Institute for
Interlaboratory Studies

Results of Proficiency Test
Migration of elements EN71-3
Category 3
April 2022

Organized by: Institute for Interlaboratory Studies
Spijkenisse, The Netherlands

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1 INTRODUCTION

Toy safety is the practice of ensuring that toys, especially those made for children, are safe usually through the application of set safety standards. In many countries, toys must be able to pass safety tests in order to be sold. Many regions model their safety standards on the EU's EN71 standard, either directly, or through adoption of the ISO8124-3 standard which in itself is modelled on EN71. In Europe, toys must meet the criteria set by the EC Toy Safety Directive 2009/48/EC which applies to toy imports into the EU since 20th of July 2011. There is an exception for the chemical requirements under part III of Annex II of this directive. These chemical requirements came into force on 20th of July 2013.
The test methods EN71-3:19+A1:21 and ISO8124-3:20 both describe the determination of Migration of elements (metals that are considered hazardous) when a toy gets into contact with an acid solution (0.07 n HCl, simulating a gastric acid solution).

Since 2010 the Institute for Interlaboratory Studies (iis) organizes a proficiency scheme for Migration of elements EN71-3 every year. During the annual proficiency testing program 2021/2022 it was decided to continue the proficiency test for the determination of Migration of Elements. This proficiency test describes the Migration of elements EN71-3 for category 3 samples.

In this interlaboratory study 101 laboratories in 28 countries registered for participation, see appendix 4 for the number of participants per country. In this report the results of this Migration of elements EN71-3 for category 3 proficiency test are presented and discussed. This report is also electronically available through the iis website www.iisnl.com.

2 SET UP

The Institute for Interlaboratory Studies (iis) in Spijkenisse, the Netherlands, was the organizer of this proficiency test (PT). Sample analyzes for fit-for-use and homogeneity testing were subcontracted to an ISO/IEC17025 accredited laboratory.
It was decided to send two different samples: one sample with two 5x5 cm sheets of paper with blue ink labelled #22560 and one sample of approximately 0.5 grams of dried paint labelled #22561.
The participants were requested to report rounded and unrounded test results. The unrounded test results were preferably used for statistical evaluation.

2.1 ACCREDITATION

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

2.2 PROTOCOL

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

2.3 CONFIDENTIALITY STATEMENT

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

2.4 SAMPLES

For the first sample a batch of paper was selected printed with blue ink. After cutting into 5x5 cm paper sheets the batch was randomly divided over 125 small plastic bags. Each bag contained 2 paper sheets and was labelled #22560.
The homogeneity of the subsamples was checked by determination of Strontium in accordance with EN71-3 on 8 stratified randomly selected subsamples.

	Strontium as Sr in mg/kg
sample #22560-1	300
sample #22560-2	314
sample #22560-3	309
sample #22560-4	320
sample #22560-5	311
sample #22560-6	308
sample #22560-7	314
sample #22560-8	310

Table 1: homogeneity test results of subsamples #22560

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.

	Strontium as Sr in mg/kg
r (observed)	16
reference test method	EN71-3:19+A1:21
0.3 x R (reference test method)	39

Table 2: evaluation of the repeatability of subsamples #22560

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

For the second sample a batch of gray colored dried paint was prepared by iis. The elements Antimony, Cadmium, Chromium and Lead were added to the paint. The subsamples were labelled #22561.
The batch for sample #22561 was used in the previous proficiency test iis16V02 on Migration of elements as sample #16557. Therefore, homogeneity of the subsamples was assumed.

To each of the participants one sample with paper labelled #22560 and one sample with dried paint labelled #22561 were sent on 2nd of March, 2022.

2.5 ANALYZES

The participants were requested to determine the migration of nineteen elements (Aluminum, Antimony, Arsenic, Barium, Boron, Cadmium, Chromium (III), Chromium (VI), Cobalt, Copper, Lead, Manganese, Mercury, Nickel, Selenium, Strontium, Tin, Organic Tin and Zinc) applying the analysis procedure that is routinely used in the laboratory. It was requested to report if the laboratory was accredited for the requested elements that were determined 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 appendices 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 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 appendices 1 and 2. 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 (derived from e.g. ISO or ASTM test methods), the z-scores were calculated using a target standard deviation. This results in an evaluation independent of the variation in this interlaboratory study.

The target standard deviation was calculated from the literature reproducibility by division with 2.8. In case no literature reproducibility was available, other target values were used, like Horwitz or an estimated reproducibility based on former 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 the samples due to COVID-19 pandemic. Therefore, the reporting time on the data entry portal was extended with another week. Nine participants reported test results after the extended reporting date and seven other participants did not report any test results. Not all participants were able to report all tests requested.
In total 94 participants reported 846 numerical test results. Observed were 32 outlying test results, which is 3.8%. 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 ELEMENT

In this section the reported test results are discussed per sample and per element. 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 5.

EN71-3 method is considered to be the official test method for the determination of elements migrated from different matrices. In 2019 a new version of EN71-3 is published. In 2021 an amended version of the method is published in which the most significant change is the lower limits published in Table 2 for Aluminum.
In test method of EN71-3:19+A1:21 precision data are given in Table 4 and in Table C.1. Table 4 contains precision data from an interlaboratory study. The committee was not able to obtain precision data for all elements for each category via an interlaboratory study. In order to compensate for missing data for certain element and category combinations estimations for the reproducibility have been considered by the committee based on table 4 and input from experts. These precision data are given in table C.1 and are used to evaluate the performance of the group of participants in this PT.

In EN71-3:19+A1:21 a part is introduced that maintaining the pH between 1.1 and 1.3 is very important for the determination of the migration of elements. Therefore, based on the answers given by the participants, the test results of participants who reported pH values outside the range of 1.1 and 1.3 were excluded from the statistical evaluations.

sample #22560

Aluminum: This determination was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of EN71-3:19+A1:21.

Copper: This determination was very problematic at the low level of 52 mg/kg. One statistical outlier was observed and one other test result was excluded. The calculated reproducibility after rejection of the suspect data is not at all in agreement with the requirements of EN71-3:19+A1:21. Furthermore, the level of Copper is low compared to the Migration limit for toy materials category III as mentioned in EN71-3:19+A1:21. Therefore, no z-scores are calculated.

Lead: This determination was not problematic. Two statistical outliers were observed and three other test results were excluded. The calculated reproducibility after rejection of the suspect data is in agreement with the requirements of EN71-3:19+A1:21.

Strontium: This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of EN71-3:19+A1:21.

The majority of the participants agreed on a concentration near or below the limit of detection for all other reported elements mentioned in paragraph 2.5. Therefore, no z-scores are calculated for these elements. The reported results can be found in appendix 2.

sample #22561

Aluminum: This determination was not problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of EN71-3:19+A1:21.

Antimony: This determination was not problematic. Three statistical outliers were observed and two other test results were excluded. The calculated reproducibility after rejection of the suspect data is in agreement with the requirements of EN71-3:19+A1:21.

Cadmium: This determination was not problematic. Four statistical outliers were observed and three other test results were excluded. The calculated reproducibility after rejection of the suspect data is in agreement with the requirements of EN71-3:19+A1:21.

Chromium (III): This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of EN71-3:19+A1:21.

Lead: This determination was not problematic. Five statistical outliers were observed and two other test results were excluded. The calculated reproducibility after rejection of the suspect data is in agreement with the requirements of EN71-3:19+A1:21.

Manganese: This determination was not problematic at the low level of 13 mg/kg. Four statistical outliers were observed and one other test result was excluded. The calculated reproducibility after rejection of the suspect data is in agreement with the requirements of EN71-3:19+A1:21. The level of Manganese is low compared to the Migration limit for toy materials category III as mentioned in EN71-3:19+A1:21. However it was decided to calculate z-scores because of the good agreement with the requirements of EN71-3:19+A1:21.

Strontium: This determination was not problematic. Five statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of EN71-3:19+A1:21.

The majority of the participants agreed on a concentration near or below the limit of detection for all other reported elements mentioned in paragraph 2.5. Therefore, no z-scores are calculated for these elements. The reported results can be found in appendix 2.

4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES

A comparison has been made between the reproducibilities as declared by the reference test method and the reproducibilities 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 tables.

Element	unit	n	average	2.8 * sd	R(lit)
Aluminum as Al	mg/kg	71	235	79	99
Copper as Cu	mg/kg	50	52.2	102.5	(21.9)
Lead as Pb	mg/kg	86	26.6	8.3	22.4
Strontium as Sr	mg/kg	82	342	70	144

Table 3: reproducibilities of tests on sample #22560

For results between brackets no z-scores are calculated.

Element	unit	n	average	2.8 * sd	R(lit)
Aluminum as Al	mg/kg	75	4014	1337	1686
Antimony as Sb	mg/kg	81	173	76	145
Cadmium as Cd	mg/kg	84	273	65	115
Chromium (III)	mg/kg	64	210	76	88
Lead as Pb	mg/kg	81	345	113	290
Manganese as Mn	mg/kg	51	12.6	4.1	5.3
Strontium as Sr	mg/kg	77	153	41	64

Table 4: reproducibilities of tests on sample #22561

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

4.3 COMPARISON OF THE PROFICIENCY TEST OF APRIL 2022 WITH PREVIOUS PTS

	April 2022	April 2021	April 2020	April 2019	April 2018
Number of reporting laboratories	94	89	87	93	91
Number of test results	846	723	838	810	661
Number of statistical outliers	32	52	33	13	2
Percentage of statistical outliers	3.8%	7.2%	3.9%	1.6%	0.3%

Table 5: comparison with previous proficiency tests

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

The uncertainties determined in this PT are compared with the relative standard deviations as found in previous years and with the target requirements in the next table.

Element	April 2022	April 2021	April 2020	April 2019	2010-2018	Target
Aluminum	12%	11-35%	12-13%	13-33%	16-63%	15%
Antimony	16%	n.e.	n.e.	n.e.	22-28%	30%
Arsenic	n.e.	n.e.	n.e.	n.e.	13-20%	20%
Barium	n.e.	15%	n.e.	n.e.	13-76%	30%
Boron	n.e.	n.e.	n.e.	n.e.	12%	15%
Cadmium	8%	n.e.	9-15%	n.e.	11-20%	15%
Chromium (III)	13%	13-27%	n.e.	n.e.	6-23%	15%
Chromium (VI)	n.e.	35%	n.e.	n.e.	n.e.	50%
Cobalt	n.e.	n.e.	n.e.	20%	10-20%	15%
Copper	(70%)	n.e.	11%	n.e.	11-18%	15%
Lead	11-12%	19%	23%	n.e.	12-22%	30%
Manganese	12%	16%	32%	13-22%	13-29%	15%
Mercury	n.e.	31%	n.e.	25%	55%	20%
Nickel	n.e.	n.e.	n.e.	15%	14-21%	20%
Selenium	n.e.	16%	n.e.	14%	26%	15%
Strontium	7-10%	12%	16-23%	13-15%	13-25%	15%
Tin	n.e.	n.e.	n.e.	n.e.	32-42%	30%
Organic Tin	n.e.	n.e.	n.e.	n.e.	n.e.	50%
Zinc	n.e.	n.e.	n.e.	14%	11-39%	15%

Table 6: development of uncertainties over the years

For results between brackets no z-scores are calculated.

The performance of the group is in general equal to or better in comparison to the performance in previous years, except Copper. The performance is in general also in line with the precision requirements of EN71-3:19 table C.1.

4.4 EVALUATION OF ANALYTICAL DETAILS

A vast majority (about 90%) of the reporting participants mentioned that they are ISO/IEC17025 accredited for category 3 determination of Migration of elements EN71-3.

Furthermore, the participants were asked to provide some analytical details which are listed in appendix 3. Based on the answers given the following can be summarized:
- Almost all participants reported to have used a sample intake of 100 mg or more. Only one participant reported to have used a lower sample intake. Please note that test method EN71-3 mentions to take not less than 100 mg whenever possible.
- A majority of the participants mentioned to have used a volume ratio of 5 mL of HCl solution per 100 mg sample intake for the migration.
- 96% of the participants reported a pH value of the solution between 1.1 and 1.3, see also paragraph 4.1. Of this group 65% of the participants have adjusted to keep the pH within this range.

As the majority of the group follow the same analytical procedures no separate statistical analysis has been performed.

5 DISCUSSION

Sample #22561 was used before in proficiency test iis16V02 as sample #16557. In the next table a comparison is given between the two proficiency tests. The concentration levels of the elements are comparable between both samples while the calculated reproducibilities from sample #22561 are much lower than for sample #16557

Element	unit	sample #22561			sample #16557		
		n	average	R(calc)	n	average	R(calc)
Antimony	mg/kg	81	173	76	112	181	140
Cadmium	mg/kg	84	273	65	104	265	98
Chromium (III)	mg/kg	64	210	76	88	211	97
Lead	mg/kg	81	345	113	93	319	166

Table 7: comparison of sample #22561 with sample #16557

This PT clearly shows the benefit of the publication of EN71-3 in 2019 in which the importance of keeping the pH between 1.1 and 1.3 is well described. In this PT the test results of only three participants were excluded for not keeping the pH between 1.1 and 1.3. Surprisingly, the z-scores of these participants are in most cases all right. Nevertheless, for consistency the test results were excluded from the statistical evaluations in this PT.
The comparison of sample #22561 to the 2016 PT (see table 7 above) also underpin the effect for keeping the pH well controlled. The reproducibility in the 2022 PT is much lower than observed in the 2016 PT. In earlier versions of EN71-3 the effect of the pH was less clearly described and therefore less understood and applied by the group of laboratories.

When the results of this interlaboratory study are compared to the Migration limits from toy materials for category III as mentioned in EN71-3:19+A1:21 (see table below), it was noticed that not all participants would have made identical decisions about the acceptability of the material for the determined components.
The majority of the reporting laboratories would have rejected sample #22560 for too high level of Lead while ten laboratories would have accepted the sample.
All reporting laboratories would have rejected sample #22561 for too high level of Cadmium, but for Lead the majority of the laboratories would have rejected the sample while two laboratories would have accepted the sample.

Element	Category III mg/kg
Aluminum	28130
Antimony	560
Arsenic	47
Barium	18750
Boron	15000
Cadmium	17
Chromium (III)	460
Chromium (VI)	0.053
Cobalt	130
Copper	7700
Lead	23
Manganese	15000
Mercury	94
Nickel	930
Selenium	460
Strontium	56000
Tin	180000
Organic Tin	12
Zinc	46000

Table 8: Migration limits from toy materials for Category III as mentioned in EN71-3:19+A1:21

6 CONCLUSION

In this PT it appeared that version of EN71-3:19+A1:21 has been followed well by most of the participants. Most of the participants had detected the elements correctly in the samples.
Each participating laboratory should 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.

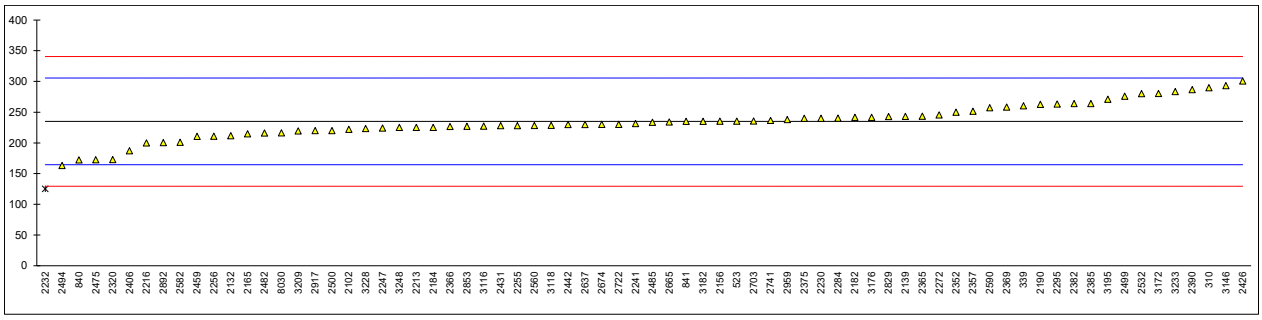
APPENDIX 1

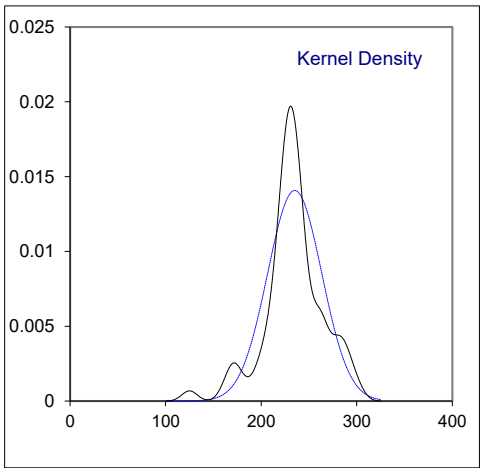
Determination of migration of Aluminum as Al on paper sample #22560; results in mg/kg

lab	method	value	mark	z(targ)	remarks
210		-----		-----	
310	EN71-3	289.556		1.55	
339	EN71-3	260.293		0.72	
523	EN71-3	235.24		0.01	
551		-----		-----	
840	EN71-3	172.00		-1.79	
841	EN71-3	234.9		0.00	
2102	EN71-3	221.913		-0.37	
2132	EN71-3	211.5		-0.67	
2137		-----		-----	
2139	EN71-3	243		0.23	
2156	EN71-3	235.2		0.01	
2165	EN71-3	214.70		-0.58	
2182		241.42		0.18	
2184	EN71-3	225.1		-0.28	
2190	EN71-3	262.46		0.78	
2201	EN71-3	<300		-----	
2213	EN71-3	225.01		-0.28	
2216	EN71-3	200		-0.99	
2230	EN71-3	240.1		0.15	
2232	EN71-3	124.86	R(0.05)	-3.12	
2238	EN71-3	<300		-----	
2241	EN71-3	231.416		-0.10	
2247	EN71-3	224.14		-0.31	
2255	EN71-3	228.0		-0.20	
2256	EN71-3	210.89		-0.68	
2265		-----		-----	
2272	EN71-3	245.4		0.30	
2284	EN71-3	240.24		0.15	
2287		-----		-----	
2290	EN71-3	<300		-----	
2293		-----		-----	
2294		-----		-----	
2295	EN71-3	263		0.79	
2320	EN71-3	172.7		-1.77	
2352	EN71-3	250.0		0.43	
2357	EN71-3	251.52		0.47	
2363		-----		-----	
2365	EN71-3	243.5		0.24	
2366	EN71-3	226.6		-0.24	
2369	EN71-3	258.25		0.66	
2375	EN71-3	240		0.14	
2382	EN71-3	264		0.82	
2385		264		0.82	
2390	EN71-3	286.45		1.46	
2406	EN71-3	187.04		-1.36	
2426	EN71-3	300.68		1.86	
2429	EN71-3	<300		-----	
2431	EN71-3	227.93		-0.20	
2442	EN71-3	230.00		-0.14	
2459	EN71-3	210.48		-0.70	
2475	EN71-3	172.3		-1.78	
2482	EN71-3	216		-0.54	
2485	EN71-3	233.489		-0.04	
2492		-----		-----	
2494	EN71-3	163.18		-2.04	
2499	EN71-3	275.88	C	1.16	first reported 352.23
2500	EN71-3	220		-0.43	
2509		-----		-----	
2532	EN71-3	280.24		1.28	
2560	EN71-3	228.1		-0.20	
2582	EN71-3	200.82	C	-0.97	first reported 131.2
2590	EN71-3	257.150		0.63	
2637		230		-0.14	
2643		-----		-----	
2659	ISO8124-3	not analyzed		-----	
2665	EN71-3	233.9		-0.03	
2674	EN71-3	230.0431		-0.14	
2703	EN71-3	235.4		0.01	
2722	EN71-3	230.2		-0.14	
2741	EN71-3	236.54		0.04	
2798	EN71-3	Not Detected		-----	possibly a false negative test result?
2817		-----		-----	
2829	EN71-3	242.80		0.22	
2853	EN71-3	227		-0.23	

lab	method	value	mark	z(targ)	remarks
2864		-----		-----	
2892	EN71-3	200.3		-0.98	
2917	EN71-3	219.96		-0.43	
2959	EN71-3	238		0.09	
2980		-----		-----	
3100	EN71-3	<300		-----	
3116	EN71-3	227.312		-0.22	
3118	EN71-3	228.4192		-0.19	
3146	EN71-3	293		1.65	
3153	EN71-3	<300		-----	
3172	EN71-3	280.43		1.29	
3176	EN71-3	241.62		0.19	
3182	EN71-3	235.082		0.00	
3185	EN71-3	<300		-----	
3190	EN71-3	<300		-----	
3195	EN71-3	271		1.02	
3200		-----		-----	
3209	EN71-3	219.2		-0.45	
3214	EN71-3	<300		-----	
3218		-----		-----	
3228	EN71-3	223.3		-0.33	
3233	EN71-3	283.64		1.38	
3248	EN71-3	225		-0.28	
8005		-----		-----	
8030	EN71-3	216.15		-0.53	
8031		-----		-----	

normality	OK	
n	71	
outliers	1	
mean (n)	234.987	
st.dev. (n)	28.3440	RSD=12%
R(calc.)	79.363	
st.dev.(EN71-3:19+A1:21)	35.2481	
R(EN71-3:19+A1:21)	98.695	



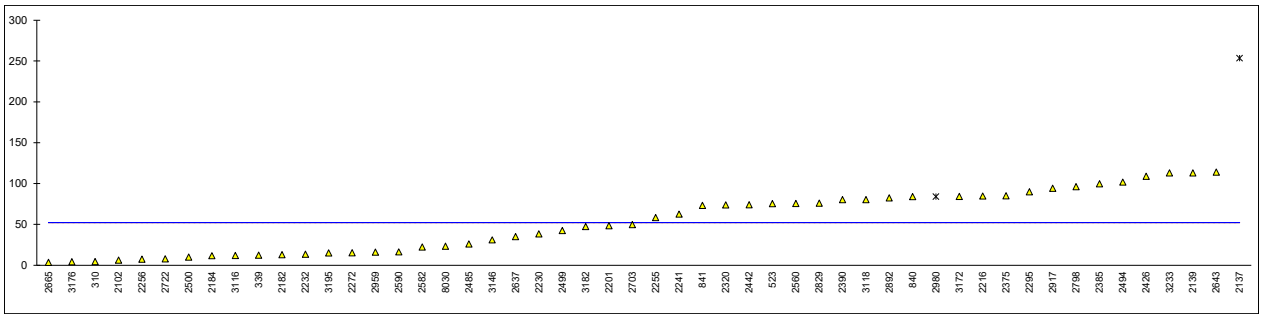


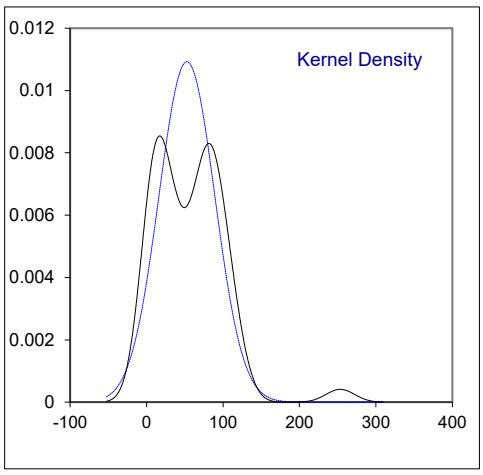
Determination of migration of Copper as Cu on paper sample #22560; results in mg/kg

lab	method	value	mark	z(targ)	remarks
210		-----		-----	
310	EN71-3	4.447		-----	
339	EN71-3	12.224		-----	
523	EN71-3	75.35		-----	
551		-----		-----	
840	EN71-3	83.96		-----	
841	EN71-3	73.2		-----	
2102	EN71-3	6.086		-----	
2132	EN71-3	<15		-----	
2137	EN71-3	253.50	R(0.01)	-----	
2139	EN71-3	113		-----	
2156	EN71-3	<5		-----	
2165	EN71-3	Not detected		-----	
2182		12.88		-----	
2184	EN71-3	11.51		-----	
2190	EN71-3	<50		-----	
2201	EN71-3	48.37		-----	
2213	EN71-3	<10		-----	
2216	EN71-3	84.7		-----	
2230	EN71-3	38.5		-----	
2232	EN71-3	13.43		-----	
2238	EN71-3	<10		-----	
2241		62.513		-----	
2247	EN71-3	<50		-----	
2255	EN71-3	58.3		-----	
2256	EN71-3	7.39		-----	
2265		-----		-----	
2272	EN71-3	15.12		-----	
2284		-----		-----	
2287		-----		-----	
2290		-----		-----	
2293		-----		-----	
2294		-----		-----	
2295	EN71-3	90		-----	
2320	EN71-3	73.7		-----	
2352		-----		-----	
2357	EN71-3	<50		-----	
2363		-----		-----	
2365	EN71-3	<50		-----	
2366	EN71-3	<50		-----	
2369	EN71-3	not detected		-----	
2375	EN71-3	85		-----	
2382	EN71-3	＜50		-----	
2385		99.8		-----	
2390	EN71-3	80.25		-----	
2406	EN71-3	<50		-----	
2426	EN71-3	108.77		-----	
2429	EN71-3	<10		-----	
2431		-----		-----	
2442	EN71-3	74.00		-----	
2459		-----		-----	
2475		-----		-----	
2482		-----		-----	
2485	EN71-3	25.886		-----	
2492		-----		-----	
2494	EN71-3	101.62		-----	
2499	EN71-3	42.41		-----	
2500	EN71-3	10		-----	
2509		-----		-----	
2532	EN71-3	Not Detected		-----	
2560	EN71-3	75.6		-----	
2582	EN71-3	22.35		-----	
2590	EN71-3	16.215		-----	
2637		35		-----	
2643		114.0	C	-----	first reported 179.8
2659	ISO8124-3	not analyzed		-----	
2665	EN71-3	3.47		-----	
2674		-----		-----	
2703	EN71-3	49.6		-----	
2722	EN71-3	7.6889		-----	
2741	EN71-3	<100		-----	
2798	EN71-3	96		-----	
2817		-----		-----	
2829	EN71-3	75.95	C	-----	first reported 154.10
2853		-----		-----	

lab	method	value	mark	z(targ)	remarks
2864		-----		-----	
2892	EN71-3	82.40		-----	
2917	EN71-3	94.05		-----	
2959	EN71-3	16		-----	
2980		84	ex	-----	test result excluded, see §4.1
3100	EN71-3	<10		-----	
3116	EN71-3	11.902		-----	
3118	EN71-3	80.3796		-----	
3146	EN71-3	31.04		-----	
3153	EN71-3	<10		-----	
3172	EN71-3	84.067		-----	
3176	EN71-3	4.24		-----	
3182	EN71-3	47.230		-----	
3185	EN71-3	<10		-----	
3190	EN71-3	＜10		-----	
3195	EN71-3	15.0		-----	
3200		-----		-----	
3209	EN71-3	<50.0		-----	
3214	EN71-3	<10		-----	
3218		-----		-----	
3228	EN71-3	<50		-----	
3233	EN71-3	112.98		-----	
3248		-----		-----	
8005		-----		-----	
8030	EN71-3	23.25		-----	
8031		-----		-----	

	normality	OK
	n	50
	outliers	1 +1ex
	mean (n)	52.217
	st.dev. (n)	36.6097 RSD=70%
	R(calc.)	102.507
	st.dev.(EN71-3:19+A1:21)	(7.8325)
	R(EN71-3:19+A1:21)	(21.931)

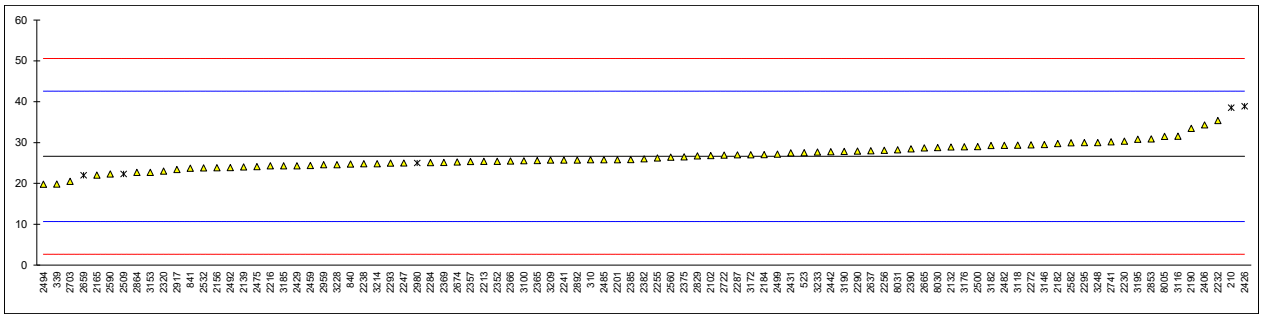


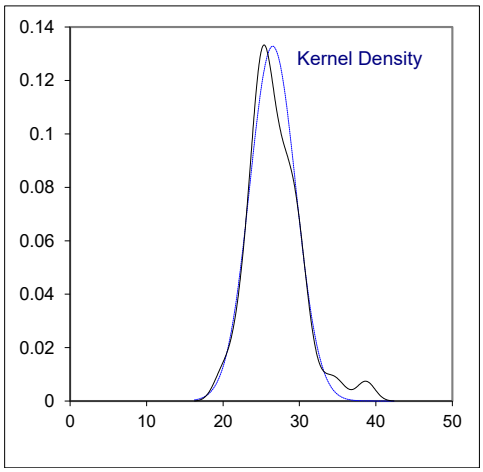


Determination of migration of Lead as Pb on paper sample #22560; results in mg/kg

lab	method	value	mark	z(targ)	remarks
210	In house	38.52	R(0.05)	1.49	
310	EN71-3	25.779		-0.11	
339	EN71-3	19.839		-0.85	
523	In house	27.52		0.11	
551		-----		-----	
840	EN71-3	24.74		-0.24	
841	EN71-3	23.7		-0.37	
2102	EN71-3	26.787		0.02	
2132	EN71-3	28.9		0.28	
2137		-----		-----	
2139	EN71-3	24		-0.33	
2156	EN71-3	23.82		-0.35	
2165	EN71-3	22.02		-0.58	
2182		29.73		0.39	
2184	EN71-3	27.06		0.05	
2190	EN71-3	33.48		0.86	
2201	EN71-3	25.792		-0.11	
2213	EN71-3	25.37		-0.16	
2216	EN71-3	24.3		-0.29	
2230	EN71-3	30.3		0.46	
2232	EN71-3	35.38		1.09	
2238	EN71-3	24.8		-0.23	
2241		25.707		-0.12	
2247	EN71-3	24.98		-0.21	
2255	EN71-3	26.2		-0.05	
2256	EN71-3	28.09		0.18	
2265		-----		-----	
2272	EN71-3	29.46		0.35	
2284	EN71-3	25.11		-0.19	
2287	EN71-3	26.98		0.04	
2290	EN71-3	27.9		0.16	
2293	EN71-3	24.95		-0.21	
2294		-----		-----	
2295	EN71-3	30		0.42	
2320	EN71-3	23.00		-0.45	
2352	EN71-3	25.4		-0.15	
2357	EN71-3	25.34		-0.16	
2363		-----		-----	
2365	EN71-3	25.60		-0.13	
2366	EN71-3	25.47		-0.15	
2369	EN71-3	25.14		-0.19	
2375	EN71-3	26.5		-0.02	
2382	EN71-3	26		-0.08	
2385		25.8		-0.10	
2390	EN71-3	28.45		0.23	
2406	EN71-3	34.31		0.96	
2426	EN71-3	38.87	R(0.05)	1.53	
2429	EN71-3	24.31		-0.29	
2431	EN71-3	27.47		0.10	
2442	EN71-3	27.73		0.14	
2459	EN71-3	24.37		-0.28	
2475	EN71-3	24.1		-0.32	
2482	EN71-3	29.3		0.33	
2485	EN71-3	25.789		-0.11	
2492	ASTM F963	23.87		-0.35	
2494	EN71-3	19.79		-0.86	
2499	EN71-3	27.15		0.06	
2500	EN71-3	29		0.30	
2509	EN71-3	22.312	ex	-0.54	test result excluded, see §4.1
2532	EN71-3	23.8		-0.35	
2560	EN71-3	26.4		-0.03	
2582	EN71-3	29.94		0.41	
2590	EN71-3	22.304		-0.54	
2637		28		0.17	
2643		-----		-----	
2659	ISO8124-3	21.985	ex	-0.58	test result excluded, see §4.1
2665	EN71-3	28.69		0.26	
2674	EN71-3	25.2230		-0.18	
2703	EN71-3	20.5		-0.77	
2722	EN71-3	26.9231		0.04	
2741	EN71-3	30.16		0.44	
2798	EN71-3	Not Detected		-----	possibly a false negative test result?
2817		-----		-----	
2829	EN71-3	26.71		0.01	
2853	EN71-3	30.9		0.53	

lab	method	value	mark	z(targ)	remarks
2864	EN71-3	22.69		-0.49	
2892	EN71-3	25.71		-0.12	
2917	EN71-3	23.39		-0.41	
2959	EN71-3	24.6		-0.25	
2980		25	ex,C	-0.20	fr. 12.5 / test result excluded, see §4.1
3100	EN71-3	25.542		-0.14	
3116	EN71-3	31.552		0.62	
3118	EN71-3	29.3197		0.34	
3146	EN71-3	29.52		0.36	
3153	EN71-3	22.69		-0.49	
3172	EN71-3	27.0		0.05	
3176	EN71-3	28.96		0.29	
3182	EN71-3	29.260		0.33	
3185	EN71-3	24.30		-0.29	
3190	EN71-3	27.80		0.15	
3195	EN71-3	30.8		0.52	
3200		-----		-----	
3209	EN71-3	25.7		-0.12	
3214	EN71-3	24.8		-0.23	
3218		-----		-----	
3228	EN71-3	24.6		-0.25	
3233	EN71-3	27.67		0.13	
3248	EN71-3	30		0.42	
8005	ASTM F963/GB6675/ISO8124-3	31.503		0.61	
8030	EN71-3	28.77		0.27	
8031	ISO8124-3	28.2		0.20	
	normality	OK			
	n	86			
	outliers	2 +3ex			
	mean (n)	26.634			
	st.dev. (n)	2.9748	RSD=11%		
	R(calc.)	8.330			
	st.dev.(EN71-3:19+A1:21)	7.9901			
	R(EN71-3:19+A1:21)	22.372			





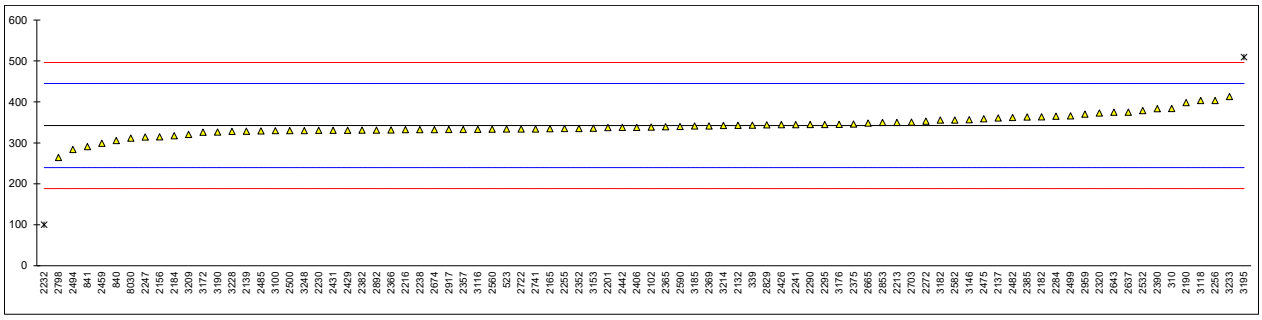
Determination of migration of Strontium as Sr on paper sample #22560; results in mg/kg

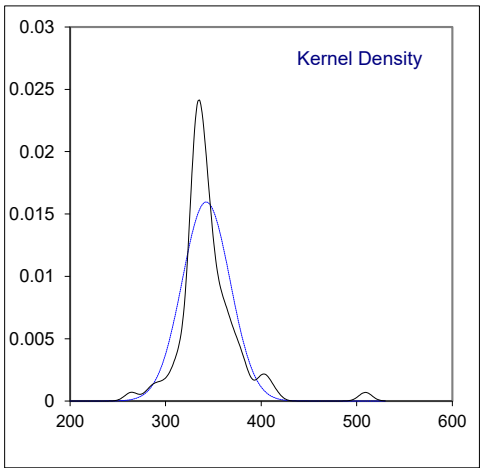
lab	method	value	mark	z(targ)	remarks
210		-----		-----	
310	EN71-3	383.808		0.81	
339	EN71-3	343.069		0.01	
523	EN71-3	333.55		-0.17	
551		-----		-----	
840	EN71-3	305.84		-0.71	
841	EN71-3	290.9		-1.00	
2102	EN71-3	338.336		-0.08	
2132	EN71-3	342.8		0.01	
2137	EN71-3	360.65		0.36	
2139	EN71-3	328		-0.28	
2156	EN71-3	314.7		-0.54	
2165	EN71-3	334.35		-0.15	
2182		363.28		0.41	
2184	EN71-3	317.2		-0.49	
2190	EN71-3	398.07		1.09	
2201	EN71-3	337.075		-0.10	
2213	EN71-3	349.64		0.14	
2216	EN71-3	332		-0.20	
2230	EN71-3	330.7	C	-0.23	first reported 150.7
2232	EN71-3	99.95	R(0.01)	-4.72	
2238	EN71-3	332.2		-0.20	
2241		344.147		0.04	
2247	EN71-3	313.89		-0.55	
2255	EN71-3	335.0		-0.14	
2256	EN71-3	403.26		1.19	
2265		-----		-----	
2272	EN71-3	352.92		0.21	
2284	EN71-3	365.01		0.44	
2287		-----		-----	
2290	EN71-3	344.5		0.04	
2293		-----		-----	
2294		-----		-----	
2295	EN71-3	345		0.05	
2320	EN71-3	372.9		0.60	
2352	EN71-3	335.0		-0.14	
2357	EN71-3	332.6		-0.19	
2363		-----		-----	
2365	EN71-3	339.0		-0.06	
2366	EN71-3	331.5		-0.21	
2369	EN71-3	341.29		-0.02	
2375	EN71-3	346		0.07	
2382	EN71-3	331		-0.22	
2385		363		0.40	
2390	EN71-3	383.263		0.80	
2406	EN71-3	337.57		-0.09	
2426	EN71-3	344.04		0.03	
2429	EN71-3	330.82		-0.22	
2431	EN71-3	330.72		-0.23	
2442	EN71-3	337.50		-0.09	
2459	EN71-3	298.83		-0.85	
2475	EN71-3	358.5		0.32	
2482	EN71-3	362		0.38	
2485	EN71-3	328.856		-0.26	
2492		-----		-----	
2494	EN71-3	283.52		-1.14	
2499	EN71-3	365.96		0.46	
2500	EN71-3	330		-0.24	
2509		-----		-----	
2532	EN71-3	378.7		0.71	
2560	EN71-3	333.3		-0.18	
2582	EN71-3	355.80		0.26	
2590	EN71-3	339.945		-0.05	
2637		375		0.64	
2643		374.5		0.63	
2659	ISO8124-3	not analyzed		-----	
2665	EN71-3	348.1		0.11	
2674	EN71-3	332.2127		-0.20	
2703	EN71-3	350.6		0.16	
2722	EN71-3	333.6036		-0.17	
2741	EN71-3	333.75		-0.17	
2798	EN71-3	264		-1.53	
2817		-----		-----	
2829	EN71-3	343.85		0.03	
2853	EN71-3	349.5		0.14	

lab	method	value	mark	z(targ)	remarks
2864		-----		-----	
2892	EN71-3	331.2		-0.22	
2917	EN71-3	332.40		-0.19	
2959	EN71-3	370.4		0.55	
2980		-----		-----	
3100	EN71-3	329.734		-0.24	
3116	EN71-3	333.034		-0.18	
3118	EN71-3	403.2226		1.19	
3146	EN71-3	356.5		0.28	
3153	EN71-3	335.94		-0.12	
3172	EN71-3	326		-0.32	
3176	EN71-3	345.12		0.05	
3182	EN71-3	355.707		0.26	
3185	EN71-3	341.21		-0.02	
3190	EN71-3	326.4		-0.31	
3195	EN71-3	509	R(0.01)	3.25	
3200		-----		-----	
3209	EN71-3	320.7		-0.42	
3214	EN71-3	342.3		0.00	
3218		-----		-----	
3228	EN71-3	327.9		-0.28	
3233	EN71-3	413.08		1.38	
3248	EN71-3	330		-0.24	
8005		-----		-----	
8030	EN71-3	311.48		-0.60	
8031		-----		-----	

	normality	suspect
	n	82
	outliers	2
	mean (n)	342.304
	st.dev. (n)	24.9885
	R(calc.)	69.968
	st.dev.(EN71-3:19+A1:21)	51.3456
	R(EN71-3:19+A1:21)	143.768

RSD=7%



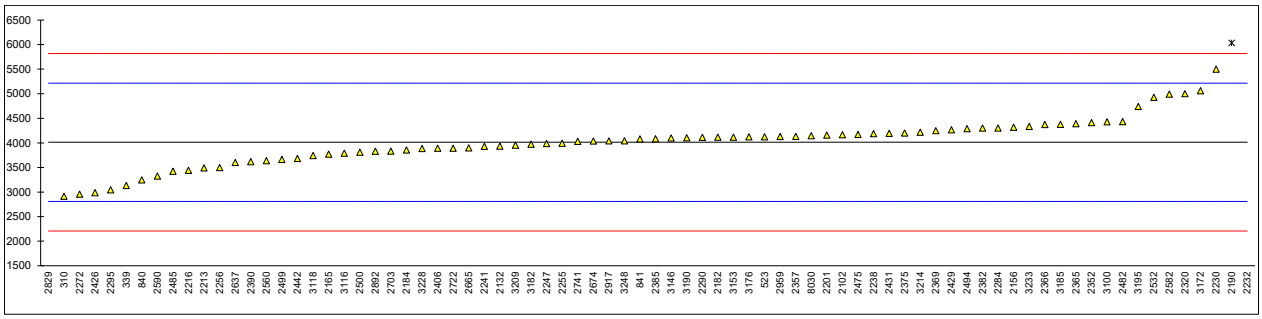


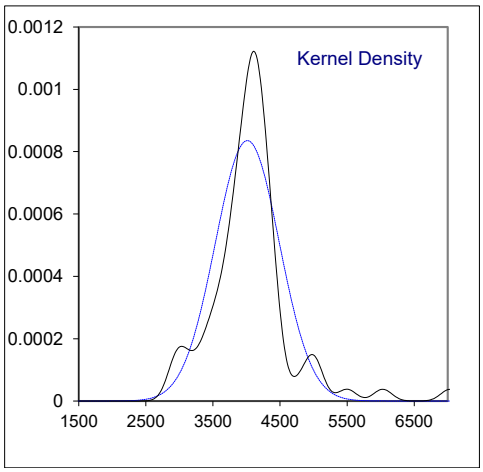
Determination of migration of Aluminum as Al on dried paint sample #22561; results in mg/kg

lab	method	value	mark	z(targ)	remarks
210		-----		-----	
310	EN71-3	2911.857		-1.83	
339	EN71-3	3130.283		-1.47	
523	EN71-3	4121.02		0.18	
551		-----		-----	
840		3245.78		-1.28	
841	EN71-3	4079.1		0.11	
2102		4165.676		0.25	
2132	EN71-3	3933.6		-0.13	
2137		-----		-----	
2139	EN71-3	2 419		-----	
2156	EN71-3	4315		0.50	
2165	EN71-3	3768.70		-0.41	
2182		4114.58		0.17	
2184	EN71-3	3853		-0.27	
2190	EN71-3	6032.78	R(0.01)	3.35	
2201	EN71-3	4156.50		0.24	
2213	EN71-3	3489		-0.87	
2216	EN71-3	3440		-0.95	
2230	EN71-3	5500		2.47	
2232	EN71-3	7035.77	R(0.01)	5.02	
2238	EN71-3	4185		0.28	
2241		3930.664		-0.14	
2247	EN71-3	3982.62		-0.05	
2255	EN71-3	3991		-0.04	
2256	EN71-3	3492.99		-0.86	
2265		-----		-----	
2272		2957.11		-1.75	
2284	EN71-3	4300.232		0.48	
2287		-----		-----	
2290	EN71-3	4111.9		0.16	
2293		-----		-----	
2294		-----		-----	
2295	EN71-3	3045		-1.61	
2320	EN71-3	5000		1.64	
2352	EN71-3	4410.0		0.66	
2357	EN71-3	4131.4		0.20	
2363		-----		-----	
2365	EN71-3	4390.0		0.63	
2366	EN71-3	4370.0		0.59	
2369	EN71-3	4246.28		0.39	
2375	EN71-3	4200		0.31	
2382	EN71-3	4300		0.48	
2385	EN71-3	4085		0.12	
2390	EN71-3	3615.634	C	-0.66	first reported 2239.31
2406	EN71-3	3888.95		-0.21	
2426	EN71-3	2984.08		-1.71	
2429	EN71-3	4265.3		0.42	
2431	EN71-3	4191.05		0.29	
2442	EN71-3	3682.59		-0.55	
2459		-----		-----	
2475	EN71-3	4170.7		0.26	
2482	EN71-3	4431		0.69	
2485	EN71-3	3422.768		-0.98	
2492		-----		-----	
2494	EN71-3	4287.2		0.45	
2499	EN71-3	3664.34	C	-0.58	first reported 6661.86
2500	EN71-3	3810		-0.34	
2509		-----		-----	
2532	EN71-3	4926.0		1.52	
2560		3634.9		-0.63	
2582	EN71-3	4989.0		1.62	
2590	EN71-3	3322.960		-1.15	
2637		3600		-0.69	
2643		-----		-----	
2659	ISO8124-3	not analyzed		-----	
2665	EN71-3	3897		-0.19	
2674	EN71-3	4036.6540		0.04	
2703	EN71-3	3829.3		-0.31	
2722	EN71-3	3889.145		-0.21	
2741	EN71-3	4028.14		0.02	
2798	EN71-3	Not Detected		-----	possibly a false negative test result?
2817		-----		-----	
2829		245.46	C,R(0.01)	-6.26	first reported 374.61
2853		-----		-----	

lab	method	value	mark	z(targ)	remarks
2864		-----		-----	
2892		3827.3		-0.31	
2917	EN71-3	4038.6		0.04	
2959	EN71-3	4129		0.19	
2980		-----		-----	
3100	EN71-3	4428.208		0.69	
3116	EN71-3	3791.677		-0.37	
3118	EN71-3	3739.3144		-0.46	
3146	EN71-3	4098		0.14	
3153	EN71-3	4114.58		0.17	
3172	EN71-3	5058.5		1.74	
3176	EN71-3	4120.59		0.18	
3182	EN71-3	3971.694		-0.07	
3185	EN71-3	4377.87		0.60	
3190	EN71-3	4101		0.15	
3195	EN71-3	4740		1.21	
3200		-----		-----	
3209	EN71-3	3950.1		-0.11	
3214	EN71-3	4216.4		0.34	
3218		-----		-----	
3228	EN71-3	3884.4		-0.21	
3233	EN71-3	4334.21		0.53	
3248	EN71-3	4040		0.04	
8005		-----		-----	
8030	EN71-3	4144.76		0.22	
8031		-----		-----	

normality	suspect	
n	75	
outliers	3	
mean (n)	4013.683	
st.dev. (n)	477.5361	RSD=12%
R(calc.)	1337.101	
st.dev.(EN71-3:19+A1:21)	602.0524	
R(EN71-3:19+A1:21)	1685.747	



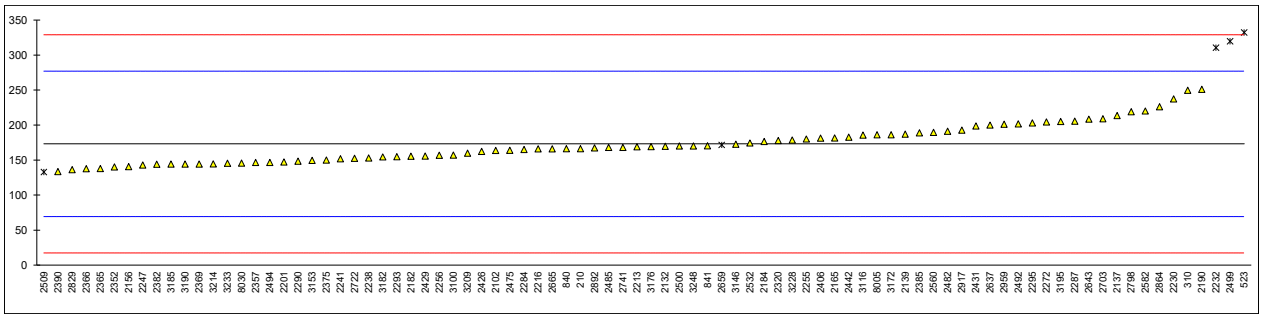


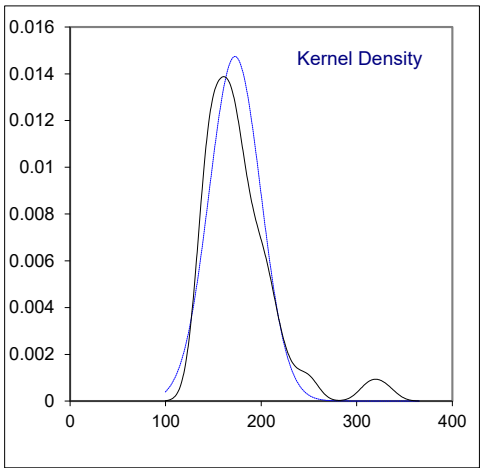
Determination of migration of Antimony as Sb on dried paint sample #22561; results in mg/kg

lab	method	value	mark	z(targ)	remarks
210	In house	166.26		-0.13	
310	EN71-3	249.512		1.47	
339		-----		-----	
523	In house	332.05	R(0.01)	3.06	
551		-----		-----	
840		166.23		-0.13	
841	EN71-3	170.3		-0.05	
2102		163.687		-0.18	
2132	EN71-3	169.7		-0.07	
2137	EN71-3	213.50		0.78	
2139	EN71-3	187		0.27	
2156	EN71-3	140.7		-0.62	
2165	EN71-3	181.59		0.16	
2182		155.41		-0.34	
2184	EN71-3	176.4		0.06	
2190	EN71-3	250.79		1.49	
2201	EN71-3	147.15		-0.50	
2213	EN71-3	169		-0.08	
2216	EN71-3	166		-0.14	
2230	EN71-3	237.4		1.24	
2232	EN71-3	310.24	R(0.01)	2.64	
2238	EN71-3	152.9		-0.39	
2241		151.808		-0.41	
2247	EN71-3	142.75		-0.59	
2255	EN71-3	180.1		0.13	
2256	EN71-3	156.82		-0.31	
2265		-----		-----	
2272		204.28		0.60	
2284	EN71-3	164.89		-0.16	
2287	EN71-3	205.35	C	0.62	first reported 385.32
2290	EN71-3	148.3		-0.48	
2293	EN71-3	154.9		-0.35	
2294		-----		-----	
2295	EN71-3	203		0.57	
2320	EN71-3	177.8		0.09	
2352	EN71-3	140.0		-0.64	
2357	EN71-3	146.6		-0.51	
2363		-----		-----	
2365	EN71-3	138.0		-0.68	
2366	EN71-3	137.6		-0.68	
2369	EN71-3	144.21		-0.56	
2375	EN71-3	150		-0.45	
2382	EN71-3	144		-0.56	
2385	EN71-3	189		0.31	
2390	EN71-3	133.36		-0.77	
2406	EN71-3	181.19		0.15	
2426	EN71-3	162.2	C	-0.21	first reported 545.32
2429	EN71-3	155.6		-0.34	
2431	EN71-3	198.61		0.49	
2442	EN71-3	182.50		0.18	
2459		-----		-----	
2475	EN71-3	163.9		-0.18	
2482	EN71-3	191		0.34	
2485	EN71-3	167.937		-0.10	
2492	ASTM F963	201.53		0.55	
2494	EN71-3	146.64		-0.51	
2499	EN71-3	319.58	C,R(0.01)	2.82	first reported 332.43
2500	EN71-3	170		-0.06	
2509	EN71-3	132.856	ex	-0.78	test result excluded, see §4.1
2532	EN71-3	174.4		0.02	
2560		189.6		0.32	
2582	EN71-3	220.04		0.90	
2590	EN71-3	< L.O.Q.		-----	
2637		200		0.52	
2643		208.3		0.68	
2659	ISO8124-3	171.449	ex	-0.03	test result excluded, see §4.1
2665	EN71-3	166.0		-0.14	
2674		-----		-----	
2703	EN71-3	209.0		0.69	
2722	EN71-3	152.498		-0.40	
2741	EN71-3	168		-0.10	
2798	EN71-3	219		0.88	
2817		-----		-----	
2829		136.27		-0.71	
2853		-----		-----	

lab	method	value	mark	z(targ)	remarks
2864	EN71-3	226.07		1.02	
2892		167.40		-0.11	
2917	EN71-3	192.77		0.38	
2959	EN71-3	201.1		0.54	
2980		-----		-----	
3100	EN71-3	156.942		-0.31	
3116	EN71-3	185.461		0.24	
3118		-----		-----	
3146	EN71-3	172.7		-0.01	
3153	EN71-3	149.59		-0.45	
3172	EN71-3	186.1		0.25	
3176	EN71-3	169.26		-0.07	
3182	EN71-3	154.344		-0.36	
3185	EN71-3	144.18		-0.56	
3190	EN71-3	144.2		-0.56	
3195	EN71-3	205		0.61	
3200		-----		-----	
3209	EN71-3	159.7		-0.26	
3214	EN71-3	144.4		-0.55	
3218		-----		-----	
3228	EN71-3	178.5		0.10	
3233	EN71-3	145.22		-0.54	
3248	EN71-3	170		-0.06	
8005	ASTM F963/GB6675/ISO8124-3	186.068		0.25	
8030	EN71-3	145.46		-0.53	
8031		-----		-----	

normality	OK	
n	81	
outliers	3 +2ex	
mean (n)	173.148	
st.dev. (n)	27.0238	RSD=16%
R(calc.)	75.667	
st.dev.(EN71-3:19+A1:21)	51.9444	
R(EN71-3:19+A1:21)	145.444	



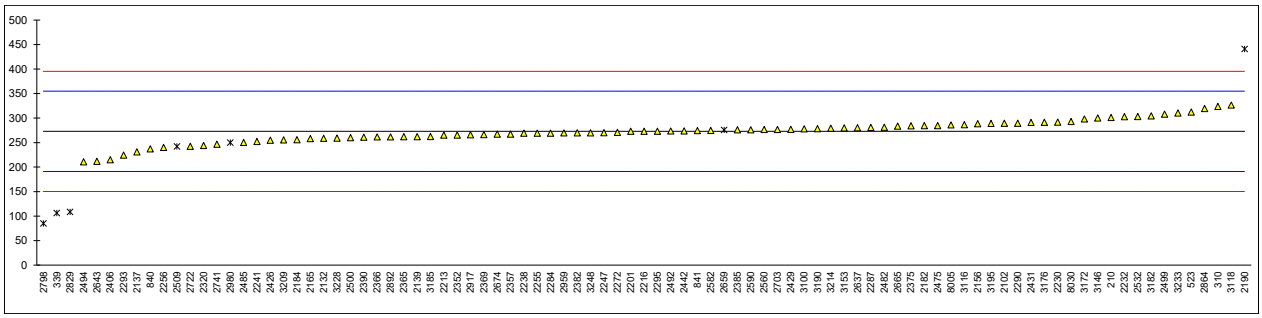


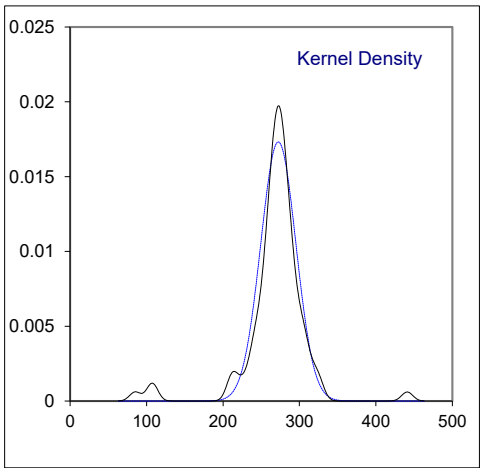
Determination of migration of Cadmium as Cd on dried paint sample #22561; results in mg/kg

lab	method	value	mark	z(targ)	remarks
210	In house	301.08		0.69	
310	EN71-3	323.662		1.24	
339	EN71-3	106.058	R(0.01)	-4.08	
523	In house	312.2		0.96	
551		-----		-----	
840		237.12		-0.87	
841	EN71-3	274.5		0.04	
2102		289.167		0.40	
2132	EN71-3	258.7		-0.35	
2137	EN71-3	231.0	C	-1.02	first reported 128.00
2139	EN71-3	262		-0.27	
2156	EN71-3	288.2		0.37	
2165	EN71-3	257.98		-0.36	
2182		284.38		0.28	
2184	EN71-3	255.6		-0.42	
2190	EN71-3	440.96	R(0.01)	4.11	
2201	EN71-3	272.95		0.00	
2213	EN71-3	265		-0.19	
2216	EN71-3	273		0.00	
2230	EN71-3	291.5		0.45	
2232	EN71-3	302.80		0.73	
2238	EN71-3	268.9		-0.10	
2241		251.922		-0.51	
2247	EN71-3	270.03		-0.07	
2255	EN71-3	269.03		-0.09	
2256	EN71-3	240.02		-0.80	
2265		-----		-----	
2272		270.76		-0.05	
2284	EN71-3	269.09		-0.09	
2287	EN71-3	280.66		0.19	
2290	EN71-3	289.3		0.40	
2293	EN71-3	224.3		-1.19	
2294		-----		-----	
2295	EN71-3	273		0.00	
2320	EN71-3	243.9		-0.71	
2352	EN71-3	265.0		-0.19	
2357	EN71-3	267.2		-0.14	
2363		-----		-----	
2365	EN71-3	262.0		-0.27	
2366	EN71-3	261.3		-0.28	
2369	EN71-3	266.17		-0.16	
2375	EN71-3	284		0.27	
2382	EN71-3	270		-0.07	
2385	EN71-3	276		0.08	
2390	EN71-3	260.77		-0.30	
2406	EN71-3	214.80		-1.42	
2426	EN71-3	254.67		-0.45	
2429	EN71-3	276.7		0.09	
2431	EN71-3	290.95		0.44	
2442	EN71-3	273.72		0.02	
2459		-----		-----	
2475	EN71-3	284.5		0.28	
2482	EN71-3	281		0.20	
2485	EN71-3	250.178		-0.55	
2492	ASTM F963	273.45		0.01	
2494	EN71-3	210.70		-1.52	
2499	EN71-3	307.92		0.86	
2500	EN71-3	260		-0.31	
2509	EN71-3	241.929	ex	-0.76	test result excluded, see §4.1
2532	EN71-3	303.0		0.74	
2560		276.4		0.09	
2582	EN71-3	274.58		0.04	
2590	EN71-3	276.024		0.08	
2637		280		0.17	
2643		211.6		-1.50	
2659	ISO8124-3	275.588	ex	0.07	test result excluded, see §4.1
2665	EN71-3	283.5		0.26	
2674	EN71-3	267.1455		-0.14	
2703	EN71-3	276.6		0.09	
2722	EN71-3	242.3762		-0.75	
2741	EN71-3	246.62		-0.64	
2798	EN71-3	85	R(0.01)	-4.59	
2817		-----		-----	
2829		108.54	C,R(0.01)	-4.02	first reported 138.32
2853		-----		-----	

lab	method	value	mark	z(targ)	remarks
2864	EN71-3	319.36		1.14	
2892		261.3		-0.28	
2917	EN71-3	265.93		-0.17	
2959	EN71-3	269.5		-0.08	
2980		250	ex	-0.56	test result excluded, see §4.1
3100	EN71-3	278.026		0.13	
3116	EN71-3	286.548		0.33	
3118	EN71-3	326.4555		1.31	
3146	EN71-3	300		0.66	
3153	EN71-3	279.71		0.17	
3172	EN71-3	297.83		0.61	
3176	EN71-3	291.24		0.45	
3182	EN71-3	304.284		0.77	
3185	EN71-3	262.29		-0.26	
3190	EN71-3	278.2		0.13	
3195	EN71-3	289		0.39	
3200		-----		-----	
3209	EN71-3	255.3		-0.43	
3214	EN71-3	279.3		0.16	
3218		-----		-----	
3228	EN71-3	259.0		-0.34	
3233	EN71-3	310.35		0.92	
3248	EN71-3	270		-0.07	
8005	ASTM F963/GB6675/ISO8124-3	285.784		0.31	
8030	EN71-3	292.73		0.48	
8031		-----		-----	

normality	OK	
n	84	
outliers	4 +3ex	
mean (n)	272.890	
st.dev. (n)	23.0614	RSD=8%
R(calc.)	64.572	
st.dev.(EN71-3:19+A1:21)	40.9335	
R(EN71-3:19+A1:21)	114.614	



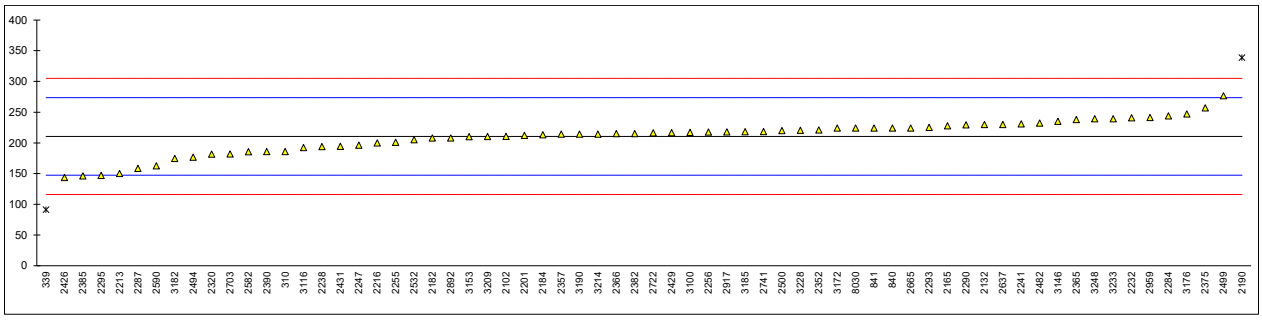


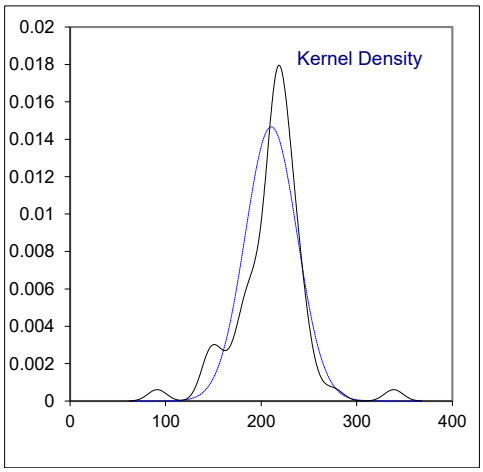
Determination of migration of Chromium (III) on dried paint sample #22561; results in mg/kg

lab	method	value	mark	z(targ)	remarks
210		-----		-----	
310	EN71-3	185.707		-0.78	
339	EN71-3	91.050	R(0.01)	-3.78	
523		Not determined		-----	
551		-----		-----	
840		224.2		0.43	
841	EN71-3	224.2		0.43	
2102		210.667		0.01	
2132	EN71-3	229.6		0.61	
2137		-----		-----	
2139	EN71-3	<10	C	<-6.35	fr. 101 / possibly a false negative test result?
2156		-----		-----	
2165	EN71-3	227.80		0.55	
2182		207.86		-0.08	
2184	EN71-3	213.1		0.08	
2190	EN71-3	338.75	R(0.01)	4.06	
2201	EN71-3	211.92		0.05	
2213	EN71-3	150		-1.92	
2216	EN71-3	200		-0.33	
2230		-----		-----	
2232	EN71-3	240.82		0.96	
2238	EN71-3	193.8		-0.53	
2241		230.890		0.65	
2247	EN71-3	195.99		-0.46	
2255	EN71-3	201		-0.30	
2256	EN71-3	217.46		0.22	
2265		-----		-----	
2272		-----		-----	
2284	EN71-3	244.03		1.06	
2287	EN71-3	158.32		-1.65	
2290	EN71-3	229.2		0.59	
2293	EN71-3	225.1		0.46	
2294		-----		-----	
2295	EN71-3	147		-2.01	
2320	EN71-3	181.5		-0.92	
2352	EN71-3	221.0		0.33	
2357	EN71-3	214.1		0.11	
2363		-----		-----	
2365	EN71-3	238.0		0.87	
2366	EN71-3	214.9		0.14	
2369	EN71-3	not applicable		-----	
2375	EN71-3	257		1.47	
2382	EN71-3	215		0.14	
2385	EN71-3	146		-2.04	
2390	EN71-3	185.546	C	-0.79	first reported 109.07
2406		-----		-----	
2426	EN71-3	143.66		-2.12	
2429	EN71-3	216.3		0.18	
2431	EN71-3	194.35		-0.51	
2442		-----		-----	
2459		-----		-----	
2475		-----		-----	
2482	EN71-3	232		0.68	
2485		-----		-----	
2492		-----		-----	
2494	EN71-3	176.80		-1.07	
2499	EN71-3	276.53		2.09	
2500	EN71-3	220		0.30	
2509		-----		-----	
2532	EN71-3	205	C	-0.17	first reported 287.7
2560		not analyzed		-----	
2582	EN71-3	185.35		-0.80	
2590	EN71-3	162.430		-1.52	
2637		230		0.62	
2643		-----		-----	
2659	ISO8124-3	not analyzed		-----	
2665	EN71-3	224.2		0.43	
2674		-----		-----	
2703	EN71-3	181.79		-0.91	
2722	EN71-3	216.0388		0.18	
2741	EN71-3	218.32		0.25	
2798	EN71-3	Not Detected		-----	possibly a false negative test result?
2817		-----		-----	
2829		not determined		-----	
2853		-----		-----	

lab	method	value	mark	z(targ)	remarks
2864		-----		-----	
2892		208.0		-0.08	
2917	EN71-3	217.83		0.23	
2959	EN71-3	241.3		0.98	
2980		-----		-----	
3100	EN71-3	217.030		0.21	
3116	EN71-3	192.081		-0.58	
3118		-----		-----	
3146	EN71-3	235.1		0.78	
3153	EN71-3	209.97		-0.02	
3172	EN71-3	224.1		0.43	
3176	EN71-3	247.19		1.16	
3182	EN71-3	174.653		-1.13	
3185	EN71-3	218.15		0.24	
3190	EN71-3	214.2		0.12	
3195		-----		-----	
3200		-----		-----	
3209	EN71-3	210.3		-0.01	
3214	EN71-3	214.2		0.12	
3218		-----		-----	
3228	EN71-3	220.5		0.32	
3233	EN71-3	239.02		0.90	
3248	EN71-3	239		0.90	
8005		-----		-----	
8030	EN71-3	224.11		0.43	
8031		-----		-----	

	normality	OK	
	n	64	
	outliers	2	
	mean (n)	210.488	
	st.dev. (n)	27.2052	RSD=13%
	R(calc.)	76.174	
	st.dev.(EN71-3:19+A1:21)	31.5732	
	R(EN71-3:19+A1:21)	88.405	



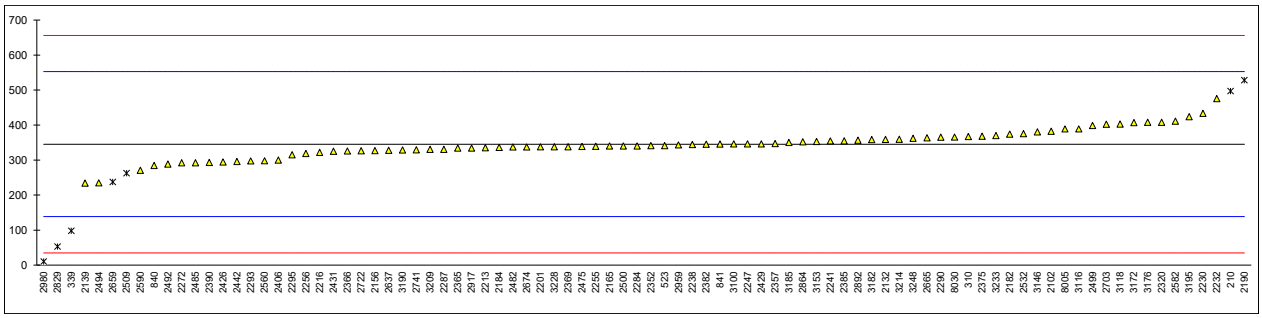


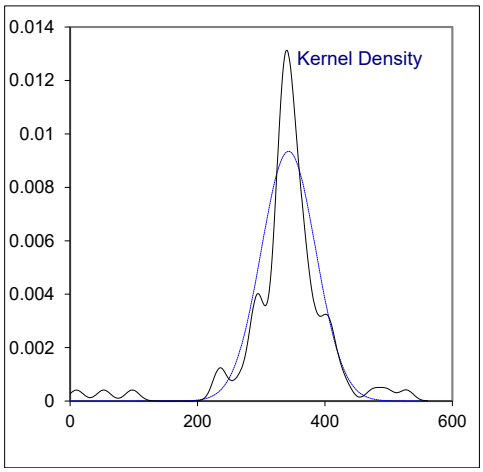
Determination of migration of Lead as Pb on dried paint sample #22561; results in mg/kg

lab	method	value	mark	z(targ)	remarks
210	In house	497.03	R(0.05)	1.46	
310	EN71-3	367.226		0.21	
339	EN71-3	97.839	R(0.01)	-2.39	
523	In house	341		-0.04	
551		-----		-----	
840		284.34		-0.59	
841	EN71-3	345.8		0.00	
2102		382.157		0.36	
2132	EN71-3	358.6		0.13	
2137		-----		-----	
2139	EN71-3	234		-1.07	
2156	EN71-3	327.2		-0.17	
2165	EN71-3	339.95		-0.05	
2182		374.06		0.28	
2184	EN71-3	336.0		-0.09	
2190	EN71-3	527.95	R(0.01)	1.76	
2201	EN71-3	337.63		-0.07	
2213	EN71-3	335		-0.10	
2216	EN71-3	322		-0.23	
2230	EN71-3	433.4		0.85	
2232	EN71-3	475.36		1.26	
2238	EN71-3	344.3		-0.01	
2241		354.436		0.09	
2247	EN71-3	346.07		0.01	
2255	EN71-3	339.1		-0.06	
2256	EN71-3	318.4	C	-0.26	first reported 153.2
2265		-----		-----	
2272		292.13		-0.51	
2284	EN71-3	340.12		-0.05	
2287	EN71-3	330.45		-0.14	
2290	EN71-3	365.1		0.19	
2293	EN71-3	297.5		-0.46	
2294		-----		-----	
2295	EN71-3	315		-0.29	
2320	EN71-3	408	C	0.61	first reported 136.3
2352	EN71-3	341.0		-0.04	
2357	EN71-3	346.7		0.01	
2363		-----		-----	
2365	EN71-3	334.0		-0.11	
2366	EN71-3	325.8		-0.19	
2369	EN71-3	338.08		-0.07	
2375	EN71-3	368		0.22	
2382	EN71-3	345		0.00	
2385	EN71-3	355		0.09	
2390	EN71-3	293.363	C	-0.50	first reported 127.85
2406	EN71-3	299.93		-0.44	
2426	EN71-3	294.5	C	-0.49	first reported 80.85
2429	EN71-3	346.1		0.01	
2431	EN71-3	324.95		-0.20	
2442	EN71-3	295.63		-0.48	
2459		-----		-----	
2475	EN71-3	338.9		-0.06	
2482	EN71-3	337		-0.08	
2485	EN71-3	292.487		-0.51	
2492	ASTM F963	288.43		-0.55	
2494	EN71-3	234.82		-1.07	
2499	EN71-3	398.55		0.51	
2500	EN71-3	340		-0.05	
2509	EN71-3	262.115	ex	-0.80	test result excluded, see §4.1
2532	EN71-3	375.1		0.29	
2560		297.9		-0.46	
2582	EN71-3	410.92		0.63	
2590	EN71-3	270.619		-0.72	
2637		328		-0.17	
2643		-----		-----	
2659	ISO8124-3	237.206	ex	-1.04	test result excluded, see §4.1
2665	EN71-3	363.2		0.17	
2674	EN71-3	337.0882		-0.08	
2703	EN71-3	402.3		0.55	
2722	EN71-3	326.7157		-0.18	
2741	EN71-3	329.1		-0.16	
2798	EN71-3	Not Detected		-----	possibly a false negative test result?
2817		-----		-----	
2829		52.85	C,R(0.01)	-2.82	first reported 69.00
2853		-----		-----	

lab	method	value	mark	z(targ)	remarks
2864	EN71-3	351.87		0.06	
2892		356.8		0.11	
2917	EN71-3	334.18		-0.11	
2959	EN71-3	343.1		-0.02	
2980		10	C,R(0.01)	-3.24	first reported 50
3100	EN71-3	345.875		0.01	
3116	EN71-3	388.755		0.42	
3118	EN71-3	402.6951		0.55	
3146	EN71-3	380.5		0.34	
3153	EN71-3	352.96		0.07	
3172	EN71-3	407.05		0.60	
3176	EN71-3	407.90		0.60	
3182	EN71-3	358.497		0.13	
3185	EN71-3	350.09		0.05	
3190	EN71-3	328.8		-0.16	
3195	EN71-3	424		0.76	
3200		-----		-----	
3209	EN71-3	330.4		-0.14	
3214	EN71-3	359.2		0.13	
3218		-----		-----	
3228	EN71-3	338.0		-0.07	
3233	EN71-3	369.94		0.24	
3248	EN71-3	362		0.16	
8005	ASTM F963/GB6675/ISO8124-3	388.584		0.42	
8030	EN71-3	365.72		0.20	
8031		-----		-----	

normality	suspect	
n	81	
outliers	5 +2ex	
mean (n)	345.314	
st.dev. (n)	40.5029	RSD=12%
R(calc.)	113.408	
st.dev.(EN71-3:19+A1:21)	103.5942	
R(EN71-3:19+A1:21)	290.064	



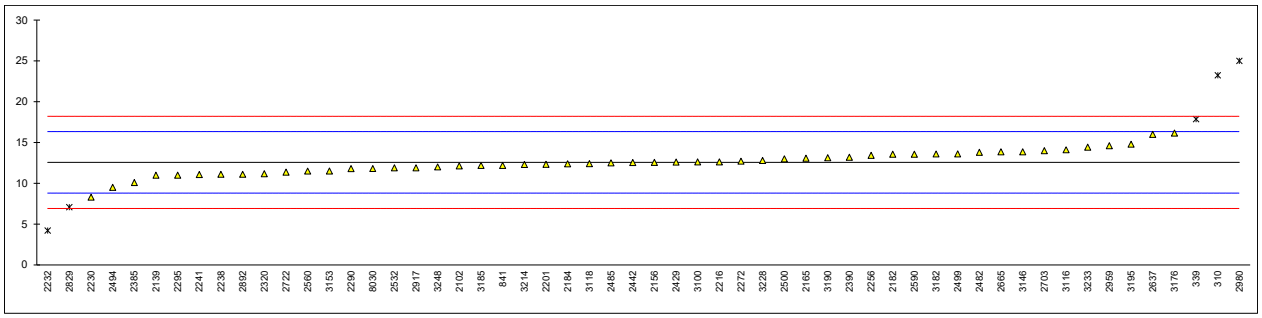


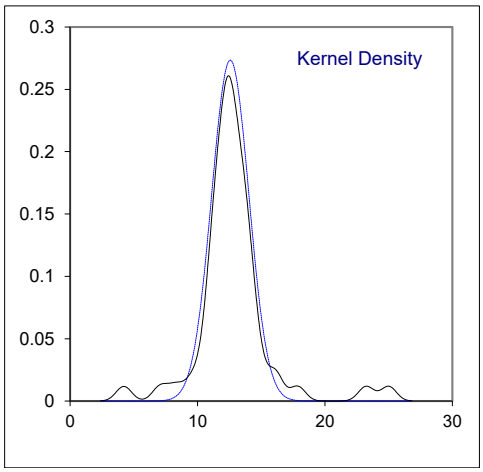
Determination of migration of Manganese as Mn on dried paint sample #22561; results in mg/kg

lab	method	value	mark	z(targ)	remarks
210		-----		-----	
310	EN71-3	23.24	R(0.01)	5.66	
339	EN71-3	17.855	R(0.05)	2.81	
523	EN71-3	Not detected		-----	
551		-----		-----	
840		<50		-----	
841	EN71-3	12.2		-0.19	
2102		12.126		-0.23	
2132	EN71-3	<25		-----	
2137		-----		-----	
2139	EN71-3	11		-0.83	
2156	EN71-3	12.57		0.00	
2165	EN71-3	13.09		0.28	
2182		13.56		0.53	
2184	EN71-3	12.40		-0.09	
2190	EN71-3	<50		-----	
2201	EN71-3	12.33		-0.13	
2213	EN71-3	<10		-----	
2216	EN71-3	12.63		0.03	
2230	EN71-3	8.3		-2.26	
2232	EN71-3	4.21	R(0.01)	-4.43	
2238	EN71-3	11.1		-0.78	
2241		11.070		-0.79	
2247	EN71-3	<100		-----	
2255	EN71-3	Not Detected		-----	
2256	EN71-3	13.44		0.46	
2265		-----		-----	
2272		12.72		0.08	
2284		-----		-----	
2287		-----		-----	
2290	EN71-3	11.8		-0.41	
2293		-----		-----	
2294		-----		-----	
2295	EN71-3	11		-0.83	
2320	EN71-3	11.18		-0.74	
2352		-----		-----	
2357	EN71-3	<50		-----	
2363		-----		-----	
2365	EN71-3	<50		-----	
2366	EN71-3	<50		-----	
2369	EN71-3	not detected		-----	
2375	EN71-3	<50		-----	
2382	EN71-3	＜50		-----	
2385	EN71-3	10.1		-1.31	
2390	EN71-3	13.19		0.33	
2406	EN71-3	<50		-----	
2426	EN71-3	ND		-----	
2429	EN71-3	12.6		0.02	
2431		-----		-----	
2442	EN71-3	12.55	C	-0.01	first reported 121.55
2459		-----		-----	
2475		-----		-----	
2482	EN71-3	13.8		0.65	
2485	EN71-3	12.500		-0.04	
2492		-----		-----	
2494	EN71-3	9.50		-1.63	
2499	EN71-3	13.62		0.56	
2500	EN71-3	13		0.23	
2509		-----		-----	
2532	EN71-3	11.9	C	-0.35	first reported 17.8
2560		11.5		-0.57	
2582	EN71-3	Not detected	C	-----	first reported 5.56
2590	EN71-3	13.566		0.53	
2637		16		1.82	
2643		-----		-----	
2659	ISO8124-3	not analyzed		-----	
2665	EN71-3	13.86		0.69	
2674		-----		-----	
2703	EN71-3	14.0		0.76	
2722	EN71-3	11.3723		-0.63	
2741	EN71-3	<25		-----	
2798	EN71-3	Not Detected		-----	
2817		-----		-----	
2829		7.070	C,R(0.05)	-2.92	first reported 4.49
2853		-----		-----	

lab	method	value	mark	z(targ)	remarks
2864		-----		-----	
2892		11.11		-0.77	
2917	EN71-3	11.90		-0.35	
2959	EN71-3	14.6		1.08	
2980		25	ex,C	6.60	first reported 7 / test result excluded, see §4.1
3100	EN71-3	12.623		0.03	
3116	EN71-3	14.100		0.81	
3118	EN71-3	12.4200		-0.08	
3146	EN71-3	13.86		0.69	
3153	EN71-3	11.51		-0.56	
3172	EN71-3	< 50		-----	
3176	EN71-3	16.15		1.90	
3182	EN71-3	13.587		0.54	
3185	EN71-3	12.18		-0.21	
3190	EN71-3	13.14		0.30	
3195	EN71-3	14.8		1.18	
3200		-----		-----	
3209	EN71-3	<25.0		-----	
3214	EN71-3	12.3		-0.14	
3218		-----		-----	
3228	EN71-3	12.8		0.12	
3233	EN71-3	14.43		0.99	
3248	EN71-3	12		-0.30	
8005		-----		-----	
8030	EN71-3	11.82		-0.40	
8031		-----		-----	

	normality	suspect
	n	51
	outliers	4 +1ex
	mean (n)	12.567
	st.dev. (n)	1.4587 RSD=12%
	R(calc.)	4.084
	st.dev.(EN71-3:19+A1:21)	1.8850
	R(EN71-3:19+A1:21)	5.278



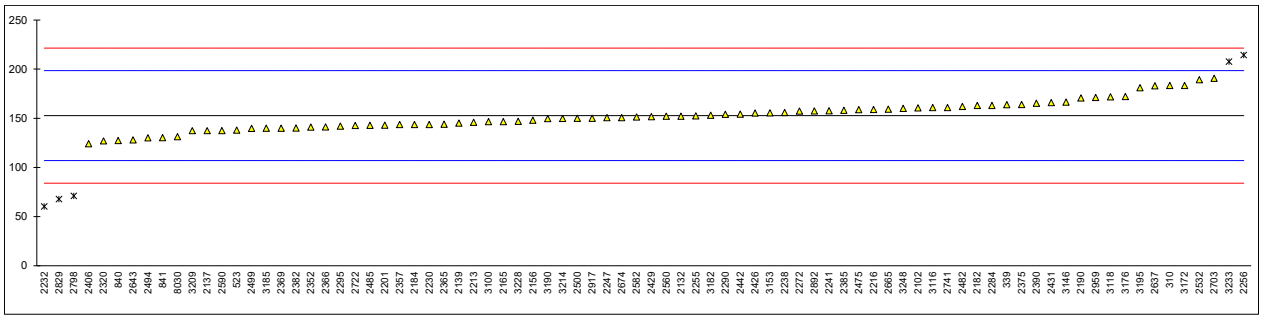


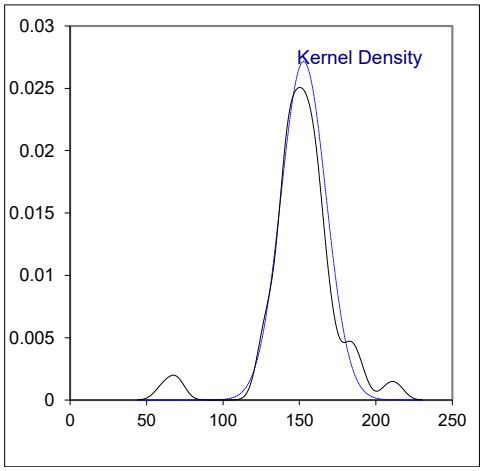
Determination of migration of Strontium as Sr on dried paint sample #22561; results in mg/kg

lab	method	value	mark	z(targ)	remarks
210		-----		-----	
310	EN71-3	183.431		1.34	
339	EN71-3	163.781		0.48	
523	EN71-3	137.9		-0.65	
551		-----		-----	
840		127.43		-1.10	
841	EN71-3	130.3		-0.98	
2102		160.649		0.34	
2132	EN71-3	152.2		-0.02	
2137	EN71-3	137.4	C	-0.67	first reported 89.68
2139	EN71-3	145		-0.34	
2156	EN71-3	148.1		-0.20	
2165	EN71-3	146.52		-0.27	
2182		163		0.45	
2184	EN71-3	143.6		-0.40	
2190	EN71-3	170.59		0.78	
2201	EN71-3	142.96		-0.43	
2213	EN71-3	146		-0.29	
2216	EN71-3	159		0.27	
2230	EN71-3	143.7	C	-0.39	first reported 103.7
2232	EN71-3	60.22	R(0.01)	-4.04	
2238	EN71-3	155.8		0.13	
2241		157.628		0.21	
2247	EN71-3	150.57		-0.09	
2255	EN71-3	152.4		-0.02	
2256	EN71-3	214.32	R(0.05)	2.69	
2265		-----		-----	
2272		157.34		0.20	
2284	EN71-3	163.04		0.45	
2287		-----		-----	
2290	EN71-3	153.9		0.05	
2293		-----		-----	
2294		-----		-----	
2295	EN71-3	142		-0.47	
2320	EN71-3	126.9		-1.13	
2352	EN71-3	141.0		-0.51	
2357	EN71-3	143.52		-0.40	
2363		-----		-----	
2365	EN71-3	144.0		-0.38	
2366	EN71-3	141.1		-0.51	
2369	EN71-3	139.92		-0.56	
2375	EN71-3	164		0.49	
2382	EN71-3	140		-0.56	
2385	EN71-3	158		0.23	
2390	EN71-3	165.23		0.54	
2406	EN71-3	124.02		-1.25	
2426	EN71-3	155.28		0.11	
2429	EN71-3	151.6		-0.05	
2431	EN71-3	165.85		0.57	
2442	EN71-3	154.21		0.06	
2459		-----		-----	
2475	EN71-3	158.8		0.26	
2482	EN71-3	162		0.40	
2485	EN71-3	142.836		-0.43	
2492		-----		-----	
2494	EN71-3	130.13		-0.99	
2499	EN71-3	139.77		-0.57	
2500	EN71-3	150		-0.12	
2509		-----		-----	
2532	EN71-3	189.2		1.59	
2560		152.1		-0.03	
2582	EN71-3	151.26	C	-0.06	first reported 74.66
2590	EN71-3	137.482		-0.67	
2637		183		1.32	
2643		128.0		-1.08	
2659	ISO8124-3	not analyzed		-----	
2665	EN71-3	159.2		0.28	
2674	EN71-3	150.5859		-0.09	
2703	EN71-3	190.7		1.66	
2722	EN71-3	142.6078		-0.44	
2741	EN71-3	160.93		0.36	
2798	EN71-3	71	R(0.01)	-3.57	
2817		-----		-----	
2829		67.68	C,R(0.01)	-3.71	first reported 37.68
2853		-----		-----	

lab	method	value	mark	z(targ)	remarks
2864		-----		-----	
2892		157.4		0.20	
2917	EN71-3	150.09		-0.12	
2959	EN71-3	171.2		0.81	
2980		-----		-----	
3100	EN71-3	146.495		-0.27	
3116	EN71-3	160.890		0.36	
3118	EN71-3	171.7418		0.83	
3146	EN71-3	166.4		0.60	
3153	EN71-3	155.49		0.12	
3172	EN71-3	183.47		1.34	
3176	EN71-3	172.08		0.84	
3182	EN71-3	153.116		0.02	
3185	EN71-3	139.87		-0.56	
3190	EN71-3	149.6		-0.14	
3195	EN71-3	181		1.23	
3200		-----		-----	
3209	EN71-3	137.3		-0.67	
3214	EN71-3	149.7		-0.13	
3218		-----		-----	
3228	EN71-3	146.9		-0.26	
3233	EN71-3	207.62	R(0.05)	2.39	
3248	EN71-3	160		0.32	
8005		-----		-----	
8030	EN71-3	131.23		-0.94	
8031		-----		-----	

	normality	OK
	n	77
	outliers	5
	mean (n)	152.746
	st.dev. (n)	14.6992
	R(calc.)	41.158
	st.dev.(EN71-3:19+A1:21)	22.9119
	R(EN71-3:19+A1:21)	64.153





APPENDIX 2

Determination of migration of other elements on sample #22560; results in mg/kg

lab	Sb	As	Ba	B	Cd	Cr (III)	Cr (VI)	Co
210	-----	-----	-----	-----	-----	-----	-----	-----
310	<1.0	<10	4.532	3.173	<5.0	<5.0	<0.02	<10
339	0.031	0.075	3.991	3.197	0.004	0.240	-----	0.023
523	not detected	not detected	not detected	not detected	not detected	not detected	not detected	not detected
551	-----	-----	-----	-----	-----	-----	-----	-----
840	<10	<10	<50	<50	<5	0.26	<0.02	<10
841	<5	<2.5	<10	<10	<5	0.261	<0.02	<10
2102	not detected	not detected	3.92	2.895	not detected	not detected	not analyzed	not detected
2132	<10	<2.5	<25	<25	<1	<10	<0.025	<10
2137	-----	-----	-----	-----	-----	-----	-----	-----
2139	<10	<10	<10	<10	<10	<5	<0.1	<10
2156	<10	<3	<5	<10	<0.5	-----	-----	<5
2165	not detected	not detected	not detected	not detected	not detected	not detected	not detected	not detected
2182	-----	-----	-----	-----	-----	-----	-----	-----
2184	not detected	not detected	3.32	not detected	not detected	0.2903	not detected	not detected
2190	<10	<2	<50	<50	<0.5	0.31	nd	<2
2201	<10	<10	<10	<10	<5	<10	<0.025	<10
2213	<10	<5	<10	<10	<2	<1	<0.05	<10
2216	not detected	not detected	4.16	8.66	not detected	0.29	not detected	0.11
2230	<2	<2	<2	<2	<2	-----	-----	<2
2232	<2	5.39	<2	<5	<0.15	<1	not analyzed	<2
2238	<10	<10	<10	<50	<5	<10	<0.025	<10
2241	0.040	0.102	3.630	2.263	0.006	0.226	ND	ND
2247	<10	<5	<50	<50	<5	<4	<0.025	<10
2255	not detected	not detected	not detected	not detected	not detected	not detected	not detected	not detected
2256	not detected	not detected	4.40	3.54	not detected	0.23	not detected	not detected
2265	-----	-----	-----	-----	-----	-----	-----	-----
2272	-----	-----	-----	-----	-----	-----	-----	-----
2284	-----	-----	-----	-----	-----	-----	-----	-----
2287	<5	<2	<10	-----	<5	<5	<5	-----
2290	<10	<10	<10	<50	<5	<10	-----	<10
2293	not detected	not detected	1.722	-----	not detected	not detected	-----	-----
2294	-----	-----	-----	-----	-----	-----	-----	-----
2295	<10	<5	<10	<10	<2	<1	<0.05	<10
2320	<10	<10	<50	<50	<5	not detected	not detected	<10
2352	-----	-----	-----	-----	-----	-----	-----	-----
2357	<10	<10	<50	<50	<5	<5	<0.025	<10
2363	-----	-----	-----	-----	-----	-----	-----	-----
2365	<10	<10	<50	<50	<5	<5	<0.020	<10
2366	<10	<10	<50	<50	<5	<1	<0.010	<10
2369	not detected	not detected	not detected	not detected	not detected	not applicable	not applicable	not detected
2375	<10	<10	<50	<50	<5	<5	<0.053	<10
2382	＜10	＜10	＜50	＜50	＜5	＜5	＜0.025	＜10
2385	<1	<1	3.35	3.48	<0.5	<0.5	<0.02	<0.5
2390	not detected	not detected	not detected	not detected	not detected	0.25	not analyzed	not detected
2406	<10	<10	<50	<50	<5	-----	-----	<10
2426	ND	ND	ND	ND	ND	ND	-----	ND
2429	<10	<10	<10	<50	<5	<10	<0.025	<10
2431	-----	-----	5.16	-----	-----	-----	-----	-----
2442	not detected	not detected	not detected	not detected	not detected	-----	-----	not detected
2459	ND	ND	3.80	ND	ND	ND	ND	ND
2475	-----	-----	-----	-----	-----	-----	-----	-----
2482	-----	-----	-----	-----	-----	0.250	-----	-----
2485	-----	-----	4.037	2.428	-----	-----	-----	-----
2492	-----	-----	3.28	-----	-----	-----	-----	-----
2494	not detected	not detected	5.19	5.08	not detected	not detected	-----	not detected
2499	1.48	not detected	4.08	16.09	not detected	0.52	not analyzed	not detected
2500	not detected	not detected	not detected	not detected	not detected	not detected	not detected	not detected
2509	-----	-----	-----	-----	-----	-----	-----	-----
2532	not detected	not detected	not detected	not detected	not detected	not detected	not detected	not detected
2560	<10	<5	<10	<10	<5	not analyzed	not analyzed	<5
2582	not detected	<5	<5	<5	<5	not detected	not detected	<5
2590	< L.O.Q.	< L.O.Q.	4.282	-----	< L.O.Q.	< L.O.Q.	-----	< L.O.Q.
2637	<0,1	<0,5	4.7	4	<0,05	<0,5	<0,3	<0,1
2643	-----	-----	-----	-----	-----	-----	-----	-----
2659	not detected	1.250	3.676	not analyzed	not detected	not analyzed	not analyzed	not analyzed
2665	not detected	not determ.	4.27	2.94	not detected	0.225	not detected	not determ.
2674	-----	-----	-----	-----	-----	-----	-----	-----
2703	0.1	0.1	3.5	2.4	not detected	0.23	not detected	not detected
2722	not detected	not detected	not detected	not detected	not detected	not detected	not detected	not detected
2741	<10	<2.5	<25	<25	<1	0.32	<0.05	<10
2798	not detected	not detected	not detected	not detected	not detected	not detected	not detected	not detected
2817	-----	-----	-----	-----	-----	-----	-----	-----
2829	not detected	not detected	6.19	3.45	not detected	not determ.	not determ.	not determ.
2853	-----	-----	-----	-----	-----	-----	-----	-----

lab	Sb	As	Ba	B	Cd	Cr (III)	Cr (VI)	Co
2864	not detected	not detected	4.24	-----	not detected	-----	-----	-----
2892	<1.0	<1.0	3.648	2.141	<1.0	0.2183	-----	<1.0
2917	<0.25	<0.5	3.67	2.41	<0.25	<0,5	-----	<0.25
2959	-----	-----	-----	-----	-----	0.362	-----	-----
2980	-----	-----	-----	-----	-----	-----	-----	-----
3100	<10	<10	<10	<50	<5	<10	<0.025	<10
3116	<2	<0.15	4.550	<5	<0.15	<1	<0.02	<2
3118	<5	<2.5	<5	<5	<5	-----	-----	<5
3146	< 2	< 3	< 10	< 10	< 0.1	< 3	< 0.01	< 1
3153	<10	<10	<10	<50	<5	<10	<0.025	<10
3172	< 10	< 5	< 50	< 50	< 2	0.9033	< 0.025	< 10
3176	0.31	0.12	5.31	4.94	-----	-----	-----	-----
3182	<5	0.425	5.150	<5 C	<0.1	0.430	<0.025	<1
3185	<10	<10	<10	<50	<5	<10	<0.025	<10
3190	＜10	＜10	＜10	＜50	＜5	＜10	＜0.025	＜10
3195	<0,50	<0,20	5.00	5.52	<0,050	-----	-----	<0,10
3200	-----	-----	-----	-----	-----	-----	-----	-----
3209	<5.0	<2.5	<25.0	<5.0	<5.0	<10	<0.025	<5.0
3214	<10	<10	<10	<50	<5	<10	-----	<10
3218	-----	-----	-----	-----	-----	-----	-----	-----
3228	<5	<5	<10	<10	<1	<10	-----	<2.5
3233	< 5	< 0.5	5.20	< 5	< 0.5	0.26	< 0.025	< 0.5
3248	<10	<10	<10	<10	<5	<10	<0.0265	<10
8005	<2	<2	4.508	-----	<2	-----	-----	-----
8030	not detected	not detected	4.16	not detected	0.62	0.84	not detected	not detected
8031	not detected	not detected	not detected	-----	not detected	not detected	-----	-----

Lab 3182 first reported 13.346

Determination of migration of other elements on sample #22560; results in mg/kg
-- continued --

lab	Mn	Hg	Ni	Se	Sn	Organic Sn	Zn
210	-----	-----	-----	-----	-----	-----	-----
310	6.436	<10	<10	<10	<0.2	-----	2.116
339	3.846	0	0.254	0.001	0.022	-----	2.855
523	not detected	not detected	not detected	not detected	not detected	not determ.	not detected
551	-----	-----	-----	-----	-----	-----	-----
840	<50	<10	<10	<10	<4.9	<1.8	<50
841	<10	<5	<10	<10	<2.5	<0.2	<10
2102	2.86	not detected	not detected	not detected	not detected	Not analyzed	0.98
2132	<25	<10	<10	<10	<10	N/A	<50
2137	-----	-----	-----	-----	-----	-----	-----
2139	<10	<10	<10	<10	<10	<4	<50
2156	2.758	<2	<5	<3	<5	-----	<5
2165	not detected	not detected	not detected	not detected	not detected	not detected	not detected
2182	-----	-----	-----	-----	-----	-----	-----
2184	2.72	not detected	not detected	not detected	not detected	not detected	not detected
2190	<50	<5	<50	<50	<4	<12	<50
2201	<10	<10	<10	<10	<2.5	<3.0	<100
2213	<10	<1	<10	<10	<10	<0.05	<10
2216	3.23	not detected	0.59	not detected	not detected	not applicable	1.90
2230	<2	<2	15.1	<2	<2	-----	<2
2232	<2	<0.15	20.53	<2	<2	not analyzed	<5
2238	<10	<10	<10	<10	<2.5	<2	<100
2241	2.793	0.001	0.180	ND	ND	ND	0.999
2247	<100	<5	<50	<50	<2.5	<2	<100
2255	not detected	not detected	not detected	not detected	not detected	not detected	not detected
2256	3.24	not detected	0.23	not detected	not detected	not detected	2.90
2265	-----	-----	-----	-----	-----	-----	-----
2272	-----	-----	-----	-----	-----	-----	-----
2284	-----	-----	-----	-----	-----	-----	-----
2287	-----	<5	-----	<10	-----	-----	-----
2290	<10	<10	<10	<10	<10	-----	<100
2293	-----	not detected	-----	not detected	-----	-----	-----
2294	-----	-----	-----	-----	-----	-----	-----
2295	<10	<1	<10	<10	<10	-----	<10
2320	<10	<10	<10	<10	<4.9	not detected	<50
2352	-----	-----	-----	-----	-----	-----	-----
2357	<50	<10	<10	<10	<3	not analyzed	<50
2363	-----	-----	-----	-----	-----	-----	-----
2365	<50	<10	<10	<10	<4.9	-----	<50
2366	<50	<10	<10	<10	<3	<3	<50
2369	not detected	not detected	not detected	not detected	not detected	not detected	not detected
2375	<50	<10	<10	<10	<4.9	-----	<50
2382	＜50	＜10	＜10	＜10	＜3	＜0.02	＜50
2385	2.51	<0.1	<1	<1	<1	<0.2	<5
2390	not detected	not detected	not detected	not detected	not detected	not analyzed	not detected
2406	<50	<10	<50	<10	<1	-----	<50
2426	ND	ND	ND	ND	ND	-----	ND
2429	<10	<10	<10	<10	<10	<3.0	<100
2431	-----	-----	-----	-----	-----	-----	-----
2442	not detected	not detected	not detected	not detected	not detected	not detected	not detected
2459	2.28	ND	ND	ND	ND	ND	3.21
2475	-----	-----	-----	-----	-----	-----	-----
2482	-----	-----	-----	-----	-----	-----	-----
2485	3.026	-----	-----	-----	-----	-----	-----
2492	-----	-----	-----	-----	-----	-----	-----
2494	1.64	not detected	not detected	not detected	not detected	not detected	1.64
2499	3.24	0.025	not detected	3.18	not detected	not analyzed	3.70
2500	not detected	not detected	not detected	not detected	not detected	not detected	not detected
2509	-----	-----	-----	-----	-----	-----	-----
2532	not detected	not detected	not detected	not detected	not detected	not detected	not detected
2560	<10	<5	<10	<10	<2	not analyzed	<10
2582	<5	<5	<5	<5	<5	not detected	<5
2590	2.906	< L.O.Q.	< L.O.Q.	< L.O.Q.	< L.O.Q.	-----	< L.O.Q.
2637	4	<0,05	<0,5	<1	<0,5	-----	2
2643	-----	-----	-----	-----	-----	-----	-----
2659	not analyzed	not detected	not analyzed	not detected	not analyzed	not analyzed	not analyzed
2665	3.11	not detected	0.231	not detected	not determ.	not analyzed	1.24
2674	-----	-----	-----	-----	-----	-----	-----
2703	2.5	not detected	0.1	not detected	not detected	not applicable	2.4
2722	not detected	not detected	not detected	not detected	not detected	not detected	not detected
2741	<25	<10	<10	<10	<4	-----	<50
2798	not detected	not detected	not detected	not detected	not detected	not detected	not detected
2817	-----	-----	-----	-----	-----	-----	-----
2829	3.79	not determ.	not detected	not detected	not detected	not determ.	9.71
2853	-----	-----	-----	-----	-----	-----	-----

lab	Mn	Hg	Ni	Se	Sn	Organic Sn	Zn
2864	-----	not detected	-----	not detected	-----	-----	-----
2892	2.862	<0.1	<1.0	<1.0	<1.0	-----	<10
2917	2.84	<0.1	<0,5	<0.5	<0.25	-----	<2
2959	-----	-----	-----	-----	-----	-----	-----
2980	-----	-----	-----	-----	-----	-----	5
3100	<10	<10	<10	<10	<2	<5	<100
3116	3.112	<0.15	<2	<2	<2	<0.225	<5
3118	<5	<5	<5	<5	<5	-----	<5
3146	< 10	< 1	< 5	< 2	< 3	not analyzed	< 10
3153	<10	<10	<10	<10	<10	<2.0	<100
3172	< 50	< 10	< 10	< 10	< 2	< 0.05	< 50
3176	4.00	-----	1.26	-----	0.27	-----	6.99
3182	<5	<1	<5	<5	<1	not analyzed	<5
3185	<10	<10	<10	<10	<2.5	<5	<100
3190	＜10	＜10	＜10	＜10	＜2.5	＜2.0	＜100
3195	3.64	<0,10	<2,0	<0,50	<0,10	-----	<5,0
3200	-----	-----	-----	-----	-----	-----	-----
3209	<25.0	<5.0	<5.0	<5.0	<4.0	<1.0	<50.0
3214	<10	<10	<10	<10	<10	-----	<100
3218	-----	-----	-----	-----	-----	-----	-----
3228	<5	<2.5	<5	<10	<1	-----	<10
3233	< 5	< 0.5	< 5	< 5	< 0.5	< 2	< 5
3248	<10	<10	<10	<10	<0.8	<3	<10
8005	-----	<2	-----	<2	-----	-----	-----
8030	not detected	not detected	not detected	not detected	not detected	not detected	not detected
8031	-----	not detected	-----	not detected	-----	-----	-----

Determination of migration of other elements on sample #22561; results in mg/kg

lab	As	Ba	B	Cr (VI)	Co	Cu	Hg	Ni
210	-----	-----	-----	-----	-----	-----	-----	-----
310	0.228	6.70	<50	<0.02	<10	2.555	<10	<10
339	0.123	7.703	0.852	<0.01	0.040	2.082	0	0.952
523	not detected	not detected	not detected	not detected	not detected	not detected	not detected	not detected
551	-----	-----	-----	-----	-----	-----	-----	-----
840	<10	<50	<50	<0.02	<10	<10	<10	<10
841	<2.5	<10	<10	<0.02	<10	<10	<5	<10
2102	not detected	8.965	not detected	not analyzed	not detected	1.844	0.11	not detected
2132	<2.5	<25	<25	<0.025	<10	<15	<10	<10
2137	-----	-----	-----	-----	-----	-----	-----	-----
2139	<10	<10	<10	<0.1	<10	<10	<10	<10
2156	<3	8.804	<10	-----	<5	<5	<2	<5
2165	not detected	not detected	not detected	not detected	not detected	not detected	not detected	not detected
2182	-----	8.75	-----	-----	-----	-----	-----	-----
2184	not detected	8.00	not detected	not detected	not detected	not detected	not detected	not detected
2190	<2	<50	<50	nd	<2	<50	<5	<50
2201	<10	<10	<10	<0.025	<10	<10	<10	<10
2213	<5	<10	<10	<0.05	<10	<10	<1	<10
2216	not detected	7.72	2.13	not detected	0.09	1.21	not detected	1.13
2230	<0.15	<2	<2	-----	<2	<2	<0.15	<2
2232	16.78	4.62	<5	not analyzed	<2	<2	<0.15	85.82
2238	<10	<10	<50	<0,025	<10	<10	<10	<10
2241	0.245	6.415	0.478	ND	0.022	1.492	0.001	0.681
2247	<5	<50	<50	<0.025	<10	<50	<5	<50
2255	not detected	not detected	not detected	not detected	not detected	not detected	not detected	not detected
2256	0.25	9.61	not detected	not detected	not detected	not detected	not detected	0.85
2265	-----	-----	-----	-----	-----	-----	-----	-----
2272	-----	-----	-----	-----	-----	-----	-----	-----
2284	-----	-----	-----	-----	-----	-----	-----	-----
2287	<2	<10	-----	<5	-----	-----	<5	-----
2290	<10	<10	<50	-----	<10	<10	<10	<10
2293	not detected	8.323	-----	-----	-----	-----	not detected	-----
2294	-----	-----	-----	-----	-----	-----	-----	-----
2295	<5	<10	<10	<0.05	<10	<10	<1	<10
2320	<10	<50	<50	not detected	<10	<50	<10	<10
2352	-----	-----	-----	-----	-----	-----	-----	-----
2357	<10	<50	<50	<0.025	<10	<50	<10	<10
2363	-----	-----	-----	-----	-----	-----	-----	-----
2365	<10	<50	<50	<0.020	<10	<50	<10	<10
2366	<10	<50	<50	<0.010	<10	<50	<10	<10
2369	not detected	not detected	not detected	not applicable	not detected	not detected	not detected	not detected
2375	<10	<50	<50	<0.053	<10	<50	<10	<10
2382	＜10	＜50	＜50	＜0.025	＜10	＜50	＜10	＜10
2385	<1	5.49	<1	<0.02	<0.5	<5	<0.1	<1
2390	not detected	not detected	not detected	not analyzed	not detected	not detected	not detected	not detected
2406	<10	<50	<50	-----	<10	<50	<10	<50
2426	ND	ND	ND	-----	ND	ND	ND	ND
2429	<10	<10	<50	<0.025	<10	<10	<10	<10
2431	-----	7.65	-----	-----	-----	-----	-----	-----
2442	not detected	9.08	not detected	-----	not detected	not detected	not detected	not detected
2459	-----	-----	-----	-----	-----	-----	-----	-----
2475	-----	-----	-----	-----	-----	-----	-----	-----
2482	-----	-----	-----	-----	-----	-----	-----	-----
2485	-----	6.920	-----	-----	-----	-----	-----	-----
2492	-----	7.70	-----	-----	-----	-----	-----	-----
2494	not detected	6.12	not detected	-----	not detected	1.03	not detected	not detected
2499	not detected	9.10	2.83	not detected	0.022	1.55	not detected	not detected
2500	not detected	8	not detected	not detected	not detected	not detected	not detected	not detected
2509	-----	-----	-----	-----	-----	-----	-----	-----
2532	not detected	not detected	not detected	not detected	not detected	not detected	not detected	not detected
2560	<5	<10	<10	not analyzed	<5	<10	<5	<10
2582	<5	<5	<5	not detected	not detected	<5	not detected	<5
2590	< L.O.Q.	8.453	-----	-----	< L.O.Q.	21.592	< L.O.Q.	< L.O.Q.
2637	<0,5	9	<2	-----	<0,1	4	<0,05	1
2643	-----	-----	-----	-----	-----	-----	-----	-----
2659	0.071	5.644	not analyzed	not analyzed	not analyzed	not analyzed	not detected	not analyzed
2665	0.217	8.43	not determ.	not detected	not determ.	1.98	not detected	0.924
2674	-----	-----	-----	-----	-----	-----	-----	-----
2703	0.2	5.2	0.2	0.008	not detected	2.2	0.1	0.7
2722	not detected	6.12	not detected	not detected	not detected	not detected	not detected	not detected
2741	<2.5	<25	<25	<0.05	<10	<15	<10	<10
2798	not detected	not detected	not detected	not detected	not detected	not detected	not detected	not detected
2817	-----	-----	-----	-----	-----	-----	-----	-----
2829	not detected	0.860 C	not detected	not determ.	not detected	not detected	not determ.	not detected
2853	-----	-----	-----	-----	-----	-----	-----	-----

lab	As	Ba	B	Cr (VI)	Co	Cu	Hg	Ni
2864	not detected	5.34	-----	-----	-----	-----	not detected	-----
2892	<1.0	6.241	<1.0	-----	<1.0	2.389	<1.0	<1.0
2917	<0.5	7.11	<1	-----	<0.25	2.09	<0.1	<1
2959	-----	8.9	-----	-----	-----	-----	-----	-----
2980	-----	-----	-----	-----	-----	-----	10 C	-----
3100	<10	<10	<50	<0.025	<10	<10	<10	<10
3116	<0.15	9.816	<5	<0.02	<2	<2	<0.15	<2
3118	<5	<5	<5	-----	<5	<5	<5	<5
3146	< 3	< 10	< 10	< 0.01	< 1	< 10	< 1	< 5
3153	<10	<10	<50	<0.025	<10	<10	<10	<10
3172	< 5	< 50	< 50	< 0.025	< 10	< 50	< 10	< 10
3176	0.42	9.54	2.39	-----	-----	2.74	-----	0.66
3182	0.250	10.340	<5	0.607	<1	<5	<1	<5
3185	<10	<10	<50	<0.025	<10	<10	<10	<10
3190	＜10	＜10	＜50	＜0.025	＜10	＜10	＜10	＜10
3195	0.309	10.6	<5,0	-----	<0,10	2.42	<0,10	<2,0
3200	-----	-----	-----	-----	-----	-----	-----	-----
3209	<2.5	<25.0	<5.0	<0.025	<5.0	<50.0	<5.0	<5.0
3214	<10	<10	<50	-----	<10	<10	<10	<10
3218	-----	-----	-----	-----	-----	-----	-----	-----
3228	<5	<10	<10	-----	<2.5	<50	<2.5	<5
3233	< 0.5	9.92	< 5	< 0.025	< 0.5	< 5	< 0.5	< 5
3248	<10	<10	<100	<0.0265	<10	<10	<10	<10
8005	<2	9.817	-----	-----	-----	-----	<2	-----
8030	not detected	7.12	not detected	not detected	not detected	not detected	not detected	not detected
8031	-----	-----	-----	-----	-----	-----	-----	-----

Lab 2829 first reported 1.05
Lab 2980 first reported 43

Determination of migration of other elements on sample #22561; results in mg/kg
--continued--

lab	Se	Sn	Organic Sn	Zn
210	-----	-----	-----	-----
310	<10	<0.2	-----	2.779
339	0.046	0	-----	2.808
523	Not detected	Not detected	Not determined	Not detected
551	-----	-----	-----	-----
840	<10	<4.9	<1.8	<10
841	<10	<2.5	<0.2	<10
2102	Not detected	Not detected	Not analyzed	2.105
2132	<10	<10	<1.5	<50
2137	-----	-----	-----	-----
2139	<10	<10	<4	<50
2156	<3	<5	-----	<5
2165	Not detected	Not detected	Not detected	Not detected
2182	-----	-----	-----	-----
2184	not detected	not detected	not detected	not detected
2190	<50	<4	<12	<50
2201	<10	<2.5	<3.0	<100
2213	<10	<10	<0.05	<10
2216	None Detected	None Detected	Not Applicable	1.90
2230	<2	<2	-----	<2
2232	<2	<2	not analyzed	<5
2238	<10	<2.5	<2	<100
2241	0.011	ND	ND	1.923
2247	<50	<2.5	<2	<100
2255	Not Detected	Not Detected	Not Detected	Not Detected
2256	not detected	not detected	not detected	2.84
2265	-----	-----	-----	-----
2272	-----	-----	-----	-----
2284	-----	-----	-----	-----
2287	<10	-----	-----	-----
2290	<10	<10	-----	<100
2293	Not detected	-----	-----	-----
2294	-----	-----	-----	-----
2295	<10	<10	-----	<10
2320	<10	<4.9	Not detected	<50
2352	-----	-----	-----	-----
2357	<10	<3	not analyzed	<50
2363	-----	-----	-----	-----
2365	<10	<4.9	-----	<50
2366	<10	<3	<3	<50
2369	not detected	not detected	not detected	not detected
2375	<10	<4.9	-----	<50
2382	＜10	＜3	＜0.02	＜50
2385	<1	<1	<0.2	<5
2390	not detected	not detected	not analyzed	not detected
2406	<10	<1	-----	<50
2426	ND	ND	-----	ND
2429	<10	<10	<3.0	<100
2431	-----	-----	-----	-----
2442	Not detected	Not detected	Not detected	Not detected
2459	-----	-----	-----	-----
2475	-----	-----	-----	-----
2482	-----	-----	-----	-----
2485	-----	-----	-----	-----
2492	-----	-----	-----	-----
2494	not detected	not detected	not detected	14.90
2499	2.62	not detected	not analyzed	6.48
2500	not detected	not detected	not detected	not detected
2509	-----	-----	-----	-----
2532	Not Detected	Not Detected	Not Detected	Not Detected
2560	<10	<2	not analyzed	<10
2582	<5	Not detected	Not detected	<5
2590	< L.O.Q.	< L.O.Q.	-----	< L.O.Q.
2637	<1	<0,5	-----	4
2643	-----	-----	-----	-----
2659	0.212	not analyzed	not analyzed	not analyzed
2665	not detected	not detected	not analyzed	3.03
2674	-----	-----	-----	-----
2703	0.1	Not detected	Not detected	1.8
2722	not detected	not detected	not detected	not detected
2741	<10	<4	-----	<50
2798	Not Detected	Not Detected	Not Detected	Not Detected
2817	-----	-----	-----	-----
2829	not detected	not detected	not determined	6.70
2853	-----	-----	-----	-----

lab	Se	Sn	Organic Sn	Zn
2864	not detected	-----	-----	-----
2892	<1.0	<1.0	-----	<10
2917	<0.5	<0.25	-----	2.22
2959	-----	-----	-----	-----
2980	-----	-----	-----	5
3100	<10	<2	<5	<100
3116	<2	<2	<0.225	<5
3118	<5	<5	-----	<5
3146	< 2	< 3	not analyzed	< 10
3153	<10	<10	<2.0	<100
3172	< 10	< 2	< 0.05	< 50
3176	-----	-----	-----	6.23
3182	<5	<1	Not Analyzed	<5
3185	<10	<2.5	<5	<100
3190	＜10	＜2.5	＜2.0	＜100
3195	<0,50	<0,10	-----	<5,0
3200	-----	-----	-----	-----
3209	<5.0	<4.0	<1	<50.0
3214	<10	<10	-----	<100
3218	-----	-----	-----	-----
3228	<10	<1	-----	<10
3233	< 5	< 0.5	< 2	< 5
3248	<10	<0.8	<3	<10
8005	<2	-----	-----	-----
8030	Not detected	Not detected	Not detected	Not detected
8031	-----	-----	-----	-----

APPENDIX 3 Analytical details

lab	ISO/IEC17025 accredited	Sample intake	Amount of 0.07 mol/L HCl solution used in mL	pH after 1 minute shaking	Was the pH adjusted after 1 minute of shaking	pH after adjustment
210	Yes	---	---	---	---	---
310	Yes	paper: 0.1970 Dried paint: 0.2199	Paper: 10 Dried paint: 11	paper: 2.4 dried paint: 4.8	Yes	1.2
339	Yes	#22560 : 0.234 g #22561 : 0.222 g	#22560 : 11.705 ml #22561 : 11.100 ml	#22560 : 1.98 #22561 : 2.65	Yes	#22560 : 1.18 #22561 : 1.16
523	Yes	0.1 grams	5mL	#22560 pH1.142; #22561 pH=1.204	No	same
551	---	---	---	---	---	---
840	Yes	0.2g	10mL	>1.5	Yes	1-1.5
841	Yes	0.2 grams	10 ml	< 1.3	Yes	< 1.3
2102	Yes	0.1	5	1.2	No	---
2132	Yes	Sample #22560: 0.1000 gram Sample #22561: 0.1007 gram	#22560: 2.5mL H_2O, 25mL 0.14mol/L HCl #22561: 5mL	Sample #22560: 2.60 Sample #22561: 4.68	Yes	Sample #22560: 1.22 Sample #22561: 1.20
2137	Yes	0.1	5	1.18	No	1.20
2139	Yes	1. #22560 : 0.180 6 g 2. #22561 : 0.166 9 g	1. #22560 : 10 mL 2. #22561 : 10 mL	1. #22560 : 1.9 2. #22561 : 4.5	Yes	1. #22560 : 1.1 2. #22561 : 1.2
2156	Yes	0.1g	5ml	---	Yes	#22560 - 1.16 #22561 - 1.16
2165	Yes	0.0700~0.2000g,nearest to 0.1mg	5mL or 10mL	pH of #22560:1.6 pH of #22561>2.8	Yes	pH of #22560:1.1 pH of #22561:1.1
2182	Yes	0.2	10	#22560: 1.10 #22560: 1.12	No	#22560: 1.12 #22560: 1.19
2184	Yes	0.1g	5ml	#22560: 3.44 #22561: 3.94	Yes	#22560: 1.16 #22561: 1.12
2190	Yes	0.2g	10ml	1.2	---	
2201	Yes	22560#0.2040g, 22561#0.2110g	10ml	22560#pH1.20 22561#pH1.18	No	22560#pH1.14 22561#pH1.13
2213	Yes	0.2 gm	10 mL	1.21	No	---
2216	Yes	0.785 grams	5 mL 0.07M HCl per replicate	---	Yes	---
2230	Yes	0.1025g	5ml	1.3	No	no adjustment
2232	Yes	#22560 - 0.1111g #22561 - 0.1269g	#22560 -5.56ml #22561 -6.35ml	#22560 - 1.12 #22561 - 1.15	No	---
2238	Yes	0.1g	5mL	#22560 PH 1.10,#22561 PH 1.17	No	/
2241	Yes	#22560: 0.2037 / #22561: 0.2019	10 mL	#22560: 2.259 / #22561: 5.312	Yes	#22560: 1.180 / #22561: 1.241
2247	Yes	0.1gm	5ml	#22560:2.0 #22561:4.7	Yes	#22560:1.15 #22561:1.15
2255	Yes	0.1	5	S# 22560- pH 2 S#22561 pH- 4.0	Yes	1.2
2256	Yes	22560 - 0.1751 gram 22561 - 0.1938 gram	22560 - 8.8 22561 - 9.7	22560 - 1.132 22561 - 1.167	No	N/A
2265	---	---	---	---	---	---
2272	No	0.1gram	5mL	cannot detect as the extract was too little.	No	---
2284	---	#22560:0.209; #22651: 0.189	#22560: 10mL; #22651: 9 mL	#22560: 1.68; #22561: 3.64	Yes	#22560: 1.25; #22561: 1.20
2287	No	0.1g	5mL	---	Yes	---
2290	Yes	---	---	---	---	---
2293	Yes	0.2	10	1.7	Yes	1.2
2294	---	---	---		---	---
2295	Yes	0.2 grams	10 ml	#22560 pH 1.8 #22561 pH 4.8	Yes	#22560 pH 1.25 #22561 pH 1.26
2320	Yes	0.1	5	1.2	No	---
2352	Yes	0.2g	10mL	1.18/1.21	Yes	1.22/1.25
2357	---	---	---	---	---	---
2363	---	---	---	---	---	---

lab	ISO/IEC17025 accredited	Sample intake	Amount of 0.07 mol/L HCl solution used in mL	pH after 1 minute shaking	Was the pH adjusted after 1 minute of shaking	pH after adjustment
2365	Yes	0.1g	5ml	#22560: 2.80 ; #22561: 4.50	Yes	#22560: 1.15 ; #22561: 1.18
2366	Yes	0.15	7.5	22560#:1.9 22561#:5.19	Yes	22560#:1.15 22561#:1.19
2369	Yes	---	---	---	---	---
2375	Yes	---	---	---	---	---
2382	Yes	0.2g	10ml	#22560:1.29 #22561:1.38	Yes	#22560:1.29 #22561:1.29
2385	Yes	~ 0.5 g	25 mL	1.161 / 1.277	No	
2390	Yes	22560 (0.2084g) 22561 (0.1412)	22560 (10.4mL) 22561 (7.0)	greater than 1.0	Yes	under 1.1 - 1.3
2406	Yes	0.1 g	5 mL	---	Yes	---
2426	Yes	0.2011	10ml	1.19	No	-
2429	Yes	0.1g	5mL	1.13	Yes	1.11
2431	Yes	0.1g	5ml	1.2	No	1.2
2442	Yes	0.1g	5 ml	5.03	Yes	1.16
2459	Yes	0.1 gm	5 ml	1.2	Yes	1.2
2475	Yes	0.121	5.2	1.15	No	---
2482	Yes	0.2 g	10	#22560: pH 2,2; #22561: pH 2,3	Yes	#22560: pH 1,24; #22561: pH 1,24
2485	Yes	0.1 grams	5 mL	1.26	No	---
2492	Yes	0.1g	5mL	not measure	No	no adjustment
2494	Yes	#22560:0.2003 g #22561:0.2021 g	#22560:10.02 mL #22561:10.11 mL	#22560:1.71 #22561:4.40	Yes	#22560:1.17 #22561:1.20
2499	Yes	0.150 grams	22,5 ml	1.47 - 1.57	Yes	1.30 - 1.27
2500	Yes	0.1g	5ml	1.16	Yes	1.12
2509	Yes	0.2011g	10	2~3	No	2~3
2532	Yes	0.1g	5ml of 0.07 mol/L HCL	1.18	No	1.16
2560	Yes	0.100 g	20 ml	1-1.5	No	NA
2582	No	0.1000g	5.00 ml	1.2	No	---
2590	Yes	0.1	10ML	2.05	Yes	1.15
2637	Yes	0,4 g	20 ml	---	Yes	---
2643	---	---	---	---	---	---
2659	Yes	0.10 GRAM	15 ML	1.4	No	NOT APPLICABLE
2665	Yes	#22560: 0.4 g #22561: 0.5 g	#22560: 20 ml #22561: 25 ml	#22560: 4.34 #22561: 4.46	Yes	#22560: 1.16 #22561: 1.21
2674	No	about 0.14g	about 7 mL	>1.2	No	1.1-1.2
2703	Yes	Sample #22560 0.4025g sample #22561 0.5131g		>pH 1.3	Yes	#22560: pH 1.27 #22561: pH 1.11
2722	Yes	Paper: 0.2068g // Coating: 0.1007g	Paper: 10mL // Coating: 5mL	Paper: 2.52 // Coating: 4.63	Yes	Paper: 1.18 // Coating: 1.22
2741	No	22560: 0.1088 g 22561: 0.1036 g	22560: 2.72ml 0.14 mol/L HCL+ 2.72 ml DI H2O 22561: 5.18ml 0.07 mol/l HCL	22560: 1.21 22561: 1.24	No	/
2798	Yes	0.1g	5ml	1.13	No	1.13
2817	---	---	---	---	---	---
2829	No	0.100	5mL	1.23	No	---
2853	Yes	0.2	10	2.31	Yes	1.2
2864	Yes	100 mg	5 mL	1.6	Yes	1.3
2892	Yes	0.2	10		Yes	1.251
2917	Yes	0.2046 and 0.1963; 0.2109 and 0.2987	15.2 and 15.2; 15.3 and 15.4	1.8 and 1.9; 3.0 and 4.5	Yes	1.1 and 1.1; 1.1 and 1.1
2959	No	0.1	5	---	---	---
2980	No	0.2	10	---	Yes	1.5
3100	Yes	#22560:0.1g #22561:0.1g	5mL	#22560:2.65 #22561:5.46	Yes	#22560:1.12 #22561:1.14
3116	Yes	0.2g for #22560 0.25g for #22561	10mL for #22560 12.5mL for #22561	Between 1.1 and 1.2	No	Not applicable
3118	Yes	0.1 gram	5 mL	22560 = 1.24 22561 = 1.16	Yes	22560 = 1.28 22561 = 1.18

lab	ISO/IEC17025 accredited	Sample intake	Amount of 0.07 mol/L HCl solution used in mL	pH after 1 minute shaking	Was the pH adjusted after 1 minute of shaking	pH after adjustment
3146	Yes	#22560: 200 mg #22561: 250 mg	#22561: 12.5 ml	#22560: 1.6 #22561: >2.5	Yes	#22560: 1.1 #22561: 1.1
3153	Yes	0.1 gram	5 mL	4.84	Yes	1.18
3172	Yes	---	---	---	---	---
3176	Yes	0,05	50	1,25	---	---
3182	Yes	0.2 g	10 mL	1.19	Yes	1.17
3185	Yes	0.12g	6mL	22560:2.68 22561:4.14	Yes	22560:1.13 22561:1.18
3190	Yes	0.1000	5	5.61	Yes	1.22
3195	No	0,15g paper 0,20g paint	7,5mL paper 10mL paint	2,1 paper 4,3 paint	Yes	1,1 paper 1,2 paint
3200	---	---			---	
3209	Yes	22560:0.1976g 22561:0.1543g	22560:10ml 22561:7.7ml	22560:2.86 22561:5.12	Yes	22560:1.11 22561:1.25
3214	Yes	0.2 g	#22560: 5 mL 0.14 N HCl + 5 mL Water #22561: 10 mL 0.07 mol/L HCL	#22560: pH= 1.7 #22561: pH= 5.0	Yes	#22560: pH= 1.113 #22561: pH= 1.166
3218	---	---			---	---
3228	---	0.2g	10	1.1-1.3 after shaking 1h and standby 1h in the water bath	---	---
3233	Yes	0.1106 g (greied dried painted) = 0.1037	5.5 mL (greied dried painted) = 5.2	2.28 (greied dried painted) = 4.40	Yes	1.12 (greied dried painted) = 1.13
3248	Yes	#22560 0.2000g #22561 0.2000g	#22560: 5mL H2O + 5mL 0.14N HCl #22561: 10mL	#22560: 1.74 #22561: 5.02	Yes	#22560: 1.19 #22561: 1.20
8005	Yes	0.2g for #22560 0.25g for #22561	10 mL for #22560 12.5 mL for #22561	#22560, (pH 2.35) #22561, (pH 4.93)	Yes	1.1-1.2
8030	Yes	#22560=0.3982 g except Organic tin 0.5 g #22561=0.4854 g except Organic tin 0.5 g	#22560=20 ml #22561=25 ml	#22560=1.47 #22561=4.45	Yes	#22560=1.11 #22561=1.10
8031	Yes	0.2	10	2.31	Yes	1.2

APPENDIX 4

Number of participants per country

3 labs in	BANGLADESH
1 lab in	BRAZIL
1 lab in	EGYPT
4 labs in	FRANCE
7 labs in	GERMANY
1 lab in	GUATEMALA
13 labs in	HONG KONG
3 labs in	INDIA
2 labs in	INDONESIA
4 labs in	ITALY
1 lab in	JAPAN
3 labs in	KOREA, Republic of
2 labs in	MALAYSIA
3 labs in	MEXICO
1 lab in	MOROCCO
26 labs in	P.R. of CHINA
3 labs in	PAKISTAN
1 lab in	SINGAPORE
1 lab in	SLOVENIA
2 labs in	SRI LANKA
1 lab in	SWITZERLAND
4 labs in	TAIWAN
2 labs in	THAILAND
2 labs in	THE NETHERLANDS
3 labs in	TURKEY
1 lab in	U.S.A.
1 lab in	UNITED KINGDOM
5 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
fr.	= first reported
f+?	= possibly a false positive test result?
f-?	= possibly a false negative test result?

Literature

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