Results of Proficiency Test
AZO Dyes in Textile
March 2021

Organized by: Institute for Interlaboratory Studies
Spijkenisse, the Netherlands

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1 INTRODUCTION

Since 1997 the Institute for Interlaboratory Studies (iis) organizes a proficiency test for the analysis of banned aromatic amines from AZO Dyes in Textile. During the annual proficiency testing program 2020/2021 it was decided to continue the proficiency test for the analysis of banned aromatic amines derived from AZO Dyes in Textile.

In this interlaboratory study 155 laboratories in 31 different countries registered for participation. See appendix 4 for the number of participants per country. In this report the results of the AZO Dyes in Textile 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 textile samples both positive on banned aromatic amines derived from AZO Dyes of approximately 3 grams each. The first sample is a brown acrylic textile labelled #21550 and the second sample is a pink polyester textile labelled #21551.
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 can be downloaded from 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.

2.4 SAMPLES

For the first sample a batch of acrylic was selected which was dyed with Basic Brown 4 by a third party. A part of this batch was cut in small pieces. After homogenization the batch was divided over 190 subsamples in small bags of approximately 3 grams each and labelled #21550.
The homogeneity of the subsamples was checked by the determination of 2,4-Diaminotoluene according to test method EN14362-1 on eight stratified randomly selected subsamples.

	2,4-Diaminotoluene in mg/kg
sample #21550-1	54.2
sample #21550-2	59.3
sample #21550-3	56.5
sample #21550-4	50.1
sample #21550-5	58.6
sample #21550-6	57.1
sample #21550-7	61.2
sample #21550-8	55.5

Table 1: homogeneity test results of subsamples #21550

From the above test results the relative standard deviation was calculated and compared with 0.3 times the relative standard deviation derived from iis PTS 2004-2020 in agreement with the procedure of ISO13528, Annex B2 in the next table.

	2,4- Diaminotoluene
RSD (observed)	6.0%
reference method	iis PTS
0.3 x RSD (reference method)	7.5%

Table 2: evaluation of the relative standard deviation of subsamples #21550

The calculated relative standard deviation was in agreement with 0.3 times the relative standard deviation derived from iis PTS 2004-2020. Therefore, homogeneity of the subsamples was assumed.

For the second sample a batch of polyester was selected which was dyed with Solvent Red 1 by a third party. A part of this batch was cut in small pieces. After homogenization the batch was divided over 190 subsamples in small bags of approximately 3 grams each and labelled #21551.
The homogeneity of the subsamples was checked by the determination of o-Anisidine according to test method EN14362-1 on eight stratified randomly selected subsamples.

	o-Anisidine in mg/kg
sample #21551-1	101.4
sample #21551-2	103.9
sample #21551-3	103.2
sample #21551-4	97.3
sample #21551-5	94.4
sample #21551-6	103.8
sample #21551-7	102.8
sample #21551-8	98.7

Table 3: homogeneity test results of subsamples #21551

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.

	o-Anisidine in mg/kg
r (observed)	9.8
reference test method	ISO14362-1:17
0.3 x R (reference test method)	14.9

Table 4: evaluation of the repeatability of subsamples #21551

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 labelled #21550 and one sample labelled #21551 was sent on March 3, 2021.

2.5 ANALYZES

The participants were asked to determine on sample #21550 and on sample #21551 the concentrations of the following aromatic amines:
4-Aminodiphenyl (CAS No. 92-67-1)
Benzidine (CAS No. 92-87-5)
4-Chloro-o-toluidine (CAS No. 95-69-2)
2-Naphtylamine (CAS No. 91-59-8)
2-Amino-4-nitrotoluene (CAS No. 99-55-8)
4-Chloraniline (CAS No. 106-47-8)
2,4-Diaminoanisol (CAS No. 615-05-4)
4,4’-Diaminodiphenylmethane (CAS No. 101-77-9)
3,3’-Dichlorobenzidine (CAS No. 91-94-1)
3,3’-Dimethoxybenzidine (CAS No. 119-90-4)
3,3’-Dimethylbenzidine (CAS No. 119-93-7)
3,3’-Dimethyl-4,4’-Diaminodiphenylmethane (CAS No. 838-88-0)
p-Cresidine (CAS No. 120-71-8)

4,4'-Diamino-3,3'-dichlorodiphenylmethane (CAS No. 101-14-4)
4,4'-Diaminodiphenylether (CAS No. 101-80-4)
4,4'-Diaminodiphenylsulfide (CAS No. 139-65-1)
2,4-Diaminotoluene (CAS No. 95-80-7)
2,4,5-Trimethylaniline (CAS No. 137-17-7)
o-Anisidine (CAS No. 90-04-0)
2,4-Xylidine (CAS No. 95-68-1)
2,5-Xylidine (CAS No. 95-78-3)
2,6-Xylidine (CAS No. 87-62-7)
Total Xylidines
o-Aminoazotoluene (CAS No. 97-56-3)
o-Toluidine (CAS No. 95-53-4)
Sum of o-Aminoazotoluene and o-Toluidine

It was decided not to request p-Aminoazobenzene, CAS no. 60-09-3, because the samples were not positive for this component and to enable this determination more sample amount should be supplied. As it is never easy to obtain sample material it was therefore decided to remove this component from the list so that we can supply a lower sample amount to more participants.
To ensure homogeneity it was requested not to use less than 0.5 grams of the sample per determination. It was also requested to report if the laboratory was accredited to determine the reported components and to report some analytical details.

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-cts/. 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-cts/. The reported test results are tabulated per determination in appendix 1 and 2 of this report. The laboratories are presented by their code numbers.

Directly after the deadline, a reminder was sent to those laboratories that had not reported test results at that moment. Shortly after the deadline, the available test results were screened for suspect data.

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

3.1 STATISTICS

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

First, the normality of the distribution of the various data sets per determination was checked by means of the Lilliefors-test, a variant of the Kolmogorov-Smirnov test and by the calculation of skewness and kurtosis. Evaluation of the three normality indicators in combination with the visual evaluation of the graphic Kernel density plot, lead to judgement of the normality being either 'unknown', 'OK', 'suspect' or 'not OK'. After removal of outliers, this check was repeated. If a dataset 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.

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 R(0.01) for the Rosner's test. Stragglers are marked by D(0.05) for the Dixon's test, by G(0.05) or DG(0.05) for the Grubbs' test and by R(0.05) for the Rosner's test. Both outliers and stragglers were not included in the calculations of averages and standard deviations.

For each assigned value, the uncertainty was determined in accordance with ISO13528. Subsequently the calculated uncertainty was evaluated against the respective requirement based on the target reproducibility in accordance with ISO13528. In this PT, the criterion of ISO13528, paragraph 9.2.1 was met for all evaluated tests, therefore, the uncertainty of all assigned values may be negligible and need not be included in the PT report.

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

3.2 GRAPHICS

In order to visualise the data against the reproducibilities from literature, Gauss plots were made, using the sorted data for 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, e.g. ISO reproducibilities, the z-scores were calculated using a target standard deviation. This results in an evaluation independent of the variation of this interlaboratory study.

The target standard deviation was calculated from the literature reproducibility by division with 2.8. In case no literature reproducibility was available, other target values were used, like Horwitz or an estimated reproducibility based on former iis proficiency tests.

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

The z-scores were calculated according to:

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

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

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

4 EVALUATION

In this proficiency test some problems were encountered with the dispatch of samples. Seventeen participants reported test results after the final reporting date and five other participants did not report any test results. Not all participants were able to report all tests requested.
In total 150 participants reported 291 numerical test results. Observed were 30 outlying test results, which is 10.3%. In proficiency tests 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 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 5.

For the determination of Aromatic Amines derived from AZO colorants the ISO14362 method is considered to be the official test method. Two versions of ISO14362 were published in 2017. Part 1 of ISO14362 describes a method to detect certain aromatic amines that are banned. Part 3 of ISO14362 describes a method to detect 4-Aminoazobenzene. In both samples, 4-Aminoazobenzene was not present.

Regretfully, not for all listed Aromatic Amines precision data are available in ISO14362-1:17. Unfortunately, for both component 2,4-Diaminotoluene, which is present in sample #21550 and component o-Anisidine, which is present in sample #21551 no precision statement is mentioned. For the evaluation of both components the average of the reproducibilities mentioned in ISO14362-1:17 is used.

Sample #21550

2,4-Diaminotoluene (CAS No. 95-80-7): The determination was problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ISO14362-1:2017.

Sample #21551

o-Anisidine (CAS No. 90-04-0): The determination was problematic for a number of laboratories. Twenty-seven statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO14362-1:2017.

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 (or estimated) from the reference test method ISO14362-1 are compared in the next tables.

Component	unit	n	average	2.8 * sd	R(lit)
2,4-Diaminotoluene	mg/kg	140	47.4	32.6	21.5

Table 5: reproducibility of the aromatic amine in textile sample #21550

Component	unit	n	average	2.8 * sd	R(lit)
o-Anisidine	mg/kg	121	82.6	31.9	37.4

Table 6: reproducibility of the aromatic amine in textile sample #21551

Without further statistical calculations it can be concluded that the group of laboratories has difficulties with the analysis of 2,4-Diaminotoluene but has no problem with the analysis of o-Anisidine.

4.3 COMPARISON OF THE PROFICIENCY TEST OF MARCH 2021 WITH PREVIOUS PTS

	March 2021	March 2020	March 2019	March 2018	February 2017
Number of reporting laboratories	150	126	165	171	164
Number of test results	291	380	299	496	770
Number of statistical outliers	30	2	11	3	18
Percentage statistical outliers	10.3%	0.5%	3.7%	0.6%	2.3%

Table 7: comparison to previous proficiency tests

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

The performance of the determinations of the proficiency test was compared, expressed as relative standard deviations (uncertainties). The conclusions are given in the following table.

Component	March 2021	March 2020	March 2019	March 2018	2004 - 2017	target
4-Aminodiphenyl	n.e.	n.e.	n.e.	n.e.	18-36%	16%
Benzidine	n.e.	n.e.	n.e.	12%	15-35%	14%
4-Chloro-o-toluidine	n.e.	n.e.	n.e.	n.e.	24%	16%
2-Naphtylamine	n.e.	n.e.	n.e.	n.e.	27-41%	16%
4-Chloroaniline	n.e.	n.e.	n.e.	n.e.	27%	16%
2,4-Diaminoanisol	n.e.	n.e.	n.e.	n.e.	24-52%	16%
4,4'-Diaminodiphenylmethane	n.e.	n.e.	n.e.	n.e.	21%	15%
3,3'-Dimethoxybenzidine	n.e.	11%	11%	12%	16-31%	13%

Component	March 2021	March 2020	March 2019	March 2018	2004 - 2017	target
3,3'-Dimethylbenzidine	n.e.	n.e.	n.e.	n.e.	15-36%	18%
4,4'-Diamino-3,3'-Dichlorodiphenylmethane	n.e.	n.e.	n.e.	n.e.	20-35%	16%
4,4'-Diaminodiphenylether	n.e.	n.e.	n.e.	n.e.	15%	16%
4,4'-Diaminodiphenylsulfide	n.e.	n.e.	n.e.	n.e.	18-26%	16%
2,4-Diaminotoluene	25%	n.e.	n.e.	n.e.	n.e.	21%
o-Anisidine	14%	n.e.	n.e.	n.e.	n.e.	37%
2,4-Xylidine	n.e.	n.e.	26%	n.e.	19%	16%
o-Aminoazotoluene *)	n.e.	n.e.	n.e.	n.e.	n.e.	22%
o-Toluidine *)	n.e.	n.e.	n.e.	n.e.	19-38%	22%
Sum of o-aminoazotoluene and o-Toluidine *)	n.e.	35%	n.e.	n.e.	34%	22%

Table 8: development of uncertainties of aromatic amines in textile samples over the years

Aromatic amines not mentioned in table 8 are not determined in a PT of iis yet.

4.4 EVALUATION OF THE ANALYTICAL DETAILS

For this PT some questions were asked about accreditation and about sample details such as sample intake, sample preparation and the use of a diatomaceous earth column.

- One hundred and thirty-two participants (85%) mentioned that they are accredited for determination of banned AZO Dyes in Textile. Eleven participants mentioned that the laboratory is not accredited for the determination of aromatic amines in textiles.
- 85% of the participants used 0.5 grams or more for testing.
- The samples were used as received by 48% of the participants and further cut or grinded by 42%.
- 3% of the participants used the ASE technique to release/extract the analyte(s), 29% Soxhlet, 14% Mechanical Shaking, 3% Thermal desorption, 6% Ultrasonic and 30% another technique.
- Xylene, t-Butyl methyl ether and citrate buffer were the most reported solvents used to release the analyte(s).
- A quarter of the participants reported an extraction time of 30 minutes or 60 minutes. An extraction time of 15-20 minutes was reported by 5% of the participants, 20% reported 40-50 minutes and 9% reported an extraction time of more than 60 minutes.
- More than half (62%) of the participants reported and extraction temperature of 70°C, about 26% an extraction temperature above 100°C.
- About the use of diatomaceous earth column as prescribed in ISO14362-1 more of the half of the participants (64%) reported to have used this column. Twenty-eight participants did not use this column and seven participants reported to have used a different test method.

No effect was observed on the averages or variation between reported test results.

5 DISCUSSION

Almost all reporting participants were able to detect 2,4-Diaminotoluene in sample #21550 and o-Anisidine in sample #21551.

When the results of this interlaboratory study were compared to the Ecolabelling Standards and Requirements for Textiles in EU and with the similar Bluesign® BSSL (Table 9), it was noticed that not all participants would make identical decisions about the acceptability of the textiles for the determined components.

Ecolabel	baby clothes	in direct skin contact	no direct skin contact
Bluesign® BSSL	<20 mg/kg	<20 mg/kg	<20 mg/kg
Oeko-Tex 100	<20 mg/kg	<20 mg/kg	<20 mg/kg

Table 9: Bluesign® BSSL and Ecolabelling Standards and Requirements for Textiles in EU

Almost all reporting laboratories would have rejected sample #21550 for all categories, except seven participants. Almost all reporting laboratories would have rejected sample#21551 for all categories, except twelve participants.

6 CONCLUSION

Although it can be concluded that the majority of the participants has no problem with detecting 2,4-Diaminotoluene and o-Anisidine in the samples of this PT, each participating laboratory will have to evaluate its performance in this study and decide about any corrective actions if necessary. Therefore, participation on a regular basis in this scheme could be helpful to improve the performance and thus increase of the quality of the analytical results.

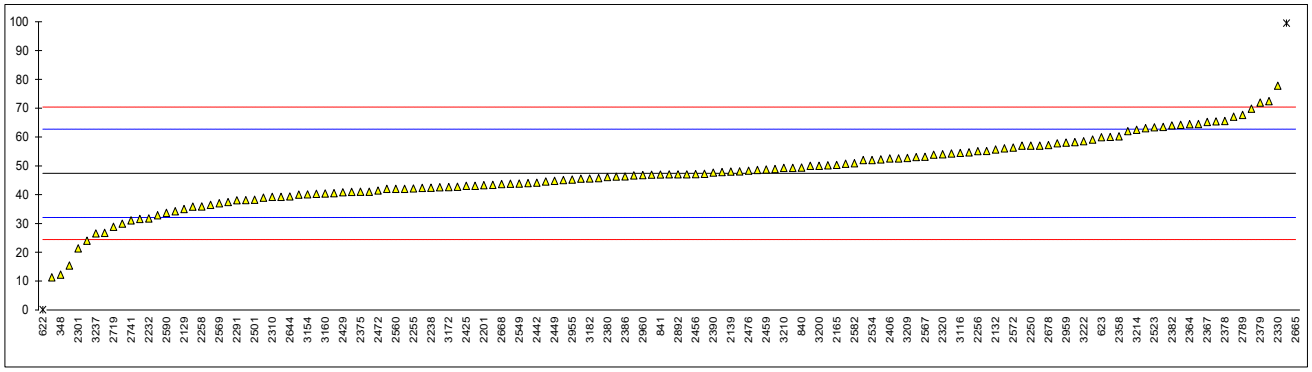
APPENDIX 1

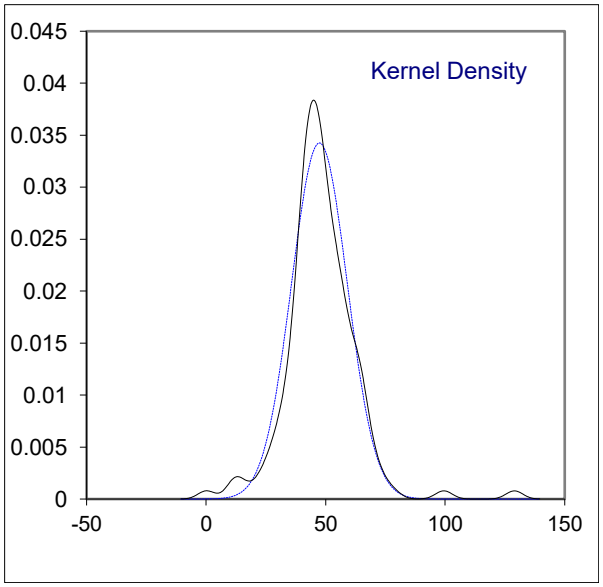
Determination of 2,4-Diaminotoluene (CAS No. 95-80-7) in sample #21550; results in mg/kg

lab	method	value	mark	z(targ)	remarks
210	ISO14362-1	47.83		0.06	
230	ISO14362-1	43.38	C	-0.52	First reported 15.361504
339	EN14362-1	11.3		-4.71	
348	PE-S930-LABE-005	12.2		-4.59	
362	ISO14362-1	56.0		1.12	
551		-----		-----	
622	ISO14362-1	0.08	R(0.05)	-6.17	
623	ISO14362-1	59.864		1.63	
840	ISO14362-1	49.4		0.26	
841	ISO14362-1	46.98		-0.05	
2102		99.46	R(0.01)	6.79	
2115	ISO14362-1	47.17		-0.03	
2129	EN14362-1	35.0		-1.62	
2132	EN14362-1	55.6466		1.08	
2138	EN14362-1	54.61		0.94	
2139	EN14362-1	48		0.08	
2165	EN14362-1	50.3		0.38	
2170	EN14362-1	46.99		-0.05	
2184	EN14362-1	52.5		0.67	
2201	ISO14362-1	43.25		-0.54	
2213	EN14362-1	23.97		-3.06	
2218	EN14362-1	26.71		-2.70	
2232	EN14362-1	31.7	C	-2.05	First reported 16.1
2236		-----		-----	
2238	EN14362-1	42.35		-0.66	
2247	EN14362-1	42.74		-0.61	
2250	EN14362-1	57		1.25	
2255	EN14362-1	42.10		-0.69	
2256	ISO14362-1	55.07		1.00	
2258	ISO14362-1	35.89		-1.50	
2265	EN14362-1	40.9		-0.85	
2271	ISO14362-1	46.9		-0.06	
2286	ISO14362-1	63.02		2.04	
2289	ISO14362-1	40		-0.96	
2290	ISO14362-1	57.8		1.36	
2291	ISO14362-1	38		-1.23	
2293		-----		-----	
2295	EN14362-1	42		-0.70	
2297	ISO14362-1	<5		<-5.53	Possibly a false negative test result?
2301	ISO14362-1	21.315		-3.40	
2310	EN14362-1	39.2		-1.07	
2311	ISO14362-1	40.518		-0.90	
2313	EN14362-1	37.40		-1.30	
2314	EN14362-1	39.23		-1.07	
2320	ISO14362-1	53.978		0.86	
2330	ISO14362-1	77.80		3.97	
2347	ISO14362-1	57		1.25	
2350		-----		-----	
2352	EN14362-1	64.5		2.23	
2357	ISO14362-1	65.4		2.35	
2358	ISO14362-1	60.2		1.67	
2364	EN14362-1	64.4		2.22	
2365	ISO14362-1	62.0		1.91	
2366	EN14362-1	57		1.25	
2367	ISO14362-1	65.2		2.32	
2370	ISO14362-1	32.79		-1.91	
2372	ISO14362-1	29.90		-2.28	
2373	ISO14362-1	64.2		2.19	
2375	ISO14362-1	41		-0.83	
2378	ISO14362-1	65.5		2.36	
2379	ISO14362-1	71.9036	C	3.20	First reported 84.4499
2380	ISO14362-1	46.1		-0.17	
2381	ISO14362-1	44.00		-0.44	
2382	ISO14362-1	64.0		2.17	
2386	EN14362-1	46.3		-0.14	
2390	EN14362-1	47.61		0.03	
2406	ISO14362-1	52.49		0.66	
2425	ISO14362-1	43.0		-0.57	
2426	ISO14362-1	50.19		0.36	
2429	EN14362-1	40.8		-0.86	
2442	ISO14362-1	44.09		-0.43	
2449		44.78		-0.34	
2453	ISO14362-1	53.85		0.84	
2456	ISO14362-1	47.05	C	-0.04	First reported 93.61

lab	method	value	mark	z(targ)	remarks
2459	ISO14362-1	48.723		0.17	
2472	ISO14362-1	41.40		-0.78	
2475	EN14362-1	47.01		-0.05	
2476	ISO14362-1	48.3		0.12	
2486	ISO14362-1	38.10		-1.21	
2489	ISO14362-1	48.87		0.19	
2492	In house	52.0		0.60	
2495	ISO14362-1	46.21		-0.15	
2501	ISO14362-1	38.21		-1.20	
2511	ISO14362-1	42.532		-0.63	
2514	EN14362-1	44.53		-0.37	
2523	ISO14362-1	63.37		2.08	
2528	EN14362-1	59.10		1.53	
2534	ISO14362-1	52	C	0.60	First reported 101.6
2549	EN14362-1	43.8		-0.47	
2553	EN14362-1	36.45		-1.43	
2560		42		-0.70	
2561	ISO14362-1	45.7		-0.22	
2565	ISO14362-1	38.93		-1.10	
2567	EN14362-1	53.1		0.74	
2569	ISO14362-1	37		-1.36	
2572	EN14362-1	56.3		1.16	
2582	ISO14362-1	50.89		0.46	
2590	EN14362-1	33.69		-1.79	
2591	ISO14362-1	not detected <4		<-5.66	Possibly a false negative test result?
2605	ISO14362-1	48.02		0.08	
2609	EN14362-1	69.8		2.92	
2618	EN14362-1	42.30		-0.66	
2638	ISO14362-1	15.40		-4.17	
2643	KS K0147	58.19		1.41	
2644		39.36		-1.05	
2665	EN14362-1	129.0	R(0.01)	10.65	
2668	EN14362-1	43.65		-0.49	
2674	EN14362-1	52.2		0.63	
2678	ISO14362-1	57.20		1.28	
2689	EN14362-1	42		-0.70	
2703		-----		-----	
2719	ISO14362-1	28.8		-2.43	
2734		-----		-----	
2741	EN14362-1	31.034		-2.13	
2743		-----		-----	
2773	EN14362-1	43.0		-0.57	
2789	ISO14362-1	67.66		2.64	
2798	ISO14362-1	50		0.34	
2823	ISO14362-1	31.536		-2.07	
2826	ISO14362-1	55.13		1.01	
2827	EN14362-1	40.23		-0.93	
2829	ISO14362-1	49.27		0.24	
2864	EN14362-1	not detected		-----	Possily a false negative test result? D.L. not reported.
2866	EN14362-1	63.45		2.10	
2867	EN14362-1	50.7		0.43	
2892	ISO14362-1	47.000		-0.05	
2948	ISO14362-1	35.837		-1.51	
2953		-----		-----	
2955	EN14362-1	45.2		-0.29	
2959	EN14362-1	58		1.38	
2960	ISO14362-1	46.8		-0.08	
3110	EN14362-1	53.01		0.73	
3116	ISO14362-1	54.43		0.92	
3118	ISO14362-1	48.5		0.14	
3134	EN14362-1	60.0	C	1.64	First reported 32
3149	ISO14362-1	34.2		-1.72	
3153	ISO14362-1	45.5		-0.25	
3154	EN14362-1	40.062		-0.96	
3160	ISO14362-1	40.371		-0.92	
3172	ISO14362-1	42.6269		-0.62	
3176	ISO14362-1	67.006		2.56	
3182	ISO14362-1	45.55		-0.24	
3185	EN14362-1	45.00		-0.31	
3190	EN14362-1	46.65		-0.10	
3192		-----		-----	
3200	ISO14362-1	50.0		0.34	
3209	ISO14362-1	52.71		0.69	
3210	In house	49.24		0.24	
3214	ISO14362-1	62.52		1.97	
3218	EN14362-1	43.78		-0.47	
3222	ISO14362-1	58.48		1.45	
3228	EN14362-1	54.3		0.90	

lab	method	value	mark	z(targ)	remarks
3237	ISO14362-1	26.5		-2.73	
3248	ISO14362-1	41		-0.83	
8030	ISO14362-1	72.4026		3.26	
	normality	OK			
	n	140			
	outliers	3			
	mean (n)	47.393			
	st.dev. (n)	11.6476	RSD = 25%		
	R(calc.)	32.613			
	st.dev.(ISO14362-1:17)	7.6642			
	R(ISO14362-1:17)	21.460			



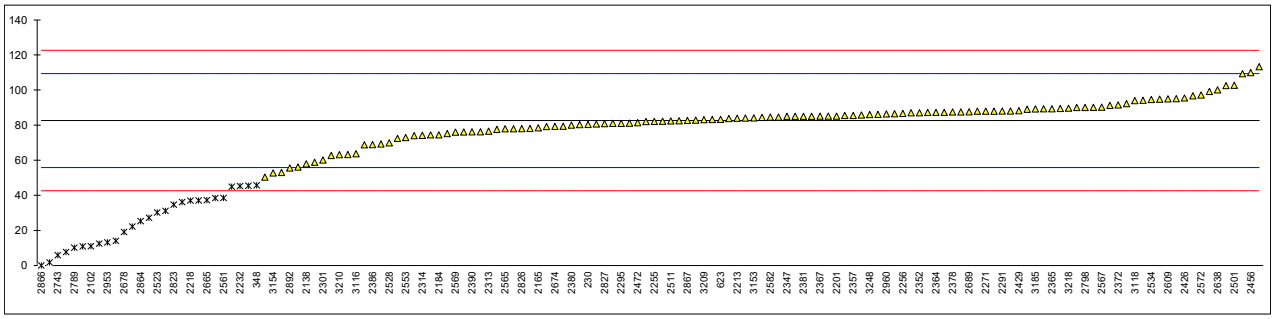


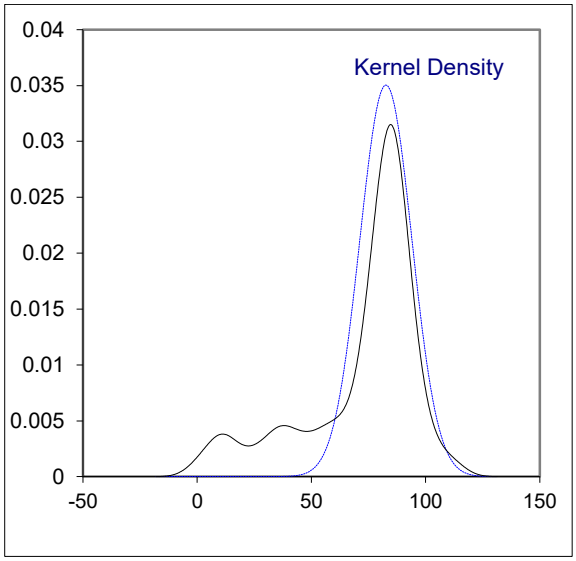
Determination of o-Anisidine (CAS No. 90-04-0) in sample #21551; results in mg/kg

lab	Method	value	mark	z(targ)	remarks
210	ISO14362-1	7.64	R(0.05)	-5.61	
230	ISO14362-1	80.344827		-0.17	
339	EN14362-1	<5		<-5.81	Possibly a false negative test result?
348	Inhouse	45.7	R(0.05)	-2.76	
362	ISO14362-1	14.0	R(0.05)	-5.14	
551	ISO14362-1	86.46		0.29	
622	ISO14362-1	1.68	R(0.05)	-6.06	
623	ISO14362-1	83.284		0.05	
840	ISO14362-1	62.6		-1.50	
841	ISO14362-1	58.82		-1.78	
2102		10.94	R(0.05)	-5.36	
2115	ISO14362-1	44.87	R(0.05)	-2.82	
2129	EN14362-1	102.5		1.49	
2132	EN14362-1	80.6716		-0.14	
2138	EN14362-1	57.83		-1.85	
2139	EN14362-1	53		-2.22	
2165	EN14362-1	78.4		-0.31	
2170	EN14362-1	94.99		0.93	
2184	EN14362-1	74.5		-0.61	
2201	ISO14362-1	85.11		0.19	
2213	EN14362-1	83.93		0.10	
2218	EN14362-1	36.95	R(0.05)	-3.42	
2232	EN14362-1	45.3	R(0.05)	-2.79	
2236		-----		-----	
2238	EN14362-1	87.15		0.34	
2247	EN14362-1	83.69		0.08	
2250	EN14362-1	87		0.33	
2255	EN14362-1	82.05		-0.04	
2256	ISO14362-1	86.68		0.31	
2258	ISO14362-1	27.18	C,R(0.05)	-4.15	First reported 12.03
2265	EN14362-1	109.25		2.00	
2271	ISO14362-1	87.9		0.40	
2286	ISO14362-1	63.18		-1.45	
2289	ISO14362-1	85		0.18	
2290	ISO14362-1	99.2		1.24	
2291	ISO14362-1	88		0.40	
2293		-----		-----	
2295	EN14362-1	81		-0.12	
2297	ISO14362-1	91.2		0.64	
2301	ISO14362-1	60.031		-1.69	
2310	EN14362-1	79.4		-0.24	
2311	ISO14362-1	80.326		-0.17	
2313	EN14362-1	76.50		-0.46	
2314	EN14362-1	74.12		-0.63	
2320	ISO14362-1	85.424		0.21	
2330	ISO14362-1	22.13	C,R(0.05)	-4.53	First reported 19.4
2347	ISO14362-1	85		0.18	
2350	EN14362-1	36.099	R(0.05)	-3.48	
2352	EN14362-1	87.0		0.33	
2357	ISO14362-1	85.5		0.22	
2358	ISO14362-1	68.8		-1.03	
2364	EN14362-1	87.2		0.35	
2365	ISO14362-1	89.3		0.50	
2366	EN14362-1	90		0.55	
2367	ISO14362-1	85.1		0.19	
2370	ISO14362-1	94.76		0.91	
2372	ISO14362-1	91.5		0.67	
2373	ISO14362-1	86.1		0.26	
2375	ISO14362-1	81		-0.12	
2378	ISO14362-1	87.5		0.37	
2379	ISO14362-1	45.4126	R(0.05)	-2.78	
2380	ISO14362-1	80.0		-0.19	
2381	ISO14362-1	85.00		0.18	
2382	ISO14362-1	83.2		0.05	
2386	EN14362-1	68.9		-1.03	
2390	EN14362-1	76.11		-0.49	
2406	ISO14362-1	37.04	R(0.05)	-3.41	
2425	ISO14362-1	84.4		0.14	
2426	ISO14362-1	95.46		0.96	
2429	EN14362-1	88.2		0.42	
2442	ISO14362-1	82.87		0.02	
2449		75.1		-0.56	
2453	ISO14362-1	77.96		-0.35	
2456	ISO14362-1	109.89		2.04	
2459	ISO14362-1	72.416		-0.76	

lab	Method	value	mark	z(targ)	remarks
2472	ISO14362-1	81.30		-0.10	
2475	EN14362-1	94.12		0.86	
2476	ISO14362-1	87.9		0.40	
2486	ISO14362-1	76.17		-0.48	
2489	ISO14362-1	77.53		-0.38	
2492	In house	69.2		-1.00	
2495	ISO14362-1	31.07	R(0.05)	-3.86	
2501	ISO14362-1	102.72	C	1.51	First reported 139.75
2511	ISO14362-1	82.323		-0.02	
2514	EN14362-1	81.04		-0.12	
2523	ISO14362-1	30.167	R(0.05)	-3.93	
2528	EN14362-1	69.90		-0.95	
2534	ISO14362-1	94.6		0.90	
2549	EN14362-1	85.7		0.23	
2553	EN14362-1	72.87		-0.73	
2560	ISO14362-1	89		0.48	
2561	ISO14362-1	38.5	R(0.05)	-3.30	
2565	ISO14362-1	77.87		-0.35	
2567	EN14362-1	90.2		0.57	
2569	ISO14362-1	76		-0.49	
2572	EN14362-1	97.1		1.09	
2582	ISO14362-1	84.51		0.14	
2590	EN14362-1	10.81	C,R(0.05)	-5.37	First reported 24.27
2591	ISO14362-1	12.446	R(0.05)	-5.25	
2605	ISO14362-1	89.46		0.51	
2609	EN14362-1	94.9		0.92	
2618	EN14362-1	85.00		0.18	
2638	ISO14362-1	100.02		1.30	
2643		-----		-----	
2644	ISO14362-1	90.11		0.56	
2665	EN14362-1	37.24	R(0.05)	-3.40	
2668	EN14362-1	87.89		0.40	
2674	EN14362-1	79.3		-0.25	
2678	ISO14362-1	19.05	R(0.05)	-4.76	
2689	EN14362-1	87.6		0.38	
2703		-----		-----	
2719	ISO14362-1	79.2		-0.25	
2734		-----		-----	
2741	EN14362-1	73.919		-0.65	
2743	ISO14362-1	5.839735	C,R(0.05)	-5.75	First reported 9.867016056
2773	EN14362-1	87.5		0.37	
2789	ISO14362-1	10.16	R(0.05)	-5.42	
2798	ISO14362-1	90		0.55	
2823	ISO14362-1	34.598	R(0.05)	-3.59	
2826	ISO14362-1	78.02		-0.34	
2827	EN14362-1	80.84		-0.13	
2829	ISO14362-1	84.55		0.15	
2864	EN14362-1	25.24	R(0.05)	-4.29	
2866	EN14362-1	0	R(0.05)	-6.18	
2867	EN14362-1	82.7		0.01	
2892	ISO14362-1	55.500		-2.03	
2948	ISO14362-1	74.378		-0.61	
2953	EN14362-1	13.11	R(0.05)	-5.20	
2955	EN14362-1	85.1		0.19	
2959	EN14362-1	88		0.40	
2960	ISO14362-1	86.4		0.29	
3110	EN14362-1	82.39		-0.02	
3116	ISO14362-1	63.63		-1.42	
3118	ISO14362-1	93.93		0.85	
3134	EN14362-1	84.0	C	0.11	First reported 80
3149	ISO14362-1	38.4	C,R(0.05)	-3.31	First reported 10.5
3153	ISO14362-1	84.1		0.11	
3154	EN14362-1	52.67		-2.24	
3160	ISO14362-1	78.137		-0.33	
3172	ISO14362-1	56.0612		-1.99	
3176	ISO14362-1	87.224		0.35	
3182	ISO14362-1	82.14		-0.03	
3185	EN14362-1	89.18		0.49	
3190	EN14362-1	89.25		0.50	
3192		-----		-----	
3200	ISO14362-1	82.0		-0.04	
3209	ISO14362-1	83.11		0.04	
3210	In house	63.16		-1.45	
3214	ISO14362-1	96.69		1.06	
3218	EN14362-1	89.59		0.52	
3222	ISO14362-1	113.33		2.30	
3228	EN14362-1	76.1		-0.49	
3237	ISO14362-1	92.2		0.72	

lab	Method	value	mark	z(targ)	remarks
3248	ISO14362-1	86		0.26	
8030	ISO14362-1	50.3525	C	-2.41	First reported 38.4838
	normality	suspect			
	n	121			
	outliers	27			
	mean (n)	82.591			
	st.dev. (n)	11.3887	RSD = 14%		
	R(calc.)	31.888			
	st.dev.(ISO14362-1:17)	13.3561			
	R(ISO14362-1:17)	37.397			





APPENDIX 2 Summary of other reported aromatic amines

Abbreviations of amine names

4AD = 4-Aminodiphenyl (CAS No. 92-67-1)

BD = Benzidine (CAS No. 92-87-5)

4CoT = 4-Chloro-o-toluidine (CAS No. 95-69-2)

2NA = 2-Naphtylamine (CAS No. 91-59-8)

ANT = 2-Amino-4-nitrotoluene (CAS No. 99-55-8)

4CA = 4-Chloraniline (CAS No. 106-47-8)

DAA = 2,4-Diaminoanisol (CAS No. 615-05-4)

DADM = 4,4'-Diaminodiphenyl methane (CAS No. 101-77-9)

DCB = 3,3'-Dichlorobenzidine (CAS No. 91-94-1)

DMoxB = 3,3'-Dimethoxybenzidine (CAS No. 119-90-4)

DMB = 3,3'-Dimethylbenzidine (CAS No. 119-93-7)

DDDM = 3,3'-Dimethyl-4,4'-Diaminodiphenyl methane (CAS No. 838-88-0)

pC = p-Cresidine (CAS No. 120-71-8)

DDM = 4,4'-Diamino-3,3'-dichlorodiphenyl methane (CAS No. 101-14-4)

DDE = 4,4'-Diaminodiphenyl ether (CAS No. 101-80-4)

DDS = 4,4'-Diaminodiphenyl sulfide (CAS No. 139-65-1)

24DAT = 2,4-Diaminotoluene (CAS No. 95-80-7)

TMA = 2,4,5-Trimethylaniline (CAS No. 137-17-7)

oA = o-Anisidine (CAS No. 90-04-0)

24X = 2,4-Xylidine (CAS No. 95-68-1)

25X = 2,5Xylidine (CAS No. 95-78-3)

26X = 2,6-Xylidine (CAS No. 87-62-7)

TX = Total of Xylidine

oAAT = o-Aminoazotoluene (CAS No. 97-56-3)

oTol = o-Toluidine (CAS No. 95-53-4)

oAAT&oTol = Sum of o-Aminoazotoluene and o-Toluidine

Summary of other reported aromatic amines in sample #21550, see abbreviations above

lab	4AD	BD	4CoT	2NA	ANT	4CA	DAA	DADM	DCB	DMoxB	DMB	DDDM
210	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
230	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
339	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
348	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
362	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
551	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
622	0.06	0.00	0.90	0.01	0.40	0.01	0.05	0.00	0.58	2.16	0.00	0.00
623	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
840	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
841	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2102	ND	ND	8.36	ND	ND	ND	ND	ND	ND	ND	ND	ND
2115	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2129	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2132	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2138	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2139	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2165	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2170	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2184	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2201	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2213	<5	<5	5.12	<5	<5	<5	<5	<5	<5	<5	<5	<5
2218	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2232	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2236	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2238	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

lab	4AD	BD	4CoT	2NA	ANT	4CA	DAA	DADM	DCB	DMoxB	DMB	DDDM
2247	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2250	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2255	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2256	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2258	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2265	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
2271	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2286	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2289	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2290	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2291	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2293	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2295	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2297	<5	<5	<5	<5	<5	<5	58.3	<5	<5	<5	<5	<5
2301	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2310	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2311	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2313	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2314	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2320	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2330	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2347	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2350	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2352	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2357	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2358	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
2364	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2365	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5
2366	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2367	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2370	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2372	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2373	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2375	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2378	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2379	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2380	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2381	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2382	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2386	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2390	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2406	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2425	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2426	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2429	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2442	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2449	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2453	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2456	-----	-----	Traces	-----	-----	-----	-----	-----	-----	-----	-----	-----
2459	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2472	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2475	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2476	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2486	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2489	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2492	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2495	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5	<5	<5
2501	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2511	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2514	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2523	0	0	0	0	0	0	0	0	0	0	0	0
2528	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2534	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2549	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2553	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2560	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2561	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2565	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2567	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2569	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2572	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2582	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2590	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2591	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2605	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
2609	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2618	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

lab	4AD	BD	4CoT	2NA	ANT	4CA	DAA	DADM	DCB	DMoxB	DMB	DDDM
2638	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2643	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2644	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2665	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5	<5	<5
2668	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2674	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2678	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2689	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2703	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2719	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2734	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2741	<5	<5	<5 5.9172	<5	<5	<5	<5	<5	<5	<5	<5	<5
2743	-----	-----	8706	-----	-----	-----	-----	-----	-----	-----	-----	-----
2773	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2789	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2798	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2823	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2826	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2827	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2829	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2864	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2866	0	0	0	0	0	0	0	0	0	0	0	0
2867	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2892	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2948	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2953	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2955	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2959	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2960	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3110	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3116	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3118	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
3134	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3149	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3153	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
3154	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3160	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3172	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
3176	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3182	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3185	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
3190	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5
3192	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3200	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
3209	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3210	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3214	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
3218	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
3222	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3228	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3237	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3248	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
8030	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Summary of aromatic amines in sample #21550 continued

lab	pC	DDM	DDE	DDS	TMA	oA	24X	25X	26X	TX	oAAT	oTol	oAAT+ oTol
210	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
230	ND	ND	ND	ND	ND	ND	ND	-----	ND	ND	ND	ND	ND
339	<5	<5	<5	<5	<5	<5	-----	-----	-----	-----	<5	<5	<5
348	<5	<5	<5	<5	<5	<5	<5	-----	<5	-----	<5	<5	<5
362	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
551	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
622	0.00	0.00	0.77	0.00	0.00	0.00	0.00	-----	0.00	-----	0.00	0.47	0.47
623	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
840	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
841	<5	<5	<5	<5	<5	<5	<5	<5	<5	-----	<5	<5	-----
2102	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.95	2.95
2115	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2129	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2132	<5	<5	<5	<5	<5	<5	<5	Not Apl	<5	Not Apl	<5	<5	Not Apl
2138	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2139	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

lab	pC	DDM	DDE	DDS	TMA	oA	24X	25X	26X	TX	oAAT	oTol	oAAT+ oTol
2165	ND	ND	ND	ND	ND	ND	ND	-----	ND	-----	ND	ND	-----
2170	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2184	ND	ND	ND	ND	ND	ND	ND	-----	ND	-----	ND	ND	-----
2201	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2213	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2218	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2232	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2236	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2238	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2247	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2250	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2255	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2256	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2258	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2265	< 5	< 5	< 5	< 5	< 5	< 5	< 5	-----	< 5	< 5	< 5	< 5	< 5
2271	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2286	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2289	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2290	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2291	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	38
2293	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2295	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2297	<5	<5	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5
2301	nd	nd	nd	nd	nd	nd	nd	Nd	nd	nd	nd	nd	nd
2310	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2311	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2313	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2314	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2320	ND	ND	ND	ND	ND	ND	ND	-----	ND	-----	ND	6.756	6.756
2330	ND	ND	ND	ND	ND	ND	ND	Not Apl	ND	ND	ND	ND	ND
2347	<5	<5	<5	<5	<5	<5	<5	-----	<5	-----	<5	<5	<5
2350	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2352	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2357	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2358	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
2364	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2365	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5
2366	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2367	ND	ND	ND	ND	ND	ND	ND	-----	ND	-----	ND	ND	-----
2370	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2372	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2373	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2375	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2378	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2379	ND	ND	ND	ND	ND	ND	ND	N tested	ND	N tested	ND	4.3595	N tested
2380	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2381	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2382	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2386	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2390	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2406	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2425	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2426	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2429	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2442	ND	ND	ND	ND	ND	ND	ND	-----	-----	-----	ND	ND	-----
2449	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2453	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2456	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2459	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2472	<5	<5	<5	<5	<5	<5	<5	-----	<5	-----	<5	<5	-----
2475	ND	ND	ND	ND	ND	ND	ND	ND	ND	-----	-----	-----	-----
2476	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2486	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2489	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2492	ND	ND	ND	ND	ND	ND	ND	-----	ND	-----	ND	ND	ND
2495	<5	<5	<5	<5	<5	<5	<5	-----	<5	-----	-----	<5	-----
2501	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2511	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2514	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2523	0	0	0	0	0	0	0	0	0	0	0	0	0
2528	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2534	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2549	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2553	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2560	<5	<5	<5	<5	<5	<5	<5	-----	<5	-----	<5	<5	<5
2561	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

lab	pC	DDM	DDE	DDS	TMA	oA	24X	25X	26X	TX	oAAT	oTol	oAAT+ oTol
2565	<5	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
2567	<5	<5	<5	<5	<5	<5	<5	--	<5	<5	--	<5	<5
2569	ND	ND	ND	ND	ND	ND	ND	--	ND	--	ND	ND	-----
2572	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2582	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2590	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2591	ND	ND	ND	ND	ND	ND	ND	-----	ND	-----	ND	ND	ND
2605	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	-----	-----	-----	-----	<5.00	<5.00	<5.00
2609	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2618	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2638	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.02
2643	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2644	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2665	<5	<5	<5	<5	-----	<5	<5	-----	<5	-----	-----	7.56	-----
2668	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2674	ND	ND	ND	ND	ND	ND	ND	-----	ND	-----	ND	ND	ND
2678	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.30	8.30
2689	ND	ND	ND	ND	ND	ND	ND	N tested	ND	N tested	ND	ND	ND
2703	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2719	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2734	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2741	<5	<5	<5	<5	<5	<5	<5	-----	<5	-----	<5	<5	-----
2743	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.0082	-----
2773	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2789	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2798	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2823	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2826	<10	<10	<10	<10	<10	<10	<10	-----	<10	<10	<10	<10	<10
2827	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2829	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2864	ND	ND	ND	ND	ND	ND	ND	-----	ND	-----	ND	ND	ND
2866	0	0	0	0	0	0	-----	-----	-----	-----	0	0	0
2867	ND	ND	ND	ND	ND	ND	ND	ND	ND	-----	ND	ND	-----
2892	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2948	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2953	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	2.01	-----
2955	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2959	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2960	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3110	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3116	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3118	<5	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
3134	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.0*	-----
3149	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3153	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
3154	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3160	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3172	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	-----	< 5	< 5	-----
3176	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3182	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3185	<5	<5	<5	<5	<5	<5	<5	\	<5	\	<5	<5	<5
3190	＜5	＜5	＜5	＜5	＜5	＜5	＜5	-----	＜5	-----	＜5	＜5	＜5
3192	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3200	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
3209	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3210	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3214	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
3218	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
3222	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3228	ND	ND	ND	ND	ND	ND	ND	-----	ND	-----	ND	ND	-----
3237	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3248	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
8030	ND	ND	ND	ND	ND	ND	ND	N tested	ND	N tested	ND	3.9215	N tested

*) Lab 3134 first reported for oTol 40

Summary of other reported aromatic amines in sample #21551, see abbreviations above

lab	4AD	BD	4CoT	2NA	ANT	4CA	DAA	DADM	DCB	DMoxB	DMB	DDDM
210	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
230	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
339	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
348	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
362	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
551	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
622	0.03	0.00	0.00	0.01	0.75	0.01	0.08	0.00	0.18	0.81	0.00	0.00
623	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
840	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
841	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2102	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2115	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2129	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2132	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2138	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2139	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2165	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2170	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2184	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2201	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2213	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2218	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2232	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2236	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2238	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2247	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2250	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2255	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2256	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2258	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2265	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
2271	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2286	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2289	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2290	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2291	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2293	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2295	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2297	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2301	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2310	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2311	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2313	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2314	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2320	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2330	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2347	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2350	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2352	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2357	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2358	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
2364	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2365	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2366	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2367	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2370	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2372	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2373	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2375	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2378	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2379	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2380	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2381	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2382	<5.0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2386	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2390	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2406	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2425	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2426	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2429	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2442	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2449	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2453	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2456	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2459	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

lab	4AD	BD	4CoT	2NA	ANT	4CA	DAA	DADM	DCB	DMoxB	DMB	DDDM
2472	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2475	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2476	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2486	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2489	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2492	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2495	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5	<5	<5
2501	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2511	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2514	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2523	0	0	0	0	0	0	0	0	0	0	0	0
2528	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2534	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2549	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2553	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2560	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2561	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2565	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2567	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2569	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2572	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2582	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2590	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2591	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2605	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
2609	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2618	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2638	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2643	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2644	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2665	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5	<5	<5
2668	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2674	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2678	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2689	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2703	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2719	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2734	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2741	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2743	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2773	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2789	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2798	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2823	-----	-----	-----	-----	-----	-----	-----	60.327	-----	-----	-----	-----
2826	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2827	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2829	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2864	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2866	0	0	0	0	0	0	0	0	0	0	0	0
2867	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2892	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2948	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2953	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2955	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2959	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2960	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3110	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3116	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3118	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
3134	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3149	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3153	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
3154	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3160	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3172	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
3176	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3182	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3185	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
3190	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5
3192	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3200	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
3209	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3210	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3214	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
3218	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
3222	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3228	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

lab	4AD	BD	4CoT	2NA	ANT	4CA	DAA	DADM	DCB	DMoxB	DMB	DDDM
3237	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3248	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
8030	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Summary of aromatic amines in sample #21551 continued

lab	pC	DDM	DDE	DDS	24DAT	TMA	24X	25X	26X	TX	oAAT	oTol	oAAT+ oTol
210	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
230	ND	ND	ND	ND	ND	ND	ND	-----	ND	ND	ND	ND	ND
339	<5	<5	<5	<5	<5	<5	-----	-----	-----	-----	<5	<5	<5
348	<5	<5	<5	<5	<5	<5	<5	-----	<5	-----	<5	<5	<5
362	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
551	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
622	0.00	0.00	0.34	0.00	0.00	0.00	0.00	-----	0.00	-----	0.00	0.00	0.00
623	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
840	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
841	<5	<5	<5	<5	<5	<5	<5	<5	<5	-----	<5	<5	-----
2102	ND	ND	ND	ND	ND	ND	0.85	ND	0.95	1.80	ND	ND	ND
2115	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2129	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2132	<5	<5	<5	<5	<5	<5	<5	<5	<5	Not Apl	<5	<5	Not Apl
2138	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2139	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2165	ND	ND	ND	ND	ND	ND	ND	-----	ND	-----	ND	ND	-----
2170	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2184	ND	ND	ND	ND	ND	ND	ND	-----	ND	-----	ND	ND	-----
2201	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2213	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2218	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2232	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2236	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2238	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2247	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2250	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2255	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2256	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2258	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2265	< 5	< 5	< 5	< 5	< 5	< 5	< 5	-----	< 5	< 5	< 5	< 5	< 5
2271	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2286	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2289	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2290	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2291	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	88
2293	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2295	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2297	<5	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
2301	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2310	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2311	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2313	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2314	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2320	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2330	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2347	<5	<5	<5	<5	<5	<5	<5	-----	<5	-----	<5	<5	<5
2350	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2352	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2357	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2358	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
2364	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2365	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5	＜5
2366	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2367	ND	ND	ND	ND	ND	ND	ND	ND	ND	-----	ND	ND	-----
2370	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2372	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2373	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2375	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2378	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2379	ND	ND	ND	ND	ND	ND	ND	N tested	ND		ND	ND	N tested
2380	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2381	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2382	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2386	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2390	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2406	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

lab	pC	DDM	DDE	DDS	24DAT	TMA	24X	25X	26X	TX	oAAT	oTol	oAAT+ oTol
2425	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2426	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2429	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2442	ND	ND	ND	ND	ND	ND	ND	-----	-----	-----	-----	ND	-----
2449	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2453	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2456	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2459	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2472	<5	<5	<5	<5	<5	<5	<5	-----	<5	-----	<5	<5	-----
2475	ND	ND	ND	ND	ND	ND	ND	ND	-----	-----	ND	ND	-----
2476	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2486	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2489	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2492	ND	ND	ND	ND	ND	ND	ND	-----	ND	-----	ND	ND	ND
2495	<5	<5	<5	<5	<5	<5	<5	-----	<5	-----	-----	<5	-----
2501	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2511	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2514	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2523	0	0	0	0	0	0	0	0	0	0	0	0	0
2528	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2534	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2549	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2553	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2560	<5	<5	<5	<5	<5	<5	<5	-----	<5	-----	<5	<5	<5
2561	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2565	<5	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
2567	<5	<5	<5	<5	<5	<5	<5	--	<5	<5	--	<5	<5
2569	ND	ND	ND	ND	ND	ND	ND	--	ND	-----	ND	ND	-----
2572	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2582	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2590	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2591	ND	ND	ND	ND	ND	ND	ND	-----	ND	-----	ND	ND	ND
2605	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	-----	-----	-----	-----	<5.00	<5.00	<5.00
2609	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2618	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2638	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2643	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2644	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2665	<5	<5	<5	<5	<5	<5	<5	-----	<5	-----	-----	<5	-----
2668	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2674	ND	ND	ND	ND	ND	ND	ND	-----	ND	-----	ND	ND	ND
2678	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2689	ND	ND	ND	ND	ND	ND	ND	N tested	ND	N tested	ND	ND	ND
2703	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2719	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2734	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2741	<5	<5	<5	<5	<5	<5	<5	-----	<5	-----	<5	<5	-----
2743	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2773	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2789	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2798	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2823	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2826	<10	<10	<10	<10	<10	<10	<10	-----	<10	<10	<10	<10	<10
2827	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2829	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2864	ND	ND	ND	ND	ND	ND	ND	-----	ND	-----	ND	ND	ND
2866	0	0	0	0	0	0	-----	-----	-----	-----	0	0	-----
2867	ND	ND	ND	ND	ND	ND	ND	ND	ND	-----	ND	ND	-----
2892	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2948	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2953	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2955	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2959	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2960	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3110	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3116	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3118	<5	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
3134	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3149	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3153	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
3154	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3160	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3172	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	-----	< 5	< 5	-----
3176	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3182	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3185	< 5	< 5	< 5	< 5	< 5	< 5	< 5	\	< 5	\	< 5	< 5	< 5

lab	pC	DDM	DDE	DDS	24DAT	TMA	24X	25X	26X	TX	oAAT	oTol	oAAT+ oTol
3190	<5	<5	<5	<5	<5	<5	<5	-----	<5	-----	<5	<5	<5
3192	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3200	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
3209	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3210	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3214	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
3218	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
3222	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3228	ND	ND	ND	ND	ND	ND	ND	-----	ND	-----	ND	ND	-----
3237	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3248	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
8030	ND	ND	ND	ND	ND	ND	ND	N tested	ND	N tested	ND	ND	N tested

APPENDIX 3 Analytical details

lab	Laboratory accredited	Sample used as received or further grinded or cut	Sample intake in grams	Technique used to release/extract the analyte(s)
210	Yes	---		---
230	Yes	Further cut	0.5g	Mechanical Shaking
339	No	Used as received	1.0	Soxhlet
348	Yes	Further cut	1	PE-S-930-LABE-006: chlorobenzene reflux PE-S-930-LABE-005: citrate buffer solution at 70±2ºC
362	Yes	Used as received	1.0 g	Soxhlet
551	Yes	Further cut	1g	Soxhlet
622	Yes	Used as received	1 gram	Liebig Condensor
623	Yes	Further cut	1	Soxhlet
840	Yes	Further cut	0.5	Soxhlet
841	Yes	Used as received	1 gram	Water bath
2102	No	Used as received	1 gram	Soxhlet
2115	Yes	Used as received	1g	---
2129	Yes	Used as received	0,5 g	tert-Butyl-methyl-ether
2132	Yes	Further cut	0.5g	Ultrasonic
2138	Yes	Further cut	0.5 ~ 1 g	Soxhlet
2139	Yes	Used as received	0.503 g	Soxhlet
2165	Yes	Used as received	2g	---
2170	Yes	Used as received	0.9g	Reflux Condenser
2184	Yes	Used as received	2g	Soxhlet
2201	Yes	Used as received	0.5g	
2213	---	---		---
2218	No	Further cut		Mechanical Shaking
2232	Yes	Further cut	1g	
2236	---	---		---
2238	Yes	Used as received	1g	ASE
2247	Yes	Further cut	1 to 2 gram	Soxhlet
2250	Yes	Used as received	0,5	according to 14362-1
2255	Yes	Used as received	0.6	
2256	Yes	Further cut	1.0 21550 - 0.5038	ASE
2258	Yes	Used as received	21551 - 0.5016	Ultrasonic
2265	Yes	Used as received	0,5g	Ultrasonic
2271	Yes	Further cut	0.5g	extraction apparatus
2286	No	Further cut	0.5g	Soxhlet
2289	Yes	Further cut	1.0g	
2290	Yes	---		---
2291	Yes	Used as received	0.500g	
2293	---	---		---
2295	Yes	Further cut	1 gram	Ultrasonic
2297	Yes	Used as received	1g	Soxhlet
2301	Yes	Further cut	1 gram	Soxhlet
2310	Yes	Used as received	1	ASE
2311	Yes	Further cut	0.5	Reduction by Sodium Dithionite
2313	Yes	Further cut	1.0g	
2314	Yes	Further cut	O.5 GM	Mechanical Shaking
2320	Yes	Further cut	0.5g	Mechanical Shaking
2330	Yes	Used as received	0.50 g	Soxhlet
2347	Yes	Further cut	1.0g	---
2350	Yes	Used as received	0.5086 g	Soxhlet
2352	Yes	Further cut	0.5g	
2357	---	---		---
2358	Yes	Further cut	1 g	Ultrasonic
2364	Yes	#21550 further cutting	#21550: 0.5065g #21551: 0.5004g	Soxhlet
2365	Yes	Used as received	0.5g	Mechanical Shaking
2366	Yes	Further cut	1	
2367	Yes	Used as received	0.5	
2370	Yes	Further cut	0.5 g	Mechanical Shaking
2372	No	Further cut	1g	Ultrasonic
2373	Yes	Further cut	0.5	Soxhlet
2375	Yes	Further cut	1 g	
2378	Yes	Used as received	0.5g	
2379	Yes	Further cut	1 g	---
2380	Yes	Used as received	0.5 g	
2381	Yes	Further cut	0.5gm	Mechanical Shaking
2382	Yes	Used as received	0.5g	Mechanical Shaking
2386	Yes	Used as received	0,5 g	Extraction according to EN 14326-1
2390	Yes	Further cut	#21550: 0.5g #21551 1g	Mechanical Shaking
2406	Yes	Used as received	1 gram	Soxhlet
2425	Yes	Further cut	0.5 g	Mechanical Shaking
2426	Yes	Further cut	Approx 0.5 gram	Mechanical Shaking
2429	Yes	Used as received	0.6	Soxhlet

lab	Laboratory accredited	Sample used as received or further grinded or cut	Sample intake in grams	Technique used to release/extract the analyte(s)
2442	Yes	Further cut	# 21550 - 1.0042g # 21551 - 1.0054g	Soxhlet
2449	Yes	Further cut	1.0	Mechanical Shaking
2453	Yes	Used as received	±1g	Soxhlet
2456	Yes	Used as received	approximately 3g	Soxhlet
2459	Yes	Further cut	1.0g	Soxhlet
2472	Yes	Used as received	2g	ASE
2475	Yes	Used as received	0.5g	
2476	---	---	1gm	---
2486	Yes	Used as received	0.5501 g sample for 21550 0.5708 g sample for 21551	Mechanical Shaking
2489	Yes	Further cut	21550 - 0.5088; 21551 - 0.5009	Waterbath
2492	Yes	Further cut	0.2 - 0.5 g	Thermal Desorption
2495	Yes	Used as received	0.5g	Water bath @ 70°C
2501	Yes	Further cut	1g	Mechanical Shaking
2511	---	---		---
2514	Yes	Used as received	21550=0.2560 & 21551=0.3270	Thermal Desorption
2523	Yes	Further cut	1.0 g	The extraction apparatus is using the method/apparatus listed in ISO14362-1 8.1 Figure 1.
2528	Yes	Used as received	0.5grams	Soxhlet
2534	Yes	Used as received	(1 +/-0,01) g	Ultrasonic
2549	Yes	Used as received	0.5 grams	Soxhlet
2553	Yes	Further cut	1g	Mechanical Shaking
2560	Yes	Further cut	0.5 gm	Soxhlet
2561	Yes	Used as received	1	
2565	Yes	Further cut	1g	ASE
2567	Yes	Further cut	0.5 gm	Soxhlet
2569	Yes	Used as received	1 gm	Soxhlet
2572	Yes	---		---
2582	Yes	Further cut	0.60 g	Mechanical Shaking
2590	Yes	Used as received	1 G	Soxhlet
2591	Yes	Used as received	1.0 grams	Thermal Desorption
2605	Yes	Used as received	1.000	
2609	Yes	Used as received	1.00	Soxhlet
2618	Yes	Used as received	1.0 gm	Mechanical Shaking ISO 14362-1 Procedure:10.2(#21550)
2638	No	Used as received	1 gm	ISO 14362-1 Procedure:10.1 (#21551)
2643	No	Used as received	0.5 g	Soxhlet
2644	Yes	Used as received	2	Ultrasonic
2665	---	Used as received		
2668	Yes	Used as received	0.5 gms	Soxhlet
2674	Yes	Used as received	2.0g	Mechanical Shaking
2678	No	Further cut	0.5g	Thermal Desorption
2689	Yes	Further cut	0.5g	Soxhlet
2703	---	---		---
2719	Yes	Further cut	0.5g	Soxhlet
2734	---	---		---
2741	Yes	Further cut	0.5	---
2743	Yes	Used as received	0,7 g	Soxhlet
2773	Yes	Further cut	1.0005g	Soxhlet
2789	Yes	Used as received	1	thermal bath
2798	Yes	Used as received	0.5	Mechanical Shaking
2823	Yes	Used as received		Soxhlet
2826	Yes	Used as received	1 g	Ultrasonic
2827	Yes	Further cut	0.5g	Soxhlet
2829	No	Further cut	1.0 g	
2864	Yes	Used as received	0.5 g	Soxhlet
2866	Yes	Used as received	1	---
2867	Yes	Used as received	1g	Heating block
2892	Yes	Used as received	1g	
2948	---	---	1	---
2953	No	Further cut	1g	Water bath - 70°C
2955	Yes	Used as received	0.6	
2959	Yes	Used as received	1g	Mechanical Shaking
2960	Yes	Used as received	2.5g	Soxhlet
3110	---	---		---
3116	Yes	Used as received	1 grams	# 21550: Buffer extraction and reductive cleavage in water bath, followed by liquid-liquid extraction using Diatomaceous Earth column. # 21551, extra xylene reflux before the buffer extraction.
3118	Yes	Further cut	0.5	Reflux
3134	No	Used as received	Soxhlet	
3149	Yes	Further cut	1 g	Soxhlet
3153	Yes	Further cut	0.5g	Heating water bath at 70°C

lab	Laboratory accredited	Sample used as received or further grinded or cut	Sample intake in grams	Technique used to release/extract the analyte(s)
3154	Yes	Used as received	---	
3160	Yes	Further cut	0.7	Soxhlet
3172	Yes	---		---
3176	Yes	Further cut	1	Water Bath
3182	Yes	Used as received	About 1 gram	Soxhlet
3185	Yes	Further cut	1g	
3190	Yes	Used as received	1g	SPE
3192	---	---		---
3200	Yes	Used as received	Mechanical Shaking	
3209	Yes	Further cut	1g	
3210	Yes	Used as received	1g	Thermal Desorption
3214	Yes	Further cut	1 gram	Ultrasonic
3218	Yes	Used as received	0.5g	water bath
3222	Yes	Used as received	0,8 g	Soxhlet extraction of dyes from polyester, heating bath for extraction/reduction
3228	Yes	Used as received	3	heating block
3237	Yes	Further cut	0,5 gr	extraction with water bath and diatomaceous earth column for 20550 soxhlet and without diatomaceous earth column for 20551
3248	Yes	Further cut	0.5g	Soxhlet
8030	Yes	Further cut	1 g	---

Analytical details continued

lab	Solvent used for release	Extraction time in minutes	Extraction temperature in °C	ISO14362-1 chapter 10.4 or Annex E followed	Use of diatomaceous earth column?
210					---
230	sodium dithionite, ethyl acetate	60	70	Annex E	No
339	EN14362-1	EN14362-1	EN14362-1	Annex E	No
348	PE-S-930-LABE-006: chlorobenzene, PE-S-930-LABE-005: citrate buffer sol	60 min, 30 min	PE-S-930-LABE-006: reflux, PE-S-930-LABE-005: 70±2ºC	Different	
362	n-Hexane	40 min		Chapter 10.4	Yes
551	Xylene		70	Annex E	No
622	Xylene	40 min		Chapter 10.4	Yes
623	Xylene	40 min		Annex E	No
840	xylene	40	<200	Annex E	No
841	15ml Citrate buffer	30 min	70°C	Annex E	No
2102	Xylene	40	Boiling	Different	
2115				Chapter 10.4	Yes
2129	#21551: Xylene	#21551: 60 min	#21551: 280°C	Different	
2132	#21550: Citric buffer #21551: Citric buffer	30mins	70°C	Chapter 10.4	Yes
2138	Xylene	40 min	over Xylene boiling point	Chapter 10.4	Yes
2139	Xylene	45 min	Boiling xylene	Annex E	No
2165	xylene	30 min	Boiling point		---
2170	Xylene	@40 min	@100C	Chapter 10.4	Yes
2184	xylene	1 hr	Boiling point of xylene	Chapter 10.4	Yes
2201	#21551 Colourant extraction with Xylene #21550 Direct buffer extraction	Reductive separation 30min+30min	70 degrees	Chapter 10.4	Yes
2213					---
2218	Xylene	30	70	Chapter 10.4	Yes
2232	sodium dithionite in a citrate buffer aqueous solution.	60min	70 degrees	Chapter 10.4	Yes
2236					---
2238	t-butyl methyl ether	30min	70	Chapter 10.4	Yes
2247	Xylene	approx 30 min	>140°C	Chapter 10.4	Yes
2250	Methyl-tert. butylether	30	70	Chapter 10.4	Yes
2255	Xylene & t-BME	60	70	Chapter 10.4	Yes
2256	xylene extraction & citrate buffer	40mins & 30mins	boiling & 70℃	Chapter 10.4	Yes
2258	MTBE,XILENE,METHANOL Sodium dithionite NaOH Citrate/sodium hydoxide	60	70	Different	
2265	MeOH TBME	2x 30min.	70°C	Chapter 10.4	Yes
2271	xylene	40min	boiling xylene	Chapter 10.4	Yes
2286	xylene	Until solvent dripping from	Over 150°C	Chapter 10.4	Yes

lab	Solvent used for release	Extraction time in minutes	Extraction temperature in °C	ISO14362-1 chapter 10.4 or Annex E followed	Use of diatomaceous earth column?
		test piece becomes colorless.			
2289	Xylene	30min	70°C	Chapter 10.4	Yes
2290					---
2291	#21551: xylene	50min for #21551	/	Chapter 10.4	Yes
2293					---
2295	TBME/dithionite	60	70	Chapter 10.4	Yes
2297	xylene	30min		Chapter 10.4	Yes
2301	Citric buffer & sodium dithionite	1 hour	70c	Chapter 10.4	Yes
2310	t-butylmethylether	50	70	Chapter 10.4	Yes
2311	Reduction by Sodium Dithionite prepared in water	30	70	Chapter 10.4	Yes
2313	Tertiary butyl methyl ether	60 min	70 degree	Chapter 10.4	Yes
2314	TBME	75 MTS	70 DEC	Chapter 10.4	Yes
2320	Ethyl Acetate	15min	70°C	Annex E	No
2330	Xylene	30 min	70 °C	Annex E	No
2347	Ethyl acetate	30min	70℃		---
2350	Chlorobenzene	30 min		Chapter 10.4	Yes
2352	xylene	60min	<200°C	Chapter 10.4	Yes
2357					---
2358	Xylene	40 min	N/A	Chapter 10.4	Yes
2364	MTBE	50min	below 45 ℃	Chapter 10.4	Yes
2365	Ethyl acetate	15min	25	Annex E	No
2366	buffer solution	30	70	Chapter 10.4	Yes
2367	methyl tert-Butyl Ether	<50 min	/	Chapter 10.4	Yes
2370	CAN	60 min	70 ℃	Chapter 10.4	Yes
2372	Xylene	30	70	Chapter 10.4	Yes
2373	MTBE	50min	45°C	Chapter 10.4	Yes
2375	Xylene	120 min	70 °C	Annex E	No
2378	Xylene	60min	160 °C	Chapter 10.4	Yes
2379	-	-	-	Annex E	No
2380	Xylene	40 Min	Less than 200°C	Annex E	No
2381				Annex E	No
2382	methanol ethylacetate dimethylbenlene	60min	70°C	Chapter 10.4	Yes
2386	MtBE and Xylol	2* 30min	70°C	Different	
2390	ethyl acetate	15	70	Annex E	No
2406	Xylene	40 min	Reflux temp.	Annex E	No
2425	Methanol	2 hours	70° C	Annex E	No
2426	Citrate Buffer pH = 6, sodium dithionite, & t-BME	75 min	70+/-2C	Chapter 10.4	Yes
2429	T-butyl methyl ether	60	70	Annex E	No
2442	Xylene	40 min	(60 ± 2) °C		Yes
2449	Ethyl acetate	30 min	70	Annex E	No
2453				Chapter 10.4	Yes
2456	Xylene isomers mixture	30 min	Reflux temp	Chapter 10.4	Yes
2459	Tertiary butyl methyl ether	60min	70	Chapter 10.4	Yes
2472	citrate buffer sol+aqueous sodium dithionite sol	30min	70	Chapter 10.4	Yes
2475				Chapter 10.4	Yes
2476	TERT-Butyne methyl ether	40min	181		---
2486	Tert- Butyl Methyl Ether	200 min	70°C	Chapter 10.4	Yes
2489	Tertiary butyl methyl ether	60 min	70°C	Chapter 10.4	Yes
2492	buffer pH 6.0	30 min	70 °C	Chapter 10.4	Yes
2495	Buffer citrate and ditionite sol	30min without ditionite sol and 30min with diotionite sol	70°C	Chapter 10.4	Yes
2501	xylene	about 40 min	70°C	Chapter 10.4	Yes
2511					---
2514	Xylene/TBME	60 min	70°C	Chapter 10.4	Yes
2523	Xylene (CAS No.: 1330-20-7)	#21550: >40 min ;#21551: 40 min	140°C	Chapter 10.4	Yes
2528	xylene	30min		Chapter 10.4	Yes
2534	Ethere	30+30 min	70°C	Chapter 10.4	Yes
2549	Xylene	30 min	Boiling temperature	Chapter 10.4	Yes
2553	MTBE	30 min	70	Chapter 10.4	Yes
2560	Xylene	60 min	70 °C	Annex E	No
2561	xylene reflux	xylene extraction = 40 mins ph 6 citrate buffer	citrate extraction = 70 oC	Annex E	No

lab	Solvent used for release	Extraction time in minutes	Extraction temperature in °C	ISO14362-1 chapter 10.4 or Annex E followed	Use of diatomaceous earth column?
		extraction = 60 mins total			
2565	Buffer solution	30 min	70°C	Chapter 10.4	Yes
2567	Buffer	30 min	70°C	Chapter 10.4	Yes
2569	xylene	2 hrs	70 °C		---
2572					---
2582	Citric Buffer	30	70	Annex E	No
2590	Xylene + buffer citric acid/sodium hydroxide	40 min soxhlet + 60 min buffer extraction	70°C	Different	
2591	Reflux Extraction: xylene Reduction of arylamines: buffer solution	Reflux Extr:40 min Reduction of arylamines:30 + 30 min	Reflux Extraction 170 ºC Reduction of arylamines 70 ºC	Chapter 10.4	Yes
2605	/	/	/	Chapter 10.4	Yes
2609	Chlorobenzene	30min	Reflux	Chapter 10.4	Yes
2618	Methyl tert-butyl ether	60 min	70 °C	Annex E	No
2638	xylene	30 min	above 100 C	Chapter 10.4	Yes
2643	Monoclorobenzene	20 min		Chapter 10.4	Yes
2644	MTBE	30	70	Chapter 10.4	Yes
2665					---
2668	Xylene	30 min	70C	Chapter 10.4	Yes
2674	xylene	30min	70°C	Annex E	No
2678	Ethylacetate	30min+30min	70°C		---
2689	m-xylene	60mins	132℃	Annex E	No
2703					---
2719	Tert-Butyl Methyl Ether	N/A	N/A	Chapter 10.4	Yes
2734					---
2741				Chapter 10.4	Yes
2743	TBME	40 min soxhlet extraction, 30 min buffer heating.	70 °C	Chapter 10.4	Yes
2773	XYLINE	30 Minutes.	70°C	Chapter 10.4	Yes
2789	MTBE	30	70	Chapter 10.4	Yes
2798	MTBE	15min	room temperature	Annex E	No
2823	Xylene	40 min	225	Chapter 10.4	Yes
2826	Citrate / Sodium hydroxide sol	30 + /- 1 mins	70 + /- 2 oC	Chapter 10.4	Yes
2827	Xylene	40 mins	70°C	Chapter 10.4	Yes
2829	Extraction with boiling xylene	20 min	140 °C	Chapter 10.4	Yes
2864	Xylene	40	139 °C	Annex E	No
2866				Different	
2867	Xylene	60min	132°C	Chapter 10.4	Yes
2892	Xylenen/t-BME	30/30/30	70	Annex E	No
2948	Buffer+sodiumdithionite	30	60		---
2953	Citric acid buffer	60min	70°C	Chapter 10.4	Yes
2955	Xylene & t-BME	60	70	Chapter 10.4	Yes
2959	MTBE	15	70	Chapter 10.4	Yes
2960	xylene	40min	70℃	Chapter 10.4	Yes
3110					---
3116	Buffer followed by MBTE	30 min	70°C	Chapter 10.4	Yes
3118	xylene	40 min or until solvent drops from the specimen are colourless		Chapter 10.4	Yes
3134	Chloroform and xylene	approx 90 min	boiling temperature of dichlromethane and xylene	Chapter 10.4	Yes
3149	Xylol	40 min		Chapter 10.4	Yes
3153	Citrate / Sodium hydroxide buffer solution	30 min plus 30 min after adding reducing agent	70°C	Chapter 10.4	Yes
3154					---
3160	xilene and chlorobenzene	40	Not controlled	Chapter 10.4	Yes
3172					---
3176	Citric Acid, Sodium Hydroxide, Sodium Dithionite	60	70	Chapter 10.4	Yes
3182	Xylene	40 min	70°C	Chapter 10.4	Yes
3185	\	\	\	Chapter 10.4	Yes
3190	/	/	/	Chapter 10.4	Yes
3192					---
3200				Chapter 10.4	Yes

lab	Solvent used for release	Extraction time in minutes	Extraction temperature in °C	ISO14362-1 chapter 10.4 or Annex E followed	Use of diatomaceous earth column?
3209	ISO 14362-1:2017	60min	70℃	Chapter 10.4	Yes
3210	tampon pH 7	60 min	70°C	Chapter 10.4	Yes
3214	Citrate / Sodium Hydroxide buffer sol	30 mins	70	Chapter 10.4	Yes
3218	Citrate/sodium hydroxide buffer sol	60min	70°C	Chapter 10.4	Yes
3222	xylene for extraction of dyes from polyester, then extraction/reduction with buffer solution pH 6 and sodium hydrosulphite	30 min xylene extr, 60 min extr/reduction	70°C	Chapter 10.4	Yes
3228	m-xylene	60	130	Chapter 10.4	Yes
3237	buffer strat	60 min	70	Chapter 10.4	#21550: Yes; #21551: No
3248	Xylene	30 min	NA	Chapter 10.4	Yes
8030	-	-	-	Chapter 10.4	Yes

APPENDIX 4

Number of participants per country

10 labs in BANGLADESH
1 lab in BRAZIL
1 lab in BULGARIA
2 labs in CAMBODIA
1 lab in EGYPT
3 labs in FRANCE
9 labs in GERMANY
1 lab in GREECE
2 labs in GUATEMALA
11 labs in HONG KONG
12 labs in INDIA
4 labs in INDONESIA
12 labs in ITALY
2 labs in JAPAN
1 lab in MAURITIUS
1 lab in MOROCCO
36 labs in P.R. of CHINA
6 labs in PAKISTAN
1 lab in PORTUGAL
2 labs in SINGAPORE
4 labs in SOUTH KOREA
4 labs in SPAIN
3 labs in SRI LANKA
5 labs in TAIWAN
3 labs in THAILAND
1 lab in THE NETHERLANDS
2 labs in TUNISIA
4 labs in TURKEY
1 lab in U.S.A.
3 labs in UNITED KINGDOM
7 labs in VIETNAM

APPENDIX 5

Abbreviations

C	= final test result after checking of first reported suspect test result
D(0.01)	= outlier in Dixon's outlier test
D(0.05)	= straggler in Dixon's outlier test
G(0.01)	= outlier in Grubbs' outlier test
G(0.05)	= straggler in Grubbs' outlier test
DG(0.01)	= outlier in Double Grubbs' outlier test
DG(0.05)	= straggler in Double Grubbs' outlier test
R(0.01)	= outlier in Rosner's outlier test
R(0.05)	= straggler in Rosner's outlier test
E	= 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
SDS	= Safety Data Sheet

Literature

1 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, 76, 926, (1993)
6 W.J. Youden and E.H. Steiner, Statistical Manual of the AOAC, (1975)
7 P.L. Davies, Fr. Z. Anal. Chem, 331, 513, (1988)
8 J.N. Miller, Analyst, 118, 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, 127, 1359-1364 (2002)
11 W. Horwitz and R. Albert, J. AOAC Int, 79, 3, 589-621, (1996)
12 Bernard Rosner, Percentage Points for a Generalized ESD Many-Outlier Procedure, Technometrics, 25(2), 165-172, (1983)