Results of Proficiency Test
Metals in dried Paint
April 2018

Organised by: Institute for Interlaboratory Studies
Spijkenisse, the Netherlands

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CONTENTS

1 INTRODUCTION 3

2 SET UP 3

2.1 ACCREDITATION 3

2.2 PROTOCOL 3

2.3 CONFIDENTIALITY STATEMENT 4

2.4 SAMPLES 4

2.5 ANALYSES 4

3 RESULTS 5

3.1 STATISTICS 5

3.2 GRAPHICS 6

3.3 Z-SCORES 6

4 EVALUATION 7

4.1 EVALUATION PER SAMPLE AND PER ELEMENT 7

4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES 8

4.3 COMPARISON OF THE PROFICIENCY TEST OF APRIL 2018 WITH PREVIOUS PTS 9

4.4 EVALUATION OF THE ANALYTICAL DETAILS 10

5 DISCUSSION 10

6 CONCLUSION 11

Appendices:

1. Data and statistical results 12
2. Summary of other reported test results 24
3. Analytical Details 32
4. Number of participants per country 35
5. Abbreviations and literature 36

1 INTRODUCTION

Since the USA Consumer Product Safety Improvement Act (CPSIA) did Pass in 2008, Institute for Interlaboratory Studies (iis) received a number of requests to start a Proficiency Test (PT) scheme for the determination of Lead in paint. Among other things, the CPSIA (sec. 101) bans Lead and Phthalates 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 heavy metals on request of a number of participants.
In the 2018 interlaboratory study, 139 laboratories in 37 different countries registered for participation. See appendix 4 for the number of participants per country. In this report, the results of the 2018 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 in Spijkenisse was the organiser of this proficiency test. In this proficiency test, it was decided to use two different dried paint samples (labelled #18535 and #18536). Sample #18535 was spiked with Chromium and Lead. Sample #18536 was spiked with Cadmium, Cobalt, Mercury and Nickel. Sample analyses for fit-for-use and homogeneity testing were subcontracted to an ISO/IEC17025 accredited laboratory. The participants were asked 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/IEC 17043:2010 (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 organisation 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 March 2017 (iis-protocol, version 3.4). This protocol can be downloaded via the FAQ page of the iis website www.iisnl.com.

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

Two different dried paint samples were used in this proficiency test. For the batch of sample #18535 yellow paint was fortified with Chromium and Lead. For the batch of sample #18536 grey paint was fortified with Cadmium, Cobalt, Mercury and Nickel. After thorough mixing, the paint batches were applied to plastic sheets. After drying, the paints were scraped off, milled and per batch divided over 150 plastic bags of 0.5 gram and labelled #18535 or labelled #18536 respectively.

The batch for sample #18535 was used in a previous proficiency test on Metals in dried Paint (iis12V01, sample #12011). In iis12V01 the homogeneity of this batch was demonstrated sufficiently without doubt. Therefore, homogeneity of the subsamples #18535 was assumed. The batch for sample #18536 was also used in a previous proficiency test on Metals in dried Paint (iis16V01, sample #16551). In iis16V01 the homogeneity of this batch was also demonstrated sufficiently without doubt. Therefore, homogeneity of the subsamples #18536 was assumed.

Approx. 0.5 grams of each of the subsamples #18535 and #18536 were sent to the participating laboratories on March 21, 2018.

2.5 ANALYSES

The participants were requested to determine on both samples #18535 and #18536 the concentration of total Antimony, Arsenic, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Nickel and Selenium, applying the analysis procedure that is routinely used in the laboratory. Also, some method details were requested.

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 results, but report as much significant figures as possible. It was also requested not to report ‘less than’ 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. 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 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 in appendix 1 of this report. The laboratories are presented by their code numbers.

Directly after the deadline, a reminder was sent to those laboratories that had not reported test results at that moment.

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

3.1 STATISTICS

The protocol followed in the organisation of this proficiency test was the one as described in the report 'iis Interlaboratory Studies: Protocol for the Organization, Statistics and Evaluation' of March 2017 (iis-protocol, version 3.4).

For the statistical evaluation the *unrounded* (when available) figures were used instead of the rounded test results. Test results reported as '<…' or '>…" were in general 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 ISO 5725, the original test results per determination were submitted to Dixon's and/or 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 the averages and the 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. When the uncertainty passed the evaluation, no remarks are made in the report. However, when the uncertainty

failed the evaluation it is mentioned in the report and it will have consequences for the evaluation of the test results.

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

3.2 GRAPHICS

In order to visualise the data against the reproducibilities from literature, Gauss plots were made, using the sorted data for one determination (see appendix 1). On the Y-axis the reported analysis 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 standard. 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 individual participating laboratories the z-scores were calculated. In order to be able to have an objective evaluation of the performance of the individual participants, it was decided to evaluate this performance against the literature requirements. Therefore, the z-scores were calculated using a target standard deviation. This results in an evaluation independent of the variation in this interlaboratory study.

The target standard deviation was calculated from the literature reproducibility by division with 2.8. In case no literature reproducibility was available, other target values were used. In some cases, a reproducibility based on former iis 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 is fit-for-use.

The z-scores were calculated according to:

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

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:

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

4 EVALUATION

During the execution of this proficiency test no major problems were encountered. Only six participants did not report any test results at all. Finally, the 133 reporting laboratories did report in total 638 numerical test results. Observed were 25 statistically outlying test results, which is 3.9% 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.

Due to the lack of precision data in the relevant test methods for the determination of metals in paint, the z-scores and the calculated reproducibilities were compared to an estimated reproducibility calculated using the Horwitz equation.

4.1 EVALUATION PER SAMPLE AND PER ELEMENT

In this section, the results are discussed per sample and per element. All statistical test results reported on the paint samples are summarised in appendix 1.

Sample #18535

Total Chromium: The total Chromium determination on this sample, at a concentration level of 82 mg/kg, may be problematic for some participants. Two statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the estimated reproducibility calculated using the Horwitz equation.

Total Lead: The total Lead determination on this sample, at a concentration level of 279 mg/kg, may be problematic. One statistical outlier was observed and one test result was excluded. The calculated reproducibility after rejection of the suspect data is not in agreement with the estimated reproducibility calculated using the Horwitz equation.

Other metals: The majority of participants did not detect Antimony, Arsenic, Cadmium, Cobalt, Copper, Mercury, Nickel or Selenium in this sample.

Sample #18536

Total Cadmium: The total Cadmium determination on this sample, at a concentration level of 73 mg/kg, may be problematic for some participants. Seven statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the estimated reproducibility calculated using the Horwitz equation.

Total Cobalt: The total Cobalt determination on this sample, at a concentration level of 490 mg/kg, may be very problematic. One statistical outlier was observed. The variation was high compared to estimated reproducibility using the Horwitz equation. Therefore, it was decided not to calculate z-scores for this determination. See also the discussion in paragraph 5.

Total Mercury: The total Mercury determination on this sample, at a concentration level of 111 mg/kg, may be problematic. Six statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the estimated reproducibility calculated using the Horwitz equation.

Total Nickel: The total Nickel determination on this sample, at a concentration level of 1533 mg/kg may be problematic for some participants. Eight statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in full agreement with the estimated reproducibility calculated using the Horwitz equation.

Other metals: The majority of participants did not detect Antimony, Arsenic, Chromium, Copper, Lead or Selenium in this sample.

4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES

A comparison has been made between the target reproducibilities calculated from the Horwitz equation and the reproducibilities as found for the group of participating laboratories. The number of significant results, the average results, the calculated reproducibilities (standard deviation times 2.8) and the target reproducibilities are compared in the next tables.

Parameter	*unit*	*n*	*average*	*2.8 * sd*	*R (target)*
Total Chromium	mg/kg	104	81.6	20.1	18.8
Total Lead	mg/kg	131	278.6	68.9	53.5

table 1: reproducibilities of tests on sample #18535

Parameter	*unit*	*n*	*average*	*2.8 * sd*	*R (target)*
Total Cadmium	mg/kg	111	73.1	15.1	17.2
Total Cobalt	mg/kg	86	489.1	393.2	(86.3) *)
Total Mercury	mg/kg	98	111.4	34.0	24.5
Total Nickel	mg/kg	81	1533.2	217.3	227.7

table 2: reproducibilities of tests on sample #18536

*) results between brackets: no z scores were calculated

From the above table, it can be concluded, without statistical calculations, that the participating laboratories have no difficulties with the analysis of total Chromium, Cadmium and Nickel in dried paint but that the analysis of total Lead, Cobalt and Mercury is more difficult for the laboratories when compared with the strict target results calculated with the Horwitz equation. See also the discussions in paragraphs 4.1 and 5.

4.3 EVALUATION OF THE PROFICIENCY TEST OF APRIL 2018 WITH PREVIOUS PTS

	April 2018	*April 2017*	*April 2016*	*April 2015*	*April 2014*
Number of reporting labs	133	132	152	156	132
Number of results reported	638	975	1133	558	264
Number of statistical outliers	25	24	33	16	10
Percentage outliers	3.9%	2.5%	2.9%	2.9%	3.8%

table 3: comparison with previous proficiency tests

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

The uncertainties in percentages of the determinations of the proficiency tests was compared against the calculated requirements of Horwitz in the following table.

Parameter	*April 2018*	*April 2017*	*April 2016*	*April 2015*	*April 2014*	*2009-2013*	*Horwitz RSD 2500-25 mg/kg*
Total Antimony	n.e.	n.e.	15%	n.e.	n.e.	n.e.	5-10%
Total Arsenic	n.e.	9%	n.e.	n.e.	n.e.	n.e.	5-10%
Total Cadmium	7%	n.e.	7-8%	n.e.	n.e.	n.e.	5-10%
Total Chromium	9%	9-12%	9%	n.e.	n.e.	n.e.	5-10%
Total Cobalt	29%	8%	30%	7%	n.e.	n.e.	5-10%
Total Copper	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.	5-10%
Total Lead	9%	9%	10%	9%	6 - 8%	7-10%	5-10%
Total Mercury	11%	14%	18%	n.e.	n.e.	n.e.	5-10%
Total Nickel	5%	13%	5%	13%	n.e.	n.e.	5-10%
Total Selenium	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.	5-10%

table 4: comparison of the uncertainties (in %) over the years

For most determinations, the observed uncertainty is in good agreement with the requirements of Horwitz. Therefore, it is remarkable that the uncertainty observed for Cobalt is so much higher. Some explanations are given in the discussion (see paragraph 5).

4.4 EVALUATION OF ANALYTICAL DETAILS

For this Proficiency Test, also some analytical details were requested (see appendix 3). It appeared that 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 most laboratories. Sometimes other versions of CPSC were used. About 17% of the laboratory used an 'in house' method. Depending on the metal to be determined were other methods reported: EPA 3052, EPA 3051, EN 16711, ASTM F963, IEC62321, ISO17072-2 and ISO8124-5. Surprisingly, some of these test methods are not designed to determine metals in dried paint. For example, ISO17072-5 is a test method to determine metals in leather; EN16711 is for metals in textile and IEC62321 for metals in electro technical products.

It appeared also that 85% of the reporting participants is accredited in accordance with ISO/IEC17025 to determine reported components.
Most laboratories used a sample intake between 10 and 500 mg. Fifty-two percent of the reporting participants used 100mg.
Nearly all laboratories used a strong acid like Nitric Acid to digest the paint. Most participants used a combination of Nitric Acid with Hydrochloric Acid and/or Hydrofluoric Acid.
When evaluating the above differences to the reported test results, no clear correlation was found.

5 DISCUSSION

Sample #18535 was used in a previous Proficiency Test (iis12V01, sample #12011, 2012). A comparison is made between the two proficiency tests. It is observed that the PT findings of the subsamples of dried paint containing Lead give a good correlation.

	unit	#18535			#12011		
		n	mean	R(calc)	n	mean	R(calc)
Total Lead	mg/kg	131	278.6	68.9	106	274.4	76.5

table 5: comparison of sample #18535 with #12011

Sample #18536 was used in a previous Proficiency Test (iis16V01, sample #16551, 2016). Again, a comparison is made between the two proficiency tests. It is observed that the PT findings of the subsamples of dried paint containing Cadmium, Cobalt, Mercury and Nickel give a good correlation.

	unit	#18536			#16551		
		n	mean	R(calc)	n	mean	R(calc)
Total Cadmium	mg/kg	111	73.1	15.1	131	72.9	17.1
Total Cobalt	mg/kg	86	489.1	393.2	99	457.0	384.2
Total Mercury	mg/kg	98	111.4	34.0	117	112.8	57.2
Total Nickel	mg/kg	81	1533.2	217.3	94	1524.0	202.4

table 6: comparison of sample #18536 with #16551

As mentioned in paragraph 4.3 again a large variation is observed for the determination of Cobalt compared to the PTs of 2015 and 2017. A possible explanation could be the different type of paints used which complicated the determination of Cobalt. May be it is more difficult to digest the Cobalt in a different organic matrix complex?

Another explanation could be the spectral interferences in the ICP determination due to overlap of the emission line from e.g. Cobalt or stray light from the emission line of high concentration elements e.g. Nickel.

6 CONCLUSION

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.

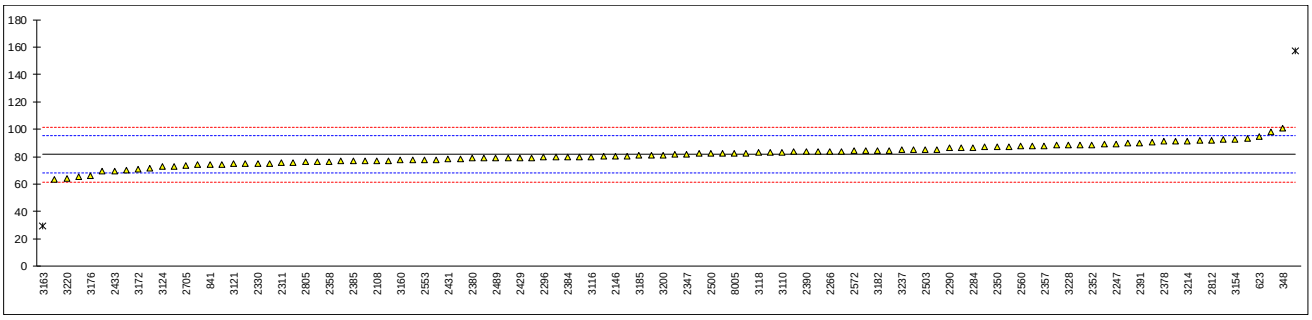
APPENDIX 1

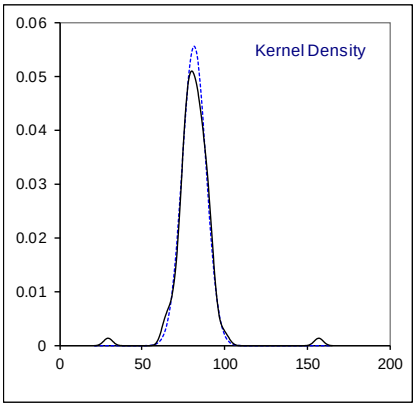
Determination of Total Chromium as Cr on sample #18535; results in mg/kg

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
213	CPSC-CH-E1003-09	-----		-----	2431	In house	78.0476		-0.52
230		-----		-----	2433	CPSC-CH-E1003-09	69.70		-1.76
330	In house	85.22		0.54	2448	IEC62321	77.80		-0.56
348	CPSC-CH-E1003-09	100.88		2.87	2453	CPSC-CH-E1003-09	-----		-----
523		-----		-----	2459	CPSC-CH-E1003-09.1	69.565		-1.78
551	EPA3052	83.55		0.30	2460	CPSC-CH-E1003-09	-----		-----
623	In house	94.75		1.96	2476		-----		-----
840	CPSC-CH-E1003-09	77.29		-0.63	2480		-----		-----
841	EPA3052	74.5		-1.05	2489	In house	79		-0.38
1051	CPSC-CH-E1003-09	-----		-----	2492	In house	97.9		2.43
1099	In house	73.02		-1.27	2495	CPSC-CH-E1003-09	80.14		-0.21
1128		-----		-----	2497	ISO17072-2	84.08		0.38
2108	CPSC-CH-E1003-09	77.0		-0.68	2500	CPSC-CH-E1003-09	82.23		0.10
2115	CPSC-CH-E1003-09	-----		-----	2503		85.25		0.55
2118	CPSC-CH-E1002-08	76.7434		-0.72	2509	CPSC-CH-E1003-09	157	R(0.01)	11.21
2120	CPSC-CH-E1003-09	-----		-----	2511	CPSC-CH-E1003-09	76.96		-0.68
2129	CPSC-CH-E1003-09	82.7		0.17	2514	In house	89.9		1.24
2132	CPSC-CH-E1003-09	82.39		0.12	2522	CPSC-CH-E1003-09	-----		-----
2137	CPSC-CH-E1003-09	90.27		1.30	2529	CPSC-CH-E1003-09	-----		-----
2146	In house	80.50		-0.16	2532	EPA3052	83		0.21
2165	ASTM F963	84.0		0.36	2553	CPSC-CH-E1003-09	77.88		-0.55
2170	CPSC-CH-E1003-09	-----		-----	2560		87.66		0.91
2182	In house	-----		-----	2564	CPSC-CH-E1003-09	-----		-----
2184	CPSC-CH-E1003-09	78.2		-0.50	2567	CPSC-CH-E1003-09	84.38		0.42
2213	CPSC-CH-E1002-08	75.3		-0.93	2572	CPSC-CH-E1003-09	84.3		0.41
2215	EPA3052	81.66		0.02	2574	In house	75.205		-0.94
2247	CPSC-CH-E1003-09	89.3		1.15	2590	CPSC-CH-E1003-09	74.4201		-1.06
2255	In house	92.4		1.61	2632	IEC62321-4&5	70.24		-1.68
2256		88.48		1.03	2642	CPSC-CH-E1003-09	-----		-----
2258	In house	87.087		0.82	2645	CPSC-CH-E1003-09	-----		-----
2266	CPSC-CH-E1003-09	84		0.36	2674	CPSC-CH-E1003-09	87.2		0.84
2284	CPSC-CH-E1003-09	86.712		0.77	2678	CPSC-CH-E1003-09	-----		-----
2286	CPSC-CH-E1003-09	-----		-----	2705	In house	73.87		-1.14
2287		-----		-----	2713	In house	-----		-----
2289	CPSC-CH-E1003-09	74.57		-1.04	2720	CPSC-CH-E1003-09	78.9		-0.39
2290	CPSC-CH-E1003-09	86.2		0.69	2805	ASTM F963	76		-0.83
2293	CPSC-CH-E1003-09	-----		-----	2809	CPSC-CH-E1003-09	74.7400		-1.01
2294	CPSC-CH-E1003-09	-----		-----	2812	CPSC-CH-E1003-09	92.05		1.56
2296	In house	79.4652		-0.31	2826		77.88		-0.55
2301		63.4469		-2.69	2840		-----		-----
2309	EPA3051	80.0		-0.23	2851		-----		-----
2310	CPSC-CH-E1003-09	79.05		-0.37	3100	ISO8124-5	79.7654		-0.27
2311	CPSC-CH-E1003-09	75.28		-0.93	3110	In house	83.42		0.28
2314	CPSC-CH-E1003-09	-----		-----	3116		80.03		-0.23
2330	CPSC-CH-E1003-09	74.9909		-0.98	3118	CPSC-CH-E1003-09	82.856		0.19
2347	EPA3052	82.0		0.07	3121	In house	74.6		-1.03
2350	EPA3052	87.10		0.82	3124	EPA3052	72.964		-1.28
2352	IEC62321-4&5	88.7		1.06	3146	CPSC-CH-E1003-09	71.4		-1.51
2355	CPSC-CH-E1003-09	91.8		1.52	3150	CPSC-CH-E1003-09	93	C	1.70
2357	ISO8124-5	88		0.96	3154	CPSC-CH-E1003-09	92.80		1.67
2358	CPSC-CH-E1003-09	76.62		-0.73	3160	CPSC-CH-E1003-09	77.66		-0.58
2363	EPA3052	89		1.11	3163	In house	29.5	R(0.01)	-7.74
2365	EPA3052	85.4		0.57	3172	CPSC-CH-E1003-09	70.8		-1.60
2366	CPSC-CH-E1003-09	86.63		0.75	3176	CPSC-CH-E1003-09	66.35		-2.26
2369	EPA3052	88.2		0.99	3182	CPSC-CH-E1003-09	84.40		0.42
2370	CPSC-CH-E1003-09	79.2		-0.35	3185	CPSC-CH-E1003-09	80.72		-0.12
2372	ASTM F963	84.6		0.45	3191	ISO8124-5	80.66		-0.13
2375	ISO16711-1	88		0.96	3197	CPSC-CH-E1003-09	82.1		0.08
2378	EPA3052	91.0		1.40	3200	ISO8124-5	81.15		-0.06
2379	CPSC-CH-E1003-09	-----		-----	3209	ISO8124-5	81.05		-0.07
2380	CPSC-CH-E1003-09	78.8		-0.41	3210	CPSC-CH-E1003-09	-----		-----
2381	CPSC-CH-E1003-09	-----		-----	3214	EPA3052	91.1		1.42
2382	EPA3052	91.1		1.42	3216	In house	65.752		-2.35
2384	CPSC-CH-E1003-09	79.97		-0.24	3220	EN16711-1	64.1982		-2.58
2385	In house	76.8		-0.71	3225	CPSC-CH-E1003-09	-----		-----
2389		-----		-----	3228	CPSC-CH-E1003-09	88.2		0.99
2390	CPSC-CH-E1003-09	83.810		0.34	3237	In house	84.92		0.50
2391	CPSC-CH-E1003-09	90		1.26	3248	CPSC-CH-E1003-09	76		-0.83
2426	CPSC-CH-E1003-09	-----		-----	8005		82.6		0.16
2429	CPSC-CH-E1003-09	79.15		-0.36					

normality	OK	
n	104	
outliers	2	
mean (n)	81.554	
st.dev. (n)	7.1677	RSD= 8.8%
R(calc.)	20.070	
st.dev.(Horwitz)	6.7277	
R(Horwitz)	18.837	

Lab 3150 first reported: 57



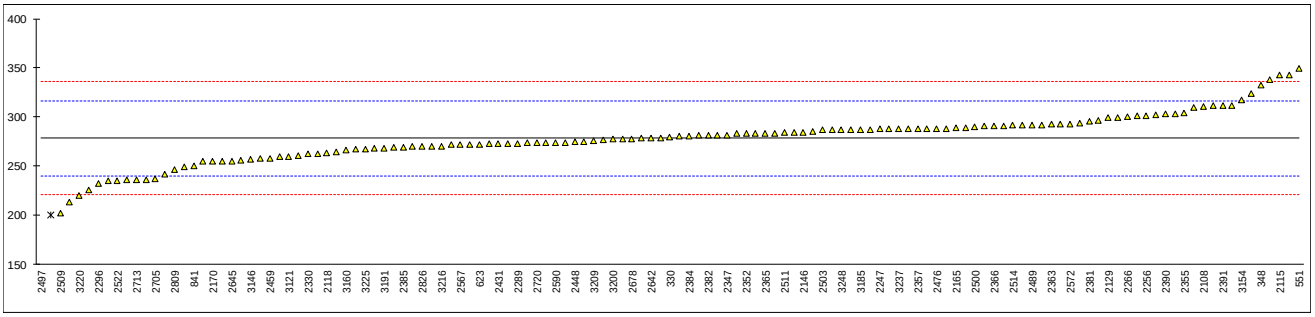


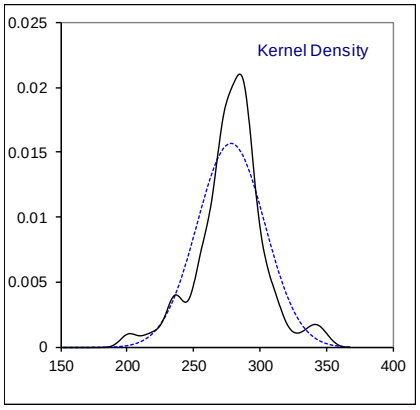
Determination of Total Lead as Pb on sample #18535; results in mg/kg

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
213	CPSC-CH-E1003-09	311.35		1.72	2431	In house	272.7121		-0.31
230		-----		-----	2433	CPSC-CH-E1003-09	236.24		-2.22
330	In house	279.79		0.06	2448	IEC62321	274.93		-0.19
348	CPSC-CH-E1003-09	332.49		2.82	2453	CPSC-CH-E1003-09	302.3		1.24
523		-----		-----	2459	CPSC-CH-E1003-09.1	257.971		-1.08
551	EPA3052	349.6	C	3.72	2460	CPSC-CH-E1003-09	303.603		1.31
623	In house	272.45		-0.32	2476		288.05		0.50
840	CPSC-CH-E1003-09	264.22		-0.75	2480		-----		-----
841	EPA3052	250.6		-1.46	2489	In house	292		0.70
1051	CPSC-CH-E1003-09	254.69		-1.25	2492	In house	296.8		0.95
1099	In house	269.89		-0.45	2495	CPSC-CH-E1003-09	281.33		0.14
1128		-----		-----	2497	ISO17072-2	103.77	R(0.01)	-9.15
2108	CPSC-CH-E1003-09	310.3		1.66	2500	CPSC-CH-E1003-09	290.12		0.60
2115	CPSC-CH-E1003-09	342.4		3.34	2503		286.7		0.43
2118	CPSC-CH-E1002-08	263.6973		-0.78	2509	CPSC-CH-E1003-09	202		-4.01
2120	CPSC-CH-E1003-09	338.0	C	3.11	2511	CPSC-CH-E1003-09	284.08		0.29
2129	CPSC-CH-E1003-09	299		1.07	2514	In house	291.4		0.67
2132	CPSC-CH-E1003-09	274.28		-0.22	2522	CPSC-CH-E1003-09	235.5		-2.25
2137	CPSC-CH-E1003-09	324		2.38	2529	CPSC-CH-E1003-09	242.2082		-1.90
2146	In house	284.46		0.31	2532	EPA3052	285		0.34
2165	ASTM F963	288.6		0.52	2553	CPSC-CH-E1003-09	267.88		-0.56
2170	CPSC-CH-E1003-09	254.9195	C	-1.24	2560		280.14		0.08
2182	In house	213.3838		-3.41	2564	CPSC-CH-E1003-09	312.1		1.76
2184	CPSC-CH-E1003-09	272.5		-0.32	2567	CPSC-CH-E1003-09	272.25		-0.33
2213	CPSC-CH-E1002-08	283.6		0.26	2572	CPSC-CH-E1003-09	293.1		0.76
2215	EPA3052	277.06		-0.08	2574	In house	277.420		-0.06
2247	CPSC-CH-E1003-09	287.66		0.48	2590	CPSC-CH-E1003-09	273.9715		-0.24
2255	In house	291.3		0.67	2632	IEC62321-4&5	236.09		-2.22
2256		301.1		1.18	2642	CPSC-CH-E1003-09	279		0.02
2258	In house	343.08		3.38	2645	CPSC-CH-E1003-09	255.18		-1.22
2266	CPSC-CH-E1003-09	300		1.12	2674	CPSC-CH-E1003-09	283.0		0.23
2284	CPSC-CH-E1003-09	287.102		0.45	2678	CPSC-CH-E1003-09	277.7032		-0.05
2286	CPSC-CH-E1003-09	284.41		0.31	2705	In house	236.81		-2.19
2287		-----		-----	2713	In house	236.2		-2.22
2289	CPSC-CH-E1003-09	272.9		-0.30	2720	CPSC-CH-E1003-09	273.8		-0.25
2290	CPSC-CH-E1003-09	300.9		1.17	2805	ASTM F963	279		0.02
2293	CPSC-CH-E1003-09	290.500		0.62	2809	CPSC-CH-E1003-09	246.5075		-1.68
2294	CPSC-CH-E1003-09	267.630		-0.57	2812	CPSC-CH-E1003-09	272.32		-0.33
2296	In house	232.8261		-2.39	2826		269.953		-0.45
2301		235.0556		-2.28	2840		278.7510		0.01
2309	EPA3051	287.4		0.46	2851	CPSC-CH-E1003-09.1	287.7344		0.48
2310	CPSC-CH-E1003-09	292.2		0.71	3100	ISO8124-5	273.602		-0.26
2311	CPSC-CH-E1003-09	286.78		0.43	3110	In house	289.42		0.57
2314	CPSC-CH-E1003-09	281.4		0.15	3116		272.82		-0.30
2330	CPSC-CH-E1003-09	262.7420		-0.83	3118	CPSC-CH-E1003-09	249.637		-1.51
2347	EPA3052	281.7		0.16	3121	In house	259.6		-0.99
2350	EPA3052	272.2		-0.33	3124	EPA3052	255.08		-1.23
2352	IEC62321-4&5	283.0		0.23	3146	CPSC-CH-E1003-09	257		-1.13
2355	CPSC-CH-E1003-09	304.3		1.35	3150	CPSC-CH-E1003-09	275	C	-0.19
2357	ISO8124-5	288		0.49	3154	CPSC-CH-E1003-09	317.1		2.02
2358	CPSC-CH-E1003-09	259.5		-1.00	3160	CPSC-CH-E1003-09	266.41		-0.64
2363	EPA3052	293		0.76	3163	In house	200.0	ex	-4.11
2365	ASTM F963	283.1		0.24	3172	CPSC-CH-E1003-09	287.7		0.48
2366	CPSC-CH-E1003-09	291.08		0.65	3176	CPSC-CH-E1003-09	260.31		-0.96
2369	EPA3052	291.7		0.69	3182	CPSC-CH-E1003-09	257.8		-1.09
2370	CPSC-CH-E1003-09	256		-1.18	3185	CPSC-CH-E1003-09	287.13		0.45
2372	ASTM F963	270		-0.45	3191	ISO8124-5	267.98		-0.55
2375	ISO16711-1	288		0.49	3197	CPSC-CH-E1003-09	294.1		0.81
2378	EPA3052	293.1		0.76	3200	ISO8124-5	277.39		-0.06
2379	CPSC-CH-E1003-09	225.4134		-2.78	3209	ISO8124-5	275.53		-0.16
2380	CPSC-CH-E1003-09	299.5		1.10	3210	CPSC-CH-E1003-09	263		-0.82
2381	CPSC-CH-E1003-09	295.32		0.88	3214	EPA3052	309.9		1.64
2382	EPA3052	281.4		0.15	3216	In house	270.183		-0.44
2384	CPSC-CH-E1003-09	280.88		0.12	3220	EN16711-1	220.0396		-3.06
2385	In house	269		-0.50	3225	CPSC-CH-E1003-09	267.66		-0.57
2389		-----		-----	3228	CPSC-CH-E1003-09	282.9		0.23
2390	CPSC-CH-E1003-09	303.304		1.29	3237	In house	287.71		0.48
2391	CPSC-CH-E1003-09	312		1.75	3248	CPSC-CH-E1003-09	287		0.44
2426	CPSC-CH-E1003-09	268.887		-0.51	8005		288.52		0.52
2429	CPSC-CH-E1003-09	273.92		-0.24					

normality	suspect	
n	131	
outliers	1 (+1ex)	
mean (n)	278.572	
st.dev. (n)	24.5975	RSD= 8.8%
R(calc.)	68.873	
st.dev.(Horwitz)	19.1011	
R(Horwitz)	53.483	

Lab 551 first reported: 454.16
Lab 2120 first reported: 186
Lab 2170 first reported: <10
Lab 3150 first reported: 176
Lab 3163 test results are excluded as four of six test values are outliers



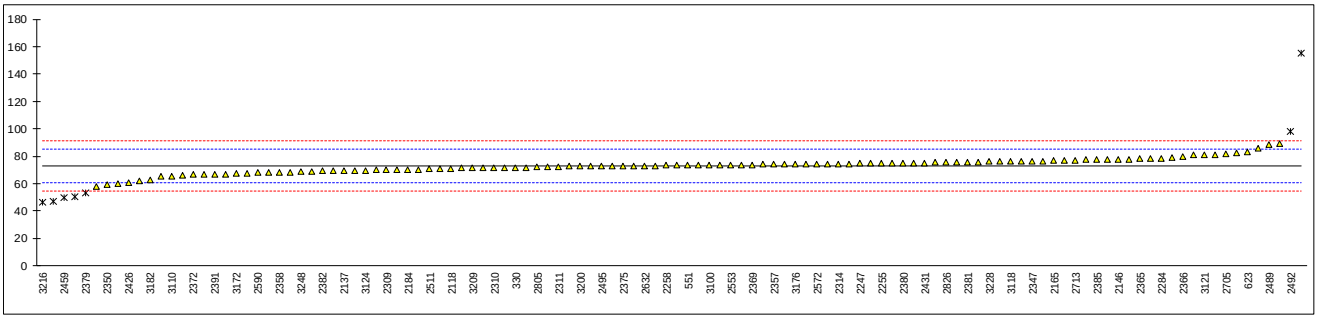


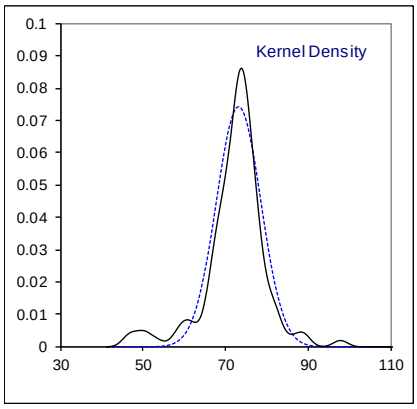
Determination of Total Cadmium as Cd on sample #18536; results in mg/kg

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
213	CPSC-CH-E1003-09	77.92		0.79	2431	In house	75.1552		0.34
230		-----		-----	2433	CPSC-CH-E1003-09	66.96		-1.00
330	In house	71.8		-0.21	2448	IEC62321	50.22	R(0.05)	-3.73
348	CPSC-CH-E1003-09	74.11		0.16	2453	CPSC-CH-E1003-09	-----		-----
523		-----		-----	2459	CPSC-CH-E1003-09.1	50.00	R(0.05)	-3.77
551	EPA3052	73.55		0.07	2460	CPSC-CH-E1003-09	-----		-----
623	In house	82.98		1.61	2476		-----		-----
840	CPSC-CH-E1003-09	69.33		-0.61	2480		-----		-----
841	EPA3052	67.1		-0.98	2489	In house	88.5		2.51
1051	CPSC-CH-E1003-09	-----		-----	2492	In house	97.8	R(0.05)	4.03
1099	In house	74.67		0.26	2495	CPSC-CH-E1003-09	72.82		-0.05
1128		-----		-----	2497	ISO17072-2	72.68		-0.07
2108	CPSC-CH-E1003-09	89.0		2.59	2500	CPSC-CH-E1003-09	82.213		1.49
2115	CPSC-CH-E1003-09	-----		-----	2503		85.98		2.10
2118	CPSC-CH-E1002-08	71.1025		-0.33	2509	CPSC-CH-E1003-09	77		0.64
2120	CPSC-CH-E1003-09	47.3	R(0.05)	-4.21	2511	CPSC-CH-E1003-09	70.55		-0.42
2129	CPSC-CH-E1003-09	77.5		0.72	2514	In house	77.53		0.72
2132	CPSC-CH-E1003-09	68.45		-0.76	2522	CPSC-CH-E1003-09	71.7		-0.23
2137	CPSC-CH-E1003-09	69.37		-0.61	2529	CPSC-CH-E1003-09	71.8495		-0.20
2146	In house	77.63		0.74	2532	EPA3052	75		0.31
2165	ASTM F963	76.9		0.62	2553	CPSC-CH-E1003-09	73.68		0.09
2170	CPSC-CH-E1003-09	-----		-----	2560		78.50		0.88
2182	In house	60.2438		-2.10	2564	CPSC-CH-E1003-09	73.0		-0.02
2184	CPSC-CH-E1003-09	70.5		-0.42	2567	CPSC-CH-E1003-09	69.04		-0.66
2213	CPSC-CH-E1002-08	70.1		-0.49	2572	CPSC-CH-E1003-09	74.1		0.16
2215	EPA3052	76.17		0.50	2574	In house	70.515		-0.42
2247	CPSC-CH-E1003-09	74.66		0.25	2590	CPSC-CH-E1003-09	67.9621		-0.84
2255	In house	74.9		0.29	2632	IEC62321-4&5	73.09		0.00
2256		81.07		1.30	2642	CPSC-CH-E1003-09	-----		-----
2258	In house	73.380		0.05	2645	CPSC-CH-E1003-09	-----		-----
2266	CPSC-CH-E1003-09	76.5		0.55	2674	CPSC-CH-E1003-09	75.9		0.46
2284	CPSC-CH-E1003-09	78.624		0.90	2678	CPSC-CH-E1003-09	81.2666		1.33
2286	CPSC-CH-E1003-09	-----		-----	2705	In house	81.73		1.41
2287		-----		-----	2713	In house	77.3		0.69
2289	CPSC-CH-E1003-09	73.87		0.13	2720	CPSC-CH-E1003-09	73.52		0.07
2290	CPSC-CH-E1003-09	72.6		-0.08	2805	ASTM F963	72.1		-0.16
2293	CPSC-CH-E1003-09	-----		-----	2809	CPSC-CH-E1003-09	67.3350		-0.94
2294	CPSC-CH-E1003-09	-----		-----	2812	CPSC-CH-E1003-09	74.03		0.15
2296	In house	75.0580		0.32	2826		75.448		0.38
2301		76.3272		0.53	2840		-----		-----
2309	EPA3051	70.0		-0.51	2851		-----		-----
2310	CPSC-CH-E1003-09	71.63		-0.24	3100	ISO8124-5	73.6253		0.09
2311	CPSC-CH-E1003-09	72.37		-0.12	3110	In house	65.64		-1.22
2314	CPSC-CH-E1003-09	74.33		0.20	3116		73.97		0.14
2330	CPSC-CH-E1003-09	57.7871		-2.50	3118	CPSC-CH-E1003-09	76.293		0.52
2347	EPA3052	76.4		0.54	3121	In house	81.1		1.31
2350	EPA3052	59.25		-2.26	3124	EPA3052	69.582		-0.57
2352	IEC62321-4&5	73.6		0.08	3146	CPSC-CH-E1003-09	71.6		-0.24
2355	CPSC-CH-E1003-09	74.5		0.23	3150	CPSC-CH-E1003-09	61.8		-1.84
2357	ISO8124-5	74		0.15	3154	CPSC-CH-E1003-09	71.41		-0.28
2358	CPSC-CH-E1003-09	68.11		-0.81	3160	CPSC-CH-E1003-09	69.90		-0.52
2363	EPA3052	74		0.15	3163	In house	155.5	R(0.01)	13.44
2365	EPA3052	78.2		0.83	3172	CPSC-CH-E1003-09	67.2		-0.96
2366	CPSC-CH-E1003-09	79.51		1.05	3176	CPSC-CH-E1003-09	74.01		0.15
2369	EPA3052	73.9		0.13	3182	CPSC-CH-E1003-09	62.8		-1.68
2370	CPSC-CH-E1003-09	68.1		-0.82	3185	CPSC-CH-E1003-09	72.86		-0.04
2372	ASTM F963	66.7		-1.04	3191	ISO8124-5	73.16		0.01
2375	ISO16711-1	73		-0.02	3197	CPSC-CH-E1003-09	72.3		-0.13
2378	EPA3052	75.3		0.36	3200	ISO8124-5	72.64		-0.07
2379	CPSC-CH-E1003-09	53.1488	R(0.05)	-3.25	3209	ISO8124-5	71.53		-0.26
2380	CPSC-CH-E1003-09	75.05		0.32	3210	CPSC-CH-E1003-09	-----		-----
2381	CPSC-CH-E1003-09	75.74		0.43	3214	EPA3052	79.2		1.00
2382	EPA3052	69.2		-0.64	3216	In house	46.267	R(0.05)	-4.38
2384	CPSC-CH-E1003-09	75.59	C	0.41	3220	EN16711-1	65.0980		-1.31
2385	In house	77.5		0.72	3225	CPSC-CH-E1003-09	-----		-----
2389		-----		-----	3228	CPSC-CH-E1003-09	76.0		0.47
2390	CPSC-CH-E1003-09	70.740		-0.38	3237	In house	66.33		-1.10
2391	CPSC-CH-E1003-09	67		-0.99	3248	CPSC-CH-E1003-09	69		-0.67
2426	CPSC-CH-E1003-09	60.562		-2.05	8005		69.37		-0.61
2429	CPSC-CH-E1003-09	73.66		0.09					

normality	suspect	
n	111	
outliers	7	
mean (n)	73.099	
st.dev. (n)	5.3868	RSD= 7.4%
R(calc.)	15.083	
st.dev.(Horwitz)	6.1304	
R(Horwitz)	17.165	

Lab 2384 first reported: 41.17



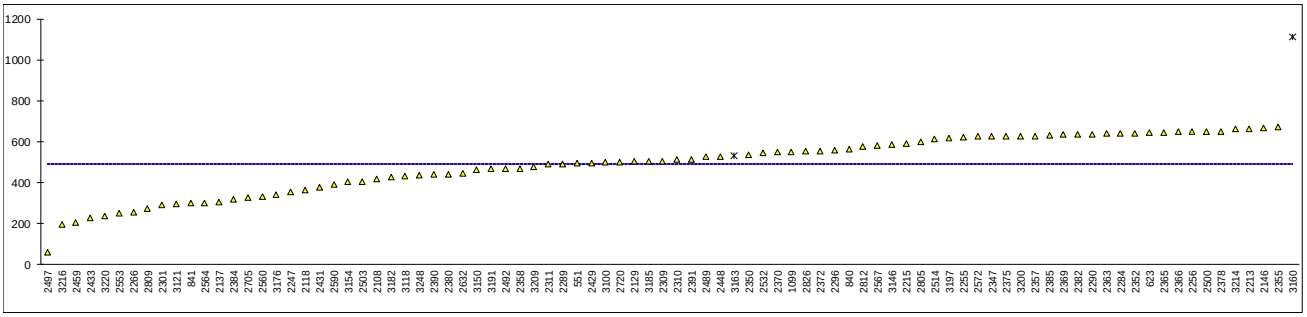


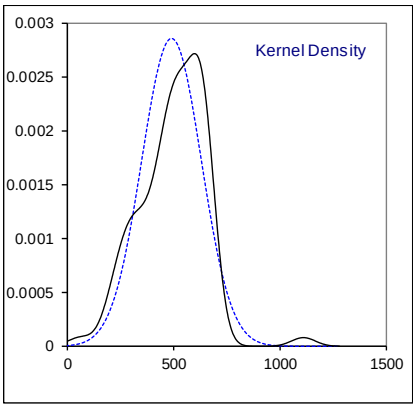
Determination of Total Cobalt as Co on sample #18536; results in mg/kg

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
213	CPSC-CH-E1003-09	-----		-----	2431	In house	377.2433		-----
230		-----		-----	2433	CPSC-CH-E1003-09	228.11		-----
330	In house	-----		-----	2448	IEC62321	528.46		-----
348	CPSC-CH-E1003-09	-----		-----	2453	CPSC-CH-E1003-09	-----		-----
523		-----		-----	2459	CPSC-CH-E1003-09.1	206.500		-----
551	EPA3052	493.23		-----	2460	CPSC-CH-E1003-09	-----		-----
623	In house	643.75		-----	2476		-----		-----
840	CPSC-CH-E1003-09	563.77		-----	2480		-----		-----
841	EPA3052	298.6		-----	2489	In house	528		-----
1051	CPSC-CH-E1003-09	-----		-----	2492	In house	468.3		-----
1099	In house	550.86		-----	2495	CPSC-CH-E1003-09	-----		-----
1128		-----		-----	2497	ISO17072-2	58.56		-----
2108	CPSC-CH-E1003-09	418.0		-----	2500	CPSC-CH-E1003-09	650.132		-----
2115	CPSC-CH-E1003-09	-----		-----	2503		406.1		-----
2118	CPSC-CH-E1002-08	361.6647		-----	2509	CPSC-CH-E1003-09	-----		-----
2120	CPSC-CH-E1003-09	-----		-----	2511	CPSC-CH-E1003-09	-----		-----
2129	CPSC-CH-E1003-09	503.5		-----	2514	In house	612.50		-----
2132	CPSC-CH-E1003-09	-----		-----	2522	CPSC-CH-E1003-09	-----		-----
2137	CPSC-CH-E1003-09	305	C	-----	2529	CPSC-CH-E1003-09	-----		-----
2146	In house	667.58		-----	2532	EPA3052	546		-----
2165	ASTM F963	-----		-----	2553	CPSC-CH-E1003-09	249.34		-----
2170	CPSC-CH-E1003-09	-----		-----	2560		331.85		-----
2182	In house	-----		-----	2564	CPSC-CH-E1003-09	300.2		-----
2184	CPSC-CH-E1003-09	-----		-----	2567	CPSC-CH-E1003-09	579.5		-----
2213	CPSC-CH-E1002-08	664.2		-----	2572	CPSC-CH-E1003-09	625.2		-----
2215	EPA3052	590.15		-----	2574	In house	-----		-----
2247	CPSC-CH-E1003-09	356.27		-----	2590	CPSC-CH-E1003-09	389.5962		-----
2255	In house	619.9		-----	2632	IEC62321-4&5	446.58		-----
2256		647.2		-----	2642	CPSC-CH-E1003-09	-----		-----
2258	In house	-----	W	-----	2645	CPSC-CH-E1003-09	-----		-----
2266	CPSC-CH-E1003-09	254.5		-----	2674	CPSC-CH-E1003-09	-----		-----
2284	CPSC-CH-E1003-09	638.321		-----	2678	CPSC-CH-E1003-09	-----		-----
2286	CPSC-CH-E1003-09	-----		-----	2705	In house	325.81		-----
2287		-----		-----	2713	In house	-----		-----
2289	CPSC-CH-E1003-09	491.6		-----	2720	CPSC-CH-E1003-09	499.2		-----
2290	CPSC-CH-E1003-09	637		-----	2805	ASTM F963	600		-----
2293	CPSC-CH-E1003-09	-----		-----	2809	CPSC-CH-E1003-09	272.7525		-----
2294	CPSC-CH-E1003-09	-----		-----	2812	CPSC-CH-E1003-09	578.21		-----
2296	In house	558.0946		-----	2826		551.974		-----
2301		290.5575		-----	2840		-----		-----
2309	EPA3051	504.0		-----	2851		-----		-----
2310	CPSC-CH-E1003-09	512.04		-----	3100	ISO8124-5	498.739		-----
2311	CPSC-CH-E1003-09	489.89		-----	3110	In house	-----		-----
2314	CPSC-CH-E1003-09	-----		-----	3116		-----		-----
2330	CPSC-CH-E1003-09	NA		-----	3118	CPSC-CH-E1003-09	430.901		-----
2347	EPA3052	625.8		-----	3121	In house	294		-----
2350	EPA3052	537.5		-----	3124	EPA3052	-----		-----
2352	IEC62321-4&5	640.2		-----	3146	CPSC-CH-E1003-09	585		-----
2355	CPSC-CH-E1003-09	669.8		-----	3150	CPSC-CH-E1003-09	465		-----
2357	ISO8124-5	628		-----	3154	CPSC-CH-E1003-09	402.7		-----
2358	CPSC-CH-E1003-09	470.1		-----	3160	CPSC-CH-E1003-09	1109.79	C,R(0.01)	-----
2363	EPA3052	638		-----	3163	In house	529.5	ex	-----
2365	EPA3052	645.2		-----	3172	CPSC-CH-E1003-09	-----		-----
2366	CPSC-CH-E1003-09	647.20		-----	3176	CPSC-CH-E1003-09	340.10		-----
2369	EPA3052	633.4		-----	3182	CPSC-CH-E1003-09	425.7		-----
2370	CPSC-CH-E1003-09	549		-----	3185	CPSC-CH-E1003-09	503.82		-----
2372	ASTM F963	553		-----	3191	ISO8124-5	467.34		-----
2375	ISO16711-1	626		-----	3197	CPSC-CH-E1003-09	617.6		-----
2378	EPA3052	651.2		-----	3200	ISO8124-5	626.77		-----
2379	CPSC-CH-E1003-09	-----		-----	3209	ISO8124-5	475.51		-----
2380	CPSC-CH-E1003-09	439.4		-----	3210	CPSC-CH-E1003-09	-----		-----
2381	CPSC-CH-E1003-09	-----		-----	3214	EPA3052	661.2		-----
2382	EPA3052	634.7		-----	3216	In house	197.732		-----
2384	CPSC-CH-E1003-09	317.28		-----	3220	EN16711-1	236.0971		-----
2385	In house	629		-----	3225	CPSC-CH-E1003-09	-----		-----
2389		-----		-----	3228	CPSC-CH-E1003-09	-----		-----
2390	CPSC-CH-E1003-09	439.099		-----	3237	In house	-----		-----
2391	CPSC-CH-E1003-09	515		-----	3248	CPSC-CH-E1003-09	435		-----
2426	CPSC-CH-E1003-09	-----		-----	8005		-----		-----
2429	CPSC-CH-E1003-09	494.25		-----					

normality	OK	
n	86	
outliers	1 (+1ex)	
mean (n)	489.141	
st.dev. (n)	140.4308	RSD=28.7%
R(calc.)	393.206	
st.dev.(Horwitz)	(30.8144)	
R(Horwitz)	(86.280)	

Lab 2137 first reported: 900
Lab 2258 first reported: 0
Lab 3160 first reported: 1197.53
Lab 3163 are excluded as four of six reported test values are outliers



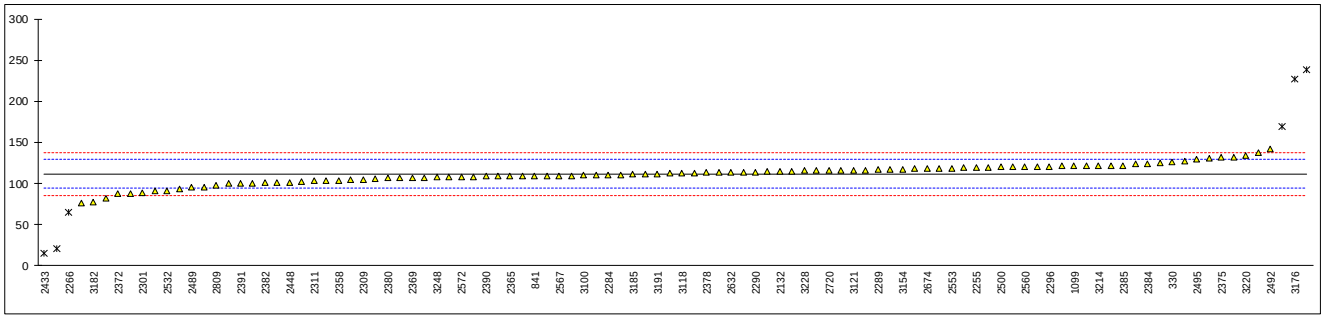


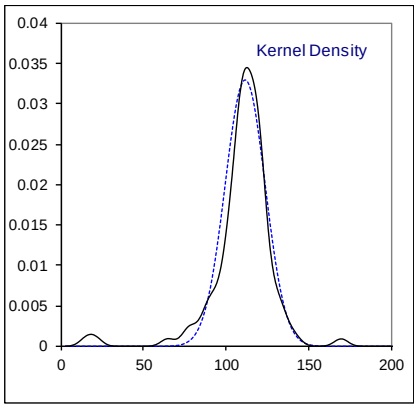
Determination of Total Mercury as Hg on sample #18536; results in mg/kg

lab	method	value	mark	z(targ)
213	CPSC-CH-E1003-09	-----		-----
230		-----		-----
330	In house	126.5		1.73
348	CPSC-CH-E1003-09	-----		-----
523		-----		-----
551	EPA3052	108.15		-0.37
623	In house	110.20		-0.13
840	CPSC-CH-E1003-09	111.05		-0.04
841	EPA3052	109.2		-0.25
1051	CPSC-CH-E1003-09	-----		-----
1099	In house	121.27		1.13
1128		-----		-----
2108	CPSC-CH-E1003-09	131.1		2.25
2115	CPSC-CH-E1003-09	-----		-----
2118	CPSC-CH-E1002-08	108.2503		-0.36
2120	CPSC-CH-E1003-09	-----		-----
2129	CPSC-CH-E1003-09	124.4		1.49
2132	CPSC-CH-E1003-09	114.75		0.39
2137	CPSC-CH-E1003-09	-----		-----
2146	In house	119.70		0.95
2165	ASTM F963	113.1		0.20
2170	CPSC-CH-E1003-09	-----		-----
2182	In house	-----		-----
2184	CPSC-CH-E1003-09	111.9		0.06
2213	CPSC-CH-E1002-08	101.3		-1.15
2215	EPA3052	116.81		0.62
2247	CPSC-CH-E1003-09	93.32		-2.06
2255	In house	119.3		0.90
2256		113.61		0.26
2258	In house	87.6	C	-2.71
2266	CPSC-CH-E1003-09	64.5	R(0.05)	-5.35
2284	CPSC-CH-E1003-09	110.092		-0.15
2286	CPSC-CH-E1003-09	-----		-----
2287		-----		-----
2289	CPSC-CH-E1003-09	116.6		0.60
2290	CPSC-CH-E1003-09	113.9		0.29
2293	CPSC-CH-E1003-09	-----		-----
2294	CPSC-CH-E1003-09	-----		-----
2296	In house	120.4147		1.03
2301		88.53	C	-2.61
2309	EPA3051	104.32		-0.80
2310	CPSC-CH-E1003-09	103.28		-0.92
2311	CPSC-CH-E1003-09	102.9		-0.97
2314	CPSC-CH-E1003-09	-----		-----
2330	CPSC-CH-E1003-09	99.8029		-1.32
2347	EPA3052	121.6		1.17
2350	EPA3052	126.6		1.74
2352	IEC62321-4&5	109.1		-0.26
2355	CPSC-CH-E1003-09	109.2		-0.25
2357	ISO8124-5	107		-0.50
2358	CPSC-CH-E1003-09	103.9		-0.85
2363	EPA3052	110		-0.16
2365	EPA3052	109.0		-0.27
2366	CPSC-CH-E1003-09	108.68		-0.31
2369	EPA3052	107.2		-0.48
2370	CPSC-CH-E1003-09	95.7		-1.79
2372	ASTM F963	87.6		-2.71
2375	ISO16711-1	132		2.35
2378	EPA3052	113.0		0.19
2379	CPSC-CH-E1003-09	90.8815		-2.34
2380	CPSC-CH-E1003-09	106.9		-0.51
2381	CPSC-CH-E1003-09	-----		-----
2382	EPA3052	100.9		-1.19
2384	CPSC-CH-E1003-09	123.44	C	1.38
2385	In house	122		1.21
2389		-----		-----
2390	CPSC-CH-E1003-09	108.531		-0.32
2391	CPSC-CH-E1003-09	100		-1.30
2426	CPSC-CH-E1003-09	-----		-----
2429	CPSC-CH-E1003-09	115.84		0.51
2431	In house	117.6969		0.72
2433	CPSC-CH-E1003-09	15.18	R(0.01)	-10.97
2448	IEC62321	101.544		-1.12
2453	CPSC-CH-E1003-09	-----		-----
2459	CPSC-CH-E1003-09.1	100.500		-1.24
2460	CPSC-CH-E1003-09	-----		-----
2476		-----		-----
2480		-----		-----
2489	In house	95		-1.87
2492	In house	141.7		3.46
2495	CPSC-CH-E1003-09	129.25		2.04
2497	ISO17072-2	-----		-----
2500	CPSC-CH-E1003-09	120.124		1.00
2503		107.2		-0.48
2509	CPSC-CH-E1003-09	76		-4.03
2511	CPSC-CH-E1003-09	102.12		-1.06
2514	In house	119.26		0.90
2522	CPSC-CH-E1003-09	-----		-----
2529	CPSC-CH-E1003-09	-----		-----
2532	EPA3052	91		-2.32
2553	CPSC-CH-E1003-09	118.49		0.81
2560		120.31	C	1.02
2564	CPSC-CH-E1003-09	-----		-----
2567	CPSC-CH-E1003-09	109.25		-0.24
2572	CPSC-CH-E1003-09	108.2		-0.36
2574	In house	123.315		1.36
2590	CPSC-CH-E1003-09	81.3	C	-3.43
2632	IEC62321-4&5	113.56		0.25
2642	CPSC-CH-E1003-09	-----		-----
2645	CPSC-CH-E1003-09	-----		-----
2674	CPSC-CH-E1003-09	118.0		0.76
2678	CPSC-CH-E1003-09	137.2444		2.95
2705	In house	120.35		1.02
2713	In house	-----		-----
2720	CPSC-CH-E1003-09	115.7		0.49
2805	ASTM F963	121.3	C	1.13
2809	CPSC-CH-E1003-09	97.8250		-1.55
2812	CPSC-CH-E1003-09	132	C	2.35
2826		116.254		0.56
2840		-----		-----
2851		-----		-----
3100	ISO8124-5	109.920		-0.17
3110	In house	115.62		0.48
3116		112.5		0.13
3118	CPSC-CH-E1003-09	112.12		0.09
3121	In house	116		0.53
3124	EPA3052	-----		-----
3146	CPSC-CH-E1003-09	118		0.76
3150	CPSC-CH-E1003-09	106		-0.61
3154	CPSC-CH-E1003-09	117		0.64
3160	CPSC-CH-E1003-09	20.68	C,R(0.01)	-10.35
3163	In house	238.5	R(0.01)	14.50
3172	CPSC-CH-E1003-09	104.1		-0.83
3176	CPSC-CH-E1003-09	227.20	R(0.01)	13.21
3182	CPSC-CH-E1003-09	77.59		-3.85
3185	CPSC-CH-E1003-09	110.80		-0.07
3191	ISO8124-5	111.25		-0.01
3197	CPSC-CH-E1003-09	120.2		1.01
3200	ISO8124-5	114.36		0.34
3209	ISO8124-5	109.53		-0.21
3210	CPSC-CH-E1003-09	-----		-----
3214	EPA3052	121.3		1.13
3216	In house	169.516	R(0.01)	6.63
3220	EN16711-1	133.52		2.53
3225	CPSC-CH-E1003-09	-----		-----
3228	CPSC-CH-E1003-09	115.5		0.47
3237	In house	121.05		1.10
3248	CPSC-CH-E1003-09	108		-0.38
8005		115.2		0.44

normality	OK	
n	98	
outliers	6	
mean (n)	111.372	
st.dev. (n)	12.1304	RSD= 10.9%
R(calc.)	33.965	
st.dev.(Horwitz)	8.7665	
R(Horwitz)	24.546	

Lab 2258 first reported: 77.6
Lab 2301 first reported: 217.9222
Lab 2384 first reported: 77.48
Lab 2560 first reported: <10
Lab 2590 first reported: 65.9581
Lab 2805 first reported: <10
Lab 2812 first reported: 208.66
Lab 3160 first reported: 21.66



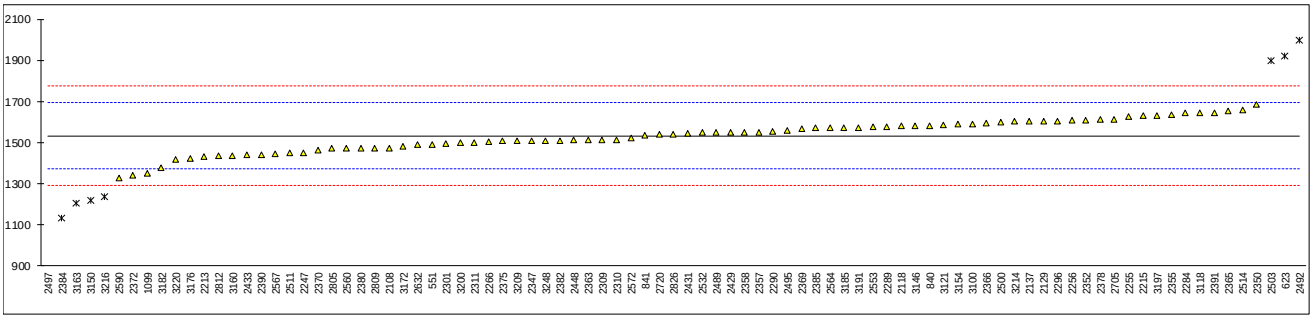


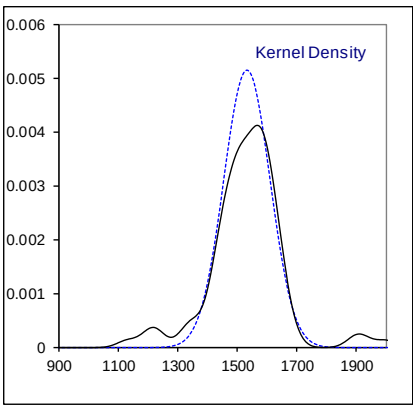
Determination of Total Nickel as Ni on sample #18536; results in mg/kg

lab	method	value	mark	z(targ)
213	CPSC-CH-E1003-09	-----		-----
230		-----		-----
330	In house	-----		-----
348	CPSC-CH-E1003-09	-----		-----
523		-----		-----
551	EPA3052	1491		-0.52
623	In house	1920.00	C,R(0.05)	4.76
840	CPSC-CH-E1003-09	1581.40		0.59
841	EPA3052	1533.8		0.01
1051	CPSC-CH-E1003-09	-----		-----
1099	In house	1351.24		-2.24
1128		-----		-----
2108	CPSC-CH-E1003-09	1474.0		-0.73
2115	CPSC-CH-E1003-09	-----		-----
2118	CPSC-CH-E1002-08	1579.243		0.57
2120	CPSC-CH-E1003-09	-----		-----
2129	CPSC-CH-E1003-09	1603		0.86
2132	CPSC-CH-E1003-09	-----		-----
2137	CPSC-CH-E1003-09	1603		0.86
2146	In house	-----		-----
2165	ASTM F963	-----		-----
2170	CPSC-CH-E1003-09	-----		-----
2182	In house	-----		-----
2184	CPSC-CH-E1003-09	-----		-----
2213	CPSC-CH-E1002-08	1430.6		-1.26
2215	EPA3052	1631.38		1.21
2247	CPSC-CH-E1003-09	1450.27		-1.02
2255	In house	1627.4		1.16
2256		1607.3		0.91
2258	In house	-----	W	-----
2266	CPSC-CH-E1003-09	1505.5		-0.34
2284	CPSC-CH-E1003-09	1642.943		1.35
2286	CPSC-CH-E1003-09	-----		-----
2287		-----		-----
2289	CPSC-CH-E1003-09	1577		0.54
2290	CPSC-CH-E1003-09	1554.9		0.27
2293	CPSC-CH-E1003-09	-----		-----
2294	CPSC-CH-E1003-09	-----		-----
2296	In house	1603.7341		0.87
2301		1495.1412		-0.47
2309	EPA3051	1512.0		-0.26
2310	CPSC-CH-E1003-09	1512.7		-0.25
2311	CPSC-CH-E1003-09	1500.67		-0.40
2314	CPSC-CH-E1003-09	-----		-----
2330	CPSC-CH-E1003-09	NA		-----
2347	EPA3052	1509.2		-0.30
2350	EPA3052	1686		1.88
2352	IEC62321-4&5	1608.2		0.92
2355	CPSC-CH-E1003-09	1634.9		1.25
2357	ISO8124-5	1550		0.21
2358	CPSC-CH-E1003-09	1550		0.21
2363	EPA3052	1512		-0.26
2365	EPA3052	1651.7		1.46
2366	CPSC-CH-E1003-09	1593.29		0.74
2369	EPA3052	1568.9		0.44
2370	CPSC-CH-E1003-09	1464		-0.85
2372	ASTM F963	1340		-2.38
2375	ISO16711-1	1507		-0.32
2378	EPA3052	1612.1		0.97
2379	CPSC-CH-E1003-09	-----		-----
2380	CPSC-CH-E1003-09	1471		-0.76
2381	CPSC-CH-E1003-09	-----		-----
2382	EPA3052	1510.5		-0.28
2384	CPSC-CH-E1003-09	1132	C,R(0.05)	-4.93
2385	In house	1571		0.46
2389		-----		-----
2390	CPSC-CH-E1003-09	1440.758		-1.14
2391	CPSC-CH-E1003-09	1645		1.37
2426	CPSC-CH-E1003-09	-----		-----
2429	CPSC-CH-E1003-09	1549.10		0.20
2431	In house	1546.8144		0.17
2433	CPSC-CH-E1003-09	1439.06		-1.16
2448	IEC62321	1511.11		-0.27
2453	CPSC-CH-E1003-09	-----		-----
2459	CPSC-CH-E1003-09.1	ND		-----
2460	CPSC-CH-E1003-09	-----		-----
2476		-----		-----
2480		-----		-----
2489	In house	1549		0.19
2492	In house	2000.2	R(0.05)	5.74
2495	CPSC-CH-E1003-09	1558.30		0.31
2497	ISO17072-2	160.79	R(0.01)	-16.88
2500	CPSC-CH-E1003-09	1600.312		0.83
2503		1898	R(0.05)	4.49
2509	CPSC-CH-E1003-09	-----		-----
2511	CPSC-CH-E1003-09	1449.69		-1.03
2514	In house	1659.74		1.56
2522	CPSC-CH-E1003-09	-----		-----
2529	CPSC-CH-E1003-09	-----		-----
2532	EPA3052	1547		0.17
2553	CPSC-CH-E1003-09	1574.97		0.51
2560		1470.41	C	-0.77
2564	CPSC-CH-E1003-09	1572.8		0.49
2567	CPSC-CH-E1003-09	1445.2		-1.08
2572	CPSC-CH-E1003-09	1521.3		-0.15
2574	In house	-----		-----
2590	CPSC-CH-E1003-09	1327.6188		-2.53
2632	IEC62321-4&5	1488.34		-0.55
2642	CPSC-CH-E1003-09	-----		-----
2645	CPSC-CH-E1003-09	-----		-----
2674	CPSC-CH-E1003-09	-----		-----
2678	CPSC-CH-E1003-09	-----		-----
2705	In house	1614.74		1.00
2713	In house	-----		-----
2720	CPSC-CH-E1003-09	1540		0.08
2805	ASTM F963	1470.4		-0.77
2809	CPSC-CH-E1003-09	1471.0775		-0.76
2812	CPSC-CH-E1003-09	1435.01		-1.21
2826		1541.18		0.10
2840		-----		-----
2851		-----		-----
3100	ISO8124-5	1590.47		0.70
3110	In house	-----		-----
3116		-----		-----
3118	CPSC-CH-E1003-09	1643.398		1.35
3121	In house	1584		0.62
3124	EPA3052	-----		-----
3146	CPSC-CH-E1003-09	1580		0.58
3150	CPSC-CH-E1003-09	1217	C,R(0.05)	-3.89
3154	CPSC-CH-E1003-09	1588		0.67
3160	CPSC-CH-E1003-09	1437.17	C	-1.18
3163	In house	1205.5	R(0.05)	-4.03
3172	CPSC-CH-E1003-09	1480		-0.65
3176	CPSC-CH-E1003-09	1421.58		-1.37
3182	CPSC-CH-E1003-09	1375		-1.95
3185	CPSC-CH-E1003-09	1573.12		0.49
3191	ISO8124-5	1573.25		0.49
3197	CPSC-CH-E1003-09	1632.5		1.22
3200	ISO8124-5	1498.92		-0.42
3209	ISO8124-5	1507.52		-0.32
3210	CPSC-CH-E1003-09	-----		-----
3214	EPA3052	1601.4		0.84
3216	In house	1235.309	R(0.05)	-3.66
3220	EN16711-1	1416.4799		-1.44
3225	CPSC-CH-E1003-09	-----		-----
3228	CPSC-CH-E1003-09	-----		-----
3237	In house	-----		-----
3248	CPSC-CH-E1003-09	1510		-0.29
8005		-----		-----

normality	OK	
n	81	
outliers	8	
mean (n)	1533.207	
st.dev. (n)	77.5943	RSD=5.1%
R(calc.)	217.264	
st.dev.(Horwitz)	81.3280	
R(Horwitz)	227.718	

Lab 623 first reported: 1842.63
Lab 2258 first reported: 0
Lab 2384 first reported: 1015
Lab 2560 first reported: <10
Lab 3150 first reported: 1244
Lab 3160 first reported: 1968.72





APPENDIX 2

Determination of Antimony, Arsenic, Cadmium, Cobalt on sample #18535; results in mg/kg

lab	method	Sb	As	Cd	Co
213	CPSC-CH-E1003-09	-----	-----	-----	-----
230		-----	-----	-----	-----
330	In house	-----	-----	< 10	-----
348	CPSC-CH-E1003-09	-----	-----	< 5	-----
523		-----	-----	-----	-----
551	EPA3052	ND	ND	ND	ND
623	In house	Not Detected	Not Detected	Not Detected	Not Detected
840	CPSC-CH-E1003-09	<2	<2	<2	<2
841	EPA3052	n.d	n.d	n.d	n.d
1051	CPSC-CH-E1003-09	-----	-----	-----	-----
1099	In house	<5.0	<5.0	<0.5	<5.0
1128		-----	-----	-----	-----
2108	CPSC-CH-E1003-09	n.d.	n.d.	n.d.	n.d.
2115	CPSC-CH-E1003-09	-----	-----	-----	-----
2118	CPSC-CH-E1002-08	0.0925	0.2170	0.0598	0.2123
2120	CPSC-CH-E1003-09	-----	-----	< 2,5	-----
2129	CPSC-CH-E1003-09	<5	<5	<5	<5
2132	CPSC-CH-E1003-09	<10	<10	<10	-----
2137	CPSC-CH-E1003-09	-----	-----	-----	-----
2146	In house	-----	-----	-----	-----
2165	ASTM F963	-----	-----	<10	-----
2170	CPSC-CH-E1003-09	-----	-----	-----	-----
2182	In house	-----	-----	0.3226	-----
2184	CPSC-CH-E1003-09	-----	-----	<10	-----
2213	CPSC-CH-E1002-08	<10	<10	<10	<10
2215	EPA3052	< 10	< 10	< 10	< 10
2247	CPSC-CH-E1003-09	nd	nd	nd	nd
2255	In house	ND	ND	ND	ND
2256		-----	-----	-----	-----
2258	In house	0	0	0	0
2266	CPSC-CH-E1003-09	< 10	< 10	< 10	< 10
2284	CPSC-CH-E1003-09	-----	-----	-----	-----
2286	CPSC-CH-E1003-09	-----	-----	-----	-----
2287		-----	-----	-----	-----
2289	CPSC-CH-E1003-09	<10	<10	<10	<10
2290	CPSC-CH-E1003-09	<20	<20	<20	<20
2293	CPSC-CH-E1003-09	-----	-----	-----	-----
2294	CPSC-CH-E1003-09	-----	-----	-----	-----
2296	In house	<14.1805	<19.2151	<1.0442	<6.0053
2301		0	0	0	0
2309	EPA3051	ND[Dl-10mg/kg]	ND[Dl-10mg/kg	ND[Dl-10mg/kg	ND[Dl-10mg/kg
2310	CPSC-CH-E1003-09	NOT DETECTED	NOT DETECTED	NOT DETECTED	NOT DETECTED
2311	CPSC-CH-E1003-09	Not Detected	Not Detected	Not Detected	Not Detected
2314	CPSC-CH-E1003-09	-----	-----	-----	-----
2330	CPSC-CH-E1003-09	NA	NA	ND	NA
2347	EPA3052	<10	<10	<2	<5
2350	EPA3052	<10	<10	<0.5	<5
2352	IEC62321-4&5	-----	-----	-----	-----
2355	CPSC-CH-E1003-09	<10	<10	<2	<5
2357	ISO8124-5	-----	-----	-----	-----
2358	CPSC-CH-E1003-09	n.d.	n.d.	n.d.	n.d.
2363	EPA3052	ND	ND	ND	ND
2365	ASTM F963	<10	<10	<2	<5
2366	CPSC-CH-E1003-09	<10	<10	<10	<10
2369	EPA3052	<10	<10	<2	<5
2370	CPSC-CH-E1003-09	<2	<2	<2	<2
2372	ASTM F963	n.d.	n.d.	n.d.	n.d.
2375	ISO16711-1	-----	-----	-----	-----
2378	EPA3052	ND	ND	ND	ND
2379	CPSC-CH-E1003-09	-----	-----	-----	-----
2380	CPSC-CH-E1003-09	-----	-----	-----	-----
2381	CPSC-CH-E1003-09	-----	-----	-----	-----
2382	EPA3052	-----	-----	-----	-----
2384	CPSC-CH-E1003-09	<10	<10	<5	<10
2385	In house	<1	<1	<0,5	<1
2389		-----	-----	-----	-----
2390	CPSC-CH-E1003-09	ND	ND	0.844	0.603
2391	CPSC-CH-E1003-09	3	<1	<1	<1
2426	CPSC-CH-E1003-09	-----	-----	ND	-----
2429	CPSC-CH-E1003-09	<10	<10	<10	<10
2431	In house	-----	-----	-----	-----
2433	CPSC-CH-E1003-09	-----	-----	-----	-----
2448	IEC62321	-----	-----	-----	-----
2453	CPSC-CH-E1003-09	-----	-----	-----	-----

lab	method	Sb	As	Cd	Co
2459	CPSC-CH-E1003-09.1	ND	23.188	ND	ND
2460	CPSC-CH-E1003-09	-----	-----	-----	-----
2476		-----	-----	-----	-----
2480		-----	-----	-----	-----
2489	In house	ND	ND	ND	ND
2492	In house	-----	-----	-----	-----
2495	CPSC-CH-E1003-09	-----	<2	<2	-----
2497	ISO17072-2	-----	1.61	-----	-----
2500	CPSC-CH-E1003-09	ND	ND	ND	ND
2503		2.906	0	0	0
2509	CPSC-CH-E1003-09	-----	-----	-----	-----
2511	CPSC-CH-E1003-09	-----	-----	-----	-----
2514	In house	-----	-----	-----	-----
2522	CPSC-CH-E1003-09	-----	-----	-----	-----
2529	CPSC-CH-E1003-09	-----	-----	-----	-----
2532	EPA3052	Not Detected	Not Detected	Not Detected	Not Detected
2553	CPSC-CH-E1003-09	<5	<5	<5	<5
2560		<10	<10	<10	<10
2564	CPSC-CH-E1003-09	-----	-----	ND [<20]	ND [<20]
2567	CPSC-CH-E1003-09	<20	<20	<20	<20
2572	CPSC-CH-E1003-09	<20	<20	<20	<20
2574	In house	-----	-----	1.391	-----
2590	CPSC-CH-E1003-09	-----	< L.O.Q.	< L.O.Q.	< L.O.Q.
2632	IEC62321-4&5	N.D.	N.D.	N.D.	N.D.
2642	CPSC-CH-E1003-09	-----	-----	-----	-----
2645	CPSC-CH-E1003-09	-----	-----	-----	-----
2674	CPSC-CH-E1003-09	-----	-----	ND	-----
2678	CPSC-CH-E1003-09	-----	n.d	n.d	-----
2705	In house	0.12	0.23	0.03	0.12
2713	In house	-----	-----	<10	-----
2720	CPSC-CH-E1003-09	<10	<10	<10	<10
2805	ASTM F963	<10	<10	<10	<10
2809	CPSC-CH-E1003-09	-----	-----	-----	-----
2812	CPSC-CH-E1003-09	-----	-----	-----	-----
2826		<10	<10	<10	<10
2840		-----	-----	-----	-----
2851		-----	-----	-----	-----
3100	ISO8124-5	<10	<10	<10	<10
3110	In house	-----	-----	-----	-----
3116		-----	-----	-----	-----
3118	CPSC-CH-E1003-09	ND	ND	ND	ND
3121	In house	0.35	-----	below LOD	0.25
3124	EPA3052	0.40474	0.22934	0.00255	-----
3146	CPSC-CH-E1003-09	n.d.	n.d.	n.d.	n.d.
3150	CPSC-CH-E1003-09	-----	-----	-----	-----
3154	CPSC-CH-E1003-09	-----	-----	-----	-----
3160	CPSC-CH-E1003-09	n.d.	n.d.	n.d.	n.d.
3163	In house	nd	nd	15.3	72.5
3172	CPSC-CH-E1003-09	< 10	< 10	< 10	-----
3176	CPSC-CH-E1003-09	-----	-----	-----	-----
3182	CPSC-CH-E1003-09	ND	ND	ND	ND
3185	CPSC-CH-E1003-09	<10	<10	<10	<10
3191	ISO8124-5	0.2611	1.974	0.1148	0.7861
3197	CPSC-CH-E1003-09	ND	ND	ND	ND
3200	ISO8124-5	<10.0	<10.0	<10.0	<10.0
3209	ISO8124-5	<10.0	<10.0	<10.0	<10.0
3210	CPSC-CH-E1003-09	-----	-----	-----	-----
3214	EPA3052	<10	<10	<10	<10
3216	In house	0.253	0.070	nd	0.348
3220	EN16711-1	ND	ND	ND	ND
3225	CPSC-CH-E1003-09	-----	-----	-----	-----
3228	CPSC-CH-E1003-09	-----	-----	<10	-----
3237	In house	-----	-----	-----	-----
3248	CPSC-CH-E1003-09	ND	ND	ND	ND
8005		-----	-----	-----	-----

Determination of Copper, Mercury, Nickel, Selenium on sample #18535; results in mg/kg

lab	method	Cu	Hg	Ni	Se
213	CPSC-CH-E1003-09	-----	-----	-----	-----
230		-----	-----	-----	-----
330	In house	-----	< 10	-----	-----
348	CPSC-CH-E1003-09	-----	-----	-----	-----
523		-----	-----	-----	-----
551	EPA3052	ND	ND	ND	ND
623	In house	Not Detected	Not Detected	Not Detected	Not Detected
840	CPSC-CH-E1003-09	12.50	<2	<2	<2
841	EPA3052	n.d	n.d	n.d	n.d
1051	CPSC-CH-E1003-09	-----	-----	-----	-----
1099	In house	<50.0	<0.5	<5.0	<5.0
1128		-----	-----	-----	-----
2108	CPSC-CH-E1003-09	n.d.	n.d.	n.d.	n.d.
2115	CPSC-CH-E1003-09	-----	-----	-----	-----
2118	CPSC-CH-E1002-08	2.8047	0.0819	0.8754	0
2120	CPSC-CH-E1003-09	-----	-----	-----	-----
2129	CPSC-CH-E1003-09	<25	<5	<5	<5
2132	CPSC-CH-E1003-09	-----	<10	-----	-----
2137	CPSC-CH-E1003-09	-----	-----	-----	-----
2146	In house	-----	-----	-----	-----
2165	ASTM F963	-----	<10	-----	-----
2170	CPSC-CH-E1003-09	-----	-----	-----	-----
2182	In house	-----	-----	-----	-----
2184	CPSC-CH-E1003-09	-----	<10	-----	-----
2213	CPSC-CH-E1002-08	<10	<10	<10	<10
2215	EPA3052	< 50	< 10	< 10	< 10
2247	CPSC-CH-E1003-09	nd	nd	nd	nd
2255	In house	ND	ND	ND	ND
2256		-----	-----	-----	-----
2258	In house	0	0	0	0
2266	CPSC-CH-E1003-09	< 10	< 10	< 10	< 10
2284	CPSC-CH-E1003-09	-----	-----	-----	-----
2286	CPSC-CH-E1003-09	-----	-----	-----	-----
2287		-----	-----	-----	-----
2289	CPSC-CH-E1003-09	<10	<10	<10	<10
2290	CPSC-CH-E1003-09	<20	<20	24.9	<20
2293	CPSC-CH-E1003-09	-----	-----	-----	-----
2294	CPSC-CH-E1003-09	-----	-----	-----	-----
2296	In house	13.7385	<7.0646	<5.8643	10.8063
2301		0	0	0	0
2309	EPA3051	ND[Dl-10mg/kg	ND[Dl-10mg/kg	ND[Dl-10mg/kg	ND[Dl-10mg/kg
2310	CPSC-CH-E1003-09	NOT DETECTED	NOT DETECTED	NOT DETECTED	NOT DETECTED
2311	CPSC-CH-E1003-09	Not Detected	Not Detected	Not Detected	Not Detected
2314	CPSC-CH-E1003-09	-----	-----	-----	-----
2330	CPSC-CH-E1003-09	NA	ND	NA	NA
2347	EPA3052	<5	<2	<5	<10
2350	EPA3052	<5	<2	<5	<10
2352	IEC62321-4&5	-----	-----	-----	-----
2355	CPSC-CH-E1003-09	<5	<2	<5	<10
2357	ISO8124-5	-----	-----	-----	-----
2358	CPSC-CH-E1003-09	n.d.	n.d.	n.d.	n.d.
2363	EPA3052	ND	ND	ND	ND
2365	ASTM F963	<10	<2	<10	<10
2366	CPSC-CH-E1003-09	<10	<10	<10	<10
2369	EPA3052	<5	<2	<5	<10
2370	CPSC-CH-E1003-09	13.3	<2	<2	<2
2372	ASTM F963	13.7	n.d.	n.d.	n.d.
2375	ISO16711-1	-----	-----	-----	-----
2378	EPA3052	ND	ND	ND	-----
2379	CPSC-CH-E1003-09	-----	-----	-----	-----
2380	CPSC-CH-E1003-09	-----	-----	-----	-----
2381	CPSC-CH-E1003-09	-----	-----	-----	-----
2382	EPA3052	-----	-----	-----	-----
2384	CPSC-CH-E1003-09	<10	<1	<10	<10
2385	In house	2.6	<0,5	<1	<1
2389		-----	-----	-----	-----
2390	CPSC-CH-E1003-09	ND	0.715	1.327	ND
2391	CPSC-CH-E1003-09	<1	<1	2	<1
2426	CPSC-CH-E1003-09	-----	-----	-----	-----
2429	CPSC-CH-E1003-09	<10	<10	<10	<10
2431	In house	-----	-----	-----	-----
2433	CPSC-CH-E1003-09	-----	-----	-----	-----
2448	IEC62321	-----	0.038	-----	-----
2453	CPSC-CH-E1003-09	-----	-----	-----	-----
2459	CPSC-CH-E1003-09.1	ND	82.125	ND	ND
2460	CPSC-CH-E1003-09	-----	-----	-----	-----

lab	method	Cu	Hg	Ni	Se
2476		-----	-----	-----	-----
2480		-----	-----	-----	-----
2489	In house	ND	ND	ND	ND
2492	In house	-----	-----	-----	-----
2495	CPSC-CH-E1003-09	-----	-----	-----	<2
2497	ISO17072-2	-----	-----	-----	-----
2500	CPSC-CH-E1003-09	ND	ND	ND	ND
2503		2.46	0	0.45	0
2509	CPSC-CH-E1003-09	-----	-----	-----	-----
2511	CPSC-CH-E1003-09	-----	-----	-----	-----
2514	In house	-----	-----	-----	-----
2522	CPSC-CH-E1003-09	-----	-----	-----	-----
2529	CPSC-CH-E1003-09	-----	-----	-----	-----
2532	EPA3052	Not Detected	Not Detected	Not Detected	Not Detected
2553	CPSC-CH-E1003-09	<5	<5	<5	<5
2560		<10	<10	<10	<10
2564	CPSC-CH-E1003-09	-----	-----	ND [<20]	-----
2567	CPSC-CH-E1003-09	<20	<20	<20	<20
2572	CPSC-CH-E1003-09	<20	<20	23.2	<20
2574	In house	-----	14.565	-----	-----
2590	CPSC-CH-E1003-09	-----	< L.O.Q.	1.2317	< L.O.Q.
2632	IEC62321-4&5	N.D.	N.D.	N.D.	N.D.
2642	CPSC-CH-E1003-09	-----	-----	-----	-----
2645	CPSC-CH-E1003-09	-----	-----	-----	-----
2674	CPSC-CH-E1003-09	-----	ND	-----	-----
2678	CPSC-CH-E1003-09	-----	n.d	-----	-----
2705	In house	0.40	0.03	0.45	0.00
2713	In house	-----	-----	-----	-----
2720	CPSC-CH-E1003-09	<10	<10	<10	<10
2805	ASTM F963	<10	<10	<10	<10
2809	CPSC-CH-E1003-09	-----	-----	-----	-----
2812	CPSC-CH-E1003-09	-----	-----	-----	-----
2826		<10	<10	<10	<10
2840		-----	-----	-----	-----
2851		-----	-----	-----	-----
3100	ISO8124-5	<10	<10	<10	<10
3110	In house	-----	-----	-----	-----
3116		-----	-----	-----	-----
3118	CPSC-CH-E1003-09	ND	ND	ND	ND
3121	In house	0.90	0.055	0.59	0.025
3124	EPA3052	0.95476	0.059078	-----	0.01
3146	CPSC-CH-E1003-09	n.d.	0.0520	n.d.	n.d.
3150	CPSC-CH-E1003-09	5.45	-----	-----	-----
3154	CPSC-CH-E1003-09	6.84	-----	2.42	-----
3160	CPSC-CH-E1003-09	n.d.	n.d.	n.d.	n.d.
3163	In house	3.7	nd	4.8	-----
3172	CPSC-CH-E1003-09	-----	< 10	< 10	-----
3176	CPSC-CH-E1003-09	33.58	-----	-----	-----
3182	CPSC-CH-E1003-09	<13	<13	ND	ND
3185	CPSC-CH-E1003-09	<10	<10	<10	<10
3191	ISO8124-5	3.9915	0.5644	10.28	1.0115
3197	CPSC-CH-E1003-09	ND	ND	ND	ND
3200	ISO8124-5	<10.0	<10.0	<10.0	<10.0
3209	ISO8124-5	<10.0	<10.0	<10.0	<10.0
3210	CPSC-CH-E1003-09	-----	-----	-----	-----
3214	EPA3052	<10	<10	<10	<10
3216	In house	1.154	nd	0.486	nd
3220	EN16711-1	ND	ND	ND	ND
3225	CPSC-CH-E1003-09	-----	-----	-----	-----
3228	CPSC-CH-E1003-09	-----	<10	-----	-----
3237	In house	-----	-----	-----	-----
3248	CPSC-CH-E1003-09	ND	ND	ND	ND
8005		-----	-----	-----	-----

Determination of Antimony, Arsenic, Chromium on sample #18536; results in mg/kg

lab	method	Sb	As	Cr
213	CPSC-CH-E1003-09	-----	-----	-----
230		-----	-----	-----
330	In house	-----	-----	< 10
348	CPSC-CH-E1003-09	-----	-----	< 5
523		-----	-----	-----
551	EPA3052	ND	ND	ND
623	In house	Not Detected	Not Detected	Not Detected
840	CPSC-CH-E1003-09	<2	<2	<2
841	EPA3052	n.d	n.d	n.d
1051	CPSC-CH-E1003-09	-----	-----	-----
1099	In house	<5.0	<5.0	<2.0
1128		-----	-----	-----
2108	CPSC-CH-E1003-09	n.d.	n.d.	n.d.
2115	CPSC-CH-E1003-09	-----	-----	-----
2118	CPSC-CH-E1002-08	0.0824	0.6847	4.0059
2120	CPSC-CH-E1003-09	-----	-----	-----
2129	CPSC-CH-E1003-09	<5	<5	<5
2132	CPSC-CH-E1003-09	<10	<10	<10
2137	CPSC-CH-E1003-09	-----	-----	-----
2146	In house	-----	-----	3.87
2165	ASTM F963	-----	-----	<10
2170	CPSC-CH-E1003-09	-----	-----	-----
2182	In house	-----	-----	-----
2184	CPSC-CH-E1003-09	-----	-----	<10
2213	CPSC-CH-E1002-08	<10	<10	<10
2215	EPA3052	< 10	< 10	< 10
2247	CPSC-CH-E1003-09	nd	nd	nd
2255	In house	ND	ND	ND
2256		-----	-----	-----
2258	In house	0	0	0
2266	CPSC-CH-E1003-09	<10	<10	<20
2284	CPSC-CH-E1003-09	-----	-----	-----
2286	CPSC-CH-E1003-09	-----	-----	-----
2287		-----	-----	-----
2289	CPSC-CH-E1003-09	<10	<10	<10
2290	CPSC-CH-E1003-09	<20	<20	<20
2293	CPSC-CH-E1003-09	-----	-----	-----
2294	CPSC-CH-E1003-09	-----	-----	-----
2296	In house	<14.1805	<19.2151	6.4534
2301		0	0	0
2309	EPA3051	ND[Dl-10mg/kg	ND[Dl-10mg/kg	ND[Dl-10mg/kg
2310	CPSC-CH-E1003-09	NOT DETECTED	NOT DETECTED	NOT DETECTED
2311	CPSC-CH-E1003-09	Not Detected	Not Detected	Not Detected
2314	CPSC-CH-E1003-09	-----	-----	-----
2330	CPSC-CH-E1003-09	NA	NA	ND
2347	EPA3052	<10	<10	10.5
2350	EPA3052	<10	<10	<5
2352	IEC62321-4&5	-----	-----	-----
2355	CPSC-CH-E1003-09	<10	<10	10.1
2357	ISO8124-5	-----	-----	-----
2358	CPSC-CH-E1003-09	n.d.	n.d.	n.d.
2363	EPA3052	ND	ND	9
2365	ASTM F963	<10	<10	<10
2366	CPSC-CH-E1003-09	<10	<10	<10
2369	EPA3052	<10	<10	10.7
2370	CPSC-CH-E1003-09	<2	<2	6.03
2372	ASTM F963	n.d.	n.d.	9.49
2375	ISO16711-1	-----	-----	-----
2378	EPA3052	ND	ND	ND
2379	CPSC-CH-E1003-09	-----	-----	-----
2380	CPSC-CH-E1003-09	-----	-----	-----
2381	CPSC-CH-E1003-09	-----	-----	-----
2382	EPA3052	-----	-----	10.0
2384	CPSC-CH-E1003-09	<10	<10	<10
2385	In house	<1	<2	4.1
2389		-----	-----	-----
2390	CPSC-CH-E1003-09	ND	0.1999	5.209
2391	CPSC-CH-E1003-09	7	<1	5
2426	CPSC-CH-E1003-09	-----	-----	-----
2429	CPSC-CH-E1003-09	<10	<10	<10
2431	In house	-----	-----	-----
2433	CPSC-CH-E1003-09	-----	-----	-----
2448	IEC62321	-----	-----	-----
2453	CPSC-CH-E1003-09	-----	-----	-----
2459	CPSC-CH-E1003-09.1	ND	24	ND
2460	CPSC-CH-E1003-09	-----	-----	-----

lab	method	Sb	As	Cr
2476		-----	-----	-----
2480		-----	-----	-----
2489	In house	ND	ND	ND
2492	In house	-----	-----	-----
2495	CPSC-CH-E1003-09	<2	<2	5.57
2497	ISO17072-2	-----	-----	-----
2500	CPSC-CH-E1003-09	ND	ND	ND
2503		0	1.012	4.629
2509	CPSC-CH-E1003-09	-----	-----	153
2511	CPSC-CH-E1003-09	-----	-----	-----
2514	In house	-----	-----	-----
2522	CPSC-CH-E1003-09	-----	-----	-----
2529	CPSC-CH-E1003-09	-----	-----	-----
2532	EPA3052	Not Detected	Not Detected	Not Detected
2553	CPSC-CH-E1003-09	<5	<5	<5
2560		<10	<10	<10
2564	CPSC-CH-E1003-09	-----	-----	-----
2567	CPSC-CH-E1003-09	<20	<20	<20
2572	CPSC-CH-E1003-09	<20	<20	<20
2574	In house	-----	-----	3.617
2590	CPSC-CH-E1003-09	< L.O.Q.	0.8391	9.2726
2632	IEC62321-4&5	N.D.	N.D.	4.01
2642	CPSC-CH-E1003-09	-----	-----	-----
2645	CPSC-CH-E1003-09	-----	-----	-----
2674	CPSC-CH-E1003-09	-----	-----	ND
2678	CPSC-CH-E1003-09	-----	n.d	-----
2705	In house	0.00	0.35	4.07
2713	In house	-----	-----	-----
2720	CPSC-CH-E1003-09	<10	<10	<10
2805	ASTM F963	<10	<10	<10
2809	CPSC-CH-E1003-09	-----	-----	-----
2812	CPSC-CH-E1003-09	-----	-----	-----
2826		<10	<10	<10
2840		-----	-----	-----
2851		-----	-----	-----
3100	ISO8124-5	<10	<10	<10
3110	In house	-----	-----	-----
3116		-----	-----	-----
3118	CPSC-CH-E1003-09	ND	ND	ND
3121	In house	Below LOD	-----	3.1
3124	EPA3052	0.42976	-----	-----
3146	CPSC-CH-E1003-09	n.d.	n.d.	n.d.
3150	CPSC-CH-E1003-09	-----	-----	5.15
3154	CPSC-CH-E1003-09	-----	-----	7.04
3160	CPSC-CH-E1003-09	n.d.	31.58	n.d.
3163	In house	nd	1.9	nd
3172	CPSC-CH-E1003-09	< 10	< 10	< 10
3176	CPSC-CH-E1003-09	-----	-----	-----
3182	CPSC-CH-E1003-09	ND	ND	<13
3185	CPSC-CH-E1003-09	<10	<10	<10
3191	ISO8124-5	11.08	1.0737	6.519
3197	CPSC-CH-E1003-09	ND	ND	ND
3200	ISO8124-5	<10.0	<10.0	<10.0
3209	ISO8124-5	<10.0	<10.0	<10.0
3210	CPSC-CH-E1003-09	-----	-----	-----
3214	EPA3052	<10	<10	11.9
3216	In house	nd	2.388	1.797
3220	EN16711-1	ND	ND	1.3165
3225	CPSC-CH-E1003-09	-----	-----	-----
3228	CPSC-CH-E1003-09	-----	-----	<10
3237	In house	-----	-----	-----
3248	CPSC-CH-E1003-09	ND	ND	ND
8005		-----	-----	-----

Determination of Copper, Lead, Selenium on sample #18536; results in mg/kg

lab	method	Cu	Pb		Se
213	CPSC-CH-E1003-09	-----	-----		-----
230		-----	-----		-----
330	In house	-----	< 10		-----
348	CPSC-CH-E1003-09	-----	< 10		-----
523		-----	-----		-----
551	EPA3052	ND	ND		ND
623	In house	Not Detected	Not Detected		Not Detected
840	CPSC-CH-E1003-09	18.55	<2		<2
841	EPA3052	n.d	n.d		n.d
1051	CPSC-CH-E1003-09	-----	<10		-----
1099	In house	<50.0	<2.0		<5.0
1128		-----	-----		-----
2108	CPSC-CH-E1003-09	35.3	n.d.		n.d.
2115	CPSC-CH-E1003-09	-----	0.76		-----
2118	CPSC-CH-E1002-08	33.3346	5.5178		0
2120	CPSC-CH-E1003-09	-----	2.2		-----
2129	CPSC-CH-E1003-09	<25	<5		<5
2132	CPSC-CH-E1003-09	-----	<10		<10
2137	CPSC-CH-E1003-09	-----	-----		-----
2146	In house	-----	-----		-----
2165	ASTM F963	-----	<10		-----
2170	CPSC-CH-E1003-09	-----	5.1402	C	-----
2182	In house	-----	0.5623		-----
2184	CPSC-CH-E1003-09	-----	<10		-----
2213	CPSC-CH-E1002-08	<10	<10		<10
2215	EPA3052	< 50	< 10		< 10
2247	CPSC-CH-E1003-09	nd	nd		nd
2255	In house	ND	ND		ND
2256		-----	-----		-----
2258	In house	0	0		0
2266	CPSC-CH-E1003-09	<10	<10		<10
2284	CPSC-CH-E1003-09	-----	-----		-----
2286	CPSC-CH-E1003-09	-----	*f*10		-----
2287		-----	-----		-----
2289	CPSC-CH-E1003-09	<10	<10		<10
2290	CPSC-CH-E1003-09	<20	<20		<20
2293	CPSC-CH-E1003-09	-----	0.00		-----
2294	CPSC-CH-E1003-09	-----	< 2		-----
2296	In house	21.8047	<8.6517		9.7196
2301		0	0		0
2309	EPA3051	ND[Dl-10mg/kg	ND[Dl-10mg/kg		ND[Dl-10mg/kg
2310	CPSC-CH-E1003-09	NOT DETECTED	NOT DETECTED		NOT DETECTED
2311	CPSC-CH-E1003-09	Not Detected	Not Detected		Not Detected
2314	CPSC-CH-E1003-09	-----	-----		-----
2330	CPSC-CH-E1003-09	NA	ND		NA
2347	EPA3052	<5	<2		<10
2350	EPA3052	<5	<5		<10
2352	IEC62321-4&5	-----	-----		-----
2355	CPSC-CH-E1003-09	<5	<20		<10
2357	ISO8124-5	-----	-----		-----
2358	CPSC-CH-E1003-09	n.d.	n.d.		n.d.
2363	EPA3052	ND	ND		ND
2365	ASTM F963	<10	<20		<10
2366	CPSC-CH-E1003-09	<10	<10		<10
2369	EPA3052	<5	<2		<10
2370	CPSC-CH-E1003-09	11.9	<2		<2
2372	ASTM F963	14.3	n.d.		n.d.
2375	ISO16711-1	-----	-----		-----
2378	EPA3052	ND	ND		-----
2379	CPSC-CH-E1003-09	-----	-----		-----
2380	CPSC-CH-E1003-09	-----	-----		-----
2381	CPSC-CH-E1003-09	-----	-----		-----
2382	EPA3052	-----	-----		-----
2384	CPSC-CH-E1003-09	<10	<10		<10
2385	In house	4.4	<1		<2
2389		-----	-----		-----
2390	CPSC-CH-E1003-09	ND	ND		ND
2391	CPSC-CH-E1003-09	<1	<1		<1
2426	CPSC-CH-E1003-09	-----	ND		-----
2429	CPSC-CH-E1003-09	<10	<10		<10
2431	In house	-----	-----		-----
2433	CPSC-CH-E1003-09	-----	-----		-----
2448	IEC62321	-----	-----		-----
2453	CPSC-CH-E1003-09	-----	< LQ [8mg/kg]		-----
2459	CPSC-CH-E1003-09.1	ND	ND		ND
2460	CPSC-CH-E1003-09	-----	< 25		-----

lab	method	Cu	Pb	Se
2476		-----	Not Detected	-----
2480		-----	-----	-----
2489	In house	ND	ND	ND
2492	In house	-----	-----	-----
2495	CPSC-CH-E1003-09	-----	<5	<2
2497	ISO17072-2	-----	-----	-----
2500	CPSC-CH-E1003-09	ND	ND	ND
2503		0	0	0.521
2509	CPSC-CH-E1003-09	-----	39	-----
2511	CPSC-CH-E1003-09	-----	-----	-----
2514	In house	-----	-----	-----
2522	CPSC-CH-E1003-09	-----	-----	-----
2529	CPSC-CH-E1003-09	-----	-----	-----
2532	EPA3052	Not Detected	Not Detected	Not Detected
2553	CPSC-CH-E1003-09	<5	<5	<5
2560		<10	<10	<10
2564	CPSC-CH-E1003-09	-----	ND [<20]	-----
2567	CPSC-CH-E1003-09	<20	<20	<20
2572	CPSC-CH-E1003-09	<20	<20	<20
2574	In house	-----	5.013	-----
2590	CPSC-CH-E1003-09	-----	7.4218	< L.O.Q.
2632	IEC62321-4&5	3.70	N.D.	N.D.
2642	CPSC-CH-E1003-09	-----	<25	-----
2645	CPSC-CH-E1003-09	-----	-----	-----
2674	CPSC-CH-E1003-09	-----	ND	-----
2678	CPSC-CH-E1003-09	-----	n.d	-----
2705	In house	4.09	0.63	0.13
2713	In house	-----	<10	-----
2720	CPSC-CH-E1003-09	<10	<10	<10
2805	ASTM F963	<10	<10	<10
2809	CPSC-CH-E1003-09	-----	-----	-----
2812	CPSC-CH-E1003-09	-----	-----	-----
2826		<10	<10	<10
2840		-----	2.11813	-----
2851		-----	<10	-----
3100	ISO8124-5	<10	<10	<10
3110	In house	-----	-----	-----
3116		-----	-----	-----
3118	CPSC-CH-E1003-09	ND	ND	ND
3121	In house	3.44	0.69	0.35
3124	EPA3052	-----	0.71732	0.015656
3146	CPSC-CH-E1003-09	n.d.	n.d.	n.d.
3150	CPSC-CH-E1003-09	7.50	-----	-----
3154	CPSC-CH-E1003-09	7.42	-----	-----
3160	CPSC-CH-E1003-09	n.d.	146.01	7.44
3163	In house	13.9	nd	-----
3172	CPSC-CH-E1003-09	-----	< 10	-----
3176	CPSC-CH-E1003-09	86.14	-----	-----
3182	CPSC-CH-E1003-09	ND	ND	ND
3185	CPSC-CH-E1003-09	<10	<10	<10
3191	ISO8124-5	0.701	1.0289	2.511
3197	CPSC-CH-E1003-09	ND	ND	ND
3200	ISO8124-5	<10.0	<10.0	<10.0
3209	ISO8124-5	<10.0	<10.0	<10.0
3210	CPSC-CH-E1003-09	-----	<90	-----
3214	EPA3052	<10	<10	<10
3216	In house	3.410	0.814	nd
3220	EN16711-1	ND	ND	ND
3225	CPSC-CH-E1003-09	-----	ND	-----
3228	CPSC-CH-E1003-09	-----	<10	-----
3237	In house	-----	-----	-----
3248	CPSC-CH-E1003-09	ND	ND	ND
8005		-----	-----	-----

Lab 2170 first reported: 254.9195

APPENDIX 3 Analytical Details

lab	ISO17025 accredited	Sample intake (in mg)	Acid used for the digestion	Concentration of the acid (in%)	Acid used (ml)
213	---				
230	---				
330	No	100 mg	Nitric acid	69% HNO3	4 ml
348	Yes	100	HNO3+H2O2+HCl	67% HNO3 / 30% H2O2 / 32% HCl	10 ml HNO3 / 2 ml H2O2 / 3 ml HCl
523	---				
551	No	0.1	HNO3 + HF	HNO3 - 37% and HF 70%	8ml HNO3 and 2ml HF
623	Yes	100	HNO3	37%	8
840	Yes	0.1g	HNO3 + H2O2	10%	5mL
841	---				
1051	Yes	100mg	HNO3	13.8%	25 mL
1099	---				
1128	---				
2108	Yes	100 mg	Nitric acid and Hydrochloric acid	HNO3: 66% HCL: 37%	HNO3: 8ml HCL: 2 ml
2115	Yes	100 mg	HNO3	> 69%	5 ml
2118	Yes	50 mg	HNO3/H2O2	HNO3 65%-H2O2 30%	8ml/ 2ml
2120	Yes	50	Pb: HNO3+ HF; Cd EN 1122 method A	concentrated	Pb: 7,5 ml HNO3 + 2,5 ml HF ; Cd:same as described in the standard EN 1122 method A
2129	Yes		HNO3		
2132	Yes	30 mg	HNO3	67%	2 ml
2137	Yes	100 mg	HNO3	60 %	10 mL
2146	No	200 mg	HNO3	67%	5
2165	Yes	100	HNO3	65%~68%	10
2170	Yes	50 mg	Nitric Acid	65%	8 ml
2182	No	100			
2184	Yes	100	HNO3	69%	5
2213	Yes	116			
2215	Yes	18535 : 911 18536 : 514	nitric acid+ HF	nitric acid 10%	nitric acid10ml+HF1ml
2247	Yes	700 to 1000 mg	HNO3, H2O2 and HF	22 to 25 % aqueous in final solution	7 ml
2255	Yes	49.23	Nitric acid	37%	10
2256	Yes	101.2	Nitric Acid	69%	10
2258	Yes	43.4	Nitric Acid	70%	4
2266	Yes				
2284	Yes	100	Nitric acid	68%	3ml
2286	No	100mg	nitric acid	60%	5 mL
2287	---				
2289	Yes	about 79 mg	HNO3	65%	5ml
2290	---				
2293	Yes	125 mg	Nitric acid	20%	6 mL
2294	Yes	#18535 103.8 #18536 53.7	Nitric Acid for both samples	39% for both samples	6mL for both samples
2296	Yes	100mg	10ml 43% (m/m) Nitric acid and 5ml 37% (m/m) Hydrochloric acid	10ml 43% (m/m) Nitric acid and 5ml 37% (m/m) Hydrochloric acid	10ml 43% (m/m) Nitric acid and 5ml 37% (m/m) Hydrochloric acid
2301	Yes	10	Nitric Acid	65 %	4
2309	Yes	100mg	nitric acid & Hydrochloric Acid & Hydrofloric acid	Nitric-69%, HCL-37%, HF-40%	10ml
2310	Yes	100 mg	Nitric acid	65% of nitric acid	10 ml
2311	Yes	50	Nitric Acid	69% Nitric Acid	5
2314	Yes	0.15g	Nitric acid	67-70%	5ml
2330	Yes	0.25 g	Nitric acid	65%	10 ,l

lab	ISO17025 accredited	Sample intake (in mg)	Acid used for the digestion	Concentration of the acid (in%)	Acid used (ml)
2347	Yes	100mg	HNO3,HCl,HF	HNO3:65%~68%,HCl:36%~38%, HF>40%	HNO3:4mL,HCl:4mL,HF:1mL
2350	Yes	about 0.2 g	HNO3+HF	70 %,49%	8 mL
2352	Yes	100mg	HNO3, HCl, HF	HNO3:68.0%, HCl:38.0%, HF:40.0%	HNO3:7mL, HCl:2mL, HF:1mL
2355	Yes	0.1g	HNO3,HCl,HF	70%HNO3, 35%HCl, 50%HF	7ml HNO3,1ml HF, 2ml HCl
2357	Yes				
2358	Yes	100 mg	Nitric acid	40% nitric acid	10 ml
2363	Yes		HNO3,HF,HCl	69.0%~71.0%HNO3,36%-38%HCl,48.8-49.2%HF	HNO3 7ml, HF 1ml,HCl 2ml
2365	Yes	100mg	HNO3,H2O2 and HF	HNO3:69%(w/w); H2O2:30%(w/w); HF:48%(w/w);	6.5mL HNO3,1mL H2O2 and 1mL HF
2366	Yes	200mg	18535: HNO3+ H2O2 18536: HNO3+HF	HNO3: 70%, H2O2 30%, HF 49%	18535: 6.5ml HNO3+ 1 ml H2O2, 18536: 6.5ml HNO3+1ml HF
2369	Yes				
2370	Yes	100mg	HNO3 + HF	HNO3(69%) ; HF(49%)	HNO3(10mL) ; HF(4mL)
2372	Yes	100mg	hydrochloric acid, nitric acid, hydrofluoric acid, sulfuric acid	36%~38% hydrochloric acid, 69%~71% nitric acid, 49% hydrofluoric acid, 96% sulfuric acid	ASTM F963:10ml sulfuric acid, 9ml hydrochloric acid, 3ml nitric acid ; EPA3052:1ml hydrofluoric acid
2375	Yes	0.1 mg	HNO3	%65	10ml
2378	Yes	100mg	HNO3,HCl,HF	HNO3:68.0%,HCl:36%,HF:40%	HNO3:7mL,HCl:2mL,HF:1mL
2379	Yes	100	HNO3 , H2O2	69% , 30%	10 , 1
2380	Yes	50.0 mg	HNO3	65 %	5 ml
2381	Yes	56.0 mg	Nitric Acid	65%	9.0 ml
2382	No	0.1g	HNO3+HCL+HF	30%HNO3	7+2+1
2384	Yes	0.2	Nitric Acid	40%	10 mL
2385	Yes	70	HNO3/H2O2	69%	5
2389	---				
2390	No	about 200 mg	HNO3	65 % HNO3	10 ml, HNO3 (Conc)
2391	Yes	100mg	Nitric Acid	65%	10ml
2426	Yes	0.0503 gram	Nitric Acid	65%	8
2429	Yes	100	HCL+HNO3	10%	HCL 2ml, HNO3 6ml
2431	Yes	100	HNO3 and HCl	65% HNO3 and 37% HCl	9ml HNO3 and 1ml HCl
2433	Yes	0-1 g	nitric acid and 30% hydrogen peroxide	3-5%	12mL conc + 5mL 10% nitric acid
2448	No	50	Nitric acid	65%	5
2453	Yes	150	HNO3		
2459	---				
2460	Yes	about 190 mg	HNO3 for both samples	15 % for both samples	6 ml for both samples
2476	Yes	0.15	Nitric Acid	65%	6
2480	---				
2489	Yes	about 24 mg	HNO3+HF	HNO3 (69%) & HF (40%)	8 ml HNO3+2 ml HF
2492	Yes	100	Nitric acid	65%	10
2495	Yes	101.85 - 77.96	HNO3:HCl 3:1	HNO3 65% - HCl 35%	10
2497	---				
2500	Yes	100	Concentrated nitric acid	65 – 70 %	10
2503	---				
2509	Yes				
2511	---				
2514	Yes	39.0	HNO3 + HCl	Concentrated	10 ml
2522	Yes				
2529	No	50mg	nitric acid	10% nitric acid solution	5mL
2532	Yes	0.025mg	Nitric Acid & Hydrofluoric Acid	Nitric Acid (69-70 %) , HF - 48%	HNO3- 7.5 ml & HF - 2.5ml

lab	ISO17025 accredited	Sample intake (in mg)	Acid used for the digestion	Concentration of the acid (in%)	Acid used (ml)
2553	Yes	in milligrams	HNO3	69%	10 ml
2560	Yes	100.3	HNO3 + HCl	HNO3 : HCl (1:3)	8
2564	---				
2567	Yes	50	HNO3, HF	65%HNO3, 48%HF	5+1=6
2572	---				
2574	Yes	203.2	HNO3	concentrated HNO3	7
2590	Yes	0.0765	HNO3	2.5%	2ML
2632	Yes	200mg	HNO3	10% HNO3	5mL
2642	Yes	100	HNO3		5ml
2645	Yes	100 mg	HNO3 concentrated	69 %	10 mL
2674	Yes	0.1g	nitric acid	40%	10mL
2678	Yes	100	nitric acid		10 ml
2705	No	400	HNO3/H2O2	30%	7
2713	Yes	0.1 gram	Nitric acid	%10	10 ml
2720	Yes	50mg	nitric acid and hydrochloric acid	16%	7ml nitric acid and 1 ml hydrochloric acid
2805	No	50	Acid nitric	65%	5
2809	Yes	100	HNO3	65%	5
2812	No	100 mg	HNO3	%65 HNO3	5ml (Final volume 50mL)
2826	No	100	Nitric acid	20% (v/v)	5ml
2840	Yes	about 480 mg	Ammonium acetate	15%	50 mL
2851	Yes	32mg	HNO3 65%	40% HNO3	10ml
3100	Yes	about 83 mg	nitric acid	65%	10mL
3110	---				
3116	No	50	Nitric acid	40% (v/v)	4mL
3118	No	50	HNO3 : HCl	6%	6
3121	Yes	0,1	Conc. HNO3	2,8M HNO3 after digestion	5
3124	Yes	0,15	HNO3, HCl, HF		
3146	Yes	about 200 mg	HNO3/HCL	HNO3 65% , HCL 30 %	4,5 ml HNO3 , 1,5ml HCL filled up to 50ml
3150	No	50	nitric acid	67%	8
3154	Yes				
3160	Yes	100	HNO3 (c) +HCl (32%) + H2O2 (30%)	8%	4.5 ml HNO3 + 0.5 ml HCl + 1 ml H2O2
3163	No	1000	none	none	none
3172	Yes	50	Nitric and Fluoridric	Nitric: 65-67% - Fluoridric >=40%	5+3
3176	Yes	100	Nitric Acid	65% Nitric acid	10 mL
3182	Yes	100	Nitric acid	65%	5 ml
3185	Yes	100mg	Nitric acid	65%	10ml
3191	Yes	100mg	HNO3, HCl (reverse aqua regia)	analysis grade 68% HNO3 v/v, 38% HCl v/v	4.5ml HNO3, 1.5ml HCl
3197	Yes	200	HNO3	%65	10 ml
3200	Yes	100.6mg	HNO3:HCL=3:1	67%HNO3+37%HCL	8ml
3209	Yes	105.5	Hydrochloric acid : Nitric acid = 1:3	100%	5
3210	Yes	about 69 mg	HNO3	67%	5ml
3214	Yes	100 mg	HNO3, HCl,HF	24%	HNO3: 9ml ; HCl: 3 ml ; HF: 1 ml
3216	No	200 mg	Nitric acid	70%	10 ml
3220	Yes	100mg	HNO3	65%	9ml
3225	Yes	100 mg	Nitric acid	67-70%	5ml, final as 25 ml
3228	Yes	100mg	HNO3	65%	8ml
3237	Yes	0.1 mg	Nitric acid	65%	10 ml
3248	Yes	150	Nitric acid	35%	5
8005	Yes				

APPENDIX 4

Number of participants per country

5 labs in BANGLADESH
1 lab in BELGIUM
2 labs in BRAZIL
2 labs in CAMBODIA
2 labs in DENMARK
1 lab in EGYPT
1 lab in FINLAND
4 labs in FRANCE
6 labs in GERMANY
2 labs in GUATEMALA
15 labs in HONG KONG
9 labs in INDIA
4 labs in INDONESIA
5 labs in ITALY
2 labs in JAPAN
2 labs in KOREA
1 lab in LUXEMBOURG
3 labs in MALAYSIA
1 lab in MAURITIUS
3 labs in MEXICO
1 lab in MOROCCO
26 labs in P.R. of CHINA
4 labs in PAKISTAN
1 lab in PHILIPPINES
1 lab in POLAND
2 labs in PORTUGAL
1 lab in SINGAPORE
3 labs in SPAIN
1 lab in SRI LANKA
6 labs in TAIWAN R.O.C.
3 labs in THAILAND
2 labs in THE NETHERLANDS
2 labs in TUNISIA
6 labs in TURKEY
2 labs in U.S.A.
1 lab in UNITED KINGDOM
6 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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