Results of Proficiency Test
Migration of elements EN71-3
Category 1, 2 and 3
April 2020

Organized by: Institute for Interlaboratory Studies
Spijkenisse, The Netherlands

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Report: iis20V02

August 2020

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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 (Council Directive 88/378/EEC). This directive has been superseded by Council Directive 2009/48/EC, which applies to toy imports into the EU since 20 July 2011. There is an exception for the chemical requirements under part III of Annex II of this directive. These chemical requirements became into force on 20 July 2013.
The test methods EN71-3:2019 and ISO8124-3:2018 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).
Every year the Institute for Interlaboratory Studies (iis) organizes a proficiency scheme for Migration of Elements EN71-3 since 2010. During the annual proficiency testing program 2019/2020, it was decided to continue the proficiency test for the analysis of the migration of elements. This year the proficiency test contained category 1, 2 and 3 samples and was extended with a qualitative category 3 sample.
In this interlaboratory study 39 laboratories in 18 different countries registered for category 1 participation, 37 laboratories in 15 different countries for category 2 participation and 95 laboratories in 26 different countries for category 3 participation.
In total 103 participants in 29 different countries registered for participation for one or more categories (proficiency tests). See appendix 4 for the number of participants per country. In this report, the results of the proficiency test are presented and discussed. This report is also electronically available through the iis website www.iisnl.com.

2 SET UP

The Institute for Interlaboratory Studies (iis) in Spijkenisse, the Netherlands, was the organizer of this proficiency test (PT). Sample analyzes for fit-for-use and homogeneity testing were subcontracted to an ISO/IEC17025 accredited laboratory. It was decided to send to each participant depending on the registration up to five different samples divided over the three categories mentioned in EN71-3 with different concentrations of various elements, see below table.

PT identification	EN71-3 category	Sample id.	Sample amount	Matrix	Elements added
iis20V02A	category 1	#20570	0.5 g	Plaster	Barium, Strontium and Zinc
iis20V02B	category 2	#20575	3 g	Finger Paint	Cadmium and Lead
iis20V02C	category 3	#20580	2 pcs	Ink on paper	Cadmium and Copper
	category 3	#20581	0.5 g	Dried Paint	Cadmium and Lead
	category 3	#20582	1 piece	Toy Sword	real life sample

Table 1: overview of samples

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 Organization, 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

iis20V02A

For sample #20570 a batch of white plaster was purchased in a local shop. To this batch of plaster the elements Barium, Strontium and Zinc were added as salts. After thorough mixing the batch of plaster was divided over 60 small bags, each filled with 0.5 grams and labelled #20570. The homogeneity of the subsamples was verified by measuring the **total** content of the elements Barium, Strontium and Zinc by an in-house method on 8 stratified randomly selected subsamples.

	Barium in mg/kg	Strontium in mg/kg	Zinc in mg/kg
sample #20570-1	414	1972	382
sample #20570-2	411	1996	395
sample #20570-3	442	2084	402
sample #20570-4	466	2105	421
sample #20570-5	439	1998	391
sample #20570-6	454	2074	412
sample #20570-7	451	2022	385
sample #20570-8	460	2069	434

Table 2: homogeneity test results of subsamples #20570

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

	Barium in mg/kg	Strontium in mg/kg	Zinc in mg/kg
r (observed)	57	137	51
reference test method	EN71-3:2019	EN71-3:2019	EN71-3:2019
0.3 * R (reference test method)	74	257	51

Table 3: evaluation of the repeatabilities of subsamples #20570

The calculated repeatabilities were in agreement with 0.3 times the reproducibilities of the reference test method. Therefore, homogeneity of the subsamples was assumed.

iis20V02B

For sample #20575 a batch of finger paint was purchased from a local shop. To this batch the elements Cadmium and Lead were added as salts. After thorough mixing the batch of pink finger paint was divided over 50 small jars with approximately 3 grams each and labelled #20575. The homogeneity of the subsamples was verified by measuring the Cadmium and Lead content by EN71-3 on 5 stratified randomly selected subsamples.

	Cadmium in mg/kg	Lead in mg/kg
sample #20575-1	15.77	24.11
sample #20575-2	15.56	24.29
sample #20575-3	17.20	26.76
sample #20575-4	16.99	26.91
sample #20575-5	16.98	26.71

Table 4: homogeneity test results of subsamples #20575

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

	Cadmium in mg/kg	Lead in mg/kg
r (observed)	2.16	3.99
reference test method	EN71-3:2019	EN71-3:2019
0.3 * R (reference test method)	2.77	4.33

Table 5: evaluation of the repeatabilities of subsamples #20575

The calculated repeatabilities were in agreement with 0.3 times the reproducibilities of the reference test method. Therefore, homogeneity of the subsamples was assumed.

iis20V02C

For sample #20580 a paper with magenta ink was prepared by iis. The elements Cadmium and Copper were added as salts to the ink and after homogenisation printed on paper. After cutting of the paper the pieces were randomly divided over 120 small bags. Each bag contained two 5x5 cm pieces of paper and was labelled #20580. The homogeneity of the subsamples was verified by measuring the content of Cadmium and Copper by EN71-3 on 8 stratified randomly selected subsamples.

	Cadmium in mg/kg	Copper in mg/kg
sample #20580-1	310	400
sample #20580-2	320	420
sample #20580-3	320	400
sample #20580-4	320	410
sample #20580-5	320	420
sample #20580-6	320	410
sample #20580-7	310	400
sample #20580-8	320	420

Table 6: homogeneity test results of subsamples #20580

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

	Cadmium in mg/kg	Copper in mg/kg
r (observed)	13	26
reference test method	EN71-3:2019	EN71-3:2019
0.3 * R (reference test method)	40	52

Table 7: evaluation of the repeatabilities of subsamples #20580

The calculated repeatabilities were in agreement with 0.3 times the reproducibilities of the reference test method. Therefore, homogeneity of the subsamples was assumed.

For sample #20581 a dried pink paint was prepared by iis. The elements Cadmium and Lead were added to the paint as salts. After thorough mixing 120 small bags were filled with 0.5 grams each and labelled #20581. The homogeneity of the batch was verified by measuring the **total** Cadmium and Lead content by EPA 3052 on 8 stratified randomly selected subsamples.

	Cadmium in mg/kg	Lead in mg/kg
sample #20581-1	577.54	56.33
sample #20581-2	592.76	50.85
sample #20581-3	573.49	61.22
sample #20581-4	589.92	57.21
sample #20581-5	575.23	56.99
sample #20581-6	570.09	56.60
sample #20581-7	575.36	55.57
sample #20581-8	566.05	56.78

Table 8: homogeneity test results of subsamples #20581

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

	Cadmium in mg/kg	Lead in mg/kg
r (observed)	26	8
reference test method	EN71-3:2019	EN71-3:2019
0.3 * R (reference test method)	73	14

Table 9: evaluation of the repeatabilities of subsamples #20581

The calculated repeatabilities were in agreement with 0.3 times the reproducibilities of the reference test method. Therefore, homogeneity of the subsamples was assumed.

A batch of plastic toy swords which was recalled from the market was obtained from a trade company. The batch was found positive on Copper. From this batch toy swords subsamples were taken randomly, disabled and the part that was found positive was labelled #20582. This sample is a real-life sample and placed as an extra sample in this proficiency test for qualitative analysis only. Therefore, no homogeneity evaluation is given for this sample.

Depending on the registration of the participant the appropriate set of PT samples was sent on March 18, 2020.

2.5 ANALYZES

The participants were requested to determine the migration of nineteen elements applying the analysis procedure that is routinely used in the laboratory. It was requested to use more than 0.1 grams per determination to ensure homogeneity. It was also requested to report if the laboratory was accredited for the determination Migration of elements 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 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 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 samples receipt on this data entry portal. The letter of instructions can also be downloaded from the iis website www.iisnl.com.

3 RESULTS

During five weeks after sample dispatch, the test results of the individual laboratories were gathered via the data entry portal www.kpmd.co.uk/sgs-iis-cts/. The reported test results are tabulated per determination in appendix 1 and 2 of this report. The laboratories are presented by their code numbers.

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

3.1 STATISTICS

The protocol followed in the organization of this proficiency test was the one as described for proficiency testing in the report ‘iis Interlaboratory Studies: Protocol for the 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 dataset does not have a normal distribution, the (results of the) statistical evaluation should be used with due care.

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

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

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

3.2 GRAPHICS

In order to visualize the data against the reproducibilities from literature, Gauss plots were made, using the sorted data for one determination (see appendix 1). On the Y-axis, the reported test results are plotted. The corresponding laboratory numbers are on the X-axis. The straight horizontal line presents the consensus value (a trimmed mean). The four striped lines, parallel to the consensus value line, are the +3s, +2s, -2s and -3s target reproducibility limits of the selected reference test method. Outliers and other data, which were excluded from the calculations, are represented as a cross. Accepted data are represented as a triangle.

Furthermore, Kernel Density Graphs were made. This is a method for producing a smooth density approximation to a set of data that avoids some problems associated with histograms. Also, a normal Gauss curve was projected over the Kernel Density Graph for reference.

3.3 Z-SCORES

To evaluate the performance of the participating laboratories the z-scores were calculated. As it was decided to evaluate the performance of the participants in this proficiency test (PT) against the literature requirements 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 general when no literature reproducibility is available, another target may be 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 should be done in order to evaluate whether the reported test results are fit-for-purpose.

The z-scores were calculated in accordance with:

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

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

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

4 EVALUATION

In this interlaboratory study some problems were encountered with the dispatch of the samples. Some participants informed iis that they were not able to report test results due to the measures taken to contain the Covid-19 pandemic in their countries. Nine participants did not report any test results and five other participants reported the test results after the reporting deadline. Not all laboratories were able to report all elements requested. Finally, the 94 reporting laboratories submitted 1035 numerical test results (qualitative sample #20582 excluded). Observed were 45 outlying test results, which is 4.3%. In proficiency studies outlier percentages of 3% - 7.5% are quite normal.

Not all original data sets proved to have a normal Gaussian distribution. These are referred to as “not OK” or “suspect”. The statistical evaluation of these data sets should be used with due care, see also paragraph 3.1.

4.1 EVALUATION PER SAMPLE AND PER ELEMENT

In this section the determination is discussed per sample and per element. All statistical results reported on the samples are summarized in appendix 1. The test results of the elements which were not evaluated are summarized in appendix 2. The test methods, which were used by various laboratories, were taken into account for explaining the observed differences when possible and applicable. These test methods are also in the tables in appendix 1 together with the original data. 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 April 2019 the CEN committee published a new version of EN71-3. In this 2019 test method of EN71-3 new 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 of EN71-3:19 and are used to evaluate the performance of the group of participants in this PT.

In EN71-3:19 a new part was introduced in which was emphasized that maintaining the pH between 1.1 and 1.3 is very important for the migration of the elements. Therefore, it was decided to exclude from the statistical evaluation the test results of the participants who reported deviating pH values (outside the range of 1.1 and 1.3). It was decided to keep the test results of the group that had not given details about the pH in the statistical analysis because the effect on the assigned values was rather small, see for more discussion paragraph 5 and appendix 1 for the effect on the averages.

iis20V02A (Cat.1) Plaster #20570

Aluminum: This determination was problematic. No statistical outliers were observed but two test results were excluded. However, the calculated reproducibility after rejection of the suspect data is not in agreement with the target reproducibility based on EN71-3:19. When only test results are considered that comply with pH values kept between 1.1 and 1.3 the calculated reproducibility is in full agreement with the target reproducibility based on EN71-3:19.

Barium: This determination was not problematic. Most of the reporting participants agreed on a level <10 mg/kg. Although this element was added to the plaster, apparently it did hardly migrate from this matrix.

Boron: This determination was not problematic. Most of the reporting participants agreed on a level <10 mg/kg.

Cadmium: This determination was not problematic. No statistical outliers were observed but three test results were excluded. The calculated reproducibility after rejection of the suspect data is in agreement with the target reproducibility based on EN71-3:19.

Lead: This determination was problematic. No statistical outliers were observed but two test results were excluded. However, the calculated reproducibility after rejection of the suspect data is not in agreement with the target reproducibility based on EN71-3:19. When only test results are considered that comply with pH values kept between 1.1 and 1.3 the calculated reproducibility is in full agreement with the target reproducibility based on EN71-3:19.

Manganese: This determination was not problematic. No statistical outliers were observed but two test results were excluded. The calculated reproducibility after rejection of the suspect data is in agreement with the target reproducibility based on EN71-3:19.

Strontium: This determination was not problematic. Two statistical outliers were observed and two other test results were excluded. However, the calculated reproducibility after rejection of the suspect data is in agreement with the target reproducibility based on EN71-3:19.

Zinc: This determination was not problematic. No statistical outliers were observed but two test results were excluded. The calculated reproducibility after rejection of the suspect data is in agreement with the target reproducibility based on EN71-3:19.

The majority of the participants agreed on a concentration near or below the limit of detection for all other reported elements, see appendix 2.

iis20V02B (Cat.2) Finger Paint #20575

Aluminum: This determination was not problematic. Three statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the target reproducibility based on EN71-3:19.

Cadmium: This determination was not problematic. Two statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the target reproducibility based on EN71-3:19.

Lead: This determination was not problematic. Three statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the target reproducibility based on EN71-3:19.

The majority of the participants agreed on a concentration near or below the limit of detection for all other reported elements, see appendix 2.

iis20V02C (Cat.3)
Ink on Paper #20580

Aluminum: This determination was not problematic. Four statistical outliers were observed and one other test result was excluded. However, the calculated reproducibility after rejection of the suspect data is in agreement with the target reproducibility based on EN71-3:19.

Cadmium: This determination was not problematic. Three statistical outliers were observed and three other test results were excluded. However, the calculated reproducibility after rejection of the suspect data is in agreement with the target reproducibility based on EN71-3:19.

Copper: This determination was not problematic. Three statistical outliers were observed and two other test results were excluded. However, the calculated reproducibility after rejection of the suspect data is in agreement with the target reproducibility based on EN71-3:19.

Strontium: This determination was problematic. Two statistical outliers were observed and one other test result was excluded. The calculated reproducibility after rejection of the suspect data is not in agreement with the target reproducibility based on EN71-3:19.

The majority of the participants agreed on a concentration near or below the limit of detection for all other reported elements, see appendix 2.

Dried Paint #20581

Aluminum: This determination was problematic for some laboratories. Seven statistical outliers were observed and one other test result was excluded. However, the calculated reproducibility after rejection of the suspect data is in agreement with the target reproducibility based on EN71-3:19.

Cadmium: This determination was problematic for some laboratories. Six statistical outliers were observed and two other test results were excluded. However, the calculated reproducibility after rejection of the suspect data is in full agreement with the target reproducibility based on EN71-3:19.

Lead: This determination was not problematic. No statistical outliers were observed but one test result was excluded. However, the calculated reproducibility after rejection of the suspect data is in agreement with the target reproducibility based on EN71-3:19.

Manganese: This determination was very problematic. One statistical outlier was observed and three other test results were excluded. The calculated reproducibility after rejection of the suspect data is not at all in agreement with the target reproducibility based on EN71-3:19.

Strontium: This determination was problematic for some laboratories. Nine statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in full agreement with the target reproducibility based on EN71-3:19.

The majority of the participants agreed on a concentration near or below the limit of detection for all other reported elements, see appendix 2.

Qualitative piece of a toy sword sample #20582

77% Of the reporting participants assessed this sample to “Fail” the safety standards for children after determination of Migration of elements according to EN71-3, category 3 and Toy Safety Directive 2009/48/EC. The elements on which the sample failed was in almost all cases on Copper and in four cases also on Zinc. According to table 2 cat.3 in EN71-3:19 the migration limit for Copper is 7700 mg/kg and for Zinc 46000 mg/kg.
Remarkably, 23% of the participants assessed this sample to “Pass”.

Some participants also found levels of Aluminum and Barium, but in such low levels that none of the participants qualify the sample as “Fail” based on these elements.

The majority of the participants agreed on a concentration near or below the limit of detection for all other reported elements, see appendix 2.

4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES

A comparison has been made between the reproducibilities as declared by the relevant reference test method and the reproducibilities as found for the group of participating laboratories. The number of significant test results, the average, the calculated reproducibilities (2.8 * standard deviation) and the target reproducibilities, derived from the official test method EN71-3:2019 are presented in the next table.

Element	unit	n	average	2.8 * sd	R(target)
Aluminum as Al	mg/kg	33	318	153	134
Barium as Ba	mg/kg	25	<10	n.e.	n.e.
Boron as B	mg/kg	19	<10	n.e.	n.e.
Cadmium as Cd	mg/kg	32	1.73	0.67	0.97
Lead as Pb	mg/kg	32	3.60	2.30	2.02
Manganese as Mn	mg/kg	33	68.0	18.9	28.6
Strontium as Sr	mg/kg	31	699	226	294
Zinc as Zn	mg/kg	33	405	136	170

Table 10: reproducibilities on sample #20570 (plaster, cat 1)

Element	unit	n	average	2.8 * sd	R(target)
Aluminum as Al	mg/kg	26	93.5	23.1	39.3
Cadmium as Cd	mg/kg	34	19.6	3.4	11.0
Lead as Pb	mg/kg	33	28.8	4.5	16.1

Table 11: reproducibilities on sample #20575 (finger paint, cat 2)

Element	unit	n	average	2.8 * sd	R(target)
Aluminum as Al	mg/kg	76	474	161	199
Cadmium as Cd	mg/kg	81	307	80	129
Copper as Cu	mg/kg	78	377	111	158
Strontium as Sr	mg/kg	53	38.3	25.0	16.1

Table 12: reproducibilities on sample #20580 (ink on paper, cat 3)

Element	unit	n	average	2.8 * sd	R(target)
Aluminum as Al	mg/kg	69	1136	410	477
Cadmium as Cd	mg/kg	76	434	177	182
Lead as Pb	mg/kg	73	44.4	28.1	37.3
Manganese as Mn	mg/kg	62	23.3	20.9	9.8
Strontium as Sr	mg/kg	74	331	145	139

Table 13 reproducibilities on sample #20581 (dried paint, cat 3)

Without further statistical calculations, it can be concluded that the group of participating laboratories has no difficulties with the determination of the migration of the evaluated elements in plaster, finger paint, ink on paper and dried paint in accordance with EN71-3:19.

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

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 tables.

Element	April 2020	April 2019	April 2018	April 2017	April 2016	EN71-3:19 table C.1
Aluminum	17%	29%	20%	23%	20%	15%
Antimony	--	--	--	47%	--	30%
Arsenic	--	--	--	--	32%	20%
Barium	--	--	--	--	--	20%
Boron	--	--	--	--	--	15%
Cadmium	14%	--	18%	--	--	20%
Chromium *)	--	--	--	--	44%	n.a.
Chromium (III)	--		--	--	--	15%
Chromium (VI)	--		--	--	--	50%
Cobalt	--	--	--	--	--	15%
Copper	--	10%	--	28%	17%	15%
Lead	23%	26%	30%	22%	22%	20%
Manganese	10%	--	14%	13%	16%	15%
Mercury	--	--	--	--	--	30%
Nickel	--	--	--	--	--	20%
Selenium	--	--	--	--	--	15%
Strontium	12%	20%	15%	21%	18%	15%
Tin	--	--	--	--	--	20%
Organic Tin	--		--	--	--	50%
Zinc	12%	--	17%	--	--	15%

Table 14: development of uncertainties over the years for category 1 materials (plaster)
*) Chromium total

Element	April 2020	April 2019	EN71-3:19 table C.1
Aluminum	9%	--	15%
Antimony	--	--	30%
Arsenic	--	--	20%
Barium	--	22%	15%
Boron	--	--	15%
Cadmium	6%	--	20%
Chromium (III)	--	--	20%
Chromium (VI)	--	--	50%
Cobalt	--	--	20%
Copper	--	--	15%
Lead	6%	22%	20%
Manganese	--	--	15%
Mercury	--	--	30%

Element	April 2020	April 2019	EN71-3:19 table C.1
Nickel	--	19%	20%
Selenium	--	--	20%
Strontium	--	--	15%
Tin	--	--	20%
Organic Tin	--	--	50%
Zinc	--	--	15%

Table 15: development of uncertainties over the years for category 2 materials (finger paint)

Element	April 2020	April 2019	April 2018	April 2017	April 2016	EN71-3:19 table C.1
Aluminum	12-13%	13-33%	46-54%	58-63%	16%	15%
Antimony	--	--	--	--	28%	30%
Arsenic	--	--	--	--	20%	20%
Barium	--	--	13%	--	--	30%
Boron	--	--	--	--	--	15%
Cadmium	9-15%	--	20%	--	13%	15%
Chromium *)				25%	17%	n.a.
Chromium (III)	--	--	--	--	--	15%
Chromium (VI)	--	--	--	--	--	50%
Cobalt	--	20%	--	20%	--	15%
Copper	11%	--	18%	--	--	15%
Lead	23%	--	--	--	22%	30%
Manganese	32%	13-22%	21-23%	24-29%	24%	15%
Mercury	--	25%	--	--	--	20%
Nickel	--	15%	--	--	--	20%
Selenium	--	14%	--	--	--	15%
Strontium	16-23%	13-15%	18-20%	20-25%	13%	15%
Tin	--	--	--	--	--	30%
Organic Tin	--	--	--	--	--	50%
Zinc	--	14%	--	--	--	15%

Table 16: development of uncertainties over the years for category 3 materials (e.g. ink op paper, dried paint)
*) Chromium total

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

4.4 EVALUATION OF ANALYTICAL DETAILS

A vast majority of the registered participants mentioned that they are ISO/IEC17025 accredited for one or more categories of the determination of Migration of elements EN71-3. Furthermore, the participants were asked to provide several analytical details which are listed in appendix 3. Based on the answers given by the participants the following can be summarized:

iis20V02A (category 1, plaster)
- (Almost) all participants reported to have used a sample intake of 100 mg or more. Two participants reported to have used a lower sample intake, which is possibly a unit error in reporting. Please note, test method EN71-3 mentions to take not less than 100 mg whenever possible.
- For the migration, (almost) all reporting participants mentioned to have used a volume ratio of 5 mL of HCl solution per 100 mg sample intake.
- 86% of the participants reported a measured pH value between 1.1 and 1.3. Of this group 83% of the participants have adjusted to keep the pH within this range.

iis20V02B (category 2, finger paint)
- (Almost) all participants reported to have used a sample intake of 100 mg or more. One participant reported to have used a lower sample intake, which is possibly a unit error in reporting. Please note, test method EN71-3 mentions to take not less than 100 mg whenever possible.
- For the migration, (almost) all reporting participants mentioned to have used a volume ratio of 5 mL of HCl solution per 100 mg sample intake.
- 87% of the participants reported a measured pH value between 1.1 and 1.3. Of this group 50% of the participants have adjusted to keep the pH within this range.

iis20V02C (category 3, ink on paper and dried paint)
- (Almost) all participants reported to have used a sample intake of 100 mg or more. Seven participants reported to have used a lower sample intake, which is possibly a unit error in reporting. Please note, test method EN71-3 mentions to take not less than 100 mg whenever possible.
- For the migration, a majority of the reporting participants mentioned to have used a volume ratio of 5 mL of HCl solution per 100 mg sample intake.
- 96% of the participants reported a measured pH value between 1.1 and 1.3. Of this group 86% of the participants have adjusted to keep the pH within this range.

iis20V02C (category 3, real-life toy sword sample for qualitative assessment)
- 75% of the participants reported to have used a sample intake of 100 mg or more, while 25% of the participants used less or possibly reported a unit error. Please note, test method EN71-3 mentions to take not less than 100 mg whenever possible.
- For the migration, about 78% of the reporting participants mentioned to have used a volume ratio of 5 mL of HCl solution per 100 mg sample intake.
- 94% of the participants reported a measured pH value between 1.1 and 1.3. Of this group 57% of the participants have adjusted to keep the pH within this range.

5 DISCUSSION

In this 2020 PT it appeared that the new version of EN71-3:19 has been well followed by most of the participants. In EN71-3:19 a special paragraph is added about how to deal with buffer effect by the sample. While a majority of the participants reported a measured pH value within the range of 1.1 and 1.3 there is still 4-14% of the participants that did not report details about the pH.

For the plaster sample (#20570, category 1) the influence of following the test method correctly (e.g. adjusting the pH and a minimum amount of intake) is visible. The relative standard deviation of the group “only test results that maintain the pH between 1.1-1.3” is less compared to the relative standard deviation of the evaluated group. This was found for all elements given in appendix 1. Although the observed reproducibility is somewhat lower with the group that reported the pH correctly it was decided to keep the test results in the statistical evaluation of the group that had not reported the pH details. The effect of excluding other test results than the ones with deviating pH appeared to have limited effect on the assigned values.

For the finger paint sample (#20575, category 2), the ink on paper sample (#20580, category 3) and the dried paint sample (#20581, category 3) the influence of following the test method correctly (e.g. maintaining the pH and a minimum amount of sample intake) is less pronounced. The relative standard deviation of the group “only test results that maintain the pH between 1.1-1.3” is mostly slightly less compared to the relative standard deviation of the evaluated group.

6 CONCLUSION

The vast majority of participants do well in keeping the pH between 1.1 and 1.3 as mentioned in EN71-3. It was done much better than in previous iis proficiency tests og EN71-3 in which we had to exclude much more test results. Apparently, the explanation given in the 2019 version of test method EN71-3 had helped laboratories in improving the performance. Maintaining the pH is very important for the reproducibility of the determination of elements. Of course, it also depends on the sample matrix.

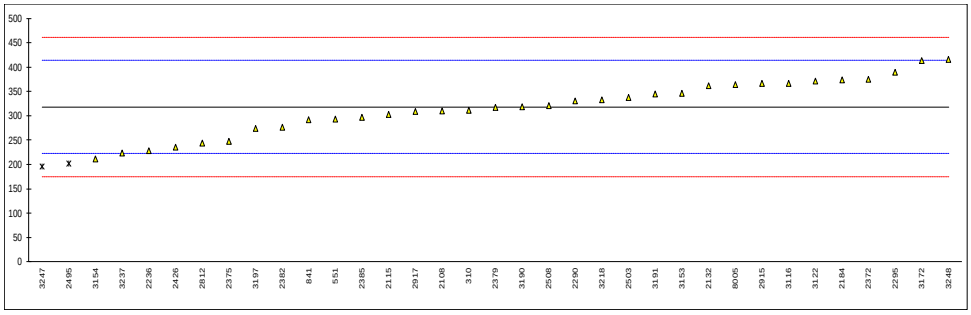
Each participating laboratory should evaluate its performance in this study and decide about any corrective actions if necessary. Therefore, participation on a regular basis in this scheme could be helpful to improve the performance and thus increase of the quality of the analytical results.

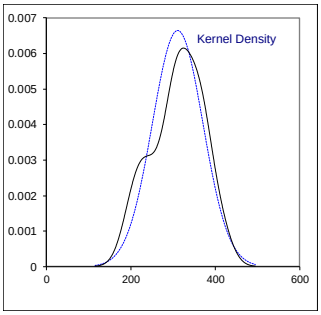
APPENDIX 1

Determination of migration of Aluminum as Al on plaster sample #20570 (Cat.1); results in mg/kg

lab	method	value	mark	z(targ)	remarks
230		-----		-----	
310	EN71-3	311.265		-0.15	
551	EN71-3	293.24		-0.53	
841		292.3		-0.54	
2108	EN71-3	310.6		-0.16	
2115	EN71-3	303.1		-0.32	
2132	EN71-3	362.3		0.92	
2184	EN71-3	373.4		1.15	
2236	EN71-3	228.8		-1.87	
2247		-----		-----	
2290	EN71-3	330.86		0.26	
2295	EN71-3	389.2		1.48	
2299		-----		-----	
2372	EN71-3	375		1.19	
2375	EN71-3	247		-1.49	
2379	EN71-3	317.45		-0.02	
2382	EN71-3	276.5		-0.88	
2385	EN71-3	297		-0.45	
2426	EN71-3	236.08		-1.72	
2495	EN71-3	201.70	ex	-2.44	test result excluded, see §4.1
2503	EN71-3	337.4		0.40	
2508	EN71-3	321		0.06	
2812	EN71-3	244.01		-1.56	
2864		-----		-----	
2915	EN71-3	366.13		1.00	
2917	EN71-3	308.4		-0.21	
3116	EN71-3	366.596		1.01	
3122	EN71-3	371.04		1.10	
3153	EN71-3	346.53		0.59	
3154	EN71-3	212.1		-2.22	
3172	EN71-3	414.0		2.00	
3190	EN71-3	318		-0.01	
3191	EN71-3	345.10		0.56	
3197	EN71-3	273.7		-0.93	
3218	EN71-3	333.0		0.31	
3237	EN71-3	223.7		-1.98	
3247	In house	195.33	ex	-2.58	test result excluded, see §4.1
3248	EN71-3	415.8		2.04	
8005	EN71-3	363.67		0.95	

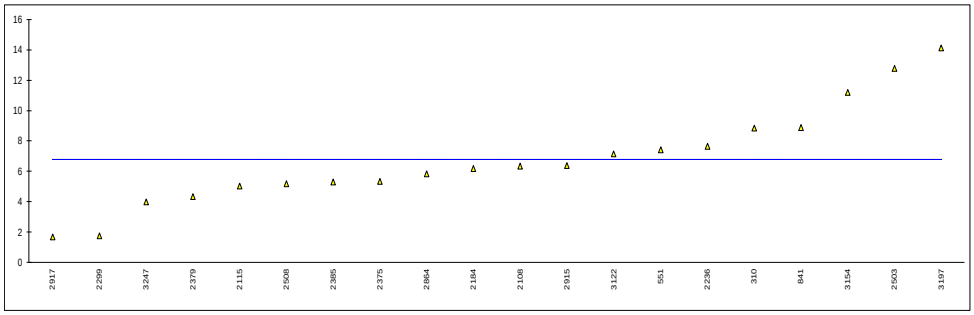
				Only test results that maintain pH between 1.1 - 1.3	
	normality	OK		OK	
	n	33		23	
	outliers	0 +2ex		0	
	mean (n)	318.3112		317.6432	
	st.dev. (n)	54.52440	RSD=17%	49.49426	RSD=16%
	R(calc.)	152.6683		138.5839	
	st.dev.(EN71-3:19)	47.74668		47.64649	
	R(EN71-3:19)	133.6907		133.4102	

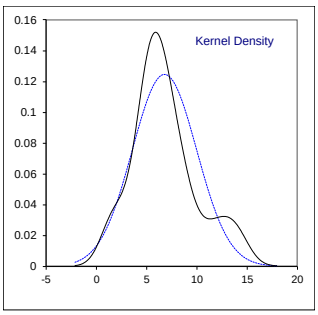




Determination of migration of Barium as Ba on plaster sample #20570 (Cat.1); results in mg/kg

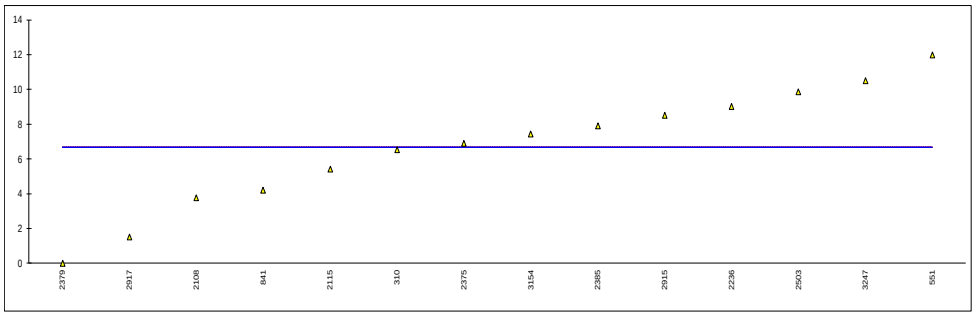
lab	method	value	mark	z(targ)	remarks
230		-----		-----	
310	EN71-3	8.839		-----	
551	EN71-3	7.425		-----	
841		8.9		-----	
2108	EN71-3	6.330		-----	
2115	EN71-3	5.02		-----	
2132	EN71-3	<25		-----	
2184	EN71-3	6.21		-----	
2236	EN71-3	7.64		-----	
2247		-----		-----	
2290	EN71-3	<10		-----	
2295		-----		-----	
2299	In house	1.772		-----	
2372	EN71-3	<50		-----	
2375	EN71-3	5.34		-----	
2379	EN71-3	4.33		-----	
2382	EN71-3	<50.0		-----	
2385	EN71-3	5.3		-----	
2426	EN71-3	nd		-----	
2495	EN71-3	<5,0		-----	
2503	EN71-3	12.77		-----	
2508	EN71-3	5.2		-----	
2812		-----		-----	
2864	EN71-3	5.83		-----	
2915	EN71-3	6.372		-----	
2917	EN71-3	1.7		-----	
3116	EN71-3	LT2		-----	
3122	EN71-3	7.14		-----	
3153	EN71-3	<10		-----	
3154	EN71-3	11.20		-----	
3172	EN71-3	< 50		-----	
3190	EN71-3	<10		-----	
3191	EN71-3	<5.00		-----	
3197	EN71-3	14.1		-----	
3218	EN71-3	<10		-----	
3237		-----		-----	
3247	In house	4.00		-----	
3248	EN71-3	<10		-----	
8005		-----		-----	
	n	25			
	mean (n)	<10			

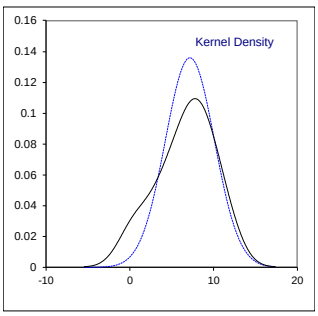




Determination of migration of Boron as B on plaster sample #20570 (Cat.1); results in mg/kg

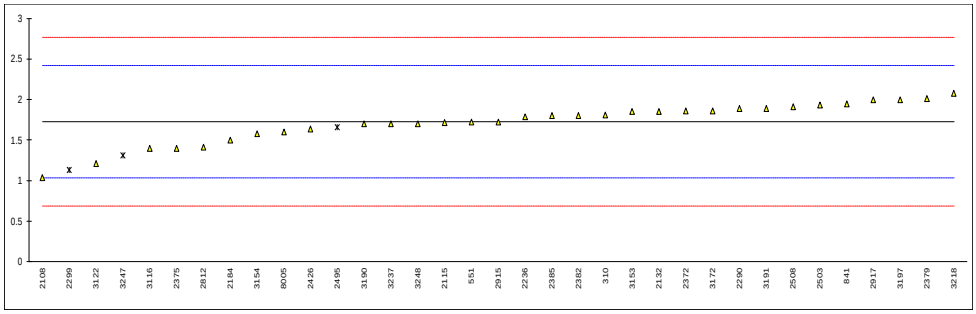
lab	method	value	mark	z(targ)	remarks
230		-----		-----	
310	EN71-3	6.532		-----	
551	EN71-3	11.97		-----	
841		4.2		-----	
2108	EN71-3	3.783		-----	
2115	EN71-3	5.41		-----	
2132	EN71-3	<25		-----	
2184	EN71-3	<10		-----	
2236	EN71-3	9.03		-----	
2247		-----		-----	
2290	EN71-3	<50		-----	
2295		-----		-----	
2299		-----		-----	
2372	EN71-3	<50		-----	
2375	EN71-3	6.9		-----	
2379	EN71-3	0		-----	
2382	EN71-3	<50.0		-----	
2385	EN71-3	7.9		-----	
2426	EN71-3	nd		-----	
2495	EN71-3	<5,0		-----	
2503	EN71-3	9.846		-----	
2508		-----		-----	
2812		-----		-----	
2864		-----		-----	
2915	EN71-3	8.5231		-----	
2917	EN71-3	1.5		-----	
3116	EN71-3	LT5		-----	
3122	EN71-3	<10		-----	
3153	EN71-3	<50		-----	
3154	EN71-3	7.44		-----	
3172	EN71-3	< 50		-----	
3190	EN71-3	<50		-----	
3191	EN71-3	<10.00		-----	
3197	EN71-3	<10		-----	
3218	EN71-3	<50		-----	
3237		-----		-----	
3247	In house	10.49		-----	
3248	EN71-3	<50		-----	
8005		-----		-----	
	n	19			
	mean (n)	<10			

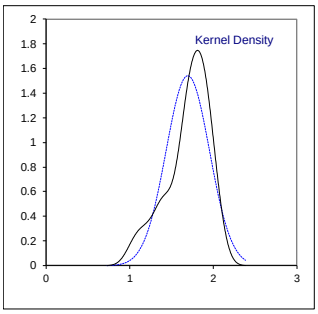




Determination of migration of Cadmium as Cd on plaster sample #20570 (Cat.1); results in mg/kg

lab	method	value	mark	z(targ)	remarks
230		-----		-----	
310	EN71-3	1.808		0.23	
551	EN71-3	1.7246		-0.01	
841		1.95		0.64	
2108	EN71-3	1.040		-1.99	
2115	EN71-3	1.72		-0.03	
2132	EN71-3	1.856		0.37	
2184	EN71-3	1.50		-0.66	
2236	EN71-3	1.79		0.18	
2247		-----		-----	
2290	EN71-3	1.89		0.47	
2295		-----		-----	
2299	In house	1.133	ex	-1.72	test result excluded, see §4.1
2372	EN71-3	1.86		0.38	
2375	EN71-3	1.40		-0.95	
2379	EN71-3	2.01		0.81	
2382	EN71-3	1.80		0.21	
2385	EN71-3	1.8		0.21	
2426	EN71-3	1.64		-0.26	
2495	EN71-3	1.66	ex	-0.20	test result excluded, see §4.1
2503	EN71-3	1.93		0.58	
2508	EN71-3	1.91		0.52	
2812	EN71-3	1.41		-0.92	
2864	EN71-3	ND		-----	
2915	EN71-3	1.725		-0.01	
2917	EN71-3	2.0		0.78	
3116	EN71-3	1.396		-0.96	
3122	EN71-3	1.21		-1.50	
3153	EN71-3	1.85		0.35	
3154	EN71-3	1.58		-0.43	
3172	EN71-3	1.86		0.38	
3190	EN71-3	1.7		-0.08	
3191	EN71-3	1.89		0.47	
3197	EN71-3	2.0		0.78	
3218	EN71-3	2.08		1.01	
3237	EN71-3	1.7		-0.08	
3247	In house	1.31	ex	-1.21	test result excluded, see §4.1
3248	EN71-3	1.7		-0.08	
8005	EN71-3	1.5998		-0.37	
					Only test results that maintain pH between 1.1 - 1.3
	normality	suspect			not OK
	n	32			22
	outliers	0 +3ex			0
	mean (n)	1.7290			1.7529
	st.dev. (n)	0.23928	RSD=14%		0.22569 RSD=13%
	R(calc.)	0.6700			0.6319
	st.dev.(EN71-3:19)	0.34581			0.35058
	R(EN71-3:19)	0.9683			0.9816

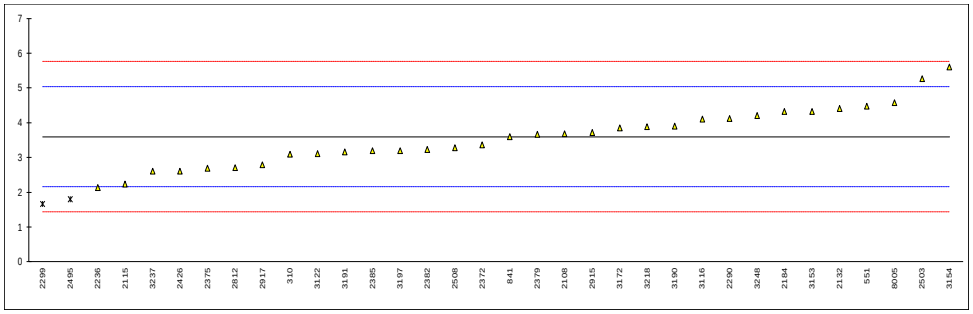


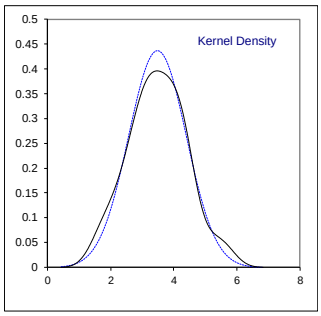


Determination of migration of Lead as Pb on plaster sample #20570 (Cat.1); results in mg/kg

lab	method	value	mark	z(targ)	remarks
230		-----		-----	
310	EN71-3	3.095		-0.70	
551	EN71-3	4.47		1.21	
841		3.6		0.00	
2108	EN71-3	3.677		0.11	
2115	EN71-3	2.23		-1.90	
2132	EN71-3	4.417		1.14	
2184	EN71-3	4.32		1.00	
2236	EN71-3	2.14		-2.03	
2247		-----		-----	
2290	EN71-3	4.12		0.72	
2295		-----		-----	
2299	In house	1.657	ex	-2.70	test result excluded, see §4.1
2372	EN71-3	3.36		-0.33	
2375	EN71-3	2.7		-1.25	
2379	EN71-3	3.67		0.10	
2382	EN71-3	3.23		-0.51	
2385	EN71-3	3.2		-0.55	
2426	EN71-3	2.61		-1.37	
2495	EN71-3	1.80	ex	-2.50	test result excluded, see §4.1
2503	EN71-3	5.261		2.31	
2508	EN71-3	3.28		-0.44	
2812	EN71-3	2.71		-1.23	
2864	EN71-3	ND		-----	
2915	EN71-3	3.715		0.16	
2917	EN71-3	2.8		-1.11	
3116	EN71-3	4.1001		0.70	
3122	EN71-3	3.12		-0.66	
3153	EN71-3	4.33		1.02	
3154	EN71-3	5.61		2.80	
3172	EN71-3	3.85		0.35	
3190	EN71-3	3.9		0.42	
3191	EN71-3	3.17		-0.60	
3197	EN71-3	3.2		-0.55	
3218	EN71-3	3.89		0.41	
3237	EN71-3	2.6		-1.39	
3247		-----		-----	
3248	EN71-3	4.2		0.84	
8005	EN71-3	4.57		1.35	

			Only test results that maintain pH between 1.1 - 1.3	
normality	OK		OK	
n	32		22	
outliers	0 +2ex		0	
mean (n)	3.5983		3.5279	
st.dev. (n)	0.82059	RSD=23%	0.71248	RSD=20%
R(calc.)	2.2977		1.9949	
st.dev.(EN71-3:19)	0.71966		0.70558	
R(EN71-3:19)	2.0150		1.9756	

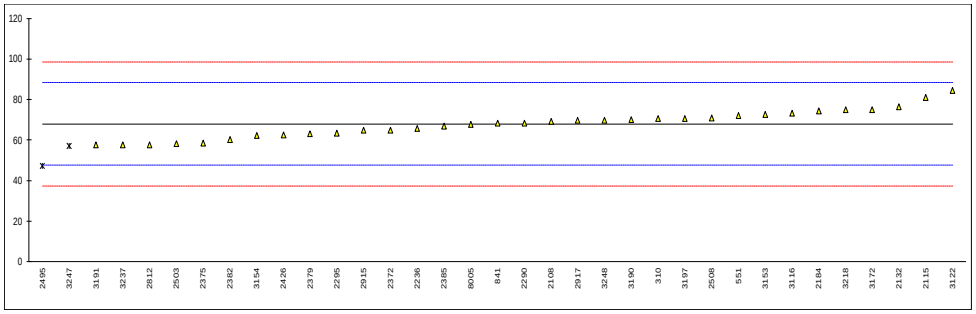


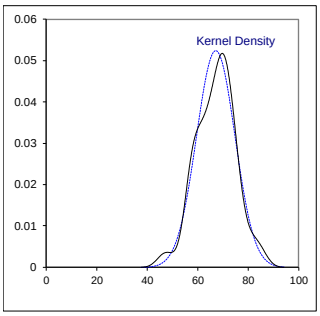


Determination of migration of Manganese as Mn on plaster sample #20570 (Cat.1); results in mg/kg

lab	method	value	mark	z(targ)	remarks
230		-----		-----	
310	EN71-3	70.597	C	0.25	first reported 70597 mg/kg
551	EN71-3	72.06		0.39	
841		68.4		0.04	
2108	EN71-3	69.22		0.12	
2115	EN71-3	81.1		1.28	
2132	EN71-3	76.35		0.82	
2184	EN71-3	74.56		0.64	
2236	EN71-3	65.83		-0.22	
2247		-----		-----	
2290	EN71-3	68.50		0.05	
2295	EN71-3	63.4		-0.45	
2299		-----		-----	
2372	EN71-3	65.0		-0.30	
2375	EN71-3	58.5		-0.93	
2379	EN71-3	63.26	C	-0.47	first reported 13.59
2382	EN71-3	60.4		-0.75	
2385	EN71-3	67		-0.10	
2426	EN71-3	62.48		-0.54	
2495	EN71-3	47.31	ex	-2.03	test result excluded, see §4.1
2503	EN71-3	58.16		-0.97	
2508	EN71-3	71.1		0.30	
2812	EN71-3	57.81		-1.00	
2864		-----		-----	
2915	EN71-3	64.81		-0.32	
2917	EN71-3	69.9		0.18	
3116	EN71-3	73.3242		0.52	
3122	EN71-3	84.43		1.61	
3153	EN71-3	72.74		0.46	
3154	EN71-3	62.21		-0.57	
3172	EN71-3	75.1		0.69	
3190	EN71-3	70		0.19	
3191	EN71-3	57.65		-1.02	
3197	EN71-3	70.7		0.26	
3218	EN71-3	75.0		0.68	
3237	EN71-3	57.7		-1.01	
3247	In house	57.04	ex	-1.08	test result excluded, see §4.1
3248	EN71-3	69.9		0.18	
8005	EN71-3	67.78		-0.02	

				Only test results that maintain pH between 1.1 - 1.3	
	normality	OK		OK	
	n	33		23	
	outliers	0 +2ex		0	
	mean (n)	68.0294		68.1464	
	st.dev. (n)	6.73654	RSD=10%	6.17582	RSD=9%
	R(calc.)	18.8623		17.2923	
	st.dev.(EN71-3:19)	10.20441		10.22196	
	R(EN71-3:19)	28.5724		28.6215	

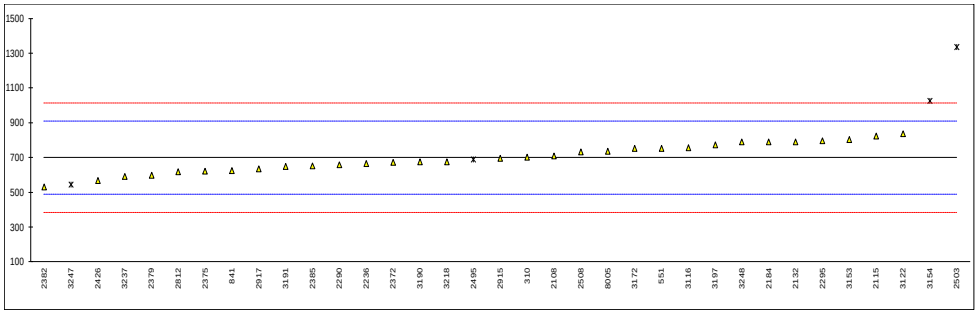


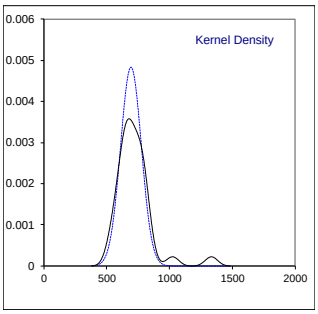


Determination of migration of Strontium as Sr on plaster sample #20570 (Cat.1); results in mg/kg

lab	method	value	mark	z(targ)	remarks
230		-----		-----	
310	EN71-3	702.084	C	0.03	first reported 702084 mg/kg
551	EN71-3	752.98		0.52	
841		625.5		-0.70	
2108	EN71-3	709.5		0.10	
2115	EN71-3	823.7		1.19	
2132	EN71-3	789.7		0.87	
2184	EN71-3	789.1		0.86	
2236	EN71-3	665.2		-0.32	
2247		-----		-----	
2290	EN71-3	660.00		-0.37	
2295	EN71-3	796.8		0.93	
2299		-----		-----	
2372	EN71-3	671		-0.27	
2375	EN71-3	620.50		-0.75	
2379	EN71-3	598.86		-0.95	
2382	EN71-3	531.7		-1.60	
2385	EN71-3	651		-0.46	
2426	EN71-3	566.98		-1.26	
2495	EN71-3	688.60	ex	-0.10	test result excluded, see §4.1
2503	EN71-3	1335	R(0.01)	6.07	
2508	EN71-3	732		0.32	
2812	EN71-3	619.2		-0.76	
2864		-----		-----	
2915	EN71-3	694.44		-0.04	
2917	EN71-3	635.9		-0.60	
3116	EN71-3	755.57		0.54	
3122	EN71-3	836.26		1.31	
3153	EN71-3	802.49		0.99	
3154	EN71-3	1025.1	R(0.05)	3.11	
3172	EN71-3	752.0		0.51	
3190	EN71-3	675		-0.23	
3191	EN71-3	648.23		-0.48	
3197	EN71-3	772.0		0.70	
3218	EN71-3	676.0		-0.22	
3237	EN71-3	589.6		-1.04	
3247	In house	544.87	ex	-1.47	test result excluded, see §4.1
3248	EN71-3	788.7		0.86	
8005	EN71-3	735.63		0.35	

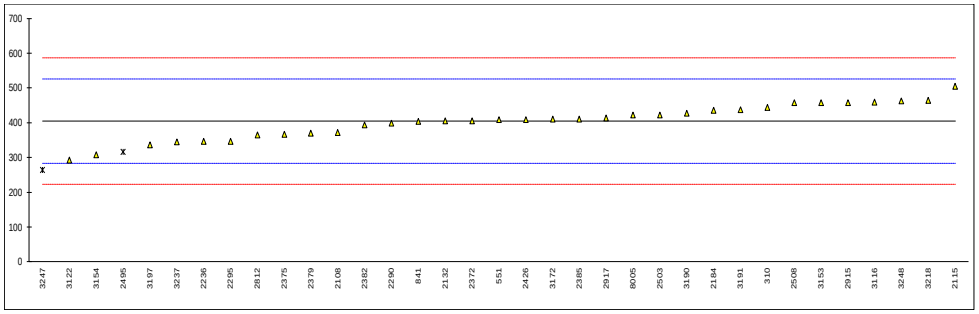
				Only test results that maintain pH between 1.1 - 1.3	
	normality	OK		OK	
	n	31		23	
	outliers	2 +2ex		0	
	mean (n)	698.9556		703.0180	
	st.dev. (n)	80.54862	RSD=12%	79.64225	RSD=11%
	R(calc.)	225.5361		222.9983	
	st.dev.(EN71-3:19)	104.84333		105.45270	
	R(EN71-3:19)	293.5613		295.2676	

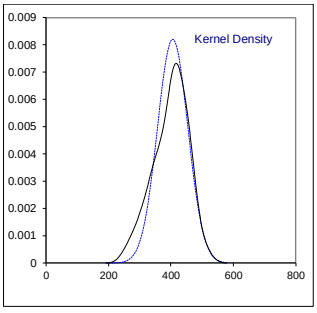




Determination of migration of Zinc as Zn on plaster sample #20570 (Cat.1); results in mg/kg

lab	method	value	mark	z(targ)	remarks
230		-----		-----	
310	EN71-3	444.514	C	0.65	first reported 444514 mg/kg
551	EN71-3	408.5		0.06	
841		403.4		-0.02	
2108	EN71-3	371.9		-0.54	
2115	EN71-3	505.5		1.66	
2132	EN71-3	405.48		0.01	
2184	EN71-3	435.2		0.50	
2236	EN71-3	346.0		-0.97	
2247		-----		-----	
2290	EN71-3	399.15		-0.09	
2295	EN71-3	347.2		-0.95	
2299		-----		-----	
2372	EN71-3	406		0.02	
2375	EN71-3	366		-0.64	
2379	EN71-3	369.87		-0.58	
2382	EN71-3	393.6		-0.19	
2385	EN71-3	410		0.08	
2426	EN71-3	408.71		0.06	
2495	EN71-3	316.26	ex	-1.46	test result excluded, see §4.1
2503	EN71-3	422.6		0.29	
2508	EN71-3	457		0.86	
2812	EN71-3	365.2		-0.65	
2864		-----		-----	
2915	EN71-3	458.5		0.88	
2917	EN71-3	413.6		0.14	
3116	EN71-3	459.21		0.89	
3122	EN71-3	293.13		-1.84	
3153	EN71-3	457.75		0.87	
3154	EN71-3	308.4		-1.59	
3172	EN71-3	409.8		0.08	
3190	EN71-3	428		0.38	
3191	EN71-3	437.90		0.54	
3197	EN71-3	336.3		-1.13	
3218	EN71-3	464.0		0.97	
3237	EN71-3	344.1		-1.00	
3247	In house	263.81	ex	-2.32	test result excluded, see §4.1
3248	EN71-3	462.4		0.95	
8005	EN71-3	421.89		0.28	
					Only test results that maintain pH between 1.1 - 1.3
	normality	OK			OK
	n	33			23
	outliers	0 +2ex			0
	mean (n)	404.8729			411.9219
	st.dev. (n)	48.63461	RSD=12%		46.62569 RSD=11%
	R(calc.)	136.1769			130.5519
	st.dev.(EN71-3:19)	60.73093			61.78829
	R(EN71-3:19)	170.0466			173.0072

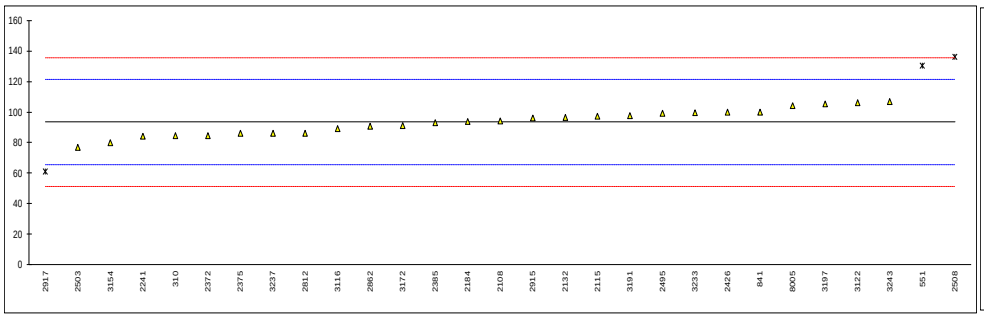


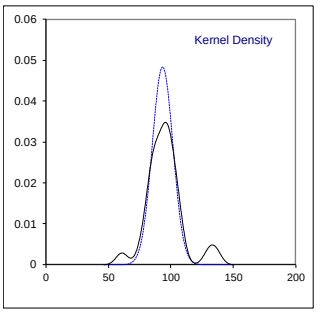


Determination of migration of Aluminum as Al on finger paint sample #20575 (Cat.2); results in mg/kg

lab	method	value	mark	z(targ)	remarks
310	EN71-3	84.505		-0.64	
551	EN71-3	130.4489	C,R(0.05)	2.64	first reported 141.72
841	EN71-3	100.01		0.47	
2108	EN71-3	94.15		0.05	
2115	EN71-3	97.2		0.27	
2132	EN71-3	96.59		0.22	
2184	EN71-3	93.7		0.02	
2241	EN71-3	84.315		-0.65	
2247		-----		-----	
2290	EN71-3	<100		-----	
2295		-----		-----	
2372	EN71-3	84.6		-0.63	
2375	EN71-3	86		-0.53	
2385	EN71-3	93		-0.03	
2426	EN71-3	100		0.47	
2495	EN71-3	99.32		0.42	
2503		76.89		-1.18	
2508	EN71-3	136	R(0.05)	3.03	
2812	EN71-3	86.31		-0.51	
2862	EN71-3	90.78		-0.19	
2864		-----		-----	
2915	EN71-3	96.06		0.18	
2917	EN71-3	61.00	C,R(0.05)	-2.32	first reported 246.5
3116	EN71-3	89.17		-0.31	
3122	EN71-3	106.25		0.91	
3153	EN71-3	<100		-----	
3154	EN71-3	80.14		-0.95	
3172	EN71-3	91.3		-0.15	
3191	EN71-3	97.56		0.29	
3197	EN71-3	105.3		0.84	
3214	EN71-3	<100.0		-----	
3218	EN71-3	<100		-----	
3233	EN71-3	99.66		0.44	
3237	EN71-3	86.1		-0.53	
3243	EN71-3	107		0.96	
3248	EN71-3	<100		-----	
8005	EN71-3	104.37		0.78	

				Only test results that maintain pH between 1.1 - 1.3	
	normality	OK		OK	
	n	26		19	
	outliers	3		2	
	mean (n)	93.4723		94.1911	
	st.dev. (n)	8.24181	RSD=9%	7.13087	RSD=8%
	R(calc.)	23.0771		19.9664	
	st.dev.(EN71-3:19)	14.02084		14.12866	
	R(EN71-3:19)	39.2584		39.5602	

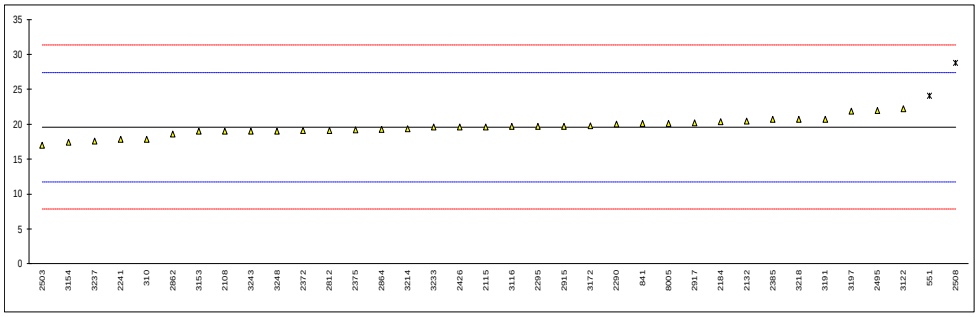


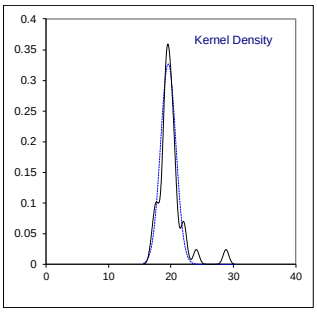


Determination of migration of Cadmium as Cd on finger paint sample #20575 (Cat.2); results in mg/kg

lab	method	value	mark	z(targ)	remarks
310	EN71-3	17.872	C	-0.43	first reported 17872 mg/kg
551	EN71-3	24.05	R(0.05)	1.15	
841	EN71-3	20.1		0.14	
2108	EN71-3	18.99		-0.15	
2115	EN71-3	19.6		0.01	
2132	EN71-3	20.42		0.22	
2184	EN71-3	20.37		0.20	
2241	EN71-3	17.823		-0.45	
2247		-----		-----	
2290	EN71-3	20.01		0.11	
2295	EN71-3	19.7		0.03	
2372	EN71-3	19.1		-0.12	
2375	EN71-3	19.2		-0.09	
2385	EN71-3	20.7		0.29	
2426	EN71-3	19.59		0.01	
2495	EN71-3	21.96		0.61	
2503		16.98		-0.66	
2508	EN71-3	28.8	R(0.01)	2.36	
2812	EN71-3	19.11		-0.12	
2862	EN71-3	18.56		-0.26	
2864	EN71-3	19.29		-0.07	
2915	EN71-3	19.70		0.03	
2917	EN71-3	20.2		0.16	
3116	EN71-3	19.66		0.02	
3122	EN71-3	22.23		0.68	
3153	EN71-3	18.98		-0.15	
3154	EN71-3	17.39		-0.56	
3172	EN71-3	19.8		0.06	
3191	EN71-3	20.74		0.30	
3197	EN71-3	21.9		0.60	
3214	EN71-3	19.36		-0.05	
3218	EN71-3	20.70		0.29	
3233	EN71-3	19.57		0.00	
3237	EN71-3	17.6		-0.50	
3243	EN71-3	19		-0.15	
3248	EN71-3	19		-0.15	
8005	EN71-3	20.13		0.14	

				Only test results that maintain pH between 1.1 - 1.3	
	normality	OK		OK	
	n	34		26	
	outliers	2		1	
	mean (n)	19.5687		19.6694	
	st.dev. (n)	1.21986	RSD=6%	1.11297	RSD=6%
	R(calc.)	3.4156		3.1163	
	st.dev.(EN71-3:19)	3.91374		3.93389	
	R(EN71-3:19)	10.9585		11.0149	

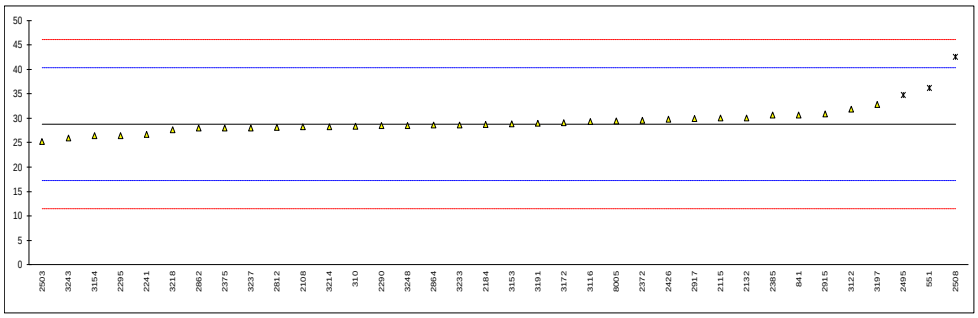


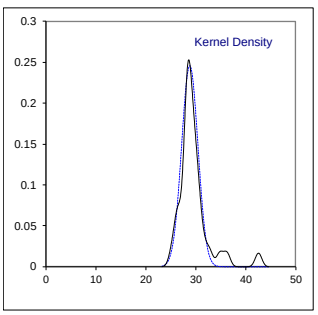


Determination of migration of Lead as Pb on finger paint sample #20575 (Cat.2); results in mg/kg

lab	method	value	mark	z(targ)	remarks
310	EN71-3	28.331	C	-0.08	
551	EN71-3	36.19345	C,R(0.05)	1.29	first reported 51.29
841	EN71-3	30.7		0.33	
2108	EN71-3	28.24		-0.09	
2115	EN71-3	30.0		0.21	
2132	EN71-3	30.08		0.23	
2184	EN71-3	28.73		-0.01	
2241	EN71-3	26.634		-0.37	
2247		-----		-----	
2290	EN71-3	28.49		-0.05	
2295	EN71-3	26.5		-0.40	
2372	EN71-3	29.6		0.14	
2375	EN71-3	28		-0.14	
2385	EN71-3	30.6		0.32	
2426	EN71-3	29.76		0.17	
2495	EN71-3	34.78	R(0.05)	1.04	
2503		25.22		-0.62	
2508	EN71-3	42.5	R(0.01)	2.38	
2812	EN71-3	28.11		-0.12	
2862	EN71-3	27.95		-0.14	
2864	EN71-3	28.59		-0.03	
2915	EN71-3	30.87		0.36	
2917	EN71-3	29.9		0.19	
3116	EN71-3	29.33		0.10	
3122	EN71-3	31.80		0.52	
3153	EN71-3	28.79		0.00	
3154	EN71-3	26.39		-0.42	
3172	EN71-3	29.1		0.06	
3191	EN71-3	28.93		0.03	
3197	EN71-3	32.8		0.70	
3214	EN71-3	28.24		-0.09	
3218	EN71-3	27.60		-0.21	
3233	EN71-3	28.65		-0.02	
3237	EN71-3	28.0		-0.14	
3243	EN71-3	26		-0.48	
3248	EN71-3	28.5		-0.05	
8005	EN71-3	29.40		0.11	

				Only test results that maintain pH between 1.1 - 1.3	
	normality	OK		OK	
	n	33		26	
	outliers	3		1	
	mean (n)	28.7829		29.1106	
	st.dev. (n)	1.62204	RSD=6%	1.46263	RSD=5%
	R(calc.)	4.5417		4.0954	
	st.dev.(EN71-3:19)	5.75658		5.82212	
	R(EN71-3:19)	16.1184		16.3019	



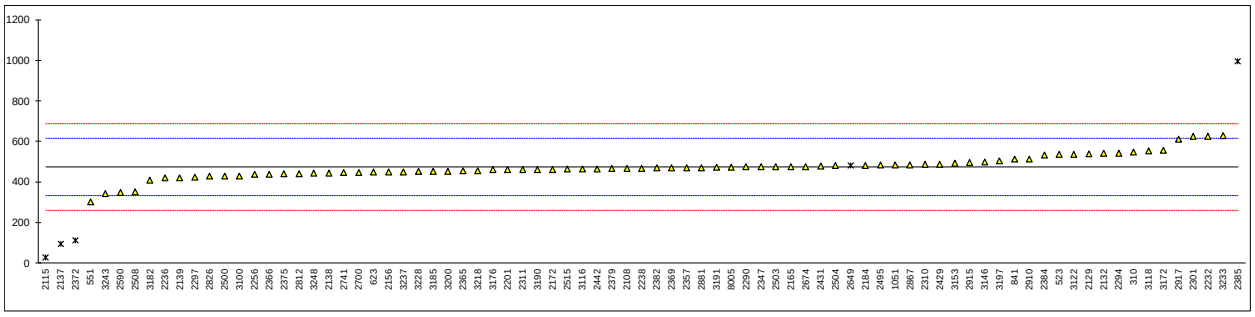


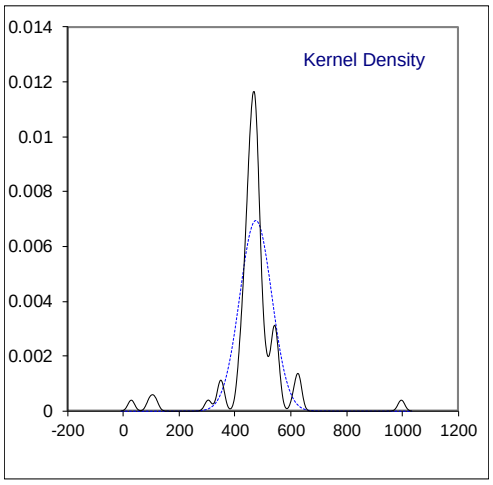
Determination of migration of Aluminum as Al with ink on paper sample #20580 (Cat.3); results in mg/kg

lab	method	value	mark	z(targ)	remarks
310	EN71-3	547.094		1.02	
523	EN71-3	536.4		0.87	
551	EN71-3	303.3876	C	-2.40	first reported 227.1
623	EN71-3	449.05		-0.35	
841	EN71-3	513		0.54	
1051	EN71-3	484.01		0.14	
2108	EN71-3	468.6		-0.08	
2115	EN71-3	27.8	C,R(0.01)	-6.28	first reported 36.6
2129	EN71-3	539		0.91	
2132	EN71-3	541.16		0.94	
2137	EN71-3	94.35	R(0.01)	-5.34	
2138	EN71-3	445.21		-0.41	
2139	EN71-3	422.2		-0.73	
2156	EN71-3	450.0		-0.34	
2165	EN71-3	476.6		0.03	
2172	EN71-3	461.2		-0.18	
2184	EN71-3	480.5		0.09	
2201	EN71-3	460.99		-0.19	
2232	EN71-3	626.77		2.14	
2236	EN71-3	419.8		-0.77	
2238	EN71-3	468.6		-0.08	
2247		-----		-----	
2256	EN71-3	437.08		-0.52	
2290	EN71-3	475.56		0.02	
2293		-----		-----	
2294	EN71-3	543		0.97	
2297	EN71-3	423.1		-0.72	
2301	EN71-3	626.77		2.14	
2310	EN71-3	487		0.18	
2311	EN71-3	461		-0.19	
2347	EN71-3	476		0.02	
2357	EN71-3	469.67		-0.06	
2365	EN71-3	454.76		-0.27	
2366	EN71-3	438.907		-0.50	
2369	EN71-3	468.94		-0.08	
2372	EN71-3	113	R(0.01)	-5.08	
2375		440		-0.48	
2379	EN71-3	465.78		-0.12	
2382	EN71-3	468.7		-0.08	
2384	EN71-3	534.445		0.85	
2385	EN71-3	996	R(0.01)	7.33	
2390	EN71-3	ND	C	-----	first reported 673.07
2413		-----		-----	
2426	EN71-3	nd		-----	
2429	EN71-3	488.2		0.20	
2431	EN71-3	477.88		0.05	
2442	EN71-3	465.41		-0.12	
2475		-----		-----	
2495	EN71-3	483.77		0.13	
2500	EN71-3	429.894		-0.62	
2503		476.5		0.03	
2504	EN71-3	480.22		0.08	
2508	EN71-3	353		-1.70	
2515	EN71-3	463.72		-0.15	
2532		-----		-----	
2582		-----		-----	
2590	EN71-3	350.059	C	-1.75	first reported 250.870
2643		-----		-----	
2649	EN71-3	480.3	ex	0.08	test result excluded, see §4.1
2674	EN71-3	476.6		0.03	
2685		-----		-----	
2700		447.4	C	-0.38	first reported 282.14
2741	EN71-3	446.9		-0.38	
2790		-----		-----	
2812	EN71-3	441.37		-0.46	
2817		-----	W	-----	test result withdrawn, first reported 206.4000
2826	EN71-3	428.25		-0.65	
2864		-----		-----	
2867	EN71-3	484.2		0.14	
2881	EN71-3	469.78		-0.06	
2907		-----		-----	
2910	EN71-3	513.2		0.55	
2915	EN71-3	496.00		0.31	
2917	EN71-3	611.0		1.92	
3100	EN71-3	429.96		-0.62	

lab	method	value	mark	z(targ)	remarks
3116	EN71-3	464.051		-0.14	
3118	EN71-3	554.1447	C	1.12	first reported 754.77
3122	EN71-3	537.60		0.89	
3146	EN71-3	500		0.36	
3153	EN71-3	492.29		0.25	
3172	EN71-3	555.7		1.14	
3176	EN71-3	460.22		-0.20	
3182	EN71-3	409.542		-0.91	
3185	EN71-3	452.29		-0.31	
3190	EN71-3	461		-0.19	
3191	EN71-3	472.09		-0.03	
3197	EN71-3	506.1		0.45	
3200	EN71-3	453.4		-0.29	
3218	EN71-3	455.30		-0.27	
3228	EN71-3	452		-0.31	
3233	EN71-3	629.08		2.18	
3237	EN71-3	450.9		-0.33	
3243	EN71-3	343		-1.85	
3248	EN71-3	445.1		-0.41	
8005	EN71-3	473.91		-0.01	

				Only test results that maintain pH between 1.1 - 1.3	
	normality	not OK		not OK	
	n	76		64	
	outliers	4 +1ex		4	
	mean (n)	474.2804		472.0745	
	st.dev. (n)	57.40193	RSD=12%	50.58403	RSD=11%
	R(calc.)	160.7254		141.6353	
	st.dev.(EN71-3:19)	71.14205		70.81118	
	R(EN71-3:19)	199.1978		198.2713	



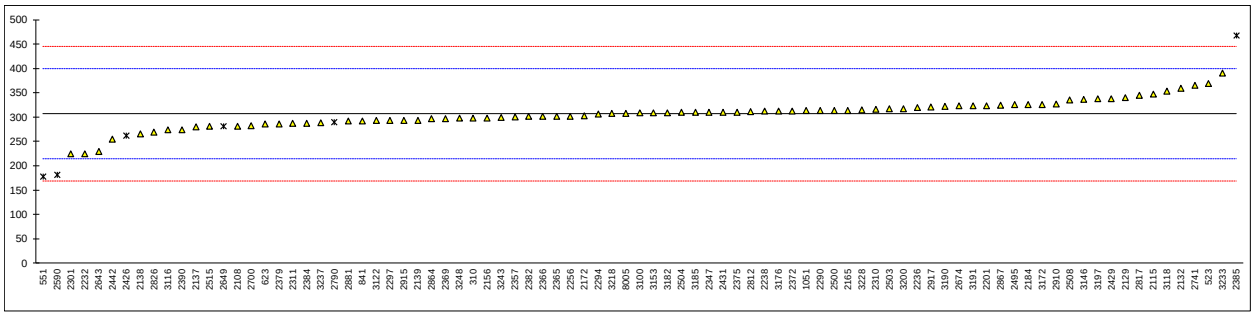


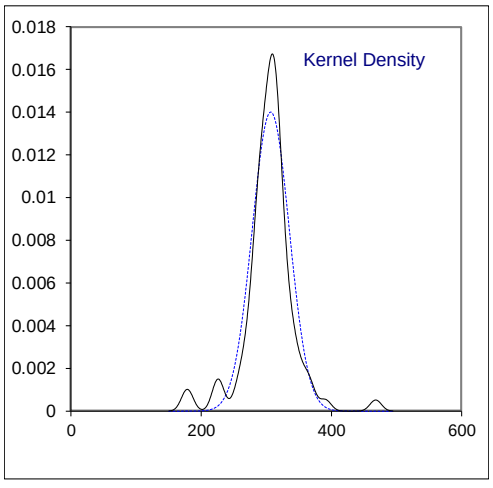
Determination of migration of Cadmium as Cd with ink on paper sample #20580 (Cat.3); results in mg/kg

lab	method	value	mark	z(targ)	remarks
310	EN71-3	297.829	C	-0.20	first reported 297829 mg/kg
523	EN71-3	369.2		1.35	
551	EN71-3	177.3914	C,R(0.01)	-2.82	first reported 155.2
623	EN71-3	285.51		-0.47	
841	EN71-3	292		-0.33	
1051	EN71-3	313.59		0.14	
2108	EN71-3	281.8		-0.55	
2115	EN71-3	348.0		0.89	
2129	EN71-3	340.59		0.73	
2132	EN71-3	359.27		1.13	
2137	EN71-3	280.5		-0.58	
2138	EN71-3	265.23		-0.91	
2139	EN71-3	293.4		-0.30	
2156	EN71-3	298.4		-0.19	
2165	EN71-3	314.2		0.15	
2172	EN71-3	302.8		-0.09	
2184	EN71-3	325.8		0.41	
2201	EN71-3	323.50		0.36	
2232	EN71-3	225.31		-1.78	
2236	EN71-3	319.3		0.26	
2238	EN71-3	312.4		0.11	
2247		-----		-----	
2256	EN71-3	302.13		-0.11	
2290	EN71-3	313.70		0.14	
2293		-----		-----	
2294	EN71-3	306		-0.02	
2297	EN71-3	293.1		-0.30	
2301	EN71-3	224.31		-1.80	
2310	EN71-3	316		0.19	
2311	EN71-3	287		-0.44	
2347	EN71-3	310		0.06	
2357	EN71-3	300.35		-0.15	
2365	EN71-3	302.08		-0.11	
2366	EN71-3	301.500		-0.12	
2369	EN71-3	297.07		-0.22	
2372	EN71-3	313		0.13	
2375		310.5		0.07	
2379	EN71-3	285.68		-0.47	
2382	EN71-3	301.2		-0.13	
2384	EN71-3	287.257		-0.43	
2385	EN71-3	468	R(0.01)	3.49	
2390	EN71-3	273.79		-0.72	
2413		-----		-----	
2426	EN71-3	261.45	ex	-0.99	test result excluded, see §4.1
2429	EN71-3	337.3		0.65	
2431	EN71-3	310.14		0.07	
2442	EN71-3	254.99		-1.13	
2475		-----		-----	
2495	EN71-3	325.55		0.40	
2500	EN71-3	313.948		0.15	
2503		316.9		0.21	
2504	EN71-3	309.68		0.06	
2508	EN71-3	335		0.60	
2515	EN71-3	281.36		-0.56	
2532		-----		-----	
2582		-----		-----	
2590	EN71-3	181.037	C,R(0.01)	-2.74	first reported 98.750
2643	EN71-3	230		-1.67	
2649	EN71-3	281.38	ex	-0.56	test result excluded, see §4.1
2674	EN71-3	323.3		0.35	
2685		-----		-----	
2700		282		-0.55	
2741	EN71-3	365.9		1.28	
2790	ISO8124-3	290	ex,C	-0.37	test result excluded, see §4.1. First reported 160.81
2812	EN71-3	311.12		0.09	
2817	In house	345.0000		0.82	
2826	EN71-3	269.61		-0.81	
2864	EN71-3	296.86		-0.22	
2867	EN71-3	324.3		0.37	
2881	EN71-3	291.90		-0.33	
2907		-----		-----	
2910	EN71-3	327.3		0.44	
2915	EN71-3	293.2		-0.30	
2917	EN71-3	321.3		0.31	
3100	EN71-3	308.63		0.03	

lab	method	value	mark	z(targ)	remarks
3116	EN71-3	273.507		-0.73	
3118	EN71-3	353.16		1.00	
3122	EN71-3	292.93		-0.31	
3146	EN71-3	336		0.63	
3153	EN71-3	308.83		0.04	
3172	EN71-3	325.8		0.41	
3176	EN71-3	312.83		0.12	
3182	EN71-3	309.482		0.05	
3185	EN71-3	309.92		0.06	
3190	EN71-3	322		0.32	
3191	EN71-3	323.38		0.35	
3197	EN71-3	337.2		0.65	
3200	EN71-3	317.1		0.22	
3218	EN71-3	308.20		0.02	
3228	EN71-3	315		0.17	
3233	EN71-3	390.94		1.82	
3237	EN71-3	287.9		-0.42	
3243	EN71-3	299		-0.18	
3248	EN71-3	297.7		-0.20	
8005	EN71-3	308.27		0.02	

				Only test results that maintain pH between 1.1 - 1.3	
	normality	suspect		suspect	
	n	81		68	
	outliers	3 +3ex		3	
	mean (n)	307.1326		307.7001	
	st.dev. (n)	28.48731	RSD=9%	26.40280	RSD=9%
	R(calc.)	79.7645		73.9278	
	st.dev.(EN71-3:19)	46.06989		46.15501	
	R(EN71-3:19)	128.9957		129.2340	



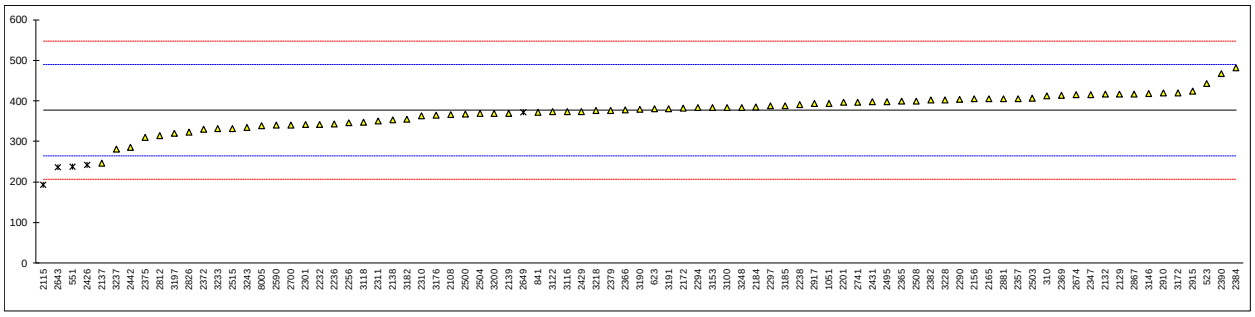


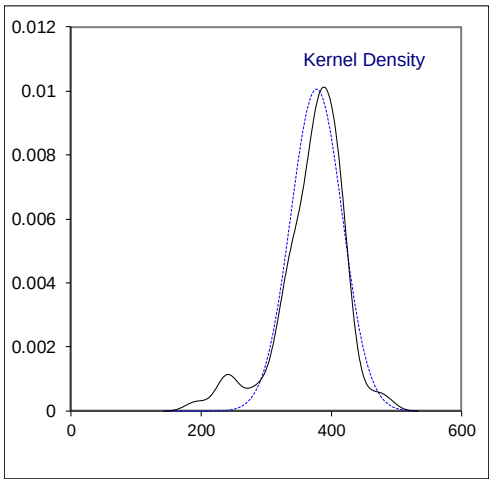
Determination of migration of Copper as Cu with ink on paper sample #20580 (Cat.3); results in mg/kg

lab	method	value	mark	z(targ)	remarks
310	EN71-3	413.060	C	0.64	first reported 413060 mg/kg
523	EN71-3	442.8		1.16	
551	EN71-3	237.8051	C,DG(0.05)	-2.46	first reported 212.0
623	EN71-3	380.18		0.05	
841	EN71-3	372.5		-0.08	
1051	EN71-3	393.76		0.29	
2108	EN71-3	367.0		-0.18	
2115	EN71-3	193	C,G(0.05)	-3.25	first reported 244.7
2129	EN71-3	417.2		0.71	
2132	EN71-3	417.15		0.71	
2137	EN71-3	247		-2.30	
2138	EN71-3	354.04		-0.41	
2139	EN71-3	369.8		-0.13	
2156	EN71-3	405.5		0.50	
2165	EN71-3	405.5		0.50	
2172	EN71-3	382.0		0.09	
2184	EN71-3	385.7		0.15	
2201	EN71-3	396.04		0.33	
2232	EN71-3	342.43		-0.61	
2236	EN71-3	343.0		-0.60	
2238	EN71-3	391.5		0.25	
2247		-----		-----	
2256	EN71-3	346.23		-0.55	
2290	EN71-3	403.76		0.47	
2293		-----		-----	
2294	EN71-3	383		0.10	
2297	EN71-3	388.3		0.20	
2301	EN71-3	342.43		-0.61	
2310	EN71-3	363		-0.25	
2311	EN71-3	351		-0.46	
2347	EN71-3	415		0.67	
2357	EN71-3	406.03		0.51	
2365	EN71-3	399.64		0.40	
2366	EN71-3	377.680		0.01	
2369	EN71-3	414.20		0.66	
2372	EN71-3	331		-0.82	
2375		310		-1.19	
2379	EN71-3	376.07		-0.02	
2382	EN71-3	401.8		0.44	
2384	EN71-3	482.379		1.86	
2385	EN71-3	<1		<-6.65	possibly a false negative test result?
2390	EN71-3	467.67		1.60	
2413		-----		-----	
2426	EN71-3	242.45	ex	-2.38	test result excluded, see §4.1
2429	EN71-3	374.2		-0.05	
2431	EN71-3	397.99		0.37	
2442	EN71-3	284.95		-1.63	
2475		-----		-----	
2495	EN71-3	398.64		0.38	
2500	EN71-3	368.282		-0.16	
2503		406.5		0.52	
2504	EN71-3	368.58		-0.15	
2508	EN71-3	400		0.40	
2515	EN71-3	332.14		-0.80	
2532		-----		-----	
2582		-----		-----	
2590	EN71-3	339.795	C	-0.66	first reported 95.513
2643	EN71-3	236.33	DG(0.05)	-2.49	
2649	EN71-3	372.22	ex	-0.09	test result excluded, see §4.1
2674	EN71-3	414.95		0.67	
2685		-----		-----	
2700		341		-0.64	
2741	EN71-3	397.1		0.35	
2790		-----		-----	
2812	EN71-3	315.1		-1.10	
2817		-----	W	-----	test result withdrawn, first reported 225.1795
2826	EN71-3	323.45		-0.95	
2864		-----		-----	
2867	EN71-3	417.4		0.71	
2881	EN71-3	405.62		0.50	
2907		-----		-----	
2910	EN71-3	419.4		0.75	
2915	EN71-3	424.70		0.84	
2917	EN71-3	393.1		0.28	
3100	EN71-3	384.07		0.12	

lab	method	value	mark	z(targ)	remarks
3116	EN71-3	373.256		-0.07	
3118	EN71-3	347.94		-0.52	
3122	EN71-3	373.21		-0.07	
3146	EN71-3	418		0.72	
3153	EN71-3	383.22		0.11	
3172	EN71-3	420.3		0.76	
3176	EN71-3	365.52		-0.20	
3182	EN71-3	354.840		-0.39	
3185	EN71-3	388.35		0.20	
3190	EN71-3	380		0.05	
3191	EN71-3	380.51		0.06	
3197	EN71-3	320.2		-1.01	
3200	EN71-3	368.9		-0.15	
3218	EN71-3	376.00		-0.02	
3228	EN71-3	403		0.46	
3233	EN71-3	331.55		-0.81	
3237	EN71-3	281.2		-1.70	
3243	EN71-3	334		-0.76	
3248	EN71-3	384.1		0.12	
8005	EN71-3	338.64		-0.68	

				Only test results that maintain pH between 1.1 - 1.3	
	normality	suspect		suspect	
	n	78		66	
	outliers	3 +2ex		2	
	mean (n)	377.1160		374.6505	
	st.dev. (n)	39.61657	RSD=11%	39.36093	RSD=11%
	R(calc.)	110.9264		110.2106	
	st.dev.(EN71-3:19)	56.56740		56.19757	
	R(EN71-3:19)	158.3887		157.3532	



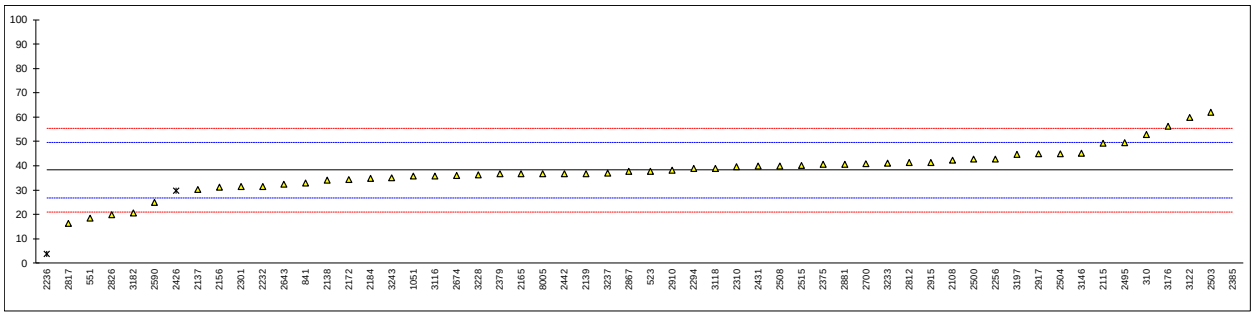


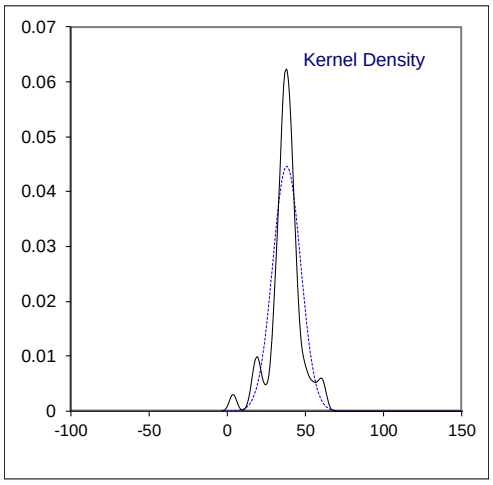
Determination of migration of Strontium as Sr with ink on paper sample #20580 (Cat.3); results in mg/kg

lab	method	value	mark	z(targ)	remarks
310	EN71-3	52.907		2.55	
523	EN71-3	37.81		-0.08	
551	EN71-3	18.52		-3.44	
623	EN71-3	ND		-----	
841	EN71-3	33		-0.92	
1051	EN71-3	35.734		-0.44	
2108	EN71-3	42.36		0.71	
2115	EN71-3	49.2		1.90	
2129	EN71-3	<100		-----	
2132	EN71-3	<250		-----	
2137	EN71-3	30.3		-1.39	
2138	EN71-3	34.24		-0.70	
2139	EN71-3	36.8		-0.26	
2156	EN71-3	31.34		-1.21	
2165	EN71-3	36.7		-0.27	
2172	EN71-3	34.43		-0.67	
2184	EN71-3	34.90		-0.59	
2201	EN71-3	<100		-----	
2232	EN71-3	31.44		-1.19	
2236	EN71-3	3.91	R(0.05)	-5.99	
2238	EN71-3	<100		-----	
2247		-----		-----	
2256	EN71-3	42.88		0.80	
2290	EN71-3	<100		-----	
2293		-----		-----	
2294	EN71-3	39		0.13	
2297	EN71-3	<50		-----	
2301	EN71-3	31.44		-1.19	
2310	EN71-3	39.6		0.23	
2311	EN71-3	<50		-----	
2347	EN71-3	<50		-----	
2357	EN71-3	<50		-----	
2365	EN71-3	<50		-----	
2366	EN71-3	<50		-----	
2369	EN71-3	<50		-----	
2372	EN71-3	<50		-----	
2375		40.5		0.39	
2379	EN71-3	36.66		-0.28	
2382	EN71-3	<50.0		-----	
2384	EN71-3	<50		-----	
2385	EN71-3	310	R(0.01)	47.34	
2390	EN71-3	n.d		-----	
2413		-----		-----	
2426	EN71-3	29.74	ex	-1.49	test result excluded, see §4.1
2429	EN71-3	<100		-----	
2431	EN71-3	39.90		0.28	
2442	EN71-3	36.76		-0.26	
2475		-----		-----	
2495	EN71-3	49.44		1.95	
2500	EN71-3	42.718		0.78	
2503		61.91		4.12	
2504	EN71-3	44.91		1.16	
2508	EN71-3	39.9		0.28	
2515	EN71-3	40.06		0.31	
2532		-----		-----	
2582		-----		-----	
2590	EN71-3	25.071		-2.30	
2643	EN71-3	32.55		-1.00	
2649	EN71-3	<100		-----	
2674	EN71-3	36.1		-0.38	
2685		-----		-----	
2700		40.95		0.47	
2741	EN71-3	ND		-----	
2790		-----		-----	
2812	EN71-3	41.24		0.52	
2817	In house	16.3692		-3.81	
2826	EN71-3	19.83		-3.21	
2864		-----		-----	
2867	EN71-3	37.7		-0.10	
2881	EN71-3	40.60		0.41	
2907		-----		-----	
2910	EN71-3	38.3		0.01	
2915	EN71-3	41.39		0.54	
2917	EN71-3	44.9		1.16	
3100	EN71-3	<100		-----	

lab	method	value	mark	z(targ)	remarks
3116	EN71-3	35.765		-0.44	
3118	EN71-3	39.05		0.14	
3122	EN71-3	59.95		3.78	
3146	EN71-3	45.3		1.23	
3153	EN71-3	<100		-----	
3172	EN71-3	< 50		-----	
3176	EN71-3	56.14		3.11	
3182	EN71-3	20.651		-3.07	
3185	EN71-3	<100		-----	
3190	EN71-3	<100		-----	
3191	EN71-3	<250.00		-----	
3197	EN71-3	44.6		1.10	
3200	EN71-3	<100		-----	
3218	EN71-3	<100		-----	
3228	EN71-3	36.4		-0.33	
3233	EN71-3	41.06		0.49	
3237	EN71-3	37.1		-0.20	
3243	EN71-3	35		-0.57	
3248	EN71-3	<100		-----	
8005	EN71-3	36.75		-0.26	

				Only test results that maintain pH between 1.1 - 1.3	
	normality	suspect		suspect	
	n	53		45	
	outliers	2 +1ex		2	
	mean (n)	38.2665		37.8692	
	st.dev. (n)	8.92783	RSD=23%	8.83791	RSD=23%
	R(calc.)	24.9979		24.7462	
	st.dev.(EN71-3:19)	5.73998		5.68038	
	R(EN71-3:19)	16.0719		15.9051	



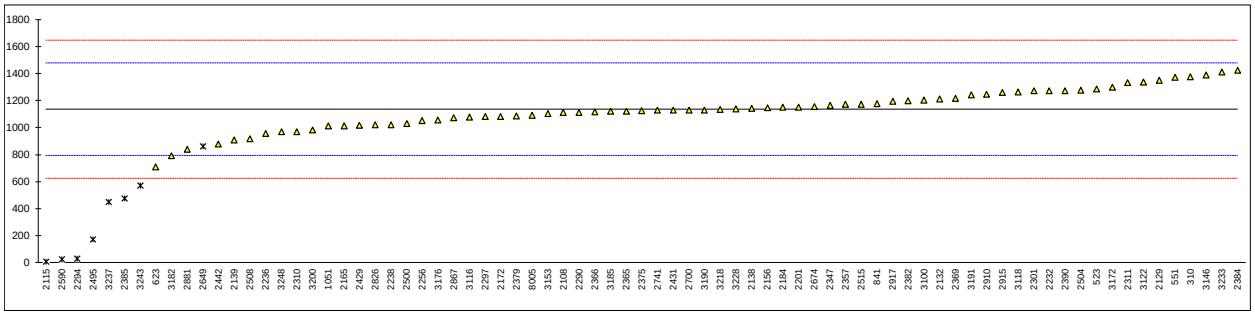


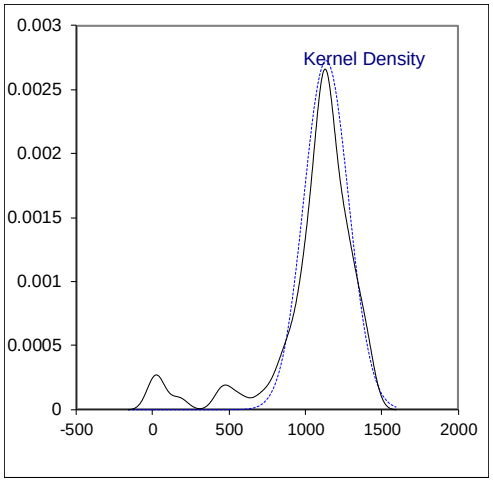
Determination of migration of Aluminum as Al on dried paint sample #20581 (Cat.3);
results in mg/kg

lab	method	value	mark	z(targ)	remarks
310	EN71-3	1377		1.42	
523	EN71-3	1284		0.87	
551	EN71-3	1374		1.40	
623	EN71-3	707.73		-2.51	
841	EN71-3	1179		0.25	
1051	EN71-3	1010.82		-0.73	
2108	EN71-3	1110		-0.15	
2115	EN71-3	8.8	C,R(0.01)	-6.62	first reported 9.43
2129	EN71-3	1352		1.27	
2132	EN71-3	1211.7		0.45	
2137		-----		-----	
2138	EN71-3	1141.02		0.03	
2139	EN71-3	907.9	C	-1.34	first reported 338.4
2156	EN71-3	1145		0.05	
2165	EN71-3	1013		-0.72	
2172	EN71-3	1081		-0.32	
2184	EN71-3	1149		0.08	
2201	EN71-3	1151.0		0.09	
2232	EN71-3	1273		0.81	
2236	EN71-3	954.7		-1.06	
2238	EN71-3	1022.6		-0.66	
2247		-----		-----	
2256	EN71-3	1051.49		-0.49	
2290	EN71-3	1111.91		-0.14	
2293		-----		-----	
2294	EN71-3	29	R(0.01)	-6.50	
2297	EN71-3	1080		-0.33	
2301	EN71-3	1273.00		0.81	
2310	EN71-3	971		-0.97	
2311	EN71-3	1332		1.15	
2347	EN71-3	1164		0.17	
2357	EN71-3	1170.84		0.21	
2365	EN71-3	1118.73		-0.10	
2366	EN71-3	1116.70		-0.11	
2369	EN71-3	1214.70		0.46	
2372	EN71-3	<50		<-6.37	possibly a false negative test result?
2375	EN71-3	1126		-0.06	
2379	EN71-3	1085.72		-0.29	
2382	EN71-3	1198.7		0.37	
2384	EN71-3	1423.289		1.69	
2385	EN71-3	476	R(0.01)	-3.87	
2390	EN71-3	1274.22		0.81	
2413		-----		-----	
2426	EN71-3	nd		-----	
2429	EN71-3	1017		-0.70	
2431		1129.83	C	-0.03	first reported 576.41
2442	EN71-3	876.45	C	-1.52	first reported 450.54
2475		-----		-----	
2495	EN71-3	172.2	C,R(0.01)	-5.66	first reported 119.82
2500	EN71-3	1029.205		-0.63	
2503		-----		-----	
2504	EN71-3	1277.62		0.83	
2508	EN71-3	917		-1.28	
2515	EN71-3	1171.33		0.21	
2532		-----		-----	
2582		-----		-----	
2590	EN71-3	25.254	R(0.01)	-6.52	
2643		-----		-----	
2649	EN71-3	860.45	ex	-1.62	test result excluded, see §4.1
2674	EN71-3	1156.3		0.12	
2685		-----		-----	
2700		1130.44		-0.03	
2741	EN71-3	1127.5		-0.05	
2790		-----		-----	
2812		-----		-----	
2817		-----	W	-----	test result withdrawn, first reported 12.3191
2826	EN71-3	1020.519		-0.68	
2864		-----		-----	
2867	EN71-3	1071.2		-0.38	
2881	EN71-3	840.500	C	-1.73	first reported 5.60
2907		-----		-----	
2910	EN71-3	1247.8		0.66	
2915	EN71-3	1257.8		0.72	
2917	EN71-3	1194.4		0.34	
3100	EN71-3	1204.92		0.41	

lab	method	value	mark	z(targ)	remarks
3116	EN71-3	1078.895		-0.33	
3118	EN71-3	1264.05		0.75	
3122	EN71-3	1335.56		1.17	
3146	EN71-3	1390		1.49	
3153	EN71-3	1104.73		-0.18	
3172	EN71-3	1299		0.96	
3176	EN71-3	1056	C	-0.47	first reported 4,51
3182	EN71-3	790.198		-2.03	
3185	EN71-3	1118.68		-0.10	
3190	EN71-3	1131		-0.03	
3191	EN71-3	1242.88		0.63	
3197		-----		-----	
3200	EN71-3	983.6		-0.89	
3218	EN71-3	1133.80		-0.01	
3228	EN71-3	1138		0.01	
3233	EN71-3	1409.89		1.61	
3237	EN71-3	449.9	R(0.01)	-4.03	
3243	EN71-3	573	R(0.05)	-3.30	
3248	EN71-3	967.4		-0.99	
8005	EN71-3	1092.53		-0.25	

				Only test results that maintain pH between 1.1 - 1.3	
	normality	OK		OK	
	n	69		59	
	outliers	7 +1ex		6	
	mean (n)	1135.692		1128.948	
	st.dev. (n)	146.4818	RSD=13%	151.3535	RSD=13%
	R(calc.)	410.149		423.790	
	st.dev.(EN71-3:19)	170.3539		169.3422	
	R(EN71-3:19)	476.991		474.158	



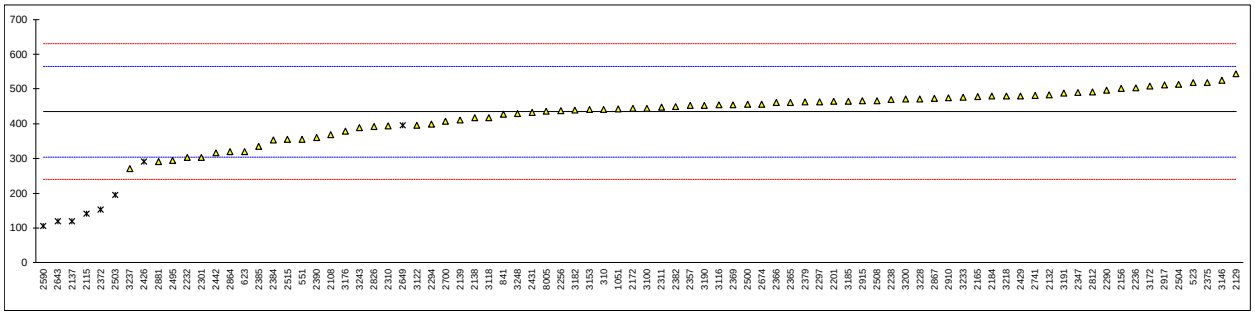


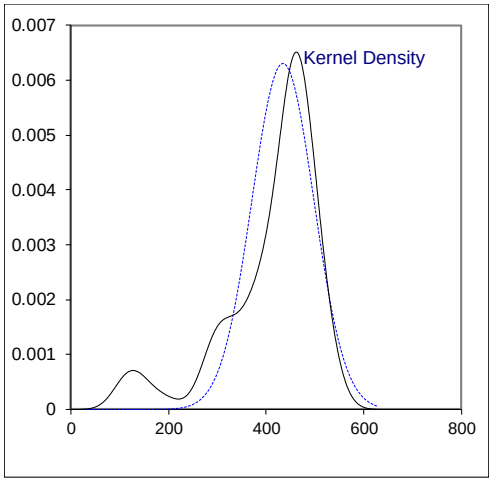
Determination of migration of Cadmium as Cd on dried paint sample #20581 (Cat.3); results in mg/kg

lab	method	value	mark	z(targ)	remarks
310	EN71-3	441.300	C	0.11	first reported 441300 mg/kg
523	EN71-3	518.1		1.28	
551	EN71-3	355.6		-1.21	
623	EN71-3	320.21		-1.75	
841	EN71-3	427		-0.11	
1051	EN71-3	442.57		0.12	
2108	EN71-3	369.2		-1.00	
2115	EN71-3	142	C,R(0.01)	-4.49	first reported 182.6
2129	EN71-3	544.3		1.69	
2132	EN71-3	482.83		0.74	
2137	EN71-3	120	R(0.01)	-4.83	
2138	EN71-3	417.22		-0.26	
2139	EN71-3	410.8		-0.36	
2156	EN71-3	502.3		1.04	
2165	EN71-3	477.8		0.67	
2172	EN71-3	443.6		0.14	
2184	EN71-3	479.2		0.69	
2201	EN71-3	464.34		0.46	
2232	EN71-3	303.12		-2.02	
2236	EN71-3	503.4		1.06	
2238	EN71-3	469.4		0.54	
2247		-----		-----	
2256	EN71-3	436.77		0.04	
2290	EN71-3	495.73		0.94	
2293		-----		-----	
2294	EN71-3	399		-0.54	
2297	EN71-3	463.3		0.44	
2301	EN71-3	303.12		-2.02	
2310	EN71-3	393		-0.64	
2311	EN71-3	448		0.21	
2347	EN71-3	489		0.84	
2357	EN71-3	452.09		0.27	
2365	EN71-3	460.99		0.41	
2366	EN71-3	460.632		0.40	
2369	EN71-3	454.88		0.31	
2372	EN71-3	153	R(0.01)	-4.32	
2375	EN71-3	519		1.30	
2379	EN71-3	462.16		0.43	
2382	EN71-3	449.8		0.24	
2384	EN71-3	352.585		-1.26	
2385	EN71-3	335		-1.53	
2390	EN71-3	360.93		-1.13	
2413		-----		-----	
2426	EN71-3	291.44	ex	-2.19	test result excluded, see §4.1
2429	EN71-3	480.2		0.70	
2431		432.12		-0.04	
2442	EN71-3	317.02		-1.80	
2475		-----		-----	
2495	EN71-3	293.67		-2.16	
2500	EN71-3	455.260		0.32	
2503		195.9	R(0.05)	-3.66	
2504	EN71-3	514.04		1.22	
2508	EN71-3	467		0.50	
2515	EN71-3	354.53		-1.23	
2532		-----		-----	
2582		-----		-----	
2590	EN71-3	105.409	R(0.01)	-5.05	
2643	EN71-3	118.5	R(0.01)	-4.85	
2649	EN71-3	395.44	ex	-0.60	test result excluded, see §4.1
2674	EN71-3	456.8		0.34	
2685		-----		-----	
2700		407.21		-0.42	
2741	EN71-3	482.1		0.73	
2790		-----		-----	
2812	EN71-3	491.3		0.87	
2817		-----	W	-----	test result withdrawn, first reported 129.4833
2826	EN71-3	391.8		-0.65	
2864	EN71-3	319.45		-1.76	
2867	EN71-3	472.1		0.58	
2881	EN71-3	291.58		-2.19	
2907		-----		-----	
2910	EN71-3	474.7		0.62	
2915	EN71-3	466.82		0.50	
2917	EN71-3	512.0		1.19	
3100	EN71-3	443.98		0.15	

lab	method	value	mark	z(targ)	remarks
3116	EN71-3	453.8549		0.30	
3118	EN71-3	417.23		-0.26	
3122	EN71-3	395.92		-0.59	
3146	EN71-3	525		1.39	
3153	EN71-3	440.48		0.09	
3172	EN71-3	508.9		1.14	
3176	EN71-3	378.23		-0.86	
3182	EN71-3	439.497		0.08	
3185	EN71-3	464.41		0.46	
3190	EN71-3	453		0.28	
3191	EN71-3	488.75		0.83	
3197		-----		-----	
3200	EN71-3	471.0		0.56	
3218	EN71-3	480.10		0.70	
3228	EN71-3	471		0.56	
3233	EN71-3	475.45		0.63	
3237	EN71-3	270.7		-2.51	
3243	EN71-3	388		-0.71	
3248	EN71-3	428.7		-0.09	
8005	EN71-3	435.16		0.01	

			Only test results that maintain pH between 1.1 - 1.3	
normality	OK		OK	
n	76		65	
outliers	6 +2ex		4	
mean (n)	434.4387		429.3772	
st.dev. (n)	63.24024	RSD=15%	61.82762	RSD=14%
R(calc.)	177.0727		173.1173	
st.dev.(EN71-3:19)	65.16580		64.40658	
R(EN71-3:19)	182.4642		180.3384	



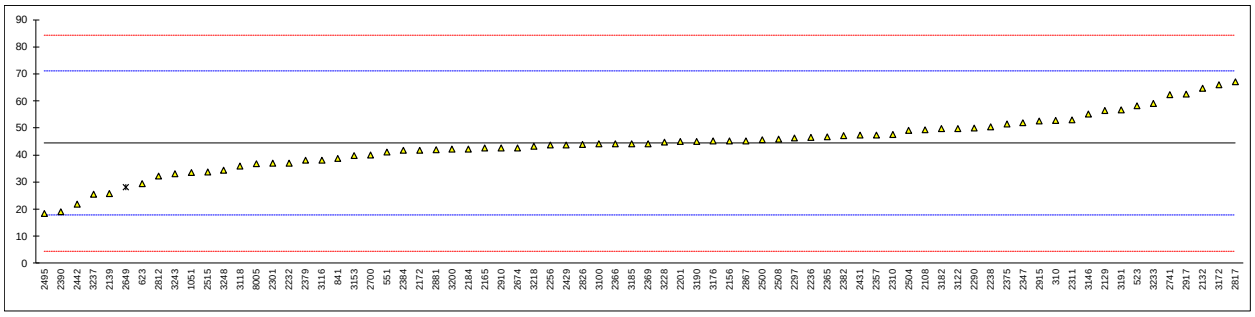


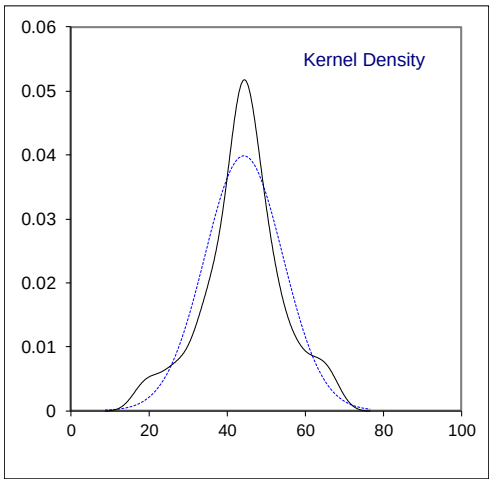
Determination of migration of Lead as Pb on dried paint sample #20581 (Cat.3);
results in mg/kg

lab	method	value	mark	z(targ)	remarks
310	EN71-3	52.728	C	0.63	first reported 52728 mg/kg
523	EN71-3	58.25		1.04	
551	EN71-3	41.04		-0.25	
623	EN71-3	29.37		-1.13	
841	EN71-3	38.8		-0.42	
1051	EN71-3	33.592		-0.81	
2108	EN71-3	49.25		0.37	
2115		-----		-----	
2129	EN71-3	56.43		0.91	
2132	EN71-3	64.80		1.54	
2137		-----		-----	
2138	EN71-3	ND		-----	
2139	EN71-3	25.8		-1.39	
2156	EN71-3	45.22		0.06	
2165	EN71-3	42.6		-0.13	
2172	EN71-3	41.75		-0.20	
2184	EN71-3	42.29		-0.16	
2201	EN71-3	44.92		0.04	
2232	EN71-3	37.05		-0.55	
2236	EN71-3	46.60		0.17	
2238	EN71-3	50.5		0.46	
2247		-----		-----	
2256	EN71-3	43.75		-0.05	
2290	EN71-3	50.08		0.43	
2293		-----		-----	
2294	EN71-3	N		-----	
2297	EN71-3	46.22		0.14	
2301	EN71-3	37.05		-0.55	
2310	EN71-3	47.7		0.25	
2311	EN71-3	53		0.65	
2347	EN71-3	52		0.57	
2357	EN71-3	47.31		0.22	
2365	EN71-3	46.75		0.18	
2366	EN71-3	44.123		-0.02	
2369	EN71-3	44.22		-0.01	
2372	EN71-3	<10		-----	
2375	EN71-3	51.4		0.53	
2379	EN71-3	38.07		-0.47	
2382	EN71-3	47.2		0.21	
2384	EN71-3	41.704		-0.20	
2385	EN71-3	<1		<-3.26	possibly a false negative test result?
2390	EN71-3	19.09		-1.90	
2413		-----		-----	
2426	EN71-3	nd		-----	
2429	EN71-3	43.8		-0.04	
2431		47.28		0.22	
2442	EN71-3	21.78		-1.70	
2475		-----		-----	
2495	EN71-3	18.4	C	-1.95	first reported 7,28
2500	EN71-3	45.693		0.10	
2503		-----		-----	
2504	EN71-3	49.18		0.36	
2508	EN71-3	45.9		0.12	
2515	EN71-3	33.77		-0.80	
2532		-----		-----	
2582		-----		-----	
2590	EN71-3	< L.O.Q.		-----	
2643		-----		-----	
2649	EN71-3	28.11	ex	-1.22	test result excluded, see §4.1
2674	EN71-3	42.63		-0.13	
2685		-----		-----	
2700		40.07		-0.32	
2741	EN71-3	62.4		1.36	
2790		-----		-----	
2812	EN71-3	32.28		-0.91	
2817	In house	67.1500		1.71	
2826	EN71-3	43.94		-0.03	
2864	EN71-3	ND		-----	
2867	EN71-3	45.3		0.07	
2881	EN71-3	41.950	C	-0.18	first reported 0.15
2907		-----		-----	
2910	EN71-3	42.6		-0.13	
2915	EN71-3	52.59		0.62	
2917	EN71-3	62.5		1.36	
3100	EN71-3	44.12		-0.02	

lab	method	value	mark	z(targ)	remarks
3116	EN71-3	38.095		-0.47	
3118	EN71-3	35.9857	C	-0.63	first reported 78.63
3122	EN71-3	49.86		0.41	
3146	EN71-3	55.1		0.81	
3153	EN71-3	39.82		-0.34	
3172	EN71-3	66.1		1.63	
3176	EN71-3	45.2	C	0.06	first reported 1,70
3182	EN71-3	49.831		0.41	
3185	EN71-3	44.18		-0.01	
3190	EN71-3	45		0.05	
3191	EN71-3	56.67		0.92	
3197		-----		-----	
3200	EN71-3	42.2		-0.16	
3218	EN71-3	43.20		-0.09	
3228	EN71-3	44.7		0.03	
3233	EN71-3	59.04		1.10	
3237	EN71-3	25.5		-1.42	
3243	EN71-3	33		-0.85	
3248	EN71-3	34.4		-0.75	
8005	EN71-3	36.715		-0.57	

				Only test results that maintain pH between 1.1 - 1.3	
	normality	OK		OK	
	n	73		62	
	outliers	0 +1ex		0	
	mean (n)	44.3642		43.3996	
	st.dev. (n)	10.01821	RSD=23%	9.78474	RSD=23%
	R(calc.)	28.0510		27.3973	
	st.dev.(EN71-3:19)	13.30926		13.01989	
	R(EN71-3:19)	37.2659		36.4557	



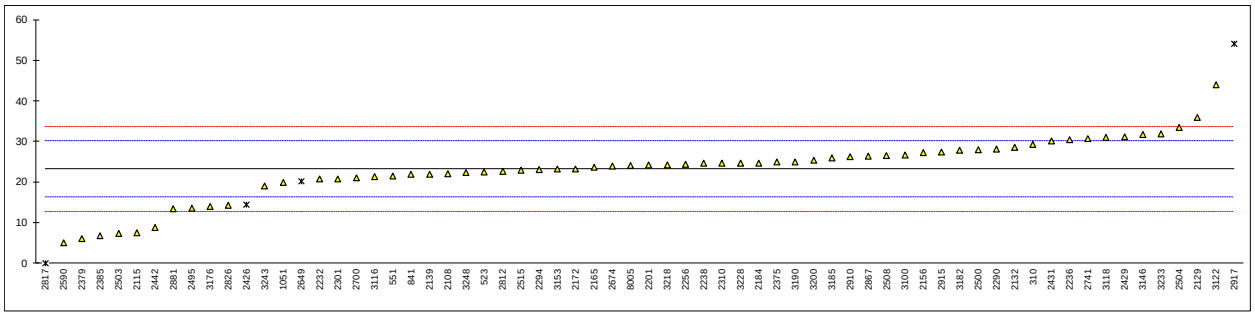


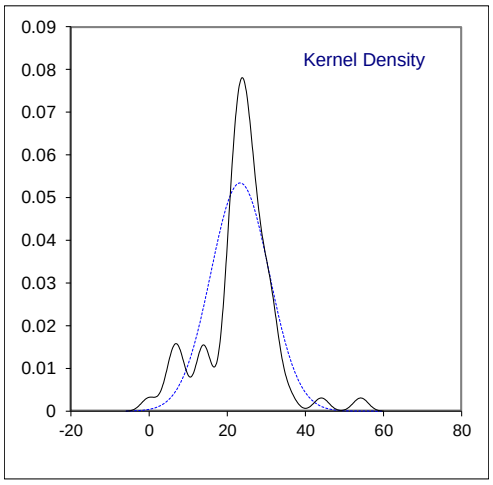
Determination of migration of Manganese as Mn on dried paint sample #20581 (Cat.3); results in mg/kg

lab	method	value	mark	z(targ)	remarks
310	EN71-3	29.337	C	1.74	first reported 29337 mg/kg
523	EN71-3	22.5		-0.22	
551	EN71-3	21.46		-0.52	
623	EN71-3	ND		-----	
841	EN71-3	21.9		-0.39	
1051	EN71-3	19.909		-0.96	
2108	EN71-3	22.00		-0.36	
2115	EN71-3	7.48		-4.52	
2129	EN71-3	35.86		3.61	
2132	EN71-3	28.50		1.50	
2137		-----		-----	
2138	EN71-3	ND		-----	
2139	EN71-3	21.9		-0.39	
2156	EN71-3	27.20		1.13	
2165	EN71-3	23.7		0.12	
2172	EN71-3	23.21		-0.02	
2184	EN71-3	24.69		0.41	
2201	EN71-3	24.17		0.26	
2232	EN71-3	20.77		-0.72	
2236	EN71-3	30.38		2.04	
2238	EN71-3	24.6		0.38	
2247		-----		-----	
2256	EN71-3	24.37		0.32	
2290	EN71-3	28.19		1.41	
2293		-----		-----	
2294	EN71-3	23		-0.08	
2297	EN71-3	<50		-----	
2301	EN71-3	20.77		-0.72	
2310	EN71-3	24.6		0.38	
2311	EN71-3	<50		-----	
2347	EN71-3	<50		-----	
2357	EN71-3	<50		-----	
2365	EN71-3	<50		-----	
2366	EN71-3	<50		-----	
2369	EN71-3	<50		-----	
2372	EN71-3	<50		-----	
2375	EN71-3	24.9		0.47	
2379	EN71-3	5.99		-4.95	
2382	EN71-3	<50.0		-----	
2384	EN71-3	<50		-----	
2385	EN71-3	6.7		-4.75	
2390	EN71-3	n.d		-----	
2413		-----		-----	
2426	EN71-3	14.42	ex	-2.54	test result excluded, see §4.1
2429	EN71-3	31.2		2.27	
2431		30.15		1.97	
2442	EN71-3	8.73		-4.17	
2475		-----		-----	
2495	EN71-3	13.57		-2.78	
2500	EN71-3	27.912		1.33	
2503		7.349		-4.56	
2504	EN71-3	33.46		2.92	
2508	EN71-3	26.6		0.95	
2515	EN71-3	22.86		-0.12	
2532		-----		-----	
2582		-----		-----	
2590	EN71-3	4.982		-5.24	
2643		-----		-----	
2649	EN71-3	20.19	ex	-0.88	test result excluded, see §4.1
2674	EN71-3	23.92		0.19	
2685		-----		-----	
2700		21.04		-0.64	
2741	EN71-3	30.7		2.13	
2790		-----		-----	
2812	EN71-3	22.58		-0.20	
2817	In house	0	ex	-6.67	test result excluded as zero is not a real test value
2826	EN71-3	14.25		-2.58	
2864		-----		-----	
2867	EN71-3	26.4		0.90	
2881	EN71-3	13.38		-2.83	
2907		-----		-----	
2910	EN71-3	26.2		0.84	
2915	EN71-3	27.35		1.17	
2917	EN71-3	54.1	R(0.01)	8.83	
3100	EN71-3	26.65		0.97	

lab	method	value	mark	z(targ)	remarks
3116	EN71-3	21.334		-0.55	
3118	EN71-3	30.99		2.21	
3122	EN71-3	44.04		5.95	
3146	EN71-3	31.7		2.42	
3153	EN71-3	23.17		-0.03	
3172	EN71-3	< 50		-----	
3176	EN71-3	13.94		-2.67	
3182	EN71-3	27.769		1.29	
3185	EN71-3	25.93		0.76	
3190	EN71-3	25		0.50	
3191	EN71-3	<250.00		-----	
3197		-----		-----	
3200	EN71-3	25.4		0.61	
3218	EN71-3	24.20		0.27	
3228	EN71-3	24.6		0.38	
3233	EN71-3	31.94		2.48	
3237		-----		-----	
3243	EN71-3	19		-1.22	
3248	EN71-3	22.3		-0.28	
8005	EN71-3	24.074		0.23	

				Only test results that maintain pH between 1.1 - 1.3	
	normality	suspect		suspect	
	n	62		56	
	outliers	1 +3ex		0	
	mean (n)	23.2703		23.0973	
	st.dev. (n)	7.45611	RSD=32%	8.10671	RSD=35%
	R(calc.)	20.8771		22.6988	
	st.dev.(EN71-3:19)	3.49054		3.46459	
	R(EN71-3:19)	9.7735		9.7009	



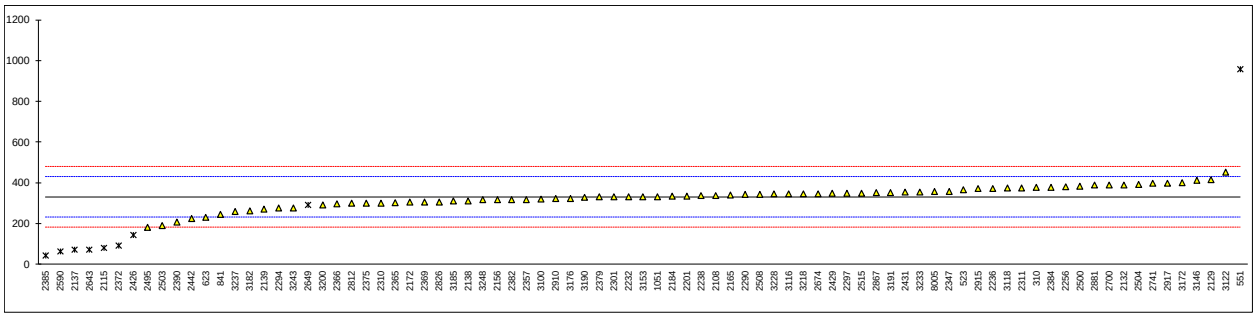


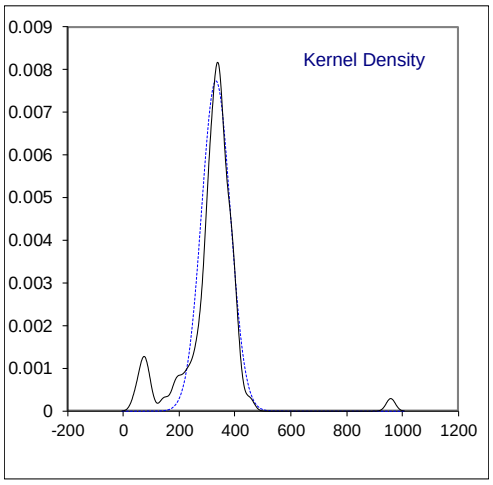
Determination of migration of Strontium as Sr on dried paint sample #20581 (Cat.3); results in mg/kg

lab	method	value	mark	z(targ)	remarks
310	EN71-3	376.423	C	0.91	first reported 376423 mg/kg
523	EN71-3	367.1		0.72	
551	EN71-3	959.0752	C,R(0.01)	12.63	first reported 994.5
623	EN71-3	231.40		-2.01	
841	EN71-3	244		-1.76	
1051	EN71-3	332.93		0.03	
2108	EN71-3	337.2		0.12	
2115	EN71-3	81.7	C,R(0.01)	-5.02	first reported 105.0
2129	EN71-3	414.24		1.67	
2132	EN71-3	389.84		1.18	
2137	EN71-3	70.84	R(0.01)	-5.24	
2138	EN71-3	310.91		-0.41	
2139	EN71-3	271.0		-1.21	
2156	EN71-3	317.5		-0.28	
2165	EN71-3	341.4		0.20	
2172	EN71-3	304.2		-0.54	
2184	EN71-3	334.1		0.06	
2201	EN71-3	335.42		0.08	
2232	EN71-3	331		-0.01	
2236	EN71-3	372.2	C	0.82	first reported 37.22
2238	EN71-3	336.3		0.10	
2247		-----		-----	
2256	EN71-3	379.89		0.98	
2290	EN71-3	342.06		0.22	
2293		-----		-----	
2294	EN71-3	276		-1.11	
2297	EN71-3	348.1		0.34	
2301	EN71-3	331.00		-0.01	
2310	EN71-3	301		-0.61	
2311	EN71-3	375		0.88	
2347	EN71-3	357		0.52	
2357	EN71-3	318.29		-0.26	
2365	EN71-3	303.33		-0.56	
2366	EN71-3	298.321		-0.66	
2369	EN71-3	304.50		-0.54	
2372	EN71-3	92.6	R(0.01)	-4.80	
2375	EN71-3	300.5		-0.62	
2379	EN71-3	330.30		-0.02	
2382	EN71-3	317.7		-0.27	
2384	EN71-3	377.893		0.94	
2385	EN71-3	43	R(0.01)	-5.80	
2390	EN71-3	206	C	-2.52	first reported 78.97
2413		-----		-----	
2426	EN71-3	145.1	ex	-3.75	test result excluded, see §4.1
2429	EN71-3	348		0.34	
2431		353.59		0.45	
2442	EN71-3	225.52		-2.13	
2475		-----		-----	
2495	EN71-3	182.67		-2.99	
2500	EN71-3	383.388		1.05	
2503		191.5		-2.81	
2504	EN71-3	391.55		1.21	
2508	EN71-3	344		0.26	
2515	EN71-3	348.29		0.34	
2532		-----		-----	
2582		-----		-----	
2590	EN71-3	62.829	R(0.01)	-5.40	
2643	EN71-3	72.9	R(0.01)	-5.20	
2649	EN71-3	291.32	ex	-0.80	test result excluded, see §4.1
2674	EN71-3	346.2		0.30	
2685		-----		-----	
2700		388.69		1.16	
2741	EN71-3	397.5		1.33	
2790		-----		-----	
2812	EN71-3	298.8		-0.65	
2817		-----	W	-----	test result withdrawn, first reported 35.2303
2826	EN71-3	305.75		-0.51	
2864		-----		-----	
2867	EN71-3	351.2		0.40	
2881	EN71-3	388.590	C	1.15	first reported 170.25
2907		-----		-----	
2910	EN71-3	323.2		-0.16	
2915	EN71-3	371.42		0.81	
2917	EN71-3	399.0		1.36	
3100	EN71-3	320.23		-0.22	

lab	method	value	mark	z(targ)	remarks
3116	EN71-3	345.734		0.29	
3118	EN71-3	374.18		0.86	
3122	EN71-3	452.56	C	2.44	first reported 490.44
3146	EN71-3	412		1.62	
3153	EN71-3	331.80		0.01	
3172	EN71-3	401.5		1.41	
3176	EN71-3	323.77		-0.15	
3182	EN71-3	261.462		-1.40	
3185	EN71-3	310.54		-0.42	
3190	EN71-3	328		-0.07	
3191	EN71-3	351.56		0.41	
3197		-----		-----	
3200	EN71-3	292.3		-0.78	
3218	EN71-3	346.00		0.30	
3228	EN71-3	345		0.28	
3233	EN71-3	354.89		0.48	
3237	EN71-3	260.1		-1.43	
3243	EN71-3	277		-1.09	
3248	EN71-3	316.7		-0.29	
8005	EN71-3	356.41		0.51	

				Only test results that maintain pH between 1.1 - 1.3	
	normality	OK		OK	
	n	74		62	
	outliers	9		6	
	mean (n)	331.2790		331.9547	
	st.dev. (n)	51.61939	RSD=16%	50.96240	RSD=15%
	R(calc.)	144.5343		142.6947	
	st.dev.(EN71-3:19)	49.69184		49.79321	
	R(EN71-3:19)	139.1372		139.4210	





Qualification on the safety standards for children after determination of Migration of elements according to EN71-3, category 3 and Toy Safety Directive 2009/48/EC on a piece of real-life toy sword sample #20582 (Cat.3); results in Pass/Fail

lab	method	qualification	Cu in mg/kg	Zn in mg/kg	remarks
310	EN71-3	Fail	29694.803	18788.201	
523	EN71-3	Fail	101737	30603	
551	EN71-3	Fail	64060	14780	
623	EN71-3	Fail	67910.00	-----	
841	EN71-3	Fail	27455.3	-----	
1051	EN71-3	Fail	48287.3	-----	
2108	EN71-3	Fail	62191	-----	
2115	EN71-3	Pass	43.5	21.1	
2129		Pass	-----	-----	
2132	EN71-3	Fail	53541.7	9462	
2137	EN71-3	Pass	274.5	113.5	
2138		-----	-----	-----	
2139	EN71-3	Pass	226.5	136.1	
2156	EN71-3	Pass	255.9	106.7	
2165	EN71-3	Fail	96280	32450	
2172	EN71-3	Fail	145200	-----	
2184	EN71-3	Fail	65055	-----	
2201	EN71-3	Fail	206800	36450	
2232	EN71-3	Fail	12793	-----	
2236	EN71-3	-----	551.2	170.7	no judgement reported
2238	EN71-3	Fail	119642	-----	
2247		-----	-----	-----	
2256	EN71-3	Fail	167106.67	-----	
2290	EN71-3	Fail	32061.30	-----	
2293		-----	-----	-----	
2294		-----	-----	-----	
2297	EN71-3	Fail	272263	48851	
2301		-----	-----	-----	
2310	EN71-3	Fail	70767	15841	
2311	EN71-3	Fail	87587	31837	
2347	EN71-3	Fail	205220	-----	
2357	EN71-3	Fail	243630.1	44036.66	
2365	EN71-3	Fail	262145	48748	
2366	EN71-3	Fail	271610	48772.1	
2369		Fail	199295.16	-----	
2372	EN71-3	Pass	540	393	
2375		Fail C	40235 C	7012 C	first reported Pass/ 238 for Cu/ 87 for Zn
2379	EN71-3	Fail	27757.26	-----	
2382	EN71-3	Fail	193961.6	-----	
2384	EN71-3	Fail	68031.915	-----	
2385		Pass	-----	-----	
2390	EN71-3	Fail	80.17	34.92	possibly a false qualification or unit error?
2413		-----	-----	-----	
2426	EN71-3	-----	315.47	156.82	no judgement reported
2429	EN71-3	Fail	208411	47343	
2431	EN71-3	Fail	40881.35	12765.65	
2442	EN71-3	Pass	246.62	127.37	
2475		-----	-----	-----	
2495	EN71-3	Fail	30184.34	-----	
2500	EN71-3	Fail	154018.001	28498.746	
2503		-----	654.5	277.1	no judgement reported
2504	EN71-3	Pass	703.39	185.80	
2508		Pass	-----	-----	
2515	EN71-3	Fail	53344.52	14767.89	
2532		-----	-----	-----	
2582		-----	-----	-----	
2590	EN71-3	Pass	192.823	94.505	
2643	EN71-3	Pass	272	-----	
2649	EN71-3	Fail	350.23	172.39	possibly a false qualification or unit error?
2674	EN71-3	Fail	70714	-----	
2685		-----	-----	-----	
2700	EN71-3	Fail	23043.56	5810.46	
2741	EN71-3	Fail	52589	10475	
2790		-----	-----	-----	
2812	EN71-3	Pass	239.1	104.6	
2817	EN71-3	Fail	18912.7775	-----	
2826	EN71-3	Fail	44055.5	71.3	
2864		Pass	-----	-----	
2867	EN71-3	Fail	95500	-----	
2881	EN71-3	Pass	118.36	54.98	
2907		-----	-----	-----	
2910	EN71-3	Fail	105451.8	-----	
2915	EN71-3	Fail	98874.56	-----	

lab	method	qualification	Cu in mg/kg	Zn in mg/kg	remarks
2917	EN71-3	Fail	119778.44	-----	
3100	EN71-3	Fail	180232	21522.6	
3116	EN71-3	Fail	64570	-----	
3118	EN71-3	Fail	58272.07	-----	
3122	EN71-3	Fail	>7700	-----	
3146		-----	-----	-----	
3153	EN71-3	Fail	82063	-----	
3172	EN71-3	Fail	118800	21090	
3176		Pass	-----	-----	
3182	EN71-3	Fail	97101.857	-----	
3185	EN71-3	Fail	222413	-----	
3190	EN71-3	Fail	169400	33460	
3191	EN71-3	Fail	89202.91	17776.81	
3197	EN71-3	Fail	36259.7	6518.3	
3200	EN71-3	Fail	95134.9	45404.0	
3218	EN71-3	Fail	96570.00	42840.00	
3228	EN71-3	Fail	76589	-----	
3233	EN71-3	Fail	72603.68	44580.34	
3237	EN71-3	Pass	239.2	127.3	
3243	EN71-3	Pass	282	104	
3248	EN71-3	Fail	81989	20543	
8005	EN71-3	Fail	97277	-----	
	n	61			
	mean (n)	Fail			

Determination of migration of Aluminum as Al on piece of qualitative toy sword sample #20582 (Cat.3); results in mg/kg

lab	method	value	mark	z(targ)	remarks
310	EN71-3	126.287		-----	
523	EN71-3	370.6		-----	
551	EN71-3	179.1		-----	
623		-----		-----	
841		-----		-----	
1051		-----		-----	
2108		-----		-----	
2115	EN71-3	1.60		-----	
2129		-----		-----	
2132	EN71-3	<250		-----	
2137		-----		-----	
2138		-----		-----	
2139	EN71-3	< 10		-----	
2156	EN71-3	6.278		-----	
2165	EN71-3	360.0		-----	
2172		-----		-----	
2184		-----		-----	
2201		-----		-----	
2232		-----		-----	
2236	EN71-3	<50.0		-----	
2238		-----		-----	
2247		-----		-----	
2256		-----		-----	
2290		-----		-----	
2293		-----		-----	
2294		-----		-----	
2297	EN71-3	660.8		-----	
2301		-----		-----	
2310	EN71-3	629		-----	
2311	EN71-3	496		-----	
2347		-----		-----	
2357		-----		-----	
2365	EN71-3	687.34		-----	
2366	EN71-3	942.025		-----	
2369		-----		-----	
2372	EN71-3	<50		-----	
2375		241	C	-----	first reported 9
2379		-----		-----	
2382		-----		-----	
2384		-----		-----	
2385		-----		-----	
2390	EN71-3	n.d		-----	
2413		-----		-----	
2426	EN71-3	10.58		-----	
2429	EN71-3	<300		-----	
2431		-----		-----	
2442	EN71-3	9.87		-----	
2475		-----		-----	
2495		-----		-----	
2500	EN71-3	529.306		-----	
2503		9.895		-----	
2504	EN71-3	14.66		-----	
2508		-----		-----	
2515	EN71-3	420.10		-----	
2532		-----		-----	
2582		-----		-----	
2590	EN71-3	12.739		-----	
2643		-----		-----	
2649	EN71-3	<300		-----	
2674		-----		-----	
2685		-----		-----	
2700	EN71-3	142.65		-----	
2741	EN71-3	521.5		-----	
2790		-----		-----	
2812	EN71-3	10.01		-----	
2817		-----		-----	
2826	EN71-3	<10		-----	
2864		-----		-----	
2867		-----		-----	
2881	EN71-3	10.49		-----	
2907		-----		-----	
2910		-----		-----	
2915		-----		-----	
2917		-----		-----	
3100	EN71-3	449.80		-----	

lab	method	value	mark	z(targ)	remarks
3116		-----		-----	
3118		-----		-----	
3122		-----		-----	
3146		-----		-----	
3153		-----		-----	
3172	EN71-3	444.0		-----	
3176		-----		-----	
3182		-----		-----	
3185		-----		-----	
3190	EN71-3	431		-----	
3191	EN71-3	<250.00		-----	
3197	EN71-3	218.8		-----	
3200		-----		-----	
3218	EN71-3	<300		-----	
3228		-----		-----	
3233	EN71-3	598.65		-----	
3237		-----		-----	
3243	EN71-3	7.0		-----	
3248	EN71-3	<300		-----	
8005		-----		-----	
	n	26			
	mean (n)	<300			

Determination of migration of Barium as Ba on piece of qualitative toy sword sample #20582 (Cat.3); results in mg/kg

lab	method	value	mark	z(targ)	remarks
310	EN71-3	11.889		-----	
523	EN71-3	313.6		-----	
551	EN71-3	10.55		-----	
623		-----		-----	
841		-----		-----	
1051		-----		-----	
2108		-----		-----	
2115	EN71-3	3.50		-----	
2129		-----		-----	
2132	EN71-3	69.4		-----	
2137	EN71-3	26.45		-----	
2138		-----		-----	
2139	EN71-3	< 10		-----	
2156	EN71-3	4.422		-----	
2165	EN71-3	230.2		-----	
2172		-----		-----	
2184		-----		-----	
2201		-----		-----	
2232		-----		-----	
2236	EN71-3	30.50		-----	
2238		-----		-----	
2247		-----		-----	
2256		-----		-----	
2290		-----		-----	
2293		-----		-----	
2294		-----		-----	
2297	EN71-3	308.3		-----	
2301		-----		-----	
2310	EN71-3	268		-----	
2311	EN71-3	570		-----	
2347		-----		-----	
2357		-----		-----	
2365	EN71-3	290.28		-----	
2366	EN71-3	119.858		-----	
2369		-----		-----	
2372	EN71-3	<50		-----	
2375		865.07	C	-----	first reported 50
2379		-----		-----	
2382		-----		-----	
2384		-----		-----	
2385		-----		-----	
2390	EN71-3	57.54		-----	
2413		-----		-----	
2426	EN71-3	60.19		-----	
2429	EN71-3	44.24		-----	
2431	EN71-3	318.71		-----	
2442	EN71-3	32.47		-----	
2475		-----		-----	
2495		-----		-----	
2500	EN71-3	95.136		-----	
2503		60.13		-----	
2504	EN71-3	29.06		-----	
2508		-----		-----	
2515	EN71-3	29.23		-----	
2532		-----		-----	
2582		-----		-----	
2590	EN71-3	4.639		-----	
2643	EN71-3	25.25		-----	
2649	EN71-3	<10		-----	
2674		-----		-----	
2685		-----		-----	
2700	EN71-3	9.72		-----	
2741	EN71-3	159		-----	
2790		-----		-----	
2812		-----		-----	
2817		-----		-----	
2826	EN71-3	35.1		-----	
2864		-----		-----	
2867		-----		-----	
2881	EN71-3	14.27		-----	
2907		-----		-----	
2910		-----		-----	
2915		-----		-----	
2917		-----		-----	
3100	EN71-3	75.31		-----	

lab	method	value	mark	z(targ)	remarks
3116		-----		-----	
3118		-----		-----	
3122		-----		-----	
3146		-----		-----	
3153		-----		-----	
3172	EN71-3	206.9		-----	
3176		-----		-----	
3182		-----		-----	
3185		-----		-----	
3190		-----		-----	
3191	EN71-3	<5.00		-----	
3197	EN71-3	<10		-----	
3200		-----		-----	
3218	EN71-3	41.00		-----	
3228		-----		-----	
3233	EN71-3	273.14		-----	
3237	EN71-3	26.0		-----	
3243	EN71-3	7.9		-----	
3248	EN71-3	<10		-----	
8005		-----		-----	
	n	24			
	mean (n)	<50			

APPENDIX 2

Determination of migration of Other Elements on plaster sample #20570 (Cat.1); results in mg/kg

lab	Sb	As	Cr (III)	Cr (VI)	Co	Cu	Hg	Ni	Se	Sn	Org.Sn
230	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
310	0.03	0.384	0.32	0	0.594	0.961	0.004	2.842	0.587	0.023	-----
551	0.084	**3.35003**	-----	-----	0.3677	8.53	-----	1.8836	0.3429	0.099	-----
841	<0.1	0.4	0.29	<0.002	0.2	<2.5	<0.1	<2.5	<0.5	0.067	-----
2108	<0,125	0.3831	0.1992	<0,0025	0.3584	2.161	<0,0125	2.706	1.803	<0,125	0.09
2115	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2132	<1.0	0.462	<10	<0.014	0.288	<15	<0.1	<1.0	<1.0	<0.05	<0.72
2184	<1	<0.5	<1	<0.015	<0.5	<2.5	<0.5	<2.5	<2.5	<0.2	<0.77
2236	<2.0	<2.0	-----	-----	<2.0	<5.0	<2.0	<2.0	<2.0	<2.0	-----
2247	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2290	<10	<1	<5	-----	<1	<10	<1	<10	<5	<10	<0.3
2295	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2299	0.004	0.073	-----	-----	-----	-----	0.032	-----	0.422	-----	-----
2372	<1.0	<0.5	<5.0	<0.01	<0.5	<50	<0.5	<10	<5.0	<4.9	<0.135
2375	<0.025	0.40	<5	<0.01	0.24	<2.5	<0.025	<2.5	0.58	<0.025	-----
2379	0.13	1.10	0.27	0	0.22	0.61	0.28	0.94	0.40	0.07	0
2382	<1.0	<0.50	<5.0	<0.010	<0.50	<50.0	<0.50	<10.0	<5.0	<0.150	<0.10
2385	<1	<0,5	<1	<0,02	<1	<1	<0,1	<1	<1	<1	<0,1
2426	nd	nd	nd	nd	nd	nd	nd	nd	nd	**312.65**	nd
2495	<1,0	0.22	<1,0	-----	<1,0	<5,0	<0,5	<5,0	<1,0	<0,2	-----
2503	-----	-----	-----	-----	-----	5.191	-----	-----	-----	-----	-----
2508	**15.8**	-----	0.56	-----	0.15	0.58	-----	0.47	2.59	0.18	-----
2812	-----	0.41	0.28	-----	0.22	-----	-----	-----	0.58	-----	-----
2864	ND	ND	-----	-----	-----	-----	ND	-----	ND	-----	-----
2915	0.025	0.583	0.224	<0.005	0.2563	0.6922	<0.01	0.1571	0.3165	0.034	<0.2
2917	<3	<1	<1	-----	<1	<1	<0,1	<1	<1	<1	-----
3116	LT2	0.4826	0.2707	LT0.002	LT2	LT2	LT0.15	LT2	LT2	LT2	LT0.225
3122	<1.25	0.36	0.29	<0.005	0.22	0.71	<0.02	0.27	<1.25	<0.2	<0.1
3153	<10	<1	<5	<0.01	<1	<10	<1	<10	<5	<10	-----
3154	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3172	< 10	< 1	< 10	< 0.005	< 5	< 50	< 5	< 10	< 10	< 50	< 0.1
3190	<10	<1	<5	<0.01	<10	<10	<1	<10	<10	<10	<0.3
3191	<5.00	0.51	-----	-----	<1.00	<10.00	<1.00	<5.00	<1.00	<1.00	-----
3197	<10	<0.5	<0.5	ND	<1	<10	<1	<10	<1	<10	ND
3218	<10	<1.0	<5.0	<0.02	<1.0	<10	<1.0	<10	<5.0	<10	<0.9
3237	-----	0.2	-----	-----	-----	-----	-----	-----	-----	-----	-----
3247	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3248	<10	<1	<1	<0.01	<1	<10	<1	<10	<5	<10	<0.5
8005	-----	0.496	0.2915	-----	-----	-----	-----	-----	-----	-----	-----

Lab 551 possibly a false positive test result for Arsenic as As? First reported 6.7445 for Arsenic as As

Lab 2236 reported <2.0 for Total Chromium

Lab 2426 possibly a false positive test result for Tin as Sn?

Lab 2508 possibly a false positive test result for Antimony as Sb?

Determination of migration of Other Elements on finger paint sample #20575 (Cat.2); results in mg/kg

lab	Sb	As	Ba	B	Cr (III)	Cr (VI)	Co	Cu
310	0.015	0.016	0.177	0.176	<5,0	<0,02	0.03	0.416
551	0.0499	**0.7520**	0.4091	0.419	-----	-----	-----	3.752
841	0.11	<0.1	<2.5	<2.5	<0.2	<0.002	<0.1	<2.5
2108	0.5366	<0,125	0.1673	0.1487	<0,125	0.00334	<0,125	0.3175
2115	-----	-----	-----	-----	-----	-----	-----	-----
2132	<1.0	<0.05	<25	<25	<0.05	<0.0035	<0.1	<15
2184	<1	<0.5	<2.5	<10	<1	<0.004	<0.5	<2.5
2241	0.074	0.021	0.131	0.030	0.005	<0.005	0.001	0.050
2247	-----	-----	-----	-----	-----	-----	-----	-----
2290	<1	<0.5	<10	<50	<1	-----	<1	<10
2295	-----	-----	-----	-----	-----	-----	-----	-----
2372	<1.0	<0.4	<50	<50	<5.0	<0.0025	<0.5	<50
2375	<0.025	<0.025	<2.5	<2.5	<1	<0.005	<0.025	<2.5
2385	<1	<0,5	<1	<10	<1	<0,005	<0,5	<1
2426	nd	nd	nd	nd	nd	nd	nd	7.82
2495	<1,0	<0,1	<5,0	<5,0	<1,0	-----	<0,2	<5,0
2503	-----	-----	-----	-----	-----	-----	-----	-----
2508	**49.1**	-----	0.73	-----	-----	-----	-----	0.57
2812	-----	-----	-----	-----	-----	-----	-----	-----
2862	0.125	0.0735	0.892	-----	-----	-----	-----	-----
2864	ND	ND	ND	-----	-----	-----	-----	-----
2915	0.020	0.022	0.0487	0.6719	0.015	<0.0025	<0.01	0.0508
2917	<1	<0,5	<0,5	<1	<1	-----	<1	<1
3116	LT2	LT0.15	LT2	LT5	LT0.02	LT0.002	LT2	LT2
3122	<1.25	<0.125	<1.25	<10	<0.125	<0.005	<0.125	<0.2
3153	<1	<0.3	<10	<50	<1	<0.0025	<1	<10
3154	-----	-----	-----	39.69	-----	-----	-----	2.06
3172	< 5	< 0.1	< 50	< 50	< 4	< 0.005	< 1	< 50
3191	<1.00	<0.10	<5.00	<10.00	-----	-----	<0.50	<10.00
3197	<1	<0.5	<10	<10	<0.5	ND	<1	<10
3214	<1.0	<0.1	<10.0	<50.0	<2.5	-----	<1.0	<10.0
3218	<1.0	<0.5	<10	<50	<1.0	<0.005	<1.0	<10
3233	<5	<0.05	<5	<5	0.020	<0.0025	<0.5	<5
3237	-----	-----	-----	-----	-----	-----	-----	-----
3243	n.d.	n.d.	3.7	n.d.	n.d.	n.d.	0.071	0.27
3248	<1	<0.3	<10	<50	<1	<0.0025	<1	<10
8005	-----	-----	-----	-----	-----	-----	-----	-----

Lab 551 possibly a false positive test result for Arsenic as As? First reported 1.252
Lab 2508 possibly a false positive test result for Antimony as Sb?

Determination of migration of Other Elements on finger paint sample #20575 (Cat.2); results in mg/kg
---continued---

lab	Mn	Hg	Ni	Se	Sr	Sn	Org.Sn	Zn
310	0.099	0.001	0.574	0.009	0.523	0.016	-----	0.3
551	0.9181	-----	0.3143	0.5089	-----	0.1796	-----	6.65
841	<2.5	<0.1	<2.5	<0.5	<2.5	0.054	-----	<2.5
2108	0.1475	<0,0125	0.2449	<0,125	1.062	<0,125	0.09	16.55
2115	-----	-----	-----	-----	-----	-----	-----	1.20
2132	<25	<0.1	<1.0	<1.0	<50	<0.05	<0.15	<50
2184	<2.5	<0.5	<2.5	<2.5	<2.5	<0.06	<0.77	<10
2241	0.075	0.001	0.161	0.006	0.162	0.014	<0.200	0.439
2247	-----	-----	-----	-----	-----	-----	-----	-----
2290	<10	<1	<1	<1	<100	<10	<0.15	<100
2295	-----	-----	-----	-----	-----	-----	-----	-----
2372	<50	<0.5	<9	<4	<50	<4.9	<0.03	<50
2375	<2.5	<0.025	<2.5	<0.5	<2.5	<0.025	-----	<2.5
2385	<1	<0,1	<1	<1	<1	<1	<0,02	1.0
2426	nd	nd	nd	nd	nd	nd	nd	9.31
2495	<5,0	<0,2	<1,0	<1,0	<5,0	<5,0	-----	<5,0
2503	-----	-----	-----	-----	-----	-----	-----	32.14
2508	0.17	-----	0.53	0.74	4.1	0.9	-----	18.5
2812	-----	-----	-----	-----	-----	-----	-----	-----
2862	-----	-----	-----	-----	-----	-----	-----	-----
2864	-----	ND	-----	ND	-----	-----	-----	-----
2915	0.1847	<0.01	0.2012	<0.1	<0.1	0.024	<0.1	4.069
2917	<1	<0,1	<1	<1	<1	<1	-----	<1
3116	LT2	LT0.15	LT2	LT2	LT2	LT2	-----	LT5
3122	<0.125	<0.02	0.19	<1.25	0.22	<0.2	<0.1	<10
3153	<10	<0.5	<1	<1	<100	<10	-----	<100
3154	-----	-----	-----	-----	4.13	-----	-----	72.43
3172	< 50	< 0.5	< 5	< 1	< 50	< 50	< 0.1	< 50
3191	<10.00	<0.50	<5.00	<1.00	<50.00	<1.00	-----	<50.00
3197	<10	<1	<1	<1	<10	<10	ND	<10
3214	<10.0	<0.8	<1.0	<1.0	<100.0	<10.0	-----	<100.0
3218	<10	<1.0	<1.0	<1.0	<100	<10	<0.2	<100
3233	<5	<0.5	<5	<5	<5	0.05	-----	12.85
3237	-----	-----	-----	-----	-----	-----	-----	-----
3243	0.21	n.d.	0.20	n.d.	0.20	n.d.	n.d.	0.10
3248	<10	<0.5	<1	<1	<100	<10	<0.2	<100
8005	-----	-----	-----	-----	-----	-----	-----	-----

Determination of migration of Other Elements on paper with ink sample #20580 (Cat.3); results in mg/kg

lab	Sb	As	Ba	B	Cr (III)	Cr (VI)	Co	Pb	Mn	Hg	Ni	Se
310	0.01	0.073	3.062	0.748	0.488	<0,02	0.217	0.608	7.474	0.05	2.743	0.011
523	0.0648	0.0508	<5.0	<2.5	-----	-----	0.071	0.327	6.41	0.0884	0.588	<0.05
551	-----	-----	-----	-----	-----	-----	-----	-----	3.167	-----	-----	-----
623	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
841	<5	<2.5	<10	<10	<5	<0.02	<10	<5	<10	<5	<10	<10
1051	<5	<5	<10	<10	0.8680	<0.05	<5	<5	<10	<5	<10	<10
2108	0.5976	0.2073	2.997	0.3908	0.3611	<0,025	0.1515	0.3857	6.820	0.02901	3.036	1.922
2115	-----	-----	2.82	-----	-----	-----	-----	-----	6.8	0.22	-----	-----
2129	<1,0	<0,10	<10	<10	<1,0	-----	<0,10	<1,0	<10	<0,10	<1,0	<1,0
2132	<10	<2.5	<25	<25	<10	<0.025	<10	<10	<25	<10	<10	<10
2137	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2138	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2139	< 10	< 10	< 10	< 10	< 10	< 0.002	< 10	< 10	< 10	< 10	< 10	< 10
2156	<5	<3	2.371	11.59	-----	-----	<1	<1	5.70	<5	<1	<3
2165	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	5.93	<RL	<RL	<RL
2172	<2	<2	<5	<2	<2	-----	<2	<2	5.833	<2	<2	<2
2184	<5	<5	<2.5	<10	<10	<0.045	<2.5	<2.5	5.85	<2.5	<2.5	<10
2201	<10	<10	<10	<50	<10	<0.025	<10	<10	<10	<10	<10	<10
2232	ND	ND	1.94	ND	0.33	ND	0.64	1.72	5.26	0.027	0.38	ND
2236	<2.0	<2.0	2.60	<2.0	-----	-----	<2.0	<2.0	7.15	<2.0	<2.0	<2.0
2238	<10	<10	<10	<50	<10	<0.025	<10	<10	<10	<10	<10	<10
2247	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2256	ND	ND	2.52	ND	ND	ND	ND	ND	6.46	ND	ND	ND
2290	<10	<10	<10	<50	<10	-----	<10	<10	<10	<10	<10	<10
2293	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2294	NA	NA	28	21	NA	NA	NA	NA	7	NA	NA	NA
2297	<50	<10	<50	<50	<50	<50	<50	<10	<50	<10	<50	<50
2301	-----	-----	1.94	-----	0.33	-----	0.64	1.72	5.26	0.03	0.38	-----
2310	ND	ND	ND	ND	ND	ND	ND	ND	n.d.	ND	ND	ND
2311	ND	ND	ND	ND	0.58	ND	ND	ND	n.d.	ND	ND	ND
2347	<10	<10	<50	<50	-----	-----	<10	<10	<50	<10	<10	<10
2357	<10	<10	<50	<50	<5	-----	<10	<5	<50	<10	<10	<10
2365	<10	<10	<50	<50	<5	<0.02	<10	<10	<50	<10	<10	<10
2366	<10	<10	<50	<50	<3	<0.01	<10	<10	<50	<10	<10	<10
2369	<10	<10	<50	<50	<5	<0.18	<10	<5	<50	<10	<10	<10
2372	<10	<10	<50	<50	<5.0	<0.02	<10	<10	<50	<10	<10	<10
2375	<0.025	0.05	<2.5	<2.5	<5	<0.053	<0.025	0.087	6.11	0.03	<2.5	<0.5
2379	0.14	0.20	2.93	0	0.43	0	0.02	0.27	2.30	0.19	2.26	0
2382	<10.0	<10.0	<50.0	<50.0	<5.0	<0.0250	<10.0	<5.0	<50.0	<10.0	<10.0	<10.0
2384	<10	<10	<50	<50	-----	-----	<10	<10	<50	<10	<10	<10
2385	<1	<1	3.7	<10	<1	<0,02	<1	**40**	23	<0,1	<1	<1
2390	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d
2413	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2426	nd	nd	2.07	nd	nd	0.38	-----	-----	4.65	nd	nd	nd
2429	<10	<10	<10	<50	<10	<0.025	<10	<10	<10	<10	<10	<10
2431	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2442	ND	ND	ND	ND	-----	-----	ND	ND	7.35	ND	ND	ND
2475	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2495	<5	<5	<5	<5	<5	-----	<5	<5	6.59	<5	<5	<5
2500	<2	<2	2.489	<2	0.381	<0.002	<2	<2	6.619	<2	<2	<2
2503	-----	-----	3.166	-----	1.925	-----	-----	-----	6.412	-----	-----	-----
2504	<1	<2	<5	<1	n.a.	n.a.	<0.2	<2	6.75	<2	<2	<1
2508	4.26	0.44	2.12	4.76	0.36	-----	-----	0.34	5.59	-----	0.5	0.72
2515	0.04	0.25	2.62	0.14	0.33	-----	0.21	0.25	6.37	0.04	0.44	0.05
2532	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2582	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2590	<L.O.Q.	<L.O.Q.	2.677	-----	<L.O.Q.	-----	<L.O.Q.	<L.O.Q.	3.469	<L.O.Q.	<L.O.Q.	<L.O.Q.
2643	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2649	<10	<10	<10	<50	<10	<0.0265	<10	<10	<10	<10	<10	<10
2674	<RL	<RL	<RL	<RL	< 1	< 1	<RL	<RL	5.87	<RL	<RL	<RL
2685	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2700	0.03	0.08	2.34	0.43	0.36	-----	0.02	0.26	6.65	0.04	0.61	0.07
2741	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2790	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2812	-----	-----	-----	-----	-----	-----	-----	-----	6.61	0.024	-----	-----
2817	----- W	-----	8.1600	-----	-----	-----	8.2462	----- W	0	-----	0	-----
2826	<1	<1	3.39	<1	-----	-----	<1	<1	6.32	<1	<1	<1
2864	ND	ND	ND	-----	-----	-----	-----	ND	ND	-----	-----	ND
2867	n.d	n.d	n.d	n.d	n.d	-----	n.d	n.d	5.77	n.d	n.d	n.d
2881	0.000	0.00	4.52	9.28	0.92	-----	0.00	0.78	7.10	0.00	0.66	0.00
2907	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2910	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2915	0.010	0.296	2.624	0.641	0.337	<0.01	0.0504	0.2562	5.346	0.0135	0.4193	<0.1
2917	<1	<1	2.6	<1	<1	-----	<1	<1	6.2	<0,1	<1	<1
3100	<10	<10	<10	<50	<10	<0.025	<10	<10	<10	<10	<10	<10

lab	Sb	As	Ba	B	Cr (III)	Cr (VI)	Co	Pb	Mn	Hg	Ni	Se
3116	LT2	LT0.15	LT2	LT5	0.299	LT0.002	LT2	0.3824	5.685	LT0.15	LT2	LT2
3118	<5	<2.5	-----	<5	-----	-----	<5	<5	6.28	<5	<5	<5
3122	<1.25	<0.125	3.26	<10	0.41	<0.005	<0.125	0.27	8.57	0.04	0.34	<1.25
3146	< 2	< 1	< 10	< 10	< 3	< 0.025	< 1	< 0.5	< 10	< 0.5	< 5	< 0.5
3153	<10	<10	<10	<50	<10	<0.025	<10	<10	<10	<10	<10	<10
3172	< 10	< 5	< 50	< 50	0.53	< 0.025	< 10	< 10	< 50	< 10	< 10	< 10
3176	-----	-----	3.32	-----	-----	-----	-----	-----	5.81	-----	-----	-----
3182	<5	0.133	<5	<5	1.141	<0.025	<5	<1	7.063	<1	<5	<5
3185	<10	<10	<10	<50	<10	<0.025	<10	<10	<10	<10	<10	<10
3190	<10	<10	<10	<50	<10	<0.025	<10	<10	<10	<10	<10	<10
3191	<5.00	<5.00	<5.00	<250.00	-----	-----	<10.00	<3.00	<25.00	<5.00	<10.00	<5.00
3197	<10	<0.5	<10	<10	<0.5	ND	<1	<1	<10	<1	<10	<10
3200	<10	<10	<10	<10	<5.0	<0.053	<10	<10	<10	<10	<10	<10
3218	<10	<10	<10	<50	<10	<0.053	<10	<10	<10	<10	<10	<10
3228	<5	<5	<2.5	<10	<10	<0.045	<2.5	<2.5	5.8	<2.5	<2.5	<10
3233	<5	<0.5	<5	<5	0.45	<0.025	<0.5	<0.5	7.15	<0.5	<5	<5
3237	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3243	n.d.	n.d.	3.2	0.30	0.29	n.d.	n.d.	0.16	5.2	n.d.	0.34	n.d.
3248	<10	<10	<10	<50	<10	<0.0265	<10	<10	<10	<10	<10	<10
8005	-----	-----	-----	-----	-----	-----	-----	0.302	5.685	-----	-----	-----

Lab 2236 reported <2.0 for Total Chromium
Lab 2385 possibly a false positive test result for Lead as Pb?
Lab 2817 test results withdrawn for Antimony and Lead. First reported 48.5350 for Sb and first reported 70.5750 for Pb
Lab 2881 first reported 60.64 for Antimony as Sb

Determination of migration of Other Elements on paper with ink sample #20580 (Cat.3); results in mg/kg ---continued---

lab	Sn	Org.Sn	Zn
310	0.072	-----	6.894
523	<0.05	-----	7.71
551	-----	-----	-----
623	ND	ND	ND
841	<2.5	-----	<10
1051	<2.5	-----	<10
2108	<0,125	<0,05	6.765
2115	-----	-----	3.71
2129	<3,0	-----	<10
2132	<10	<7.2	<250
2137	-----	-----	-----
2138	ND	ND	ND
2139	< 10	< 10	37.3
2156	<5	-----	6.43
2165	<RL	<RL	<RL
2172	<2	-----	<5
2184	<1	<0.77	<10
2201	<10	<3	<100
2232	0.036	ND	1.75
2236	<2.0	-----	<5.0
2238	<10	<2	<100
2247	-----	-----	-----
2256	ND	ND	5.74
2290	<10	<3	<100
2293	-----	-----	-----
2294	NA	NA	38
2297	<50	<50	<50
2301	0.04	-----	1.75
2310	ND	ND	ND
2311	ND	-----	ND
2347	<4.9	-----	<50
2357	<50	-----	<50
2365	<4.9	<0.5	<50
2366	<10	<3	<50
2369	<4.9	-----	<50
2372	<4.9	<1.8	<50
2375	0.08	-----	9.2
2379	0.12	0	1.06
2382	<3.0	<0.50	<50.0
2384	<4.9	-----	<50
2385	<1	<0,1	1.5
2390	n.d	-----	n.d
2413	-----	-----	-----
2426	10.59	nd	8.14
2429	<10	<3	<100
2431	-----	-----	-----
2442	ND	ND	ND
2475	-----	-----	-----
2495	<5	-----	11.91
2500	<2	<2	5.911
2503	-----	-----	26.14
2504	<2	n.a.	6.82
2508	0.25	-----	5.14
2515	0.04	-----	4.46
2532	-----	-----	-----
2582	-----	-----	-----
2590	<L.O.Q.	-----	11.202
2643	-----	-----	-----
2649	<10	<3	<100
2674	<RL	<RL	<RL
2685	-----	-----	-----
2700	0.03	<2	5.32
2741	ND	ND	ND
2790	-----	-----	-----
2812	-----	-----	10.41
2817	-----	-----	90.0000
2826	<1	-----	3.61
2864	-----	-----	-----
2867	n.d	n.d	n.d
2881	0.00	-----	5.86
2907	-----	-----	-----
2910	-----	-----	-----
2915	0.061	<1	5.303
2917	<1	-----	2.7
3100	<2.5	<2	<100

lab	Sn	Org.Sn	Zn
3116	LT2	LT0.45	LT5
3118	<5	<5	<5
3122	<0.2	<0.1	13.47
3146	< 3	-----	< 10
3153	<10	-----	<100
3172	< 2	< 2	< 50
3176	-----	-----	7.52
3182	<1	-----	<5
3185	<2.5	<10	<100
3190	<10	<3	<100
3191	<2.50	-----	<250.00
3197	<10	ND	<10
3200	<10	<2.5	<100
3218	<10	<3.0	<100
3228	<1.0	-----	<10
3233	<0.5	-----	6.92
3237	-----	-----	-----
3243	n.d.	n.d.	4.2
3248	<10	<3	<100
8005	-----	-----	-----

Determination of migration of Other Elements on dried paint sample #20581 (Cat.3); results in mg/kg

lab	Sb	As	Ba	B	Cr (III)	Cr (VI)	Co	Cu	Hg	Ni	Se
310	0.016	0.386	4.711	0.743	1.05	<0,02	0.611	1.341	0.012	7.427	0.013
523	<0.05	0.208	5.73	<2.5	-----	-----	0.121	<2.5	<0.025	0.4	0.118
551	-----	-----	4.307	-----	-----	-----	-----	4.489	-----	-----	-----
623	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
841	<5	<2.5	<10	<10	<5	<0.02	<10	<10	<5	<10	<10
1051	<5	<5	<10	<10	0.8690	<0.05	<5	<10	<5	<10	<10
2108	0.2182	0.9705	5.715	<0,125	0.6302	0.02508	0.4682	0.4594	<0,0125	7.122	9.258
2115	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2129	<1,0	0.294	<10	<10	1.14	-----	0.195	<10	<0,10	<1,0	<1,0
2132	<10	<2.5	<25	<25	<10	<0.025	<10	<15	<10	<10	<10
2137	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2138	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2139	< 10	< 10	< 10	< 10	< 10	< 0.002	< 10	< 10	< 10	< 10	< 10
2156	<5	<3	4.289	22.79	-----	-----	<1	<1	<5	<1	<3
2165	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
2172	<2	<2	<5	<2	<2	-----	<2	<2	<2	<2	<2
2184	<5	<5	4.92	<10	<10	<0.045	<2.5	<2.5	<2.5	<2.5	<10
2201	<10	<10	<10	<50	<10	<0.025	<10	<10	<10	<10	<10
2232	ND	ND	3.10	ND	0.69	ND	1.92	ND	ND	0.13	ND
2236	<2.0	<2.0	4.56	3.14	-----	-----	<2.0	<5.0	<2.0	<2.0	<2.0
2238	<10	<10	<10	<10	<10	<0.025	<10	<10	<10	<10	<10
2247	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2256	ND	ND	4.97	ND	ND	ND	ND	ND	ND	ND	ND
2290	<10	<10	<10	<50	<10	-----	<10	<10	<10	<10	<10
2293	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2294	NA	NA	NA	NA	NA	NA	N	N	N	N	N
2297	<50	<10	<50	<50	<50	<50	<50	<50	<10	<50	<50
2301	-----	-----	3.10	-----	0.69	-----	1.92	-----	-----	0.13	-----
2310	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
2311	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
2347	<10	<10	<10	<50	-----	-----	<10	<50	<10	<10	<10
2357	<10	<10	<50	<50	<5	-----	<10	<50	<10	<10	<10
2365	<10	<10	<50	<50	<5	<0.02	<10	<50	<10	<10	<10
2366	<10	<10	<50	<50	<3	<0.01	<10	<50	<10	<10	<10
2369	<10	<10	<50	<50	<5	<0.18	<10	<50	<10	<10	<10
2372	<10	<10	<50	<50	<5.0	<0.02	<10	<50	<10	<10	<10
2375	<0.025	0.2	4.82	<2.5	<5	<0.053	0.12	<2.5	<0.025	<2.5	<0.5
2379	0.25	1.13	5.11	0	0.70	0	0.13	0.80	0.77	3.73	0.05
2382	<10.0	<10.0	<50.0	<50.0	<5.0	<0.0250	<10.0	<50.0	<10.0	<10.0	<10.0
2384	<10	<10	<50	<50	-----	-----	<10	<50	<10	<10	<10
2385	<1	<1	2.7	<10	<1	<0,02	<1	**390**	<0,1	<1	<1
2390	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d
2413	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2426	nd	nd	nd	nd	nd	nd	nd	8.69	nd	nd	nd
2429	<10	<10	<10	<50	<10	<0.025	<10	<10	<10	<10	<10
2431	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2442	ND	ND	ND	ND	-----	-----	ND	ND	ND	ND	ND
2475	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2495	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
2500	<2	<2	4.843	<2	0.734	<0.002	<2	<2	<2	<2	<2
2503	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2504	<1	<2	5.56	<1	n.a.	n.a.	<0.2	<2	<2	<2	<1
2508	5.29	0.72	3.51	3.45	0.9	-----	0.09	1.69	0.005	0.4	1.23
2515	0.01	0.88	3.40	0	0.52	-----	0.62	0.97	0	0.62	0
2532	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2582	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2590	< L.O.Q.	< L.O.Q.	< L.O.Q.	-----	< L.O.Q.	-----	< L.O.Q.	< L.O.Q.	< L.O.Q.	7.777	< L.O.Q.
2643	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2649	<10	<10	<10	<50	<10	<0.0265	<10	<10	<10	<10	<10
2674	<RL	<RL	<RL	<RL	< 1	< 1	<RL	<RL	<RL	<RL	<RL
2685	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2700	0.02	0.28	3.46	0.23	0.47	-----	0.07	0.49	0	0.33	0.09
2741	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2790	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2812	-----	-----	-----	-----	-----	-----	0.121	-----	-----	-----	-----
2817	----- W	-----	1.4250	-----	-----	-----	9.7286	0.6414	-----	0	-----
2826	<1	<1	5.77	<1	-----	-----	<1	<1	<1	<1	<1
2864	ND	ND	ND	-----	-----	-----	-----	-----	ND	-----	ND
2867	n.d	n.d	n.d	n.d	n.d	-----	n.d	n.d	n.d	n.d	n.d
2881	0.00	0.00	0.00	12.99	0.00	-----	0.00	0.00	0.00	0.35	0.00
2907	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2910	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2915	<0.01	1.245	4.500	0.808	0.718	<0.01	0.1964	0.4870	<0.01	0.5738	<0.1
2917	<1	<1	3.0	<1	<1	-----	<1	1.8	<0,1	<1	<5
3100	<10	<10	<10	<50	<10	<0.025	<10	<10	<10	<10	<10

lab	Sb	As	Ba	B	Cr (III)	Cr (VI)	Co	Cu	Hg	Ni	Se
3116	LT2	0.4516	3.356	LT5	0.507	LT0.002	LT2	LT2	LT0.15	LT2	LT2
3118	<5	<2.5	11.27	<5	-----	-----	<5	<5	<5	<5	<5
3122	<1.25	0.26	7.20	<10	0.97	<0.005	<0.125	0.29	<0.02	0.38	<1.25
3146	< 2	3.79	< 10	< 10	< 3	< 0.010	< 1	< 10	< 0.5	< 5	< 0.5
3153	<10	<10	<10	<50	<10	<0.025	<10	<10	<10	<10	<10
3172	< 10	< 5	< 50	< 50	0.83	< 0.025	< 10	< 50	< 10	< 10	< 10
3176	-----	0.14	2.21	-----	-----	-----	-----	-----	-----	-----	-----
3182	<5	0.858	<5	<5	0.517	<0.025	<5	<5	<1	<5	<5
3185	<10	<10	<10	<50	<10	<0.025	<10	<10	<10	<10	<10
3190	<10	<10	<10	<50	<10	<0.025	<10	<10	<10	<10	<10
3191	<5.00	<5.00	<5.00	<250.00	-----	-----	<10.00	<50.00	<5.00	<10.00	<5.00
3197	<10	<0.5	<10	<10	<1	<0.053	<1	<10	<1	<10	<10
3200	<10	<10	<10	<10	<5.0	<0.053	<10	<10	<10	<10	<10
3218	<10	<10	<10	<50	<10	<0.053	<10	<10	<10	<10	<10
3228	<5	<5	<2.5	<10	<10	<0.045	<2.5	<2.5	<2.5	<2.5	<10
3233	<5	<0.5	5.01	<5	0.89	<0.025	<0.5	<5	<0.5	<5	<5
3237	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3243	n.d.	0.18	6.1	2.3	0.48	n.d.	0.11	5.0	n.d.	0.26	0.14
3248	<10	<10	<10	<50	<10	<0.0265	<10	<10	<10	<10	<10
8005	-----	0.543	3.65	-----	0.7024	-----	-----	-----	-----	-----	-----

Lab 2385 possibly a false positive test result for Copper as Cu?
Lab 2817 test result withdrawn for Antimony as Sb, first reported 44.3333

Determination of migration of Other Elements on dried paint sample #20581 (Cat.3); results in mg/kg
---continued---

lab	Sn	Org.Sn	Zn
310	0.406	-----	1.879
523	0.125	-----	<2.5
551	-----	-----	-----
623	ND	ND	ND
841	<2.5	-----	<10
1051	<2.5	-----	<10
2108	0.1417	0.07	<1,00
2115	-----	-----	-----
2129	<3,0	-----	<10
2132	<10	<7.2	<250
2137	-----	-----	-----
2138	ND	ND	ND
2139	< 10	< 10	< 10
2156	<5	-----	3.394
2165	<RL	<RL	<RL
2172	<2	-----	<5
2184	<1	<0.77	<10
2201	<10	<3	<100
2232	0.16	ND	ND
2236	<2.0	-----	<5.0
2238	<10	<2	<100
2247	-----	-----	-----
2256	ND	ND	3.87
2290	<10	<3	<100
2293	-----	-----	-----
2294	N	N	N
2297	<50	<50	<50
2301	0.16	-----	-----
2310	n.d.	n.d.	n.d.
2311	n.d.	-----	n.d.
2347	<4.9	-----	<50
2357	<50	-----	<50
2365	<4.9	<0.5	<50
2366	<10	<3	<50
2369	<4.9	-----	<50
2372	<4.9	<1.8	<50
2375	0.21	<0.14	<2.5
2379	0.33	0	0
2382	<3.0	<0.50	<50.0
2384	<4.9	-----	<50
2385	<1	<0,1	6.0
2390	n.d	-----	n.d
2413	-----	-----	-----
2426	32.07	nd	nd
2429	<10	<3	<100
2431	-----	-----	-----
2442	ND	ND	ND
2475	-----	-----	-----
2495	<5	-----	<5
2500	<2	<2	3.194
2503	-----	-----	42.09
2504	<2	n.a.	<2
2508	0.39	-----	2.59
2515	0.06	-----	0.44
2532	-----	-----	-----
2582	-----	-----	-----
2590	< L.O.Q.	-----	< L.O.Q.
2643	-----	-----	-----
2649	<10	<3	<100
2674	<RL	<RL	<RL
2685	-----	-----	-----
2700	0.16	-----	1.25
2741	ND	ND	ND
2790	-----	-----	-----
2812	-----	-----	-----
2817	-----	-----	6.2747
2826	<1	-----	<1
2864	-----	-----	-----
2867	n.d	n.d	n.d
2881	0.00	-----	0.79
2907	-----	-----	-----
2910	-----	-----	-----
2915	0.159	<1	2.421
2917	<1	-----	<1
3100	<2.5	<2	<100

lab	Sn	Org.Sn	Zn
3116	LT2	LT0.450	LT5
3118	<5	<5	<5
3122	<0.2	<0.1	<10
3146	5.17	-----	< 10
3153	<10	-----	<100
3172	< 2	< 2	< 50
3176	-----	-----	-----
3182	<1	-----	<5
3185	<2.5	<10	<100
3190	<10	<3	<100
3191	<2.50	-----	<250.00
3197	<10	-----	<10
3200	<10	<2.5	<100
3218	<10	<3.0	<100
3228	<1.0	-----	<10
3233	<0.5	-----	<5
3237	-----	-----	-----
3243	n.d.	n.d.	0.93
3248	<10	<3	<100
8005	-----	-----	-----

Determination of migration of Other Elements on piece of toy sword sample #20582 (Cat.3); results in mg/kg

lab	Sb	As	B	Cd	Cr (III)	Cr (VI)	Co	Pb	Mn	Hg	Ni	Se
310	0.019	0.083	<50	0.315	0.344	<0,02	0.037	0.417	3.608	0.012	0.737	0.004
523	0.61	0.24	<2.5	0.78	-----	-----	0.12	6.38	6.45	0.029	0.55	<0.05
551	-----	-----	-----	-----	-----	-----	-----	51.66	-----	-----	4.811	-----
623	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
841	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1051	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2108	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2115	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2129	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2132	<10	<2.5	<25	<1	<10	<0.025	<10	<10	<25	<10	<10	<10
2137	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2138	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2139	< 10	< 10	< 10	< 10	< 10	< 0.002	< 10	< 10	< 10	< 10	< 10	< 10
2156	<5	<3	<1	<0.5	-----	-----	<1	<1	<1	<3	<1	<3
2165	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2172	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2184	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2201	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2232	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2236	<2.0	<2.0	4.47	<2.0	-----	-----	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
2238	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2247	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2256	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2290	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2293	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2294	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2297	<50	<10	<50	<10	<50	<0.01	<50	<10	<50	<50	<50	<50
2301	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2310	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	47.8	n.d.	n.d.	n.d.	n.d.
2311	n.d.	n.d.	n.d.	n.d.	2.38	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
2347	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2357	<10	<10	<50	<5	<5	-----	<10	<5	<50	<10	<10	<10
2365	<10	<10	<50	<5	<5	<0.02	<10	<10	<50	<10	<10	<10
2366	<10	<10	<50	<5	<3	<0.01	<10	<10	<50	<10	<10	<10
2369	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2372	<10	<10	<50	<5	<5	<0.02	<10	<10	<50	<10	<10	<10
2375	<1 C	<0.5 C	<50 C	0.23 C	<5	<0.053	<0.5 C	8.1 C	<50 C	<0.5	<10 C	<5 C
2379	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2382	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2384	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2385	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2390	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d
2413	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2426	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2429	<10	<10	<50	<5	<10	<0.025	<10	<10	<10	<10	<10	<10
2431	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2442	ND	ND	ND	ND	-----	-----	ND	1.23	ND	ND	ND	ND
2475	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2495	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2500	<2	<2	<2	<2	<2	<0.002	<2	<2	3.698	<2	<2	<2
2503	-----	-----	2.418	-----	-----	-----	-----	-----	-----	-----	-----	-----
2504	<1	<2	<1	<2	n.a.	n.a.	<0.2	<2	<2	<2	<2	<1
2508	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2515	0.18	0.14	0.25	0.12	1.30	-----	0.08	2.42	5.04	0.02	1.29	1.28
2532	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2582	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2590	<L.O.Q.	<L.O.Q.	-----	<L.O.Q.	<L.O.Q.	-----	<L.O.Q.	<L.O.Q.	<L.O.Q.	<L.O.Q.	<L.O.Q.	<L.O.Q.
2643	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2649	<10	<10	<50	<5	<10	<0.0265	<10	22.44	<10	<10	<10	<10
2674	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2685	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2700	0.11	0.05	0.22	0.05	1.66	-----	0.03	2.37	0.87	0	0.60	0
2741	ND	ND	ND	ND	1.8	ND	ND	ND	ND	ND	ND	ND
2790	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2812	-----	-----	-----	-----	-----	-----	-----	0.75	-----	-----	-----	-----
2817	-----	-----	-----	-----	-----	-----	-----	25.7000	-----	-----	-----	-----
2826	<10	<10	<10	<10	-----	-----	<10	<10	<10	<10	<10	<10
2864	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2867	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2881	**57.74**	0.00	0.79	0.11	0.81	-----	0.00	0.97	1.19	0.00	0.38	0.00
2907	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2910	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2915	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2917	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3100	<10	<10	<50	<5	<10	<0.025	<10	<10	<10	<10	<10	<10

lab	Sb	As	B	Cd	Cr (III)	Cr (VI)	Co	Pb	Mn	Hg	Ni	Se
3116	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3118	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3122	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3146	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3153	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3172	< 10	< 5	< 50	< 2	< 0.10	< 0.025	< 10	< 5	< 50	< 10	< 10	< 10
3176	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3182	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3185	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3190	<10	<10	<10	<10	<10	<0.025	<10	<10	<10	<10	<10	<10
3191	<5.00	<5.00	<10.00	<5.00	-----	-----	<10.00	<3.00	<250.00	<5.00	<10.00	<5.00
3197	<10	<0.5	<10	<0.5	<1	ND	<1	3.3	<10	<1	<10	<10
3200	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3218	<10	<10	<50	<5.0	<10	<0.053	<10	<10	<10	<10	<10	<10
3228	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3233	<5	<0.5	<5	<0.5	1.86	<0.025	<0.5	5.29	7.22	<0.5	36.86	<5
3237	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3243	n.d.	n.d.	n.d.	n.d.	0.047	n.d.	0.043	0.22	0.61	n.d.	0.29	n.d.
3248	<10	<10	<50	<5	<10	<0.0265	<10	<10	14.9	<10	<10	<10
8005	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Lab 2236 reported <2.0 for Total Chromium
Lab 2375 first reported <0.025 for Sb, As, Cd and Co, <2.5 for B, Mn and Ni, 0.60 for Pb, <0.5 for Se
Lab 2881 possibly a false positive test result for Antimony as Sb?

Determination of migration of Other Elements on piece of toy sword sample #20582 (Cat.3); results in mg/kg ---continued---

lab	Sr	Sn	Org.Sn
310	6.622	0.027	-----
523	9.67	0.21	-----
551	-----	-----	-----
623	-----	-----	-----
841	-----	-----	-----
1051	-----	-----	-----
2108	-----	-----	-----
2115	-----	-----	-----
2129	-----	-----	-----
2132	<250	<10	<7.2
2137	-----	-----	-----
2138	-----	-----	-----
2139	< 10	< 10	< 10
2156	1.289	<5	-----
2165	-----	-----	-----
2172	-----	-----	-----
2184	-----	-----	-----
2201	-----	-----	-----
2232	-----	-----	-----
2236	<2.0	<2.0	-----
2238	-----	-----	-----
2247	-----	-----	-----
2256	-----	-----	-----
2290	-----	-----	-----
2293	-----	-----	-----
2294	-----	-----	-----
2297	<50	<50	<50
2301	-----	-----	-----
2310	n.d.	n.d.	n.d.
2311	n.d.	n.d.	n.d.
2347	-----	-----	-----
2357	<50	<50	-----
2365	<50	<4.9	<0.5
2366	<50	<10	<3
2369	-----	-----	-----
2372	<50	<4.9	<1.8
2375	<50 C	3.05 C	<0.14
2379	-----	-----	-----
2382	-----	-----	-----
2384	-----	-----	-----
2385	-----	-----	-----
2390	n.d	n.d	-----
2413	-----	-----	-----
2426	2.45	13.47	nd
2429	<100	<10	<3
2431	-----	-----	-----
2442	ND	ND	ND
2475	-----	-----	-----
2495	-----	-----	-----
2500	5.822	<2	<2
2503	2.308	-----	-----
2504	5.15	<2	n.a.
2508	-----	-----	-----
2515	5.57	0.15	-----
2532	-----	-----	-----
2582	-----	-----	-----
2590	<L.O.Q.	<L.O.Q.	<L.O.Q.
2643	-----	-----	-----
2649	<100	<10	<3
2674	-----	-----	-----
2685	-----	-----	-----
2700	0.99	0.28	-----
2741	ND	ND	ND
2790	-----	-----	-----
2812	-----	0.91	-----
2817	-----	-----	-----
2826	<10	<10	<10
2864	-----	-----	-----
2867	-----	-----	-----
2881	2.88	0.00	-----
2907	-----	-----	-----
2910	-----	-----	-----
2915	-----	-----	-----
2917	-----	-----	-----
3100	<100	<2.5	<2

lab	Sr	Sn	Org.Sn
3116	-----	-----	-----
3118	-----	-----	-----
3122	-----	-----	-----
3146	-----	-----	-----
3153	-----	-----	-----
3172	< 50	< 2	< 2
3176	-----	-----	-----
3182	-----	-----	-----
3185	-----	-----	-----
3190	<10	<10	<10
3191	<250.00	<2.50	-----
3197	8.3	<10	ND
3200	-----	-----	-----
3218	<100	<10	<3.0
3228	-----	-----	-----
3233	9.91	0.95	-----
3237	-----	-----	-----
3243	1.6	n.d.	n.d.
3248	<100	<10	<3
8005	-----	-----	-----

Lab 2375 first reported <2.5 for Strontium as Sr, 0.15 for Tin as Sn

APPENDIX 3
Analytical details for sample #20570 (Cat.1)

lab	ISO/IEC17025 accredited	Sample intake in mg	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
230	---	---	---	---	---	---
310	Yes	185.4	9.5	1.4	No	1.1
551	No	100	5	1.1	No	---
841	Yes	0.1	5.2	1.53	Yes	1.19
2108	Yes	250	12.5	1.46	Yes	1.16
2115	Yes	150	7.5	1 - 1.2	No	---
2132	Yes	100	5	1.6	Yes	1.24
2184	Yes	100	5	1.43	Yes	1.14
2236	Yes	402.1	20	1.35	Yes	1.18
2247	---	---	---	---	---	---
2290	---	---	---	---	---	---
2295	Yes	150	7.5	1.27	No	---
2299	Yes	100	5	> 6	Yes	< 1.5
2372	Yes	306.4	15	1.169	Yes	---
2375	Yes	---	---	---	---	---
2379	Yes	503.9	25.2	1.42	Yes	1.27
2382	Yes	101.3	5	>1.3	Yes	1.1-1.3
2385	Yes	300	15	>1.5	Yes	1.1
2426	Yes	198.8	10	1 Minute	No	---
2495	Yes	150	7.5	1.4	No	---
2503	Yes	103.3	---	---	---	---
2508	Yes	500	25	1.48	Yes	1.24
2812	---	100	5	1.2	No	---
2864	Yes	100	5	1.6	Yes	1.2
2915	Yes	100	5	1.57	Yes	1.2
2917	---	---	---	---	---	---
3116	Yes	200	10	---	---	---
3122	---	---	---	---	---	---
3153	Yes	100	5	1.42	Yes	1.16
3154	Yes	---	---	---	---	---
3172	Yes	---	---	---	---	---
3190	Yes	0.1	5	1.4	Yes	1.2
3191	Yes	199.8	10	1.42	Yes	1.2
3197	Yes	150	7.5	1.35	Yes	1.25
3218	Yes	200	10	1.44	Yes	1.19
3237	Yes	100 and 200	5 and 10	1.54	Yes	1.24
3247	Yes	200	10	1	No	---
3248	Yes	200	10	1.45	Yes	1.18
8005	Yes	100	5	5.4	Yes	1.15

Analytical details for sample #20575 (Cat.2)

lab	ISO/IEC17025 accredited	Sample intake in mg	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
310	Yes	671,7	33.5	1.2	No	1.2
551	No	100	5	1.1	Yes	---
841	Yes	0.15	7.5	1.33	Yes	1.15
2108	Yes	400	20	1,29	No	---
2115	Yes	150	7.5	1 - 1.2	No	---
2132	Yes	100	5	1.36	Yes	1.17
2184	Yes	200	10	1.23	No	NA
2241	Yes	100 160 200	5 8 10	1.14-1.17	No	---
2247	---	---	---	---	---	---
2290	---	---	---	---	---	---
2295	---	150	7.5	1.2	No	---
2372	Yes	538.5	25	1.193	No	---
2375	---	---	---	---	---	---
2385	Yes	500	25	>1,5	---	1,1
2426	Yes	197.5	10	1	No	---
2495	Yes	200	10	1,31	Yes	---
2503	Yes	101.9	---	---	---	---
2508	Yes	400	20	1.36	Yes	1.25
2812	Yes	100	5	1.2	No	---
2862	Yes	200	10	1.34	Yes	1.21
2864	Yes	100	5	1.6	Yes	1.2
2915	Yes	200	10	1.33	Yes	1.21
2917	Yes	500	25	1,33	Yes	1,14
3116	Yes	200	10	1.2	No	---
3122	Yes	955.7	48.1	1.24	Yes	1.16
3153	Yes	100	5	1.23	No	---
3154	---	---	---	---	---	---
3172	---	---	---	---	---	---
3191	Yes	199.9	10	1.32	No	1.24
3197	Yes	150	7,5	1,34	Yes	1,25
3214	Yes	About 300	15	1.2	No	---
3218	Yes	200	10	1.25	No	---
3233	Yes	203.9	10.2	1.32	Yes	1.17
3237	Yes	500	25	1,39	Yes	1,29
3243	Yes	601	30	---	No	---
3248	Yes	200	10	1.24	No	---
8005	Yes	200	10	1.2	No	---

Analytical details for samples #20580 and #20581 (Cat.3)

lab	ISO/IEC17025 accredited	Sample intake in mg	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
310	Yes	20580: 205.6 20581: 124.1	20580:10 20581:6.5	20580:2.5 20581:5.6	Yes	1.1
523	---	---	---	---	---	---
551	No	100	5	5.8	Yes	1.2
623	Yes	100	5	1.2	No	---
841	Yes	100	5	1.5	Yes	1.19
1051	Yes	300	15	1.7	Yes	<1.3
2108	Yes	20580: 200 20581: 250	20580:10 20581:12,5	20580: 2,31 20581: 5,64	Yes	20580: 1,15 20581: 1,14
2115	Yes	100	5	1 - 1.2	No	---
2129	Yes	---	---	dried paint: aprox. 6	Yes	dried paint: 1,15
2132	Yes	100	5	#20580: 5.62 #20581: 5.42	Yes	#20580: 1.16 #20581: 1.22
2137	Yes	200	10	1.56	Yes	1.2
2138	Yes	200	10	1.1	No	2N & 6N HCl
2139	Yes	#20580: 104.7 #20581: 102.7	#20580:5 #20581:5	#20580: 3.1 #20581: 3.9	Yes	#20580: 1.2 #20581: 1.2
2156	Yes	300	15	20580: 5.52 20581: 5.47	Yes	20580: 1.19 - 1.20
2165	Yes	20580: 200.1 20581: 101.2	20580: 5mL DI water+5mL 0.14 mol/L HCl 20581: 5mL	20580: 1.2 20581: 2.8	Yes	20581: 1.2
2172	Yes	about 100	about 5	#20580: 3.56 #20581: 5.28	Yes	about 1.20
2184	Yes	100	5	#20580: 4.16 #20581: 5.37	Yes	#20580: 1.10 #20581: 1.25
2201	Yes	#20580:200.9 #20581:201.3	10	#20580: 3.53 #20581: 5.35	Yes	#20580: 1.20 #20581: 1.16
2232	Yes	---	---	---	Yes	---
2236	Yes	20580 (401.6) 20581 (406.1)	20580 (20) 20581 (20)	20580 (1.77) 20581 (1.56)	Yes	20580 (1.12) 20581 (1.16)
2238	Yes	100	5	20580: 2.05 20581: 4.31	Yes	20580:1.24 20581:1.23
2247	---	---	---	---	---	---
2256	Yes	20580 151.2 20581 133.0	20580 7.56 20581 6.65	20580: 3.989 20581: 5.793	Yes	20580: 1.196 20581: 1.178
2290	---	---	---	---	---	---
2293	---	---	---	---	---	---
2294	Yes	580= 0.15 581= 0.1501 582= 0.1501	7.5	580=5.7 581=6.5 582=1.25	Yes	580=1.11 581=1.28 582=1.25
2297	Yes	0.1	50	1.5	Yes	1.28
2301	No	0.2033	10	1.4	Yes	1.3
2310	Yes	200	10	1.4 (#20580) 4.5 (#20581)	Yes	1.08 (#20580) 1.09 (#20581)
2311	Yes	100	5	1.28 (#20580) 5.28 (#20581)	Yes	1.16 (#20581)
2347	Yes	---	---	---	---	---
2357	Yes	0.2	10	---	---	---
2365	Yes	100	5	>1.3	Yes	1.2
2366	Yes	#20580:200 #20581:300	#20580:10 #20581:15	#20580:1.62 #20581:1.82	Yes	#20580:1.18 #20581:1.20
2369	---	---	---	---	---	---
2372	Yes	207.5	10	1.198	No	---
2375	---	---	---	---	---	---
2379	Yes	468.9	23.5	5.86	Yes	1.23
2382	Yes	20580# 110.1 20581# 114.1	20580# 5 20581# 6	>1.3	Yes	1.1-1.3
2384	Yes	200	10	#20580: 2.00 #20581: 5.30	Yes	#20580: 1.17 #20581: 1.15
2385	Yes	200	10	1,2	No	---
2390	Yes	20580 203.6 20581 202.6	20580 10.2 20581 10.1	20580 4.21 20581 4.42	Yes	20580: 1.21 20581: 1.23
2413	---	---	---	---	---	---

lab	ISO/IEC17025 accredited	Sample intake in mg	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
2426	Yes	101.9	10	7	Yes	1
2429	Yes	200	10	2	Yes	1.2
2431	Yes	100	5	4.03	Yes	1.21
2442	Yes	100	5	1.28	No	---
2475	---	---	---	---	---	---
2495	Yes	200	10	2,07	Yes	1,20
2500	Yes	100.8	5	NA	Yes	1.21
2503	Yes	101.9 Ink 124.4 Paint	---	---	---	---
2504	Yes	#20580 = 100 #20581 = 200	#20580 = 5 #20581 = 10	#20580=2.43 #20581=6.16	Yes	#20580 = 1.23 #20581 = 1.24
2508	---	---	---	---	---	---
2515	Yes	100.8	5	1.55	Yes	1.19
2532	---	---	---	---	---	---
2582	---	---	---	---	---	---
2590	Yes	1002	50	1,32	No	---
2643	Yes	100	5	---	No	---
2649	Yes	100	5	1.0 to 2.0	No	---
2674	No	about 100	5	>1.2	No	about 1.2
2685	---	---	---	---	---	---
2700	Yes	0.2	10	#20580: 1.6 #20581: 5.5	Yes	1.2
2741	Yes	0.1	5	---	Yes	1.25
2790	Yes	200	10	1.5	No	---
2812	Yes	0.1	5	1.2	No	---
2817	No	240	16	1.2	Yes	1.28
2826	No	100	5	---	Yes	1.1 - 1.3
2864	Yes	100	5	1.6	Yes	1.2
2867	Yes	200	10	20580:1.21	Yes	20581: 1.17
2881	Yes	20580 - 400 20581 - 500	10 per one sample	1.4	Yes	1.1
2907	---	---	---	---	---	---
2910	Yes	100	5	>2.0	Yes	1.2
2915	---	100	5	5.9	Yes	1.21
2917	---	---	---	---	---	---
3100	Yes	#20580:200.1 #20581:100.2	#20580:10 #20581:5	#20580:5.65 #20581:5.92	Yes	#20580:1.19 #20581:1.16
3116	Yes	200	10	1.7 / 5.8	Yes	1.2
3118	Yes	100	5	1.44 #20580 1.77 #20581	Yes	1.28 #20580 1.25 #20581
3122	Yes	#20580: 400 #20581: 209.7	#20580: 20.35 #20581: 10.5	#20580: 4.00 #20581: 5.03	Yes	#20580: 1.16 #20581: 1.10
3146	Yes	200	#20581: 10	#20580: 1.6 #20581: >2.5	Yes	#20580: 1.1 #20581: 1.1
3153	Yes	100	5	2.8	Yes	1.17
3172	---	---	---	---	---	---
3176	Yes	100	5,5	1,15	No	---
3182	Yes	100	5	#20580: 2.04 #20581: 5.65	Yes	1.20 #20580 1.23 #20581
3185	Yes	200	10	#20580: 6.00 #20581: 5.72	Yes	#20580:1.23 #20581:1.17
3190	Yes	100	5	About 5.0	Yes	About 1.2
3191	Yes	200.2	10	5.46	Yes	1.2
3197	Yes	150	7,5	20580: 1,97 20581: 5,50	Yes	20580: 1,26 20581: 1,20
3200	Yes	20580: 100.5 20581: 110.0	20580: 5 20581: 5.5	20580: 4.10 20581: 5.11	Yes	20580: 1.27 20581: 1.22
3218	Yes	200	10	20580: 3.80 20581: 5.73	Yes	20580: 1.21 20581: 1.24
3228	Yes	100	5	>1.2	Yes	about 1.2
3233	Yes	102.2 paper/ 114.4 paint / 101.2 gold coating	5.1 paper/ 5.7 paint / 5.1 gold coating	1.17 paper/ 1.18 paint/ 1.13 gold coating	Yes	1.15 paper/ 1.15 paint/ 1.16 gold coating
3237	Yes	100 and 200	5 and 10	1,77	Yes	1,28

lab	ISO/IEC17025 accredited	Sample intake in mg	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
3243	Yes	#20580: 600 #20581: 489	#20580: 30 #20581: 24.5	---	No	---
3248	Yes	200	10	5.32	Yes	1.21
8005	Yes	200	10	>2	Yes	~1.15

Analytical details for sample #20582 (Cat.3)

lab	Safety standard by which the sample failed for children	Sample intake in mg	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
310	EN71-3 cat 3, limit of copper of 7700 mg/kg is exceeded	67,4	5	data not available	No	data not available
523	EN71-3:2019 Cat 3 fails in cooper	70	5	1.38	Yes	1.23
551	EN71-3:2019 for Copper (Cu) and Lead (Pb)	100	5	1.1	No	---
623	EN 71-3	Substrate = 500 Coating = 100	Substrate = 25 Coating = 5	1.19	No	---
841	EN71-3:2019	100	5	1.36	Yes	1.12
1051	EN71-3:2019	300	15	1.5	Yes	<1.3
2108	high amount of copper in paint	73,8; result calculated with 100	5	1,28	No	---
2115	NO	13800	692	1 - 1.2	No	---
2129	---	---	---	---	---	---
2132	EN71-3:2019	371	5	1.19	No	---
2137	Pass	200	10	1.56	Yes	1.2
2138	---	---	---	---	---	---
2139	According to EN 71-3, sample #20582 is passed	202.6	10	1.1	No	---
2156	---	2000	100	1.27	Yes	1.19
2165	EN71-3: 2019	Coating: 84.1	5	1.1	No	---
2172	Directive 2009/48/EC	about 100	about 5.00	1.56	Yes	1.18
2184	EN71-3:2019	36.8	5	1.24	No	NA
2201	EN71-3:2019	196.5	10	1.29	Yes	1.17
2232	---	---	---	---	No	---
2236	---	402	20	1.13	No	---
2238	EN71-3:2019	100	5	1.21	No	\
2247	---	---	---	---	---	---
2256	EN 71-3	103.8	5.19	1.51	Yes	1.174
2290	BS EN 71-3:2019	0.0157	5	1.37	Yes	1.17
2293	---	---	---	---	---	---
2294	---	---	---	---	---	---
2297	EN 71-3	100	50	1.59	Yes	1.26
2301	---	---	---	---	---	---
2310	EN71-3:2019	200	10	1.4 (#20580) / 4.5 (#20581)	Yes	1.08 (#20580) / 1.09 (#20581)
2311	EN 71-3:2019, Toy safety directive (2009/48/EC)	16	5	1.21	Yes	---
2347	---	---	---	---	---	---
2357	---	---	---	---	---	---
2365	EN71-3-2019	100	5	>1.3	Yes	1.20
2366	EN71-3:2019	150	7.5	1.63	Yes	1.18
2369	---	---	---	---	---	---
2372	EN71-3:2019	516.1	25	1.254	No	---
2375	---	---	---	---	---	---
2379	Fail	167.5	8.4	1.28	No	---

lab	Safety standard by which the sample failed for children	Sample intake in mg	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
2382	EN71-3:2019 Part3 migration of certain elements	56.3	5	>1.3	Yes	1.1-1.3
2384	EN71-3	188	10	1.52	Yes	1.12
2385	---	500	25	1,1	No	---
2390	EN 71-3 Cat 3	508.3	25.4	1.26	No	---
2413	---	---	---	---	---	---
2426	---	101.9	10	7	Yes	1
2429	EN71-3	0.1	5	1.3	Yes	1.2
2431	BS EN 71-3 2019	100	5	1.55	Yes	1.26
2442	---	---	---	---	---	---
2475	---	---	---	---	---	---
2495	EN71-3 CAT 3	103,5	5,17	1,34	No	---
2500	EN 71-3：2019 Cat III	100.3	5	NA According to EN 71-3:2019, stand at (22±3）℃ for 5 min, then check the pH of the mixture is between 1.1-1.3	Yes	1.23
2503	Sample Passes EN 71-3 Cat 3 limits Table 2	114	---	---	---	---
2504	---	200	10	1.22	No	1.22
2508	---	1000	50	1.34	Yes	1.26
2515	EN71-3	773	5.0	1.2	No	1.9
2532	---	---	---	---	---	---
2582	---	---	---	---	---	---
2590	---	519	25	1.20	No	---
2643	EN71-3	400	20	-	No	---
2649	EN71-3:2019	100	5	1.0 to 2.0	No	---
2674	EN71-3-2019	coating toy about 100/ base material toy about 200	coating toy 5/ base material toy 10	about 1.2	Yes	---
2685	---	---	---	---	---	---
2700	EN71-3:2019 sample is fail Copper for Golden coating	0.0328	5	1.2	No	---
2741	Coating on Sword	0.081	5	---	Yes	1.2
2790	---	---	---	---	---	---
2812	---	0.1	5	1.2	No	---
2817	According to UNE EN 71-3	250	12.5	1.20	Yes	1.27
2826	Toy Safety Directive, 2009/48/EC	100	5	---	Yes	1.1 - 1.3
2864	---	---	---	---	---	---
2867	EN 71-3:2019	30 Coating	5	1.22	No	---
2881	Category III in 71 - 3 Standard (Polimeric and similar materials, including laminates, whether textile reinforced, but excluding other textiles)	All sample was used: 1000	50	1.4	Yes	1.15
2907	---	---	---	---	---	---
2910	EN 71-3	100	5	>1.8	Yes	1.2
2915	EN71-3	Scraped-off paint coating 100/ Base material (black plastic) 200	5 scraped-off paint coating/ 10 base material (black plastic)	pH scraped-off paint coating solution was 1.53. pH Base material (black plastic) solution was 1.35	Yes	1.20
2917	DIN EN 71-3	60	10	1,3	Yes	1,1

lab	Safety standard by which the sample failed for children	Sample intake in mg	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
3100	EN 71-3:2019	100.3	5	1.37	Yes	1.17
3116	EN71-3:2019, Cat III (coating material)	54.8	5	1.23	No	---
3118	safety of toys EN 71 part 3 cat III	100	5	1.60	Yes	1.26
3122	According to EN 71-3:2019	74.6	6	1.25	Yes	1.10
3146	---	---	---	---	---	---
3153	EN71-3:2019	100	5	1.25	No	---
3172	---	---	---	---	---	---
3176	EN 71-3	500	25	1,2	No	---
3182	EN71-3:2019	100	5	1.77	Yes	1.25
3185	EN71-3:2019 for gold color coating	100 gold color coating	5	1.6	Yes	1.18
3190	EN 71-3:2019	19.7	5	1.2	No	/
3191	EN 71-3:2019	200.0	10.0	1.79	Yes	1.20
3197	---	72,4	5	1,48	Yes	1,16
3200	Gold Coating	20582:100.0	20582:5	20582:1.43	Yes	20582:1.23
3218	EN71-3:2019	100	5	1.26	No	/
3228	EN 71-3-2019	100	5	about 1.2	No	---
3233	EN 71-3-2019	102.2 paper/ 114.4 paint/ 101.2 gold coating	5.1 paper/ 5.7 paint/ 5.1 gold coating	1.17 paper/ 1.18 paint/ 1.13 gold coating	Yes	1.15 paper/ 1.15 paint/ 1.16 gold coating
3237	---	500	25	1,35	Yes	1,25
3243	---	600	30	---	No	---
3248	EN71-3:2019	100	5	1.27	No	---
8005	EN71-3:2019 Cat III: coating Fail in copper	100	5	1.21	No	---

APPENDIX 4

Number of participants per country

2 labs in	BANGLADESH
1 lab in	BRAZIL
1 lab in	COLOMBIA
1 lab in	CYPRUS
2 labs in	FRANCE
9 labs in	GERMANY
1 lab in	GUATEMALA
9 labs in	HONG KONG
4 labs in	INDIA
3 labs in	INDONESIA
4 labs in	ITALY
2 labs in	MALAYSIA
1 lab in	MAURITIUS
3 labs in	MEXICO
26 labs in	P.R. of CHINA
2 labs in	PAKISTAN
1 lab in	PERU
1 lab in	POLAND
1 lab in	SINGAPORE
4 labs in	SOUTH KOREA
2 labs in	SPAIN
1 lab in	SRI LANKA
1 lab in	SWEDEN
3 labs in	TAIWAN
3 labs in	THAILAND
1 lab in	THE NETHERLANDS
6 labs in	TURKEY
3 labs in	U.S.A.
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
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

Literature

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2 Council Directive 88/378/EEC
3 Council Directive 2009/48/EC
4 EN71-3:19, Safety of Toys - Migration of Elements
5 16 CFR § 1303.1
6 16 CFR § 1303.2
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11 ISO5725:86
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