

Institute for Interlaboratory Studies

> Results of Proficiency Test Free and Released Formaldehyde in Textile November 2023

Organized by: Institute for Interlaboratory Studies Spijkenisse, the Netherlands

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1 INTRODUCTION

Since 2003 the Institute for Interlaboratory Studies (iis) organizes a proficiency scheme for the determination of Free and Released Formaldehyde in Textile every year. During the annual proficiency testing program of 2023 it was decided to continue the proficiency test for the determination of Free and Released Formaldehyde in Textile.

In this interlaboratory study 144 laboratories in 29 countries registered for participation, see appendix 3 for the number of participants per country. In this report the results of the Free and Released Formaldehyde 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 a laboratory that has performed the tests in accordance with for ISO/IEC17043 relevant requirements of ISO/IEC17025.

It was decided to send two different textile samples of 5 grams each labelled #23750 and #23751 respectively.

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

2.1 QUALITY SYSTEM

The Institute for Interlaboratory Studies in Spijkenisse, the Netherlands, has implemented a quality system based on ISO/IEC17043:2010. 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.

2.4 SAMPLES

For the first sample a batch of pink cotton was selected, which contains Formaldehyde. After homogenization 200 small plastic bags were filled with approximately 5 grams each and labelled #23750. Each subsample was wrapped in aluminum foil and packed again in a small plastic bag.

The homogeneity of the subsamples was checked by the determination of Free Formaldehyde in accordance with ISO14184-1 on 8 stratified randomly selected subsamples.

	Free Formaldehyde in mg/kg
sample #23750-1	27.61
sample #23750-2	27.60
sample #23750-3	27.16
sample #23750-4	27.65
sample #23750-5	27.74
sample #23750-6	27.72
sample #23750-7	27.05
sample #23750-8	27.68

Table 1: homogeneity test results of subsamples #23750

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

	Free Formaldehyde in mg/kg
r (observed)	0.75
reference method	Horwitz
0.3 x R (reference method)	2.25

Table 2: evaluation of the repeatability of subsamples #23750

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

For the second sample a batch of grey cotton was selected, which contains Formaldehyde. After homogenization 200 small plastic bags were filled with approximately 5 grams each and labelled #23751. Each subsample was wrapped in aluminum foil and packed again in a small plastic bag.

The homogeneity of the subsamples was checked by the determination of Free Formaldehyde in accordance with ISO14184-1 on 6 stratified randomly selected subsamples.

	Free Formaldehyde in mg/kg
sample #23751-1	91.60
sample #23751-2	93.60
sample #23751-3	94.31
sample #23751-4	97.06
sample #23751-5	94.80
sample #23751-6	93.40

Table 3: homogeneity test results of subsamples #23751

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

	Free Formaldehyde in mg/kg
r (observed)	5.1
reference method	Horwitz
0.3 x R (reference method)	6.4

Table 4: evaluation of the repeatability of subsamples #23751

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

To each of the participating laboratories two textile samples labelled #23750 and #23751 respectively were sent on October 4, 2023.

2.5 ANALYZES

The participants were requested to determine Free and Released Formaldehyde on both PT samples.

To ensure homogeneity it was requested not to use less than 0.5 gram per determination. It was also requested to report if the laboratory was accredited for the determined 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/. 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 the original test results are placed under 'Remarks' in the 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.

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 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, 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 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:

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

4 EVALUATION

In this proficiency test no problems were encountered with the dispatch of the samples. Six participants reported test results after the final reporting date and one other participant did not report any test results. Not all participants were able to report all parameters requested.

In total 143 participants reported 424 numerical test results. Observed were 5 outlying test results, which is 1.2%. 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 sets should be used with due care, see also paragraph 3.1.

4.1 EVALUATION PER SAMPLE AND PER TEST

In this section the reported test results are discussed per sample and per test. The test methods which 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 in appendix 1. The abbreviations, used in these tables, are explained in appendix 4.

The method for determination of the Free Formaldehyde is specified in the Standards of the Ecolabelling Institutes. It should be noted that ISO14184-1 corresponds to the Japanese method specified in the Japanese Law 112 and is described in the Japanese Standard JIS L1096. In test methods ISO14184-1:11 and ISO14184-2:11 some information on precision data is given. In table B.1 of ISO14184-1 and table C.2 of ISO14184-2 precision values are mentioned but obtained by (slightly) different methods than mentioned in both ISO14184 methods. Therefore, it was concluded that reliable reproducibility data cannot be obtained from test methods ISO14184-1 and -2:11. Therefore, the calculated reproducibility was compared against the estimated reproducibility calculated with the Horwitz equation.

sample #23750

<u>Free Formaldehyde</u>: The group of participants met the target requirements. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the estimated reproducibility calculated with the Horwitz equation.

<u>Released Formaldehyde</u>: The group of participants met the target requirements. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the estimated reproducibility calculated with the Horwitz equation.

sample #23751

<u>Free Formaldehyde</u>: The group of participants met the target requirements. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the estimated reproducibility calculated with the Horwitz equation.

<u>Released Formaldehyde</u>: The group of participants met the target requirements. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the estimated reproducibility calculated with the Horwitz equation.

4.2 **PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES**

A comparison has been made between the reproducibility as declared by the estimated reproducibility calculated with the Horwitz equation 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 the reference method are presented in the next table.

Component	unit	n	average	2.8 * sd	R(target)
Free Formaldehyde	mg/kg	141	97.4	18.6	21.9
Released Formaldehyde	mg/kg	68	140.4	21.3	29.9

 Table 5: reproducibilities of tests on sample #23750

Component	unit	n	average	2.8 * sd	R(target)
Free Formaldehyde	mg/kg	142	61.5	12.9	14.8
Released Formaldehyde	mg/kg	68	97.9	19.9	22.0

Table 6: reproducibilities of tests on sample #23751

Without further statistical calculations it can be concluded that for all tests there is a good compliance of the group of participants with the reference method.

4.3 COMPARISON OF THE PROFICIENCY TEST OF NOVEMBER 2023 WITH PREVIOUS PTS

	November 2023	November 2022	November 2021	November 2020	November 2019
Number of reporting laboratories	143	151	183	174	183
Number of test results	424	437	529	705	489
Number of statistical outliers	5	6	12	15	11
Percentage of statistical outliers	1.2%	1.4%	2.3%	2.1%	2.2%

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 test was compared to uncertainties observed in iis PTs over the years, expressed as relative standard deviation (RSD) of the PTs, see next table.

	November 2023	November 2022	November 2021	November 2020	2019 - 2013
Free Formaldehyde	7-8%	8%	7%	6-9%	7-13%
Released Formaldehyde	5-7%	6-7%	8-9%	8-10%	7-22%

Table 8: development of the uncertainties over the years

The uncertainties observed in this PT for Free and Released Formaldehyde are comparable to the uncertainties observed in previous iis PTs.

4.4 EVALUATION OF THE ANALYTICAL DETAILS

For this PT some analytical details were requested which are listed in appendix 2. Based on the answers given by the participants the following can be summarized:

- 90% of the participants mentioned that they are ISO/IEC17025 accredited to determine the reported component(s).
- 79% used approximately 1 grams of sample intake for the Free Formaldehyde determination and 91% used approximately 1 grams of sample intake for the Released Formaldehyde determination.
- About 65% did not confirm the Formaldehyde test result with the Dimedone test.

No further sub analysis is performed because all observed reproducibilities are in line with the target reproducibilities.

5 DISCUSSION

In this PT, the average of the homogeneity test results is not in line with the average (consensus value) from the PT results. There are several reasons for this. First, the goal of the homogeneity testing is very different from the goal of the evaluation of the reported PT results. In order to prove the homogeneity of the PT samples, a test method is selected with a high precision (smallest variation). The accuracy (trueness) of the test method is less relevant.

Secondly, the homogeneity testing is done by one laboratory only. The test results of this ISO/IEC17025 accredited laboratory will have a bias (systematic deviation) depending on the test method used. The desire to detect small variations between the PT samples leads to the use of a sensitive test method with high precision, which may be a test method with significant bias.

Also, each test result reported by the laboratories that participate in the PT will have a bias. However, some will have a positive bias and others a negative bias. These different biases compensate each other in the PT average (consensus value). Therefore, the PT consensus value may deviate from the average of the homogeneity test. At the same time the accuracy of the PT consensus value is more reliable than the accuracy of the average of the results of the homogeneity test.

All reporting participants were able to identify Free and Released Formaldehyde in the textile samples.

When the results of this interlaboratory study were compared to the Ecolabelling Standards and Requirements for Textiles in EU and with the similar Bluesign® RSL in the table below, 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
Oeko-Tex® 100	<16 mg/kg	<75 mg/kg	<150 mg/kg
Bluesign® RSL	<15 mg/kg	<75 mg/kg	<300 mg/kg

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

sample #23750

For the category "baby clothes" all reporting laboratories would have rejected the sample. For the category "in direct skin contact" all reporting laboratories would have rejected the sample for Free and Released Formaldehyde, except one participant for Free Formaldehyde. For the category "no direct skin contact" all reporting laboratories would have accepted the sample for Free Formaldehyde. For Released Formaldehyde all reporting laboratories except five would have accepted the sample. These five laboratories would have rejected the sample for Released Formaldehyde based on Oeko-Tex®100.

sample #23751

For the category "baby clothes" all reporting laboratories would have rejected the sample. For the category "in direct skin contact" all reporting laboratories except one would have accepted the sample for Free Formaldehyde. All laboratories would have rejected the sample for Released Formaldehyde.

For the category "no direct skin contact" all reporting laboratories would have accepted the sample.

6 CONCLUSION

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 Free Formaldehyde on sample #23750; results in mg/kg

201011		·			izeree, recate in highty
lab	method	value	mark	z(targ)	remarks
110	ISO14184-1	116.8		2.48	
210	ISO14184-1	85 92		-1 47	
220	10014104 1	102.7		0.60	
339	15014164-1	102.7		0.00	
362	ISO14184-1	96.87		-0.07	
523	ISO14184-1	119.5		2.82	
551	ISO14184-1	91.57		-0.75	
623	1501/18/-1	00.8		_0.84	
023		400.0		-0.04	
624	15014184-1	100.3		0.37	
840	ISO14184-1	94.4		-0.38	
2108	ISO14184-1	92		-0.69	
2115	ISO14184-1	90.63		-0.87	
2110		00.00	0	0.07	First reported 100 F
2121	13014104-1	90	C	0.00	First reported 122.5
2129	ISO14184-1	84.62		-1.63	
2132	ISO14184-1	99.2443		0.23	
2137	ISO14184-1	102.6		0.66	
2138	1501/18/-1	0/ 8		-0.33	
2100		94.0		-0.00	
2165	15014184-1	98.000		0.16	
2170	ISO14184-1	99.52		0.27	
2182	ISO14184-1	91.35		-0.77	
2184	ISO14184-1	102.2		0.61	
2201	1501/18/-1	00 /		0.25	
2201	10014104-1	400.05		0.20	
2220	15014184-1	100.65		0.41	
2238	ISO14184-1	90.42		-0.89	
2247	ISO14184-1	99.62		0.28	
2255	15014184-1	98 7		0 17	
2255		02 52		0.17	
2250	15014164-1	93.55		-0.50	
2264	GB/12912	81.78		-2.00	
2265	ISO14184-1	95.519		-0.24	
2269	ISO14184-1	82 86		-1 86	
2200		05.00		0.07	
2275	13014104-1	95.5		-0.27	
2289	ISO14184-1	104.2		0.87	
2290	ISO14184-1	93.5		-0.50	
2297	ISO14184-1	90		-0.95	
2310	ISO14184-1	98		0.08	
2010		00 00		0.00	
2311	15014184-1	98.03		0.08	
2313	ISO14184-1	99.81		0.31	
2314	JIS 1041A	96.31		-0.14	
2320	ISO14184-1	107 3		1 26	
2326	ISO14184-1	03 377		_0.52	
2320	10014104-1	93.377		-0.52	
2330	15014184-1	93.58		-0.49	
2347	ISO14184-1	96.0		-0.18	
2348	ISO14184-1	100.8		0.43	
2350	ISO14184-1	97 27		-0.02	
2351	1901/18/ 1	102		0.50	
2331	13014104-1	102		0.09	
2356	15014184-1	94.38		-0.39	
2358	ISO14184-1	96.501		-0.12	
2363	ISO14184-1	96.2		-0.15	
2364	ISO14184-1	100.30		0.37	
2365	19014184 1	05.8		0.07	
2000		33.0		-0.21	
2366	ISO14184-1	96		-0.18	
2367	ISO14184-1	100.50		0.40	
2369	ISO14184-1	96.08		-0.17	
2370	ISO14184-1	96 50		-0 12	
2272	1501/18/-1	85 /		_1 52	
2312		00.4		-1.00	
2373	ISO14184-1	98.19		0.10	
2375	ISO14184-1	99.2		0.23	
2378	ISO14184-1	96		-0.18	
2379	ISO14184-1	98 5270		0 14	
2010		04.0210		0.14	
2000	10014104-1	34.ZZ		-0.41	
2381	15014184-1	96.20		-0.15	
2383	GB/T2912	100.8		0.43	
2385	ISO14184-1	86.1		-1.45	
2406	ISO14184-1	98.31		0 12	
2/15	19014194 1	106.76		1 20	
2413	13014104-1	100.70		1.20	
2429	15014184-1	93.6		-0.49	
2442	ISO14184-1	97.97		0.07	
2449	ISO14184-1	95.91		-0.19	
2453	ISO14184-1	93.02		-0.56	
2455	1901/19/ 1	02.4		0.00	
2404	13014104-1	JZ.4		-0.04	
2458	15014184-1	95.67		-0.22	
2474	ISO14184-1	93.1		-0.55	
2475	ISO14184-1	95.66		-0.22	
2476	ISO14184-1	108.0		1 35	
2410	1901/19/ 1	97.94		1.00	
240/	101114104-1	0/01		-1 2.0	

-0.31

95.0

2483 ISO14184-1

lab	method	value	mark	z(targ)	remarks
2489	ISO14184-1	103.5		0.78	
2492	JIS L1041	98.68		0.16	
2494	ISO14184-1	115.78		2.35	
2504	ISO14184-1	90.961		-0.82	
2511	ISO14184-1	110.045		1.62	
2514	15014184-1	100		0.33	
2519	ISO14104-1 ISO14184-1	104.3		0.00	
2549	ISO14184-1	98.5		0.14	
2567	ISO14184-1	102.13		0.60	
2569	ISO14184-1	99.2		0.23	
2572	ISO14184-1	94.7		-0.35	
2582	ISO14184-1	92.7310		-0.60	
2590	ISO14184-1	96.44		-0.12	
2605	ISO14184-1	95.01	D(0.04)	-0.31	
2620	ISO14104-1 ISO14184-1	90.70 90.76	R(0.01)	-3.07	
2643	ISO14184-1	105 19		0.00	
2644	ISO14184-1	126.34	R(0.01)	3.70	
2665	In house	100.45	、 ,	0.39	
2674	ISO14184-1	99.19		0.23	
2678	ISO14184-1	102.51		0.65	
2726	ISO14184-1	97	0	-0.05	First way a start 70 A
2727	15014184-1	86.7	C	-1.37	First reported 76.4
2827	ISO14184-1	07.5 99.51		-1.29	
2885	ISO14184-1	95.65		-0.22	
2908	ISO14184-1	116.32	С	2.42	First reported 71.11
2921	JIS L1041	84.7		-1.62	
2926	ISO14184-1	93.25		-0.53	
2933	CNS15580-1	96.26		-0.15	
2948	ISO14184-1	110.25		1.64	
2950	ISO14184-1	102.48		0.65	
2900	15014184-1	99.Z 08.56		0.23	
2971	ISO14184-1	90.50		-0.33	
2989					
2991	GB/T2912	100.1	С	0.34	First reported 122.2
3015	ISO14184-1	91.1		-0.81	
3033	ISO14184-1	105.321		1.01	
3110	ISO14184-1	94.0		-0.44	
3116	ISO14184-1	98.4		0.13	
3118	15014184-1	104.01		0.84	
3145	ISO14184-1	99.9 90.19		-0.92	
3153	ISO14184-1	97.67		0.02	
3163	ISO14184-1	84		-1.71	
3166	In house	92.02		-0.69	
3172	ISO14184-1	100.33		0.37	
3182	ISO14184-1	102.81		0.69	
3185	15014184-1	92.46		-0.63	
3190	ISO14104-1	90.02		-0.10	
3200	ISO14184-1	105 30		1 01	
3207	JIS L1041	98		0.08	
3210	In house	85.16		-1.57	
3214	ISO14184-1	93.23		-0.53	
3216	ISO14184-1	89.05	С	-1.07	First reported 132.1
3222	ISO14184-1	103.5		0.78	
3223	15014184-1	101.63		0.54	
3230	ISO14184-1	99 05		0.20	
3232	ISO14184-1	114.15		2.14	
3237	ISO14184-1	103.1		0.73	
3248	GB/T2912	101	С	0.46	First reported 71
6191	In house	105.42		1.02	
8005	ST2016	98.1		0.09	
8008	JIS SI1.6	93.4		-0.51	
8016	15014184-1	92.40		-0.64	
	normality	suspect			
	n	141			
	outliers	2			
	mean (n)	97.406			
	st.dev. (n)	6.6476	RSD = 7%		
	K(calc.)	18.613			
	R(Horwitz)	21 905			





Determination of Released Formaldehyde on sample #23750; results in mg/kg

lab	method	value	mark	z(targ)	remarks
110	ISO14184-2	161.7	marin	1 00	
210	10014104-2				
339					
362					
523					
551					
623	ISO14184-2	130.9		-0.89	
624					
840	ISO14184-2	129.3		-1 04	
2108					
2115	ISO14184-2	144.12		0.35	
2121					
2129					
2132	ISO14184-2	146.1149		0.53	
2137					
2138					
2165	ISO14184-2	139.50		-0.09	
2170					
2182					
2184					
2201	ISO14184-2	140.0		-0.04	
2226					
2238	ISO14184-2	146.56		0.57	
2247					
2255					
2256					
2264					
2265					
2269					
2275	ISO14184-2	146.0		0.52	
2289	ISO14184-2	148.4		0.75	
2290	100///0/0				
2297	ISO14184-2	150		0.90	
2310	ISO14184-2	139		-0.13	
2311	15014184-2	139.7		-0.07	
2313	15014184-2	133.44		-0.05	
2314		136.74		-0.35	
2320	15014184-2	153.3		1.21	
2320	ISO14184-2	120.009		-1.29	
2330	ISO14164-2 ргос. аппех в	142.73		0.22	
2347	15014104-2	130.3		-0.20	
2340	13014104-2 AATCC112	143.1	C	0.25	First reported 285.25
2350	ISO14184 2	142.02	C	0.21	First reported 200.20
2356	ISO14184-2	144		0.33	
2350	15014104-2	142.10		0.10	
2363	ISO14104-2 ISO14184-2	140 4		0.47	
2364	ISO14184-2	146 51		0.00	
2365	ISO14184-2	140.01		-0.03	
2366	ISO14184-2	140.1		-0.04	
2367	ISO14184-2	143 03		0.24	
2369	ISO14184-2	138 42		-0.19	
2370	ISO14184-2	133.0		-0.70	
2372	ISO14184-2	121		-1.82	
2373	ISO14184-2	143.49		0.29	
2375	ISO14184-2	137.3		-0.29	
2378	ISO14184-2	138		-0.23	
2379	ISO14184-2	144.0585		0.34	
2380	ISO14184-2	148.00		0.71	
2381	ISO14184-2	145.90		0.51	
2383	GB/T2912	147.2		0.63	
2385					
2406	ISO14184-2	112.15	R(0.05)	-2.65	
2415	ISO14184-2	129.3		-1.04	
2429	ISO14184-2	150.6		0.95	
2442	ISO14184-2	144.55		0.39	
2449	ISO14184-2	142.12		0.16	
2453					
2454	ISO14184-2	136.3		-0.39	
2458					
2474	ISO14184-2	145.8		0.50	
2475					
2476					
2482					
2483					

lab	method	value	mark a	z(targ)	remarks
2489	ISO14184-2	141.7		0.12	Tomano
2492					
2494	ISO14184-2	136.77	С	-0.34	First reported 167.37
2504	ISO14184-2	128.907		-1.08	•
2511					
2514					
2519					
2534					
2549	ISO14184-2	130.2		-0.96	
2567					
2569	ISO14184-2	140		-0.04	
2572					
2582	ISO14184-2	123.8266		-1.56	
2590					
2605	ISO14184-2	140.00		-0.04	
2625	ISO14184-2	125.29		-1.42	
2638	ISO14184-2	140.975		0.05	
2643	ISO14184-2	145.94		0.52	
2644					
2665					
2674					
2678					
2726					
2727					
2789					
2827	ISO14184-2	137.52		-0.27	
2885					
2908					
2921					
2926					
2933					
2948	ISO14184-2	134.26		-0.58	
2950					
2955					
2971	ISO14184-2	140.21		-0.02	
2977					
2989					
2991	10011101 0				
3015	15014184-2	142.1		0.16	
2110					
2116					
3118					
3145					
3146					
3153					
3163					
3166					
3172					
3182	ISO14184-2	147.66		0.68	
3185	ISO14184-2	140.44		0.00	
3190	ISO14184-2	145.96		0.52	
3197	AATCC112	146.07		0.53	
3200					
3207					
3210					
3214					
3216					
3222					
3225					
3228	10011101 0	404.00	0	4.00	
323U	13014104-2	101.03	C	1.93	First reported 321.07
3232 2227	15014104-2	134.04		-0.54	
3231	CB/T2012	133.0	C	-0.70	First reported 85
6101	00/12912	145	C	0.24	r list reported 05
8005					
8008					
8016	ISO14184-2	135.00		-0.51	
	normality	OK			
	n	68			
	outliers	1			
	mean (n)	140.431	D 05		
	st.dev. (n)	1.5988	RSD = 5%		
	R(Calc.)	21.277			
	R(Horwitz)	29 889			
	· · · · · · · · · · · · · · · · · · ·	20.000			





Determination of Free Formaldehyde on sample #23751; results in mg/kg

lah	method	valuo	mark	z(tara)	romarks
110		77.03	IIIdi K	2 0/	Temarks
210	ISO14184-1	59.05		-0.46	
339	ISO14184-1	61.4		-0.01	
362	ISO14184-1	59.22		-0.42	
523	ISO14184-1	73.5		2.28	
551	ISO14184-1	58.589		-0.54	
623	ISO14184-1	60.9		-0.11	
624	ISO14184-1	62.9		0.27	
840	ISO14184-1	62.8		0.25	
2108	ISO14184-1	55		-1.22	
2115	ISO14184-1	50.91	0	-1.99	First we wanted ZE E
2121	15014184-1	66 56 50	C	0.86	First reported 75.5
2129	ISO14104-1	50.50 60.6725		-0.94	
2132	ISO14184-1	62 5		0.15	
2138	ISO14184-1	60.5		-0.18	
2165	ISO14184-1	59.526		-0.37	
2170	ISO14184-1	68.60		1.35	
2182	JST2016	56.99		-0.84	
2184	ISO14184-1	63.4		0.37	
2201	ISO14184-1	62.3		0.16	
2226	ISO14184-1	63.93		0.47	
2238	ISO14184-1	56.04		-1.02	
2247	15014184-1	59.11		-0.44	
2200	ISO14104-1 ISO14184-1	01.0 57.00		-0.66	
2250	IIS I 1041	55.81		-0.00	
2265	ISO14184-1	58 50		-0.56	
2269	ISO14184-1	52.62		-1.67	
2275	ISO14184-1	58.6		-0.54	
2289	ISO14184-1	67.4		1.12	
2290	ISO14184-1	57.7		-0.71	
2297	ISO14184-1	60		-0.28	
2310	ISO14184-1	67		1.05	
2311	ISO14184-1	66.81		1.01	
2313	15014184-1	67.31		1.11	
2314	15014104-1	67.6		1.10	
2320	ISO14184-1	62 111		0.12	
2330	GB/T2912	62.35		0.12	
2347	GB/T2912	58.0		-0.65	
2348	ISO14184-1	59.7		-0.33	
2350	ISO14184-1	57.72		-0.71	
2351	ISO14184-1	62		0.10	
2356	ISO14184-1	62.04		0.11	
2358	ISO14184-1	61.897		0.08	
2303	15014184-1	59.3		-0.41	
2304	ISO14104-1	58.0		-0.08	
2366	ISO14184-1	58		-0.40	
2367	ISO14184-1	62.94		0.28	
2369	ISO14184-1	58.32		-0.59	
2370	ISO14184-1	63.10		0.31	
2372	ISO14184-1	53.3		-1.54	
2373	ISO14184-1	60.06		-0.26	
2375	ISO14184-1	68.4		1.31	
2378	ISO14184-1	58		-0.65	
2379	15014184-1	63.6817		0.42	
2381	ISO14184-1	60.00		-0.20	
2383	GB/T2912	62.2		0.24	
2385	ISO14184-1	53		-1 60	
2406	ISO14184-1	63.64		0.41	
2415	ISO14184-1	65.45		0.75	
2429	ISO14184-1	62.8		0.25	
2442	ISO14184-1	60.74		-0.14	
2449	ISO14184-1	67.46		1.13	
2453	15014184-1	58.27		-0.60	
2454	13014104-1	00.7 57.01		-0.90	
2430 2474	ISO14104-1	56.2		-0.00	
2474	ISO14184-1	60.Z		-0.99	
2476	ISO14184-1	68.0		1.24	
2482	ISO14184-1	52.57		-1.68	
2483	ISO14184-1	61.0		-0.09	

2489 BS014184-1 64.9 0.65 2442 JB1014164-1 69.227 0 0.37 2511 ISO14164-1 69.227 0 0.37 2514 ISO14164-1 69.73 1.37 2514 ISO14164-1 62.6 0.22 2534 ISO14164-1 62.6 0.23 2534 ISO14164-1 62.6 0.24 2537 ISO14164-1 63.7 0.30 2538 ISO14164-1 63.6 0.30 2539 ISO14164-1 63.6 0.30 2530 ISO14164-1 63.6 0.30 2531 ISO14164-1 64.1 0.66 2633 ISO14164-1 64.1 0.66 2634 ISO14164-1 64.1 0.66 2767 ISO14164-1 64.1 0.66 2778 ISO14164-1 64.1 0.57 2778 ISO14164-1 71.1 C 1.82 2778 ISO14164-1	lab	method	value	mark	z(targ)	remarks
2448 UBC 1041 58.64 -0.53 2541 15014144-1 68.73 -0.10 2541 15014144-1 64.1 0.50 2543 15014184-1 64.4 0.56 2544 15014184-1 64.4 0.56 2554 15014184-1 64.4 0.56 2554 15014184-1 65.7 -0.00 2557 15014184-1 50.56 -0.30 2558 15014184-1 50.57 -0.00 2558 15014184-1 50.58 -0.36 2568 15014184-1 50.58 -0.36 2568 15014184-1 70.015 1.79 2568 15014184-1 70.015 1.79 2578 15014184-1 70.015 1.79 2588 15014184-1 70.015 1.79 2581 15014184-1 70.015 1.79 2581 15014184-1 60.5 -0.04 2577 15014184-1 62.4 C -1.17 2581 15014184-1 62.2 0.31 2581 15014184-1 62.2 0.31 2581 15014184-1 63.54 0.39 2591 15014184-1	2489	ISO14184-1	64.9		0.65	
244 8014184-1 66.22 C 0.00 First reported 74.76 2511 8014184-1 68.373 1.37 2511 8014184-1 68.273 1.37 2531 8014184-1 62.287 1.37 2534 8014184-1 62.287 0.15 2532 8014184-1 62.297 0.30 2532 8014184-1 53.6563 -0.30 2532 8014184-1 53.06 -0.65 2533 8014184-1 53.06 -0.65 2534 8014184-1 61.52 R(0.1) -6.89 2544 8014184-1 64.58 0.59 2727 8014184-1 64.58 0.59 2727 8014184-1 64.56 -1.17 2727 8014184-1 64.64 -0.55 2728 8014184-1 65.6 -1.17 2727 8014184-1 56.6 -1.12 2728 8014184-1 56.6 -1.12 2727	2492	JIS L1041	58.64		-0.53	
2544 1850-14164-1 69.8373 -0.31 2514 1850-14164-1 66.4 -0.50 2545 1850-14164-1 66.4 -0.56 2547 1850-14164-1 66.4 -0.56 2547 1850-14164-1 66.4 -0.56 25587 1850-14164-1 65.7 -0.30 2569 1850-14164-1 59.5653 -0.30 2580 1850-14164-1 59.5853 -0.30 2581 1850-14164-1 59.585 -0.30 2582 1850-14164-1 50.57 -0.25 2584 1850-14164-1 60.6 -0.86 2585 1850-14164-1 60.5 -0.36 2584 1850-14164-1 60.5 -0.36 2584 1850-14164-1 60.5 -0.31 2587 1850-14164-1 62.4 -0.41 2587 1850-14164-1 62.4 -0.40 2587 1850-14164-1 62.45 -0.40 2588 1850-14164-1 62.45 -0.40 25981 1850-14164-1 62.45 </td <td>2494</td> <td>ISO14184-1</td> <td>66.22</td> <td>С</td> <td>0.90</td> <td>First reported 74.76</td>	2494	ISO14184-1	66.22	С	0.90	First reported 74.76
2511 18014184-1 68.73 1.37 2514 6001414-1 62.6 0.26 2514 6001414-1 62.6 0.26 2534 6001414-1 62.25 0.15 2535 18014184-1 62.7 -0.30 2537 18014184-1 65.7 -0.30 2530 18014184-1 65.7 -0.30 2531 18014184-1 61.7 -0.65 2535 18014184-1 61.41 0.46 2548 18014184-1 61.41 0.46 2548 18014184-1 64.4 -0.42 2548 18014184-1 64.4 -0.42 2727 18014184-1 64.5 -0.33 2727 18014184-1 64.5 -0.35 2727 18014184-1 65.6 -1.11 2727 18014184-1 65.6 -1.11 2728 18014184-1 65.6 -1.11 2728 18014184-1 65.6 -1.11 2737 18014184-1 65.6 -1.11 2737 </td <td>2504</td> <td>ISO14184-1</td> <td>59.8373</td> <td></td> <td>-0.31</td> <td></td>	2504	ISO14184-1	59.8373		-0.31	
2514 85014184-1 62.6 0.22 2534 85014184-1 64.4 0.50 2545 15014184-1 63.6 0.29 2557 15014184-1 63.6 0.29 2568 15014184-1 59.8653 -0.30 2561 15014184-1 59.8563 -0.30 2562 15014184-1 59.8563 -0.30 2563 15014184-1 63.6 -0.66 2653 15014184-1 64.41 0.66 2644 15014184-1 64.6 -0.06 2768 15014184-1 64.6 -0.06 2778 15014184-1 64.6 -0.06 2788 15014184-1 65.8 -0.33 2788 15014184-1 56.4 -0.171 2789 15014184-1 57.4 -0.85 2788 15014184-1 58.4 -0.131 2789 15014184-1 58.4 -0.141 2789 15014184-1 63.6 -0.30 2888 15014184-1 64.5 -0.141	2511	ISO14184-1	68.73		1.37	
2519 ISO14194-1 64.1 0.60 2546 ISO14194-1 64.4 1.50 2557 ISO14194-1 63.0 0.30 25281 ISO14194-1 58.67 -0.30 25281 ISO14194-1 58.63 -0.30 25281 ISO14194-1 58.95 -0.36 25281 ISO14194-1 30.20 P(0.01) -0.65 25281 ISO14194-1 70.915 1.79 25281 ISO14194-1 60.41 -0.66 25271 ISO14194-1 60.42 -0.66 25271 ISO14194-1 61.05 -0.25 25281 ISO14194-1 62.4 C -1.11 25271 ISO14194-1 63.3 -0.31 25281 ISO14194-1 63.4 -0.51 25281 ISO14194-1 63.4 -0.51 25291 ISO14194-1 63.4 -0.51 25291 ISO14194-1 71.11 C 1.82 2521 ISO14194-1 63.54 -0.30 25291 ISO14194-	2514	ISO14184-1	62.6		0.22	
2349 80412412 804 1.30 2369 80514184-1 63.5 0.36 2369 80514184-1 53.86 -0.30 2528 18014184-1 53.86 -0.36 2529 18014184-1 53.86 -0.36 2529 18014184-1 53.00 -0.65 2531 18014184-1 61.12 -0.66 2542 18014184-1 61.12 -0.06 2544 18014184-1 61.15 -0.25 2673 18014184-1 64.58 0.59 2727 18014184-1 62.54 0.45 2728 18014184-1 63.62 0.31 2808 18014184-1 63.64 0.31 2808 18014184-1 63.64 0.31 2808 18014184-1 63.64 0.31 2808 18014184-1 63.75 -0.30 2808 18014184-1 63.74 0.43 2808 18014184-1 63.75 -0.30 2808 18014184-1 63.1128 0.31	2519	ISO14184-1	64.1		0.50	
2548 BO141444-1 65.4 0.56 2567 BO14144-1 55.6 0.63 2568 BO14144-1 55.8 0.30 2569 BO14144-1 55.8 0.30 2560 BO14144-1 55.8 0.30 2561 BO14144-1 30.29 R(0.01) -5.89 2625 BO14144-1 70.915 0.06 2634 BO14144-1 61.05 -0.08 2674 BO14144-1 61.05 -0.08 2726 BO14144-1 61.05 -0.08 2727 BO14144-1 61.4 -0.09 2727 BO14144-1 61.4 -0.09 2727 BO14144-1 62.3 -0.33 2808 BO14144-1 71.11 C 1.82 2801 BO14144-1 52.6 -1.11 2826 BO14144-1 62.45 0.19 2831 BO14164-1 52.6 -1.11 2832 BO14184-1 62.45 0.19 2833 BO14184-1 63.4 0.39	2534	GB/T2912	69.4		1.50	
286/ 8014144-1 62.25 0.13 287 15014144-1 53.6563 -0.30 287 15014144-1 53.6563 -0.36 2805 15014144-1 53.00 -0.65 2828 15014144-1 61.12 -0.66 283 15014144-1 61.12 -0.66 2844 15014144-1 64.17 -0.61 2845 15014144-1 64.58 -0.53 2874 15014144-1 64.58 -0.53 2877 15014144-1 64.58 -0.53 2877 15014144-1 64.58 -0.33 2877 15014144-1 63.23 -0.31 2878 15014144-1 64.23 -0.31 2878 15014144-1 64.22 1.28 2878 15014144-1 64.22 1.28 2878 15014144-1 64.22 1.28 2878 15014144-1 64.22 1.28 2878 15014144-1 64.24	2549	ISO14184-1	64.4		0.56	
2899 BOJ 4194-1 6.3 0.29 2521 BOJ 4194-1 55 -0.30 2525 BOJ 4194-1 55 -0.35 2626 BOJ 4194-1 30.29 R(0.01) -5.89 2625 BOJ 4194-1 64.41 0.56 2638 BOJ 4194-1 64.41 0.56 2741 BOJ 4194-1 61.05 -0.03 2757 BOJ 4194-1 61 -0.09 2758 BOJ 4194-1 58.6 -0.31 2769 BOJ 4194-1 58.6 -0.33 2781 BOJ 4194-1 58.6 -0.31 2781 BOJ 4194-1 58.6 -0.51 2781 BOJ 4194-1 68.12 -0.51 2781 BOJ 4194-1 68.12 -0.51 2781 BOJ 4194-1 68.22 0.51 2783 BOJ 4194-1 68.24 -0.51 2783 BOJ 4194-1 68.24 0.51 2797 BOJ 4194-1 68.27 0.24 2855 BOJ 4194-1	2567	ISO14184-1	62.25		0.15	
252 BO14194-1 55.7 -0.30 2205 BO14194-1 58.00 -0.65 2205 BO14194-1 61.02 -0.66 2205 BO14194-1 70.915 1.79 2205 BO14194-1 61.05 -0.06 2275 BO14194-1 61.05 -0.25 2276 BO14194-1 61.05 -0.25 2275 BO14194-1 61.05 -0.25 2275 BO14194-1 61.05 -0.25 2275 BO14194-1 63.23 -0.31 2275 BO14194-1 63.23 -0.31 2275 BO14194-1 71.11 C 1.82 2281 JSO14194-1 75.25 -0.80 2290 BO14194-1 63.24 0.31 2291 JSO14194-1 63.24 0.31 2291 JSO14194-1 63.24 0.31 2293 LSO14194-1 63.44 0.39 22977 JSO14194-1 63.1128 0.31 22978 JSO14194-1 63.24 0.42	2569	ISO14184-1	63		0.29	
2006 100/14/14-1 00/2003 -0.30 2015 100/14/14-1 30/20 -0.06 2026 100/14/14-1 01/2 -0.06 2026 100/14/14-1 01/2 -0.06 2026 100/14/14-1 04/4 0.56 2027 100/14/14-1 04/5 -0.08 2027 100/14/14-1 04/5 0.33 2028 150/14/14-1 58/2 -0.31 2027 150/14/14-1 58/2 0.33 2028 150/14/14-1 58/2 -0.31 2028 150/14/14-1 58/2 -0.31 2028 150/14/14-1 58/2 -0.80 2028 150/14/14-1 58/2 -0.80 2028 150/14/14-1 58/3 -0.41 2029 150/14/14-1 58/3 -0.41 2030 150/14/14-1 58/3 -0.42 2031 150/14/14-1 58/3 -0.42 2031 150/14/14-1 58/2	2572	15014184-1	50.7		-0.90	
2380 NO.14 NO.8 2351 NO.144-1 NO.9 2364 NO.144-1 NO.9 2376 NO.444-1 NO.9 2377 NO.144-1 SO.4 C 2378 NO.144-1 SO.4 O.1 2391 NO.144-1 SO.4 O.1 2392 NO.144-1 SO.4 O.19 2393 NO.144-1 SO.3 O.19 2394 SO.144-1 SO.3 O.19 2394 SO.144-1 SO.4 O.19 2394 SO.144-1 SO.3	2582	15014184-1	59.8563		-0.30	
2003 ISO14144-1 03.02 R(0.01) -3.84 2034 ISO14184-1 04.41 0.46 2044 ISO14184-1 04.41 0.46 2045 ISO14184-1 04.41 0.46 20464 ISO14184-1 04.5 -0.84 2047 ISO14184-1 04.5 -0.95 2072 ISO14184-1 52.4 C -1.71 2085 ISO14184-1 63.23 -0.31 2087 ISO14184-1 63.23 -0.31 2081 ISO14184-1 63.24 -0.55 2081 ISO14184-1 63.24 -0.51 2081 ISO14184-1 63.24 -0.55 2081 ISO14184-1 62.45 -0.18 2081 ISO14184-1 62.45 -0.44 2091 ISO14184-1 63.122 -0.31 2095 ISO14184-1 63.4 -0.39 2096 ISO14184-1 64.545 -0.62 2091 ISO141	2590	15014184-1	59.58		-0.36	
2b25 ISO14144-1 01.21 -0.389 2644 ISO14144-1 61.12 -0.369 2644 ISO14184-1 60.15 -0.25 2676 ISO14184-1 61.05 -0.26 2678 ISO14184-1 61.05 -0.26 2726 ISO14184-1 61.05 -0.09 2727 ISO14184-1 52.4 C -1.71 2728 ISO14184-1 58.6 -0.53 2827 ISO14184-1 58.64 -0.55 2828 ISO14184-1 56.6 -1.11 2926 ISO14184-1 68.54 -0.31 2926 ISO14184-1 68.54 -0.39 29271 ISO14184-1 68.54 -0.39 29281 ISO14184-1 68.54 -0.31 29291 ISO14184-1 68.54 -0.54 29291 ISO14184-1 64.54 0.39 29291 ISO14184-1 64.54 0.54 31161 ISO14184-1 64.54 0.54 31161 ISO14184-1 64.7 0.5	2605	15014184-1	58.00	D(0.04)	-0.65	
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2016 but not set 10.03 20274 ISO 14184-1 60.15 -0.03 20278 ISO 14184-1 61.5 -0.05 22728 ISO 14184-1 52.4 C -1.71 2278 ISO 14184-1 63.23 -0.31 2287 ISO 14184-1 63.23 -0.33 2285 ISO 14184-1 63.23 -0.31 2280 ISO 14184-1 63.23 -0.31 2281 ISO 14184-1 63.23 -0.31 2920 ISO 14184-1 63.24 -0.19 2933 CNS 15660-1 62.45 -0.19 2948 ISO 14184-1 63.24 0.31 2951 ISO 14184-1 63.4 0.39 2951 ISO 14184-1 63.4 0.31 2951 ISO 14184-1 58.6 -0.54 3110 ISO 14184-1 58.6 -0.54 3111 ISO 14184-1 61.7 0.05 3145 ISO 14184-1 61.7	2043	15014104-1	70 015		1 70	
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3116 ISO14184-1 58.2 -0.62 3118 ISO14184-1 61.7 0.05 3145 ISO14184-1 61.7 0.05 3153 ISO14184-1 61.7 -0.09 3166 In house 59.48 -0.37 3172 ISO14184-1 63.71 0.43 3185 ISO14184-1 63.71 0.43 3185 ISO14184-1 58.28 -0.60 3197 ISO14184-1 61.91 0.09 3200 ISO14184-1 64.64 0.60 3201 ISO14184-1 64.64 0.60 3201 ISO14184-1 66.5 0.87 3210 In house 49.90 -2.19 3214 ISO14184-1 66.5 0.87 3222 ISO14184-1 66.5 0.87 3222 ISO14184-1 66.5 0.87 3222 ISO14184-1 66.5 0.87 3224 ISO14184-1 66.5 0.95 3225 ISO14184-1 66.5 0.91 3228	3110	ISO14184-1	58.6		-0.54	
3118 SO14184-1 66.07 0.87 3145 ISO14184-1 56.00 -1.03 3153 ISO14184-1 60.12 -0.25 3163 ISO14184-1 61 -0.09 3166 IsO14184-1 63.28 -0.37 3172 ISO14184-1 63.28 0.34 3185 ISO14184-1 56.20 -0.99 3190 ISO14184-1 56.28 -0.60 3197 ISO14184-1 64.64 0.60 3207 JIS L1041 60 -0.28 3214 ISO14184-1 66.05 0.87 3214 ISO14184-1 66.05 0.87 3225 ISO14184-1 66.05 0.87 3224 ISO14184-1 66.05 0.87 3225 ISO14184-1 66.33 1.30 3230 ISO14184-1 67.5 1.14 3231 ISO14184-1 68.03 1.30 3232 ISO14184-1 65.9 -0.48 3231 ISO14184-1 65.9 -0.48 30	3116	ISO14184-1	58.2		-0.62	
3146 ISO14184-1 61.7 0.05 3146 ISO14184-1 60.12 -0.25 3163 ISO14184-1 61 -0.09 3166 In house 59.48 -0.37 3172 ISO14184-1 63.71 0.43 3185 ISO14184-1 63.28 0.34 3185 ISO14184-1 56.20 -0.99 3190 ISO14184-1 64.64 0.60 3200 ISO14184-1 64.64 0.60 3207 JIS L1041 66 -0.28 3210 In house 49.90 -2.19 3214 ISO14184-1 66.05 0.95 3222 ISO14184-1 66.05 0.95 3223 ISO14184-1 66.06 1.44 3232 ISO14184-1 69.06 1.44 3232 ISO14184-1 67.5 1.14 3232 ISO14184-1 67.5 1.14 3232 ISO14184-1 67.5 1.44 3323 ISO14184-1 62.0 0.39 8006	3118	ISO14184-1	66.07		0.87	
3146 ISO14184-1 60.0 -1.03 3153 ISO14184-1 60.1 -0.25 3163 ISO14184-1 63.7 -0.37 3172 ISO14184-1 63.28 -0.37 3181 ISO14184-1 63.28 0.34 3182 ISO14184-1 63.28 0.34 3180 ISO14184-1 56.20 -0.99 3190 ISO14184-1 56.28 -0.60 3197 ISO14184-1 64.4 0.60 3200 ISO14184-1 64.64 0.60 3201 ISO14184-1 66.5 0.95 3214 ISO14184-1 66.05 0.87 3222 ISO14184-1 61.28 -0.03 3223 ISO14184-1 61.28 -0.03 3223 ISO14184-1 62.2 C 0.10 3230 ISO14184-1 62.2 C 0.10 3231 ISO14184-1 62.2 C 0.10 3232 ISO14184-1 60.50 -0.28 3234 ISO14184-1 62.2 <td>3145</td> <td>ISO14184-1</td> <td>61.7</td> <td></td> <td>0.05</td> <td></td>	3145	ISO14184-1	61.7		0.05	
3153 ISO14184-1 60.12 -0.25 3163 IN house 59.48 -0.37 3172 ISO14184-1 63.71 0.43 3182 ISO14184-1 63.28 0.34 3181 ISO14184-1 56.20 -0.99 3190 ISO14184-1 56.20 -0.99 3197 ISO14184-1 61.91 0.09 3200 ISO14184-1 64.64 0.60 3207 JIS L1041 60 -0.28 3210 In house 49.90 -2.19 3214 ISO14184-1 66.05 0.87 3222 ISO14184-1 66.5 0.95 3222 ISO14184-1 60.0 -0.28 3223 ISO14184-1 60.5 0.95 3222 ISO14184-1 60.0 -0.28 3230 ISO14184-1 60.0 -0.28 3230 ISO14184-1 60.0 -0.28 3231 ISO14184-1 60.0 -0.18 3232 ISO14184-1 67.5 1.14 3232 </td <td>3146</td> <td>ISO14184-1</td> <td>56.00</td> <td></td> <td>-1.03</td> <td></td>	3146	ISO14184-1	56.00		-1.03	
3163ISO14184-161-0.093166In house59.48-0.373172ISO14184-163.710.433182ISO14184-163.280.343185ISO14184-158.28-0.603190ISO14184-161.910.093200ISO14184-164.640.603207JIS L104160-0.283210In house49.90-2.193214ISO14184-166.050.873222ISO14184-166.050.953225ISO14184-161.28-0.033226ISO14184-169.061.443232ISO14184-167.51.143244GB/T291262C0.103237ISO14184-160.50-0.283230ISO14184-160-0.283231ISO14184-160-0.283232ISO14184-161.51.443248GB/T291262C0.1061In house54.18-1.388005ST201659.4-0.398008JTS ST1.658.9-0.488016ISO14184-160.50-0.18nn142outliers1mean (n)61.460st.dev. (horwitz)52.906R(calc.)12.936st.dev. (horwitz)52.906R(horwitz)52.906R(horwitz)52.906R(horwitz)52.906	3153	ISO14184-1	60.12		-0.25	
3166 In house 59.48 -0.37 3172 ISO14184-1 63.21 0.43 3182 ISO14184-1 56.20 -0.99 3190 ISO14184-1 58.28 -0.60 3197 ISO14184-1 61.91 0.09 3200 ISO14184-1 61.91 0.09 3201 In house 49.90 -2.19 3214 ISO14184-1 66.05 0.87 3222 ISO14184-1 66.05 0.95 3224 ISO14184-1 66.05 0.95 3225 ISO14184-1 66.06 1.44 3222 ISO14184-1 60 -0.28 3230 ISO14184-1 60.05 0.87 3228 ISO14184-1 67.5 1.14 3232 ISO14184-1 67.5 1.14 3237 ISO14184-1 67.5 1.14 3246 ISO14184-1 67.5 1.14 3237 ISO14184-1 67.5 1.14 3247 ISO14184-1 67.5 1.14 3008 <td>3163</td> <td>ISO14184-1</td> <td>61</td> <td></td> <td>-0.09</td> <td></td>	3163	ISO14184-1	61		-0.09	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3166	In house	59.48		-0.37	
3182 ISO14184-1 63.28 0.34 3185 ISO14184-1 56.20 -0.99 3190 ISO14184-1 61.91 0.09 3200 ISO14184-1 64.64 0.60 3207 JS L1041 60 -0.28 3210 In house 49.90 -2.19 3214 ISO14184-1 67.05 -0.83 3222 ISO14184-1 66.5 0.95 3225 ISO14184-1 61.28 -0.03 3228 ISO14184-1 60 -0.28 3230 ISO14184-1 68.33 1.30 3231 ISO14184-1 68.33 1.30 3232 ISO14184-1 68.33 1.30 3231 ISO14184-1 67.5 1.14 3232 ISO14184-1 67.5 1.14 3248 GB/T2912 62 C 0.10 191 In house 54.18 -1.38 8005 ST2016 59.4 -0.39 8006 ISO14184-1 60.50 -0.18	3172	ISO14184-1	63.71		0.43	
3185 ISO14184-1 56.20 -0.99 3190 ISO14184-1 58.28 -0.60 3197 ISO14184-1 64.64 0.60 3200 ISO14184-1 64.64 0.60 3207 JIS L1041 60 -0.28 3210 In house 49.90 -2.19 3214 ISO14184-1 66.5 0.87 32225 ISO14184-1 66.5 0.95 32225 ISO14184-1 60 -0.28 3230 ISO14184-1 68.53 0.95 32232 ISO14184-1 68.06 1.44 3232 ISO14184-1 68.33 1.30 3237 ISO14184-1 67.5 1.14 3248 GB/T2912 62 C 0.10 6191 In house 54.18 -1.38 8006 ST2016 59.4 -0.39 8006 ISO14184-1 60.50 -0.18 normality OK n 142 outliers 1 mean (n) 61.460 st.d	3182	ISO14184-1	63.28		0.34	
3190ISO14184-158.28-0.603197ISO14184-161.910.093200ISO14184-164.640.603207JIS L104160-0.283210In house49.90-2.193214ISO14184-157.05-0.833216ISO14184-166.050.873222ISO14184-161.28-0.033228ISO14184-160-0.283230ISO14184-168.331.303237ISO14184-168.331.303237ISO14184-168.331.303238GB/T291262C0.106905ST201659.4-0.398005ST201659.4-0.398006ISO14184-160.50-0.18normalityOKnn142outliers1mean (n)61.460st.dev. (n)4.6201st.dev. (horwitz)5.2906R(Horwitz)1.4.814	3185	ISO14184-1	56.20		-0.99	
3197ISO14184-161.910.093200ISO14184-164.640.603207JS L104160-0.283210In house49.90-2.193214ISO14184-157.05-0.833216ISO14184-166.050.873222ISO14184-161.28-0.033228ISO14184-169.061.443230ISO14184-169.061.443232ISO14184-167.51.143248GB/T291262C0.10First reported 4161.94-0.398008JTS ST1.658.9-0.488016ISO14184-160.50-0.18normalityOKn142outliers1mean (n)61.460st.dev. (n)4.6201RSD = 8%R(calc.)12.936S2.906R(Horwitz)14.814	3190	ISO14184-1	58.28		-0.60	
3200 ISO14184-1 64.64 0.60 3207 JIS L1041 60 -0.28 3210 In house 49.90 -2.19 3214 ISO14184-1 66.05 0.87 3222 ISO14184-1 66.5 0.95 3222 ISO14184-1 61.28 -0.03 3228 ISO14184-1 60 -0.28 3230 ISO14184-1 60.66 1.44 3232 ISO14184-1 67.5 1.14 3232 ISO14184-1 67.5 1.14 3232 ISO14184-1 67.5 1.14 3248 GB/T2912 62 C 0.10 7000 54.18 -1.38 8005 8005 ST2016 59.4 -0.39 8008 JTS ST1.6 58.9 -0.48 8016 ISO14184-1 60.50 -0.18 normality OK n 142 outliers 1 n n n 12.936	3197	ISO14184-1	61.91		0.09	
3207 JIS L1041 60 -0.28 3210 In house 49.90 -2.19 3214 ISO14184-1 57.05 -0.83 3216 ISO14184-1 66.05 0.87 3222 ISO14184-1 61.28 -0.03 3228 ISO14184-1 60 -0.28 3230 ISO14184-1 69.06 1.44 3232 ISO14184-1 68.33 1.30 3227 ISO14184-1 67.5 1.14 3248 GB/T2912 62 C 0.10 6191 In house 54.18 -1.38 8005 ST2016 59.4 -0.39 8008 JTS ST1.6 58.9 -0.48 8016 ISO14184-1 60.50 -0.18 normality OK -0.18 nean (n) 61.460 -0.29 st.dev. (n) 4.6201 RSD = 8% R(calc.) 12.936 -0.18 R(calc.) 12.936 -0.18 R(Horwitz) 5.2906 -0.18	3200	ISO14184-1	64.64		0.60	
3210 In house 49.90 -2.19 3214 ISO14184-1 57.05 -0.83 3216 ISO14184-1 66.05 0.87 3222 ISO14184-1 61.28 -0.03 3228 ISO14184-1 60 -0.28 3230 ISO14184-1 69.06 1.44 3232 ISO14184-1 68.33 1.30 3237 ISO14184-1 67.5 1.14 3248 GB/T2912 62 C 0.10 First reported 41 6191 In house 54.18 -1.38 8005 ST2016 59.4 -0.39 8006 ISO14184-1 60.50 -0.18 normality OK -0.18 -0.48 8016 ISO14184-1 60.50 -0.18 normality OK -0.18 -0.18 nean (n) 61.460 -1.2936 st.dev. (n) 4.6201 RSD = 8% R(calc.) 12.936 -0.18 R(Horwitz) 14.814 -0.2906	3207	JIS L1041	60		-0.28	
3214 ISO14184-1 57.05 -0.83 3216 ISO14184-1 66.05 0.87 3222 ISO14184-1 61.28 -0.03 3228 ISO14184-1 60 -0.28 3230 ISO14184-1 69.06 1.44 3232 ISO14184-1 68.33 1.30 3237 ISO14184-1 67.5 1.14 3248 GB/T2912 62 C 0.10 First reported 41 6191 In house 54.18 -1.38 8005 ST2016 59.4 -0.39 8006 ISO14184-1 60.50 -0.18 normality OK n 142 outliers 1 mean (n) 61.460 st.dev. (n) 4.6201 RSD = 8% R(calc.) 12.936 It.814	3210	In house	49.90		-2.19	
3216 ISO14184-1 66.05 0.87 3222 ISO14184-1 61.28 -0.03 3228 ISO14184-1 60 -0.28 3230 ISO14184-1 69.06 1.44 3232 ISO14184-1 67.5 1.14 3237 ISO14184-1 67.5 1.14 3248 GB/T2912 62 C 0.10 69/1 In house 54.18 -1.38 8005 ST2016 59.4 -0.39 8008 JTS ST1.6 58.9 -0.48 8016 ISO14184-1 60.50 -0.18 normality OK n 142 outliers 1 mean (n) 61.460 st.dev. (n) 4.6201 RSD = 8% R(calc.) 12.936 st.dev. (Horwitz) st.dev. (Horwitz) 5.2906 R(Horwitz)	3214	ISO14184-1	57.05		-0.83	
3222 ISO14184-1 66.5 0.95 3228 ISO14184-1 60 -0.28 3230 ISO14184-1 69.06 1.44 3232 ISO14184-1 68.33 1.30 3237 ISO14184-1 67.5 1.14 3248 GB/T2912 62 C 0.10 6191 In house 54.18 -1.38 8005 ST2016 59.4 -0.39 8008 JTS ST1.6 58.9 -0.48 8016 ISO14184-1 60.50 -0.18 normality OK -0.18 ncmality OK -0.18 nean (n) 61.460 -0.18 st.dev. (n) 4.6201 RSD = 8% R(calc.) 12.936 -0.18 st.dev. (Horwitz) 5.2906 -0.18	3216	ISO14184-1	66.05		0.87	
3225 ISO14184-1 61.28 -0.03 3228 ISO14184-1 60 -0.28 3230 ISO14184-1 69.06 1.44 3232 ISO14184-1 68.33 1.30 3237 ISO14184-1 67.5 1.14 3248 GB/T2912 62 C 0.10 6191 In house 54.18 -1.38 8005 ST2016 59.4 -0.39 8008 JTS ST1.6 58.9 -0.48 8016 ISO14184-1 60.50 -0.18 normality OK -0.18 nean (n) 61.460 -0.39 st.dev. (n) 4.6201 RSD = 8% R(calc.) 12.936 $st.dev.(Horwitz)$ st.dev.(Horwitz) 5.2906 $R(Horwitz)$ R(Horwitz) 14.814 -0.39	3222	ISO14184-1	66.5		0.95	
3228 ISO14184-1 60 -0.28 3230 ISO14184-1 69.06 1.44 3232 ISO14184-1 68.33 1.30 3237 ISO14184-1 67.5 1.14 3248 GB/T2912 62 C 0.10 6191 In house 54.18 -1.38 8005 ST2016 59.4 -0.39 8008 JTS ST1.6 58.9 -0.48 8016 ISO14184-1 60.50 -0.18 normality OK -0.18 nean (n) 61.460 st.dev. (n) st.dev. (n) 4.6201 RSD = 8% R(calc.) 12.936 st.dev. (Horwitz) st.dev. (Horwitz) 5.2906 R(Horwitz) R(Horwitz) 14.814 -	3225	ISO14184-1	61.28		-0.03	
3230 ISO14184-1 69.06 1.44 3232 ISO14184-1 68.33 1.30 3237 ISO14184-1 67.5 1.14 3248 GB/T2912 62 C 0.10 First reported 41 6191 In house 54.18 -1.38 8005 ST2016 59.4 -0.39 8008 JTS ST1.6 58.9 -0.48 8016 ISO14184-1 60.50 -0.18 normality OK -0.18 nean (n) 61.460 -0.18 st.dev. (n) 4.6201 RSD = 8% R(calc.) 12.936 -12.936 st.dev. (Horwitz) 5.2906 -8 R(Horwitz) 14.814	3228	ISO14184-1	60		-0.28	
3232 ISO14184-1 68.33 1.30 3237 ISO14184-1 67.5 1.14 3248 GB/T2912 62 C 0.10 First reported 41 6191 In house 54.18 -1.38 8005 ST2016 59.4 -0.39 8008 JTS ST1.6 58.9 -0.48 8016 ISO14184-1 60.50 -0.18 normality OK -0.18 nean (n) 61.460 -0.39 st.dev. (n) 4.6201 RSD = 8% R(calc.) 12.936 -0.48 st.dev. (Horwitz) 5.2906 -0.18	3230	ISO14184-1	69.06		1.44	
3237 ISO14184-1 67.5 1.14 3248 GB/T2912 62 C 0.10 First reported 41 6191 In house 54.18 -1.38 8005 ST2016 59.4 -0.39 8008 JTS ST1.6 58.9 -0.48 8016 ISO14184-1 60.50 -0.18 normality OK -0.18 normality OK -0.18 nean (n) 61.460 $st.dev. (n)$ st.dev. (n) 4.6201 RSD = 8% R(calc.) 12.936 $st.dev. (Horwitz)$ st.dev. (Horwitz) 5.2906 $R(Horwitz)$ R(Horwitz) 14.814	3232	ISO14184-1	68.33		1.30	
3248 GB/12912 62 C 0.10 First reported 41 6191 In house 54.18 -1.38 8005 ST2016 59.4 -0.39 8008 JTS ST1.6 58.9 -0.48 8016 ISO14184-1 60.50 -0.18 normality OK -0.18 normality OK -0.18 nean (n) 61.460 -0.18 st.dev. (n) 4.6201 RSD = 8% R(calc.) 12.936 -0.296 st.dev.(Horwitz) 5.2906 -0.48	3237	ISO14184-1	67.5		1.14	
6191 In house 54.18 -1.38 8005 ST2016 59.4 -0.39 8008 JTS ST1.6 58.9 -0.48 8016 ISO14184-1 60.50 -0.18 normality OK -0.18 normality OK -0.18 nean (n) 61.460 -0.18 st.dev. (n) 4.6201 RSD = 8% R(calc.) 12.936 -0.18 st.dev.(Horwitz) 5.2906 -0.18	3248	GB/T2912	62	С	0.10	First reported 41
0005 512010 59.4 -0.39 8008 JTS ST1.6 58.9 -0.48 8016 ISO14184-1 60.50 -0.18 normality OK n 142 outliers 1 $mean (n)$ 61.460 st.dev. (n) 4.6201 RSD = 8% R(calc.) 12.936 $st.dev.(Horwitz)$ $st.dev.(Horwitz)$ 5.2906 R(Horwitz) 14.814	6191	In house	54.18		-1.38	
3008 315511.0 58.9 -0.48 8016 ISO14184-1 60.50 -0.18 normality OK -0.18 nothins 142 -0.18 outliers 1 mean (n) 61.460 st.dev. (n) 4.6201 R(calc.) 12.936 st.dev.(Horwitz) 5.2906 R(Horwitz) 14.814	8005	512016	59.4		-0.39	
8016 ISO14184-1 60.50 -0.18 normality OK n 142 outliers 1 mean (n) 61.460 st.dev. (n) 4.6201 RSD = 8% R(calc.) 12.936 st.dev.(Horwitz) 5.2906 R(Horwitz) 14.814	8008	JISSI1.6	58.9		-0.48	
normality OK n 142 outliers 1 mean (n) 61.460 st.dev. (n) 4.6201 R(calc.) 12.936 st.dev.(Horwitz) 5.2906 R(Horwitz) 14.814	8016	15014184-1	60.50		-0.18	
iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii		normality	OK			
mean (n) 61.460 st.dev. (n) 4.6201 RSD = 8% R(calc.) 12.936 st.dev. (Horwitz) 5.2906 R(Horwitz) 14.814		outliers	1			
st.dev. (n) 4.6201 RSD = 8% R(calc.) 12.936 st.dev.(Horwitz) 5.2906 R(Horwitz) 14.814		mean (n)	61 / 60			
R(calc.) 12.936 st.dev.(Horwitz) 5.2906 R(Horwitz) 14.814		st dev (n)	4 6201	RSD = 8%		
st.dev.(Horwitz) 5.2906 R(Horwitz) 14.814		R(calc.)	12 936			
R(Horwitz) 14.814		st.dev.(Horwitz)	5.2906			
		R(Horwitz)	14.814			





Determination of Released Formaldehyde on sample #23751; results in mg/kg

lab	method	value	mark	z(targ)	remarks
110	ISO14184-2	110.1		1.55	
210					
339					
362					
523					
551	10044404 0				
623	ISO14184-2	89.2		-1.11	
024 040	1001/10/ 2			1 00	
2108	130 14 104-2	90.1		-1.00	
2115	ISO14184-2	97.68		-0.03	
2121					
2129					
2132	ISO14184-2	103.4201		0.70	
2137					
2138					
2165	ISO14184-2	97.76		-0.02	
2170					
2102					
2201	ISO14184-2	99.6		0.21	
2226					
2238	ISO14184-2	93.12		-0.61	
2247					
2255					
2256					
2264					
2200					
2209	15014184-2	97.5		-0.06	
2289	ISO14184-2	100.4		0.31	
2290					
2297	ISO14184-2	103		0.64	
2310	ISO14184-2	92.8		-0.65	
2311	ISO14184-2	97.09		-0.11	
2313	ISO14184-2	94.45		-0.44	
2314	ISO14184-2	95.73		-0.28	
2320	15014184-2	115.3		2.21	
2320	AATCC112	106 84		1 13	
2347	GB/T2912	96.0		-0.25	
2348	ISO14184-2	98.7		0.10	
2350	AATCC112	97.90	С	-0.01	First reported 195.80
2351	ISO14184-2	96		-0.25	
2356	ISO14184-2	96.04		-0.24	
2358	ISO14184-2	92.771		-0.66	
2303	15014104-2	90.4		0.00	
2365	ISO14184-2	99.3		0.34	
2366	ISO14184-2	98		0.01	
2367	ISO14184-2	97.76		-0.02	
2369	ISO14184-2	98.23		0.04	
2370	ISO14184-2	93.10		-0.62	
2372	ISO14184-2	92.8		-0.65	
2373	ISO14184-2	100.00		0.26	
2373	ISO14104-2 ISO14184-2	92.0		-0.09	
2370	ISO14184-2	100 9481		0.01	
2380	ISO14184-2	110.49		1.60	
2381	ISO14184-2	109.50		1.47	
2383	GB/T2912	97.5		-0.06	
2385					
2406	ISO14184-2	78.62		-2.46	
2415	15014184-2	90.1		-1.00	
2429	15014184-2	98.1		0.02	
2442 2440	ISO14104-2	93.3		-0.40	
2453					
2454	ISO14184-2	92.2		-0.73	
2458					
2474	ISO14184-2	109.1		1.42	
2475					
24/6					
2483					

lab	method	value	mark	z(targ)	remarks
2489	ISO14184-2	106.7	man	1.11	romarko
2492					
2494	ISO14184-2	117.76		2.52	
2504	ISO14184-2	94.275		-0.47	
2511					
2514					
2519					
2534					
2549	ISO14184-2	98.1		0.02	
2567	10011101				
2569	ISO14184-2	97		-0.12	
2012	1001/10/ 0			1 1 1	
2502	13014104-2	00.0937		-1.41	
2605	15014184-2	98.04		0.01	
2625	ISO14184-2	77 95		-2 54	
2638	ISO14184-2	98.44		0.06	
2643	ISO14184-2	99.56		0.21	
2644					
2665					
2674					
2678					
2726					
2/2/					
2789	10014104 0			0.47	
2027	15014104-2	101.04		0.47	
2003					
2921					
2926					
2933					
2948	ISO14184-2	138.56	R(0.01)	5.17	
2950			(
2955					
2971	ISO14184-2	91.20		-0.86	
2977					
2989					
2991	10044494 9				
3015	15014184-2	95.3		-0.34	
3033					
3116					
3118					
3145					
3146					
3153					
3163					
3166					
3172	10011101				
3182	ISO14184-2	105.02		0.90	
3185	15014184-2	97.50		-0.06	
3190	13014104-2 AATCC112	92.04		-0.09	
3200	AATOOTIZ	101.94		0.51	
3207					
3210					
3214					
3216					
3222					
3225					
3228	100111010				
3230	ISO14184-2	109.71	С	1.50	First reported 219.8
3232	15014184-2	97.51		-0.06	
3231	GB/T2012	00.Z 105	C	-1.02	First reported 40
6101	GD/12912	105	C	0.90	r list reported 49
8005					
8008					
8016	ISO14184-2	98.00		0.01	
	normality	suspect			
	n autliana	68			
	outliers	1			
	niean (n) st dev. (n)	97.944 7 1017	RSD - 7%		
	R(calc.)	19 0/1	100 - 1%		
	st dev (Horwitz)	7 8601			
	R(Horwitz)	22.008			





APPENDIX 2 Analytical details

lab	ISO/IEC 17025 accredited	Sample Intake Free Formaldehyde (grams)	Sample Intake Released Formaldehyde (grams)	Dimedone confirmation test	Dimedone confirmation done because of
110	Yes	1 g	1 g	No	
210	Yes	1g		No	
339	Yes	2g		No	
362	Yes	1g		No	
523	Yes	3 grams	Not apply	Yes	Not apply
551	Yes				
623	Yes	1 gram	1 gram	Yes	
624					
840	Yes	0.5g	1g	No	the test second in the 100
2108	Yes	1 g		Yes	We make the test according to ISO 14181-1
2115	Yes	1 g	1 g	Yes	ISO 14184-1
2121	Yes	1g	5	No	
2129	Yes	1.0g		No	
					The value are greater than detection
2132	Yes	<u>1g</u>	1g	Yes	limit.
2137	Yes	10 a			No
2150	Yes	0.5g		No	NO
2170	Yes	1.0 grams	Sample not enough to conduct the test.	No	
2182	Yes	1gram		Yes	Conduct confirmation for positive sample.
					dimedone confirmation test is performed
2184	No	1g		No	for positive sample to check interference
2201	Yes	1g	1g	Yes	formaldehyde.
2226	Yes	1.0 g	N/A	No	Z
2238	Yes	#23750:0.9997g&0.9998g #23751:1.0013g&1.0008g	#23750:1.0003g&0.9999g #23751:1.0003g&0.9996g	No	No
2247				 Voc	
2255	Yes	1.0	NA	Ves	Dimedone reacts all amount of
2256	Yes	1 0015a &1 0042a		100	formaldehyde in sample solution. If the sample solution after performed confirmation test gives an absorbance, it is due to the presence of interference
2200	100	1.00 log a 1.00 l2g		Yes	Yes, we perform a dimedone
2264	Yes	1 gram	NA		confirmation test used for correct the interferences.
2265	Yes	1 gram		Yes	sample was positive
0000	Maa	4	Ned and Parel in the design of the	Yes	Dimedone is used to confirm the actual presence of formaldehyde in a sample when there is a doubt that the absorption may not be due to formaldehyde but for
2269	Yes	1 grams	1 0000g	No	example to an extracted coloring agent
2213	Voc	1.00009	1.0000y	No	
2289	Yes	1.00g	1.00g		
2297	Yes	0.5	1	No	
2310	Yes	1	1	No	
2311	Yes	1	1	No	
2313	Yes	1.0g	1.0g	Yes	
2314	Yes	1.0 gram	1.0 gram	No	
2320	Yes	1g	1g	Yes	Even dimedone correction done there was no significant results difference
2326	Yes	1 gm for both samples	1 gm for both samples	No	Grey(#23751) 1.0089 am - 0.0035 am
2330	Yes	1 gram	1 gram_	Yes	To confirm the result
2347	Yes	1g	1g	No	1
2348	Yes	1 g each for two samples	1 g each for two samples	No	
2350	Yes	1g	1g	Yes	N/A
2351	Yes	#22750.1 0001 ~/4 0002 ~	#23750-1 0002 ~/4 0022 -		
2356	No	#23751:1.0022 g/1.0088 g	#23751:1.0003 g/1.0022 g	No	None

lab	ISO/IEC 17025 accredited	Sample Intake Free Formaldehyde (grams)	Sample Intake Released Formaldehyde (grams)	Dimedone confirmation test	Dimedone confirmation done because of
2358	Yes	1	1	No	
2363	Yes	0.5g	0.5g	No	
		23750:1.0027/1.0011	23750:1.0013/1.0010		
2364	No	23751:1.0014/1.0023	23751:1.0018/1.0007	No	/
2365	Yes	0.5g	0.5g	No	
2366			~		
2367	Yes	0.9948	1.0015	Yes	
2369	Yes				
2370	Ves	10	10	Ves	dimedone confirmation test Exclude other compounds from interfering with
2370	Voc	1g 1g	19	Voc	
0070	<u> </u>	19	19	No.	For Question 4,We perform a dimedone confirmation test for ISO 14184- 1,Because there is a doubt that the absorption may not be due to formaldehyde(eg.coming from extracted
2373	Yes	<u>1g</u>	<u>1g</u>	Yes	coloring agent).
2375	Yes	0,5 Gram	1 gram	No	-
2378	Yes	<u>1g</u>	<u>1g</u>	No	
2379	Yes	0.5 g	<u>1g</u>	Yes	the result of sample more than LOQ
2380	Yes	1.0 g	1.0 g	No	
2381	Yes	1g 23750# 1g per sample	1g 23750# 1g per sample	No	there is a doubt that the absorption may not be due to formaldehyde but, for example, to an extracted colouring
2383	Yes	23751# 1g per sample	23751# 1g per sample	Yes	agent.
2385	Yes	1,0		No	
2406	No	0.6 gram	1 gram	No	
2415	No	0.5 grams	1 gram	No	
2429	No	1g	1g	No	
2442	Yes	1gm	1gm	No	
2449	Yes	1.0 gram	1,o gram	Yes	
2453	No	±1.5g		No	
2454	Yes	1.0000g, two parallel tests total:2.0000g	1.0000g, two parallel tests total:2.0000g	Yes	Because the extract solution contains formaldehyde, we need to confirm the absorption is due to formaldehyde or not.
2458	Yes				
2474	Yes	1 gram	1 gram	No	
2475	Yes	0.50			
2476	Yes	1 gm	NA	No	
2482	Yes	1	not analyzed	No	
2483	Yes	1.00		No	
2489	Yes	2.5g	1 g	No	-
2492	Yes	0.5g	NA	No	
2494	Yes	1 gram	1 gram	No	
2504	Yes	1 gram	1 gram	No	n/a
2511	Yes				
2514	Yes	1.04		Yes	
2519	Yes	1		Yes	of confirm test result.
2534	Yes	1 gr		No	
2549	Yes	1 gram	1 gm	No	
2567					
2569	Yes	1 gm	1 gm	No	
2572	Yes				
2582	Yes	23750- 1.0029 g 23751- 1.0024 g	23750- 1.0014 g 23751- 1.0012 g	Yes	Reconfirmation on slightly extracted color
2590	Yes	1.25a		103	interferences
2605	Yes	2g	2g	Yes	
2625	Yes	1g	1g	No	
2638	No	0.8 am	0.8 am	No	
2643	Yes	1 a	1 a	No	
2644	Yes	1.0000	. y	Yes	To exclude interferences (above 50 mg/kg)
2665	Yes	0.5 g		No	J
2674	No	1a		Yes	
2678	Yes	1 a		No	
2726	No	1 a		No	
2,20		· IJ			

lab	ISO/IEC 17025 accredited	Sample Intake Free Formaldehyde (grams)	Sample Intake Released Formaldehyde (grams)	Dimedone confirmation test	Dimedone confirmation done because of
2727	Yes	1 gram		Yes	We follow the standard.
2789	Yes	1		No	
2827	Yes	0.5g	0.5g	No	
2885	No	1g	*	No	
2908	Yes	1.003		No	
2921					
2926	Yes	1g		Yes	To confirm Formaldehyde presence.
2933	Yes	1 g	Null	Yes	Because the sample is positive.
2948	Yes	1	1	No	• •
2950	Yes	1 gram		No	
2955	Yes	1.0	N/A	No	N/A
2971	Yes	1g	1g	Yes	
2977	Yes	1g		No	
2989					
2991	Yes	2g		No	
3015	Yes	1g	1g	Yes	
3033	Yes	2.5 g		No	
3110					
3116	Yes	1		Yes	
3118	Yes	0.5 grams		No	
3145	Yes	1 g per determination		Yes	The solutions show a yellow hue.
			Released Formaldehyde		
3146	Yes	Between 0.50g and 1.00g	was not tested.	No	
3153	Yes	1 gram		No	
3163	No	1		No	
3166	Yes	0.5	Not analyzed	No	
3172	Yes				
3182	Yes	1.00 grams	1.00 grams	No	-
3185	Yes	<u>1g</u>	<u>1g</u>	No	1
3190	Yes	1.0000g	1.0000g	No	
2107	Vaa	1 ~	1 ~	Vaa	Dimedone step was applied to confirm
3197	Yes	10	īg	No	Formaldenyde compound.
3200	Tes	ig		INU	#27350 Dimedone = 3 ppm
3207	Yes	1 gram		Yes	#27351 Dimedone = 1 ppm
3210	Yes	1		No	
3214	Yes	1 g	N/A	Yes	
		Approx. 1g for each			#23751: An additional replication has
		replicated. Two replicates are			been carried out due to the variability of
3216	Yes	made from each sample.		No	the results of the two initial analyses.
3222	Yes	1g		No	
3225					
3228	Yes	1.0g		No	
3230	Yes	1.0g	1.0g	No	
3232	Yes	1 g	1 g	No	
3237	Yes	0,5	0,5	Yes	
					Confirmation test has to be done when formaldehyde content is greater than
3248	Yes	1	1	Yes	reporting limit 16 mg/kg.
6191	No	2 g		No	
8005	Yes	1		Yes	
8008					
8016	Yes	1 ± 0.05 gm	1 ± 0.05 gm	no	

APPENDIX 3

Number of participants per country

6 labs in BANGLADESH 1 lab in BRAZIL

- 1 lab in BULGARIA 2 labs in CAMBODIA 1 lab in EGYPT 6 labs in FRANCE 9 labs in GERMANY 14 labs in HONG KONG 11 labs in INDIA 5 labs in INDONESIA
- 7 labs in ITALY
- 5 labs in KOREA, Republic of
- 1 lab in MAURITIUS
- 3 labs in MEXICO
- 2 labs in MOROCCO
- 31 labs in P.R. of CHINA
- 6 labs in PAKISTAN
- 1 lab in PERU
- 2 labs in PORTUGAL
- 1 lab in SINGAPORE
- 2 labs in SPAIN
- 2 labs in SRI LANKA
- 5 labs in TAIWAN
- 4 labs in THAILAND
- 1 lab in THE NETHERLANDS
- 3 labs in TUNISIA
- 4 labs in TURKEY
- 3 labs in U.S.A.
- 5 labs in VIETNAM

APPENDIX 4

Abbreviations

С	= 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
fr.	= first reported
f+?	= possibly a false positive test result?
f-?	= possibly a false negative test result?

Literature

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