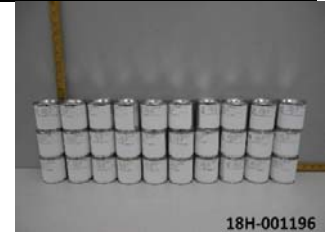


TEST REPORT

Test Report # 18H-001196 Date of Report Issue: March 7, 2018
 Date of Sample Received: February 13, 2018 Pages: Page 1 of 48

CLIENT INFORMATION:

Company: Marabu North America LP
 Recipient: Bob Keller
 Recipient Email: BKeller@marabu.com



SAMPLE INFORMATION:

Description:	UVC Ink Series	Purchase Order Number:	-
Assortment:	-	Toy Co./Agency:	-
SKU/style No.:	-	Country of Origin:	Germany
Factory/Supplier/Vendor:	-	Labeled Age Grade:	-
Country of Distribution:	United States, Canada	Recommended Age Grade:	-
Quantity Submitted:	1 lot	Tested Age Grade:	-
Testing Period:	02/14/2018 – 02/26/2018 03/05/2018 – 03/07/2018		

OVERALL RESULT:

PASS

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

ANSECO GROUP (HK) LIMITED

Loska Yeung Lok Ka
 Assistant Manager, Chemical Laboratory

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The above test(s) is/are accredited under the laboratory's ISO/IEC 17025 accreditation issued by the ANSI-ASQ National Accreditation Board (ANAB) according to certificate and scope of accreditation (Certificate # AT-1500.) Test(s) marked with '#' is/are not covered under the scope of accreditation.

The test result(s) and conclusion(s) in this report relate to the sample(s) tested as described herein.

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**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 Soluble Elements in Paints and Similar Surface Coatings
PASS	ASTM F2923-14 Consumer Product Safety for Children’s Jewelry, Clause 8 Soluble Elements in Paint and Surface Coatings
PASS	CPSIA Section 101 & 16 CFR 1303, Total Lead in Paints and Surface Coatings
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	CPSIA Section 108, Phthalates – Mouthable (DBP, BBP, DEHP, DnOP, DINP, DIDP)
PASS	California Proposition 65, Phthalates (DBP, BBP, DEHP, DINP, DIDP, DnHP)
PASS	CPSC 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 by SOR/2016-195 & SOR/2016-302, Item 23 Leachable Elements in Paints and Surface Coatings
PASS	Canadian Toys Regulations SOR/2011-17 as Amended by SOR/2016-195 & SOR/2016-302, 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
PASS	Mexican Environmental Health NOM-252-SSA1-2011, Soluble Elements from Toys and School Supplies

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The test result(s) and conclusion(s) in this report relate to the sample(s) tested as described herein.

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**DETAILED RESULTS:****CPSIA Section 106 & ASTM F963-16 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-Mass Spectrometry

Specimen No.	1	2	3	4	5	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	ND	ND	60
Soluble Arsenic (As)	ND	ND	ND	ND	ND	25
Soluble Barium (Ba)	4	5	9	11	8	1000
Soluble Cadmium (Cd)	ND	ND	ND	ND	ND	75
Soluble Chromium (Cr)	ND	ND	ND	ND	ND	60
Soluble Lead (Pb)	ND	ND	ND	ND	ND	90
Soluble Mercury (Hg)	ND	ND	ND	ND	ND	60
Soluble Selenium (Se)	ND	ND	ND	ND	ND	500
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 2 ppm)

Remark:

The total heavy metals screening results exceeded the soluble heavy metal limits, therefore separate soluble analyses were conducted.

**DETAILED RESULTS:****CPSIA Section 106 & ASTM F963-16 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-Mass Spectrometry

Specimen No.	6	7	8	9	10	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	ND	ND	60
Soluble Arsenic (As)	ND	ND	ND	ND	ND	25
Soluble Barium (Ba)	6	5	8	14	16	1000
Soluble Cadmium (Cd)	ND	ND	ND	ND	ND	75
Soluble Chromium (Cr)	ND	ND	ND	ND	ND	60
Soluble Lead (Pb)	ND	ND	ND	ND	ND	90
Soluble Mercury (Hg)	ND	ND	ND	ND	ND	60
Soluble Selenium (Se)	ND	ND	ND	ND	ND	500
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 2 ppm)

Remark:

The total heavy metals screening results exceeded the soluble heavy metal limits, therefore separate soluble analyses were conducted.

**DETAILED RESULTS:****CPSIA Section 106 & ASTM F963-16 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-Mass Spectrometry

Specimen No.	11	12	13	14	15	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	ND	ND	60
Soluble Arsenic (As)	ND	ND	ND	ND	ND	25
Soluble Barium (Ba)	16	13	4	4	5	1000
Soluble Cadmium (Cd)	ND	ND	ND	ND	ND	75
Soluble Chromium (Cr)	ND	ND	ND	ND	ND	60
Soluble Lead (Pb)	ND	ND	ND	ND	ND	90
Soluble Mercury (Hg)	ND	ND	ND	ND	ND	60
Soluble Selenium (Se)	ND	ND	ND	ND	ND	500
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 2 ppm)

Remark:

The total heavy metals screening results exceeded the soluble heavy metal limits, therefore separate soluble analyses were conducted.

**DETAILED RESULTS:****CPSIA Section 106 & ASTM F963-16 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-Mass Spectrometry

Specimen No.	16	17	18	19	20	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	ND	ND	60
Soluble Arsenic (As)	ND	ND	ND	ND	ND	25
Soluble Barium (Ba)	11	16	4	4	8	1000
Soluble Cadmium (Cd)	ND	ND	ND	ND	ND	75
Soluble Chromium (Cr)	ND	ND	ND	ND	ND	60
Soluble Lead (Pb)	ND	ND	ND	ND	ND	90
Soluble Mercury (Hg)	ND	ND	ND	ND	ND	60
Soluble Selenium (Se)	ND	ND	ND	ND	ND	500
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 2 ppm)

Remark:

The total heavy metals screening results exceeded the soluble heavy metal limits, therefore separate soluble analyses were conducted.

**DETAILED RESULTS:****CPSIA Section 106 & ASTM F963-16 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-Mass Spectrometry

Specimen No.	21	22	23	24	25	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	ND	ND	60
Soluble Arsenic (As)	ND	ND	ND	ND	ND	25
Soluble Barium (Ba)	5	7	4	6	11	1000
Soluble Cadmium (Cd)	ND	ND	ND	ND	ND	75
Soluble Chromium (Cr)	ND	ND	ND	ND	ND	60
Soluble Lead (Pb)	ND	ND	ND	ND	ND	90
Soluble Mercury (Hg)	ND	ND	ND	ND	ND	60
Soluble Selenium (Se)	ND	ND	ND	ND	ND	500
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 2 ppm)

Remark:

The total heavy metals screening results exceeded the soluble heavy metal limits, therefore separate soluble analyses were conducted.

**DETAILED RESULTS:****CPSIA Section 106 & ASTM F963-16 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-Mass Spectrometry

Specimen No.	26	27	28	29	30	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	ND	ND	60
Soluble Arsenic (As)	ND	ND	ND	ND	ND	25
Soluble Barium (Ba)	5	5	20	4	5	1000
Soluble Cadmium (Cd)	ND	ND	ND	ND	ND	75
Soluble Chromium (Cr)	ND	ND	ND	ND	ND	60
Soluble Lead (Pb)	ND	ND	ND	ND	ND	90
Soluble Mercury (Hg)	ND	ND	ND	ND	ND	60
Soluble Selenium (Se)	ND	ND	ND	ND	ND	500
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 2 ppm)

Remark:

The total heavy metals screening results exceeded the soluble heavy metal limits, therefore separate soluble analyses were conducted.

**DETAILED RESULTS:****ASTM F2923-14 Consumer Product Safety for Children's Jewelry, Clause 8 Soluble Elements in Paint and Surface Coatings**

Test Method: ASTM F963-11 Clause 8.3.2
Analytical Method: Inductively Coupled Plasma-Mass Spectrometry

Specimen No.	1	2	3	4	5	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	ND	ND	60
Soluble Arsenic (As)	ND	ND	ND	ND	ND	25
Soluble Barium (Ba)	4	5	9	11	8	1000
Soluble Cadmium (Cd)	ND	ND	ND	ND	ND	75
Soluble Chromium (Cr)	ND	ND	ND	ND	ND	60
Soluble Mercury (Hg)	ND	ND	ND	ND	ND	60
Soluble Selenium (Se)	ND	ND	ND	ND	ND	500
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 2 ppm)

Remark:

The total heavy metals screening results exceeded the soluble heavy metal limits, therefore separate soluble analyses were conducted.

**DETAILED RESULTS:****ASTM F2923-14 Consumer Product Safety for Children’s Jewelry, Clause 8 Soluble Elements in Paint and Surface Coatings**

Test Method: ASTM F963-11 Clause 8.3.2
 Analytical Method: Inductively Coupled Plasma-Mass Spectrometry

Specimen No.	6	7	8	9	10	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	ND	ND	60
Soluble Arsenic (As)	ND	ND	ND	ND	ND	25
Soluble Barium (Ba)	6	5	8	14	16	1000
Soluble Cadmium (Cd)	ND	ND	ND	ND	ND	75
Soluble Chromium (Cr)	ND	ND	ND	ND	ND	60
Soluble Mercury (Hg)	ND	ND	ND	ND	ND	60
Soluble Selenium (Se)	ND	ND	ND	ND	ND	500
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 2 ppm)

Remark:

The total heavy metals screening results exceeded the soluble heavy metal limits, therefore separate soluble analyses were conducted.

**DETAILED RESULTS:****ASTM F2923-14 Consumer Product Safety for Children’s Jewelry, Clause 8 Soluble Elements in Paint and Surface Coatings**

Test Method: ASTM F963-11 Clause 8.3.2
 Analytical Method: Inductively Coupled Plasma-Mass Spectrometry

Specimen No.	11	12	13	14	15	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	ND	ND	60
Soluble Arsenic (As)	ND	ND	ND	ND	ND	25
Soluble Barium (Ba)	16	13	4	4	5	1000
Soluble Cadmium (Cd)	ND	ND	ND	ND	ND	75
Soluble Chromium (Cr)	ND	ND	ND	ND	ND	60
Soluble Mercury (Hg)	ND	ND	ND	ND	ND	60
Soluble Selenium (Se)	ND	ND	ND	ND	ND	500
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 2 ppm)

Remark:

The total heavy metals screening results exceeded the soluble heavy metal limits, therefore separate soluble analyses were conducted.

**DETAILED RESULTS:****ASTM F2923-14 Consumer Product Safety for Children’s Jewelry, Clause 8 Soluble Elements in Paint and Surface Coatings**

Test Method: ASTM F963-11 Clause 8.3.2
 Analytical Method: Inductively Coupled Plasma-Mass Spectrometry

Specimen No.	16	17	18	19	20	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	ND	ND	60
Soluble Arsenic (As)	ND	ND	ND	ND	ND	25
Soluble Barium (Ba)	11	16	4	4	8	1000
Soluble Cadmium (Cd)	ND	ND	ND	ND	ND	75
Soluble Chromium (Cr)	ND	ND	ND	ND	ND	60
Soluble Mercury (Hg)	ND	ND	ND	ND	ND	60
Soluble Selenium (Se)	ND	ND	ND	ND	ND	500
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 2 ppm)

Remark:

The total heavy metals screening results exceeded the soluble heavy metal limits, therefore separate soluble analyses were conducted.

**DETAILED RESULTS:****ASTM F2923-14 Consumer Product Safety for Children’s Jewelry, Clause 8 Soluble Elements in Paint and Surface Coatings**

Test Method: ASTM F963-11 Clause 8.3.2
 Analytical Method: Inductively Coupled Plasma-Mass Spectrometry

Specimen No.	21	22	23	24	25	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	ND	ND	60
Soluble Arsenic (As)	ND	ND	ND	ND	ND	25
Soluble Barium (Ba)	5	7	4	6	11	1000
Soluble Cadmium (Cd)	ND	ND	ND	ND	ND	75
Soluble Chromium (Cr)	ND	ND	ND	ND	ND	60
Soluble Mercury (Hg)	ND	ND	ND	ND	ND	60
Soluble Selenium (Se)	ND	ND	ND	ND	ND	500
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 2 ppm)

Remark:

The total heavy metals screening results exceeded the soluble heavy metal limits, therefore separate soluble analyses were conducted.

**DETAILED RESULTS:****ASTM F2923-14 Consumer Product Safety for Children's Jewelry, Clause 8 Soluble Elements in Paint and Surface Coatings**

Test Method: ASTM F963-11 Clause 8.3.2
 Analytical Method: Inductively Coupled Plasma-Mass Spectrometry

Specimen No.	26	27	28	29	30	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	ND	ND	60
Soluble Arsenic (As)	ND	ND	ND	ND	ND	25
Soluble Barium (Ba)	5	5	20	4	5	1000
Soluble Cadmium (Cd)	ND	ND	ND	ND	ND	75
Soluble Chromium (Cr)	ND	ND	ND	ND	ND	60
Soluble Mercury (Hg)	ND	ND	ND	ND	ND	60
Soluble Selenium (Se)	ND	ND	ND	ND	ND	500
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 2 ppm)

Remark:

The total heavy metals screening results exceeded the soluble heavy metal limits, therefore separate soluble analyses were conducted.

**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
Conclusion	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
Conclusion	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-E1003-09.1

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	40
Conclusion	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	40
Conclusion	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:****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
Conclusion	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
Conclusion	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:****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
Conclusion	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
Conclusion	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:****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
Conclusion	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
Conclusion	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:****CPSIA Section 108, Phthalates – Mouthable (DBP, BBP, DEHP, DnOP, DINP, DIDP)**

Test Method: CPSC-CH-C1001-09.3

Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		1+2+3	4+5+6	7+8+9	10+11+12	Limit (ppm)
Test Item	CAS No.	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
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
Conclusion		PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 120 ppm)

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

**DETAILED RESULTS:****CPSIA Section 108, Phthalates – Mouthable (DBP, BBP, DEHP, DnOP, DINP, DIDP)**

Test Method: CPSC-CH-C1001-09.3

Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		13+14+15	16+17+18	19+20+21	22+23+24	Limit (ppm)
Test Item	CAS No.	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Dibutyl phthalate (DBP)	84-74-2	LT 190	ND	ND	ND	1000
Benzyl butyl phthalate (BBP)	85-68-7	LT 190	ND	ND	ND	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	LT 190	ND	ND	ND	1000
Di-n-octyl phthalate (DnOP)	117-84-0	LT 190	ND	ND	ND	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	LT 190	ND	ND	ND	1000
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	LT 190	ND	ND	ND	1000
Conclusion		PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 120 ppm)

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

**DETAILED RESULTS:****CPSIA Section 108, Phthalates – Mouthable (DBP, BBP, DEHP, DnOP, DINP, DIDP)**

Test Method: CPSC-CH-C1001-09.3

Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		25+26+27	28+29+30	---	---	Limit (ppm)
Test Item	CAS No.	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Dibutyl phthalate (DBP)	84-74-2	ND	ND	---	---	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	ND	---	---	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	ND	---	---	1000
Di-n-octyl phthalate (DnOP)	117-84-0	ND	ND	---	---	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	ND	---	---	1000
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	ND	ND	---	---	1000
Conclusion		PASS	PASS	---	---	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 120 ppm)

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

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

Test Method: CPSC-CH-C1001-09.3

Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		1+2+3	4+5+6	7+8+9	10+11+12	Limit (ppm)
Test Item	CAS No.	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
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
Conclusion		PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 120 ppm)

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-C1001-09.3

Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		13+14+15	16+17+18	19+20+21	22+23+24	Limit (ppm)
Test Item	CAS No.	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Dibutyl phthalate (DBP)	84-74-2	LT 190	ND	ND	ND	1000
Benzyl butyl phthalate (BBP)	85-68-7	LT 190	ND	ND	ND	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	LT 190	ND	ND	ND	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	LT 190	ND	ND	ND	1000
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	LT 190	ND	ND	ND	1000
Di-n-hexyl phthalate (DnHP)	84-75-3	LT 190	ND	ND	ND	1000
Conclusion		PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 120 ppm)

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-C1001-09.3

Analytical Method: Gas Chromatography with Mass Spectrometry

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

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 120 ppm)

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:****CPSC 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-C1001-09.3 (Modified)[#], In-House Method[#]

Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		1+2+3	4+5+6	7+8+9	10+11+12	Limit (ppm)
Test Item	CAS No.	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
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
Conclusion		PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 120 ppm)

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

**DETAILED RESULTS:****CPSC 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-C1001-09.3 (Modified)[#], In-House Method[#]

Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		13+14+15	16+17+18	19+20+21	22+23+24	Limit (ppm)
Test Item	CAS No.	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Dibutyl phthalate (DBP)	84-74-2	LT 190	ND	ND	ND	1000
Benzyl butyl phthalate (BBP)	85-68-7	LT 190	ND	ND	ND	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	LT 190	ND	ND	ND	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	LT 190	ND	ND	ND	1000
Di-n-hexyl phthalate (DHEXP / DnHP)	84-75-3	LT 190	ND	ND	ND	1000
Dicyclohexyl phthalate (DCHP)	84-61-7	LT 190	ND	ND	ND	1000
Diisobutyl phthalate (DIBP)	84-69-5	LT 190	ND	ND	ND	1000
Di-n-pentyl phthalate (DPENP)	131-18-0	LT 190	ND	ND	ND	1000
Conclusion		PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 120 ppm)

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

**DETAILED RESULTS:****CPSC 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-C1001-09.3 (Modified)[#], In-House Method[#]

Analytical Method: Gas Chromatography with Mass Spectrometry

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

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 120 ppm)

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-C1001-09.3

Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		1+2+3	4+5+6	7+8+9	10+11+12	Limit (ppm)
Test Item	CAS No.	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
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
Conclusion		PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 120 ppm)

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-C1001-09.3

Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		13+14+15	16+17+18	19+20+21	22+23+24	Limit (ppm)
Test Item	CAS No.	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Dibutyl phthalate (DBP)	84-74-2	LT 190	ND	ND	ND	1000
Benzyl butyl phthalate (BBP)	85-68-7	LT 190	ND	ND	ND	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	LT 190	ND	ND	ND	1000
Di-n-octyl phthalate (DnOP)	117-84-0	LT 190	ND	ND	ND	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	LT 190	ND	ND	ND	1000
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	LT 190	ND	ND	ND	1000
Sum		LT 190	ND	ND	ND	1000
Conclusion		PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 120 ppm)

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-C1001-09.3

Analytical Method: Gas Chromatography with Mass Spectrometry

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

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 120 ppm)

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

**DETAILED RESULTS:****Canadian Toys Regulations SOR/2011-17 as Amended by SOR/2016-195 & SOR/2016-302, 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.	1	2	3	4	5	Leachable Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Leachable Antimony (Sb)	ND	ND	ND	ND	ND	1000
Leachable Arsenic (As)	ND	ND	ND	ND	ND	1000
Leachable Barium (Ba)	370	310	420	260	310	1000
Leachable Cadmium (Cd)	ND	ND	ND	ND	ND	1000
Leachable Selenium (Se)	ND	ND	ND	ND	ND	1000
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 50 ppm)

The result of total elements screening exceeded the limit of leachable soluble limits, therefore separate analyses of leachable elements were conducted.

**DETAILED RESULTS:****Canadian Toys Regulations SOR/2011-17 as Amended by SOR/2016-195 & SOR/2016-302, 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.	6	7	8	9	10	Leachable Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Leachable Antimony (Sb)	ND	ND	ND	ND	ND	1000
Leachable Arsenic (As)	ND	ND	ND	ND	ND	1000
Leachable Barium (Ba)	420	110	230	360	440	1000
Leachable Cadmium (Cd)	ND	ND	ND	ND	ND	1000
Leachable Selenium (Se)	ND	ND	ND	ND	ND	1000
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 50 ppm)

The result of total elements screening exceeded the limit of leachable soluble limits, therefore separate analyses of leachable elements were conducted.

**DETAILED RESULTS:****Canadian Toys Regulations SOR/2011-17 as Amended by SOR/2016-195 & SOR/2016-302, 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.	11	12	13	14	15	Leachable Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Leachable Antimony (Sb)	ND	ND	ND	ND	ND	1000
Leachable Arsenic (As)	ND	ND	ND	ND	ND	1000
Leachable Barium (Ba)	270	160	320	390	160	1000
Leachable Cadmium (Cd)	ND	ND	ND	ND	ND	1000
Leachable Selenium (Se)	ND	ND	ND	ND	ND	1000
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 50 ppm)

The result of total elements screening exceeded the limit of leachable soluble limits, therefore separate analyses of leachable elements were conducted.

**DETAILED RESULTS:****Canadian Toys Regulations SOR/2011-17 as Amended by SOR/2016-195 & SOR/2016-302, 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.	16	17	18	19	20	Leachable Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Leachable Antimony (Sb)	ND	ND	ND	ND	ND	1000
Leachable Arsenic (As)	ND	ND	ND	ND	ND	1000
Leachable Barium (Ba)	170	130	310	95	110	1000
Leachable Cadmium (Cd)	ND	ND	ND	ND	ND	1000
Leachable Selenium (Se)	ND	ND	ND	ND	ND	1000
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 50 ppm)

The result of total elements screening exceeded the limit of leachable soluble limits, therefore separate analyses of leachable elements were conducted.

**DETAILED RESULTS:****Canadian Toys Regulations SOR/2011-17 as Amended by SOR/2016-195 & SOR/2016-302, 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.	21	22	23	24	25	Leachable Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Leachable Antimony (Sb)	ND	ND	ND	ND	ND	1000
Leachable Arsenic (As)	ND	ND	ND	ND	ND	1000
Leachable Barium (Ba)	200	210	120	140	160	1000
Leachable Cadmium (Cd)	ND	ND	ND	ND	ND	1000
Leachable Selenium (Se)	ND	ND	ND	ND	ND	1000
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 50 ppm)

The result of total elements screening exceeded the limit of leachable soluble limits, therefore separate analyses of leachable elements were conducted.

**DETAILED RESULTS:****Canadian Toys Regulations SOR/2011-17 as Amended by SOR/2016-195 & SOR/2016-302, 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.	26	27	28	29	30	Leachable Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Leachable Antimony (Sb)	ND	ND	ND	ND	ND	1000
Leachable Arsenic (As)	ND	ND	ND	ND	ND	1000
Leachable Barium (Ba)	410	170	120	320	310	1000
Leachable Cadmium (Cd)	ND	ND	ND	ND	ND	1000
Leachable Selenium (Se)	ND	ND	ND	ND	ND	1000
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

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

LT = Less than

ND = Not detected (Reporting Limit = 50 ppm)

The result of total elements screening exceeded the limit of leachable soluble limits, therefore separate analyses of leachable elements were conducted.

**DETAILED RESULTS:****Canadian Toys Regulations SOR/2011-17 as Amended by SOR/2016-195 & SOR/2016-302, 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.	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
Conclusion	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
Conclusion	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.	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
Conclusion	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
Conclusion	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:****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-Mass Spectrometry

Toy Material except Modelling Clay

Specimen No.	1	2	3	4	5	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	ND	ND	60
Soluble Arsenic (As)	ND	ND	ND	ND	ND	25
Soluble Barium (Ba)	4	5	9	11	8	1000
Soluble Cadmium (Cd)	ND	ND	ND	ND	ND	75
Soluble Chromium (Cr)	ND	ND	ND	ND	ND	60
Soluble Lead (Pb)	ND	ND	ND	ND	ND	90
Soluble Mercury (Hg)	ND	ND	ND	ND	ND	60
Soluble Selenium (Se)	ND	ND	ND	ND	ND	500
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

mg/kg = Milligrams per kilogram

LT = Less than

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

Remark:

The total heavy metals screening results exceeded the soluble heavy metal limits, therefore separate soluble analyses were 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-Mass Spectrometry

Toy Material except Modelling Clay

Specimen No.	6	7	8	9	10	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	ND	ND	60
Soluble Arsenic (As)	ND	ND	ND	ND	ND	25
Soluble Barium (Ba)	6	5	8	14	16	1000
Soluble Cadmium (Cd)	ND	ND	ND	ND	ND	75
Soluble Chromium (Cr)	ND	ND	ND	ND	ND	60
Soluble Lead (Pb)	ND	ND	ND	ND	ND	90
Soluble Mercury (Hg)	ND	ND	ND	ND	ND	60
Soluble Selenium (Se)	ND	ND	ND	ND	ND	500
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

mg/kg = Milligrams per kilogram

LT = Less than

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

Remark:

The total heavy metals screening results exceeded the soluble heavy metal limits, therefore separate soluble analyses were 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-Mass Spectrometry

Toy Material except Modelling Clay

Specimen No.	11	12	13	14	15	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	ND	ND	60
Soluble Arsenic (As)	ND	ND	ND	ND	ND	25
Soluble Barium (Ba)	16	13	4	4	5	1000
Soluble Cadmium (Cd)	ND	ND	ND	ND	ND	75
Soluble Chromium (Cr)	ND	ND	ND	ND	ND	60
Soluble Lead (Pb)	ND	ND	ND	ND	ND	90
Soluble Mercury (Hg)	ND	ND	ND	ND	ND	60
Soluble Selenium (Se)	ND	ND	ND	ND	ND	500
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

mg/kg = Milligrams per kilogram

LT = Less than

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

Remark:

The total heavy metals screening results exceeded the soluble heavy metal limits, therefore separate soluble analyses were 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-Mass Spectrometry

Toy Material except Modelling Clay

Specimen No.	16	17	18	19	20	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	ND	ND	60
Soluble Arsenic (As)	ND	ND	ND	ND	ND	25
Soluble Barium (Ba)	11	16	4	4	8	1000
Soluble Cadmium (Cd)	ND	ND	ND	ND	ND	75
Soluble Chromium (Cr)	ND	ND	ND	ND	ND	60
Soluble Lead (Pb)	ND	ND	ND	ND	ND	90
Soluble Mercury (Hg)	ND	ND	ND	ND	ND	60
Soluble Selenium (Se)	ND	ND	ND	ND	ND	500
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

mg/kg = Milligrams per kilogram

LT = Less than

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

Remark:

The total heavy metals screening results exceeded the soluble heavy metal limits, therefore separate soluble analyses were 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-Mass Spectrometry

Toy Material except Modelling Clay

Specimen No.	21	22	23	24	25	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	ND	ND	60
Soluble Arsenic (As)	ND	ND	ND	ND	ND	25
Soluble Barium (Ba)	5	7	4	6	11	1000
Soluble Cadmium (Cd)	ND	ND	ND	ND	ND	75
Soluble Chromium (Cr)	ND	ND	ND	ND	ND	60
Soluble Lead (Pb)	ND	ND	ND	ND	ND	90
Soluble Mercury (Hg)	ND	ND	ND	ND	ND	60
Soluble Selenium (Se)	ND	ND	ND	ND	ND	500
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

mg/kg = Milligrams per kilogram

LT = Less than

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

Remark:

The total heavy metals screening results exceeded the soluble heavy metal limits, therefore separate soluble analyses were 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-Mass Spectrometry

Toy Material except Modelling Clay

Specimen No.	26	27	28	29	30	Soluble Limit (ppm)
Test Item	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)	
Soluble Antimony (Sb)	ND	ND	ND	ND	ND	60
Soluble Arsenic (As)	ND	ND	ND	ND	ND	25
Soluble Barium (Ba)	5	5	20	4	5	1000
Soluble Cadmium (Cd)	ND	ND	ND	ND	ND	75
Soluble Chromium (Cr)	ND	ND	ND	ND	ND	60
Soluble Lead (Pb)	ND	ND	ND	ND	ND	90
Soluble Mercury (Hg)	ND	ND	ND	ND	ND	60
Soluble Selenium (Se)	ND	ND	ND	ND	ND	500
Conclusion	PASS	PASS	PASS	PASS	PASS	

Note:

mg/kg = Milligrams per kilogram

LT = Less than

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

Remark:

The total heavy metals screening results exceeded the soluble heavy metal limits, therefore separate soluble analyses were conducted.

**SPECIMEN DESCRIPTION:**

Specimen No.	Specimen Description	Location
1	White ink (UVC 970)	Raw material
2	Dull red ink (UVC 435)	Raw material
3	Grey ink (UVC 914)	Raw material
4	Black ink (UVC 188)	Raw material
5	Red ink (UVC 932)	Raw material
6	Green ink (UVC 162)	Raw material
7	Dull black ink (UVC 980)	Raw material
8	Matt black ink (UVC 180)	Raw material
9	Dull white ink (UVC 171)	Raw material
10	Translucent ink (UVC 910)	Raw material
11	Blue ink (UVC 455)	Raw material
12	Dull translucent ink (UVC 904)	Raw material
13	Orange ink (UVC 926)	Raw material
14	Matt red ink (UVC 934)	Raw material
15	Yellow ink (UVC 425)	Raw material
16	Dull yellow ink (UVC 924)	Raw material
17	Matt yellow ink (UVC 122)	Raw material
18	Matt white ink (UVC 409)	Raw material
19	Dark red ink (UVC 936)	Raw material
20	Dull blue ink (UVC 152)	Raw material
21	Bright white ink (UVC 270)	Raw material
22	Soft white ink (UVC 170)	Raw material
23	Bright black ink (UVC 485)	Raw material
24	Soft black ink (UVC 950)	Raw material
25	Soft red ink (UVC 132)	Raw material
26	Bright yellow ink (UVC 922)	Raw material
27	Dull green ink (UVC 960)	Raw material

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The test result(s) and conclusion(s) in this report relate to the sample(s) tested as described herein.

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**SPECIMEN DESCRIPTION:**

Specimen No.	Specimen Description	Location
28	Deep blue ink (UVC 952)	Raw material
29	Matt green ink (UVC 962)	Raw material
30	Matt blue ink (UVC 956)	Raw material



SAMPLE PHOTO:



-End Report-