

## TEST REPORT

Test Report # 21H-020794 Date of Report Issue: September 16, 2021  
Date of Sample Received: September 8, 2021 Pages: Page 1 of 59

### CLIENT INFORMATION:

Company: ITW Trans Tech  
Recipient: Prasanth Bijjam  
Recipient Email: pbijjam@itwids.com



### SAMPLE INFORMATION:

Description: INK-B series pad printing inks  
Assortment: - Purchase Order Number: -  
SKU/style No.: - Toy Co./Agency: -  
Factory/Supplier/Vendor: - Country of Origin: Germany  
Country of Distribution: Worldwide Labeled Age Grade: -  
Quantity Submitted: 1 lot Recommended Age Grade: -  
Testing Period: 09/08/2021 – 09/14/2021 Tested Age Grade: -  
09/15/2021 – 09/16/2021

### OVERALL RESULT:

 **PASS**

Refer to page 2 for test result summary and appropriate notes.

QIMA Testing (HK) Limited

Loska Yeung Lok Ka  
Assistant Manager, Chemical Laboratory

**TEST RESULTS SUMMARY:**

At the request of the client, the following tests were conducted:

CONCLUSION	TEST(S) CONDUCTED
PASS	CPSIA Section 106 & ASTM F963-17 Toy Safety, Clause 4.3.5 Total Elements Screening in Paint and Similar Surface Coatings
PASS	CPSIA Section 106 & ASTM F963-17 Toy Safety, Clause 4.3.5 Soluble Elements in Paints and Similar Surface Coatings
PASS	ASTM F2923-20 Consumer Product Safety for Children’s Jewelry, Clause 8 Total Elements Screening in Paint and Surface Coatings
PASS	ASTM F2923-20 Consumer Product Safety for Children’s Jewelry, Clause 8 Soluble Elements in Paint and Surface Coatings
PASS	ASTM F2999-19 Adult Jewelry, Clause 5 & 7 Total Elements Screening in Paint and Surface Coatings
PASS	ASTM F2999-19 Adult Jewelry, Clause 7 Soluble Elements in Paint and Surface Coatings
PASS	ASTM F2999-19 Adult Jewelry, Clause 5 Total Lead in Paints & Surface Coatings
PASS	ASTM F2923-20 Consumer Product Safety for Children’s Jewelry, Clause 5 Total Lead in Paint and Surface Coatings
PASS	CPSIA Section 101 & 16 CFR 1303, Total Lead in Paints and Surface Coatings
PASS	Washington Revised Code Section 70.240.020, Cadmium in Paints and Surface Coatings of Children’s Product
PASS	The Illinois Lead Poisoning Prevention Act (LPPA) (410 ILCS 45/6), Total Lead in Paints and Surface Coatings of Children’s Jewelry and Childcare Articles
PASS	Connecticut Public Act 10-113 (Substituted House Bill 5314), Total Cadmium Content in Children's Jewelry
PASS	Maryland Chapter 578 (House Bill 145), Total Cadmium in Children’s Jewelry
PASS	Minnesota Chapter 347-S.F. No. 2510, Total Cadmium Screening in Children’s Jewelry
PASS	California Proposition 65, Phthalates (DBP, BBP, DEHP, DINP, DIDP, DnHP)
PASS	16 CFR 1307 Prohibition of Children’s Toys and Child Care Articles Containing Specified Phthalates (DBP, BBP, DEHP, DINP, DHEXP / DnHP, DCHP, DIBP, DPENP)
PASS	Washington Revised Code Section 70.240.020, Phthalates in Children’s Product
PASS	Canadian Toys Regulations SOR/2011-17 as Amended, Item 23 – Total Elements Screening in Paints and Surface Coatings
PASS	Canadian Toys Regulations SOR/2011-17 as Amended, Item 23 –Leachable Elements in Paints and Surface Coatings
PASS	Canadian Toys Regulations SOR/2011-17 as Amended, Item 23 – Total Lead and Mercury in Paints and Surface Coatings
PASS	Canadian Surface Coating Materials Regulations SOR/2016-193, Total Lead and Mercury in Paints and Surface Coatings

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PASS	Mexican Environmental Health NOM-252-SSA1-2011, Total Elements Screening from Toys and School Supplies
PASS	Mexican Environmental Health NOM-252-SSA1-2011, Soluble Elements from Toys and School Supplies

**DETAILED RESULTS:**

**CPSIA Section 106 & ASTM F963-17 Toy Safety, Clause 4.3.5 Total Elements Screening in Paint and Similar Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1+2+3	4+5+6	7+8+9	10+11+12	13+14+15	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Antimony (Sb)	ND	ND	ND	ND	ND	60
Total Arsenic (As)	ND	ND	ND	ND	ND	25
Total Barium (Ba)	400	ND	ND	ND	770	1000
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
Total Chromium (Cr)	ND	ND	ND	ND	ND	60
Total Lead (Pb)	ND	ND	ND	ND	ND	90
Total Mercury (Hg)	ND	ND	ND	ND	ND	60
Total Selenium (Se)	ND	ND	ND	ND	ND	500
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

*Note:*

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit: Sb, As, Ba, Cd, Cr, Pb, Hg = 20ppm; Se = 50ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration.

*Remark:*

The total heavy metals screening results do not exceed the soluble heavy metal limits, therefore, further soluble analyses were not conducted.

**DETAILED RESULTS:**

**CPSIA Section 106 & ASTM F963-17 Toy Safety, Clause 4.3.5 Total Elements Screening in Paint and Similar Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	16+17+18	19+20+21	22+23+24	25+26+27	28+29+30	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Antimony (Sb)	ND	ND	ND	ND	ND	60
Total Arsenic (As)	ND	ND	ND	ND	ND	25
Total Barium (Ba)	38	ND	ND	50	32	1000
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
Total Chromium (Cr)	ND	ND	ND	ND	ND	60
Total Lead (Pb)	ND	ND	ND	ND	ND	90
Total Mercury (Hg)	ND	ND	ND	ND	ND	60
Total Selenium (Se)	ND	ND	ND	ND	ND	500
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

*Note:*

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit: Sb, As, Ba, Cd, Cr, Pb, Hg = 20ppm; Se = 50ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration.

*Remark:*

The total heavy metals screening results do not exceed the soluble heavy metal limits, therefore, further soluble analyses were not conducted.

**DETAILED RESULTS:**

**CPSIA Section 106 & ASTM F963-17 Toy Safety, Clause 4.3.5 Total Elements Screening in Paint and Similar Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	31+32+33	34+35+36	37+38+39	40+41+42	46+47+48	Soluble
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Limit (ppm)
Total Antimony (Sb)	ND	ND	ND	ND	ND	60
Total Arsenic (As)	ND	ND	ND	ND	ND	25
Total Barium (Ba)	ND	ND	140	ND	ND	1000
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
Total Chromium (Cr)	ND	ND	ND	ND	ND	60
Total Lead (Pb)	ND	ND	ND	ND	ND	90
Total Mercury (Hg)	ND	ND	ND	ND	ND	60
Total Selenium (Se)	ND	ND	ND	ND	ND	500
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

*Note:*

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit: Sb, As, Ba, Cd, Cr, Pb, Hg = 20ppm; Se = 50ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration.

*Remark:*

\*The total heavy metals screening results of Specimen No. 43, 44 and 45 exceeded the soluble heavy metal limits, therefore a separate soluble analysis was conducted.

**DETAILED RESULTS:**

**CPSIA Section 106 & ASTM F963-17 Toy Safety, Clause 4.3.5 Total Elements Screening in Paint and Similar Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	49+50	---	---	---	---	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Antimony (Sb)	ND	---	---	---	---	60
Total Arsenic (As)	ND	---	---	---	---	25
Total Barium (Ba)	ND	---	---	---	---	1000
Total Cadmium (Cd)	ND	---	---	---	---	75
Total Chromium (Cr)	ND	---	---	---	---	60
Total Lead (Pb)	ND	---	---	---	---	90
Total Mercury (Hg)	ND	---	---	---	---	60
Total Selenium (Se)	ND	---	---	---	---	500
<b>Conclusion</b>	PASS	---	---	---	---	

**Note:**

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit: Sb, As, Ba, Cd, Cr, Pb, Hg = 20ppm; Se = 50ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration.

**Remark:**

The total heavy metals screening results do not exceed the soluble heavy metal limits, therefore, further soluble analyses were not conducted.

**DETAILED RESULTS:**

**CPSIA Section 106 & ASTM F963-17 Toy Safety, Clause 4.3.5 Soluble Elements in Paints and Similar Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.2  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	43	44	45	---	---	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	---	---	60
Soluble Arsenic (As)	ND	ND	ND	---	---	25
Soluble Barium (Ba)	82	ND	ND	---	---	1000
Soluble Cadmium (Cd)	ND	ND	ND	---	---	75
Soluble Chromium (Cr)	ND	ND	ND	---	---	60
Soluble Lead (Pb)	ND	ND	ND	---	---	90
Soluble Mercury (Hg)	ND	ND	ND	---	---	60
Soluble Selenium (Se)	ND	ND	ND	---	---	500
<b>Conclusion</b>	PASS	PASS	PASS	---	---	

*Note:*

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit = 5 ppm)



**DETAILED RESULTS:**

**ASTM F2923-20 Consumer Product Safety for Children’s Jewelry, Clause 8 Total Elements Screening in Paint and Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1+2+3	4+5+6	7+8+9	10+11+12	13+14+15	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Antimony (Sb)	ND	ND	ND	ND	ND	60
Total Arsenic (As)	ND	ND	ND	ND	ND	25
Total Barium (Ba)	400	ND	ND	ND	770	1000
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
Total Chromium (Cr)	ND	ND	ND	ND	ND	60
Total Mercury (Hg)	ND	ND	ND	ND	ND	60
Total Selenium (Se)	ND	ND	ND	ND	ND	500
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

*Note:*

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit: Sb, As, Ba, Cd, Cr, Hg = 20 ppm; Se = 50 ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration.

*Remark:*

The total heavy metals screening results do not exceed the soluble heavy metal limits, therefore, further soluble analyses were not conducted.

**DETAILED RESULTS:**

**ASTM F2923-20 Consumer Product Safety for Children’s Jewelry, Clause 8 Total Elements Screening in Paint and Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	16+17+18	19+20+21	22+23+24	25+26+27	28+29+30	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Antimony (Sb)	ND	ND	ND	ND	ND	60
Total Arsenic (As)	ND	ND	ND	ND	ND	25
Total Barium (Ba)	38	ND	ND	50	32	1000
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
Total Chromium (Cr)	ND	ND	ND	ND	ND	60
Total Mercury (Hg)	ND	ND	ND	ND	ND	60
Total Selenium (Se)	ND	ND	ND	ND	ND	500
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

*Note:*

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit: Sb, As, Ba, Cd, Cr, Hg = 20 ppm; Se = 50 ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration.

*Remark:*

The total heavy metals screening results do not exceed the soluble heavy metal limits, therefore, further soluble analyses were not conducted.

**DETAILED RESULTS:**

**ASTM F2923-20 Consumer Product Safety for Children’s Jewelry, Clause 8 Total Elements Screening in Paint and Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	31+32+33	34+35+36	37+38+39	40+41+42	46+47+48	Soluble
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Limit (ppm)
Total Antimony (Sb)	ND	ND	ND	ND	ND	60
Total Arsenic (As)	ND	ND	ND	ND	ND	25
Total Barium (Ba)	ND	ND	140	ND	ND	1000
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
Total Chromium (Cr)	ND	ND	ND	ND	ND	60
Total Mercury (Hg)	ND	ND	ND	ND	ND	60
Total Selenium (Se)	ND	ND	ND	ND	ND	500
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

*Note:*

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit: Sb, As, Ba, Cd, Cr, Hg = 20 ppm; Se = 50 ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration.

*Remark:*

\*The total heavy metals screening results of Specimen No. 43, 44 and 45 exceeded the soluble heavy metal limits, therefore a separate soluble analysis was conducted.

**DETAILED RESULTS:**

**ASTM F2923-20 Consumer Product Safety for Children’s Jewelry, Clause 8 Total Elements Screening in Paint and Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	49+50	---	---	---	---	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Antimony (Sb)	ND	---	---	---	---	60
Total Arsenic (As)	ND	---	---	---	---	25
Total Barium (Ba)	ND	---	---	---	---	1000
Total Cadmium (Cd)	ND	---	---	---	---	75
Total Chromium (Cr)	ND	---	---	---	---	60
Total Mercury (Hg)	ND	---	---	---	---	60
Total Selenium (Se)	ND	---	---	---	---	500
<b>Conclusion</b>	PASS	---	---	---	---	

*Note:*  
 ppm (Parts per million) = mg/kg (Milligrams per kilogram)  
 LT = Less than  
 ND = Not detected (Reporting Limit: Sb, As, Ba, Cd, Cr, Hg = 20 ppm; Se = 50 ppm)  
 Composite results are based on specimen of least mass resulting in highest potential concentration.

*Remark:*  
 The total heavy metals screening results do not exceed the soluble heavy metal limits, therefore, further soluble analyses were not conducted.

**DETAILED RESULTS:**

**ASTM F2923-20 Consumer Product Safety for Children’s Jewelry, Clause 8 Soluble Elements in Paint and Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.2  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	43	44	45	---	---	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	---	---	60
Soluble Arsenic (As)	ND	ND	ND	---	---	25
Soluble Barium (Ba)	82	ND	ND	---	---	1000
Soluble Cadmium (Cd)	ND	ND	ND	---	---	75
Soluble Chromium (Cr)	ND	ND	ND	---	---	60
Soluble Mercury (Hg)	ND	ND	ND	---	---	60
Soluble Selenium (Se)	ND	ND	ND	---	---	500
<b>Conclusion</b>	PASS	PASS	PASS	---	---	

*Note:*  
 ppm (Parts per million) = mg/kg (Milligrams per kilogram)  
 LT = Less than  
 ND = Not detected (Reporting Limit = 2 ppm)

**DETAILED RESULTS:**

**ASTM F2999-19 Adult Jewelry, Clause 5 & 7 Total Elements Screening in Paint and Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1+2+3	4+5+6	7+8+9	10+11+12	13+14+15	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Antimony (Sb)	ND	ND	ND	ND	ND	60
Total Arsenic (As)	ND	ND	ND	ND	ND	25
Total Barium (Ba)	400	ND	ND	ND	770	1000
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
Total Chromium (Cr)	ND	ND	ND	ND	ND	60
Total Lead (Pb)	ND	ND	ND	ND	ND	600*
Total Mercury (Hg)	ND	ND	ND	ND	ND	60
Total Selenium (Se)	ND	ND	ND	ND	ND	500
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

**Note:**

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit: Sb, As, Ba, Cd, Cr, Pb, Hg = 20 ppm; Se = 50 ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration.

**Remark:**

\*Total limit

The total heavy metals screening results do not exceed the soluble heavy metal limits, therefore, further soluble analyses were not conducted.

**DETAILED RESULTS:**

**ASTM F2999-19 Adult Jewelry, Clause 5 & 7 Total Elements Screening in Paint and Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.1

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	16+17+18	19+20+21	22+23+24	25+26+27	28+29+30	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Antimony (Sb)	ND	ND	ND	ND	ND	60
Total Arsenic (As)	ND	ND	ND	ND	ND	25
Total Barium (Ba)	38	ND	ND	50	32	1000
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
Total Chromium (Cr)	ND	ND	ND	ND	ND	60
Total Lead (Pb)	ND	ND	ND	ND	ND	600*
Total Mercury (Hg)	ND	ND	ND	ND	ND	60
Total Selenium (Se)	ND	ND	ND	ND	ND	500
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

**Note:**

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit: Sb, As, Ba, Cd, Cr, Pb, Hg = 20 ppm; Se = 50 ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration.

**Remark:**

\*Total limit

The total heavy metals screening results do not exceed the soluble heavy metal limits, therefore, further soluble analyses were not conducted.

**DETAILED RESULTS:**

**ASTM F2999-19 Adult Jewelry, Clause 5 & 7 Total Elements Screening in Paint and Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.1

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	31+32+33	34+35+36	37+38+39	40+41+42	46+47+48	Soluble
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Limit (ppm)
Total Antimony (Sb)	ND	ND	ND	ND	ND	60
Total Arsenic (As)	ND	ND	ND	ND	ND	25
Total Barium (Ba)	ND	ND	140	ND	ND	1000
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
Total Chromium (Cr)	ND	ND	ND	ND	ND	60
Total Lead (Pb)	ND	ND	ND	ND	ND	600*
Total Mercury (Hg)	ND	ND	ND	ND	ND	60
Total Selenium (Se)	ND	ND	ND	ND	ND	500
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

**Note:**

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit: Sb, As, Ba, Cd, Cr, Pb, Hg = 20 ppm; Se = 50 ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration.

**Remark:**

\*Total limit

\*\*The total heavy metals screening results of Specimen No. 43, 44 and 45 exceeded the soluble heavy metal limits, therefore a separate soluble analysis was conducted.



**DETAILED RESULTS:**

**ASTM F2999-19 Adult Jewelry, Clause 5 & 7 Total Elements Screening in Paint and Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	49+50	---	---	---	---	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Antimony (Sb)	ND	---	---	---	---	60
Total Arsenic (As)	ND	---	---	---	---	25
Total Barium (Ba)	ND	---	---	---	---	1000
Total Cadmium (Cd)	ND	---	---	---	---	75
Total Chromium (Cr)	ND	---	---	---	---	60
Total Lead (Pb)	ND	---	---	---	---	600*
Total Mercury (Hg)	ND	---	---	---	---	60
Total Selenium (Se)	ND	---	---	---	---	500
<b>Conclusion</b>	PASS	---	---	---	---	

**Note:**

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit: Sb, As, Ba, Cd, Cr, Pb, Hg = 20 ppm; Se = 50 ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration.

**Remark:**

\*Total limit

The total heavy metals screening results do not exceed the soluble heavy metal limits, therefore, further soluble analyses were not conducted.

**DETAILED RESULTS:**

**ASTM F2999-19 Adult Jewelry, Clause 7 Soluble Elements in Paint and Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.2  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	43	44	45	---	---	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	---	---	60
Soluble Arsenic (As)	ND	ND	ND	---	---	25
Soluble Barium (Ba)	82	ND	ND	---	---	1000
Soluble Cadmium (Cd)	ND	ND	ND	---	---	75
Soluble Chromium (Cr)	ND	ND	ND	---	---	60
Soluble Mercury (Hg)	ND	ND	ND	---	---	60
Soluble Selenium (Se)	ND	ND	ND	---	---	500
<b>Conclusion</b>	PASS	PASS	PASS	---	---	

*Note:*  
 ppm (Parts per million) = mg/kg (Milligrams per kilogram)  
 LT = Less than  
 ND = Not detected (Reporting Limit = 2 ppm)

**DETAILED RESULTS:**

**ASTM F2999-19 Adult Jewelry, Clause 5 Total Lead in Paints & Surface Coatings**

Test Method: CPSC-CH-E-1003-09.1

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	43+44+45	---	---	---	---	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Lead (Pb)	ND	---	---	---	---	<b>600</b>
<b>Conclusion</b>	PASS	---	---	---	---	

*Note:*

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit = 20 ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration.

**DETAILED RESULTS:**

**ASTM F2923-20 Consumer Product Safety for Children’s Jewelry, Clause 5 Total Lead in Paint and Surface Coatings**

Test Method: CPSC-CH-E-1003-09.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1+2+3	4+5+6	7+8+9	10+11+12	13+14+15	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Lead (Pb)	ND	ND	ND	ND	ND	90
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	16+17+18	19+20+21	22+23+24	25+26+27	28+29+30	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Lead (Pb)	ND	ND	ND	ND	ND	90
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	31+32+33	34+35+36	37+38+39	40+41+42	43+44+45	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Lead (Pb)	ND	ND	ND	ND	ND	90
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	46+47+48	49+50	---	---	---	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Lead (Pb)	ND	ND	---	---	---	90
<b>Conclusion</b>	PASS	PASS	---	---	---	

**Note:**  
 ppm (Parts per million) = mg/kg (Milligrams per kilogram)  
 LT = Less than  
 ND = Not detected (Reporting Limit = 20 ppm)  
 Composite results are based on specimen of least mass resulting in highest potential concentration.

**DETAILED RESULTS:**

**CPSIA Section 101 & 16 CFR 1303, Total Lead in Paints and Surface Coatings**

Test Method: CPSC-CH-E-1003-09.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1+2+3	4+5+6	7+8+9	10+11+12	13+14+15	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Lead (Pb)	ND	ND	ND	ND	ND	90
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	16+17+18	19+20+21	22+23+24	25+26+27	28+29+30	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Lead (Pb)	ND	ND	ND	ND	ND	90
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	31+32+33	34+35+36	37+38+39	40+41+42	43+44+45	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Lead (Pb)	ND	ND	ND	ND	ND	90
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	46+47+48	49+50	---	---	---	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Lead (Pb)	ND	ND	---	---	---	90
<b>Conclusion</b>	PASS	PASS	---	---	---	

*Note:*  
 ppm (Parts per million) = mg/kg (Milligrams per kilogram)  
 LT = Less than  
 ND = Not detected (Reporting Limit = 20 ppm)  
 Composite results are based on specimen of least mass resulting in highest potential concentration.

**DETAILED RESULTS:**

**Washington Revised Code Section 70.240.020, Cadmium in Paints and Surface Coatings of Children’s Product**

Test Method: CPSC-CH-E-1003-09.1 (Modified)  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1+2+3	4+5+6	7+8+9	10+11+12	13+14+15	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Cadmium (Cd)	ND	ND	ND	ND	ND	40
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	16+17+18	19+20+21	22+23+24	25+26+27	28+29+30	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Cadmium (Cd)	ND	ND	ND	ND	ND	40
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	31+32+33	34+35+36	37+38+39	40+41+42	43+44+45	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Cadmium (Cd)	ND	ND	ND	ND	ND	40
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	46+47+48	49+50	---	---	---	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Cadmium (Cd)	ND	ND	---	---	---	40
<b>Conclusion</b>	PASS	PASS	---	---	---	

*Note:*  
 ppm (Parts per million) = mg/kg (Milligrams per kilogram)  
 LT = Less than  
 ND = Not detected (Reporting Limit = 20 ppm)  
 Composite results are based on specimen of least mass resulting in highest potential concentration.

**DETAILED RESULTS:**

**The Illinois Lead Poisoning Prevention Act (LPPA) (410 ILCS 45/6), Total Lead in Paints and Surface Coatings of Children’s Jewelry and Childcare Articles**

Test Method: CPSC-CH-E-1003-09.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1+2+3	4+5+6	7+8+9	10+11+12	13+14+15	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Lead (Pb)	ND	ND	ND	ND	ND	<b>40</b>
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	16+17+18	19+20+21	22+23+24	25+26+27	28+29+30	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Lead (Pb)	ND	ND	ND	ND	ND	<b>40</b>
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

*Note:*

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit = 20 ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration.

**DETAILED RESULTS:**

**The Illinois Lead Poisoning Prevention Act (LPPA) (410 ILCS 45/6), Total Lead in Paints and Surface Coatings of Children’s Jewelry and Childcare Articles**

Test Method: CPSC-CH-E-1003-09.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	31+32+33	34+35+36	37+38+39	40+41+42	43+44+45	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Lead (Pb)	ND	ND	ND	ND	ND	<b>40</b>
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	46+47+48	49+50	---	---	---	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Lead (Pb)	ND	ND	---	---	---	<b>40</b>
<b>Conclusion</b>	PASS	PASS	---	---	---	

*Note:*

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit = 20 ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration.



**DETAILED RESULTS:**

**Connecticut Public Act 10-113 (Substituted House Bill 5314), Total Cadmium Content in Children's Jewelry**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1+2+3	4+5+6	7+8+9	10+11+12	13+14+15	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	16+17+18	19+20+21	22+23+24	25+26+27	28+29+30	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	31+32+33	34+35+36	37+38+39	40+41+42	43+44+45	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	46+47+48	49+50	---	---	---	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Cadmium (Cd)	ND	ND	---	---	---	75
<b>Conclusion</b>	PASS	PASS	---	---	---	

*Note:*  
 ppm (Parts per million) = mg/kg (Milligrams per kilogram)  
 LT = Less than  
 ND = Not detected (Reporting Limit = 20 ppm)  
 Composite results are based on specimen of least mass resulting in highest potential concentration.

**DETAILED RESULTS:**

**Maryland Chapter 578 (House Bill 145), Total Cadmium in Children’s Jewelry**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1+2+3	4+5+6	7+8+9	10+11+12	13+14+15	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	16+17+18	19+20+21	22+23+24	25+26+27	28+29+30	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	31+32+33	34+35+36	37+38+39	40+41+42	43+44+45	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	46+47+48	49+50	---	---	---	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Cadmium (Cd)	ND	ND	---	---	---	75
<b>Conclusion</b>	PASS	PASS	---	---	---	

*Note:*  
 ppm (Parts per million) = mg/kg (Milligrams per kilogram)  
 LT = Less than  
 ND = Not detected (Reporting Limit = 20 ppm)  
 Composite results are based on specimen of least mass resulting in highest potential concentration.

**DETAILED RESULTS:**

**Minnesota Chapter 347-S.F. No. 2510, Total Cadmium Screening in Children’s Jewelry**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1+2+3	4+5+6	7+8+9	10+11+12	13+14+15	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	16+17+18	19+20+21	22+23+24	25+26+27	28+29+30	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

*Note:*  
 ppm (Parts per million) = mg/kg (Milligrams per kilogram)  
 LT = Less than  
 ND = Not detected (Reporting Limit = 20 ppm)  
 Composite results are based on specimen of least mass resulting in highest potential concentration.

*Remark:*  
 The total cadmium screening results did not exceed the soluble cadmium limit, therefore, further soluble analyses were not conducted.

**DETAILED RESULTS:**

**Minnesota Chapter 347-S.F. No. 2510, Total Cadmium Screening in Children’s Jewelry**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	31+32+33	34+35+36	37+38+39	40+41+42	43+44+45	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	46+47+48	49+50	---	---	---	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Cadmium (Cd)	ND	ND	---	---	---	75
<b>Conclusion</b>	PASS	PASS	---	---	---	

*Note:*

ppm (Parts per million) = mg/kg (Milligrams per kilogram)  
 LT = Less than  
 ND = Not detected (Reporting Limit = 20 ppm)  
 Composite results are based on specimen of least mass resulting in highest potential concentration.

*Remark:*

The total cadmium screening results did not exceed the soluble cadmium limit, therefore, further soluble analyses were not conducted.

**DETAILED RESULTS:**

**California Proposition 65, Phthalates (DBP, BBP, DEHP, DINP, DIDP, DnHP)**

Test Method: CPSC-CH-C1001-09.4  
 Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		1+2+3	4+5+6	7+8+9	10+11+12	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	ND	ND	ND	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	ND	ND	ND	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	ND	ND	ND	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	ND	ND	ND	1000
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	ND	ND	ND	ND	1000
Di-n-hexyl phthalate (DnHP)	84-75-3	ND	ND	ND	ND	1000
<b>Conclusion</b>		PASS	PASS	PASS	PASS	

**Note:**  
 mg/kg (Milligrams per kilogram) = ppm (Parts per million) = 0.0001 % m/m (Percent by mass)  
 LT = Less than  
 ND = Not detected (Reporting Limit = 300 mg/kg)  
 Composite results are based on specimen of least mass resulting in highest potential concentration.

**Remark:**  
 The specification is quoted from client's requirement.

**DETAILED RESULTS:**

**California Proposition 65, Phthalates (DBP, BBP, DEHP, DINP, DIDP, DnHP)**

Test Method: CPSC-CH-C1001-09.4  
 Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		13+14+15	16+17+18	19+20+21	22+23+24	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	ND	ND	ND	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	ND	ND	ND	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	ND	ND	ND	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	ND	ND	ND	1000
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	ND	ND	ND	ND	1000
Di-n-hexyl phthalate (DnHP)	84-75-3	ND	ND	ND	ND	1000
<b>Conclusion</b>		PASS	PASS	PASS	PASS	

**Note:**  
 mg/kg (Milligrams per kilogram) = ppm (Parts per million) = 0.0001 % m/m (Percent by mass)  
 LT = Less than  
 ND = Not detected (Reporting Limit = 300 mg/kg)  
 Composite results are based on specimen of least mass resulting in highest potential concentration.

**Remark:**  
 The specification is quoted from client's requirement.

**DETAILED RESULTS:**

**California Proposition 65, Phthalates (DBP, BBP, DEHP, DINP, DIDP, DnHP)**

Test Method: CPSC-CH-C1001-09.4  
 Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		25+26+27	28+29+30	31+32+33	34+35+36	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	ND	ND	ND	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	ND	ND	ND	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	ND	ND	ND	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	ND	ND	ND	1000
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	ND	ND	ND	ND	1000
Di-n-hexyl phthalate (DnHP)	84-75-3	ND	ND	ND	ND	1000
<b>Conclusion</b>		PASS	PASS	PASS	PASS	

**Note:**  
 mg/kg (Milligrams per kilogram) = ppm (Parts per million) = 0.0001 % m/m (Percent by mass)  
 LT = Less than  
 ND = Not detected (Reporting Limit = 300 mg/kg)  
 Composite results are based on specimen of least mass resulting in highest potential concentration.

**Remark:**  
 The specification is quoted from client's requirement.

**DETAILED RESULTS:**

**California Proposition 65, Phthalates (DBP, BBP, DEHP, DINP, DIDP, DnHP)**

Test Method: CPSC-CH-C1001-09.4  
 Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		37+38+39	40+41+42	43+44+45	46+47+48	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	ND	ND	ND	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	ND	ND	ND	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	ND	ND	ND	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	ND	ND	ND	1000
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	ND	ND	ND	ND	1000
Di-n-hexyl phthalate (DnHP)	84-75-3	ND	ND	ND	ND	1000
<b>Conclusion</b>		PASS	PASS	PASS	PASS	

*Note:*  
 mg/kg (Milligrams per kilogram) = ppm (Parts per million) = 0.0001 % m/m (Percent by mass)  
 LT = Less than  
 ND = Not detected (Reporting Limit = 300 mg/kg)  
 Composite results are based on specimen of least mass resulting in highest potential concentration.

*Remark:*  
 The specification is quoted from client's requirement.



**DETAILED RESULTS:**

**California Proposition 65, Phthalates (DBP, BBP, DEHP, DINP, DIDP, DnHP)**

Test Method: CPSC-CH-C1001-09.4  
 Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.	49+50	---	---	---	Limit (mg/kg)	
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	---	---	---	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	---	---	---	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	---	---	---	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	---	---	---	1000
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	ND	---	---	---	1000
Di-n-hexyl phthalate (DnHP)	84-75-3	ND	---	---	---	1000
<b>Conclusion</b>		PASS	---	---	---	

*Note:*  
 mg/kg (Milligrams per kilogram) = ppm (Parts per million) = 0.0001 % m/m (Percent by mass)  
 LT = Less than  
 ND = Not detected (Reporting Limit = 300 mg/kg)  
 Composite results are based on specimen of least mass resulting in highest potential concentration.

*Remark:*  
 The specification is quoted from client's requirement.

**DETAILED RESULTS:**

**16 CFR 1307 Prohibition of Children’s Toys and Child Care Articles Containing Specified Phthalates (DBP, BBP, DEHP, DINP, DHEXP / DnHP, DCHP, DIBP, DPENP)**

Test Method: CPSC-CH-C1001-09.4  
 Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		1+2+3	4+5+6	7+8+9	10+11+12	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	ND	ND	ND	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	ND	ND	ND	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	ND	ND	ND	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	ND	ND	ND	1000
Di-n-hexyl phthalate (DHEXP / DnHP)	84-75-3	ND	ND	ND	ND	1000
Dicyclohexyl phthalate (DCHP)	84-61-7	ND	ND	ND	ND	1000
Diisobutyl phthalate (DIBP)	84-69-5	ND	ND	ND	ND	1000
Di-n-pentyl phthalate (DPENP)	131-18-0	ND	ND	ND	ND	1000
<b>Conclusion</b>		PASS	PASS	PASS	PASS	

**Note:**  
 mg/kg (Milligrams per kilogram) = ppm (Parts per million) = 0.0001 % m/m (Percent by mass)  
 LT = Less than  
 ND = Not detected (Reporting Limit = 300 mg/kg)  
 Composite results are based on specimen of least mass resulting in highest potential concentration.

**DETAILED RESULTS:**

**16 CFR 1307 Prohibition of Children’s Toys and Child Care Articles Containing Specified Phthalates (DBP, BBP, DEHP, DINP, DHEXP / DnHP, DCHP, DIBP, DPENP)**

Test Method: CPSC-CH-C1001-09.4  
 Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		13+14+15	16+17+18	19+20+21	22+23+24	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	ND	ND	ND	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	ND	ND	ND	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	ND	ND	ND	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	ND	ND	ND	1000
Di-n-hexyl phthalate (DHEXP / DnHP)	84-75-3	ND	ND	ND	ND	1000
Dicyclohexyl phthalate (DCHP)	84-61-7	ND	ND	ND	ND	1000
Diisobutyl phthalate (DIBP)	84-69-5	ND	ND	ND	ND	1000
Di-n-pentyl phthalate (DPENP)	131-18-0	ND	ND	ND	ND	1000
<b>Conclusion</b>		PASS	PASS	PASS	PASS	

**Note:**

mg/kg (Milligrams per kilogram) = ppm (Parts per million) = 0.0001 % m/m (Percent by mass)

LT = Less than

ND = Not detected (Reporting Limit = 300 mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.

**DETAILED RESULTS:**

**16 CFR 1307 Prohibition of Children’s Toys and Child Care Articles Containing Specified Phthalates (DBP, BBP, DEHP, DINP, DHEXP / DnHP, DCHP, DIBP, DPENP)**

Test Method: CPSC-CH-C1001-09.4  
 Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		25+26+27	28+29+30	31+32+33	34+35+36	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	ND	ND	ND	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	ND	ND	ND	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	ND	ND	ND	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	ND	ND	ND	1000
Di-n-hexyl phthalate (DHEXP / DnHP)	84-75-3	ND	ND	ND	ND	1000
Dicyclohexyl phthalate (DCHP)	84-61-7	ND	ND	ND	ND	1000
Diisobutyl phthalate (DIBP)	84-69-5	ND	ND	ND	ND	1000
Di-n-pentyl phthalate (DPENP)	131-18-0	ND	ND	ND	ND	1000
<b>Conclusion</b>		PASS	PASS	PASS	PASS	

**Note:**

mg/kg (Milligrams per kilogram) = ppm (Parts per million) = 0.0001 % m/m (Percent by mass)

LT = Less than

ND = Not detected (Reporting Limit = 300 mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.

**DETAILED RESULTS:**

**16 CFR 1307 Prohibition of Children’s Toys and Child Care Articles Containing Specified Phthalates (DBP, BBP, DEHP, DINP, DHEXP / DnHP, DCHP, DIBP, DPENP)**

Test Method: CPSC-CH-C1001-09.4  
 Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		37+38+39	40+41+42	43+44+45	46+47+48	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	ND	ND	ND	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	ND	ND	ND	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	ND	ND	ND	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	ND	ND	ND	1000
Di-n-hexyl phthalate (DHEXP / DnHP)	84-75-3	ND	ND	ND	ND	1000
Dicyclohexyl phthalate (DCHP)	84-61-7	ND	ND	ND	ND	1000
Diisobutyl phthalate (DIBP)	84-69-5	ND	ND	ND	ND	1000
Di-n-pentyl phthalate (DPENP)	131-18-0	ND	ND	ND	ND	1000
<b>Conclusion</b>		PASS	PASS	PASS	PASS	

**Note:**

mg/kg (Milligrams per kilogram) = ppm (Parts per million) = 0.0001 % m/m (Percent by mass)

LT = Less than

ND = Not detected (Reporting Limit = 300 mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.

**DETAILED RESULTS:**

**16 CFR 1307 Prohibition of Children’s Toys and Child Care Articles Containing Specified Phthalates (DBP, BBP, DEHP, DINP, DHEXP / DnHP, DCHP, DIBP, DPENP)**

Test Method: CPSC-CH-C1001-09.4  
 Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		49+50	---	---	---	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	---	---	---	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	---	---	---	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	---	---	---	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	---	---	---	1000
Di-n-hexyl phthalate (DHEXP / DnHP)	84-75-3	ND	---	---	---	1000
Dicyclohexyl phthalate (DCHP)	84-61-7	ND	---	---	---	1000
Diisobutyl phthalate (DIBP)	84-69-5	ND	---	---	---	1000
Di-n-pentyl phthalate (DPENP)	131-18-0	ND	---	---	---	1000
<b>Conclusion</b>		PASS	---	---	---	

*Note:*  
 mg/kg (Milligrams per kilogram) = ppm (Parts per million) = 0.0001 % m/m (Percent by mass)  
 LT = Less than  
 ND = Not detected (Reporting Limit = 300 mg/kg)  
 Composite results are based on specimen of least mass resulting in highest potential concentration.

**DETAILED RESULTS:**

**Washington Revised Code Section 70.240.020, Phthalates in Children’s Product**

Test Method: CPSC-CH-C1001-09.4  
 Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		1+2+3	4+5+6	7+8+9	10+11+12	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	ND	ND	ND	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	ND	ND	ND	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	ND	ND	ND	1000
Di-n-octyl phthalate (DnOP)	117-84-0	ND	ND	ND	ND	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	ND	ND	ND	1000
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	ND	ND	ND	ND	1000
Sum		ND	ND	ND	ND	1000
<b>Conclusion</b>		PASS	PASS	PASS	PASS	

**Note:**

mg/kg (Milligrams per kilogram) = ppm (Parts per million) = 0.0001 % m/m (Percent by mass)

LT = Less than

ND = Not detected (Reporting Limit = 300 mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.

**DETAILED RESULTS:**

**Washington Revised Code Section 70.240.020, Phthalates in Children’s Product**

Test Method: CPSC-CH-C1001-09.4  
 Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		13+14+15	16+17+18	19+20+21	22+23+24	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	ND	ND	ND	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	ND	ND	ND	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	ND	ND	ND	1000
Di-n-octyl phthalate (DnOP)	117-84-0	ND	ND	ND	ND	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	ND	ND	ND	1000
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	ND	ND	ND	ND	1000
Sum		ND	ND	ND	ND	1000
<b>Conclusion</b>		PASS	PASS	PASS	PASS	

**Note:**

mg/kg (Milligrams per kilogram) = ppm (Parts per million) = 0.0001 % m/m (Percent by mass)

LT = Less than

ND = Not detected (Reporting Limit = 300 mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.



**DETAILED RESULTS:**

**Washington Revised Code Section 70.240.020, Phthalates in Children’s Product**

Test Method: CPSC-CH-C1001-09.4  
 Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		25+26+27	28+29+30	31+32+33	34+35+36	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	ND	ND	ND	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	ND	ND	ND	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	ND	ND	ND	1000
Di-n-octyl phthalate (DnOP)	117-84-0	ND	ND	ND	ND	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	ND	ND	ND	1000
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	ND	ND	ND	ND	1000
Sum		ND	ND	ND	ND	1000
<b>Conclusion</b>		PASS	PASS	PASS	PASS	

**Note:**

mg/kg (Milligrams per kilogram) = ppm (Parts per million) = 0.0001 % m/m (Percent by mass)

LT = Less than

ND = Not detected (Reporting Limit = 300 mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.

**DETAILED RESULTS:**

**Washington Revised Code Section 70.240.020, Phthalates in Children’s Product**

Test Method: CPSC-CH-C1001-09.4  
 Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		37+38+39	40+41+42	43+44+45	46+47+48	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	ND	ND	ND	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	ND	ND	ND	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	ND	ND	ND	1000
Di-n-octyl phthalate (DnOP)	117-84-0	ND	ND	ND	ND	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	ND	ND	ND	1000
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	ND	ND	ND	ND	1000
Sum		ND	ND	ND	ND	1000
<b>Conclusion</b>		PASS	PASS	PASS	PASS	

**Note:**

mg/kg (Milligrams per kilogram) = ppm (Parts per million) = 0.0001 % m/m (Percent by mass)

LT = Less than

ND = Not detected (Reporting Limit = 300 mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.

**DETAILED RESULTS:**

**Washington Revised Code Section 70.240.020, Phthalates in Children’s Product**

Test Method: CPSC-CH-C1001-09.4  
 Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		49+50	---	---	---	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	---	---	---	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	---	---	---	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	---	---	---	1000
Di-n-octyl phthalate (DnOP)	117-84-0	ND	---	---	---	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	---	---	---	1000
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	ND	---	---	---	1000
Sum		ND	---	---	---	1000
<b>Conclusion</b>		PASS	---	---	---	

**Note:**

mg/kg (Milligrams per kilogram) = ppm (Parts per million) = 0.0001 % m/m (Percent by mass)

LT = Less than

ND = Not detected (Reporting Limit = 300 mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.

**DETAILED RESULTS:**

**Canadian Toys Regulations SOR/2011-17 as Amended, Item 23 – Total Elements Screening in Paints and Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1+2+3	4+5+6	7+8+9	10+11+12	13+14+15	Leachable
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Limit (ppm)
Total Antimony (Sb)	ND	ND	ND	ND	ND	1000
Total Arsenic (As)	ND	ND	ND	ND	ND	1000
Total Barium (Ba)	400	ND	ND	ND	770	1000
Total Cadmium (Cd)	ND	ND	ND	ND	ND	1000
Total Lead (Pb)	ND	ND	ND	ND	ND	90*
Total Mercury (Hg)	ND	ND	ND	ND	ND	10*
Total Selenium (Se)	ND	ND	ND	ND	ND	1000
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

*Note:*  
 ppm (Parts per million) = mg/kg (Milligrams per kilogram)  
 LT = Less than  
 ND = Not detected (Reporting Limit: Pb, Hg = 10 ppm; Sb, As, Ba, Cd, Se = 50 ppm)  
 Composite results are based on specimen of least mass resulting in highest potential concentration.

*Remark:*  
 \*Total limit

The results of total elements screening did not exceed the limits of leachable elements, therefore further analysis of leachable elements was not conducted.

**DETAILED RESULTS:**

**Canadian Toys Regulations SOR/2011-17 as Amended, Item 23 – Total Elements Screening in Paints and Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	16+17+18	19+20+21	22+23+24	25+26+27	28+29+30	Leachable
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Limit (ppm)
Total Antimony (Sb)	ND	ND	ND	ND	ND	1000
Total Arsenic (As)	ND	ND	ND	ND	ND	1000
Total Barium (Ba)	38	ND	ND	50	32	1000
Total Cadmium (Cd)	ND	ND	ND	ND	ND	1000
Total Lead (Pb)	ND	ND	ND	ND	ND	90*
Total Mercury (Hg)	ND	ND	ND	ND	ND	10*
Total Selenium (Se)	ND	ND	ND	ND	ND	1000
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

*Note:*

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit: Pb, Hg = 10 ppm; Sb, As, Ba, Cd, Se = 50 ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration.

*Remark:*

\*Total limit

The results of total elements screening did not exceed the limits of leachable elements, therefore further analysis of leachable elements was not conducted.

**DETAILED RESULTS:**

**Canadian Toys Regulations SOR/2011-17 as Amended, Item 23 – Total Elements Screening in Paints and Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	31+32+33	34+35+36	37+38+39	40+41+42	46+47+48	Leachable
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Limit (ppm)
Total Antimony (Sb)	ND	ND	ND	ND	ND	1000
Total Arsenic (As)	ND	ND	ND	ND	ND	1000
Total Barium (Ba)	ND	ND	140	ND	ND	1000
Total Cadmium (Cd)	ND	ND	ND	ND	ND	1000
Total Lead (Pb)	ND	ND	ND	ND	ND	90*
Total Mercury (Hg)	ND	ND	ND	ND	ND	10*
Total Selenium (Se)	ND	ND	ND	ND	ND	1000
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

*Note:*  
 ppm (Parts per million) = mg/kg (Milligrams per kilogram)  
 LT = Less than  
 ND = Not detected (Reporting Limit: Pb, Hg = 10 ppm; Sb, As, Ba, Cd, Se = 50 ppm)  
 Composite results are based on specimen of least mass resulting in highest potential concentration.

*Remark:*  
 \*Total limit

\*\*The results of total elements screening of Specimen No. 43, 44 and 45 exceeded the limits of leachable elements, therefore a separate analysis of leachable elements was conducted.

**DETAILED RESULTS:**

**Canadian Toys Regulations SOR/2011-17 as Amended, Item 23 – Total Elements Screening in Paints and Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	49+50	---	---	---	---	Leachable
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Limit (ppm)
Total Antimony (Sb)	ND	---	---	---	---	1000
Total Arsenic (As)	ND	---	---	---	---	1000
Total Barium (Ba)	ND	---	---	---	---	1000
Total Cadmium (Cd)	ND	---	---	---	---	1000
Total Lead (Pb)	ND	---	---	---	---	90*
Total Mercury (Hg)	ND	---	---	---	---	10*
Total Selenium (Se)	ND	---	---	---	---	1000
<b>Conclusion</b>	PASS	---	---	---	---	

*Note:*

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit: Pb, Hg = 10 ppm; Sb, As, Ba, Cd, Se = 50 ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration.

*Remark:*

\*Total limit

The results of total elements screening did not exceed the limits of leachable elements, therefore further analysis of leachable elements was not conducted.

**DETAILED RESULTS:**

**Canadian Toys Regulations SOR/2011-17 as Amended, Item 23 –Leachable Elements in Paints and Surface Coatings**

Test Method: Health Canada Method C-03 (Effective 2014-02-20)  
 Analytical Method: Inductively Coupled Plasma-Mass Spectrometry

Specimen No.	43	44	45	---	---	Leachable
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Limit (ppm)
Leachable Antimony (Sb)	ND	ND	ND	---	---	1000
Leachable Arsenic (As)	ND	ND	ND	---	---	1000
Leachable Barium (Ba)	65	ND	ND	---	---	1000
Leachable Cadmium (Cd)	ND	ND	ND	---	---	1000
Leachable Selenium (Se)	ND	ND	ND	---	---	1000
<b>Conclusion</b>	PASS	PASS	PASS	---	---	

*Note:*

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit = 50 ppm)



**DETAILED RESULTS:**

**Canadian Toys Regulations SOR/2011-17 as Amended, Item 23 – Total Lead and Mercury in Paints and Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	43+44+45	---	---	---	---	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Lead (Pb)	ND	---	---	---	---	<b>90</b>
Total Mercury (Hg)	ND	---	---	---	---	<b>10</b>
<b>Conclusion</b>	PASS	---	---	---	---	

*Note:*

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit = 10 ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration.

**DETAILED RESULTS:**

**Canadian Surface Coating Materials Regulations SOR/2016-193, Total Lead and Mercury in Paints and Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1+2+3	4+5+6	7+8+9	10+11+12	13+14+15	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Lead (Pb)	ND	ND	ND	ND	ND	90
Total Mercury (Hg)	ND	ND	ND	ND	ND	10
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	16+17+18	19+20+21	22+23+24	25+26+27	28+29+30	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Lead (Pb)	ND	ND	ND	ND	ND	90
Total Mercury (Hg)	ND	ND	ND	ND	ND	10
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

*Note:*

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit = 10 ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration.

**DETAILED RESULTS:**

**Canadian Surface Coating Materials Regulations SOR/2016-193, Total Lead and Mercury in Paints and Surface Coatings**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	31+32+33	34+35+36	37+38+39	40+41+42	43+44+45	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Lead (Pb)	ND	ND	ND	ND	ND	90
Total Mercury (Hg)	ND	ND	ND	ND	ND	10
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

Specimen No.	46+47+48	49+50	---	---	---	Total Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Lead (Pb)	ND	ND	---	---	---	90
Total Mercury (Hg)	ND	ND	---	---	---	10
<b>Conclusion</b>	PASS	PASS	---	---	---	

*Note:*  
 ppm (Parts per million) = mg/kg (Milligrams per kilogram)  
 LT = Less than  
 ND = Not detected (Reporting Limit = 10 ppm)  
 Composite results are based on specimen of least mass resulting in highest potential concentration.

**DETAILED RESULTS:**

**Mexican Environmental Health NOM-252-SSA1-2011, Total Elements Screening from Toys and School Supplies**

Test Method: ASTM F963-17 Clause 8.3.1

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Toy Material except Modelling Clay

Specimen No.	1+2+3	4+5+6	7+8+9	10+11+12	13+14+15	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Antimony (Sb)	ND	ND	ND	ND	ND	60
Total Arsenic (As)	ND	ND	ND	ND	ND	25
Total Barium (Ba)	400	ND	ND	ND	770	1000
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
Total Chromium (Cr)	ND	ND	ND	ND	ND	60
Total Lead (Pb)	ND	ND	ND	ND	ND	90
Total Mercury (Hg)	ND	ND	ND	ND	ND	60
Total Selenium (Se)	ND	ND	ND	ND	ND	500
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

*Note:*

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit: Sb, As, Ba, Cd, Cr, Pb, Hg = 20 ppm; Se = 50 ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration

*Remark:*

The total heavy metals screening results do not exceed the soluble heavy metal limits, therefore, further soluble analyses were not conducted.

**DETAILED RESULTS:**

**Mexican Environmental Health NOM-252-SSA1-2011, Total Elements Screening from Toys and School Supplies**

Test Method: ASTM F963-17 Clause 8.3.1

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Toy Material except Modelling Clay

Specimen No.	16+17+18	19+20+21	22+23+24	25+26+27	28+29+30	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Antimony (Sb)	ND	ND	ND	ND	ND	60
Total Arsenic (As)	ND	ND	ND	ND	ND	25
Total Barium (Ba)	38	ND	ND	50	32	1000
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
Total Chromium (Cr)	ND	ND	ND	ND	ND	60
Total Lead (Pb)	ND	ND	ND	ND	ND	90
Total Mercury (Hg)	ND	ND	ND	ND	ND	60
Total Selenium (Se)	ND	ND	ND	ND	ND	500
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

*Note:*

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit: Sb, As, Ba, Cd, Cr, Pb, Hg = 20 ppm; Se = 50 ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration

*Remark:*

The total heavy metals screening results do not exceed the soluble heavy metal limits, therefore, further soluble analyses were not conducted.

**DETAILED RESULTS:**

**Mexican Environmental Health NOM-252-SSA1-2011, Total Elements Screening from Toys and School Supplies**

Test Method: ASTM F963-17 Clause 8.3.1

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Toy Material except Modelling Clay

Specimen No.	31+32+33	34+35+36	37+38+39	40+41+42	46+47+48	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Antimony (Sb)	ND	ND	ND	ND	ND	60
Total Arsenic (As)	ND	ND	ND	ND	ND	25
Total Barium (Ba)	ND	ND	140	ND	ND	1000
Total Cadmium (Cd)	ND	ND	ND	ND	ND	75
Total Chromium (Cr)	ND	ND	ND	ND	ND	60
Total Lead (Pb)	ND	ND	ND	ND	ND	90
Total Mercury (Hg)	ND	ND	ND	ND	ND	60
Total Selenium (Se)	ND	ND	ND	ND	ND	500
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

*Note:*

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit: Sb, As, Ba, Cd, Cr, Pb, Hg = 20 ppm; Se = 50 ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration

*Remark:*

\*The total heavy metals screening results of Specimen No. 43, 44 and 45 exceeded the soluble heavy metal limits, therefore a separate soluble analysis was conducted.

**DETAILED RESULTS:**

**Mexican Environmental Health NOM-252-SSA1-2011, Total Elements Screening from Toys and School Supplies**

Test Method: ASTM F963-17 Clause 8.3.1  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Toy Material except Modelling Clay

Specimen No.	49+50	---	---	---	---	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Total Antimony (Sb)	ND	---	---	---	---	60
Total Arsenic (As)	ND	---	---	---	---	25
Total Barium (Ba)	ND	---	---	---	---	1000
Total Cadmium (Cd)	ND	---	---	---	---	75
Total Chromium (Cr)	ND	---	---	---	---	60
Total Lead (Pb)	ND	---	---	---	---	90
Total Mercury (Hg)	ND	---	---	---	---	60
Total Selenium (Se)	ND	---	---	---	---	500
<b>Conclusion</b>	PASS	---	---	---	---	

*Note:*

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit: Sb, As, Ba, Cd, Cr, Pb, Hg = 20 ppm; Se = 50 ppm)

Composite results are based on specimen of least mass resulting in highest potential concentration

*Remark:*

The total heavy metals screening results do not exceed the soluble heavy metal limits, therefore, further soluble analyses were not conducted.

**DETAILED RESULTS:**

**Mexican Environmental Health NOM-252-SSA1-2011, Soluble Elements from Toys and School Supplies**

Test Method: NOM-252-SSA1-2011 Appendix A  
 Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Toy Material except Modelling Clay

Specimen No.	43	44	45	---	---	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	---	---	<b>60</b>
Soluble Arsenic (As)	ND	ND	ND	---	---	<b>25</b>
Soluble Barium (Ba)	82	ND	ND	---	---	<b>1000</b>
Soluble Cadmium (Cd)	ND	ND	ND	---	---	<b>75</b>
Soluble Chromium (Cr)	ND	ND	ND	---	---	<b>60</b>
Soluble Lead (Pb)	ND	ND	ND	---	---	<b>90</b>
Soluble Mercury (Hg)	ND	ND	ND	---	---	<b>60</b>
Soluble Selenium (Se)	ND	ND	ND	---	---	<b>500</b>
<b>Conclusion</b>	PASS	PASS	PASS	---	---	

*Note:*

mg/kg = Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit = 2 mg/kg)



**SPECIMEN DESCRIPTION:**

Specimen No.	Specimen Description	Location
1	Red ink	130201 INK- B 10 NT
2	Light red ink	130208 INK- B 8 NT
3	Golden ink	130276 INK- B 76 NT
4	Yellow ink	130280 INK- B 180 NT
5	Orange ink	130296 INK- B NT
6	Violet ink	1302V50 INK- B NT V50
7	Muddy yellow ink	130207 INK- B 7 NT
8	Sky blue ink	130215 INK- B 15 NT
9	Bright red ink	130209 INK- B 9 NT
10	Purple ink	130218 INK- B 18 NT
11	Bright yellow ink	130294 INK- B NT HD
12	White ink	130201 INK- B 10 NT HD
13	Dark brown ink	130223 INK- B 23 NT
14	Purple blue ink	130282 INK- B 182 NT
15	Dull pink ink	130212 INK- B 12 NT
16	Sharp yellow ink	1302Y30 INK- B NT Y30
17	Orange red ink	130298 INK- B NT HD
18	Soft white ink	130202 INK- B 2 NT
19	Dark blue ink	130216 INK- B 16 NT
20	Dark yellow ink	130295 INK- B NT HD
21	Flat blue ink	130214 INK- B 14 NT
22	Dull green ink	130220 INK- B 20 NT
23	Black ink	130291 INK- B 1 NT HD
24	Clear ink	1302E50 INK- B NT E50
25	Dark green ink	1302EG50 INK- B NT G50
26	Bright black ink	130201 INK- B 1 NT
27	Deep yellow ink	1302Y50 INK- B NT Y50
28	Deep brown ink	130222 INK- B 22 NT
29	Sharp black ink	1302N50 INK- B NT N50

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*Test(s) marked with 'ϕ' was subcontracted to external laboratory.*

*The test result(s) and conclusion(s) in this report relate only to the sample(s) as received and method /regulation section(s) tested as described herein.*

*If it is not further specified in the report, the decision rule for stating conformity is based on the [QIMA decision rule](#).*

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**SPECIMEN DESCRIPTION:**

Specimen No.	Specimen Description	Location
30	Burgundy red ink	1302R50 INK- B NT R50
31	Brick red ink	1302R20 INK- B NT R20
32	Green ink	130219 INK- B 19 NT
33	Magenta ink	1302M50 INK- B NT M50
34	Aqua green ink	130221 INK- B 21 NT
35	Flat white ink	1302W50 INK- B NT W50
36	Deep orange ink	130206 INK- B 6 NT
37	Off yellow ink	130205 INK- B 5 NT
38	Deep red ink	130299 INK- B NT HD
39	Fuchsia ink	130281 INK- B 181 NT
40	Blue ink	130213 INK- B 13 NT
41	Silvery ink	130279 INK- B 79 NT
42	Dull golden ink	130275 INK- B 75 NT
43	Pale yellow ink	130293 INK- B NT HD
44	Matt golden ink	130277 INK- B 77 NT
45	Dark red ink	130211 INK- B 11 NT
46	Deep purple ink	1302B50 INK- B NT B50
47	Soft yellow ink	130204 INK- B 4 NT
48	Dull orange ink	1302O50 INK- B NT O50
49	Flat yellow ink	130203 INK- B 3 NT
50	Pale blue ink	130217 INK- B 17 NT

**SAMPLE PHOTO:**



-End Report-