Results of Proficiency Test mixed-Xylenes October 2021

Organized by: Institute for Interlaboratory Studies

Spijkenisse, the Netherlands

Author: Mrs. E.R. Montenij-Bos

Correctors: ing. R.J. Starink & ing. A.S. Noordman-de Neef

Report: iis21C13

December 2021

CONTENTS

1	INTRODUCTION	3
2	SET UP	3
2.1	ACCREDITATION	3
2.2	PROTOCOL	3
2.3	CONFIDENTIALITY STATEMENT	3
2.4	SAMPLES	4
2.5	STABILITY OF THE SAMPLES	5
2.6	ANALYZES	5
3	RESULTS	6
3.1	STATISTICS	6
3.2	GRAPHICS	7
3.3	Z-SCORES	7
4	EVALUATION	8
4.1	EVALUATION PER SAMPLE AND PER COMPONENT	8
4.2	PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES	11
4.3	COMPARISON OF THE OCTOBER 2021 PROFICIENCY TEST WITH PREVIOUS PTS	13

Appendices:

1.	Data, statistical and graphic results	14
2.	Number of participants per country	38
3	Abbreviations and literature	30

1 Introduction

Since 1995 the Institute for Interlaboratory Studies (iis) organizes a proficiency scheme for the analysis of mixed-Xylenes once every two years. During the annual proficiency testing program 2021/2022 it was decided to continue the round robin for the analysis of mixed-Xylenes.

In this interlaboratory study 29 laboratories in 17 different countries registered for participation. See appendix 2 for the number of participants per country. In this report the results of the mixed-Xylenes 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. It was decided to send two different samples of 250 mL amber glass bottles respectively labelled #21181 and #21182.

The 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 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.

mixed-Xylenes: iis21C13 page 3 of 39

2.4 SAMPLES

A batch of approximately 17 liters of mixed Xylenes was prepared from of high purity Xylenes by iis. After homogenization 67 amber glass bottles of 250mL were filled and labelled #21181.

The homogeneity of the subsamples was checked by determination of p-Xylene in accordance with test method ASTM D7504 on 8 stratified randomly selected subsamples.

	p-Xylene in %M/M
sample #21181-1	34.86
sample #21181-2	34.86
sample #21181-3	34.86
sample #21181-4	34.86
sample #21181-5	34.85
sample #21181-6	34.85
sample #21181-7	34.84
sample #21181-8	34.86

Table 1: homogeneity tests results of subsamples #21181

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.

	p-Xylene in %M/M
r (observed)	0.021
reference test method	ASTM D7504:21
0.3 x R (reference test method)	0.168

Table 2: evaluation of repeatability of subsamples #21181

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

A batch of approximately 17 liters of mixed Xylenes was prepared from of high purity Xylenes by iis. The batch was spiked with Ethylbenzene. After homogenization 68 amber glass bottles of 250mL were filled and labelled #21182.

The homogeneity of the subsamples was checked by determination of p-Xylene in accordance with test method ASTM D7504 on 8 stratified randomly selected subsamples.

	p-Xylene in %M/M
sample #21182-1	30.02
sample #21182-2	30.03
sample #21182-3	30.03
sample #21182-4	30.03

page 4 of 39 mixed-Xylenes: iis21C13

	p-Xylene in %M/M
sample #21182-5	30.03
sample #21182-6	30.03
sample #21182-7	30.03
sample #21182-8	30.03

Table 3: homogeneity tests results of subsamples #21182

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.

	p-Xylene in %M/M
r (observed)	0.010
reference test method	ASTM D7504:21
0.3 x R (reference test method)	0.144

Table 4: evaluation of repeatability of subsamples #21182

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

To each of the participating laboratories one sample mixed-Xylenes labelled #21181 and one sample mixed-Xylenes labelled #21182 were sent on September 8, 2021. An SDS was added to the sample package.

2.5 STABILITY OF THE SAMPLES

The stability of mixed-Xylenes in amber glass bottles was checked. The material was found sufficiently stable for the period of the proficiency test.

2.6 ANALYZES

The participants were requested to determine on samples #21181 and #21182: Benzene, Toluene, Ethylbenzene p-Diethylbenzene, o-Xylene, m-Xylene, p-Xylene, sum of m- and p-Xylene, Total mixed-Xylenes, iso-Propyl Benzene (Cumene), sum of C9 and heavier aromatics and Non-aromatics.

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 reference test methods (when applicable) 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 reanalyzes). 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 Organisation, 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.

The assigned value is determined by consensus based on the test results of the group of participants after rejection of the statistical outliers and/or suspect data.

page 6 of 39 mixed-Xylenes: iis21C13

According to ISO13528 all (original received or corrected) results per determination were submitted to outlier tests. In the iis procedure for proficiency tests, outliers are detected prior to calculation of the mean, standard deviation and reproducibility. For small data sets, Dixon (up to 20 test results) or Grubbs (up to 40 test results) outlier tests can be used. For larger data sets (above 20 test results) Rosner's outlier test can be used. 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 F(0.01) for the Rosner's test. Stragglers are marked by F(0.01) for the Dixon's test, by F(0.01) 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 (dotted line) was projected over the Kernel Density Graph (smooth line) for reference. The Gauss curve is calculated from the consensus value and the corresponding standard deviation.

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 (derived from e.g. ISO or ASTM test methods), the z-scores were calculated using a target standard deviation. This results in an evaluation independent of the variation in 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 target values were used, like Horwitz or an estimated reproducibility based on former its proficiency tests.

mixed-Xylenes: iis21C13 page 7 of 39

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_{\text{(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**

Some problems were encountered with the dispatch of the samples due to COVID-19 pandemic. Therefore, the reporting time on the data entry portal was extended with two weeks. Two participants reported test results after the extended reporting date and five other participants did not report any test results. Not all laboratories were able to report all tests requested.

In total 24 participants reported 506 numerical test results. Observed were 23 outlying test results, which is 4.5%. In proficiency studies outlier percentages of 3% - 7.5% are quite normal.

Not all 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, see also paragraph 3.1.

4.1 EVALUATION PER SAMPLE AND PER COMPONENT

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

page 8 of 39 mixed-Xylenes: iis21C13

For the determination of mixed-Xylenes test method ASTM D7504 is considered to be the official test method as the previous test methods ASTM D2306, D2360 and D6563 are all withdrawn. Test method ASTM D7504 mentions a reproducibility at one defined concentration for all components. Regretfully, not for all components the estimated target reproducibility derived from ASTM D7504 could be used. The estimated target reproducibilities as obtained from ASTM D7504:21 are for some components unrealistic (for example Toluene or Non-aromatics). This is observed in both samples. This occurs when the concentrations of these components in the PT samples strongly deviates from the concentrations as mentioned in table 9 of ASTM D7504:21. For these components the estimated reproducibility based on the Horwitz equation is used.

sample #21181

<u>Benzene</u>: This determination was not problematic. The reporting participants agreed

on test results near or below the application range. Therefore, no z-scores

are calculated.

Toluene: This determination was not problematic. One statistical outlier was

observed. The calculated reproducibility after rejection of the statistical outlier is in full agreement with the estimated reproducibility using the

Horwitz equation and the requirements of ASTM D7504:21.

Ethylbenzene: 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 using the

Horwitz equation and the requirements of ASTM D7504:21

p-Diethylbenzene: This determination was not problematic. The reporting participants agreed

on test results near or below the application range. Therefore, no z-scores

are calculated.

<u>o-Xylene</u>: 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 D7504:21.

<u>m-Xylene</u>: 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 D7504:21.

p-Xylene: 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 D7504:21.

sum of m- and p-Xylene: 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 from ASTM D7504:21.

mixed-Xylenes: iis21C13 page 9 of 39

- <u>Total mixed-Xylenes</u>: This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements from ASTM D7504:21.
- <u>iso-Propylbenzene (Cumene)</u>: This determination was not problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements from ASTM D7504:21.
- sum of C9 and heavier aromatics: This determination may be problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the estimated reproducibility using the Horwitz equation (based on 4 components) but it is in agreement with the large requirements from ASTM D7504:21.
- Non-aromatics: This determination may be problematic. No statistical outliers were observed. The calculated reproducibility is not in agreement with the estimated reproducibility using the Horwitz equation (based on 9 components) and not in agreement with the small requirements from ASTM D7504:21.

sample #21182

<u>Benzene</u>: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ASTM D7504:21.

<u>Toluene</u>: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with the estimated reproducibility using the Horwitz equation and the requirements of ASTM D7504:21.

Ethylbenzene: This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D7504:21.

<u>p-Diethylbenzene</u>: This determination was not problematic. The reporting participants agreed on test results near or below the application range. Therefore, no z-scores are calculated

<u>o-Xylene</u>: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in good agreement with the requirements of ASTM D7504:21.

<u>m-Xylene</u>: This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D7504:21.

page 10 of 39 mixed-Xylenes: iis21C13

p-Xylene:

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 D7504:21.

sum of m- and p-Xylene: 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 D7504:21.

Total mixed-Xylenes: This determination was problematic. Two groups of test results were observed. It is clear that one group includes Ethylbenzene in the calculation while the other group does not. Including Ethylbenzene into the total mixed-Xylenes depends on the test method used. It might also dependent on what the customers would like to receive as total mixed-Xylenes? Therefore, it is decided not to evaluate this parameter with the received results. Test method ASTM D7502:21 includes Ethylbenzene (see chapter 15.1.2 from ASTM D7502). Based on this formula the total mixed-Xylenes is calculated by iis (see appendix 1 for more details). Three statistical outliers were observed in the iis calculated results.

iso-Propylbenzene (Cumene): 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 D7504:21.

sum of C9 and heavier aromatics: This determination may be problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the estimated reproducibility using the Horwitz equation (based on 4 components) but it is in agreement with the large requirements from ASTM D7504:21.

Non-aromatics: This determination may be problematic. No statistical outliers were observed. The calculated reproducibility is not in agreement with the estimated reproducibility using the Horwitz equation (based on 9 components) and is not in agreement with the small requirements from ASTM D7504:21.

4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES

A comparison has been made between the reproducibility as declared by the reference test method and the reproducibility as found for the group of 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 test methods) or estimated using the Horwitz equation are presented in the next tables.

mixed-Xylenes: iis21C13 page 11 of 39

Component	unit	n	average	2.8 * sd	R(lit)
Benzene	%M/M	21	<0.01	n.e.	n.e.
Toluene	%M/M	22	0.007	0.002	0.002
Ethylbenzene	%M/M	23	0.013	0.004	0.003
p-Diethylbenzene	%M/M	9	<0.01	n.e.	n.e.
o-Xylene	%M/M	23	39.84	0.32	2.02
m-Xylene	%M/M	23	25.00	0.23	0.35
p-Xylene	%M/M	23	34.95	0.19	0.56
sum of m- and p-Xylene	%M/M	22	59.95	0.29	1.28
Total mixed Xylenes	%M/M	21	99.78	0.07	5.48
iso-Propylbenzene (Cumene)	%M/M	19	0.107	0.011	0.013
sum of C9 and heavier aromatics	%M/M	19	0.150	0.055	0.044
Non-aromatics	%M/M	23	0.044	0.033	0.024

Table 5: reproducibilities of tests on sample #21181.

Component	unit	n	average	2.8 * sd	R(lit)
Benzene	%M/M	19	0.005	0.003	0.011
Toluene	%M/M	24	0.010	0.002	0.002
Ethylbenzene	%M/M	22	9.76	0.15	0.32
p-Diethylbenzene	%M/M	9	<0.01	n.e.	n.e.
o-Xylene	%M/M	24	19.41	0.26	0.98
m-Xylene	%M/M	22	40.58	0.24	0.57
p-Xylene	%M/M	23	30.11	0.14	0.48
sum of m- and p-Xylene	%M/M	22	70.69	0.32	1.51
Total mixed Xylenes	%M/M	21	99.86*)	n.e.	n.e.
iso-Propylbenzene (Cumene)	%M/M	21	0.053	0.009	0.006
sum of C9 and heavier aromatics	%M/M	18	0.081	0.029	0.027
Non-aromatics	%M/M	23	0.049	0.037	0.026

Table 6: reproducibilities of tests on sample #21182.

Without further statistical calculations, it can be concluded that for many tests there is a good compliance of the group of participants with the reference test methods. The problematic tests have been discussed in paragraph 4.1.

page 12 of 39 mixed-Xylenes: iis21C13

^{*)} average as Total mixed Xylenes calculated by iis

4.3 COMPARISON OF THE OCTOBER 2021 PROFICIENCY TEST WITH PREVIOUS PTS

	October 2021	October 2019	October 2017	October 2015	September 2013
Number of reporting laboratories	24	22	27	29	29
Number of test results	506	406	502	546	519
Number of statistical outliers	23	18	33	42	57
Percentage of statistical outliers	4.5%	4.4%	6.6%	7.7%	11.0%

Table 7: comparison with previous proficiency tests.

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

The performance of the determinations of the proficiency tests was compared against the requirements of the reference test methods. The conclusions are given the following table.

Component	October 2021		October 2019		October 2017		October 2015 *)		September 2013 *)	
Benzene	n.e.	++	-	++	n.e.	++	n.e.	-	n.e.	()
Toluene	+/-	+/-	-	++	++	++	+	+/-	++	
Ethylbenzene	-	++	+/-	+	+/-	++	++		+/-	++
o-Xylene	++	++	++	++	+/-	+	+	+		+/-
m-Xylene	+	++	+	+	++	++	-	+	-	++
p-Xylene	++	++	+	+	+	++	+	++	-	++
sum of m- and p-Xylenes	++	++	++	++	++	++	+	+	n.a.	n.a.
Total mixed-Xylenes	++	()	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
iso-Propyl Benzene	+	-	-	-	+/-		-	-	+	
sum of C9 ⁺ aromatics	-	-/+	-	+/-	++		n.e.	n.e.	+	
Non-aromatics	-	-	-	+/-	+	-				

Table 8: comparison of performances against the reference test method requirements over the last PTs.

Results between brackets are outside application range of test method.

The following performance categories were used:

++ : group performed much better than the reference test methods

+ : group performed better than the reference test methods

+/- : group performance equals the reference test methods

- : group performed worse than the reference test methods

-- : group performed much worse than the reference test methods

n.e.: not evaluated

mixed-Xylenes: iis21C13

^{*)} This year another target test method was used (ASTM D2360 or ASTM D6563)

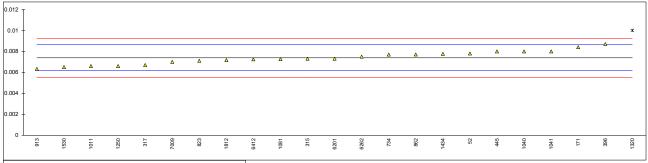
APPENDIX 1
Determination of Benzene on sample #21181; results in %M/M

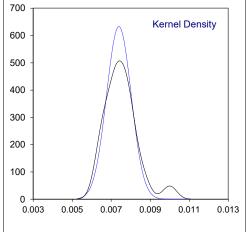
lab	method	value	mark z(targ)	remarks
52	D7504	0.0013		
150				
171	D7504	0.0016		
315	D7504	<0.0002		
317	D7504	0.0005		
323	D6563	< 0.01		
396	D7504	<0,01		
445	D2360	0.001		
446				
551				
555				
558				
734	D7504	0.000575		
823	D7504	0.0004		
862	D7504	0.0018		
913	D7504	0.001425		
1011	D5917	0.0001		
1040	D7504	0.002		
1041	D6563	<0,01		
1081	D6563	0		
1250	D7504			
1320	D7504	< 0.01		
1434	D7504	0.00171 0.0064		
1530 1812	D7504			
6201				
6262	D7504	0.0005		
6412	D7304 D5917	0.0000		
7009	D2306	0.005		
1008	D2300	0.003		
	n	21		
	mean (n)	<0.01		
		-0.01		

page 14 of 39 mixed-Xylenes: iis21C13

Determination of Toluene on sample #21181; results in %M/M

Lab	method	value	mark	z(targ)	remarks
52	D7504	0.0078		0.66	
150	D7504	0.0004		4.00	
171	D7504	0.0084		1.63	
315	D7504	0.0073		-0.15	
317	D7504	0.0067	0	-1.12	first new system 0.04
323	D6563	<0.01	С		first reported 0.01
396	D7504	0.0087		2.11	
445	D2360	0.008		0.98	
446					
551					
555					
558	D7504	0.007005		0.40	
734	D7504	0.007695		0.49	
823	D7504	0.0071		-0.47	
862	D7504	0.0077		0.49	
913	D7504	0.006325		-1.73	
1011	D5917	0.0066		-1.28	
1040	D7504	0.008	0	0.98	first way and all 0.04
1041	D6563	0.008	С	0.98	first reported 0.01
1081	D6563	0.0072738		-0.19	
1250	D7504	0.0066	D(0.05)	-1.28	
1320	D7504	0.01	R(0.05)	4.21	
1434	D7504	0.00776		0.59	
1530 1812	D7504	0.0065 0.00717		-1.44 -0.36	
	D7504				
6201 6262	D7504 D7504	0.0073 0.0075		-0.15 0.17	
	D5917				
6412		0.00724		-0.25	
7009	D2306	0.007		-0.64	
	normality	OK			
	n	22			
	outliers	1			
	mean (n)	0.00739			
	st.dev. (n)	0.00739			
	R(calc.)	0.000030			
	st.dev.(Horwitz)	0.000619			
	R(Horwitz)	0.00019			
Compa		0.00170			
Compe	R(D7504:21)	0.01745			
	1.(51007.21)	3.017 40			





mixed-Xylenes: iis21C13 page 15 of 39

Determination of Ethylbenzene on sample #21181; results in %M/M

lab	method	value	mark	z(targ)	rema	rke											
52	D7504	0.0142	iilai K	1.02	rema	i NO											
150																	
171	D7504	0.0149		1.71													
315 317	D7504 D7504	0.0137 0.0123		0.53 -0.86													
323	D6563	0.0123		-3.14													
396	D7504	0.0153		2.11													
445	D6563	0.010		-3.14													
446 551																	
555																	
558																	
734	D7504	0.013895		0.72													
823 862	D7504 D7504	0.0133 0.0141		0.13 0.92													
913	D7504	0.011433		-1.72													
1011	D5917	0.0102		-2.94													
1040 1041	D7504 D6563	0.015 0.014	С	1.81 0.82	firet r	oporto	4 U U	11									
1041	D6563	0.014	C	0.62	IIISU	eporte	u u.c	, ,									
1250	D7504	0.0126		-0.56													
1320	D7504	0.02	R(0.01)	6.76													
1434 1530	D7504 D7504	0.01405 0.0116		0.87 -1.55													
1812	D7304	0.0110		0.99													
6201	D7504	0.0138		0.62													
6262	D7504	0.0138		0.62													
6412 7009	D5917 D2306	0.01385 0.013		0.67 -0.17													
7000				0.17													
	normality	OK															
	n outliers	23 1															
	mean (n)	0.01317															
	st.dev. (n)	0.001554															
	R(calc.)	0.00435															
	R(calc.) st.dev.(Horwitz)	0.00435 0.001011															
Comp	R(calc.) st.dev.(Horwitz) R(Horwitz) pare	0.00435 0.001011 0.00283															
Comp	R(calc.) st.dev.(Horwitz) R(Horwitz)	0.00435 0.001011															
	R(calc.) st.dev.(Horwitz) R(Horwitz) pare	0.00435 0.001011 0.00283															
Comp.	R(calc.) st.dev.(Horwitz) R(Horwitz) pare	0.00435 0.001011 0.00283															
	R(calc.) st.dev.(Horwitz) R(Horwitz) pare	0.00435 0.001011 0.00283															×
0.025 T	R(calc.) st.dev.(Horwitz) R(Horwitz) pare	0.00435 0.001011 0.00283															x
0.025 T	R(calc.) st.dev.(Horwitz) R(Horwitz) pare	0.00435 0.001011 0.00283 0.00043		ΔΔ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	x
0.025 T	R(calc.) st.dev.(Horwitz) R(Horwitz) pare	0.00435 0.001011 0.00283 0.00043	Δ Δ	ΔΔ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	×
0.025 T 0.02 - 0.015	R(calc.) st.dev.(Horwitz) R(Horwitz) pare	0.00435 0.001011 0.00283 0.00043	Δ Δ-	ΔΔ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	*
0.025 T 0.02 - 0.015	R(calc.) st.dev.(Horwitz) R(Horwitz) pare	0.00435 0.001011 0.00283 0.00043		<u> </u>	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	x
0.025 T 0.02 - 0.015 0.01 - A	R(calc.) st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.00435 0.001011 0.00283 0.00043	Δ Δ	ΔΔ	Δ	Δ	Δ	Δ									_
0.025 T 0.02 - 0.015 0.011 - A	R(calc.) st.dev.(Horwitz) R(Horwitz) rare R(D7504:21)	0.00435 0.001011 0.00283 0.00043	7009 823	315 Table 1	6201	2829	6412	Δ.	1004	χ. ξ. ξ. Δ.	△	1812	Δ	<u>A</u>	1040	3986	1320 x
0.025 0.005 0.005 0.005	R(calc.) st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.00435 0.001011 0.00283 0.00043	7009 823	1001 3.16	1029	△	6412	Δ									_
0.025 T 0.02 - 0.015 0.01 - A	R(calc.) st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.00435 0.001011 0.00283 0.00043		A A 49 49 49 49 49 49 49 49 49 49 49 49 49	6201	2929	6412	A									_
0.025 0.005 0.005 0.005	R(calc.) st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.00435 0.001011 0.00283 0.00043		316	(C201	Z8759	6412	a									_
0.025 0.02 0.015 0.005	R(calc.) st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.00435 0.001011 0.00283 0.00043		316	© (200)	292.9	P P	A 465									_
0.025 0.02 0.015 0.005	R(calc.) st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.00435 0.001011 0.00283 0.00043		316	4	2029	6412	Δ.									_
0.025 0.02 0.015 0.005	R(calc.) st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.00435 0.001011 0.00283 0.00043		1001 3.15	10729	4	B412 ►	A 25°									_
0.025 0.02 0.015 0.005	R(calc.) st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.00435 0.001011 0.00283 0.00043		1081 316	1029	2200	6412	Δ									_
0.025 0.02 0.015 0.005	R(calc.) st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.00435 0.001011 0.00283 0.00043		9 9 9 16 17 17 17 17 17 17 17 17 17 17 17 17 17	4	2020	6412	A 822									_
0.025 0.02 0.015 0.005	R(calc.) st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.00435 0.001011 0.00283 0.00043		A A 329	1000	△ 7999	6412	A85									_
0.025 0.02 0.015 0.005	R(calc.) st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.00435 0.001011 0.00283 0.00043		316	Q.201	28/29	6412	Δ 82									_
0.025 0.02 0.015 0.005	R(calc.) st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.00435 0.001011 0.00283 0.00043		315	№	2829	6412	467									_
0.025 0.02 0.015 0.005	R(calc.) st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.00435 0.001011 0.00283 0.00043		A A (1900)	6201	2923	6412	754									_
0.025 0.02 0.015 0.005	R(calc.) st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.00435 0.001011 0.00283 0.00043		316	0200	2029	6412	A67									_
0.025 0.02 0.015 0.005	R(calc.) st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.00435 0.001011 0.00283 0.00043	nsity	7 P	10729	20229	6412	A 25°									_

page 16 of 39 mixed-Xylenes: iis21C13

Determination of p-Diethylbenzene on sample #21181; results in %M/M

lab	method	value	mark	z(targ)	remarks
52					
150					
171					
315	D7504	<0.0002			
317					
323					
396					
445					
446					
551					
555					
558					
734	D7504	0.0000			
823	D7504	<0.0002			
862	D7504	<0.0002			
913					
1011					
1040					
1041	D6563	<0,01			
1081	D6563	0.0043969			
1250					
1320					
1434	D7504	0.00216			
1530					
1812					
6201					
6262	D7504	<0.0005			
6412					
7009	D2306	0.000			
	n	9			
	mean (n)	<0.01			
	mean (II)	~U.U1			

Determination of o-Xylene on sample #21181; results in %M/M

lab	method	value	mark	z(targ)	remarks										
52	D7504	39.7825	IIIal N	-0.08	i emai K										
150	D1007	39.7623		-0.00											
171	D7504	39.7075		-0.18											
315	D7504	39.95		0.15											
317	D7504	39.83		-0.01											
323	D6563	39.87		0.04											
396	D7504	39.98		0.19											
445	D6563	39.89		0.07											
446															
551 555															
558															
734	D7504	39.84224		0.00											
823	D7504	39.8122		-0.04											
862	D7504	39.811		-0.04											
913	D7504	39.83577		-0.01											
1011	D5917	39.5416		-0.42											
1040	D7504	39.821		-0.03											
1041	D6563	39.83		-0.01											
1081	D6563	39.7544645		-0.12											
1250	D7504	39.8700		0.04											
1320 1434	D7504 D7504	40.09 39.89153		0.35 0.07											
1530	D7504	39.961		0.07											
1812	D7304	39.64121		-0.28											
6201	D7504	38.53	R(0.01)	-1.82											
6262	D7504	39.8622	(0.0.)	0.03											
6412	D5917	39.86729		0.04											
7009	D2306	39.894		0.07											
	normality	suspect													
	n	23													
	outliers mean (n)	1 39.8407													
	st.dev. (n)	0.11259													
	R(calc.)	0.3152													
	st.dev.(D7504:21)	0.72015													
	R(D7504:21)	2.0164													
43 T															
42 + -															_
41 -															-
40 +	Δ Δ Δ	Δ Δ	Δ Δ	Δ Δ	Δ Δ		Δ Δ					Δ	Δ	Δ	
39 +	Δ -														
33 *_															_
38 -															
37															
57	171 171	52	823	317	913	6262	323	1250	445	1434	7009	315	1530	396	1320
6 —			— I												
		Kernel Densit	tv												
5 -		rtornor Bonon	,												
"]		Λ													
		11													
4 -															
		W													
3 -		/\													
"		// /													
		// //													
2 -		// \\													
		// \\													
1 -		// \													
	•	<i>\\</i>													
0	\triangle														
38	38.5 39	39.5 40	40.5												
	55.5	23.0													

page 18 of 39 mixed-Xylenes: iis21C13

Determination of m-Xylene on sample #21181; results in %M/M

lah	mothod	valuo	mark	7/10 = 0	romoris										
lab 52	method D7504	value 24.9906	mark	z(targ) -0.04	remarks	<u> </u>									
52 150	D1304	24.9906		-0.04											
171	D7504	25.0304		0.28											
315	D7504	24.98		-0.12											
317	D7504	25.00		0.04											
323	D6563	24.86		-1.07											
396 445	D7504 D6563	24.88 24.89		-0.91 -0.83											
445 446	D0003	24.09		-0.63											
551															
555															
558															
734	D7504	24.95967		-0.28											
823	D7504	24.9908		-0.03											
862 913	D7504 D7504	25.043 25.0958		0.38 0.80											
1011	D5917	25.1576		1.29											
1040	D7504	24.971		-0.19											
1041	D6563	24.99		-0.04											
1081	D6563	25.0046901		0.08											
1250	D7504	25.1048		0.87											
1320	D7504	24.85		-1.15											
1434 1530	D7504 D7504	24.98522 24.942		-0.08 -0.42											
1812	D7304	25.14018		1.15											
6201	D7504	25.55	R(0.01)	4.40											
6262	D7504	24.9594	,	-0.28											
6412	D5917	24.97132		-0.19											
7009	D2306	25.089		0.74											
	normality	OK													
	n	23													
	outliers	1													
	mean (n) st.dev. (n)	24.9950 0.08328													
	R(calc.)	0.2332													
	st.dev.(D7504:21)	0.12621													
	R(D7504:21)	0.3534													
25.7															
25.5 -															*
25.3 -															-
													Δ	Δ	_
25.1 -	Δ.	Δ Δ	Δ Δ	Δ Δ	Δ Δ	Δ	Δ	Δ Δ	Δ	Δ	Δ	Δ			_
24.9 + A	Δ Δ Δ														
24.7															_
24.5															
1320	323 396 445 1530	6262	1040	315	1041	823	317	171	862	7009	913	1250	1812	1011	6201
6 T		Kamal Danak													
_		Kernel Densit	.y												
5 -	M														
	$/ \setminus$														
4 -	/ //														
	/ \														
3 -	/ //														
	/														
2 -															
-	/														
.	// \\														
1 -	// \\														
	/	\wedge													
0 24.	5 25	25.5	26												
24.	J 25	25.5	20												

mixed-Xylenes: iis21C13 page 19 of 39

Determination of p-Xylene on sample #21181; results in %M/M

lah	method	value	mark	7/toral	romorica	,									
lab 52	method D7504	value 34.9920	mark	z(targ) 0.23	remarks										
150	D1004	34.9920 													
171	D7504	35.0237		0.38											
315	D7504	34.84		-0.53											
317	D7504	34.97		0.12											
323 396	D6563 D7504	35.07 34.89		0.61 -0.28											
445	D6563	35.00		0.27											
446	20000														
551															
555															
558	D7504														
734 823	D7504	34.958785		0.06											
862	D7504 D7504	34.9739 34.96		0.13 0.07											
913	D7504	34.9558		0.04											
1011	D5917	35.0807		0.67											
1040	D7504	34.961		0.07											
1041	D6563	34.945		-0.01											
1081 1250	D6563 D7504	35.0226012 34.8643		0.38 -0.41											
1320	D7504 D7504	34.85		-0.41											
1434	D7504	34.89339		-0.27											
1530	D7504	34.933		-0.07											
1812		34.91272		-0.17											
6201	D7504	35.67	R(0.01)	3.61											
6262 6412	D7504 D5917	34.9394 34.92911		-0.04 -0.09											
7009	D2306	34.815		-0.09											
7000	22000	01.010		0.00											
	normality	OK													
	n	23													
	outliers mean (n)	1 34.9470													
	et dev (n)	በ በ6884													
	st.dev. (n) R(calc.)	0.06884 0.1928													
	R(calc.) st.dev.(D7504:21)	0.1928 0.20006													
	R(calc.)	0.1928													
35.8	R(calc.) st.dev.(D7504:21)	0.1928 0.20006													
35.8 7	R(calc.) st.dev.(D7504:21)	0.1928 0.20006													*
35.6 -	R(calc.) st.dev.(D7504:21)	0.1928 0.20006													*
35.6 35.4	R(calc.) st.dev.(D7504:21)	0.1928 0.20006													*
35.6 35.4 35.2 -	R(calc.) st.dev.(D7504:21)	0.1928 0.20006							Δ	Δ	Δ	Δ	Δ	Δ	ж
35.6 35.4 35.2	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006	Δ Δ	Δ Δ	<u> </u>	Δ Δ		<u> </u>	Δ	Δ	Δ	Δ	Δ	Δ	x
35.6	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006 0.5602	Δ Δ	_ <u>^</u>	<u> </u>	Δ Δ	Α		Δ	Δ	Δ	Δ	Δ	Δ	ж
35.6	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006 0.5602	Δ Δ	Δ Δ	<u> </u>	Δ Δ			Δ	Δ	Δ	Δ	Δ	Δ	ж
35.6	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006 0.5602	Δ Δ	<u> </u>	Δ Δ	Δ Δ	Α		Δ	Δ	Δ	Δ	Δ	Δ	x
35.6	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006 0.5602	4 4 A	41 65	4 4	40	•	A	Δ 25	Δ.					
35.6	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006 0.5602	6412	1041	734	1040	718	823	Δ 29	Ф	■ 4	471	323	Δ	x
35.6	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006 0.5602	6412 P	G082	913	1040	317	823	Δ 25	445					
35.6	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006 0.5602		G2622 P	913	982 2 2 2 2	317	A	Δ 25	446					
35.6	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006 0.5602		G2622 P	913	982 2 2 2 2	317	A	Δ 25	446					
35.6 - 35.4 - 35.2 - 35.5 - 34.8 - 4 34.4 - 34.2 - 34 8000	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006 0.5602		G2622 PP (1041)	913	1040	317	823	Δ 29	445					
35.6 - 35.4 - 35.2 - 35.5 - 34.8 - 4 34.4 - 34.2 - 34 8000	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006 0.5602		G662 1041	913	4 4 (040).	317	A 853	Δ	445					
35.6 - 35.4 - 35.2 - 35.5 - 34.8 - 4 34.4 - 34.2 - 34 - 6000 - 7 - 6 -	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006 0.5602		6662	913	A A (040).	317	A 8533	Δ	44.5					
35.6 - 35.4 - 35.2 - 35.5 - 34.8 - 4 34.4 - 34.2 - 34 - 6000 - 7 - 6 -	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006 0.5602		6062 1041	734	040.	317	A	Δ 20	446					
35.6 - 35.4 - 35.2 - 36.8 - 34.8 - 34.2 - 34.2 - 34.2 - 34.4 - 5.5 - 4.5	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006 0.5602		6888	913	8662	4	623	Δ 20	446					
35.6 - 35.4 - 35.2 - 35.5 - 34.8 - 4 34.2 - 34 800 - 55.5	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006 0.5602		6262 1041	913	8662	4	823	2 50	446					
35.6 - 35.4 - 35.2 - 36.8 - 34.8 - 34.2 - 34.2 - 34.2 - 34.3 - 36.0 - 36	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006 0.5602		6282	734	1040	4 215	823	25	446					
35.6 - 35.4 - 35.2 - 36.8 - 34.8 - 34.2 - 34.2 - 34.2 - 34.4 - 5.5 - 4.5	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006 0.5602		4 4 2883	734	962 2 2 2 2	4 216	A 858	25	44 5					
35.6 - 35.4 - 35.2 - 36.8 - 34.8 - 34.2 - 34.2 - 34.3 - 34.2 - 34	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006 0.5602		4 4 2823	734	962 2 2 2 2	21.6	A 853	25	4465					
35.6 - 35.4 - 35.2 - 36.8 - 34.8 - 34.2 - 34.2 - 34.2 - 34.3 - 36.0 - 36	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006 0.5602		6262	734	962 Z 2 Z 2 A A A	3.77	A	25	445					
35.6 35.4 35.2 35.2 36.6 36.4 36.6 36.4 34.2 34	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006 0.5602		4 4 6000	734	862 2 2 2 3	317	833	Δ 28	445					
35.6 - 35.4 - 35.2 - 36.8 - 34.8 - 34.2 - 34.2 - 34.3 - 34.2 - 34	R(calc.) st.dev.(D7504:21) R(D7504:21)	0.1928 0.20006 0.5602		2903	913	862 Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	317	A	Δ	4445					

page 20 of 39 mixed-Xylenes: iis21C13

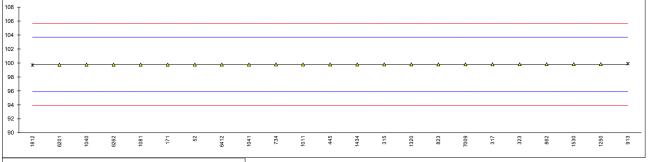
Determination of sum of m- and p-Xylenes on sample #21181; results in % M/M

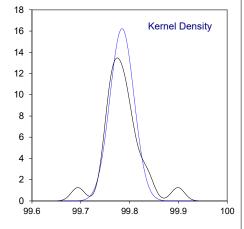
la	ab	method		V	alue		mar	k	z(targ)	rema	arks										
	52	D7504			9.9820	6	mai		0.06	101110											
15	50																				
17 31		D7504			0.054	1			0.22 -0.29												
31		D7504 D7504			9.82 9.97				-0.29 0.04												
32		D6563			0.02		С		0.15	first r	eporte	ed 99.8	31								
39	96										•										
	45	D6563		59	9.89				-0.14												
44 55																					
55																					
55	58																				
73		D7504			9.9184				-0.08												
82 86		D7504 D7504			9.9648 0.003				0.03 0.11												
91		D7504 D7504			0.003 0.0516				0.11												
101		D5917			0.238				0.62												
104	40			59	9.932				-0.05												
104		D6563			9.94				-0.03												
108		D6563			0.0069				0.12												
125 132		D7504 D7504			9.969 [.] 9.70	1			0.04 -0.55												
143	20 34	D7504			9.70 9.8780	61			-0.33												
153	30	D7504			9.870				-0.18												
181	12			60	0.0529				0.22												
620		D7504			1.22	_	R(0.	.01)	2.77												
626 641		D7504 D5917			9.8988 9.9004				-0.12 -0.11												
700		D2306			9.900. 9.904				-0.11												
									• • • • • • • • • • • • • • • • • • • •												
		normality			ot OK																
		n		22																	
		outliers mean (n)		1 59	9.9530	0															
		st.dev. (n)																			
				U.	1048	3															
		R(calc.)		0.	2935																
		R(calc.) st.dev.(D7	'504:21	0.) 0.	.2935 .4576	5															
		R(calc.)	'504:21	0.) 0.	2935	5															
62 T		R(calc.) st.dev.(D7	'504:21	0.) 0.	.2935 .4576	5															
62 T 61.5		R(calc.) st.dev.(D7	'504:21	0.) 0.	.2935 .4576	5															
61.5 + 61 +	_	R(calc.) st.dev.(D7	'504:21	0.) 0.	.2935 .4576	5															*
61.5 + 61 + 60.5 +	_	R(calc.) st.dev.(D7	'504:21	0.) 0.	.2935 .4576	5														Δ	<u>*</u>
61.5 - 61 - 60.5 - 60 -		R(calc.) st.dev.(D7	'504:21	0.) 0.	.2935 .4576	5	Δ	Δ.	Δ Δ	<u> </u>							Δ	Δ	Δ	Δ	*
61.5 + 61 + 60.5 +		R(calc.) st.dev.(D7 R(D7504::	'504:21	0.) 0.	.2935 .4576	5	Δ	Δ	Δ Δ		Δ	Δ		Δ	Δ.	Δ.	Δ	Δ	Δ	Δ	<u>*</u>
61.5 - 61 - 60.5 - 60 - 59.5 -		R(calc.) st.dev.(D7 R(D7504::	'504:21	0.) 0.	.2935 .4576	5	Δ	Δ	Δ Δ	Δ	<u> </u>				Δ	Δ	Δ	Δ	Δ	Δ	*
61.5 - 61 - 60.5 - 60 - 59.5 - 59 - 58.5 -	 	R(calc.) st.dev.(D7 R(D7504::	'504:21	0.) 0.	.2935 .4576	5	Δ	Δ	Δ Δ	<u> </u>	Δ					Δ	Δ	<u> </u>	Δ	Δ	*
61.5 61 60.5 60 59.5 59 58.5 58 57.5	 	R(calc.) st.dev.(D7 R(D7504::	'504:21	0.) 0.	.2935 .4576	5	Δ	Δ	Δ Δ	<u> </u>		Δ		Δ	A	A	Δ	Δ	Δ	Δ	*
61.5 - 61 - 60.5 - 60 - 59.5 - 59 - 58.5 -	1320	R(calc.) st.dev.(D7 R(D7504::	'504:21	0.) 0.	.2935 .4576	Δ	٨٥٥٥	734	000	823	4 052.	347	A	862	A 1901	323	A	I812	171		*
61.5 61 60.5 60 59.5 59 58.5 58 57.5	_	R(calc.) st.dev.(D7 R(D7504:	7504:21 21)	0 0 1	2935 4576; 2814	5	4	734	1040	823	4250	317	- A	888	1081	323	913	4812	171	1001	X
61.5 61 60.5 60 59.5 59 58.5 58 57.5	1320	R(calc.) st.dev.(D7 R(D7504:	7504:21 21)	0. 1.	2935,4576;2814	6413		734	1040	823	1280	317	25	A	4	323	A	A	4		* 1000
61.5 - 61 - 60.5 - 60 - 59.5 - 59 - 58.5 - 57.5 - 57 - 67.5 - 67.	1320	R(calc.) st.dev.(D7 R(D7504:	7504:21 21)	0. 1.	2935,4576;2814	Δ		734	1040	823	1250	217	\$ 25	962	A 180).	323	Δ	(812	A 125		* 1000
61.5 - 61 - 60.5 - 60 - 59.5 - 59 - 58.5 - 57 - 57 - 4.5	5	R(calc.) st.dev.(D7 R(D7504:	7504:21 21)	0. 1.	2935,4576;2814	6413		734	1040	823	4	317	\$ 25	895	A	323	Δ	69.12	4		X 1000
61.5 - 61 - 60.5 - 60 - 59.5 - 59 - 58.5 - 57.5 - 57 - 67.5 - 67.	5	R(calc.) st.dev.(D7 R(D7504:	7504:21 21)	0. 1.	2935,4576;2814	6413		734	1040	823	4 0520	317	\$ 25	805	A	323	A C1:6	69.12	4		X 1000
61.5 - 61 - 60.5 - 60 - 59.5 - 59 - 58.5 - 57.5 - 57 - 57 - 57 - 57 - 57 - 57	5 -	R(calc.) st.dev.(D7 R(D7504:	7504:21 21)	0. 1.	2935,4576;2814	6413		734	1040	4	1250	347	\$ 28	Α	A	323	A A	Z 199.	471		X 1020
61.5 - 61 - 61.5 - 60.5 - 60 - 59.5 - 58 - 58 - 57.5 - 57	5 T 4 - 5 - 33 -	R(calc.) st.dev.(D7 R(D7504:	7504:21 21)	0. 1.	2935,4576;2814	6413		734	1040	4	1250	347	\$ 28	982	A	323	A A	Z (9)	471		X 1000
61.5 - 61 - 60.5 - 60 - 59.5 - 59 - 58.5 - 57.5 - 57 - 57 - 57 - 57 - 57 - 57	5 T 4 - 5 - 33 -	R(calc.) st.dev.(D7 R(D7504:	7504:21 21)	0. 1.	2935,4576;2814	6413		234	1040	823	4 0520	317	25	8002	Δ (190)	A A	A 616	1812	121		X 1020
61.5 - 61 - 61.5 - 60 - 60.5 - 60 - 59.5 - 58 - 57.5 - 57 - 57 - 57 - 57 - 57 - 57 -	5 - 3 - 5 -	R(calc.) st.dev.(D7 R(D7504:	7504:21 21)	0. 1.	2935,4576;2814	6413		734	0100	823	0527	317	25	4	1061	A 233	A 616	1812	1/1		X
61.5 - 61 - 61.5 - 61.5 - 60.5 - 60.5 - 59.5 - 59.5 - 58.5 - 57.5	002EF 5 - 44	R(calc.) st.dev.(D7 R(D7504:	7504:21 21)	0. 1.	2935,4576;2814	6413		734	0001	823	4 0521	314	25	4	V 1981	A A	A	1812	1/1		X
61.5 - 61 - 61.5 - 60 - 60.5 - 60 - 59.5 - 58 - 57.5 - 57 - 57 - 57 - 57 - 57 - 57 -	002EF 5 - 44	R(calc.) st.dev.(D7 R(D7504:	7504:21 21)	0. 1.	2935,4576;2814	6413		734	01000	823	4 0521	214	25	A	1800)	323	A 613	1912	171		X
61.5 - 61 - 61.5 - 60.5 - 60 - 59.5 - 59 - 58.5 - 57 - 57 - 57 - 57 - 57 - 57 - 57 -	002EF 5 - 44	R(calc.) st.dev.(D7 R(D7504:	7504:21 21)	0. 1.	2935,4576;2814	6413		734	0401	\$228	1250	317	25	A	18001	333	Ø 913	(812)	121		X
61.5 - 61 - 60.5 - 60 - 59.5 - 58 - 57.5 - 57 - 57 - 57 - 57 - 57 - 57 -	00EE	R(calc.) st.dev.(D7 R(D7504:	7504:21 21)	0. 1.	2935,4576;2814	6413		734	1040	€28	1250	317	25	A	18001	333	4	(812)	144		x
61.5 - 61 - 61.5 - 60.5 - 60 - 59.5 - 59 - 58.5 - 57 - 57 - 57 - 57 - 57 - 57 - 57 -	00EE	R(calc.) st.dev.(D7 R(D7504:	7504:21 21)	0. 1.	2935,4576;2814	6413		734	0040	623	4 0521	314	82	250	1804	333	0.00	21,99	1211		X
61.5 - 61 - 61.5 - 61 - 60.5 - 60 - 59.5 - 59 - 58.5 - 58 - 57.5 - 57 - 60 - 60 - 60 - 60 - 60 - 60 - 60 - 6	5 - 3 - 5 - 1 - 5 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0	R(calc.) st.dev.(D7 R(D7504::	7504:21	\$\frac{1}{2}\$	2935 45769 2814	Densit	ty		1040	→ 683	4 0521	317	252	888	1001	333	a	1812	14.1		X
61.5 - 61 - 61.5 - 61 - 60.5 - 60 - 59.5 - 59 - 58.5 - 58 - 57.5 - 57 - 60 - 60 - 60 - 60 - 60 - 60 - 60 - 6	5 T 4 - 5 - 11 - 5 - 5 - 5 - 11 - 5 - 5 - 5 -	R(calc.) st.dev.(D7 R(D7504:	7504:21 21)	0. 1.	2935 45769 2814	6413			1040	823	082.	317	25	890	1805	A	A	1812	12.1		X

mixed-Xylenes: iis21C13 page 21 of 39

Determination of Total mixed-Xylenes on sample #21181; results in %M/M

lab	method	value	mark	z(targ)	remarks
52	D7504	99.7651		-0.01	
150					
171	D7504	99.7616		-0.01	
315	D7504	99.79		0.00	
317	D7504	99.8		0.01	
323	D6563	99.81		0.01	
396					
445	D6563	99.78		0.00	
446					
551					
555					
558					
734	D7504	99.77459		0.00	
823	D7504	99.7903		0.00	
862	D7504	99.814		0.02	
913	D7504	99.8988	R(0.05)	0.06	
1011	D5917	99.7799		0.00	
1040		99.753		-0.02	
1041	D6563	99.77		-0.01	
1081	D6563	99.761414		-0.01	
1250	D7504	99.8391		0.03	
1320	D7504	99.79		0.00	
1434	D7504	99.78419		0.00	
1530	D7504	99.832		0.02	
1812		99.69411	R(0.05)	-0.05	
6201	D7504	99.75		-0.02	
6262	D7504	99.7610		-0.01	
6412	D5917	99.76773		-0.01	
7009	D2306	99.798		0.01	
	normality	OK			
	n	21			
	outliers	2			
	mean (n)	99.7844			
	st.dev. (n)	0.02457			
	R(calc.)	0.0688			
	st.dev.(D7504:21)	1.95791			
	R(D7504:21)	5.4821			
	•				
108 -					





page 22 of 39 mixed-Xylenes: iis21C13

Determination of iso-Propyl Benzene (Cumene) on sample #21181; results in %M/M

lab	method		val	ue		mark		z(targ)) r	emark	s									
52	D7504			080				0.26		JWIN	_									
150				-					-											
171	D7504			109				0.89												
315 317	D7504 D7504		0.1	071 988				0.06 -1.74												
323	D7504 D6563		0.0					-1.74												
396	20000							-1.40												
445	D2360		0.1					0.69												
446				-																
551				-					•											
555 558				-					•											
734	D7504		0.1	- 0802				0.26	- }											
823	D7504			066				-0.05												
862	D7504			085				0.37	7											
913	D7504			924		DG(0	.05)	-3.13	3											
1011 1040	D5917 D7504			081				0.28 0.47												
1040	D7504 D6563		0.1 0.1					0.47	,)											
1041	D6563			07108	3			0.06												
1250				-	-				-											
1320	D7504		0.1					-1.48	3											
1434	D7504			1008				0.71												
1530	D7504			939		DG(0		-2.80												
1812 6201	D7504		0.1	3799 ng		G(0.0	11)	6.77 0.47												
6262	D7504			070				0.04												
6412	D5917		0.1	0929				0.54	ļ											
7009	D2306		0.1					-1.05	5											
	normality		OK																	
	n		19																	
	outliers mean (n)		3	068																
	st.dev. (n)			0374																
	R(calc.)			105																
	st.dev.(D750			0461																
	R(D7504:21)	0.0	129																
0.15 _T																				
0.14																				×
0.13 +																				
0.12																				
0.11												^	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
		Δ	Δ	Δ	Δ															
0.1	ж		Δ																	
0.09																				
0.08	1530	323	1320	7009	823	6262	315	1081	52	734	1011	862	1040	6201	6412	445	1041	1434	171	1812
120 T						\neg														
			Ke	ernel D	ensity	,														
100		Λ		_	,															
00		٨																		
80 -																				
60 -																				
40 -																				
)	/																		
'							i .													
20 -		- 1																		
20 -			_																	
0			\wedge	_																
	5 0.1	1	0	1.15		0.2														

mixed-Xylenes: iis21C13 page 23 of 39

Determination of sum of C9 and heavier aromatics on sample #21181; results in %M/M

		<u> </u>												
lab	method D7504	value 0.1497	mark	z(targ)	remark	S								
52 150	D7504	0.1497		-0.03 										
171	D7504	0.1644		0.89										
315	D7504	0.152		0.11										
317	D7504	0.1332		-1.06										
323 396	D6563	0.14 		-0.64 										
445	D6563	0.15		-0.01										
446														
551														
555 550														
558 734	D7504	 0.15688		0.42										
823	D7504	0.1454		-0.30										
862	D7504	0.1534		0.20										
913	D7504	0.042433	R(0.01)	-6.74										
1011 1040	D7504	0.026	R(0.01)	 -7.77										
1040	D6563	0.16	11(0.01)	0.61										
1081	D6563	0.1402847		-0.62										
1250														
1320 1434	D7504 D7504	0.14 0.16072		-0.64 0.66										
1530	D7504 D7504	0.16072		-2.77										
1812	27001	0.20533		3.45										
6201	D7504	0.161		0.67										
6262	D7504	0.1280		-1.39										
6412 7009	D5917 D2306	0.16078 0.147		0.66 -0.20										
7000	D2000	0.147		0.20										
	normality	not OK												
	n outliers	19 2												
	mean (n)	0.15021												
	st.dev. (n)	0.019463												
	R(calc.)	0.05450												
	st.dev.(Horwitz)	0.05450 0.015985			1 comp	onente								
Comp	st.dev.(Horwitz) R(Horwitz)	0.05450			4 comp	onents								
Comp	st.dev.(Horwitz) R(Horwitz)	0.05450 0.015985			4 comp	onents								
	st.dev.(Horwitz) R(Horwitz) are	0.05450 0.015985 0.04476			4 comp	onents								
Comp _{0.25}	st.dev.(Horwitz) R(Horwitz) are	0.05450 0.015985 0.04476			4 comp	onents								
0.25 T	st.dev.(Horwitz) R(Horwitz) are	0.05450 0.015985 0.04476			4 comp	onents								Δ
	st.dev.(Horwitz) R(Horwitz) are	0.05450 0.015985 0.04476			4 comp	onents								
0.25 T	st.dev.(Horwitz) R(Horwitz) are	0.05450 0.015985 0.04476 0.08490		Δ 4	4 comp	onents		Δ	Δ	Δ	Δ	Δ	Δ	
0.25 —	st.dev.(Horwitz) R(Horwitz) are	0.05450 0.015985 0.04476	Δ Δ	Δ 4	4 comp	onents	Δ.	Δ	Δ	Δ	Δ	Δ	Δ	
0.25 —	st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.05450 0.015985 0.04476 0.08490	Δ Δ	Δ 4	4 comp	onents	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
0.25	st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.05450 0.015985 0.04476 0.08490	Δ Δ	Δ 4	4 comp	onents	•	Δ	Δ	Δ	Δ	Δ	Δ	
0.25 — 0.2 — 0.15 — —	st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.05450 0.015985 0.04476 0.08490	Δ Δ	Δ 4	4 comp	onents	٨	Δ	Δ	Δ	Δ	Δ	Δ	
0.25 T 0.2	st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.05450 0.015985 0.04476 0.08490				Δ Δ	Δ							
0.25 T 0.2 0.15 0.1 0.05	st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.05450 0.015985 0.04476 0.08490	1330 1081	A 4		onents 4 4 9 9 9 9 9 9 9 9 9 9 9	A 288	₩ 224	1041	1434	6412	₽	Δ	A
0.25 T	st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.05450 0.015985 0.04476 0.08490				Δ Δ	A							
0.25 T 0.2	st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.05450 0.015985 0.04476 0.08490	1320			Δ Δ	A 288							
0.25	st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.05450 0.015985 0.04476 0.08490	1320			Δ Δ	208							
0.25 T	st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.05450 0.015985 0.04476 0.08490	1320			Δ Δ	2298							
0.25	st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.05450 0.015985 0.04476 0.08490	1320			Δ Δ	288							
0.25	st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.05450 0.015985 0.04476 0.08490	1320			Δ Δ	298							
0.25	st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.05450 0.015985 0.04476 0.08490	1320			Δ Δ	A 2008							
0.25	st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.05450 0.015985 0.04476 0.08490	1320			Δ Δ	239							
0.25	st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.05450 0.015985 0.04476 0.08490	1320			Δ Δ	A							
0.25 0.2	st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.05450 0.015985 0.04476 0.08490	1320			Δ Δ	A 788							
0.25 0.2	st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.05450 0.015985 0.04476 0.08490	1320			Δ Δ	Z88							
0.25 0.2	st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.05450 0.015985 0.04476 0.08490	1320			Δ Δ	A 288							
0.25 0.2	st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.05450 0.015985 0.04476 0.08490	1320			Δ Δ	2298							
0.25 0.2	st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.05450 0.015985 0.04476 0.08490	nsity 1801			Δ Δ	228							
0.25 0.2	st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.05450 0.015985 0.04476 0.08490	1320			Δ Δ	2008							

page 24 of 39 mixed-Xylenes: iis21C13

Determination of Non-aromatics on sample #21181; results in %M/M

lab	method	value	mark	z(targ)	remark	rs									
52	D7504	0.0499	IIIai K	2(targ) 0.71	remari										
150															
171	D7504	0.0493		0.64											
315 317	D7504 D7504	0.041 0.0364		-0.34 -0.89											
323	D6563	0.0304		-0.46											
396	D7504	0.0404		-0.42											
445	D2360	0.051		0.84											
446															
551 555															
558															
734	D7504	0.06026		1.94											
823	D7504	0.0453		0.17											
862 913	D7504 D7504	0.0266 0.040025		-2.05 -0.46											
1011	D5917	0.040023		-3.10											
1040	D7504	0.064		2.38											
1041	D6563	0.05		0.72											
1081	D6563	0.0397742		-0.49 											
1250 1320	D7504	0.04		-0.46											
1434	D7504	0.04562		0.20											
1530	D7504	0.0514		0.89											
1812	D7504	0.02474		-2.27 1.55											
6201 6262	D7504 D7504	0.057 0.0589		1.55 1.78											
6412	D5917	0.05040		0.77											
7009	D2306	0.030		-1.65											
	normality	OK													
	n	23													
	outliers	0													
	mean (n)	0.04391													
	st.dev. (n) R(calc.)	0.011687 0.03272													
	st.dev.(Horwitz)	0.008434													
	R(Horwitz)	0.02361			9 comp	onente									
						Officials									
Compa	are R(D7504·21)	0 00511				onenta									
Compa	are R(D7504:21)	0.00511				onenta									
0.08 T	are R(D7504:21)	0.00511				- Inches									
	are R(D7504:21)	0.00511													
0.08 T	are R(D7504:21)	0.00511											Δ	Δ	
0.08 0.07	are R(D7504:21)	0.00511					Δ Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
0.08 T 0.07	are R(D7504:21)	Δ Δ	Δ	Δ Δ	Δ		Δ Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
0.08 T 0.07 0.06	are R(D7504:21)		Δ	Δ Δ			Δ Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
0.08 T 0.07 0.06 0.05	R(D7504:21)	Δ Δ	Δ	Δ Δ			Δ Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
0.08 T 0.07	R(D7504:21)	Δ Δ	Δ	Δ Δ			Δ Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
0.08	R(D7504:21)	Δ Δ Δ			Δ Δ	Δ								Δ	
0.08 T 0.07	R(D7504:21)	Δ Δ				Δ	A A	1041	6412	445	1530	₽ 1029	€2020	734	10401
0.08	R(D7504:21)	Δ Δ Δ			Δ Δ	Δ								734	
0.08 0.07 0.07 0.06 0.05 0.04 0.03 0.02 0.01 0.0	R(D7504:21)	Δ Δ Δ	1320		Δ Δ	Δ								734	
0.08 0.07 0.06 0.06 0.05 0.04 0.03 0.02 0.01 0.	R(D7504:21)	377	1320		Δ Δ	Δ								4	
0.08 0.07 0.07 0.06 0.05 0.04 0.03 0.02 0.01 0.0	R(D7504:21)	377	1320		Δ Δ	Δ								734	
0.08 0.07 0.06 0.06 0.06 0.06 0.07 0.0	R(D7504:21)	377	1320		Δ Δ	Δ								427	
0.08 0.07 0.07 0.06 0.05 0.04 0.03 0.02 0.01 0.01 0.01 0.03 0.01 0.	R(D7504:21)	377	1320		Δ Δ	Δ								734	
0.08 0.07 0.06 0.06 0.06 0.06 0.07 0.0	R(D7504:21)	377	1320		Δ Δ	Δ								467	
0.08 0.07 0.06 0.05 0.04 0.03 0.01 0.	R(D7504:21)	377	1320		Δ Δ	Δ								734	
0.08 0.07 0.06 0.06 0.05 0.04 0.03 0.02 0.01 0.05 0.04 0.03 0.02 0.01 0.05 0.	R(D7504:21)	377	1320		Δ Δ	Δ								734	
0.08 0.07 0.06 0.05 0.04 0.03 0.01 0.	R(D7504:21)	377	1320		Δ Δ	Δ								734	
0.08 0.07 0.06 0.06 0.06 0.06 0.07 0.	R(D7504:21)	377	1320		Δ Δ	Δ								734	
0.08 0.07 0.06 0.05 0.04 0.03 0.02 0.01 0.01 0.03 0.02 0.01 0.	R(D7504:21)	377	1320		Δ Δ	Δ								457	
0.08 0.07 0.06 0.06 0.06 0.06 0.07 0.	R(D7504:21)	377	1320		Δ Δ	Δ								462	
0.08 0.07 0.06 0.05 0.04 0.03 0.02 0.01 0 0.05 0.04 0.03 0.02 0.01 0 0 0 0 0 0 0 0 0	R(D7504:21)	377	nsity		Δ Δ	Δ								4	

mixed-Xylenes: iis21C13 page 25 of 39

Determination of Benzene on sample #21182; results in %M/M

			-											
lab	method	value	mark	z(targ		rks								
52 150	D7504	0.0046		-0.0										
171	D7504	0.0056		0.2										
315	D7504	0.0044		-0.0										
317	D7504	0.0041		-0.1										
323	D6563	< 0.01												
396	D7504	0.0032		-0.3										
445	D2360	0.006		0.3										
446 551					-									
555					-									
558														
734	D7504	0.004775		0.0	3									
823	D7504	0.0040		-0.1										
862	D7504	0.0066		0.5										
913 1011	D7504 D5917	0.00425 0.0034		-0.1 -0.3										
1040	D7504	0.0034		0.6										
1041	D6563	<0,01												
1081	D6563	0.0043378		-0.0										
1250					-									
1320	D7504	< 0.01												
1434 1530	D7504	0.00471		0.0 -0.1										
1812	D7504	0.0041 0.004492		-0.0										
6201				-0.0										
6262	D7504	0.0049		0.0	3									
6412	D5917	0.00408		-0.1										
7009	D2306	0.004		-0.1	7									
	normality	suspect												
	n	19												
	outliers	0												
	mean (n)	0.00466												
	st.dev. (n)	0.000997												
	R(calc.) st.dev.(D7504:21)	0.00279) 0.003884												
	R(D7504:21)	0.01087												
0.018 T														
0.016														
0.014 +														
0.012														
0.01														
0.008 +													Δ	Δ
0.006 +										Δ	Δ	Δ		
0.004	Δ Δ	Δ Δ Δ	Δ	Δ	Δ Δ	^	_	_						
0.002														
908	1011	6412	1530	913	315	1812	52	1434	734	6262	171	445	862	1040
700 T														
'00 T		Kamal Danai	4											
600 -	\wedge	Kernel Densi	ty											
	/\													
500 -	/ \													
	/ \													
400 -		\												
	/ \													
300 -	/	\												
	/													
200 -														
100 -		\mathcal{W}												
.55	/	//												
0 +														
0	0.002 0.004	0.006 0.008	0.01											
1														

page 26 of 39 mixed-Xylenes: iis21C13

Determination of Toluene on sample #21182; results in %M/M

lab	method		\/O	lue		mar	ele .	=/tora		remark	' 0										
52				0103		mar	K	z(targ 0.49		emari	ıs										
150)																				
171	I D7504			0109				1.24													
315				0099				-0.02													
317 323			0.0	0090				-1.15 0.11													
396				0107				0.1													
445				011				1.37													
446									-												
551									-												
555 558									-												
734			0.0	 01012	25			0.27													
823	B D7504			0095				-0.52													
862				0104				0.6													
913				00840)			-1.9													
1011 1040				0087 011				-1.53 1.37													
1040			0.0					0.1													
1081	D6563		0.0	00970	58			-0.26	6												
1250				0093				-0.77													
1320			0.0		,			0.1													
1434 1530				01017 0090				0.32 -1.15													
1812				00959)4			-0.40													
6201				0116				2.12	2												
6262				0099				-0.02													
6412 7009				00973 009	5			-0.23 -1.15													
7000	D2300							-1.10	,												
	normality		Oł																		
	n outliere		24																		
	outliers mean (n)		0	00991																	
	st.dev. (n)			00078																	
	R(calc.)		0.0	00221																	
	st.dev.(Horwit	tz)	0.0 0.0	00221 00079)4																
Comr	st.dev.(Horwit R(Horwitz)	tz)	0.0 0.0	00221)4																
Comp	st.dev.(Horwit R(Horwitz) pare	tz)	0.0 0.0 0.0	00221 00079	94																
Comp	st.dev.(Horwit R(Horwitz)	tz)	0.0 0.0 0.0	00221 00079 00222	94																
Comp	st.dev.(Horwit R(Horwitz) pare	tz)	0.0 0.0 0.0	00221 00079 00222	94																
	st.dev.(Horwit R(Horwitz) pare	tz)	0.0 0.0 0.0	00221 00079 00222	94																
0.013 T	st.dev.(Horwit R(Horwitz) pare	tz)	0.0 0.0 0.0	00221 00079 00222	94												Δ	Δ	Δ	Δ	
0.013 T 0.012 -	st.dev.(Horwit R(Horwitz) pare	tz)	0.0 0.0 0.0	00221 00079 00222 02339	94	Δ	Δ	<u> </u>	Δ.	Δ.			Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
0.013 T 0.012 - 0.011 -	st.dev.(Horwit R(Horwitz) pare		0.0 0.0 0.0	00221 00079 00222)4	Δ	Δ	<u>.</u>	Δ.	Δ			Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
0.013 T 0.012 T 0.011 T 0.01 T 0.009 T	st.dev.(Horwit R(Horwitz) pare R(D7504:21)		0.0 0.0 0.0	00221 00079 00222 02339)4	Δ	Δ	Δ	<u> </u>	Δ	Δ		Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
0.013 T 0.012 - 0.011 - 0.01 - 0.009 - 0.008 -	st.dev.(Horwit R(Horwitz) pare R(D7504:21)		0.0 0.0 0.0	00221 00079 00222 02339)4	Δ	Δ	<u> </u>	Δ.	Δ	Δ		Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
0.013 T 0.012 T 0.011 T 0.01 T 0.009 T 0.008 T	st.dev.(Horwit R(Horwitz) pare R(D7504:21)		0.0 0.0 0.0	00221 00079 00222 02339)4	Δ	Δ	<u> </u>	<u>.</u>	<u> </u>	Δ.		Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
0.013 T 0.012 + 0.011 + 0.01 + 0.009 + 0.008 + 0.006 + 0.005 +	st.dev.(Horwit R(Horwitz) pare R(D7504:21)	Δ	0.0 0.0 0.0	00221 00079 00222 02339)4 ?)	Δ	Δ	<u> </u>	Δ.	Δ		<u> </u>	Δ	Δ	Δ	Δ	Δ	Δ		Δ	
0.013 T 0.012 - 0.011 - 0.01 - 0.009 - 0.008 - 0.007 - 0.006 - 0.005 -	st.dev.(Horwit R(Horwitz) pare R(D7504:21)	Δ.	0.0 0.0 0.0	00221 00079 00222 02339)4	₫	6412	316	2829	323	4	43.00	734	438	A 33	Δ 208	Δ	Δ	445	4040	1029
0.013	st.dev.(Horwit R(Horwitz) pare R(D7504:21)	Δ	0.0 0.0 0.0	00221 00079 00222 02339)4 ?)			± 20 €	62562	\$25	1041	1320	734	4891							1079
0.013 T 0.012 - 0.011 - 0.01 - 0.009 - 0.008 - 0.007 - 0.006 - 0.005 -	st.dev.(Horwit R(Horwitz) pare R(D7504:21)	Δ	0.0 0.0 0.0	00221 00079 000222 002339	2.91			316	6962	232	1041	4 00261	734	Φ							6201
0.013 0.012 0.011 0.011 0.001 0.005 0.006 0.005 0.004 0.004 0.006 0.004 0.006 0.004 0.006	st.dev.(Horwit R(Horwitz) pare R(D7504:21)	Δ	0.0 0.0 0.0	00221 00079 00222 02339	2.91			316	2829	323	4	△	Ф	454)							0501
0.013	st.dev.(Horwit R(Horwitz) pare R(D7504:21)	Δ	0.0 0.0 0.0	00221 00079 000222 002339	2.91			318	6282	323	4	△ 0261	A	A 96 94 ;							9 1029
0.013 0.012 0.011 0.011 0.001 0.005 0.006 0.005 0.004 0.004 0.006 0.004 0.006 0.004 0.006	st.dev.(Horwit R(Horwitz) pare R(D7504:21)	Δ	0.0 0.0 0.0	00221 00079 000222 002339	2.91			3)(2	2829	△	4	4	Δ	4691							1029
0.013 0.012 0.011 0.011 0.001 0.005 0.006 0.005 0.004 0.004 0.006 0.004 0.006 0.004 0.006	st.dev.(Horwit R(Horwitz) pare R(D7504:21)	Δ	0.0 0.0 0.0	00221 00079 000222 002339	2.91			3)(2	4 2929	■ 228	1041	4	402	Δ (59)							1029
0.013 0.012 0.011 0.001 0.009 0.008 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005	st.dev.(Horwit R(Horwitz) pare R(D7504:21)	Δ	0.0 0.0 0.0	00221 00079 000222 002339	2.91			316	4 2829	323	1041	4 0261	Δ 252	459)							1029
0.013 0.012 0.011 0.011 0.011 0.009 0.008 0.007 0.006 0.005 0.004 500 -	st.dev.(Horwit R(Horwitz) pare R(D7504:21)	Δ	0.0 0.0 0.0	00221 00079 000222 002339	2.91			315	4 2020	323	1041	4 0761	Δ.	4694							1029
0.013 0.012 0.011 0.001 0.009 0.008 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005	st.dev.(Horwit R(Horwitz) pare R(D7504:21)	Δ	0.0 0.0 0.0	00221 00079 000222 002339	2.91			315	4 2828	333	1041	4300000	Δ	A 1691							1029
0.013 0.012 0.011 0.011 0.011 0.009 0.008 0.007 0.006 0.005 0.004 500 -	st.dev.(Horwit R(Horwitz) pare R(D7504:21)	Δ	0.0 0.0 0.0	00221 00079 000222 002339	2.91			315	6256	323	4	0261	734	4691							1029
0.013 0.012 0.011 0.011 0.011 0.009 0.008 0.007 0.006 0.005 0.004 500 -	st.dev.(Horwit R(Horwitz) pare R(D7504:21)	Δ	0.0 0.0 0.0	00221 00079 000222 002339	2.91			316	△ 2809	322	4	0261	462	4691							1029
0.013 0.012 0.011 0.011 0.001 0.008 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005	st.dev.(Horwit R(Horwitz) pare R(D7504:21)	Δ	0.0 0.0 0.0	00221 00079 000222 002339	2.91			916	6962	323	4 1941	0281	734	A							107.9
0.013 0.012 0.011 0.011 0.011 0.009 0.008 0.007 0.006 0.005 0.004 500 -	st.dev.(Horwit R(Horwitz) pare R(D7504:21)	Δ	0.0 0.0 0.0	00221 00079 000222 002339	2.91			316	8000	323	4	OCE)	7784	Δ							1029
0.013 0.012 0.011 0.011 0.011 0.009 0.008 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.000	st.dev.(Horwit R(Horwitz) pare R(D7504:21)	Δ	0.0 0.0 0.0	00221 00079 000222 002339	2.91			936	282.9	323	4	1330	42.2	4694							0201
0.013 0.012 0.011 0.011 0.001 0.008 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005 0.004 0.005	st.dev.(Horwit R(Horwitz)) pare R(D7504:21)	Δ	0.0 0.0 0.0	00221 00079 000222 002339	2.91	1001		316	2829	S200	4	4	734	454)							0501

mixed-Xylenes: iis21C13 page 27 of 39

Determination of Ethylbenzene on sample #21182; results in %M/M

lab															
	method D7504	value	mark	z(targ) -0.10	remarks										
52 150	D7504	9.7489 		-0.10 											
171	D7504	9.7964		0.32											
315	D7504	9.86		0.87											
317	D7504	9.77		0.08											
323	D6563	9.49	R(0.01)	-2.36											
396	D7504 D6563	9.85		0.78 -1.14											
445 446	D0000	9.63		-1.14											
551															
555															
558															
734	D7504	9.746605		-0.12											
823	D7504	9.7619		0.01											
862 913	D7504 D7504	9.808 9.71130		0.42 -0.43											
1011	D5917	9.71184		-0.43											
1040	D7504	9.753		-0.06											
1041	D6563	9.74		-0.18											
1081	D6563	9.7436247		-0.15											
1250	D7504	9.7323		-0.25											
1320 1434	D7504	9.69 9.79370		-0.62 0.29											
1530	D7504	9.79370	R(0.01)	-2.69											
1812	D1004	9.76083	11(0.01)	0.00											
6201	D7504	9.74		-0.18											
6262	D7504	9.7195		-0.36											
6412	D5917	9.81385		0.47											
7009	D2306	9.839		0.69											
	normality	ОК													
	n	22													
	outliers	2													
	mean (n)	9.76033													
	st.dev. (n)	0.054264													
	R(calc.)	0.15194													
	SLUEV (1)7,504 7 11	0 114307													
	st.dev.(D7504:21) R(D7504:21)	0.114307 0.32006													
10.2 T															
10															
	R(D7504:21)	0.32006	Δ Δ	Δ Δ	Δ	Δ	Δ Δ		Δ	Δ	Δ	Δ	Δ	Δ	
10		0.32006	Δ Δ	Δ Δ	ΔΔ	Δ	Δ Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
9.8 9.6 - *	R(D7504:21)	0.32006	Δ Δ	Δ Δ	Δ Δ	Δ	Δ Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
10	R(D7504:21)	0.32006	ΔΔ	Δ Δ	Δ Δ	Δ	Δ Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
9.8 9.6 - *	R(D7504:21)	0.32006	Δ Δ	Δ Δ	Δ Δ	Δ	Δ Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
9.8	R(D7504:21)	0.32006	Δ Δ	Δ Δ	ΔΔ	Δ	Δ Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
9.8 9.6 9.4	R(D7504:21)	0.32006		∆	734	4	4 4 4 2082	317	1434	Δ Εξ.	▲	6412	Δ		316
9.8 - 9.6 - 9.4 - 9.2 - 9.2 - 9.2 - 9.2 - 9.2 - 9.3 - 9.2 - 9.2 - 9.3 - 9.2 - 9.3 - 9	R(D7504:21)	0.32006		△ △ 1001	734	1040	1812	317	4634						_
9.8	R(D7504:21)	0.32006	1280	4 A 1000	734	Q9/01	4 4 528	317	1434						_
9.8 - 9.6 - 9.4 - 9.2 - 9.2 - 9.2 - 9.2 - 9.2 - 9.3 - 9.2 - 9.2 - 9.3 - 9.2 - 9.3 - 9	R(D7504:21)	0.32006	1280	4 A A 1081	7 24 A	0401	1872 P	317	25.51						_
9.8 - 9.6 - 9.4 - 9.2 - 9.6 - 9.7 - 7 -	R(D7504:21)	0.32006	1280	4 4 1081 1081 1081 1081 1081 1081 1081 1	25 25	1040	1812	377	438						_
9.8 - 9.6 - 9.4 - 9.2 - 9.2 - 9.5 - 9	R(D7504:21)	0.32006	1280	4 4 4 (108)	734	1040	1812	317	4651						_
9.8 - 9.6 - 9.4 - * 9.2 - 9.6 - 0.5 -	R(D7504:21)	0.32006	1280	Δ Δ	734	1040	1812	317	AC64)						_
9.8 - 9.6 - 9.4 - 9.2 - 9.6 - 9.7 - 7 -	R(D7504:21)	0.32006	1280	Q 4	734	1040	1812 823 823	317	A 15.51						_
9.8 - 9.6 - 9.4 - * 9.2 - 9.6 - 0.5 -	R(D7504:21)	0.32006	1280	A A (1981)	7.34	1040	1812 823 823	377	A 25 to 1						_
9.8 9.6 - 9.4 - × 9.2 - 9 - 0051 8 - 7 - 6 - 5 - 4 -	R(D7504:21)	0.32006	1280	A A 1901	7.24 A 2.22	Ovo!	1812	317	A 25° t						_
9.8 9.6 - 9.4 - × 9.2 - 9 - 8 - 7 - 6 - 5 -	R(D7504:21)	0.32006	1280	A A 1901	7.54 A 252	Qro!	1812	317	A 25 t ;						_
9.8 9.6 9.4 - × - 9.2 - 9.5 6.5 - 4.5 - 4.5 - 3.	R(D7504:21)	0.32006	1280	4 A	22 22	0001	1872	317	25.51						_
9.8 9.6 - 9.4 - × 9.2 - 9 - 0051 8 - 7 - 6 - 5 - 4 -	R(D7504:21)	0.32006	1280	A A 1002	7.34	DP01	4 238	317	A 55.5.						_
9.8 9.6 9.4 - × - 9.2 - 9.5 6.5 - 4.5 - 4.5 - 3.	R(D7504:21)	0.32006	1280	A A 1000	25 25	1 0401	4 238	317	48.51						_
9.8 9.6 9.4 9.7 - 6 - 5 - 4 - 3 - 2 - 1 -	R(D7504:21)	0.32006	1280	4 A 10801	252	4	1872	317	A 1500						_
9.8 9.6 9.4 - * 9.2 - 9 - 0051 8	R(D7504:21)	0.32006 Kernel Densi	882 ty	A A 19801	734	△ Otro)	4 7 1915	317	A5.6.1						_
9.8 9.6 9.4 9.7 - 6 - 5 - 4 - 3 - 2 - 1 -	R(D7504:21)	0.32006	1280	A A 19801	252	Q#O)	1872	317	4691						_

page 28 of 39 mixed-Xylenes: iis21C13

Determination of p-Diethylbenzene on sample #21182; results in %M/M

lab	method	value	mark	z(targ)	remarks
52					
150					
171					
315	D7504	<0.002			
317					
323					
396					
445					
446 551					
551 555					
558					
734	D7504	0.0000			
823	D7504	<0.0002			
862	D7504	< 0.0002			
913					
1011					
1040					
1041	D6563	<0,01			
1081	D6563	0			
1250					
1320					
1434		0			
1530					
1812					
6201	D7504				
6262 6412	D7504	<0.0005			
7009	D2306	0.000			
1009	D2300	0.000			
	normality				
	n	9			
	mean (n)	<0.01			
	` '				

19.2

19.4

19.6

19.8

Determination of o-Xylene on sample #21182; results in %M/M

lah	method		value		100	ark		(tara)	20	marke											
lab			value		m	ark	Z	(targ)	rei	marks	5										
52 150	D7504		19.43°	19				0.06													
150	D7504		40.00	10																	
171	D7504		19.30	10				-0.32													
315	D7504		19.52					0.31													
317	D7504		19.42					0.02													
323	D6563		19.20					-0.61													
396	D7504		19.65					0.68													
445	D6563		19.43					0.05													
446																					
551																					
555																					
558																					
734	D7504		19.42	7135				0.04													
823	D7504		19.424					0.03													
862	D7504		19.418					0.03													
913	D7504		19.369					-0.12													
4044																					
1011	D5917		19.279					-0.38													
1040	D7504		19.397					-0.04													
1041	D6563		19.42					0.04													
1081	D6563		19.357					-0.16													
1250	D7504		19.44	10				0.08													
1320	D7504		19.51					0.28													
1434			19.49	506				0.24													
1530	D7504		19.327	7				-0.24													
1812			19.306					-0.30													
6201	D7504		19.38					-0.09													
6262	D7504		19.399	95				-0.04													
6412	D5917		19.48					0.21													
7009	D2306		19.502					0.26													
1003	D2300		13.302	_				0.20													
	normality		suspe	ct																	
			24	Cl																	
	n																				
	outliers		0																		
	mean (n)		19.412																		
	st.dev. (n)		0.093																		
	R(calc.)		0.2609																		
	st.dev.(D7504	:21)	0.3508																		
	R(D7504:21)		0.982)																	
21 T																					
20.5 +																					
20 +																					Δ
19.5	Δ Δ Δ	Δ	Δ		Δ											Δ	Δ	Δ	Δ	Δ	
19 -																					
_																					
18.5 -																					
18 -																					
17.5 -																					
17 8	171	1530	1081	913	6201	1040	6262	862	317	823	1041	734	445	52	1250	6412	1434	6002	1320	315	396
6)	1 1 8	5	6	•	29	5	62	w		w	5	.~	4		4	26	4	2	5		**
6 T						1															
			Kerne	el Dens	sity																
5 -																					
	,	\wedge																			
	L	_\																			
4 -	/	1																			
	//	1																			
	//	\																			
3 -	//	\																			
	//	1																			
2 -	//	1																			
ı -	/	/				1															

page 30 of 39 mixed-Xylenes: iis21C13

Determination of m-Xylene on sample #21182; results in %M/M

lab	method	value	mark	z(targ)	remark	(S									
52	D7504	40.5456		-0.16											
150	D7504	40.5050													
171 315	D7504 D7504	40.5959 40.45		0.09 -0.62											
317	D7504	40.55		-0.02											
323	D6563	40.77	С	0.94	first rep	orted 40.9	99								
396	D7504	39.498	C,R(0.01)	-5.27		orted 39.9									
445	D6563	40.62	, ,	0.21	·										
446															
551 555															
558															
734	D7504	40.52733		-0.25											
823	D7504	40.5362		-0.20											
862	D7504	40.546		-0.16											
913	D7504	40.6675		0.44											
1011 1040	D5917 D7504	40.6797 40.549		0.50 -0.14											
1040	D6563	40.549		-0.14											
1081	D6563	40.6004617		0.11											
1250	D7504	40.5886		0.05											
1320	D7504	40.61		0.16											
1434	D7504	40.47898	D(0.04)	-0.48											
1530 1812	D7504	40.969 40.75132	R(0.01)	1.91 0.85											
6201	D7504	40.75132 40.49		-0.43											
6262	D7504	40.6075		0.14											
6412	D5917	40.45576		-0.60											
7009	D2306	40.534		-0.21											
		OK													
	normality n	OK 22													
	outliers	2													
	mean (n)	- 40.5779													
	st.dev. (n)	0.08423													
	R(calc.)	0.2359													
	st.dev.(D7504: R(D7504:21)	21) 0.20490 0.5737													
	11(27001.21)	0.0707													
41.3 T															
41.1															
40.9															*
40.7 -										^	Δ	Δ	Δ	Δ	
40.5	Δ Δ Δ	Δ Δ Δ	Δ Δ Δ	Δ	7 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \										_
40.3 -															
40.1 -															
39.9 -															_
39.7 -															
39.5	315	734	862 52 862	1040	1041	1250	1081	6262	1320	445	913	1011	1812	323	1530
		9 2		-								-	-		-
6 T															
		Kernel Densi	ity												
5 -		٨													
		Λ													
4 -		/\													
4															
3 -		/ //													
2 -															
		/ //													
1 -		/ W													
	۸	/ // ^													
	/\	// //													
0 1	39.5 40	40.5 41	41.5												

mixed-Xylenes: iis21C13 page 31 of 39

Determination of p-Xylene on sample #21182; results in %M/M

lab	method D7504	value	mark	z(targ)	remark	S									
52 150	D7504	30.1122		0.00											
171	D7504	30.1447		0.19											
315	D7504	30.02		-0.54											
317	D7504	30.13		0.10											
323	D6563	30.19	D(0.04)	0.45											
396 445	D7504 D6563	30.36 30.16	R(0.01)	1.44 0.28											
446	D0303	30.10		0.20											
551															
555															
558															
734	D7504	30.135625		0.14											
823 862	D7504 D7504	30.1321 30.102		0.11 -0.06											
913	D7504	30.11845		0.04											
1011	D5917	30.1875		0.44											
1040	D7504	30.123		0.06											
1041	D6563	30.12		0.04											
1081	D6563	30.1639951		0.30											
1250 1320	D7504 D7504	30.1348 30.07		0.13 -0.25											
1434	D7304	30.07740		-0.20											
1530	D7504	30.139		0.15											
1812		30.03830		-0.43											
6201	D7504	30.10		-0.07											
6262 6412	D7504 D5917	30.1022 30.08961		-0.06 -0.13											
7009	D2306	29.993		-0.13 -0.69											
1000	22000	20.000		0.00											
	normality	OK													
	n	23													
	outliers mean (n)	1 30.1123													
	st.dev. (n)	0.04884													
	R(calc.)	0.1368													
	st.dev.(D7504:21)	0.17239													
	R(D7504:21)	0.4827													
30.7 _T															
_															-
30.5 -															
30.3 -															*
							A A	^	Δ	Δ	Δ	Δ	Δ	Δ	
30.1	Δ Δ Δ	. 🛕 🛕	Δ				<u>. </u>		_						
29.9 -															
29.7															_
_															
29.5	315 1812 1320 1434	6412	862	913	1041	317	823	734	1530	171	445	1081	1011	323	396
									-						
10 T															
9 -	\wedge	Kernel Densi	ty												
8 -	<i>[</i>]														
	// \\														
7 -	// \														
6 -	//														
5 -	//														
	//														
4 -	// \														
3 -															
2	//														
	/														
1 1	//	\wedge													
0 +	9 30 30.1 30.2	2 30.3 30.4	30.5												
29.9	9 30 30.1 30.2	2 30.3 30.4	30.3												
1			1												

page 32 of 39 mixed-Xylenes: iis21C13

Determination of sum of m- and p-Xylenes on sample #21182; results in %M/M

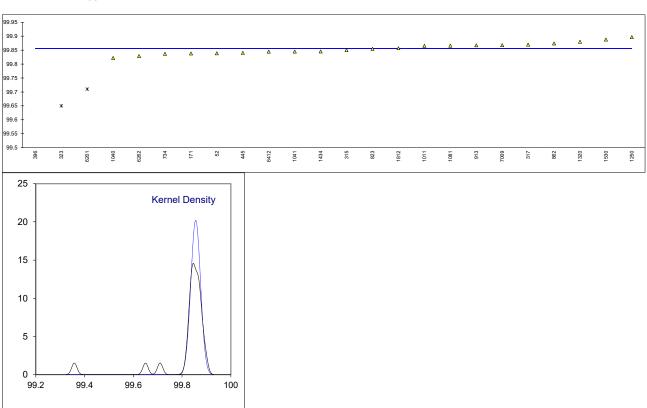
lab	method	value	mark	z(targ)	rema	rks									
52	D7504	70.6578	will	-0.06	· Oilid										
150															
171	D7504	70.7406		0.10											
315	D7504	70.46		-0.42											
317	D7504	70.68	0	-0.02	c		00.00								
323 396	D6563	70.97 	С	0.52	TITST TE	eported	90.38								
445	D6563	70.77		0.15											
446	50000														
551															
555															
558															
734	D7504	70.662955		-0.05											
823	D7504	70.6683		-0.04											
862 913	D7504 D7504	70.647 70.78595		-0.08 0.18											
1011	D5917	70.76393		0.18											
1040	50011	70.672		-0.03											
1041	D6563	70.68		-0.02											
1081	D6563	70.764456		0.14											
1250	D7504	70.7234		0.06											
1320	D7504	70.68		-0.02											
1434	D7504	70.55638	D(0.05)	-0.24											
1530 1812	D7504	71.109 70.78962	R(0.05)	0.78 0.19											
6201	D7504	70.76902 70.59		-0.18											
6262	D7504	70.7097		0.04											
6412	D5917	70.54537		-0.27											
7009	D2306	70.527		-0.30											
	normality	OK													
	n outliers	22 1													
	mean (n)	70.6885													
	st.dev. (n)	0.11502													
	R(calc.)	0.3221													
	st.dev.(D7504:21)	0.53960													
	R(D7504:21)	1.5109													
⁷³ T															
72 + _															-
71 +	Δ Δ Δ	Δ Δ Δ	Δ Δ	Δ Δ	Δ	Δ	Δ Δ	Δ				Δ		Δ	*
70 -															
69															
68 -															
67 -															
66 -															
65 -															
64 45 6	7009 6412 1434	862	734	1040	1041	1320	6262	171	1081	445	913	1812	1011	323	1530
															,
4.5 ⊤															
4 -		Kernel Densi	ty												
4		٨													
3.5 -		W													
3 -		1													
2.5															
2 -															
1.5 -		/													
1 -		/ //													
0.5		/ \													
		/ [//													
0 +) 60 7	0 74	72												
i 68	8 69 7	0 71	72												

mixed-Xylenes: iis21C13 page 33 of 39

Determination of Total mixed-Xylenes on sample #21182; results in %M/M

lab	method	value	mark	z(targ)	iis calc.	mark	remarks
52	D7504	90.0897			99.8386		
150							
171	D7504	90.0416			99.8380		
315	D7504	99.84			99.8500		
317	D7504	90.10			99.8700		
323	D6563	90.38			99.6500	R(0.01)	
396	D				99.3580	R(0.01)	
445	D6563	99.84			99.8400		
446							
551							
555							
558	D7504				00.0007		
734	D7504	99.836695			99.8367		
823	D7504	99.8543			99.8543		
862	D7504	90.065			99.8740		
913 1011	D7504 D5917	99.8671 90.1470			99.8671 99.8654		
1040	D3917	90.069			99.8034		
1040	D6563	90.11			99.8220		
1041	D6563	90.122217			99.8658		
1250	D7504	90.1644			99.8967		
1320	D7504	90.19			99.8800		
1434	D7504	99.84514			99.8451		
1530	D7504	90.434			99.8880		
1812	2.00.	90.09608			99.8569		
6201	D7504	89.97			99.7100	R(0.01)	
6262	D7504	90.1092			99.8287	()	
6412	D5917	90.03067			99.8445		
7009	D2306	90.029			99.8680		
	normality				OK		
	n				21		
	outliers				3		
	mean (n)				99.85594		
	st.dev. (n)				0.019744		
	R(calc.)				0.05528		
	st.dev.(D7504:21)				n.e.		
	R(D7504:21)				n.e.		

The column "iis calc" is the sum of m-Xylene, o-Xylene, p-Xylene and ethylbenzene calculated as Total mixed Xylenes as per test method ASTM D7504:21



page 34 of 39 mixed-Xylenes: iis21C13

Determination of iso-Propyl Benzene (Cumene) on sample #21182; results in %M/M

la	ab	method			valı	ue		mark		z(targ)	rema	arks										
- ;	52	D7504			0.05					0.77												
1	50																					
	71	D7504			0.05					1.21												
	15 17	D7504 D7504			0.05					0.51 -1.45												
3:	23	D6563			0.02					-1.45 -1.41												
	96	Воооо																				
	45	D2360			0.05	57				1.64												
	46																					
	51																					
	55					•																
	58 34	D7504			0.05	553				0.90												
	23	D7504			0.0					0.30												
	62	D7504			0.05					0.69												
9	13	D7504			0.04	46075				-3.12												
10		D5917			0.05					0.95												
104		D7504			0.05					1.64												
104 108		D6563 D6563			0.05	5 543306	8			-1.41 0.48												
12		D0303					J			0.40												
132	20	D7504			0.05					-1.41												
143	34				0.05	5589				1.16												
153		D7504			0.04					-2.37												
18		D7504				7006		R(0.01	1)	7.33												
620 620		D7504 D7504			0.05					0.34 0.64												
64		D7504 D5917				5539				0.64												
700		D2306			0.05					-0.97												
		normality	у		OK																	
		n			21																	
		outliers	`		1	-000																
		mean (n																				
						5323																
		st.dev. (ı	n)		0.00	03132																
			n)	1 :21)	0.00																	
		st.dev. (ı R(calc.)	n) 07504	1:21)	0.00 0.00 0.00	03132 0877																
		st.dev. (I R(calc.) st.dev.(D	n) 07504	1:21)	0.00 0.00 0.00	03132 0877 02295																
0.075		st.dev. (I R(calc.) st.dev.(D	n) 07504	1:21)	0.00 0.00 0.00	03132 0877 02295																
0.075		st.dev. (I R(calc.) st.dev.(D	n) 07504	1 :21)	0.00 0.00 0.00	03132 0877 02295																*
		st.dev. (I R(calc.) st.dev.(D	n) 07504	4:21)	0.00 0.00 0.00	03132 0877 02295																*
0.07 - 0.065 - 0.06 -		st.dev. (I R(calc.) st.dev.(D	n) 07504	1:21)	0.00 0.00 0.00	03132 0877 02295														A	A	*
0.07 -	- - - - -	st.dev. (I R(calc.) st.dev.(D	n) 07504	1:21)	0.00 0.00 0.00	03132 0877 02295 0643		Δ	<u> </u>	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	*
0.07 - 0.065 - 0.06 - 0.055 - 0.05 -		st.dev. (I R(calc.) st.dev.(D	n) 07504	1:21)	0.00 0.00 0.00	03132 0877 02295	Δ	Δ.		Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	*
0.07 - 0.065 - 0.06 - 0.055 -	- - - - - - -	st.dev. (I R(calc.) st.dev.(D	n) D7504 4:21)		0.00 0.00 0.00 0.00	03132 0877 02295 0643		Δ	<u> </u>	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	x
0.07 - 0.065 - 0.06 - 0.055 - 0.05 - 0.045 - 0.044 -		st.dev. (I R(calc.) st.dev.(D	n) D7504 4:21)		0.00 0.00 0.00 0.00	03132 0877 02295 0643		Δ		Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	x
0.07 - 0.065 - 0.06 - 0.055 - 0.055 - 0.045 - 0.045 - 0.035 -		st.dev. (I R(calc.) st.dev.(D	n) D7504 4:21)		0.00 0.00 0.00 0.00	03132 0877 02295 0643		Δ.	<u> </u>	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	x
0.07 - 0.065 - 0.06 - 0.055 - 0.05 - 0.045 - 0.044 -	-	st.dev. (I R(calc.) st.dev.(E R(D7504	n) 07504 4:21)	Δ	0.00 0.00 0.00 0.00	03132 0877 02295 0643	Δ	883	4	Δ	4 ▲			Δ 259								
0.07 - 0.065 - 0.06 - 0.055 - 0.055 - 0.045 - 0.045 - 0.035 -	- A	st.dev. (I R(calc.) st.dev.(D	n) D7504 4:21)		0.00 0.00 0.00 0.00	03132 0877 02295 0643		823	1029	Δ	316	6262	862		734	6412	Δ	48H	4	445	1040	Z160
0.07 - 0.065 - 0.06 - 0.055 - 0.055 - 0.045 - 0.045 - 0.035 -	913	st.dev. (I R(calc.) st.dev.(E R(D7504	n) 07504 4:21)	Δ	0.00 0.00 0.00 0.00	03132 0877 02295 0643	Δ	823	W 0001	Δ (80)	315											
0.07 - 0.065 - 0.06 - 0.055 - 0.055 - 0.045 - 0.045 - 0.045 - 0.03 -	913	st.dev. (I R(calc.) st.dev.(E R(D7504	n) 07504 4:21)	Δ	0.00 0.00 0.00 0.00	03132 0877 02295 0643	4	\neg	■	Δ	△											
0.07 - 0.065 - 0.06 - 0.055 - 0.055 - 0.045 - 0.045 - 0.045 - 0.03 -	0 L	st.dev. (I R(calc.) st.dev.(E R(D7504	n) 07504 4:21)	Δ	0.00 0.00 0.00 0.00	03132 0877 02295 0643	4	\neg	1029	A 1800	A 39.5											
0.07 - 0.065 - 0.06 - 0.055 - 0.05 - 0.04 - 0.035 - 0.03 -	0 -	st.dev. (I R(calc.) st.dev.(E R(D7504	n) 07504 4:21)	Δ	0.00 0.00 0.00 0.00	03132 0877 02295 0643	4	\neg	1000	Δ - 1800	3)(2)											
0.07 - 0.065 - 0.06 - 0.055 - 0.045 - 0.045 - 0.045 - 0.03 -	0 -	st.dev. (I R(calc.) st.dev.(E R(D7504	n) 07504 4:21)	Δ	0.00 0.00 0.00 0.00	03132 0877 02295 0643	4	\neg	1000	A 800	A 99.8											
0.07 - 0.065 - 0.066 - 0.055 - 0.05 - 0.045 - 0.045 - 0.035 - 0.03 - 140	0 - 0	st.dev. (I R(calc.) st.dev.(E R(D7504	n) 07504 4:21)	Δ	0.00 0.00 0.00 0.00	03132 0877 02295 0643	4	\neg	1029	A 1800	Δ Δ											
0.07 - 0.065 - 0.06 - 0.055 - 0.05 - 0.04 - 0.035 - 0.03 -	0 - 0	st.dev. (I R(calc.) st.dev.(E R(D7504	n) 07504 4:21)	Δ	0.00 0.00 0.00 0.00	03132 0877 02295 0643	4	\neg	10030	A 1800	Δ 9.00 9.00 9.00 9.00 9.00 9.00 9.00 9.0											
0.07 - 0.065 - 0.06 - 0.055 - 0.055 - 0.045 - 0.045 - 0.035 - 0.04 - 1.003 - 1.004 - 1	0 -	st.dev. (I R(calc.) st.dev.(E R(D7504	n) 07504 4:21)	Δ	0.00 0.00 0.00 0.00	03132 0877 02295 0643	4	\neg	10039	A 800	Δ 29 20 20 20 20 20 20 20 20 20 20 20 20 20											
0.07 - 0.065 - 0.066 - 0.055 - 0.05 - 0.045 - 0.045 - 0.035 - 0.03 - 140	0 -	st.dev. (I R(calc.) st.dev.(E R(D7504	n) 07504 4:21)	Δ	0.00 0.00 0.00 0.00	03132 0877 02295 0643	4	\neg	1000	A 800	Δ Δ											
0.07 - 0.065 - 0.06 - 0.065 - 0.05 - 0.05 - 0.05 - 0.045 - 0.04 - 0.035 - 0.04 - 1.00	0 - 0 - 0 -	st.dev. (I R(calc.) st.dev.(E R(D7504	n) 07504 4:21)	Δ	0.00 0.00 0.00 0.00	03132 0877 02295 0643	4	\neg	1023	1001	23.5 A											
0.07 - 0.065 - 0.06 - 0.055 - 0.055 - 0.045 - 0.045 - 0.035 - 0.04 - 1.003 - 1.004 - 1	0 - 0 - 0 -	st.dev. (I R(calc.) st.dev.(E R(D7504	n) 07504 4:21)	Δ	0.00 0.00 0.00 0.00	03132 0877 02295 0643	4	\neg	1029	100,	939											
0.07 - 0.065 - 0.06 - 0.065 - 0.05 - 0.05 - 0.05 - 0.05 - 0.05 - 0.05 - 0.04 - 0.035 - 0.03 - 144 - 124 - 10		st.dev. (I R(calc.) st.dev.(E R(D7504	n) 07504 4:21)	Δ	0.00 0.00 0.00 0.00	03132 0877 02295 0643	4	\neg	1000	A 1800	310											
0.07 - 0.065 - 0.06 - 0.065 - 0.05 - 0.05 - 0.05 - 0.045 - 0.04 - 0.035 - 0.04 - 1.00		st.dev. (I R(calc.) st.dev.(E R(D7504	n) 07504 4:21)	Δ	0.00 0.00 0.00 0.00	03132 0877 02295 0643	4	\neg	1029	A 1800	A											
0.07 - 0.065 - 0.06 - 0.065 - 0.05 - 0.05 - 0.05 - 0.05 - 0.05 - 0.04 - 0.035 - 0.03 - 144 - 124 - 100 - 86 - 66 - 44 - 26		st.dev. (I R(calc.) st.dev.(E R(D7504	n) 07504 4:21)	Δ	0.00 0.00 0.00 0.00	03132 0877 02295 0643	4	\neg	1029	1800	△											
0.07 - 0.065 - 0.06 - 0.065 - 0.05 - 0.05 - 0.05 - 0.05 - 0.05 - 0.04 - 0.035 - 0.03 - 144 - 124 - 100 - 86 - 66 - 44 - 26		st.dev. (I R(calc.) st.dev.(E R(D7504	n) 07504 4:21)	Δ	0.00 0.00 0.00 0.00	03132 0877 02295 0643	∆ soov	\neg	1029	A 1900	∆											

mixed-Xylenes: iis21C13 page 35 of 39

Determination of sum of C9 and heavier aromatics on sample #21182; results in %M/M

lab 52	method D7504	value 0.0835	mark	z(targ) 0.22	remar	KS								
52 150	D1304	0.0835		0.22										
171	D7504	0.0869		0.57										
315	D7504	0.091		1.00										
317	D7504	0.0759		-0.58										
323 396	D6563	0.08		-0.15 										
445	D6563	0.08		-0.15										
446														
551														
555														
558 734	D7504	0.08559		0.44										
823	D7504	0.0793		-0.23										
862	D7504	0.0796		-0.19										
913	D7504	0.025675	DG(0.05)	-5.87										
1011 1040	D7504	 0.017	DG(0.05)	-6.78										
1040	D6563	0.017	DG(0.03)	-0.76 -0.15										
1081	D6563	0.0705728		-1.14										
1250														
1320	D7504	0.09		0.90										
1434 1530	D7504	0.08449 0.0545		0.32 -2.84										
1812	D7304	0.10679		2.67										
6201	D7504	0.136	G(0.01)	5.74										
6262	D7504	0.0720		-0.99										
6412	D5917	0.08698		0.58										
7009	D2306	0.079		-0.26										
	normality n	not OK 18												
	outliers	3												
	outliers mean (n)	0.08145												
	outliers mean (n) st.dev. (n)	0.08145 0.0105												
	outliers mean (n) st.dev. (n) R(calc.)	0.08145 0.0105 0.02946												
	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) R(Horwitz)	0.08145 0.0105 0.02946			4 com	ponents								
Compa	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) R(Horwitz) are	0.08145 0.0105 0.02946 0.009504 0.02661			4 com	oonents								
Compa	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) R(Horwitz)	0.08145 0.0105 0.02946 0.009504			4 com	oonents								
Comp a	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) R(Horwitz) are	0.08145 0.0105 0.02946 0.009504 0.02661			4 com	oonents								
	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) R(Horwitz) are	0.08145 0.0105 0.02946 0.009504 0.02661			4 com	oonents								×
0.16 —	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) R(Horwitz) are	0.08145 0.0105 0.02946 0.009504 0.02661			4 com	ponents								x
0.16 T	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) R(Horwitz) are	0.08145 0.0105 0.02946 0.009504 0.02661			4 com	oonents							Δ	×
0.16 T 0.14 - 0.12 -	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.08145 0.0105 0.02946 0.009504 0.02661 0.04604	Δ Δ	Δ Δ	4 com	oonents	<u> </u>	Δ	Δ	Δ	Δ	Δ	Δ	х
0.16 T 0.14 - 0.12 - 0.1 -	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) R(Horwitz) are	0.08145 0.0105 0.02946 0.009504 0.02661 0.04604	Δ Δ	Δ Δ-	4 com	oonents	<u> </u>	Δ	Δ	Δ	Δ	Δ	Δ	x
0.16 T 0.14 - 0.12 - 0.1 0.08	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.08145 0.0105 0.02946 0.009504 0.02661 0.04604	Δ Δ	Δ Δ	4 com	ponents	<u> </u>	Δ	Δ	Δ	Δ	Δ	Δ	x
0.16 T 0.14 - 0.12 - 0.1 0.08	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) R(Horwitz) are R(D7504:21)	0.08145 0.0105 0.02946 0.009504 0.02661 0.04604	Δ Δ	Δ	4 com	ponents	A	Δ	Δ	Δ	Δ	Δ	Δ	x
0.16 T 0.14 - 0.12 - 0.1 - 0.08 - 0.06 - 0.04 - 0.02 x	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) are R(D7504:21)	0.08145 0.0105 0.02946 0.009504 0.02661 0.04604	Δ Δ	δ δ	Δ	Δ	4 8							
0.16 T 0.14 - 0.12 - 0.1 - 0.08 - 0.06 - 0.04 - 0.02 - x	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) are R(D7504:21)	0.08145 0.0105 0.02946 0.009504 0.02661 0.04604	7009	982 445	4 com	oonents	1434	734	Δ [ξ]	6412	QS(2)	3.05	21.81	x
0.16 T 0.14 - 0.12 - 0.1 - 0.08 - 0.06 - 0.04 - 0.02 x	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) are R(D7504:21)	0.08145 0.0105 0.02946 0.009504 0.02661 0.04604		Ф 448	Δ	Δ	4591							
0.16	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) are R(D7504:21)	0.08145 0.0105 0.02946 0.009504 0.02661 0.04604		9 82 A A 445	Δ	Δ	14.54							
0.16	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) are R(D7504:21)	0.08145 0.0105 0.02946 0.009504 0.02661 0.04604		4445	Δ	Δ	4891							
0.16 0.14 0.12 0.1 0.08 0.06 0.04 0.02 x 0 0.02 45 40 35 0	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) are R(D7504:21)	0.08145 0.0105 0.02946 0.009504 0.02661 0.04604		446 862	Δ	Δ	1834							
0.16	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) are R(D7504:21)	0.08145 0.0105 0.02946 0.009504 0.02661 0.04604		4 4 445	Δ	Δ	143H							
0.16 0.14 0.12 0.1 0.08 0.06 0.04 0.02 x 0 0.02 45 40 35 0	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) are R(D7504:21)	0.08145 0.0105 0.02946 0.009504 0.02661 0.04604		445	Δ	Δ	4874							
0.16	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) are R(D7504:21)	0.08145 0.0105 0.02946 0.009504 0.02661 0.04604		982	Δ	Δ	14.34							
0.16 0.14 0.12 0.1 0.08 0.06 0.04 0.02 x 0 35 - 30 - 25 - 20 -	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) are R(D7504:21)	0.08145 0.0105 0.02946 0.009504 0.02661 0.04604		446	Δ	Δ	1871							
0.16 0.14 0.12 0.1 0.08 0.06 0.04 0.02 0.05 0.04 0.02 0.05 0.0	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) are R(D7504:21)	0.08145 0.0105 0.02946 0.009504 0.02661 0.04604		962 A 445	Δ	Δ	1431							
0.16 0.14 0.12 0.1 0.08 0.06 0.04 0.02 x 0 35 - 30 - 25 - 20 -	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) are R(D7504:21)	0.08145 0.0105 0.02946 0.009504 0.02661 0.04604		446	Δ	Δ	4554 1524							
0.16 0.14 0.12 0.1 0.08 0.06 0.04 0.02 0.05 0.04 0.02 0.05 0.0	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) are R(D7504:21)	0.08145 0.0105 0.02946 0.009504 0.02661 0.04604		Ф 448	Δ	Δ	4834							
0.16 0.14 0.12 0.1 0.08 0.06 0.04 0.02 x 0 35 0.06 0.04 0.02 x 0 0.05 0.04 0.05 0.0	outliers mean (n) st.dev. (n) R(calc.) st.dev.(Horwitz) are R(D7504:21)	0.08145 0.0105 0.02946 0.009504 0.02661 0.04604		Δ Δ 4925 445	Δ	Δ	1434							

page 36 of 39 mixed-Xylenes: iis21C13

Determination of Non-aromatics on sample #21182; results in %M/M

lab	method	value	mark	z(targ)	rem	arks										
52	D7504	0.0571	IIIaik	0.91	renn	En in										
150																
171	D7504	0.0586		1.07												
315	D7504	0.050		0.14												
317 323	D7504 D6563	0.0379 0.04		-1.17 -0.95												
396	D7504	0.04		0.32												
445	D2360	0.067		1.98												
446																
551																
555 550																
558 734	D7504	0.0630		1.55												
823	D7504	0.0472		-0.16												
862	D7504	0.0309		-1.93												
913	D7504	0.047575		-0.12												
1011 1040	D5917 D7504	0.0328 0.075		-1.73 2.85												
1040	D6563	0.075		1.22												
1081	D6563	0.042973		-0.62												
1250																
1320	D7504	0.02		-3.12												
1434	D7504	0.05549		0.73												
1530 1812	D7504	0.0441 0.03459		-0.50 -1.53												
6201	D7504	0.03439		-0.40												
6262	D7504	0.0649		1.76												
6412	D5917	0.05471	С	0.65	first	reported	0.013	323								
7009	D2306	0.040		-0.95												
	normality n	OK 23														
	outliers	0														
	mean (n)	0.04872														
	st.dev. (n) R(calc.)	0.013167 0.03687														
	st.dev.(Horwitz)	0.03007														
	R(Horwitz)	0.02580			9 со	mponen	ts									
Comp		0.00507														
	R(D7504:21)	0.00567														
0.09 T																
0.08																
0.07															Δ	Δ
0.06 +								Δ	Δ	Δ	Δ	Δ	Δ	Δ		
0.05				Δ Δ	Δ		Δ									
0.04 -		<u> </u>	Δ Δ	Δ -												
0.03																
0.02 - 🛆																
0.01																
1320	1011	323	1081	1530	823	315	396	6412	1434	25	171	1041	734	6262	445	1040
35 т																
		Kernel De	nsity													
30 -	/		·													
	/_	_ \														
25 -																
	/	\														
20 -	/	\														
15 -		\\														
		//														
10 -	/	//														
	/	//														
5 -	//	//														
0 +	0.02 0.04	0.06 0.0	8 0.1													

mixed-Xylenes: iis21C13 page 37 of 39

APPENDIX 2

Number of participants per country

- 2 labs in BELGIUM
- 3 labs in BRAZIL
- 1 lab in CANADA
- 1 lab in CHINA, People's Republic
- 4 labs in GERMANY
- 1 lab in INDIA
- 1 lab in IRAN, Islamic Republic of
- 1 lab in ISRAEL
- 1 lab in ITALY
- 1 lab in KAZAKHSTAN
- 1 lab in KOREA, Republic of
- 4 labs in NETHERLANDS
- 1 lab in PAKISTAN
- 2 labs in PORTUGAL
- 1 lab in SLOVAKIA
- 2 labs in UNITED KINGDOM
- 2 labs in UNITED STATES OF AMERICA

page 38 of 39 mixed-Xylenes: iis21C13

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 D(0.01) = outlier in Grubbs' outlier test D(0.05) = straggler in Grubbs' outlier test D(0.05) = outlier in Double Grubbs' outlier test D(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 = calculation difference between reported test result and result calculated by iis

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

f+? = possibly a false positive test result? f-? = possibly a false negative test result?

SDS = Safety Data Sheet

Literature

- iis Interlaboratory Studies, Protocol for the Organisation, Statistics & Evaluation, June 2018
- 2 ISO5725:86
- 3 ISO5725 parts 1-6:94
- 4 ISO13528:05
- 5 M. Thompson and R. Wood, J. AOAC Int, <u>76</u>, 926, (1993)
- 6 W.J. Youden and E.H. Steiner, Statistical Manual of the AOAC, (1975)
- 7 P.L. Davies, Fr. Z. Anal. Chem, <u>331</u>, 513, (1988)
- 8 J.N. Miller, Analyst, <u>118</u>, 455, (1993)
- 9 Analytical Methods Committee, Technical Brief, No 4, January 2001
- 10 P.J. Lowthian and M. Thompson, The Royal Society of Chemistry, Analyst, <u>127</u>, 1359-1364, (2002)
- 11 W. Horwitz and R. Albert, J. AOAC Int, 79.3, 589-621, (1996)
- Bernard Rosner, Percentage Points for a Generalized ESD Many-Outlier Procedure, Technometrics, 25(2), 165-172, (1983)

mixed-Xylenes: iis21C13 page 39 of 39