		-0.16	
1108	D5191	7.00		-0.53	
1135	D5191	7.12		0.93	
1201	D5191	6.99		-0.65	
1284		-----		-----	
1429	D5191	6.92		-1.50	
1544	EN13016-1	7.02		-0.29	
1556	EN13016-1	6.96		-1.02	
1585		-----		-----	
1788	D5191	7.015		-0.35	
1857		-----		-----	
1949		-----		-----	
1950		-----		-----	
2124	D5191	7.06		0.20	
6016		-----		-----	
6134		-----		-----	
6201	D5191	6.95		-1.14	
6262	D5191	7.22		2.15	
6299	EN13016-1	6.93		-1.38	
9054		-----		-----	
9058		-----		-----	

normality	OK
n	30
outliers	2
mean (n)	7.043
st.dev. (n)	0.1022
R(calc.)	0.286
st.dev.(D5191:19)	0.0821
R(D5191:19)	0.230

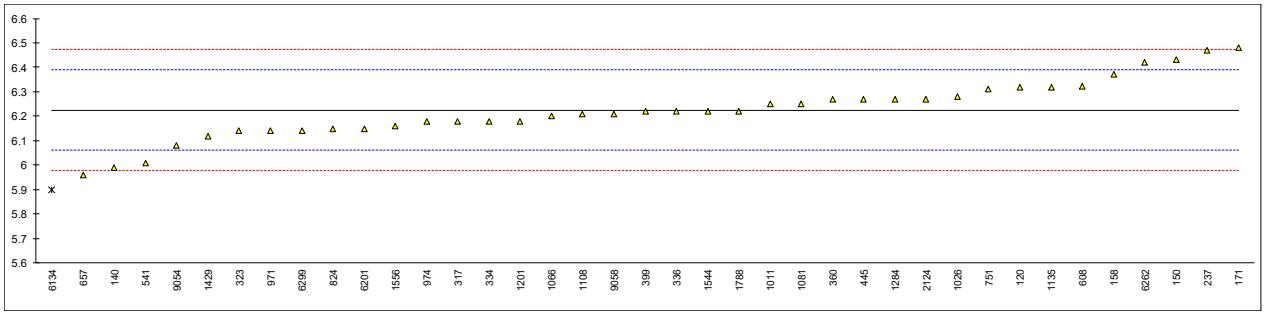

7.4
7.3
7.2
7.1
7
6.9
6.8
6.7
6.6
6.5
657
140
1429
323
971
6299
824
6201
317
1556
974
334
1201
1066
1108
1788
336
1544
158
1081
360
445
2124
1026
751
608
120
1135
6262
150
237
171

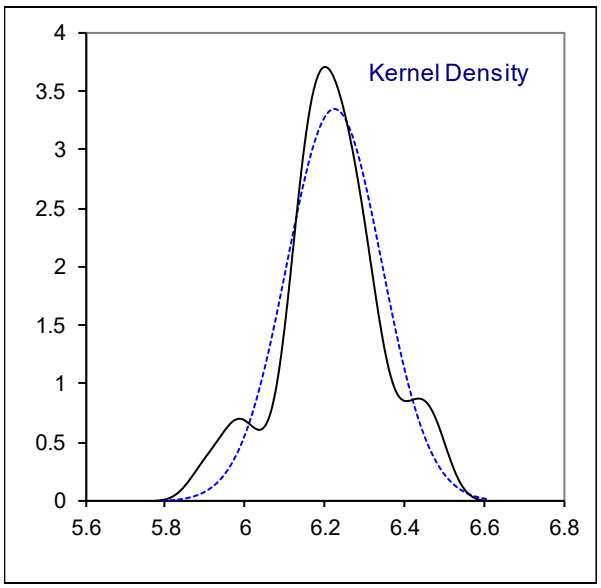

Kernel Density
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
6.4
6.6
6.8
7
7.2
7.4
7.6

Determination of DVPE acc. D5191 on sample #20041; results in psi

lab	method	value	mark	z(targ)	remarks
120	D5191	6.32		1.15	
140	D5191	5.99		-2.86	
150	D5191	6.43		2.49	
158	D5191	6.37		1.76	
171	D5191	6.48		3.10	
237	D5191	6.47		2.98	
238		-----		-----	
317	D5191	6.18		-0.55	
323	D5191	6.14	C	-1.04	first reported 37.1 kPa
334	D5191	6.18		-0.55	
336	D5191	6.22		-0.06	
360	D5191	6.27		0.54	
399	D5191	6.22		-0.06	
445	D5191	6.27		0.54	
541	D6378	6.01		-2.62	
608	D5191	6.3227		1.19	
657	D5191	5.96		-3.23	
750		-----		-----	
751	D5191	6.31		1.03	
753		-----		-----	
754		-----		-----	
779		-----		-----	
785		-----		-----	
798		-----		-----	
824	D5191	6.15		-0.92	
855		-----		-----	
862		-----		-----	
864		-----		-----	
868		-----		-----	
872		-----		-----	
873		-----		-----	
874		-----		-----	
875		-----		-----	
963		-----		-----	
971	D5191	6.14		-1.04	
974	D5191	6.18		-0.55	
1011	EN13016-1	6.25		0.30	
1026	D5191	6.28		0.67	
1066	D5191	6.2		-0.31	
1081	D5191	6.25		0.30	
1108	D5191	6.21		-0.19	
1135	D5191	6.32		1.15	
1201	D5191	6.18		-0.55	
1284	D5191	6.27		0.54	
1429	D5191	6.12		-1.28	
1544	EN13016-1	6.22		-0.06	
1556	EN13016-1	6.16		-0.80	
1585		-----		-----	
1788	D5191	6.22		-0.06	
1857		-----		-----	
1949		-----		-----	
1950		-----		-----	
2124	D5191	6.27		0.54	
6016		-----		-----	
6134	D323	5.9	R(0.01)	-3.96	
6201	D5191	6.15		-0.92	
6262	D5191	6.42		2.37	
6299	EN13016-1	6.14		-1.04	
9054		6.08		-1.77	
9058	D5191	6.21		-0.19	

normality	OK
n	38
outliers	1
mean (n)	6.225
st.dev. (n)	0.1189
R(calc.)	0.333
st.dev.(D5191:19)	0.0821
R(D5191:19)	0.230


6.6
6.5
6.4
6.3
6.2
6.1
6
5.9
5.8
5.7
5.6
6134 657 140 541 9054 1429 323 971 6299 824 6201 1556 974 317 334 1201 1066 1108 9058 399 336 1544 1788 1011 1081 360 445 1284 2124 1026 751 120 1135 608 158 6262 150 237 171


Kernel Density
4
3.5
3
2.5
2
1.5
1
0.5
0
5.6 5.8 6 6.2 6.4 6.6 6.8

APPENDIX 2

Number of participants per country

1 lab in	ARGENTINA
3 labs in	AUSTRALIA
1 lab in	AZERBAIJAN
4 labs in	BELGIUM
2 labs in	BULGARIA
5 labs in	CHINA, People's Republic
1 lab in	COTE D'IVOIRE
2 labs in	CROATIA
2 labs in	EGYPT
1 lab in	ESTONIA
1 lab in	FINLAND
7 labs in	FRANCE
2 labs in	GEORGIA
3 labs in	GERMANY
1 lab in	GREECE
3 labs in	INDIA
2 labs in	IRAN, Islamic Republic of
1 lab in	ISRAEL
1 lab in	ITALY
1 lab in	KAZAKHSTAN
2 labs in	LATVIA
2 labs in	MALAYSIA
1 lab in	MALTA
10 labs in	NETHERLANDS
4 labs in	NIGERIA
1 lab in	NORWAY
1 lab in	PAKISTAN
2 labs in	PORTUGAL
1 lab in	QATAR
18 labs in	RUSSIAN FEDERATION
2 labs in	SAUDI ARABIA
1 lab in	SINGAPORE
1 lab in	SOUTH KOREA
2 labs in	SPAIN
2 labs in	SWEDEN
2 labs in	THAILAND
1 lab in	TURKEY
2 labs in	UNITED ARAB EMIRATES
6 labs in	UNITED KINGDOM
5 labs in	UNITED STATES OF AMERICA

APPENDIX 3

Abbreviations

C	= final test result after checking of first reported suspect test result
D(0.01)	= outlier in Dixon's outlier test
D(0.05)	= straggler in Dixon's outlier test
G(0.01)	= outlier in Grubbs' outlier test
G(0.05)	= straggler in Grubbs' outlier test
DG(0.01)	= outlier in Double Grubbs' outlier test
DG(0.05)	= straggler in Double Grubbs' outlier test
R(0.01)	= outlier in Rosner's outlier test
R(0.05)	= straggler in Rosner's outlier test
E	= possibly an error in calculations
W	= test result withdrawn on request of participant
ex	= test result excluded from statistical evaluation
n.a.	= not applicable
n.e.	= not evaluated
n.d.	= not detected
fr.	= first reported
SDS	= Safety Data Sheet

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