Results of Proficiency Test
Metals in dried Paint
April 2020

Organized by: Institute for Interlaboratory Studies
Spijkenisse, the Netherlands

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Report: iis20V01

July 2020

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1 INTRODUCTION

Since 2008 the USA Consumer Product Safety Improvement Act (CPSIA) (sec. 101) bans Lead in toys. This USA legislation reduces the amount of total Lead content in the substrates of children's products to 600 ppm by 2009, to 100 ppm by 2011 and the total Lead content in surface coatings or paint to 90 mg/kg by 2009.
Since 2008 the Institute for Interlaboratory Studies (iis) organizes every year a proficiency test on total Lead in Dried Paint. In 2015 it was decided to extend the scope with other metals on request of a number of participants. During the annual proficiency testing program 2019/2020 it was decided to continue the proficiency test for the analysis of Metals in dried Paint.
In this interlaboratory study 122 laboratories in 32 different countries registered for participation. See appendix 4 for the number of participants per country.
In this report the results of this 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. Sample analyzes for fit-for-use and homogeneity testing were subcontracted to an ISO/IEC17025 accredited laboratory. It was decided to send two different dried paint samples both positive on a number of metals of approximately 0.5 grams each. The first sample is a dried white paint labelled #20565 and the second sample is a dried light green paint labelled #20566.
The participants were requested to report the 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 accreditation scope. This ensures strict adherence to protocols for sample preparation and statistical evaluation and 100% confidentiality of participant’s data. Feedback from the participants on the reported data is encouraged and customer’s satisfaction is measured on regular basis by sending out questionnaires.

2.2 PROTOCOL

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

2.3 CONFIDENTIALITY STATEMENT

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

2.4 SAMPLES

For the first sample a batch of white dried paint was selected which was artificially fortified with Chromium, Lead and Manganese. After thorough mixing, the paint batch was applied to plastic sheets and after drying, the paint was scraped off and milled. Finally, the milled paint batch was divided over 150 plastic bags of 0.5 gram each and labelled #20565.
The homogeneity of the subsamples was checked by the determination of Chromium and Manganese on eight stratified randomly selected subsamples using an in house test method.

	Chromium as Cr in mg/kg	Manganese as Mn in mg/kg
Sample 1	65	86
Sample 2	65	86
Sample 3	62	84
Sample 4	63	85
Sample 5	67	89
Sample 6	66	88
Sample 7	66	90
Sample 8	61	82

Table 1: homogeneity test results of subsamples #20565

From the above test results the relative standard deviations RSD_r were calculated and compared with 0.3 times the corresponding relative standard deviation of the reproducibility of the reference method in agreement with the procedure of ISO13528, Annex B2 in the next table.

	Chromium as Cr in mg/kg	Manganese as Mn in mg/kg
RSD_r (observed)	3.3%	3.1%
Reference method	Horwitz	Horwitz
0.3 x RSD_R (reference method)	2.6%	2.5%
0.3 x RSD_R (previous PTs)	3.3%	3.3%

Table 2: evaluation of the relative standard deviations of subsamples #20565

The calculated relative standard deviations RSD_r for both metals were not in agreement with 0.3 times the RSD_R of the reference method, but they did meet 0.3 times the RSD_R from previous proficiency tests (see chapter 4.3, table 7). Therefore, the homogeneity of the subsamples #20565 was assumed.

For the second sample a batch of light green dried paint was selected which was artificially fortified with Cobalt, Lead and Selenium. After thorough mixing, the paint batch was applied to plastic sheets and after drying, the paint was scraped off and milled. Finally, the milled paint batch was divided over 150 plastic bags of 0.5 gram each and labelled #20566.
The homogeneity of the subsamples was checked by the determination of Cobalt and Lead on eight stratified randomly selected subsamples using an in house test method.

	Cobalt as Co in mg/kg	Lead as Pb in mg/kg
Sample 1	39.0	56.9
Sample 2	39.5	57.0
Sample 3	39.4	58.9
Sample 4	39.4	58.9
Sample 5	40.7	59.0
Sample 6	38.4	56.1
Sample 7	40.8	58.2
Sample 8	39.7	58.6

Table 3: homogeneity test results of subsamples #20566

From the above test results the relative standard deviations RSD_r were calculated and compared with 0.3 times the corresponding relative standard deviation of the reproducibility of the reference method in agreement with the procedure of ISO13528, Annex B2 in the next table.

	Cobalt as Co in mg/kg	Lead as Pb in mg/kg
RSD_r (observed)	2.0%	1.9%
Reference method	Horwitz	Horwitz
0.3 x RSD_R (reference method)	2.8%	2.6%

Table 4: evaluation of the relative standard deviations of subsamples #20566

The calculated relative standard deviations RSD_r for both metals were in agreement with 0.3 times the RSD_R of the reference method. Therefore, the homogeneity of the subsamples #20566 was assumed.

To each of the participating laboratories, one subsample of #20565 and one subsample of #20566 were sent on March 18, 2020.

2.5 ANALYZES

The participants were requested to determine on both samples #20565 and #20566 the concentration of total Antimony as Sb, total Arsenic as As, total Cadmium as Cd, total Chromium as Cr, total Cobalt as Co, total Copper as Cu, total Lead as Pb, total Manganese as Mn, total Mercury as Hg, total Nickel as Ni, total Selenium as Se, total Aluminum as Al, total Strontium as Sr and total Zinc as Zn. It was also requested to report if the laboratory was accredited for the determined components and to report some analytical details.

It was explicitly requested to treat the samples as if they were routine samples and to report the test results using the indicated units on the report form and not to round the test results, but to report as much significant figures as possible. It was also requested not to report “less than’ test results, which are above the detection limit, because such test results cannot be used for meaningful statistical evaluations.

To get comparable test results a detailed report form and a letter of instructions are prepared. On the report form the reporting units are given as well as the appropriate reference test methods (when applicable) that will be used during the evaluation. The detailed report form and the letter of instructions are both made available on the data entry portal www.kpmd.co.uk/sgs-iis-cts/. The participating laboratories are also requested to confirm the sample receipt on this data entry portal. The letter of instructions can also be downloaded from the iis website www.iisnl.com.

3 RESULTS

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

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

3.1 STATISTICS

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

First, the normality of the distribution of the various data sets per determination was checked by means of the Lilliefors-test, a variant of the Kolmogorov-Smirnov test and by the calculation of skewness and kurtosis. Evaluation of the three normality indicators in combination with the visual evaluation of the graphic Kernel density plot, lead to judgement of the normality being either ‘unknown’, ‘OK’, ‘suspect’ or ‘not OK’.
After removal of outliers, this check was repeated. If a data set does not have a normal distribution, the (results of the) statistical evaluation should be used with due care.

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 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 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. The Kernel Density Graph 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 of this interlaboratory study.

The target standard deviation was calculated from the literature reproducibility by division with 2.8. In case no literature reproducibility was available, other target values were used. In some cases, a reproducibility based on former iis proficiency tests could be used.

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

The z-scores were calculated according to:

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

The $z_{(target)}$ scores are listed in the result tables in appendix 1.

Absolute values for z<2 are very common and absolute values for z>3 are very rare.
The usual interpretation of z-scores is as follows:

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

4 EVALUATION

In this interlaboratory study serious problems were encountered with the dispatch of the samples due to the COVID-19 pandemic. Therefore, the reporting time on the data entry portal was extended with another five weeks. Finally, twelve participants did not report any test results at all.
In total 110 laboratories reported 770 numerical test results. Observed were 27 statistically outlying test results, which is 3.5% of the numerical test results. 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 COMPONENT

In this section the reported test results are discussed per sample and per component. The test methods which were used by the various laboratories were taken into account for explaining the observed differences when possible and applicable. These test methods are also in the tables in appendix 1 together with the original data. The abbreviations, used in these tables, are listed in appendix 5.

Unfortunately, a suitable reference method, providing the precision data, is not available for the determination of metals in paint. Therefore, the calculated reproducibility was compared against the reproducibility estimated from the Horwitz equation.

Sample #20565

Total Chromium as Cr: This determination may be problematic at a consensus value of 60.9 mg/kg. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the estimated reproducibility using the Horwitz equation.

Total Lead as Pb: This determination may be problematic at a consensus value of 74.0 mg/kg. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the estimated reproducibility using the Horwitz equation.

Total Manganese as Mn: This determination may be problematic at a consensus value of 81.7 mg/kg. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the estimated reproducibility using the Horwitz equation.

Total Aluminum as Al: This determination may be problematic at a consensus value of 1022 mg/kg. Four statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the estimated reproducibility using the Horwitz equation.

Total Strontium as Sr: This determination may be problematic at a consensus value of 740 mg/kg. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the estimated reproducibility using the Horwitz equation.

The concentrations reported for all other Elements were near or below the detection limit. Therefore, no z-scores were calculated. See appendix 2 for the reported test results.

Sample #20566

Total Cobalt as Co: This determination may be problematic at a consensus value of 42.6 mg/kg. No statistical outliers were observed. However, the calculated reproducibility is not in agreement with the estimated reproducibility using the Horwitz equation.

Total Copper as Cu: This determination was not problematic at a consensus value of 34.2 mg/kg. Two statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the estimated reproducibility using the Horwitz equation.

Total Lead as Pb: This determination may be problematic at a consensus value of 62.3 mg/kg. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the estimated reproducibility using the Horwitz equation.

Total Manganese as Mn: This determination may be problematic at a consensus value of 33.6 mg/kg. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the estimated reproducibility using the Horwitz equation.

Total Selenium as Se: This determination may be problematic at a consensus value of 65.9 mg/kg. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the estimated reproducibility using the Horwitz equation.

Total Aluminum as Al: This determination may be very problematic at a consensus value of 1223 mg/kg. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not at all in agreement with the estimated reproducibility using the Horwitz equation.

Total Strontium as Sr: This determination may be problematic at a consensus value of 726 mg/kg. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not in agreement with the estimated reproducibility using the Horwitz equation.

The concentrations reported for all other Elements were near or below the detection limit. Therefore, no z-scores were calculated. See appendix 2 for the reported test results.

4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES

A comparison has been made between the reproducibility as declared by the estimated target reproducibility using the Horwitz equation and the reproducibility as found for the group of participating laboratories. The number of significant test results, the average, the calculated reproducibility (2.8 * standard deviation) and the estimated target reproducibility are presented in the next tables.

Component	unit	n	average	2.8 * sd	R (target)
Total Chromium as Cr	mg/kg	80	60.9	17.6	14.7
Total Lead as Pb	mg/kg	106	74.0	21.7	17.4
Total Manganese as Mn	mg/kg	55	81.7	22.7	18.9
Total Aluminum as Al	mg/kg	40	1022	345	161
Total Strontium as Sr	mg/kg	41	740	191	123

Table 5: reproducibilities of tests on sample #20565

Component	unit	n	average	2.8 * sd	R (target)
Total Cobalt as Co	mg/kg	67	42.6	12.8	10.8
Total Copper as Cu	mg/kg	55	34.2	9.8	9.0
Total Lead as Pb	mg/kg	107	62.3	17.0	15.0
Total Manganese as Mn	mg/kg	53	33.6	10.4	8.9
Total Selenium as Se	mg/kg	54	65.9	17.7	15.7
Total Aluminum as Al	mg/kg	42	1223	625	188
Total Strontium as Sr	mg/kg	43	726	201	121

Table 6: reproducibilities of tests on sample #20566

Without further calculations, it could be concluded that for the determined elements there is not a good compliance of the group of participating laboratories with the strict target results calculated with the Horwitz equation. The group of participating laboratories show to have difficulties with this determination. The problematic tests have been discussed in paragraph 4.1.

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

	April 2020	April 2019	April 2018	April 2017	April 2016
Number of reporting laboratories	110	113	133	132	152
Number of test results	770	417	638	975	1133
Number of statistical outliers	27	22	25	24	33
Percentage of statistical outliers	3.5%	5.3%	3.9%	2.5%	2.9%

Table 7: comparison with previous proficiency tests

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

The performance of the determinations of the proficiency tests was compared, expressed as relative standard deviation (RSD) of the PTs, see next table.

Component	April 2020	April 2019	April 2018	April 2017	April 2016	April 2014-2015	Horwitz RSD (2500 - 25 mg/kg)
Total Antimony	n.e.	n.e.	n.e.	n.e.	15%	n.e.	5 - 10%
Total Arsenic	n.e.	9%	n.e.	9%	n.e.	n.e.	5 - 10%
Total Cadmium	n.e.	n.e.	7%	n.e.	7-8%	n.e.	5 - 10%
Total Chromium	10%	10%	9%	9-12%	9%	n.e.	5 - 10%
Total Cobalt	11%	7%	29%	8%	30%	7%.	5 - 10%
Total Copper	10%	n.e.	n.e.	n.e.	n.e.	n.e.	5 - 10%
Total Lead	10%	8%	9%	9%	10%	6 - 9%	5 - 10%
Total Manganese	10-11%	8%	n.e..	n.e.	n.e.	n.e.	5 - 10%
Total Mercury	n.e.	n.e.	11%	14%	18%	n.e.	5 - 10%
Total Nickel	n.e.	n.e.	5%	13%	5%	13%.	5 - 10%
Total Selenium	10%	n.e.	n.e.	n.e.	n.e.	n.e.	5 - 10%
Total Aluminum	12-18%	n.e.	n.e.	n.e.	n.e.	n.e.	5 - 10%
Total Strontium	9-10%	n.e.	n.e.	n.e.	n.e.	n.e.	5 - 10%

Table 8: development of the relative standard deviations (RSD) over the years.

4.4 EVALUATION OF THE ANALYTICAL DETAILS

Many different test methods were mentioned. The American CPSC-CH-E1003-09 method (“For determining Lead (Pb) in Paint and Other Similar Surface Coatings) was used by about 50% of the participants. Also, other methods were reported and sometimes the method used was depending on the metal to be determined. Surprisingly, some of these test methods are not designed to determine metals in dried paint. For example, EN16711 is for metals in textile and IEC62321 for metals in electro technical products.
For this PT also some analytical details were requested and these are submitted by most of the participants, see appendix 3. Based on the answers given by the participants the following can be summarized:
About 85% of the reporting participants mentioned that they are accredited for the determination of Metals in dried Paint.

About 20% of the reporting participants used less than 100mg as sample intake, about 55% used 100mg, about 25% used more than 100mg as sample intake.
Nearly all laboratories used a strong acid like Nitric Acid (or Nitric Acid in combination with Hydrochloric Acid and/or Hydrofluoric Acid) to digest the dried paint. About 70% of the participants used a Nitric Acid with a concentration ≥ 65%.

When the analytical details where investigated separately, it appeared that the effect on the determination of Metals in dried Paint is negligible.

5 DISCUSSION

The participants were able to detect the spiked elements in both samples correctly in this proficiency test.
The RSD of the determined elements did not deviate from previous years.
More difficulties are found with the elements Aluminum and Strontium which were present in the paint itself. Maybe the high concentration of both elements may partly explain the large variation found.

6 CONCLUSION

When the concentration limit recommended in UN Environment's "Model Law and Guidance for Regulating Lead Paint" 90 mg/kg total Lead is taken into account 5% of the respondents would reject sample #20565 based on the total Lead content. All reporting participants would accept sample #20566 based on the total Lead content.

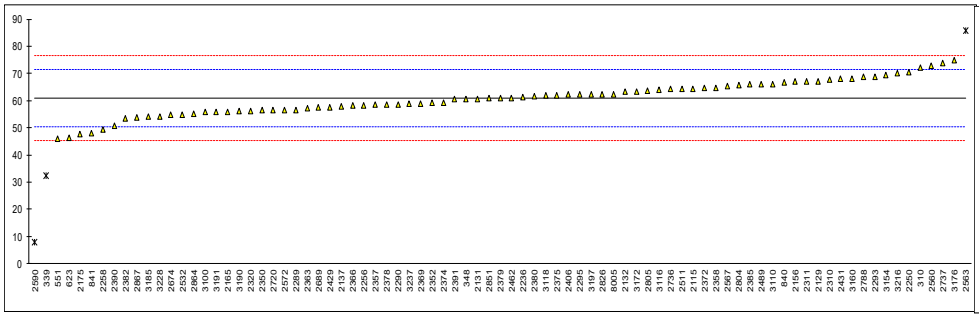
Each participating laboratory will have to evaluate its performance in this study and decide about any corrective actions if necessary. Therefore, participation on a regular basis in this scheme could be helpful to improve the performance and thus increase of the quality of the analytical results.

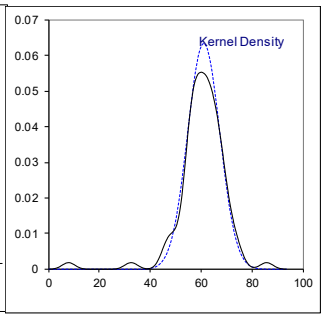
APPENDIX 1

Determination of Total Chromium as Cr on sample #20565; results in mg/kg

lab	method	value	mark	z(targ)	remarks
210		-----		-----	
310	In house	72	C	2.11	First reported 89.086
339		32.44	R(0.01)	-5.42	
348	CPSC-CH-E1003-09	60.51		-0.08	
551	In house	45.98		-2.85	
623	In house	46.23		-2.80	
632		-----		-----	
840	In house	66.870		1.13	
841	ISO8124-5	48		-2.46	
1051		-----		-----	
2115	EN16711-1	64.47		0.67	
2129	CPSC-CH-E1003-09	67		1.16	
2131	In house	60.672		-0.05	
2132	CPSC-CH-E1003-09	63.27		0.45	
2137	IEC62321	57.90		-0.58	
2156	EPA3052	67.0		1.16	
2165	ASTM F963	55.8		-0.98	
2175	IEC62321-5	47.65		-2.53	
2182		-----		-----	
2184		-----		-----	
2232		-----		-----	
2236	CPSC modified	61.21		0.05	
2247		-----		-----	
2250	EN16711-1	70.494		1.82	
2256	ASTM F963	58.32		-0.50	
2258	CPSC-CH-E1003-09	49.498		-2.18	
2286		-----		-----	
2287		-----		-----	
2289	CPSC-CH-E1003-09	56.64		-0.82	
2290	CPSC-CH-E1003-09	58.69		-0.43	
2293	CPSC-CH-E1003-09	68.89		1.52	
2294	CPSC-CH-E1003-09	NA		-----	
2295	CPSC-CH-E1003-09	62.2		0.24	
2296		-----		-----	
2310	CPSC-CH-E1003-09	67.8		1.31	
2311	CPSC-CH-E1003-09	67		1.16	
2314		-----		-----	
2320	EPA3051	56.08		-0.92	
2347		-----		-----	
2350	EPA3052	56.5		-0.84	
2352	IEC62321-5	59.2		-0.33	
2355		-----		-----	
2357	ISO8124-5	58.55		-0.45	
2358	CPSC-CH-E1003-09	64.8		0.74	
2363	In house	57.1		-0.73	
2365		-----		-----	
2366	CPSC-CH-E1003-09	58.046		-0.55	
2369	EPA3052	59.05		-0.36	
2370		-----		-----	
2372	EPA3052	64.6		0.70	
2374	In house	59.3		-0.31	
2375	EN16711-1	62		0.20	
2378	EN16711-1	58.6		-0.44	
2379	IEC62321-5	60.89	C	-0.01	First reported 81.66
2380	CPSC-CH-E1003-09	61.69		0.15	
2381		-----		-----	
2382	ASTM F963	53.4		-1.43	
2384		-----		-----	
2385	EPA3052	66		0.97	
2390	CPSC-CH-E1003-09	50.89		-1.91	
2391	CPSC-CH-E1003-09	60.5		-0.08	
2406	CPSC-CH-E1003-09	62.18		0.24	
2413		-----		-----	
2429	CPSC-CH-E1003-09	57.54		-0.64	
2431	In house	68.00		1.35	
2453		-----		-----	
2460		-----		-----	
2462	EPA3052	60.90		0.00	
2476		-----		-----	
2480		-----		-----	
2489	In house	66		0.97	
2511	CPSC-CH-E1003-09	64.3		0.64	
2522		-----		-----	
2529		-----		-----	

lab	method	value	mark	z(targ)	remarks
2532	CPSC-CH-E1003-09	54.94		-1.14	
2560	CPSC-CH-E1003-09	72.72		2.25	
2561		-----		-----	
2563		85.6	R(0.05)	4.70	
2567	CPSC-CH-E1003-09	65.2		0.81	
2572	CPSC-CH-E1003-09	56.62		-0.82	
2582		-----		-----	
2590	CPSC-CH-E1003-09	7.875	C,R(0.01)	-10.10	First reported 5.225
2642		-----		-----	
2674	EPA3052	54.9		-1.15	
2678		-----		-----	
2689	EPA3051	57.4		-0.67	
2713		-----		-----	
2720	CPSC-CH-E1003-09	56.55		-0.83	
2723		-----		-----	
2736	In house	64.22		0.63	
2737	CPSC-CH-E1003-09	73.6884		2.43	
2788	ASTM F963	68.78651		1.50	
2798		-----		-----	
2804	In house	65.79		0.93	
2805	CPSC-CH-E1003-09	63.778		0.54	
2812		-----		-----	
2826	CPSC-CH-E1003-09	62.39		0.28	
2851	CPSC-CH-E1003-09	60.8240		-0.02	
2853		-----		-----	
2864	CPSC-CH-E1003-09	55.08		-1.11	
2867	CPSC-CH-E1003-09	53.7		-1.38	
2912		-----		-----	
3100	EPA3051	55.67		-1.00	
3110	ASTM F963	66.0		0.97	
3116	ASTM F963	63.97		0.58	
3118	CPSC-CH-E1003-09	61.8423		0.17	
3154	ISO8124-5	69.35		1.60	
3160	CPSC-CH-E1003-09	68.05		1.36	
3172	ISO8124-5	63.4		0.47	
3176	CPSC-CH-E1003-09	75.0	C	2.68	First reported 105.411
3182		-----		-----	
3185	CPSC-CH-E1003-09	54.20		-1.28	
3190	ASTM F963	56		-0.94	
3191	ISO8124-5	55.69		-1.00	
3197	CPSC-CH-E1003-09	62.2		0.24	
3216	In house	70.215		1.77	
3218		-----		-----	
3225		-----		-----	
3228	CPSC-CH-E1003-09	54.2		-1.28	
3237		59.0		-0.37	
3248	CPSC-CH-E1003-09	N/A		-----	
8005	CPSC-CH-E1003-09	62.44		0.29	
	normality	OK			
	n	80			
	outliers	3			
	mean (n)	60.925			
	st.dev. (n)	6.2951	RSD = 10%		
	R(calc.)	17.626			
	st.dev.(Horwitz)	5.2514			
	R(Horwitz)	14.704			



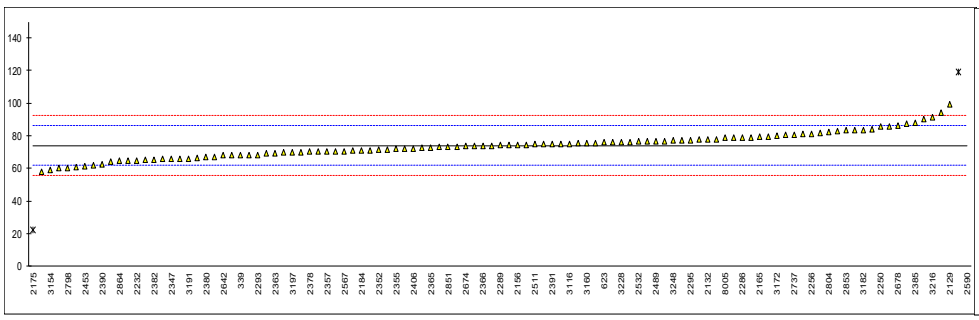


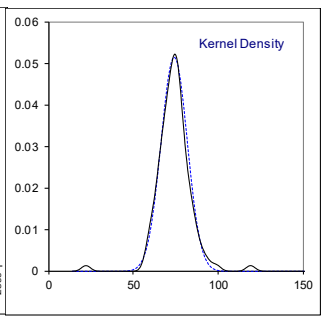
Determination of Total Lead as Pb on sample #20565; results in mg/kg

lab	method	value	mark	z(targ)	Remarks
210		-----		-----	
310	In house	81	C	1.12	First reported 98.0565
339		68.0		-0.98	
348	CPSC-CH-E1003-09	70.12		-0.63	
551	In house	64.06		-1.61	
623	In house	75.85		0.29	
632		-----		-----	
840	In house	74.010		-0.01	
841	ISO8124-5	72		-0.33	
1051	CPSC-CH-E1003-09	74.96		0.15	
2115	EN16711-1	80.39		1.02	
2129	CPSC-CH-E1003-09	99		4.03	
2131	In house	64.665		-1.51	
2132	CPSC-CH-E1003-09	77.79		0.60	
2137	IEC62321	57.83		-2.62	
2156	EPA3052	74.45		0.06	
2165	ASTM F963	79.2		0.83	
2175	IEC62321-5	21.98	C,R(0.01)	-8.40	First reported 51.45
2182		78.84		0.77	
2184	CPSC-CH-E1003-09	71.1		-0.48	
2232	CPSC-CH-E1003-09	64.73	C	-1.50	First reported 108.91
2236	CPSC Modified	66.59		-1.20	
2247		-----		-----	
2250	EN16711-1	85.635		1.87	
2256	ASTM F963	81.33		1.17	
2258	CPSC-CH-E1003-09	ND	C	-----	First reported 48.994
2286		78.87		0.78	
2287	CPSC-CH-E1003-09	65.73		-1.34	
2289	CPSC-CH-E1003-09	74.32		0.04	
2290	CPSC-CH-E1003-09	82.96		1.44	
2293	CPSC-CH-E1003-09	68.04		-0.97	
2294	CPSC-CH-E1003-09	67		-1.14	
2295	CPSC-CH-E1003-09	77.3		0.52	
2296		-----		-----	
2310	CPSC-CH-E1003-09	73.8		-0.04	
2311	CPSC-CH-E1003-09	70		-0.65	
2314	CPSC-CH-E1003-09	74.50		0.07	
2320	EPA3051	60.27		-2.22	
2347	CPSC-CH-E1003-09	66		-1.30	
2350	IEC62321	67.96		-0.98	
2352	CPSC-CH-E1003-09	71.5		-0.41	
2355	CPSC-CH-E1003-09	72		-0.33	
2357	ISO8124-5	70.12		-0.63	
2358	CPSC-CH-E1003-09	75.5		0.23	
2363	In house	69.3		-0.77	
2365	CPSC-CH-E1003-09	72.6		-0.23	
2366	CPSC-CH-E1003-09	73.882		-0.03	
2369	IEC62321-5	70.90		-0.51	
2370	CPSC-CH-E1003-09	74.4		0.06	
2372	EPA3052	84.2		1.64	
2374	In house	69.2		-0.78	
2375	EN16711-1	76		0.32	
2378	EN16711-1	70.1		-0.64	
2379	CPSC-CH-E1003-09	81.66	C	1.23	First reported 60.89
2380	CPSC-CH-E1003-09	66.88		-1.16	
2381	CPSC-CH-E1003-09	65.2		-1.43	
2382	ASTM F963	65.4		-1.40	
2384	CPSC-CH-E1003-09	60.55		-2.18	
2385	EPA3052	88		2.25	
2390	CPSC-CH-E1003-09	62.38		-1.88	
2391	CPSC-CH-E1003-09	75.0		0.15	
2406	CPSC-CH-E1003-09	72.24		-0.29	
2413		-----		-----	
2429	CPSC-CH-E1003-09	73.16		-0.14	
2431	In house	85.88		1.91	
2453	CPSC-CH-E1003-09	61.3		-2.06	
2460	CPSC-CH-E1003-09	94.12		3.24	
2462	EPA3052	72.57		-0.24	
2476	ISO8124-5	68.00		-0.98	
2480		-----		-----	
2489	In house	76.68		0.42	
2511	CPSC-CH-E1003-09	74.8		0.12	
2522	CPSC-CH-E1003-09	61.72		-1.99	
2529		-----		-----	

lab	method	value	mark	z(targ)	Remarks
2532	CPSC-CH-E1003-09	76.5		0.40	
2560	CPSC-CH-E1003-09	77.72		0.59	
2561		-----		-----	
2563		79.7		0.91	
2567	CPSC-CH-E1003-09	70.5		-0.57	
2572	CPSC-CH-E1003-09	79.12		0.82	
2582		-----		-----	
2590	CPSC-CH-E1003-09	211.304	C,R(0.01)	22.15	First reported 193.079
2642	CPSC-CH-E1003-09	67.93		-0.99	
2674	EPA3052	73.5		-0.09	
2678	CPSC-CH-E1003-09	86.06		1.94	
2689	EPA3051	69.9		-0.67	
2713		-----		-----	
2720	CPSC-CH-E1003-09	75.33		0.21	
2723		-----		-----	
2736	In house	90.21		2.61	
2737	CPSC-CH-E1003-09	80.4654		1.04	
2788	ASTM F963	119.1257	R(0.01)	7.27	
2798	CPSC-CH-E1003-09	60.3		-2.22	
2804	In house	82.56		1.37	
2805	CPSC-CH-E1003-09	70.333		-0.60	
2812	CPSC-CH-E1003-09	77.87		0.62	
2826	CPSC-CH-E1003-09	71.6026		-0.39	
2851	CPSC-CH-E1003-09	73.1145		-0.15	
2853	CPSC-CH-E1003-09	83.17		1.47	
2864	CPSC-CH-E1003-09	64.65		-1.52	
2867	CPSC-CH-E1003-09	75.1		0.17	
2912		-----		-----	
3100	EPA3051	77.17		0.50	
3110	ASTM F963	83.6		1.54	
3116	ASTM F963	75.14		0.18	
3118	CPSC-CH-E1003-09	87.1146		2.11	
3154	ISO8124-5	59.04		-2.42	
3160	CPSC-CH-E1003-09	75.41		0.22	
3172	ISO8124-5	80.05		0.97	
3176	CPSC-CH-E1003-09	71.11		-0.47	
3182	CPSC-CH-E1003-09	83.697		1.56	
3185	CPSC-CH-E1003-09	76.72		0.43	
3190	ASTM F963	66		-1.30	
3191	ISO8124-5	66.03		-1.29	
3197	CPSC-CH-E1003-09	69.9		-0.67	
3216	In house	91.300		2.78	
3218	CPSC-CH-E1003-09	73.00		-0.17	
3225	CPSC-CH-E1003-09.1	76.6		0.41	
3228	CPSC-CH-E1003-09	76.0		0.32	
3237		76.3		0.36	
3248	CPSC-CH-E1003-09	77		0.48	
8005	CPSC-CH-E1003-09	78.69		0.75	

normality	OK
n	106
outliers	3
mean (n)	74.048
st.dev. (n)	7.7409
RSD = 10%	
R(calc.)	21.675
st.dev.(Horwitz)	6.1979
R(Horwitz)	17.354



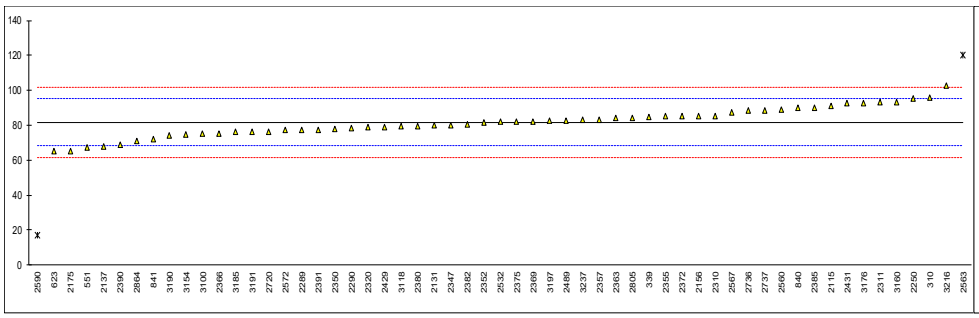


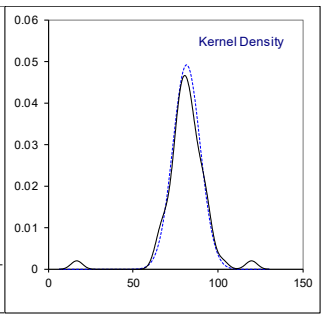
Determination of Total Manganese as Mn on sample #20565; results in mg/kg

lab	method	value	mark	z(targ)	remarks
210		-----		-----	
310	In house	96	C	2.12	First reported 115.0985
339		84.94		0.48	
348		-----		-----	
551	In house	67.50		-2.11	
623	In house	64.91		-2.49	
632		-----		-----	
840	In house	89.930		1.22	
841	ISO8124-5	72		-1.44	
1051		-----		-----	
2115	EN16711-1	91.15		1.40	
2129		-----		-----	
2131	In house	79.87		-0.27	
2132		-----		-----	
2137	IEC62321	68.03		-2.03	
2156	EPA3052	85.42		0.55	
2165		-----		-----	
2175	IEC62321-5	65.16		-2.45	
2182		-----		-----	
2184		-----		-----	
2232		-----		-----	
2236		-----		-----	
2247		-----		-----	
2250	EN16711-1	95.156		2.00	
2256		-----		-----	
2258		-----		-----	
2286		-----		-----	
2287		-----		-----	
2289	CPSC-CH-E1003-09	77.29		-0.65	
2290	CPSC-CH-E1003-09	78.64		-0.45	
2293		-----		-----	
2294	CPSC-CH-E1003-09	NA		-----	
2295		-----		-----	
2296		-----		-----	
2310	CPSC-CH-E1003-09	85.5		0.57	
2311	CPSC-CH-E1003-09	93		1.68	
2314		-----		-----	
2320	EPA3051	78.65		-0.45	
2347	EPA3052	80		-0.25	
2350	EPA3052	77.93		-0.56	
2352	In house	81.4		-0.04	
2355	CPSC-CH-E1003-09	85		0.49	
2357	ISO8124-5	83.20		0.22	
2358	CPSC-CH-E1003-09	N/A		-----	
2363	In house	84.0		0.34	
2365		-----		-----	
2366	CPSC-CH-E1003-09	75.132		-0.97	
2369	EPA3052	82.23		0.08	
2370		-----		-----	
2372	EPA3052	85.2		0.52	
2374		-----		-----	
2375	EN16711-1	82		0.05	
2378		-----		-----	
2379		-----		-----	
2380	CPSC-CH-E1003-09	79.41		-0.34	
2381		-----		-----	
2382	In house	80.3		-0.21	
2384		-----		-----	
2385	EPA3052	90		1.23	
2390	CPSC-CH-E1003-09	68.94		-1.89	
2391	CPSC-CH-E1003-09	77.5		-0.62	
2406		-----		-----	
2413		-----		-----	
2429	CPSC-CH-E1003-09	78.91		-0.41	
2431	In house	92.57		1.61	
2453		-----		-----	
2460		-----		-----	
2462		-----		-----	
2476		-----		-----	
2480		-----		-----	
2489	In house	82.76		0.16	
2511		-----		-----	
2522		-----		-----	
2529		-----		-----	

lab	method	value	mark	z(targ)	remarks
2532	CPSC-CH-E1003-09	81.96		0.04	
2560	CPSC-CH-E1003-09	89.11		1.10	
2561		-----		-----	
2563		120.1	R(0.01)	5.70	
2567	CPSC-CH-E1003-09	87.4		0.85	
2572	CPSC-CH-E1003-09	77.13		-0.68	
2582		-----		-----	
2590	CPSC-CH-E1003-09	16.765	C,R(0.01)	-9.64	First reported 14.905
2642		-----		-----	
2674		-----		-----	
2678		-----		-----	
2689		-----		-----	
2713		-----		-----	
2720	CPSC-CH-E1003-09	76.43		-0.78	
2723		-----		-----	
2736	In house	88.18		0.96	
2737	CPSC-CH-E1003-09	88.4327		1.00	
2788		-----		-----	
2798		-----		-----	
2804		-----		-----	
2805	CPSC-CH-E1003-09	84.286		0.39	
2812		-----		-----	
2826		-----		-----	
2851		-----		-----	
2853		-----		-----	
2864	CPSC-CH-E1003-09	70.97		-1.59	
2867		-----		-----	
2912		-----		-----	
3100	EPA3051	75.00		-0.99	
3110		-----		-----	
3116		-----		-----	
3118	CPSC-CH-E1003-09	79.2311		-0.37	
3154	ISO8124-5	74.58		-1.06	
3160	CPSC-CH-E1003-09	93.23		1.71	
3172		-----		-----	
3176	CPSC-CH-E1003-09	92.91		1.67	
3182		-----		-----	
3185	CPSC-CH-E1003-09	76.06		-0.84	
3190	ASTM F963	74		-1.14	
3191	ISO8124-5	76.11		-0.83	
3197	CPSC-CH-E1003-09	82.6		0.13	
3216	In house	102.754		3.13	
3218		-----		-----	
3225		-----		-----	
3228		-----		-----	
3237		83.0		0.19	
3248	CPSC-CH-E1003-09	N/A		-----	
8005		-----		-----	

normality	OK	
n	55	
outliers	2	
mean (n)	81.691	
st.dev. (n)	8.0935	RSD = 10%
R(calc.)	22.662	
st.dev.(Horwitz)	6.7373	
R(Horwitz)	18.864	





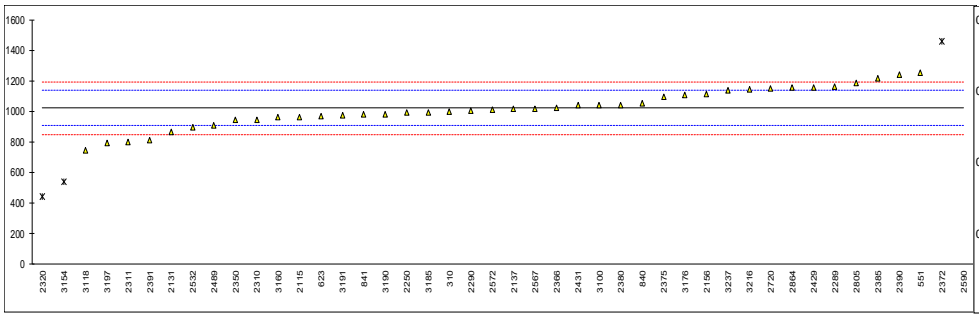
Determination of Total Aluminum as Al on sample #20565; results in mg/kg

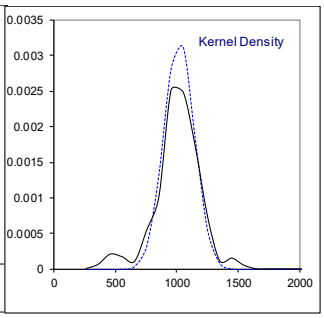
lab	method	value	mark	z(targ)	remarks
210		-----		-----	
310	In house	1000	C	-0.38	First reported 1316.334
339		-----		-----	
348		-----		-----	
551	In house	1252		4.00	
623	In house	965.40		-0.98	
632		-----		-----	
840	In house	1052.120		0.53	
841	ISO8124-5	983		-0.67	
1051		-----		-----	
2115	EN16711-1	965.08		-0.98	
2129		-----		-----	
2131	In house	866.1415		-2.70	
2132		-----		-----	
2137	IEC62321	1015.33		-0.11	
2156	EPA3052	1114		1.60	
2165		-----		-----	
2175		-----		-----	
2182		-----		-----	
2184		-----		-----	
2232		-----		-----	
2236		-----		-----	
2247		-----		-----	
2250	EN16711-1	990.79		-0.54	
2256		-----		-----	
2258		-----		-----	
2286		-----		-----	
2287		-----		-----	
2289	CPSC-CH-E1003-09	1160		2.40	
2290	CPSC-CH-E1003-09	1005.61		-0.28	
2293		-----		-----	
2294	CPSC-CH-E1003-09	NA		-----	
2295		-----		-----	
2296		-----		-----	
2310	CPSC-CH-E1003-09	947		-1.30	
2311	CPSC-CH-E1003-09	801		-3.83	
2314		-----		-----	
2320	EPA3051	442.6	C,R(0.05)	-10.05	First reported 516.32
2347		-----		-----	
2350	EPA3052	943.3		-1.36	
2352		-----		-----	
2355		-----		-----	
2357		-----		-----	
2358	CPSC-CH-E1003-09	N/A		-----	
2363		-----		-----	
2365		-----		-----	
2366	CPSC-CH-E1003-09	1022.17		0.01	
2369		-----		-----	
2370		-----		-----	
2372	EPA3052	1460	R(0.05)	7.61	
2374		-----		-----	
2375	EN16711-1	1093		1.24	
2378		-----		-----	
2379		-----		-----	
2380	CPSC-CH-E1003-09	1041.7		0.35	
2381		-----		-----	
2382	ASTM F963	NA		-----	
2384		-----		-----	
2385	EPA3052	1217		3.39	
2390	CPSC-CH-E1003-09	1239.33		3.78	
2391	CPSC-CH-E1003-09	809.5		-3.68	
2406		-----		-----	
2413		-----		-----	
2429	CPSC-CH-E1003-09	1157		2.35	
2431	In house	1038.05		0.28	
2453		-----		-----	
2460		-----		-----	
2462		-----		-----	
2476		-----		-----	
2480		-----		-----	
2489	In house	908		-1.97	
2511		-----		-----	
2522		-----		-----	
2529		-----		-----	

lab	method	value	mark	z(targ)	remarks
2532	CPSC-CH-E1003-09	895.98		-2.18	
2560		-----		-----	
2561		-----		-----	
2563		-----		-----	
2567	CPSC-CH-E1003-09	1016.0		-0.10	
2572	CPSC-CH-E1003-09	1010.23		-0.20	
2582		-----		-----	
2590	CPSC-CH-E1003-09	25350.242	C,R(0.01)	422.28	First reported 44636.679
2642		-----		-----	
2674		-----		-----	
2678		-----		-----	
2689		-----		-----	
2713		-----		-----	
2720	CPSC-CH-E1003-09	1147		2.17	
2723		-----		-----	
2736		-----		-----	
2737		-----		-----	
2788		-----		-----	
2798		-----		-----	
2804		-----		-----	
2805	CPSC-CH-E1003-09	1187.667		2.88	
2812		-----		-----	
2826		-----		-----	
2851		-----		-----	
2853		-----		-----	
2864	CPSC-CH-E1003-09	1153.52		2.29	
2867		-----		-----	
2912		-----		-----	
3100	EPA3051	1040.65		0.33	
3110		-----		-----	
3116		-----		-----	
3118	CPSC-CH-E1003-09	744.3851		-4.81	
3154	ISO8124-5	540.5	C,R(0.05)	-8.35	First reported 439.4
3160	CPSC-CH-E1003-09	961.97		-1.04	
3172		-----		-----	
3176	CPSC-CH-E1003-09	1105.0	C	1.45	First reported 315.10
3182		-----		-----	
3185	CPSC-CH-E1003-09	991.48		-0.53	
3190	ASTM F963	983		-0.67	
3191	ISO8124-5	974.09		-0.83	
3197	CPSC-CH-E1003-09	793.2		-3.97	
3216	In house	1143.070		2.11	
3218		-----		-----	
3225		-----		-----	
3228		-----		-----	
3237		1136		1.98	
3248	CPSC-CH-E1003-09	N/A		-----	
8005		-----		-----	

	normality	OK
	n	40
	outliers	4
	mean (n)	1021.74
	st.dev. (n)	123.247
	R(calc.)	345.09
	st.dev.(Horwitz)	57.612
	R(Horwitz)	161.31

RSD = 12%





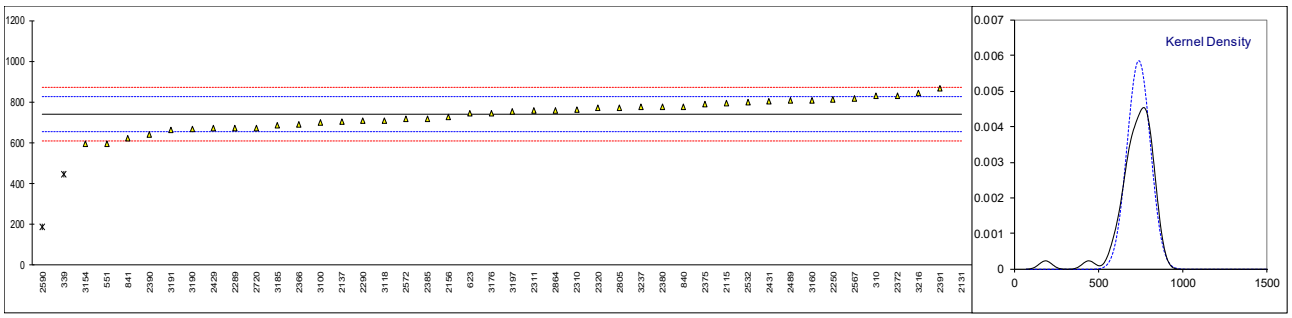
Determination of Total Strontium as Sr on sample #20565; results in mg/kg

lab	method	value	mark	z(targ)	remarks
210		-----		-----	
310	In house	830	C	2.05	First reported 982.5685
339		443.05	R(0.01)	-6.78	
348		-----		-----	
551	In house	593.3		-3.35	
623	In house	743.38		0.08	
632		-----		-----	
840	In house	777.590		0.86	
841	ISO8124-5	622		-2.70	
1051		-----		-----	
2115	EN16711-1	795.41		1.26	
2129		-----		-----	
2131	In house	2556.112	R(0.01)	41.46	
2132		-----		-----	
2137	IEC62321	705.40		-0.79	
2156	EPA3052	724.25		-0.36	
2165		-----		-----	
2175		-----		-----	
2182		-----		-----	
2184		-----		-----	
2232		-----		-----	
2236		-----		-----	
2247		-----		-----	
2250	EN16711-1	810.44		1.61	
2256		-----		-----	
2258		-----		-----	
2286		-----		-----	
2287		-----		-----	
2289	CPSC-CH-E1003-09	672.8		-1.54	
2290	CPSC-CH-E1003-09	710.17		-0.68	
2293		-----		-----	
2294	CPSC-CH-E1003-09	NA		-----	
2295		-----		-----	
2296		-----		-----	
2310	CPSC-CH-E1003-09	764.7		0.56	
2311	CPSC-CH-E1003-09	756		0.36	
2314		-----		-----	
2320	EPA3051	770.19		0.69	
2347		-----		-----	
2350		-----		-----	
2352		-----		-----	
2355		-----		-----	
2357		-----		-----	
2358	CPSC-CH-E1003-09	N/A		-----	
2363		-----		-----	
2365		-----		-----	
2366	CPSC-CH-E1003-09	690.541		-1.13	
2369		-----		-----	
2370		-----		-----	
2372	EPA3052	832		2.10	
2374		-----		-----	
2375	EN16711-1	790		1.14	
2378		-----		-----	
2379		-----		-----	
2380	CPSC-CH-E1003-09	775.49		0.81	
2381		-----		-----	
2382	ASTM F963	NA		-----	
2384		-----		-----	
2385	EPA3052	718		-0.50	
2390	CPSC-CH-E1003-09	640.18		-2.28	
2391	CPSC-CH-E1003-09	865.6		2.87	
2406		-----		-----	
2413		-----		-----	
2429	CPSC-CH-E1003-09	670.7		-1.58	
2431	In house	801.55		1.40	
2453		-----		-----	
2460		-----		-----	
2462		-----		-----	
2476		-----		-----	
2480		-----		-----	
2489	In house	806		1.50	
2511		-----		-----	
2522		-----		-----	
2529		-----		-----	

lab	method	value	mark	z(targ)	remarks
2532	CPSC-CH-E1003-09	798.55		1.33	
2560		-----		-----	
2561		-----		-----	
2563		-----		-----	
2567	CPSC-CH-E1003-09	818		1.78	
2572	CPSC-CH-E1003-09	715.41		-0.56	
2582		-----		-----	
2590	CPSC-CH-E1003-09	186.503	C,R(0.01)	-12.64	First reported 167.580
2642		-----		-----	
2674		-----		-----	
2678		-----		-----	
2689		-----		-----	
2713		-----		-----	
2720	CPSC-CH-E1003-09	672.9		-1.53	
2723		-----		-----	
2736		-----		-----	
2737		-----		-----	
2788		-----		-----	
2798		-----		-----	
2804		-----		-----	
2805	CPSC-CH-E1003-09	772.8		0.75	
2812		-----		-----	
2826		-----		-----	
2851		-----		-----	
2853		-----		-----	
2864	CPSC-CH-E1003-09	756.77		0.38	
2867		-----		-----	
2912		-----		-----	
3100	EPA3051	699.18		-0.93	
3110		-----		-----	
3116		-----		-----	
3118	CPSC-CH-E1003-09	710.2151		-0.68	
3154	ISO8124-5	593.1		-3.36	
3160	CPSC-CH-E1003-09	809.37		1.58	
3172		-----		-----	
3176	CPSC-CH-E1003-09	744.30		0.10	
3182		-----		-----	
3185	CPSC-CH-E1003-09	687.00		-1.21	
3190	ASTM F963	667		-1.67	
3191	ISO8124-5	662.61		-1.77	
3197	CPSC-CH-E1003-09	753.4		0.30	
3216	In house	842.433		2.34	
3218		-----		-----	
3225		-----		-----	
3228		-----		-----	
3237		774.7		0.79	
3248	CPSC-CH-E1003-09	N/A		-----	
8005		-----		-----	

	normality	OK
	n	41
	outliers	3
	mean (n)	740.084
	st.dev. (n)	68.2666
	R(calc.)	191.146
	st.dev.(Horwitz)	43.8057
	R(Horwitz)	122.656

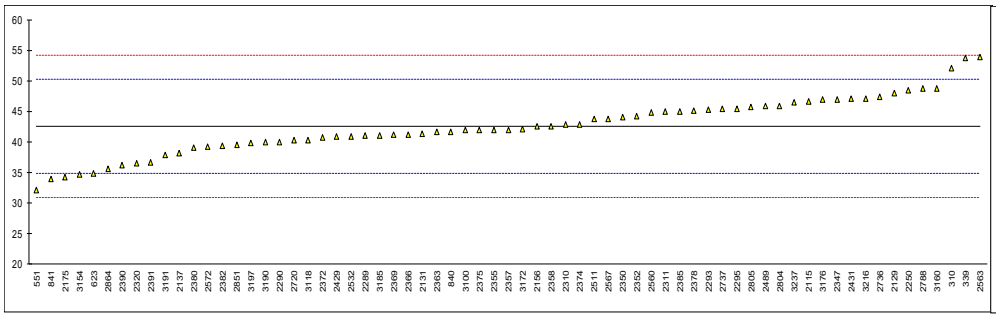
RSD = 9%

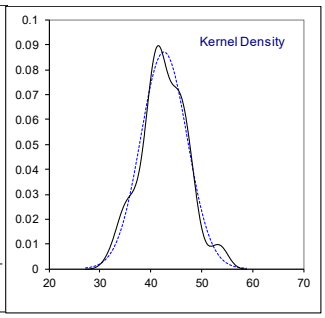


Determination of Total Cobalt as Co on sample #20566; results in mg/kg

lab	method	value	mark	z(targ)	remarks
210		-----		-----	
310	In house	52.137		2.47	
339		53.75		2.89	
348		-----		-----	
551	In house	32.06		-2.72	
623	In house	34.78		-2.01	
632		-----		-----	
840	In house	41.710		-0.22	
841	ISO8124-5	34.0		-2.22	
1051		-----		-----	
2115	EN16711-1	46.70		1.07	
2129	CPSC-CH-E1003-09	48		1.40	
2131	In house	41.327		-0.32	
2132		-----		-----	
2137	IEC62321	38.17		-1.14	
2156	EPA3052	42.5		-0.02	
2165		-----		-----	
2175	IEC62321	34.31		-2.13	
2182		-----		-----	
2184		-----		-----	
2232		-----		-----	
2236		-----		-----	
2247		-----		-----	
2250	EN16711-1	48.423		1.51	
2256		-----		-----	
2258		-----		-----	
2286		-----		-----	
2287		-----		-----	
2289	CPSC-CH-E1003-09	41.02		-0.40	
2290	CPSC-CH-E1003-09	40.03		-0.66	
2293	CPSC-CH-E1003-09	45.3		0.71	
2294	CPSC-CH-E1003-09	NA		-----	
2295	CPSC-CH-E1003-09	45.4		0.73	
2296		-----		-----	
2310	CPSC-CH-E1003-09	42.8		0.06	
2311	CPSC-CH-E1003-09	45		0.63	
2314		-----		-----	
2320	EPA3051	36.54		-1.56	
2347	EPA3052	47		1.14	
2350	EPA3052	44.08		0.39	
2352	In house	44.2		0.42	
2355	CPSC-CH-E1003-09	42		-0.15	
2357	ISO8124-5	42.01		-0.14	
2358	CPSC-CH-E1003-09	42.6		0.01	
2363	In house	41.7		-0.22	
2365		-----		-----	
2366	CPSC-CH-E1003-09	41.21		-0.35	
2369	EPA3052	41.15		-0.37	
2370		-----		-----	
2372	EPA3052	40.8		-0.46	
2374	In house	42.9		0.09	
2375	EN16711-1	42		-0.15	
2378	EN16711-1	45.1		0.65	
2379		-----		-----	
2380	CPSC-CH-E1003-09	39.03		-0.92	
2381		-----		-----	
2382	In house	39.3		-0.85	
2384		-----		-----	
2385	EPA3052	45		0.63	
2390	CPSC-CH-E1003-09	36.21		-1.64	
2391	CPSC-CH-E1003-09	36.7		-1.52	
2406		-----		-----	
2413		-----		-----	
2429	CPSC-CH-E1003-09	40.81		-0.45	
2431	In house	47.01		1.15	
2453		-----		-----	
2460		-----		-----	
2462		-----		-----	
2476		-----		-----	
2480		-----		-----	
2489	In house	45.85		0.85	
2511	CPSC-CH-E1003-09	43.8		0.32	
2522		-----		-----	
2529		-----		-----	

lab	method	value	mark	z(targ)	remarks
2532	CPSC-CH-E1003-09	40.87		-0.44	
2560	CPSC-CH-E1003-09	44.80		0.58	
2561		-----		-----	
2563		53.9		2.93	
2567	CPSC-CH-E1003-09	43.8		0.32	
2572	CPSC-CH-E1003-09	39.23		-0.86	
2582		-----		-----	
2590	CPSC-CH-E1003-09	< L.O.Q.		-----	
2642		-----		-----	
2674		-----		-----	
2678		-----		-----	
2689		-----		-----	
2713		-----		-----	
2720	CPSC-CH-E1003-09	40.21		-0.61	
2723		-----		-----	
2736	In house	47.44		1.26	
2737	CPSC-CH-E1003-09	45.3558		0.72	
2788	ASTM F963	48.73317		1.59	
2798		-----		-----	
2804	In house	45.88		0.86	
2805	CPSC-CH-E1003-09	45.667		0.80	
2812		-----		-----	
2826		-----		-----	
2851	CPSC-CH-E1003-09	39.4562		-0.80	
2853		-----		-----	
2864	CPSC-CH-E1003-09	35.63		-1.79	
2867		-----		-----	
2912		-----		-----	
3100	EPA3051	41.93		-0.17	
3110		-----		-----	
3116		-----		-----	
3118	CPSC-CH-E1003-09	40.2481		-0.60	
3154	ISO8124-5	34.63		-2.05	
3160	CPSC-CH-E1003-09	48.77		1.60	
3172	ISO8124-5	42.10		-0.12	
3176	CPSC-CH-E1003-09	46.88		1.11	
3182		-----		-----	
3185	CPSC-CH-E1003-09	41.11		-0.38	
3190	ASTM F963	40		-0.66	
3191	ISO8124-5	37.83		-1.23	
3197	CPSC-CH-E1003-09	39.9		-0.69	
3216	In house	47.019		1.15	
3218		-----		-----	
3225		-----		-----	
3228		-----		-----	
3237	ISO16711-1	46.4		0.99	
3248	CPSC-CH-E1003-09	N/A		-----	
8005		-----		-----	
	normality	OK			
	n	67			
	outliers	0			
	mean (n)	42.570			
	st.dev. (n)	4.5702	RSD = 11%		
	R(calc.)	12.797			
	st.dev.(Horwitz)	3.8728			
	R(Horwitz)	10.844			





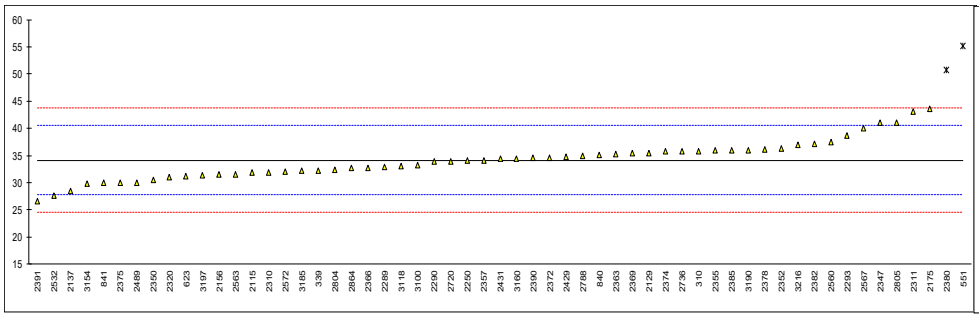
Determination of Total Copper as Cu on sample #20566; results in mg/kg

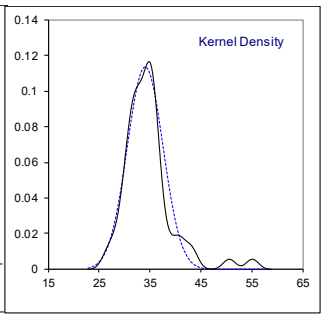
lab	method	value	mark	z(targ)	remarks
210		-----		-----	
310	In house	35.83		0.52	
339		32.18		-0.61	
348		-----		-----	
551	In house	55.23254	C,R(0.01)	6.56	First reported 77.64
623	In house	31.17	C	-0.93	First reported 20.56
632		-----		-----	
840	In house	35.120		0.30	
841	ISO8124-5	30	C	-1.29	First reported <25
1051		-----		-----	
2115	EN16711-1	31.87		-0.71	
2129	CPSC-CH-E1003-09	35.5		0.42	
2131		-----		-----	
2132		-----		-----	
2137	IEC62321	28.47		-1.77	
2156	EPA3052	31.46		-0.84	
2165		-----		-----	
2175	IEC62321	43.53	C	2.92	First reported 22.08
2182		-----		-----	
2184		-----		-----	
2232		-----		-----	
2236		-----		-----	
2247		-----		-----	
2250	EN16711-1	34.105		-0.01	
2256		-----		-----	
2258		-----		-----	
2286		-----		-----	
2287		-----		-----	
2289	CPSC-CH-E1003-09	32.96		-0.37	
2290	CPSC-CH-E1003-09	33.87		-0.09	
2293	CPSC-CH-E1003-09	38.7		1.42	
2294	CPSC-CH-E1003-09	NA		-----	
2295		-----		-----	
2296		-----		-----	
2310	CPSC-CH-E1003-09	31.9		-0.70	
2311	CPSC-CH-E1003-09	43		2.75	
2314		-----		-----	
2320	EPA3051	30.94		-1.00	
2347	EPA3052	41		2.13	
2350	EPA3052	30.56		-1.12	
2352	In house	36.2		0.64	
2355	CPSC-CH-E1003-09	36		0.58	
2357	ISO8124-5	34.12		-0.01	
2358	CPSC-CH-E1003-09	N/A		-----	
2363	In house	35.2		0.33	
2365		-----		-----	
2366	CPSC-CH-E1003-09	32.741		-0.44	
2369	EPA3052	35.49		0.42	
2370	CPSC-CH-E1003-09	---		-----	
2372	EPA3052	34.6		0.14	
2374	In house	35.8		0.51	
2375	EN16711-1	30		-1.29	
2378	EN16711-1	36.1		0.61	
2379		-----		-----	
2380	CPSC-CH-E1003-09	50.70	R(0.01)	5.15	
2381		-----		-----	
2382	In house	37.2		0.95	
2384		-----		-----	
2385	EPA3052	36		0.58	
2390	CPSC-CH-E1003-09	34.56		0.13	
2391	CPSC-CH-E1003-09	26.6		-2.35	
2406		-----		-----	
2413		-----		-----	
2429	CPSC-CH-E1003-09	34.82		0.21	
2431	In house	34.33		0.06	
2453		-----		-----	
2460		-----		-----	
2462		-----		-----	
2476		-----		-----	
2480		-----		-----	
2489	In house	30		-1.29	
2511		-----	W	-----	Test result withdrawn, reported 261.7
2522		-----		-----	
2529		-----		-----	

lab	method	value	mark	z(targ)	remarks
2532	CPSC-CH-E1003-09	27.58		-2.05	
2560	CPSC-CH-E1003-09	37.52		1.05	
2561		-----		-----	
2563		31.6		-0.79	
2567	CPSC-CH-E1003-09	40		1.82	
2572	CPSC-CH-E1003-09	32.11		-0.64	
2582		-----		-----	
2590	CPSC-CH-E1003-09	< L.O.Q.		-----	
2642		-----		-----	
2674		-----		-----	
2678		-----		-----	
2689		-----		-----	
2713		-----		-----	
2720	CPSC-CH-E1003-09	33.96		-0.06	
2723		-----		-----	
2736	In house	35.82		0.52	
2737		-----		-----	
2788	ASTM F963	34.90432		0.23	
2798		-----		-----	
2804	In house	32.30		-0.58	
2805	CPSC-CH-E1003-09	41.0		2.13	
2812		-----		-----	
2826		-----		-----	
2851		-----		-----	
2853		-----		-----	
2864	CPSC-CH-E1003-09	32.74		-0.44	
2867		-----		-----	
2912		-----		-----	
3100	EPA3051	33.19		-0.30	
3110		-----		-----	
3116		-----		-----	
3118	CPSC-CH-E1003-09	32.9975		-0.36	
3154	ISO8124-5	29.83		-1.35	
3160	CPSC-CH-E1003-09	34.40		0.08	
3172		-----		-----	
3176		-----		-----	
3182		-----		-----	
3185	CPSC-CH-E1003-09	32.16		-0.62	
3190	ASTM F963	36		0.58	
3191	ISO8124-5	<50.00		-----	
3197	CPSC-CH-E1003-09	31.4		-0.86	
3216	In house	36.930		0.86	
3218		-----		-----	
3225		-----		-----	
3228		-----		-----	
3237		-----		-----	
3248	CPSC-CH-E1003-09	N/A		-----	
8005		-----		-----	

normality	OK
n	55
outliers	2
mean (n)	34.152
st.dev. (n)	3.5140
R(calc.)	9.839
st.dev.(Horwitz)	3.2117
R(Horwitz)	8.993

RSD = 10%



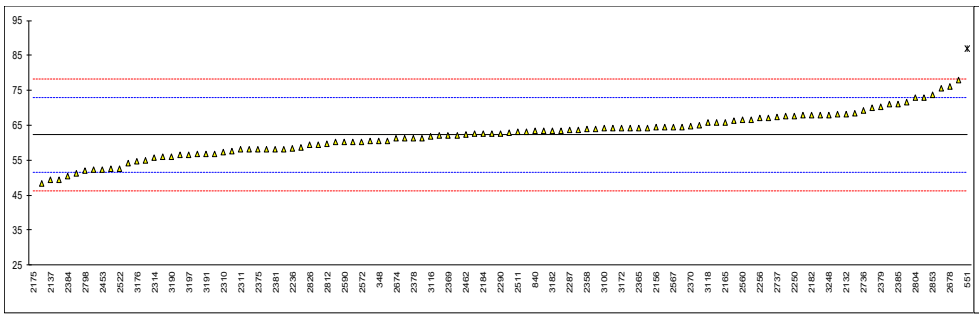


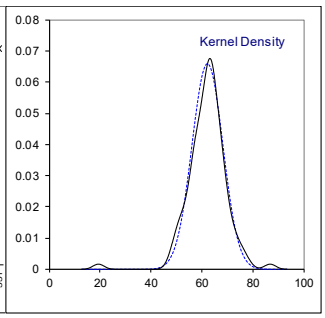
Determination of Total Lead as Pb on sample #20566; results in mg/kg

lab	method	value	mark	z(targ)	remarks
210		-----		-----	
310	In house	75.4485		2.46	
339		51.2		-2.07	
348	CPSC-CH-E1003-09	60.49		-0.34	
551	In house	86.94133	C,R(0.05)	4.61	First reported 41.35
623	In house	67.80		1.03	
632		-----		-----	
840	In house	63.280		0.19	
841	ISO8124-5	55		-1.36	
1051	CPSC-CH-E1003-09	63.52		0.23	
2115	EN16711-1	68.20		1.11	
2129	CPSC-CH-E1003-09	71		1.63	
2131	In house	52.2725		-1.87	
2132	CPSC-CH-E1003-09	68.22		1.11	
2137	IEC62321	49.27		-2.43	
2156	EPA3052	64.38		0.39	
2165	ASTM F963	65.9		0.68	
2175	IEC62321	19.42	C,R(0.01)	-8.01	First reported 43.48
2182		67.93		1.06	
2184	CPSC-CH-E1003-09	62.6		0.06	
2232	CPSC-CH-E1003-09	58.61		-0.69	
2236	CPSC Modified	58.32		-0.74	
2247		-----		-----	
2250	EN16711-1	67.695		1.01	
2256	ASTM F963	66.98		0.88	
2258	CPSC-CH-E1003-09	ND	C	-----	First reported 33.626
2286		68.00		1.07	
2287	CPSC-CH-E1003-09	63.59		0.24	
2289	CPSC-CH-E1003-09	64.12		0.34	
2290	CPSC-CH-E1003-09	62.64		0.07	
2293	CPSC-CH-E1003-09	59.4		-0.54	
2294	CPSC-CH-E1003-09	58		-0.80	
2295	CPSC-CH-E1003-09	65.7		0.64	
2296		-----		-----	
2310	CPSC-CH-E1003-09	57.2		-0.95	
2311	CPSC-CH-E1003-09	58		-0.80	
2314	CPSC-CH-E1003-09	55.60		-1.25	
2320	EPA3051	52.43		-1.84	
2347	CPSC-CH-E1003-09	62		-0.05	
2350	IEC62321	56.85		-1.02	
2352	CPSC-CH-E1003-09	61.3		-0.18	
2355	CPSC-CH-E1003-09	63		0.13	
2357	IEC62321-5	60.53		-0.33	
2358	CPSC-CH-E1003-09	63.8		0.28	
2363	In house	62.6		0.06	
2365	CPSC-CH-E1003-09	64.3		0.38	
2366	CPSC-CH-E1003-09	64.532		0.42	
2369	IEC62321-5	62.09		-0.04	
2370	CPSC-CH-E1003-09	64.6		0.43	
2372	EPA3052	66.4		0.77	
2374	In house	61.4		-0.17	
2375	EN16711-1	58		-0.80	
2378	EN16711-1	61.3		-0.18	
2379	CPSC-CH-E1003-09	70.25		1.49	
2380	CPSC-CH-E1003-09	60.10		-0.41	
2381	CPSC-CH-E1003-09	58.2		-0.76	
2382	ASTM F963	60.4		-0.35	
2384	CPSC-CH-E1003-09	50.52		-2.20	
2385	EPA3052	71		1.63	
2390	CPSC-CH-E1003-09	55.96		-1.18	
2391	CPSC-CH-E1003-09	54.1		-1.53	
2406	CPSC-CH-E1003-09	64.30		0.38	
2413		-----		-----	
2429	CPSC-CH-E1003-09	62.14		-0.03	
2431	In house	69.94		1.43	
2453	CPSC-CH-E1003-09	52.3		-1.87	
2460	CPSC-CH-E1003-09	77.98		2.93	
2462	EPA3052	62.30		0.00	
2476	ISO8124-5	58.00		-0.80	
2480		-----		-----	
2489	In house	65		0.51	
2511	CPSC-CH-E1003-09	63.1		0.15	
2522	CPSC-CH-E1003-09	52.53		-1.82	
2529		-----		-----	

lab	method	value	mark	z(targ)	remarks
2532	CPSC-CH-E1003-09	58.2		-0.76	
2560	CPSC-CH-E1003-09	66.47		0.78	
2561		-----		-----	
2563		63.3		0.19	
2567	CPSC-CH-E1003-09	64.5		0.41	
2572	CPSC-CH-E1003-09	60.33		-0.37	
2582		-----		-----	
2590	CPSC-CH-E1003-09	60.203		-0.39	
2642	CPSC-CH-E1003-09	56.39		-1.10	
2674	CPSC-CH-E1003-09	61.21		-0.20	
2678		76.13		2.59	
2689	EPA3051	57.7		-0.86	
2713		-----		-----	
2720	CPSC-CH-E1003-09	64.21		0.36	
2723		-----		-----	
2736	In house	69.22		1.30	
2737	CPSC-CH-E1003-09	67.4739		0.97	
2788	ASTM F963	71.60702		1.74	
2798		52.1		-1.90	
2804	In house	72.95		1.99	
2805	CPSC-CH-E1003-09	63.889		0.30	
2812	CPSC-CH-E1003-09	59.64		-0.49	
2826	CPSC-CH-E1003-09	59.35		-0.55	
2851	CPSC-CH-E1003-09	56.6976		-1.04	
2853	CPSC-CH-E1003-09	73.82		2.16	
2864	CPSC-CH-E1003-09	49.42		-2.40	
2867	CPSC-CH-E1003-09	64.4		0.40	
2912		-----		-----	
3100	EPA3051	64.11		0.34	
3110	ASTM F963	67.5		0.97	
3116	CPSC-CH-E1003-09	61.9		-0.07	
3118	CPSC-CH-E1003-09	65.6933		0.64	
3154	ISO8124-5	48.26		-2.62	
3160	CPSC-CH-E1003-09	67.04		0.89	
3172	ISO8124-5	64.12		0.34	
3176	CPSC-CH-E1003-09	54.71		-1.42	
3182	CPSC-CH-E1003-09	63.492		0.23	
3185	CPSC-CH-E1003-09	63.60		0.25	
3190	ASTM F963	56		-1.17	
3191	ISO8124-5	56.74		-1.04	
3197	CPSC-CH-E1003-09	56.4		-1.10	
3216	In house	73.004		2.00	
3218	CPSC-CH-E1003-09	63.10		0.15	
3225	CPSC-CH-E1003-09.1	68.5		1.16	
3228	CPSC-CH-E1003-09	62.5		0.04	
3237	ISO16711-1	66.7		0.83	
3248	CPSC-CH-E1003-09	68		1.07	
8005	CPSC-CH-E1002-08	60.27		-0.38	

normality	OK	
n	107	
outliers	2	
mean (n)	62.285	
st.dev. (n)	6.0617	RSD = 10%
R(calc.)	16.973	
st.dev.(Horwitz)	5.3508	
R(Horwitz)	14.982	



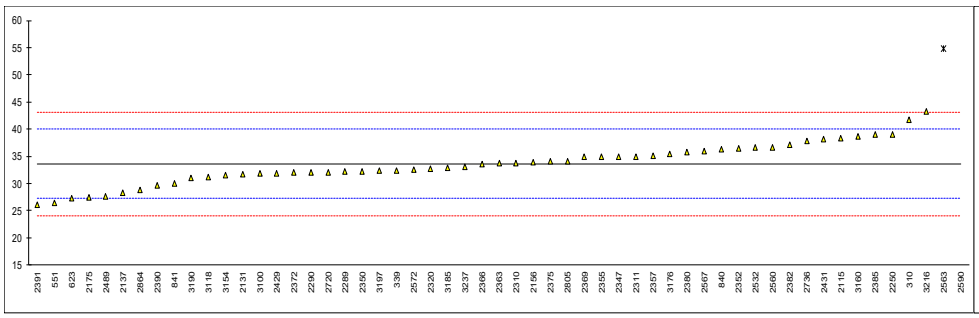


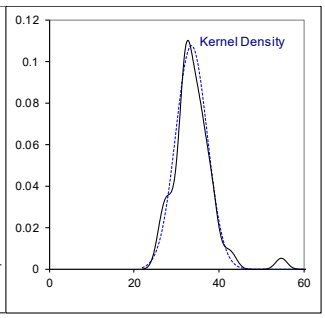
Determination of Total Manganese as Mn on sample #20566; results in mg/kg

lab	method	value	mark	z(targ)	remarks
210		-----		-----	
310	In house	41.652		2.54	
339		32.39		-0.38	
348		-----		-----	
551	In house	26.45		-2.26	
623	In house	27.34		-1.98	
632		-----		-----	
840	In house	36.260		0.84	
841	ISO8124-5	30.0		-1.14	
1051		-----		-----	
2115	EN16711-1	38.34		1.49	
2129		-----		-----	
2131	In house	31.772		-0.58	
2132		-----		-----	
2137	IEC62321	28.33		-1.67	
2156	EPA3052	33.83		0.07	
2165		-----		-----	
2175	IEC62321	27.5		-1.93	
2182		-----		-----	
2184		-----		-----	
2232		-----		-----	
2236		-----		-----	
2247		-----		-----	
2250	EN16711-1	39.014		1.71	
2256		-----		-----	
2258		-----		-----	
2286		-----		-----	
2287		-----		-----	
2289	CPSC-CH-E1003-09	32.13		-0.47	
2290	CPSC-CH-E1003-09	32.08		-0.48	
2293		-----		-----	
2294	CPSC-CH-E1003-09	NA		-----	
2295		-----		-----	
2296		-----		-----	
2310	CPSC-CH-E1003-09	33.75		0.05	
2311	CPSC-CH-E1003-09	35		0.44	
2314		-----		-----	
2320	EPA3051	32.76		-0.27	
2347	EPA3052	35		0.44	
2350	EPA3052	32.22		-0.44	
2352	In house	36.4		0.88	
2355	CPSC-CH-E1003-09	35		0.44	
2357	ISO8124-5	35.03		0.45	
2358	CPSC-CH-E1003-09	N/A		-----	
2363	In house	33.7		0.03	
2365		-----		-----	
2366	CPSC-CH-E1003-09	33.556		-0.02	
2369	EPA3052	34.96		0.43	
2370		-----		-----	
2372	EPA3052	32.0		-0.51	
2374		-----		-----	
2375	EN16711-1	34		0.12	
2378		-----		-----	
2379		-----		-----	
2380	CPSC-CH-E1003-09	35.71		0.66	
2381		-----		-----	
2382	In house	37.2		1.13	
2384		-----		-----	
2385	EPA3052	39		1.70	
2390	CPSC-CH-E1003-09	29.62		-1.26	
2391	CPSC-CH-E1003-09	26.1		-2.37	
2406		-----		-----	
2413		-----		-----	
2429	CPSC-CH-E1003-09	31.89		-0.54	
2431	In house	38.20		1.45	
2453		-----		-----	
2460		-----		-----	
2462		-----		-----	
2476		-----		-----	
2480		-----		-----	
2489	In house	27.6		-1.90	
2511		-----		-----	
2522		-----		-----	
2529		-----		-----	

lab	method	value	mark	z(targ)	remarks
2532	CPSC-CH-E1003-09	36.59		0.94	
2560	CPSC-CH-E1003-09	36.59		0.94	
2561		-----		-----	
2563		54.8	R(0.01)	6.69	
2567	CPSC-CH-E1003-09	36		0.76	
2572	CPSC-CH-E1003-09	32.51		-0.35	
2582		-----		-----	
2590	CPSC-CH-E1003-09	86.939	R(0.01)	16.83	
2642		-----		-----	
2674		-----		-----	
2678		-----		-----	
2689		-----		-----	
2713		-----		-----	
2720	CPSC-CH-E1003-09	32.08		-0.48	
2723		-----		-----	
2736	In house	37.75		1.31	
2737		-----		-----	
2788		-----		-----	
2798		-----		-----	
2804		-----		-----	
2805	CPSC-CH-E1003-09	34.0		0.12	
2812		-----		-----	
2826		-----		-----	
2851		-----		-----	
2853		-----		-----	
2864	CPSC-CH-E1003-09	28.72		-1.54	
2867		-----		-----	
2912		-----		-----	
3100	EPA3051	31.88		-0.55	
3110		-----		-----	
3116		-----		-----	
3118	CPSC-CH-E1003-09	31.1910		-0.76	
3154	ISO8124-5	31.53		-0.66	
3160	CPSC-CH-E1003-09	38.59		1.57	
3172		-----		-----	
3176	CPSC-CH-E1003-09	35.40		0.57	
3182		-----		-----	
3185	CPSC-CH-E1003-09	32.90		-0.22	
3190	ASTM F963	31		-0.82	
3191	ISO8124-5	<50.00		-----	
3197	CPSC-CH-E1003-09	32.3		-0.41	
3216	In house	43.248		3.04	
3218		-----		-----	
3225		-----		-----	
3228		-----		-----	
3237	ISO16711-1	33.1		-0.16	
3248	CPSC-CH-E1003-09	N/A		-----	
8005		-----		-----	

normality	OK	
n	53	
outliers	2	
mean (n)	33.607	
st.dev. (n)	3.7076	RSD = 11%
R(calc.)	10.381	
st.dev.(Horwitz)	3.1681	
R(Horwitz)	8.871	

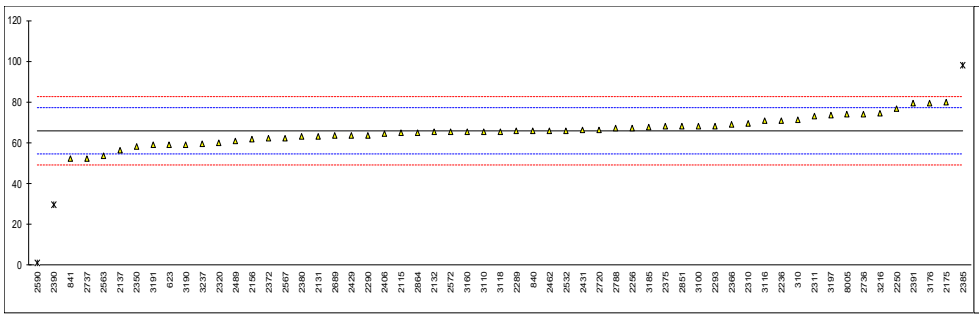


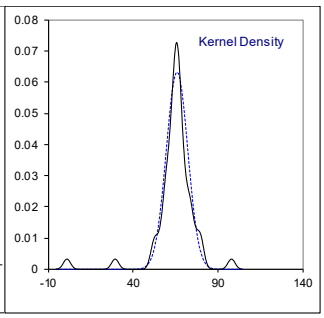


Determination of Total Selenium as Se on sample #20566; results in mg/kg

lab	method	value	mark	z(targ)	remarks
210		-----		-----	
310	In house	71.267		0.96	
339		-----		-----	
348		-----		-----	
551		-----		-----	
623	In house	59.00		-1.23	
632		-----		-----	
840	In house	65.780		-0.02	
841	ISO8124-5	52	C	-2.48	First reported 45
1051		-----		-----	
2115	EN16711-1	64.76		-0.20	
2129		-----		-----	
2131	In house	63.0475		-0.51	
2132	CPSC-CH-E1003-09	65.29		-0.11	
2137	IEC62321	56.17		-1.73	
2156	EPA3052	61.96		-0.70	
2165		-----		-----	
2175	IEC62321	79.92	C	2.50	First reported 37.93
2182		-----		-----	
2184		-----		-----	
2232		-----		-----	
2236	CPSC Modified	70.87		0.88	
2247		-----		-----	
2250	EN16711-1	76.78		1.94	
2256	ASTM F963	67.19		0.23	
2258	CPSC-CH-E1003-09	<100		-----	
2286		-----		-----	
2287		-----		-----	
2289	CPSC-CH-E1003-09	65.61		-0.05	
2290	CPSC-CH-E1003-09	63.53		-0.42	
2293	CPSC-CH-E1003-09	68.1		0.39	
2294	CPSC-CH-E1003-09	NA		-----	
2295		-----		-----	
2296		-----		-----	
2310	CPSC-CH-E1003-09	69.4		0.62	
2311	CPSC-CH-E1003-09	73		1.26	
2314		-----		-----	
2320	EPA3051	59.80		-1.09	
2347		-----		-----	
2350	EPA3052	58.18		-1.38	
2352		-----		-----	
2355		-----		-----	
2357		-----		-----	
2358	CPSC-CH-E1003-09	N/A		-----	
2363		-----		-----	
2365		-----		-----	
2366	CPSC-CH-E1003-09	68.879		0.53	
2369		-----		-----	
2370		-----		-----	
2372	EPA3052	62.0		-0.70	
2374		-----		-----	
2375	EN16711-1	68		0.37	
2378		-----		-----	
2379		-----		-----	
2380	CPSC-CH-E1003-09	63.02		-0.51	
2381		-----		-----	
2382	ASTM F963	NA		-----	
2384		-----		-----	
2385	EPA3052	98	R(0.01)	5.72	
2390	CPSC-CH-E1003-09	29.4	C,R(0.01)	-6.50	First reported 44.44
2391	CPSC-CH-E1003-09	79.3		2.39	
2406	CPSC-CH-E1003-09	64.55		-0.24	
2413		-----		-----	
2429	CPSC-CH-E1003-09	63.44		-0.44	
2431	In house	66.23		0.06	
2453		-----		-----	
2460		-----		-----	
2462	EPA3052	65.92		0.00	
2476		-----		-----	
2480		-----		-----	
2489	In house	60.72		-0.92	
2511		-----		-----	
2522		-----		-----	
2529		-----		-----	

lab	method	value	mark	z(targ)	remarks
2532	CPSC-CH-E1003-09	65.96		0.01	
2560		-----		-----	
2561		-----		-----	
2563		53.8		-2.16	
2567	CPSC-CH-E1003-09	62.1		-0.68	
2572	CPSC-CH-E1003-09	65.42		-0.09	
2582		-----		-----	
2590	CPSC-CH-E1003-09	0.992	R(0.01)	-11.56	
2642		-----		-----	
2674		-----		-----	
2678		-----		-----	
2689	EPA3051	63.4		-0.45	
2713		-----		-----	
2720	CPSC-CH-E1003-09	66.44		0.10	
2723		-----		-----	
2736	In house	74.06		1.45	
2737	CPSC-CH-E1003-09	52.3931		-2.41	
2788	ASTM F963	67.00036		0.20	
2798		-----		-----	
2804		-----		-----	
2805		-----	W	-----	Test result withdrawn, reported <10
2812		-----		-----	
2826		-----		-----	
2851	CPSC-CH-E1003-09	68.0371		0.38	
2853		-----		-----	
2864	CPSC-CH-E1003-09	64.98	C	-0.16	First reported 96.38
2867		-----		-----	
2912		-----		-----	
3100	EPA3051	68.08		0.39	
3110	ASTM F963	65.5		-0.07	
3116	CPSC-CH-E1003-09	70.69		0.85	
3118	CPSC-CH-E1003-09	65.5106		-0.07	
3154		-----		-----	
3160	CPSC-CH-E1003-09	65.46		-0.08	
3172		-----		-----	
3176	CPSC-CH-E1003-09	79.6	C	2.44	First reported 48.66
3182		-----		-----	
3185	CPSC-CH-E1003-09	67.60		0.30	
3190	ASTM F963	59		-1.23	
3191	ISO8124-5	58.89		-1.25	
3197	CPSC-CH-E1003-09	73.4		1.34	
3216	In house	74.440		1.52	
3218		-----		-----	
3225		-----		-----	
3228		-----		-----	
3237	ISO16711-1	59.5		-1.14	
3248	CPSC-CH-E1003-09	N/A		-----	
8005	CPSC-CH-E1002-08	73.80		1.41	
	normality	OK			
	n	54			
	outliers	3			
	mean (n)	65.903			
	st.dev. (n)	6.3297	RSD = 10%		
	R(calc.)	17.723			
	st.dev.(Horwitz)	5.6138			
	R(Horwitz)	15.719			

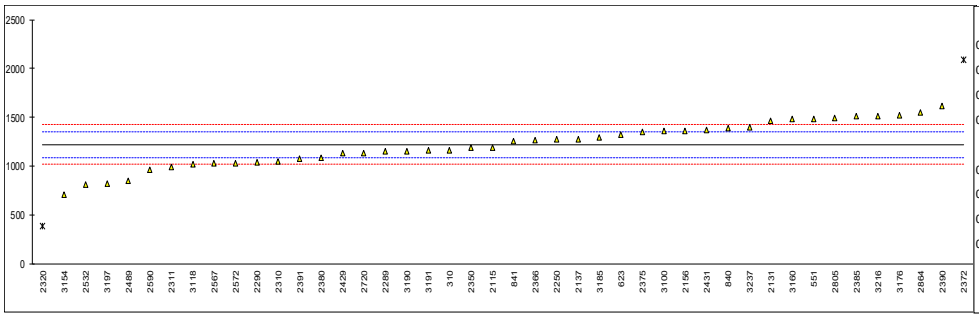


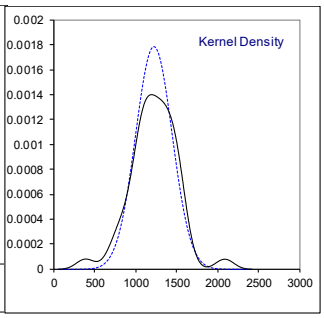


Determination of Total Aluminum as Al on sample #20566; results in mg/kg

lab	method	value	mark	z(targ)	remarks
210		-----		-----	
310	In house	1167.29		-0.83	
339		-----		-----	
348		-----		-----	
551	In house	1485		3.91	
623	In house	1327.29		1.56	
632		-----		-----	
840	In house	1392.370		2.53	
841	ISO8124-5	1257.0		0.51	
1051		-----		-----	
2115	EN16711-1	1192.85		-0.45	
2129		-----		-----	
2131	In house	1462.254		3.57	
2132		-----		-----	
2137	IEC62321	1280		0.85	
2156	EPA3052	1363		2.09	
2165		-----		-----	
2175		-----		-----	
2182		-----		-----	
2184		-----		-----	
2232		-----		-----	
2236		-----		-----	
2247		-----		-----	
2250	EN16711-1	1279.7		0.85	
2256		-----		-----	
2258		-----		-----	
2286		-----		-----	
2287		-----		-----	
2289	CPSC-CH-E1003-09	1155		-1.01	
2290	CPSC-CH-E1003-09	1041.11		-2.71	
2293		-----		-----	
2294	CPSC-CH-E1003-09	NA		-----	
2295		-----		-----	
2296		-----		-----	
2310	CPSC-CH-E1003-09	1052		-2.55	
2311	CPSC-CH-E1003-09	992		-3.44	
2314		-----		-----	
2320	EPA3051	384.4	C,R(0.05)	-12.49	First reported 434.88
2347		-----		-----	
2350	EPA3052	1189		-0.51	
2352		-----		-----	
2355		-----		-----	
2357		-----		-----	
2358	CPSC-CH-E1003-09	N/A		-----	
2363		-----		-----	
2365		-----		-----	
2366	CPSC-CH-E1003-09	1268.12		0.67	
2369		-----		-----	
2370		-----		-----	
2372	EPA3052	2090	R(0.05)	12.92	
2374		-----		-----	
2375	EN16711-1	1350		1.89	
2378		-----		-----	
2379		-----		-----	
2380	CPSC-CH-E1003-09	1087.21		-2.02	
2381		-----		-----	
2382	ASTM F963	NA		-----	
2384		-----		-----	
2385	EPA3052	1509		4.26	
2390	CPSC-CH-E1003-09	1612.90		5.81	
2391	CPSC-CH-E1003-09	1083.0		-2.08	
2406		-----		-----	
2413		-----		-----	
2429	CPSC-CH-E1003-09	1138		-1.27	
2431	In house	1369.89		2.19	
2453		-----		-----	
2460		-----		-----	
2462		-----		-----	
2476		-----		-----	
2480		-----		-----	
2489	In house	849		-5.57	
2511		-----		-----	
2522		-----		-----	
2529		-----		-----	

lab	method	value	mark	z(targ)	remarks
2532	CPSC-CH-E1003-09	809.6		-6.16	
2560		-----		-----	
2561		-----		-----	
2563		-----		-----	
2567	CPSC-CH-E1003-09	1029.7		-2.88	
2572	CPSC-CH-E1003-09	1035.24		-2.80	
2582		-----		-----	
2590	CPSC-CH-E1003-09	961.334	C	-3.90	First reported 600.424
2642		-----		-----	
2674		-----		-----	
2678		-----		-----	
2689		-----		-----	
2713		-----		-----	
2720	CPSC-CH-E1003-09	1139		-1.25	
2723		-----		-----	
2736		-----		-----	
2737		-----		-----	
2788		-----		-----	
2798		-----		-----	
2804		-----		-----	
2805	CPSC-CH-E1003-09	1495.833		4.07	
2812		-----		-----	
2826		-----		-----	
2851		-----		-----	
2853		-----		-----	
2864	CPSC-CH-E1003-09	1550.96		4.89	
2867		-----		-----	
2912		-----		-----	
3100	EPA3051	1357.38		2.00	
3110		-----		-----	
3116		-----		-----	
3118	CPSC-CH-E1003-09	1023.7521	C	-2.97	First reported 629.5134
3154	ISO8124-5	709.0	C	-7.66	First reported 604.24
3160	CPSC-CH-E1003-09	1481.57		3.85	
3172		-----		-----	
3176	CPSC-CH-E1003-09	1519.0	C	4.41	First reported 256.37
3182		-----		-----	
3185	CPSC-CH-E1003-09	1299.49		1.14	
3190	ASTM F963	1155		-1.01	
3191	ISO8124-5	1161.21		-0.92	
3197	CPSC-CH-E1003-09	821.1		-5.99	
3216	In house	1512.362		4.31	
3218		-----		-----	
3225		-----		-----	
3228		-----		-----	
3237	ISO16711-1	1397.3		2.60	
3248	CPSC-CH-E1003-09	N/A		-----	
8005		-----		-----	
	normality	OK			
	n	42			
	outliers	2			
	mean (n)	1222.90			
	st.dev. (n)	223.293	RSD = 18%		
	R(calc.)	625.22			
	st.dev.(Horwitz)	67.114			
	R(Horwitz)	187.92			

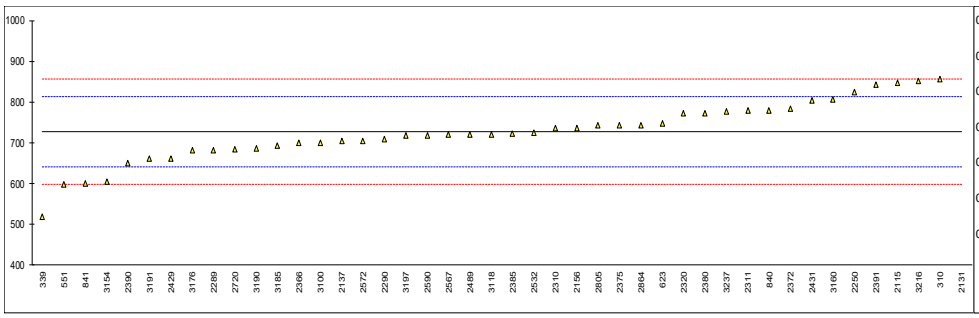


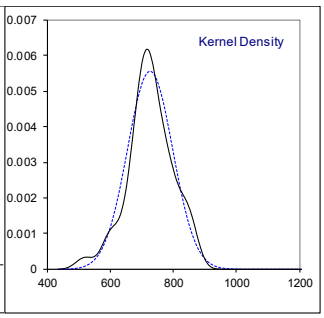


Determination of Total Strontium as Sr on sample #20566; results in mg/kg

lab	method	value	mark	z(targ)	remarks
210		-----		-----	
310	In house	856.0095		3.02	
339		518.91		-4.81	
348		-----		-----	
551	In house	598		-2.97	
623	In house	746.23		0.47	
632		-----		-----	
840	In house	778.830		1.22	
841	ISO8124-5	600		-2.92	
1051		-----		-----	
2115	EN16711-1	847.57		2.82	
2129		-----		-----	
2131	In house	2504.5995	R(0.01)	41.27	
2132		-----		-----	
2137	IEC62321	703.17		-0.53	
2156	EPA3052	735.2		0.21	
2165		-----		-----	
2175		-----		-----	
2182		-----		-----	
2184		-----		-----	
2232		-----		-----	
2236		-----		-----	
2247		-----		-----	
2250	EN16711-1	823.67		2.27	
2256		-----		-----	
2258		-----		-----	
2286		-----		-----	
2287		-----		-----	
2289	CPSC-CH-E1003-09	681.6		-1.03	
2290	CPSC-CH-E1003-09	707.96		-0.42	
2293		-----		-----	
2294	CPSC-CH-E1003-09	NA		-----	
2295		-----		-----	
2296		-----		-----	
2310	CPSC-CH-E1003-09	735		0.21	
2311	CPSC-CH-E1003-09	778		1.21	
2314		-----		-----	
2320	EPA3051	772.96		1.09	
2347		-----		-----	
2350		-----		-----	
2352		-----		-----	
2355		-----		-----	
2357		-----		-----	
2358	CPSC-CH-E1003-09	N/A		-----	
2363		-----		-----	
2365		-----		-----	
2366	CPSC-CH-E1003-09	699.744		-0.61	
2369		-----		-----	
2370		-----		-----	
2372	EPA3052	784		1.34	
2374		-----		-----	
2375	EN16711-1	743		0.39	
2378		-----		-----	
2379		-----		-----	
2380	CPSC-CH-E1003-09	773.23		1.10	
2381		-----		-----	
2382	ASTM F963	NA		-----	
2384		-----		-----	
2385	EPA3052	722		-0.09	
2390	CPSC-CH-E1003-09	650.10		-1.76	
2391	CPSC-CH-E1003-09	843.4		2.72	
2406		-----		-----	
2413		-----		-----	
2429	CPSC-CH-E1003-09	661.6		-1.50	
2431	In house	803.51		1.80	
2453		-----		-----	
2460		-----		-----	
2462		-----		-----	
2476		-----		-----	
2480		-----		-----	
2489	In house	720		-0.14	
2511		-----		-----	
2522		-----		-----	
2529		-----		-----	

lab	method	value	mark	z(targ)	remarks
2532	CPSC-CH-E1003-09	725.0		-0.02	
2560		-----		-----	
2561		-----		-----	
2563		-----		-----	
2567	CPSC-CH-E1003-09	719.0		-0.16	
2572	CPSC-CH-E1003-09	705.12		-0.49	
2582		-----		-----	
2590	CPSC-CH-E1003-09	718.847		-0.17	
2642		-----		-----	
2674		-----		-----	
2678		-----		-----	
2689		-----		-----	
2713		-----		-----	
2720	CPSC-CH-E1003-09	683.8		-0.98	
2723		-----		-----	
2736		-----		-----	
2737		-----		-----	
2788		-----		-----	
2798		-----		-----	
2804		-----		-----	
2805	CPSC-CH-E1003-09	742.429		0.38	
2812		-----		-----	
2826		-----		-----	
2851		-----		-----	
2853		-----		-----	
2864	CPSC-CH-E1003-09	743.06		0.40	
2867		-----		-----	
2912		-----		-----	
3100	EPA3051	700.69		-0.59	
3110		-----		-----	
3116		-----		-----	
3118	CPSC-CH-E1003-09	720.6214		-0.13	
3154	ISO8124-5	605.5		-2.80	
3160	CPSC-CH-E1003-09	806.20		1.86	
3172		-----		-----	
3176	CPSC-CH-E1003-09	681.14		-1.04	
3182		-----		-----	
3185	CPSC-CH-E1003-09	692.02		-0.79	
3190	ASTM F963	687		-0.91	
3191	ISO8124-5	660.11		-1.53	
3197	CPSC-CH-E1003-09	717.3		-0.20	
3216	In house	852.177		2.93	
3218		-----		-----	
3225		-----		-----	
3228		-----		-----	
3237	ISO16711-1	775.8		1.15	
3248	CPSC-CH-E1003-09	N/A		-----	
8005		-----		-----	
	normality	OK			
	n	43			
	outliers	1			
	mean (n)	726.035			
	st.dev. (n)	71.6790	RSD = 10%		
	R(calc.)	200.701			
	st.dev.(Horwitz)	43.0983			
	R(Horwitz)	120.675			





APPENDIX 2
Other reported metals

Abbreviations of Metals:
Sb = total Antimony
As = total Arsenic
Cd = total Cadmium
Cr = total Chromium
Co = total Cobalt
Cu = total Copper
Pb = total Lead
Mn = total Manganese
Hg = total Mercury
Ni = total Nickel
Se = total Selenium
Zn = total Zinc

Determination of Other Metals on sample #20565; results in mg/kg

lab	Sb	As	Cd	Co	Cu	Hg	Ni	Se	Zn
210	-----	-----	-----	-----	-----	-----	-----	-----	-----
310	<0.10	0.410	<0.25	0.99	1.9	<0.25	12	0.33	11.00
339	<12.5	<12.5	<1.5	<1.5	<1.5	-----	<1.5	-----	-----
348	-----	-----	< 5	-----	-----	-----	-----	-----	-----
551	-----	-----	-----	-----	35.70196 C	-----	-----	-----	-----
623	ND	ND	ND	ND	ND	ND	ND	ND	11.49 C
632	-----	-----	-----	-----	-----	-----	-----	-----	-----
840	<5	<5	<5	<5	<5	<5	<5	<5	13.630
841	<0.25	0.5	<0.25	<0.25	<25	<0.25	0.5	<1.25	<25
1051	-----	-----	-----	-----	-----	-----	-----	-----	-----
2115	2.04	0.46	-----	-----	1.06	-----	0.86	0.62	9.40
2129	-----	-----	-----	-----	-----	-----	-----	-----	-----
2131	-----	-----	-----	-----	-----	2.4275	11.7415	-----	-----
2132	<10	<10	<10	-----	-----	<10	-----	<10	-----
2137	-----	-----	-----	-----	-----	-----	-----	-----	-----
2156	<5	<3	<0.5	<1	<1	<5	<1	<3	16.29
2165	-----	-----	<RL	-----	-----	<RL	-----	-----	-----
2175	-----	<2	<2	<2	<2	<2	<2	<5	-----
2182	-----	-----	<10	-----	-----	<10	-----	-----	-----
2184	-----	-----	-----	-----	-----	-----	-----	-----	-----
2232	-----	-----	<5	-----	-----	-----	-----	-----	-----
2236	<10.0	<10.0	<10.0	-----	-----	<10.0	-----	<10.0	-----
2247	-----	-----	-----	-----	-----	-----	-----	-----	-----
2250	not det.	not det.	not det.	not det.	not det.	not det.	not det.	not det.	10.251
2256	ND	ND	ND	-----	-----	ND	-----	ND	-----
2258	N/D	N/D	N/D	-----	-----	N/D	-----	N/D	-----
2286	-----	-----	-----	-----	-----	-----	-----	-----	-----
2287	-----	-----	-----	-----	-----	-----	-----	-----	-----
2289	-----	-----	-----	-----	-----	-----	-----	-----	-----
2290	<20	<20	<20	<20	<20	<20	<20	<20	<20
2293	ND	ND	ND	ND	ND	ND	ND	ND	-----
2294	NA	NA	NA	NA	NA	NA	NA	NA	NA
2295	-----	-----	-----	-----	-----	-----	-----	-----	-----
2296	-----	-----	-----	-----	-----	-----	-----	-----	-----
2310	not det.	not det.	not det.	not det.	<20	not det.	not det.	not det.	20.85
2311	not det.	not det.	not det.	not det.	18	not det.	not det.	not det.	22
2314	-----	-----	not det.	-----	-----	-----	-----	-----	-----
2320	LOQ 1.4	LOQ 0.9	LOQ 0.5	LOQ 0.5	1.53	-----	0.79	LOQ 1.0	5.05
2347	<10	<10	<2	<5	<5	<2	<5	-----	-----
2350	<10	<10	<0.5	<5	<5	<2	<5	<10	19.67
2352	-----	-----	-----	-----	-----	-----	-----	-----	-----
2355	<10	<10	<2	<5	<5	<2	<5	-----	-----
2357	-----	-----	-----	-----	-----	-----	-----	-----	-----
2358	n.d.	n.d.	n.d.	n.d.	N/A	n.d.	n.d.	N/A	N/A
2363	ND	ND	ND	ND	ND	ND	ND	-----	-----
2365	-----	-----	<5	-----	-----	-----	-----	-----	-----
2366	<10	<10	<10	<10	<10	<10	<10	<10	<50
2369	<10	<10	<2	<5	<5	<2	<5	-----	-----
2370	---	---	<2	---	---	<2	---	---	---
2372	<2	<2	<2	<2	<2	<2	<2	<2	10.6
2374	-----	-----	-----	-----	-----	-----	-----	-----	-----
2375	<10	<10	<10	<10	<10	<10	<10	<10	<10

lab	Sb	As	Cd	Co	Cu	Hg	Ni	Se	Zn
2378	-----	-----	-----	-----	-----	-----	-----	-----	-----
2379	-----	-----	not det.	-----	-----	not det.	-----	-----	-----
2380	-----	-----	-----	-----	-----	-----	-----	-----	-----
2381	-----	-----	not det.	-----	-----	-----	-----	-----	-----
2382	＜10.0	＜10.0	＜5.0	＜5.0	＜5.0	＜5.0	＜5.0	NA	NA
2384	-----	-----	<10	-----	-----	-----	-----	-----	-----
2385	<10	<10	<0,5	<5	<5	<0,1	<5	<10	15
2390	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	241.8 C
2391	3.7	<1.0	<1.0	<1.0	13.8	<1.0	<1.0	<0.5 C	14.5
2406	-----	-----	-----	-----	-----	-----	-----	-----	-----
2413	-----	-----	-----	-----	-----	-----	-----	-----	-----
2429	<10	<10	<10	<10	<10	<10	<10	<10	-----
2431	-----	-----	-----	-----	-----	-----	-----	-----	-----
2453	-----	-----	-----	-----	-----	-----	-----	-----	-----
2460	-----	-----	-----	-----	-----	-----	-----	-----	-----
2462	-----	-----	-----	-----	-----	-----	-----	-----	-----
2476	-----	-----	-----	-----	-----	-----	-----	-----	-----
2480	-----	-----	-----	-----	-----	-----	-----	-----	-----
2489	not det.	not det.	not det.	not det.	not det.	not det.	not det.	not det.	not det.
2511	<10	<10	<10	<10	----- W	<10	<10	-----	-----
2522	-----	-----	<5	-----	-----	-----	-----	-----	-----
2529	-----	-----	-----	-----	-----	-----	-----	-----	-----
2532	<10	<10	<10	<10	<10	<10	<10	<10	<10
2560	<10	<10	<10	<10	<10	<10	<10	-----	-----
2561	-----	-----	-----	-----	-----	-----	-----	-----	-----
2563	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	-----
2567	<20	<20	<20	<20	<20	<20	<20	<20	--
2572	<20	<20	<20	<20	<20	<20	<20	<20	<20
2582	-----	-----	-----	-----	-----	-----	-----	-----	-----
2590	39.924 C	4.623	< L.O.Q.	0.736	< L.O.Q.	< L.O.Q.	12.929	2.348	< L.O.Q.
2642	-----	-----	-----	-----	-----	-----	-----	-----	-----
2674	-----	-----	<RL	-----	-----	<RL	-----	-----	-----
2678	-----	-----	-----	-----	-----	-----	-----	-----	-----
2689	-----	-----	-----	-----	-----	-----	-----	-----	-----
2713	-----	-----	-----	-----	-----	-----	-----	-----	-----
2720	<10	<10	<10	<10	<10	<10	<10	<10	-----
2723	-----	-----	-----	-----	-----	-----	-----	-----	-----
2736	<5.10	<5.10	<5.10	<5.10	<5.10	<5.10	<5.10	<5.10	-----
2737	-----	-----	-----	-----	-----	-----	-----	-----	-----
2788	ND	<1	ND	ND	ND	<1	ND	ND	-----
2798	-----	-----	-----	-----	-----	-----	-----	-----	-----
2804	<5	<5	<5	<5	<5	<5	<5	-----	-----
2805	<10	<10	<10	<10	<10	<10	<10	<10	----- W
2812	-----	-----	-----	-----	-----	-----	-----	-----	-----
2826	-----	-----	<10	-----	-----	<10	-----	-----	-----
2851	not det.	not det.	not det.	not det.	-----	not det.	-----	not det.	-----
2853	-----	-----	-----	-----	-----	ND	-----	-----	-----
2864	ND	ND	ND	ND	4.74	ND	ND	ND	9.81
2867	-----	-----	n.d	-----	-----	n.d	-----	-----	-----
2912	-----	-----	-----	-----	-----	-----	-----	-----	-----
3100	<10	<10	<5	<10	<10	<10	<10	<10	<20
3110	-----	-----	-----	-----	-----	-----	-----	-----	-----
3116	-----	-----	-----	-----	-----	-----	-----	-----	-----
3118	<5	<5	<5	,5	<5	<5	<5	<5	<5
3154	-----	-----	-----	-----	-----	-----	-----	-----	26.94 C
3160	<16	<16	<16	<16	<16	<16	<16	<16	25.51
3172	< 10	< 10	< 10	< 10	-----	< 10	< 10	-----	-----
3176	-----	-----	-----	-----	-----	-----	-----	-----	9.64
3182	-----	-----	<13	-----	-----	<13	-----	-----	-----
3185	<10	<10	<10	<10	<10	<10	<10	<10	<50
3190	＜10	＜10	＜10	＜10	＜10	＜10	＜10	＜10	-----
3191	<5.00	<3.00	<5.00	<10.00	<50.00	<5.00	<10.00	<5.00	<250.00
3197	<10	<10	<10	<10	<10	<10	<10	<10	<10
3216	2.452	0.180	0.162	1.131	1.078	nd	2.317	0.143	10.730
3218	-----	-----	-----	-----	-----	-----	-----	-----	-----
3225	-----	-----	-----	-----	-----	-----	-----	-----	-----
3228	-----	-----	<10	-----	-----	<10	-----	-----	-----
3237	-----	-----	-----	-----	-----	-----	-----	-----	-----
3248	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A
8005	-----	-----	-----	-----	-----	-----	-----	-----	-----

Lab 551 first reported 45.26
Lab 623 first reported ND
Lab 2390 first reported 57.45
Lab 2391 first reported 27
Lab 2511 test result withdrawn, reported 261.7
Lab 2590 first reported 62.473
Lab 2805 test result withdrawn reported 35.444
Lab 3154 first reported 34.81

Determination of Other Metals on sample #20566; results in mg/kg

lab	Sb	As	Cd	Cr	Hg	Ni	Zn
210	-----	-----	-----	-----	-----	-----	-----
310	0.065	0.392	0.1135	1.775	0.0135	13.0525	10.6475
339	<12.5	<12.5	<1.5	<3	-----	<1.5	-----
348	-----	-----	<5	<5	-----	-----	-----
551	-----	-----	-----	-----	-----	-----	-----
623	ND	ND	ND	1.17	ND	ND	7.87
632	-----	-----	-----	-----	-----	-----	-----
840	<5	<5	<5	<5	<5	<5	11.570
841	<0.25	0.57	<0.25	1.02	<0.25	0.87	<25
1051	-----	-----	-----	-----	-----	-----	-----
2115	1.38	0.47	-----	1.21	-----	1.08	12.59
2129	-----	-----	-----	-----	-----	-----	-----
2131	-----	-----	-----	-----	2.371	11.6705	341.8465
2132	<10	<10	<10	<10	<10	-----	-----
2137	-----	-----	-----	-----	-----	-----	-----
2156	<5	<3	<0.5	1.3	<5	<1	15.02
2165	-----	-----	<RL	<RL	<RL	-----	-----
2175	-----	<2	<2	<2	<2	<2	-----
2182	-----	-----	<10	-----	<10	-----	-----
2184	-----	-----	-----	-----	-----	-----	-----
2232	-----	-----	<5	-----	-----	-----	-----
2236	<10.0	<10.0	<10.0	<10.0	<10.0	-----	-----
2247	-----	-----	-----	-----	-----	-----	-----
2250	not det.	not det.	not det.	1.336	not det.	1.0547	10.828
2256	ND	ND	ND	ND	ND	-----	-----
2258	N/D	N/D	N/D	N/D	N/D	-----	-----
2286	-----	-----	-----	-----	-----	-----	-----
2287	-----	-----	-----	-----	-----	-----	-----
2289	-----	-----	-----	-----	-----	-----	-----
2290	<20	<20	<20	<20	<20	<20	<20
2293	ND	ND	ND	ND	ND	ND	-----
2294	NA	NA	NA	NA	NA	NA	NA
2295	-----	-----	-----	-----	-----	-----	-----
2296	-----	-----	-----	-----	-----	-----	-----
2310	not det.	not det.	not det.	not det.	not det.	not det.	17.8
2311	not det.	not det.	not det.	not det.	not det.	not det.	22
2314	-----	-----	not det.	-----	-----	-----	-----
2320	LOQ 1.4	LOQ 0.9	LOQ 0.5	1.69	-----	0.97	6.95
2347	<10	<10	<2	<2	<2	<5	-----
2350	<10	<10	<0.5	<5	<2	<5	31.82
2352	-----	-----	-----	-----	-----	-----	-----
2355	<10	<10	<2	-----	<2	<5	-----
2357	-----	-----	-----	-----	-----	-----	-----
2358	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	N/A
2363	ND	ND	ND	ND	ND	ND	-----
2365	-----	-----	<5	-----	-----	-----	-----
2366	<10	<10	<10	<10	<10	<10	<50
2369	<10	<10	<2	<2	<2	<5	-----
2370	---	---	<2	---	<2	---	---
2372	<2	<2	<2	<2	<2	<2	9.64
2374	-----	-----	-----	-----	-----	-----	-----
2375	<10	<10	<10	<10	<10	<10	<10
2378	-----	-----	-----	-----	-----	-----	-----
2379	-----	-----	not det.	not det.	not det.	-----	-----
2380	-----	-----	-----	-----	-----	-----	-----
2381	-----	-----	not det.	-----	-----	-----	-----
2382	＜10.0	＜10.0	＜5.0	＜5.0	＜5.0	＜5.0	NA
2384	-----	-----	<10	-----	-----	-----	-----
2385	<10	<10	<0,5	<5	<0,1	<5	13
2390	n.d	n.d	n.d	n.d	n.d	n.d	286.7 C
2391	2.0	<1.0	<1.0	2.0	<1.0	<1.0	12.9
2406	-----	-----	-----	-----	-----	-----	-----
2413	-----	-----	-----	-----	-----	-----	-----
2429	<10	<10	<10	<10	<10	<10	-----
2431	-----	-----	-----	-----	-----	-----	-----
2453	-----	-----	-----	-----	-----	-----	-----
2460	-----	-----	-----	-----	-----	-----	-----
2462	-----	-----	-----	-----	-----	-----	-----
2476	-----	-----	-----	-----	-----	-----	-----
2480	-----	-----	-----	-----	-----	-----	-----
2489	not det.	not det.	not det.	not det.	not det.	not det.	not det.
2511	<10	<10	<10	<10	<10	<10	-----
2522	-----	-----	<5	-----	-----	-----	-----
2529	-----	-----	-----	-----	-----	-----	-----
2532	<10	<10	<10	<10	<10	<10	<10

lab	Sb	As	Cd	Cr	Hg	Ni	Zn	
2560	<10	<10	<10	<10	<10	<10	-----	
2561	-----	-----	-----	-----	-----	-----	-----	
2563	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	-----	
2567	<20	<20	<20	<20	<20	<20	--	
2572	<20	<20	<20	<20	<20	<20	<20	
2582	-----	-----	-----	-----	-----	-----	-----	
2590	15.036	< L.O.Q.	< L.O.Q.	63.334	< L.O.Q.	< L.O.Q.	3.868	
2642	-----	-----	-----	-----	-----	-----	-----	
2674	-----	-----	<RL	<RL	<RL	-----	-----	
2678	-----	-----	-----	-----	-----	-----	-----	
2689	-----	-----	-----	-----	-----	-----	-----	
2713	-----	-----	-----	-----	-----	-----	-----	
2720	<10	<10	<!0	<10	<10	<10	-----	
2723	-----	-----	-----	-----	-----	-----	-----	
2736	<4.84	<4.84	<4.84	<4.84	<4.84	<4.84	-----	
2737	-----	-----	-----	-----	-----	-----	-----	
2788	ND	<1	ND	6.050674	<1	ND	-----	
2798	-----	-----	-----	-----	-----	-----	-----	
2804	<5	<5	<5	<5	<5	<5	-----	
2805	<10	<10	<10	<10	<10	<10	-----	W
2812	-----	-----	-----	-----	-----	-----	-----	
2826	-----	-----	<10	<10	<10	-----	-----	
2851	not det.	not det.	not det.	not det.	not det.	-----	-----	
2853	-----	-----	-----	-----	ND	-----	-----	
2864	ND	ND	ND	ND	ND	ND	9.01	
2867	-----	-----	n.d	n.d	n.d	-----	-----	
2912	-----	-----	-----	-----	-----	-----	-----	
3100	<10	<10	<5	<10	<10	<10	<20	
3110	-----	-----	-----	-----	-----	-----	-----	
3116	-----	-----	-----	-----	-----	-----	-----	
3118	<5	<5	<5	<5	<5	<5	<5	
3154	-----	-----	-----	1.365	-----	-----	7.512	
3160	<16	<16	<16	<16	-----	<16	23.32	
3172	< 10	< 10	< 10	< 10	< 10	< 10	-----	
3176	-----	-----	-----	-----	-----	-----	6.73	C
3182	-----	-----	<13	-----	<13	-----	-----	
3185	<10	<10	<10	<10	<10	<10	<50	
3190	<10	<10	<10	<10	<10	<10	-----	
3191	<5.00	<3.00	<5.00	<5.00	<5.00	<10.00	<250.00	
3197	<10	<10	<10	<10	<10	<10	<10	
3216	0.865	0.591	0.145	1.811	nd	2.527	11.258	
3218	-----	-----	-----	-----	-----	-----	-----	
3225	-----	-----	-----	-----	-----	-----	-----	
3228	-----	-----	<10	<10	<10	-----	-----	
3237	-----	-----	-----	-----	-----	-----	-----	
3248	N/A	N/A	<10	N/A	N/A	N/A	N/A	
8005	-----	-----	-----	-----	-----	-----	-----	

Lab 2390 first reported 74.06
Lab 2805 test result withdrawn reported 31.0
Lab 3176 first reported 20.63

APPENDIX 3
Analytical details

lab	ISO17025 accr.	Sample intake (in mg)	Acid used for the digestion	Concentration of the acid (in %)
210	---			
310	No	100 mg / 225 mg	HCl	65
339	No			
348	Yes	100 mg	HNO_3, H_2O_2, HCl	67-69, 30, 32
551	No	100 mg	HNO_3	
623	Yes	100 mg	HNO_3	65
632	---			
840	Yes	50 mg	HNO_3	65
841	Yes	100 mg	HNO_3	65-68
1051	Yes	100 mg	HNO_3	13.8
2115	Yes	50 mg	HNO_3	about 15
2129	Yes	50-100 mg	HNO_3	65-68
2131	Yes	200 mg	HNO_3	
2132	Yes	150 mg	HNO_3, H_2O_2	65
2137	Yes	50 mg	HNO_3	69~71
2156	Yes	200 mg	HNO_3, HCl	65, 37
2165	Yes	100 mg	HNO_3, HCl	10
2175	Yes	250 mg	HNO_3, H_2O_2	3
2182	Yes	100 mg	HNO_3	69
2184	---			
2232	Yes	100 mg	HNO_3	65
2236	Yes	100 mg	HNO_3, HCl	70, 35
2247	---			
2250	Yes	100 mg	HNO_3, HCl	67, 37
2256	Yes	110 mg	HNO_3	69
2258	Yes	100 mg	HNO_3	65
2286	Yes	50 mg		
2287	No	50 mg	HNO_3	10
2289	Yes	100 mg	HNO_3, HCl	65, 36.5
2290	---			
2293	No	120 mg	HNO_3	70
2294	---			
2295	Yes	100 mg	HNO_3, H_2O_2, HCl	
2296	---			
2310	Yes	100 mg	HNO_3	65
2311	Yes	100 mg	HNO_3	69
2314	Yes	200 mg	HNO_3	69
2320	Yes	200 mg	HNO_3, H_2O_2	69, 30
2347	No			
2350	Yes	200 mg	HNO_3	65
2352	Yes	100 mg	HNO_3, HCl	32
2355	Yes	250 mg	HNO_3, HCl, HF	65, 37, 67
2357	Yes	100 mg	HNO_3, HCl	
2358	Yes	250 mg	HNO_3	65
2363	Yes	100 mg	HNO_3, HCl	30
2365	Yes	100 mg	HNO_3, HCl, HBF_4	69-70, 36-38, 40
2366	Yes	100 mg	HNO_3, HCl	67, 37
2369	---			
2370	Yes	100 mg	HNO_3, HCl, HF	22.1, 11.8, 4
2372	Yes	200 mg	HNO_3, HCl, HF	60
2374	No	100 mg	HNO_3, HCl, HF	70, 38, 40
2375	Yes	100 mg	HNO_3	
2378	Yes	150 mg	HNO_3, H_2O_2	5
2379	Yes	100 mg	HNO_3, H_2O_2	20, 4
2380	Yes	50 mg	HNO_3, H_2O_2	65, 30
2381	Yes	55 mg	HNO_3	65
2382	Yes	100 mg	HNO_3, HCl	69-71, 36-38
2384	Yes	100 mg	HNO_3	50
2385	Yes	100 to 200 mg	HNO_3, HF	67, 40
2390	Yes	150 mg	HNO_3	65
2391	Yes	100 mg	HNO_3	65
2406	Yes	40 mg	HNO_3	65
2413	---			
2429	Yes	100 mg	HNO_3, HCl	10
2431	Yes	100 mg	HNO_3, HCl	5
2453	Yes	100 mg	HNO_3	
2460	No	200 mg	HNO_3	66
2462	Yes	50 mg	HNO_3, HF	16
2476	Yes	150 mg	HNO_3	65
2480	---			
2489	Yes	40 mg	HNO_3, H_2O_2	69; 30
2511	---			
2522	Yes	100 mg	HNO_3	5
2529	---			

lab	ISO17025 accr.	Sample intake (in mg)	Acid used for the digestion	Concentration of the acid (in %)
2532	Yes	100 mg	HNO_3	67
2560	Yes	100 mg	HNO_3, HCl	69, 37
2561	---			
2563	No	200 mg	HNO_3	67
2567	Yes	50 mg	HNO_3	65
2572	---			
2582	---			
2590	Yes	11 mg	HNO_3	2.5
2642	Yes	100 mg	HNO_3	3
2674	No	100 mg	HNO_3	68
2678	No	100 mg	HNO_3	65
2689	Yes	160 mg	HNO_3, HCl, HF	23, 69, 8
2713	---			
2720	Yes	100 mg	HNO_3, HCl	16
2723	---			
2736	Yes	100 mg	HNO_3, HCl	
2737	Yes	100 mg	HNO_3	65-68
2788	Yes	50 mg	HNO_3, HCl	68, 35
2798	Yes	100 mg	HNO_3, HCl, HF	
2804	No	100 mg	HNO_3	67
2805	Yes	50 mg	HNO_3	65
2812	Yes	150 mg	HNO_3	5
2826	Yes	100 mg	HNO_3, HF	67, 98
2851	Yes	300 mg	HNO_3	65-70
2853	Yes	50 mg	HNO_3	5
2864	Yes	100 mg	HNO_3	68
2867	Yes	100 mg	HNO_3, HCl	40
2912	---			
3100	Yes	110 mg	HNO_3	68
3110	Yes	100 mg	HNO_3, HCl	
3116	Yes	100 mg	HNO_3, H_2O_2	3
3118	Yes	50 mg	HNO_3	65
3154	Yes	200 mg	HNO_3	
3160	Yes	90 mg	HNO_3, H_2O_2, HCl	6.5
3172	Yes			
3176	Yes	100 mg	HNO_3	65
3182	Yes	100 mg	HNO_3	65
3185	Yes	100 mg	HNO_3, HCl	69.0-70.0, 37
3190	Yes	100 mg	HNO_3, HCl	65, 37
3191	Yes	100 mg	HNO_3, HCl	68, 37
3197	Yes	100 mg	HNO_3	65
3216	No	150 mg	HNO_3	69
3218	Yes	200 mg	HNO_3	65
3225	Yes	100 mg	HNO_3	69
3228	Yes	100 mg	HNO_3	65
3237	Yes	100 mg	HNO_3, HCl	65, 37
3248	Yes	150 mg	HNO_3	69.
8005	Yes	100 mg	HNO_3	40

APPENDIX 4

Number of participants per country

3 labs in BANGLADESH
1 lab in BRAZIL
1 lab in CAMBODIA
1 lab in EGYPT
2 labs in FRANCE
5 labs in GERMANY
2 labs in GUATEMALA
16 labs in HONG KONG
6 labs in INDIA
2 labs in INDONESIA
4 labs in ITALY
2 labs in JAPAN
4 labs in MALAYSIA
2 labs in MEXICO
1 lab in MOROCCO
1 lab in NETHERLANDS
29 labs in P.R. of CHINA
1 lab in PAKISTAN
1 lab in PHILIPPINES
1 lab in PORTUGAL
2 labs in SINGAPORE
2 labs in SOUTH KOREA
3 labs in SPAIN
2 labs in SRI LANKA
2 labs in SWITZERLAND
3 labs in TAIWAN R.O.C.
2 labs in THAILAND
2 labs in TUNISIA
7 labs in TURKEY
5 labs in U.S.A.
2 labs in UNITED KINGDOM
5 labs in VIETNAM

APPENDIX 5

Abbreviations

C = final test result after checking of first reported suspect test result
D(0.01) = outlier in Dixon's outlier test
D(0.05) = straggler in Dixon's outlier test
G(0.01) = outlier in Grubbs' outlier test
G(0.05) = straggler in Grubbs' outlier test
DG(0.01) = outlier in Double Grubbs' outlier test
DG(0.05) = straggler in Double Grubbs' outlier test
R(0.01) = outlier in Rosner's outlier test
R(0.05) = straggler in Rosner's outlier test
W = test result withdrawn on request of participant
ex = test result excluded from the statistical evaluation
n.a. = not applicable
n.e. = not evaluated
n.d. = not detected
fr. = first reported

Literature

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