CARPENTERS MANUFACTORY LIMITED

Technical Report: **(8520)091-0418** June 05, 2020
Date Received: April 01, 2020

CARPENTERS MANUFACTORY LIMITED
HUANG JIN JI INDUSTRIAL ZONE
SHANG JIE VILLAGE
QI SHI TOWN
DONGGUAN, GUANGDONG
CHINA

Sample Description:	COLOUR MIXING LEARNING MIRROR		
Vendor:	CARPENTERS MANUFACTORY LIMITED	Sample Size:	2
Manufacturer:	N/A	Style No(s):	MK12418
Buyer:	N/A	SKN/SKU No.:	N/A
Labeled Age Grade:	2 YEARS+	PO No.:	N/A
Appropriate Age Grade:	NOT REQUESTED	Ref #:	N/A
Client Specified Age Grade:	NOT SPECIFIED	Country of Origin:	CHINA
Tested Age Grade:	OVER 2 YEARS OF AGE	Assortment No.:	N/A
UPC Code:	6955920012418	Country of Destination:	GLOBAL

EXECUTIVE SUMMARY:

The sample(s) MEET the following requirement(s):

- The flammability requirements of 16 CFR 1500.3(c)(6)(vi), "Flammable solid" (FHSA regulations).
- The small part requirement of 16 CFR 1501 (FHSA Regulations).
- Labeling requirements of “CE marking, manufacturer/ Importer name and address, and product identification” under “Directive 2009/48/EC Safety of Toy”.
- The labeling requirements of the tested subclauses of the Australian/New Zealand Standard, “Safety of toys”, AS/NZS ISO 8124: Part 1: 2019.
- The mechanical and physical properties requirements of the tested subclauses of the Australian/New Zealand Standard, “Safety of toys”, AS/NZS ISO 8124: Part 1: 2019.
- The flammability requirements of the AS/NZS Standard, “Safety of toys”, AS/NZS 8124: Part 2: 2016.
- The labeling requirements of ASTM F963-17, “Standard consumer safety specification for toy safety”.
- The mechanical hazards requirements of ASTM F963-17, “Standard consumer safety specification for toy safety”.
- The mechanical hazards requirements of the tested sections of Canada Consumer Product Safety Act, Toys Regulations, SOR/2011-17 and Schedule 2.
- The cellulose nitrate requirements of Canada Toys Regulations, SOR/2011-17, section 21.
- The mechanical and physical properties requirements of the tested subclauses of the European Standard, “Safety of toys”, EN71: Part 1:2014+A1:2018, clauses 1-7.
- The flammability requirements of the European Standard "Safety of Toys”, EN 71: Part 2: 2011+ A1: 2014.

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EXECUTIVE SUMMARY:

The tested component sample(s) MEET the following requirement(s):

- The migration of certain elements requirements of the AS/NZS Standard, “Safety of toys”, AS/NZS 8124: Part 3: 2012 with Amendment No. 1: 2016.

- The soluble heavy metals content in surface coating requirements of ASTM F963-17, "Standard Consumer Safety Specification for Toy Safety," Section 4.3.5.1(2).

- The soluble heavy metals content in substrate requirements of ASTM F963-17, "Standard Consumer Safety Specification for Toy Safety," Section 4.3.5.2(2)(b).

- The applicable heavy metals content requirements for surface coatings of the Canada Consumer Product Safety Act, Toys Regulations, SOR/2011-17 Sec. 23 with Amendment in SOR/2016-195.

- The soluble heavy metals content in plastic requirement of Canada Consumer Product Safety Act, Toys Regulations, SOR/2011-17 Sec. 27(a) with Amendment in SOR/2016-302.

- The total lead content requirements of the Canada Consumer Product Safety Act, Consumer Products Containing Lead Regulations SOR/2018-83.

- The phthalates (BBP, DBP, DEHP, DINP, DIBP, DPENP, DHEXP & DCHP) content requirements of the Consumer Product Safety Improvement Act (CPSIA) of 2008 Sec. 108(a) and 108(c), 16 CFR 1307).

- The total lead content of 100ppm requirements by composite testing in substrate materials (Consumer Products Safety Improvement Act (CPSIA) of 2008).

- The total lead content of 90ppm requirements of 16 CFR 1303, “Ban of lead-containing paint and certain consumer products bearing lead-containing paint” as mandated by Congress in section 101(f) of the Consumer Products Safety Improvement Act (CPSIA) of 2008, Public Law 110-314.

- The BBP, DBP DEHP and DIBP content requirements of the European Regulation (EC) No. 1907/2006 of the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex XVII concerning the Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles, Item no. 51 (amended up to EU No. 2018/2005).

- The BBP, DBP and DEHP content requirements of the European Regulation (EC) No. 1907/2006 of the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex XVII concerning the Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles, Item no. 51.

- The cadmium content requirement of the European Regulation (EC) No. 1907/2006 of the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex XVII concerning the Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles, Item no. 23 (amended up to EU No. 2016/217).

- The DNOP, DINP and DIDP content requirements of the European Regulation (EC) No. 1907/2006 of the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex XVII concerning the Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles, Item no. 52.

EXECUTIVE SUMMARY:

The tested component sample(s) MEET the following requirement(s):

- The formaldehyde release requirement in accessible resin-bonded wood components of the European Standard, "Safety of Toys: Organic Chemical Compounds - Requirement", EN 71: Part 9: 2005, and Amendment A1: 2007, when tested according to the method BS EN 717-3.

- The migration of certain elements requirements of the European Standard, "Safety of Toys", EN 71 Part 3: 2019.

- The migration of certain elements in Category III - Scraped off toy material requirements of the European Standard, "Safety of Toys", EN 71 Part 3: 2013+A3:2018.

- The 17 phthalates content requirements of the client's specifications.

Note: The sample(s) was not evaluated to the Normal Use testing requirements specified in ASTM F963-17, Section 8.5. It is the responsibility of the manufacturer, vendor or distributor to conduct tests that will simulate normal use conditions. These tests shall ensure that hazards are not generated through normal wear and deterioration of the sample(s). These tests shall also simulate the normal play mode of the toy and to simulate the expected mode of use of the particular toy. The tests shall be conducted in an expected use environment. These normal use tests shall simulate the intended use of the toy based on its estimated lifetime.

Note: At the request of client, test(s) was conducted on the certain component(s) of the submitted samples(s) / submitted component(s).

Note: Based on visual evaluation and/or material breakdown received, there is no applicable material(s) found in the sample(s) submitted and thus the corresponding testing of EC Directive 2009/48/EC Formamide, EC No. 1907/2006 Azodyes content has/have not been conducted.

Note: Based on visual evaluation and/or material breakdown received, there is no polyvinyl chloride (PVC) found in the samples submitted and thus the corresponding testing of the Canada Consumer Product Safety Act, Phthalates Regulations, SOR/2016-188 regarding to the restriction of use of certain phthalates content have not been conducted.

BUREAU VERITAS SHENZHEN CO., LTD.

Hon Yin Kan
Manager
Toys And Juvenile Products Department

HK/ah

RESULTS:

APPROPRIATE AGE GRADE DETERMINATION

The Appropriate Age Grade is determined with reference to the Age Determination Guidelines of the Consumer Product Safety Commission (CPSC); and the ASTM F963-17, "Standard Consumer Safety Specification for Toy Safety". Annex A1
Note : The most stringent age grade from the Labeled Age Grade and the Appropriate Age Grade will be used for testing. Note : If the client does not specify an age grade for testing or request Bureau Veritas Consumer Products Services, Inc. to determine an appropriate age grade, the labeled age grade will be used for testing.

USE AND ABUSE TESTS

The samples were undergo the tests in accordance with section 8.6 through 8.16, whichever is applicable

Test	Test Parameters	Standard Reference
Impact Test	4 x 3 ft	1500.52(b)
Torque Test	4 in-lbs	1500.53(e)
Tension Test	15 lbs	1500.53(f)
Compression Test	30 lbs	1500.53(g)

RESULTS:

PHYSICAL AND MECHANICAL HAZARDS (ASTM F963-17)

Section	Requirement	Result
4.1	Material Quality	M
4.3.7	Stuffing Materials	N/A
4.5	Sound-Producing Toys	N/A
4.6	Small Objects	M
4.7	Accessible Edges	M
4.8	Projections	N/A
4.9	Accessible Points	M
4.10	Wires and Rods	N/A
4.11	Nails and Fasteners	M
4.12	Plastic Film	N/A
4.13	Folding Mechanisms and Hinges	N/A
4.14	Cords, Straps and Elastics	N/A
4.15	Stability and Over-Load Requirements	N/A
4.16	Confined Spaces	N/A
4.17	Wheels, Tires, and Axles	N/A
4.18	Holes, Clearances and Accessibility of Mechanisms	N/A
4.19	Simulated Protective Devices	N/A
4.20	Pacifiers	N/A
4.21	Projectile Toys	N/A
4.22	Teethers and Teething Toys	N/A
4.23	Rattles	N/A
4.24	Squeeze Toys	N/A
4.25	Battery-Operated Toys (exclude Section 4.25.10 Battery-powered ride-on toys & Section 4.25.11 Toys that Contain Secondary Cells or Secondary Batteries)	N/A
4.26	Toys Intended to be Attached to a Crib or Playpen	N/A
4.27	Stuffed and Beanbag-Type Toys	N/A
4.30	Toy Gun Marking	N/A
4.32	Certain Toys with Nearly Spherical Ends	N/A
4.34	Small Balls	N/A
4.35	Pompoms	N/A
4.36	Hemispheric-Shaped Objects	N/A
4.37	Yo Yo Elastic Tether Toys	N/A
4.38	Magnets	N/A
4.39	Jaw Entrapment in Handles and Steering Wheels	N/A
4.40	Expanding Materials	N/A

M = Meet NM = Not Meet N/A = Not Applicable R = Refer to Comment Section

RESULTS:

LABELING AND INSTRUCTIONAL REQUIREMENT (ASTM F963-17)

Section	Requirement	Result
5.4 & 5.3	Aquatic Toys	N/A
5.5 & 5.3	Crib and Playpen Toys	N/A
5.6 & 5.3	Mobiles	N/A
5.7 & 5.3	Stroller and Carriage Toys	N/A
5.8 & 5.3	Toys Intended to be Assembled by an Adult	N/A
5.9 & 5.3	Simulated Protective Devices	N/A
5.10 & 5.3	Toys with Functional Sharp Edges or Sharp Points	N/A
5.11	Small Objects, Small Balls, Marbles and Balloons (16 CFR 1500.19)	N/A
5.12	Toy Caps (16CFR1500.86)	N/A
5.13	Art Materials (16 CFR 1500.14(b)(8))	N/A
5.15	Battery-Operated Toys (exclude 5.15.1 and 5.15.2)	N/A
5.15.1 & 5.3	Battery-Powered Ride-On Toys	N/A
5.15.2 & 5.3	Button or Coin Cell Batteries	N/A
5.16	Promotional Materials	M
5.17 & 5.3	Magnets	N/A
6.1	Definition and Description	M
6.2	Crib and Playpen Toys	N/A
6.3	Mobiles	N/A
6.4 & 5.3	Toys Intended to be Assembled by an Adult	N/A
6.5	Battery-Operated Toys	N/A
6.6	Battery-Powered Ride-On Toys	N/A
6.7	Toys in Contact with Food	N/A
7.1	Producer's Name and Address	M
7.2	Battery-Powered Ride-on Toys	N/A

M = Meet NM = Not Meet N/A = Not Applicable R = Refer to Comment Section

FLAMMABILITY (16 CFR SECTION 1500.3(c)6)(vi))

Requirement	Test Method Reference	Findings
Burn rate no greater than 0.1 of an inch per second	16 CFR 1500.44	Did not ignite.

RESULTS:

APPROPRIATE AGE GRADE DETERMINATION

The Appropriate Age Grade is determined with reference to the EN71: Part 1 : 2014 +A1:2018, CEN ISO/TR 8124-8:2016 Safety of toys - Part 8: Age Determination Guidelines prepared by Technical Committee CEN/TC 52 and Age Grade Determination Guidelines of the Consumer Product Safety Commission (CPSC).
Note : The most stringent age grade from the Labeled Age Grade and the Appropriate Age Grade will be used for testing.
Note : If the client does not specify an age grade for testing or request Bureau Veritas Consumer Products Services, Inc. to determine an appropriate age grade, the labeled age grade will be used for testing.

EXPLANATION OF THE ABBREVIATIONS FOR PART 1, 2 & 6

Symbol	Explanation
NM	The sample(s) DOES NOT MEET the requirement of this Subclause
M	The sample(s) MEET the requirement of this Subclause
N/A	Not Applicable
NR	Not Requested
NE	Not Evaluated
NP	None Present
P	Present
R	Refer to Comment Section of this report

Symbol	Language Present	Symbol	Language Present	Symbol	Language Present
B	Belgian language	G	German language	PR	Portuguese language
D	Danish language	GR	Greek language	S	Spanish language
E	English language	H	Dutch language	SD	Swedish language
F	Finnish language	I	Italian language	SZ	Swiss language
FR	French language	N	Norwegian language		

RESULTS:

MECHANICAL & PHYSICAL PROPERTIES
(EN 71: PART 1 – 2014+A1 – 2018)

Subclause	Requirement	Result
4.1	Material cleanliness	M
4.2	Assembly	NA
4.3	Flexible plastic sheeting	NA
4.4	Toy Bags	NA
4.5	Glass	NA
4.6	Expanding materials	NA
4.7 & 7.6	Edges	M
4.8 & 7.6	Points and metallic wires	M
4.8e	Splinters	M
4.9	Protruding parts	NA
4.10.1	Folding and sliding mechanisms	NA
4.10.2	Driving mechanisms	NA
4.10.3	Hinges	NA
4.10.4	Springs	NA
4.11	Mouth actuated toys and other toys intended to be put in the mouth	NA
4.12 & 7.3	Balloons	NA
4.13 & 7.9	Cord of toy kites and other flying toys	NA
4.14.1	Toys which a child can enter	NA
4.14.2 & 7.8	Masks and helmets	NA
4.15.1	Toys propelled by child	
4.15.1.2 & 7.10.1 & 7.10.2 & 7.10.3 & 7.10.4 & 7.16	Toys propelled by child – Instructions for use	NA
4.15.1.3	Toys propelled by child – Strength	NA
4.15.1.4	Toys propelled by child – Stability	NA
4.15.1.5	Toys propelled by child – Braking	NA
4.15.1.6	Toys propelled by child - Transmission	NA
4.15.1.7	Toys propelled by child – insertion mark	NA
4.15.1.8	Electrically-driven ride-on toys	NA
4.15.2	Toy bicycles	
4.15.2.2 & 7.15	Toy bicycles – Warnings and instructions for use	NA
4.15.2.3	Toy bicycles – Braking	NA
4.15.3 & 7.16 & 7.19	Rocking horses and similar toys	NA
4.15.4 & 7.16	Toys not propelled by child	NA
4.15.5 & 7.18	Toy scooters	NA
4.16	Heavy immobile toys	NA
4.17.2	All projectiles	NA
4.17.3 & 7.7	Projectile toys with stored energy	NA

RESULTS:

MECHANICAL & PHYSICAL PROPERTIES
(EN 71: PART 1 – 2014+A1 – 2018)

Subclause	Requirement	Result
4.17.4 & 7.26	Certain projectiles toys without stored energy	NA
4.18 & 7.4	Aquatic toys and inflatable toys	NA
4.19 & 7.13 & 7.14	Percussion caps	NA
4.20.2.1-4.20.2.8, 4.20.2.10, 4.20.2.12	Acoustics	NA
4.20.2.9, 4.20.2.11 & 7.14	Acoustics – percussion toys & cap-firing toys	NA
4.21	Toys containing a non-electrical heat source	NA
4.22 & 7.2	Small balls	NA
4.23	Magnet	
4.23.2 a, b & c	Toy other than magnetic / electrical experimental sets intended for children over 8 years	NA
4.23.3 & 7.20	Magnetic / electrical experimental sets intended for children over 8 years	NA
4.24	Yo-yo ball	NA
4.25	Toys attached to food	NA
4.26	Toy Disguise Costumes	NA
4.27.1	Flying toys – General	NA
4.27.2 & 7.25.1	Rotors and propellers on flying toys	NA
4.27.3 & 7.25.2	Rotors and propellers on remote controlled flying toys	NA
	FOR TOYS INTENDED FOR CHILDREN UNDER 36 MONTHS	
5.1	General	M
5.1a	Small parts – as received	M
5.1b	Small parts, sharp points, sharp edges – after tests	M
5.1c	Cross section <2mm metal points & wires	NA
5.1e	Toys contain glue	M
5.1f	Casing of toys	NA
5.2	Fillings, coverings and seams	NA
5.3	Adhesion of plastic sheeting	NA
5.4.2	Cords and chains in toys intended for children under 18 months	NA
5.4.3 & 7.22	Cords and chains in toys intended for children of 18 months or over but under 36 months	NA
5.4.4	Fixed loops, tangled loops and nooses	NA
5.4.5	Cords and chains on pull along toys	NA
5.4.6 & 7.21	Electrical cables	NA
5.4.7	Cross-sectional dimension of certain cords	NA
5.4.8	Self-retracting cords	NA

RESULTS:

MECHANICAL & PHYSICAL PROPERTIES
(EN 71: PART 1 – 2014+A1 – 2018)

Subclause	Requirement	Result
5.4.9 & 7.11 & 7.23	Toys attached to or intended to be strung across a cradle, cot or perambulator	NA
5.5 & 7.12	Liquid filled toys	NA
5.6	Electrically driven toys	NA
5.7	Glass and porcelain	NA
5.8	Shape and size	NA
5.9 & 7.17	Monofilament fibres	NA
5.10	Small balls	NA
5.11	Play figures	NA
5.12	Hemispheric shaped toys	NA
5.13	Suction cups	NA
5.14	Straps intended to be worn fully or partially around the neck	NA
5.15 & 7.24	Sledges with cords for pulling	NA
6	Packaging	NA
	WARNINGS, INSTRUCTIONS FOR USE	
7.1	General	NA
7.2	Toys not intended for children under 36 months	NA
7.5	Functional toys	NA

2009/48/EC GENERAL LABELING REQUIREMENT

Requirement	Result
CE Mark	M
Manufacturer/ Importer name and address	M
Product Identification	M

M = Meet NM = Not Meet N/A = Not Applicable R = Refer to Comment Section

RESULTS:

FLAMMABILITY (EN 71 PART 2: 2011 + A1: 2014)

Subclause	Requirement	Result
4.1	Cellulose nitrate	NP
4.1	Surface flash on a piled surface	NA
4.1	Flammable gases	NA
4.1	Extremely flammable liquids, highly flammable liquids, flammable liquids and flammable gels	NA
4.2	Toys to be worn on the head	NA
4.3	Toy disguise costumes and toys intended to be worn by child in play	NA
4.3	warning on product and packaging (10 - 30 mm/s)	NA
4.4	Toys intended to be entered by a child	NA
4.4	warning on product and packaging (10 – 30 mm/s)	NA
4.5	Soft-filled toys	NA

REQUIREMENTS & TEST METHODS CROSS REFERENCE TABLE FOR PART 2

Sub-clause	Test Method	Sub-clause	Test Method	Sub-clause	Test Method	Sub-clause	Test Method
4.2.2	5.2	4.2.4	5.3	4.3	5.4	4.5	5.5
4.2.3	5.3	4.2.5	5.4	4.4	5.4	-	-

RESULTS:

APPROPRIATE AGE GRADE DETERMINATION

The Appropriate Age Grade is recommended with reference to the Toys: Age Classification Guidelines (1998-01-13) of the Product Safety Bureau, Health Canada.
Note : The most stringent age grade from the Labeled Age Grade and the Appropriate Age Grade will be used for testing.
Note : If the client does not specify an age grade for testing or request Bureau Veritas Consumer Products Services, Inc. to determine an appropriate age grade, the labeled age grade will be used for testing.

RESULTS:

CANADA CONSUMER PRODUCT SAFETY ACT, TOYS REGULATIONS, SOR/2011-17

Section	Parameter / Requirement	Result
Mechanical Hazards		
4	Flexible film bag used for package	NA
7	Small Toys and Detachable component	M
8	Metal edge	M
9	Wires frames	M
10	Plastic Edges	M
11	Wood	M
12	Glass	NA
13	Nails and fasteners	M
14	Safety stops/Locking Device for Folding product	NA
15 (a, b)	Moving Mechanism	NA
15 (c)	Non- Detachable Winding Key Clearance	NA
15 (d)	Detachable Key	NA
16	Projectile Toy	NA
17	Enclosures	NA
18	Stability	NA
19	Auditory hazards	NA
Specific Products - Dolls, Plush Toys and Soft Toys		
28	Exposed Sharp Points and Edges	NA
29. (a)	Stuffing Materials shall be clean and free from vermin	NA
29. (b)	Stuffing Materials shall be free from hard and sharp foreign matter	NA
30	Squeaker, Reed and Valve	NA
31	Eyes and Nose	NA
Specific Products		
35*&36*	Plant seeds	NA
37	Pull and Push toys	NA
38*	Toys Steam engine Boilers	NA
39*	Finger Paints	NA
40(a)	Rattles – Sharp wire	NA
40(b, c)	Rattles – Impaction	NA
41	Elastic	NA
42	Yo-Yo type balls	NA
43	Magnetic force	NA
44	Educational experimental kit - Labeling	NA

RESULTS:

CANADA CONSUMER PRODUCT SAFETY ACT, SCHEDULE 2

Section	Parameter / Requirement	Result
Mechanical Hazards		
1*	Jequirity Beans	M
8*	Kites	NA
9	Kite strings	NA
14*	Lawn, darts with elongated tips	NA

*M = Meet NM = Not Meet NA = Not Applicable R = Refer to Comment Section * = Non-accreditated section*

FLAMMABILITY OF CELLULOSE NITRATE

TOY REGULATIONS SOR/2011-17 SECTION 21

Requirement Reference	Observation	Flammability Classification
Section 21	No Flash Effect	M

M = Meet NM-See comment = Not Meet - Refer to Comment Section NA = Not Applicable

RESULTS:

APPROPRIATE AGE GRADE DETERMINATION

The Appropriate Age Grade is determined with reference to the Age-grading guidelines of the Annex A of the AS/NZS Standard, “Safety of toys”, AS/NZS 8124: Part 1: 2019	
Note :	The most stringent age grade from the Labeled Age Grade and the Appropriate Age Grade will be used for testing.
Note :	If the client does not specify an age grade for testing or request Bureau Veritas Consumer Products Services, Inc. to determine an appropriate age grade, the labeled age grade will be used for testing.

RESULTS:

MECHANICAL & PHYSICAL PROPERTIES – (AS/NZS ISO 8124.1:2019)

Subclause	Requirement	Result
4.1	Normal use	M
4.2	Reasonably foreseeable abuse	M
4.3	Material	M
4.4	Small parts	M
4.5	Shape, size and strength of certain toys	NA
4.6	Edges	M
4.7	Points	M
4.8	Projections	NA
4.9	Metal wires and rods	NA
4.10	Plastic film or plastic bags in packaging and in toys	NA
4.11	Cords	NA
4.12	Folding mechanisms	NA
4.13	Holes, clearances and accessibility of mechanisms	NA
4.14	Springs	NA
4.15	Stability and overload requirements	NA
4.16	Enclosures	NA
4.17	Simulated protective equipment	NA
4.18	Projectile toys	NA
4.19	Rotors and propellers	NA
4.20	Aquatic toys	NA
4.21	Braking	NA
4.22	Toy bicycles	NA
4.23	Speed limitation of electrically driven ride-on toys	NA
4.24	Toys containing a heat source	NA
4.25	Liquid-filled toys	NA
4.26	Mouth-actuated toys	NA
4.27	Toy roller skates, toy inline skates and toy skateboards	NA
4.28	Percussion caps specifically designed for use in toys	NA
4.29	Acoustic requirement	NA
4.30	Toy scooters	NA
4.31	Magnets and magnetic components	NA
4.32	Yo-yo balls	NA
4.33	Straps intended to be worn fully or partially around the neck	NA
4.34	Sledges and toboggans with cords for pulling	NA
4.35	Jaw entrapment in handles and steering wheels	NA

M = Meet NM = Not Meet N/A = Not Applicable R = Refer to Comment Section

RESULTS:

FLAMMABILITY (AS/NZS 8124.2: 2016)

Subclause	Requirement	Result
4.1	Celluloid (cellulose nitrate)	NP
4.1	Surface flash on a piled surface	NA
4.1	Flammable Gases	NA
4.1	Extremely flammable liquids, highly flammable liquids, flammable liquids and flammable gels	NA
4.2	Toys to be worn on the head	NA
4.3	Toy disguise costumes and toys intended to be worn by a child in play	NA
4.3	warning on product and packaging (10 - 30 mm/s)	NA
4.4	Toys intended to be entered by a child	NA
4.4	warning on product and packaging (10 - 30 mm/s)	NA
4.5	Soft - filled toys	NA

M = Meet NM = Not Meet N/A = Not Applicable R = Refer to Comment Section P = Present NP = Not Present

RESULTS:

PHTHALATES CONTENT IN CHILDREN`S TOYS AND CHILD CARE ARTICLES (Consumer Product Safety Improvement Act (CPSIA) of 2008, Section 108(a) and 108(c), 16 CFR 1307)

Test Method: With reference to U. S. CPSC-CH-C1001-09.3 (April 1, 2010) / CPSC-CH-C1001-09.4 (January 17, 2018).

Sample Identity	Color / Component	Location	Style
A.	clear yellow plastic clear orange plastic clear red plastic	board board board	
B.	clear green plastic clear purple plastic clear deep blue plastic	board board board	
C.	Bright red coating	A1Y	
D.	Orange coating	A2Y	
E.	Light yellow coating	A3Y	
F.	Dark green coating	A5Y	
G.	Light blue coating	A8Y	
H.	Purple coating	A11Y	
I.	White coating	A16Y	
J.	Black coating	A19Y	
K.	Clear coating	A21Y	

Test Parameter:	Listed Phthalates (See Remark)		
Requirement:	Each 0.1%		
Sample ID	Detected Analyte	Concentration (%)	Conclusion
A.	ND	ND	Pass
B.	DBP DEHP	0.013 0.013	Pass
C.	ND	ND	Pass
D.	ND	ND	Pass
E.	ND	ND	Pass
F.	ND	ND	Pass
G.	ND	ND	Pass
H.	ND	ND	Pass
I.	ND	ND	Pass
J.	ND	ND	Pass
K.	ND	ND	Pass

Results reported in percentage
ND = None detected
Detection Limit: Each Phthalate (0.005%)

RESULTS:

PHTHALATES CONTENT IN CHILDREN`S TOYS AND CHILD CARE ARTICLES (Consumer Product Safety Improvement Act (CPSIA) of 2008, Section 108(a) and 108(c), 16 CFR 1307)

Test Method: With reference to U. S. CPSC-CH-C1001-09.3 (April 1, 2010) / CPSC-CH-C1001-09.4 (January 17, 2018).

LIST OF RESTRICTED PHTHALATES		
Number	Chemical Name	CAS Number
1.	Butyl benzyl phthalate (BBP)	85-68-7
2.	Dibutyl phthalate (DBP)	84-74-2
3.	Di(2-ethylhexyl) phthalate (DEHP)	117-81-7
4.	Di-iso-nonyl phthalate (DINP)	28553-12-0 & 68515-48-0
5.	Di-iso-butyl phthalate (DIBP)	84-69-5
6.	Di-n-pentyl phthalate (DPENP or DnPP)	131-18-0
7.	Di-n-hexyl phthalate (DHEXP or DnHP)	84-75-3
8.	Dicyclohexyl phthalate (DCHP)	84-61-7

RESULTS:

BBP/DBP/DEHP CONTENTS IN TOYS AND CHILDCARE ARTICLES (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 51)

Test Method: With referenced to EN 14372:2004 Section 6.3.2, sample was extracted with organic solvent and then analyzed by Gas Chromatograph Mass Spectrometer

Sample Identity	Test Component	Location	Style
A.	shiny silver coating	inner board	
B.	clear yellow plastic clear orange plastic clear red plastic	board board board	
C.	clear green plastic clear purple plastic clear deep blue plastic	board board board	
D.	Bright red coating	A1Y	
E.	Orange coating	A2Y	
F.	Light yellow coating	A3Y	
G.	Dark green coating	A5Y	
H.	Light blue coating	A8Y	
I.	Purple coating	A11Y	
J.	White coating	A16Y	
K.	Black coating	A19Y	
L.	Clear coating	A21Y	

RESULTS:

BBP/DBP/DEHP CONTENTS IN TOYS AND CHILDCARE ARTICLES (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 51)

Test Method: With referenced to EN 14372:2004 Section 6.3.2, sample was extracted with organic solvent and then analyzed by Gas Chromatograph Mass Spectrometer

Test Parameter:	BBP	DBP	DEHP	Sum of three phthalates	
Limit (%):	0.1	0.1	0.1	0.1	
Sample	Result (%)				Conclusion
A.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
B.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
C.	LT 0.005	0.013	0.013	0.026	Pass
D.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
E.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
F.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
G.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
H.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
I.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
J.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
K.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
L.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass

Detection Limit :
BBP = Butyl benzyl phthalate (0.005%)
DBP = Dibutyl phthalate (0.005%)
DEHP = Di(2-ethylhexyl) phthalate (0.005%)

Results reported in percentage
LT = Less than
ND = None detected

RESULTS:

DNOP/DINP/DIDP CONTENTS IN TOYS AND CHILDCARE ARTICLES WHICH CAN BE PLACED IN MOUTH BY THE CHILDREN (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 52)

Test Method: With referenced to EN 14372:2004 Section 6.3.2, sample was extracted with organic solvent and then analyzed by Gas Chromatograph Mass Spectrometer

Sample Identity	Test Component	Location	Style
A.	clear yellow plastic clear orange plastic clear red plastic	board board board	
B.	clear green plastic clear purple plastic clear deep blue plastic	board board board	
C.	Bright red coating	A1Y	
D.	Orange coating	A2Y	
E.	Light yellow coating	A3Y	
F.	Dark green coating	A5Y	
G.	Light blue coating	A8Y	
H.	Purple coating	A11Y	
I.	White coating	A16Y	
J.	Black coating	A19Y	
K.	Clear coating	A21Y	

Test Parameter:	DNOP	DINP	DIDP	Sum of three phthalates	
Limit (%):	0.1	0.1	0.1	0.1	
Sample	Result (%)				Conclusion
A.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
B.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
C.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
D.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
E.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
F.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
G.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
H.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
I.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
J.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
K.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass

Detection Limit :
DNOP = Di-n-octyl phthalate (0.005%)
DINP = Di-iso-nonyl phthalate (0.005%)
DIDP = Di-iso-decyl phthalate (0.005%)

Results reported in percentage
LT = Less than
ND = None detected

RESULTS:

BBP/DBP/DEHP/DIBP CONTENTS (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 51 (amended up to EU No. 2018/2005))

Test Method: With referenced to EN 14372:2004 Section 6.3.2, sample was extracted with organic solvent and then analyzed by Gas Chromatograph Mass Spectrometer

Sample Identity	Test Component	Location	Style
A.	shiny silver coating	inner board	
B.	clear yellow plastic clear orange plastic clear red plastic	board board board	
C.	clear green plastic clear purple plastic clear deep blue plastic	board board board	
D.	Bright red coating	A1Y	
E.	Orange coating	A2Y	
F.	Light yellow coating	A3Y	
G.	Dark green coating	A5Y	
H.	Light blue coating	A8Y	
I.	Purple coating	A11Y	
J.	White coating	A16Y	
K.	Black coating	A19Y	
L.	Clear coating	A21Y	

RESULTS:

BBP/DBP/DEHP/DIBP CONTENTS (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 51 (amended up to EU No. 2018/2005))

Test Method: With referenced to EN 14372:2004 Section 6.3.2, sample was extracted with organic solvent and then analyzed by Gas Chromatograph Mass Spectrometer

Test Parameter:	BBP	DBP	DEHP	DIBP	Sum of four phthalates	
Limit (%):	0.1	0.1	0.1	0.1	0.1	
Sample	Result (%)					Conclusion
A.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
B.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
C.	LT 0.005	0.013	0.013	LT 0.005	0.026	Pass
D.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
E.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
F.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
G.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
H.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
I.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
J.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
K.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
L.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass

Detection Limit :
BBP = Butyl benzyl phthalate (0.005%)
DBP = Dibutyl phthalate (0.005%)
DEHP = Di(2-ethylhexyl) phthalate (0.005%)
DIBP = Diisobutyl phthalate (0.005%)

Results reported in percentage
LT = Less than
ND = None detected

RESULTS:

CLIENT'S 17 PHTHALATES CONTENT SPECIFICATION

- **BBP/DBP/DEHP/DNOP/DINP/DIDP Content**

	Color / Component	Location	Style
A.	Composite of shiny silver coating	 inner board	
B.	clear yellow plastic clear orange plastic clear red plastic	board board board	
C.	clear green plastic clear purple plastic clear deep blue plastic	board board board	
D.	Bright red coating	A1Y	
E.	Orange coating	A2Y	
F.	Light yellow coating	A3Y	
G.	Dark green coating	A5Y	
H.	Light blue coating	A8Y	
I.	Purple coating	A11Y	
J.	White coating	A16Y	
K.	Black coating	A19Y	
L.	Clear coating	A21Y	

RESULTS:

CLIENT'S 17 PHTHALATES CONTENT SPECIFICATION

- **BBP/DBP/DEHP/DNOP/DINP/DIDP Content**

Test Parameter	BBP	DBP	DEHP	DNOP	DINP	DIDP	
Limit (%)	0.1	0.1	0.1	0.1	0.1	0.1	
Sample	Result (%)						Conclusion
A	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
B	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
C	LT 0.005	0.013	0.013	LT 0.005	LT 0.005	LT 0.005	Pass
D	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
E	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
F	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
G	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
H	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
I	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
J	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
K	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
L	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass

Detection Limit :
DNOP = Di-n-octyl phthalate (0.005%) 117-84-0
DINP p
DIDP = Di-iso-decyl phthalate (0.005%) 26761-40-0 / 68515-49-1
BBP = Butyl benzyl phthalate (0.005%) 85-68-7
DBP = Dibutyl phthalate (0.005%) 84-74-2
DEHP = Di(2-ethylhexyl) phthalate (0.005%) 117-81-7

Results reported in percentage
LT = Less than
ND = None detected

RESULTS:

CLIENT'S 17 PHTHALATES CONTENT SPECIFICATION

- **EC No. 201-559-5 /** *DiBP* **/** *DHNUP* **/** *DIHP* **/** *DMEP* **/** *DIPP* **/** *DnPP* **/** *DPP* **/** *PiPP* **/** *DHP* **/** *1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear* **Content**

Test Parameter	EC No. 201-559-5	DiBP	DHNUP	DIHP	DMEP	DIPP	
Limit (%)	0.1	0.1	0.1	0.1	0.1	0.1	
Sample							Conclusion
A	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
B	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
C	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
D	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
E	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
F	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
G	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
H	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
I	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
J	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
K	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
L	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass

RESULTS:

CLIENT'S 17 PHTHALATES CONTENT SPECIFICATION

- **EC No. 201-559-5 /** *DiBP* **/** *DHNUP* **/** *DIHP* **/** *DMEP* **/** *DIPP* **/** *DnPP* **/** *DPP* **/** *PiPP* **/** *DHP* **/** *1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear* **Content**

Test Parameter	DnPP	DPP	PiPP	DHP	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	
Limit (%)	0.1	0.1	0.1	0.1	0.1	
Sample						Conclusion
A	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
B	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
C	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
D	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
E	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
F	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
G	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
H	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
I	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
J	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
K	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass
L	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	Pass

Results reported in percentage
LT = Less than
ND = None detected

RESULTS:

CLIENT'S 17 PHTHALATES CONTENT SPECIFICATION

Detection Limit:
DiBP = Diisobutylphthalate 84-69-5
DHNUP = 1,2-Benzenedicarboxylic acid,di-C7,11-branched and linear alkyl esters 68515-42-4
DIHP = 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich 71888-89-6
DMEP = Dimethoxyethyl phthalate 117-82-8
DIPP = Diisopentylphthalate 605-50-5
DnPP = Dipentylphthalate 131-18-0
DPP = 1,2-benzenedicarboxylic acid dipentylester, branched and linear 84777-06-0
PiPP = n-Pentyl-Isopentylphthalate 776297-69-9
DHP = Dihexylphthalate 84-75-3
1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear 68515-50-4
EC No. 201-559-5 = 1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate 68515-51-5 /68648-93-1

RESULTS:

TOTAL LEAD CONTENT IN SUBSTRATE BY COMPOSITE TESTING (100PPM) (Consumer Product Safety Improvement Act (CPSIA) of 2008)

Test Method: U.S. CPSC-CH-E1001-08.3:2012 or U.S. CPSC-CH-E1002-08.3:2012

Analyte	Lead	
Requirement: Maximum allowable limit:	100 mg/kg	

Analyte				Lead (Pb)	Conclusion
Sample Description				Result	
Color / Component		Location	Style	(mg/kg)	
(A)	clear yellow plastic clear orange plastic clear red plastic	board board board		LT 10	PASS
(B)	clear green plastic clear purple plastic clear deep blue plastic	board board board		LT 10	PASS
(C)	silvery metal	screw		LT 10	PASS
(D)	Flesh wood	wood panel		LT 10	PASS

LT = Less Than *mg/kg = milligrams per kilogram (ppm = parts per million)*
** = Average of duplicate analyses*

RESULTS:

TOTAL LEAD CONTENT (Canada Consumer Product Safety Act – Consumer Products Containing Lead Regulations SOR/2018-83)

Test Method: Health Canada, Product Safety Laboratory, Reference Manual, Book 5 - Laboratory Policies and Procedures – Part B: Test Method Section, Method C-02.2:2017, C-02.3:2017 or C-02.4-2017

Analyte	Lead	
Requirement: Maximum allowable limit:	90 mg/kg	

Analyte				Lead (Pb)	Conclusion
Sample Description				Result	
	Color / Component	Location	Style	(mg/kg)	
(A)	clear yellow plastic clear orange plastic clear red plastic	board board board		LT 10	Pass
(B)	clear green plastic clear purple plastic clear deep blue plastic	board board board		LT 10	Pass
(C)	silvery metal	screw		LT 10	Pass
(D)	Bright red coating	A1Y		LT 10	Pass
(E)	Orange coating	A2Y		LT 10	Pass
(F)	Light yellow coating	A3Y		LT 10	Pass
(G)	Dark green coating	A5Y		LT 10	Pass
(H)	Light blue coating	A8Y		LT 10	Pass
(I)	Purple coating	A11Y		LT 10	Pass
(J)	White coating	A16Y		LT 10	Pass
(K)	Black coating	A19Y		LT 10	Pass
(L)	Clear coating	A21Y		LT 10	Pass
(M)	Flesh wood	wood panel		LT 10	Pass

LT = Less Than
** = Average of duplicate analyses*
mg/kg =milligrams per kilogram (ppm=parts per million)
ND=Not detected

RESULTS:

SOLUBLE HEAVY METALS CONTENT IN SUBSTRATE (ASTM F963-17, Section 4.3.5.2(2)(b))

Test Method: ASTM International Standard ASTM F963-17, Section 8.3.5 (Excluding 8.3.5.5(3))

Sample Identity	Color	Location	Style
Type I: Substrate other than modeling clay			
A	clear yellow plastic	board	
B	clear orange plastic	board	
C	clear red plastic	board	
D	clear green plastic	board	
E	clear purple plastic	board	
F	clear deep blue plastic	board	

Analyte	As	Ba	Cd	Cr	Hg	Pb	Sb	Se	
Max. Limit Type I (mg/kg)	25	1000	75	60	60	90	60	500	
Max. Limit Type II (mg/kg)	25	250	50	25	25	90	60	500	
Analytical Correction	60%	30%	30%	30%	50%	30%	60%	60%	

Analyte	As	Ba	Cd	Cr	Hg	Pb	Sb	Se	Mass of Trace Amount	Conclusion
Sample	Result (mg/kg)								(g)	
A	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2		Pass
B	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2		Pass
C	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2		Pass
D	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2		Pass
E	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2		Pass
F	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2		Pass

mg/kg = milligrams per kilogram (ppm=parts per million)
CR = adjusted analytical result
LT = Less Than
ND = None Detected

As = Arsenic, Ba = Barium, Cd = Cadmium,
Cr = Chromium, Hg = Mercury, Pb = Lead,
Sb = Antimony, Se = Selenium
Detection limit (mg/kg): Each element 2

Remark:
Textiles (natural or synthetic) are exempted for lead content requirement according to clarification of Toy Industry Association for ASTM F963-17. The lead content analysis result of corresponding material herein is for client's reference only.

RESULTS:

SOLUBLE HEAVY METALS CONTENT IN PLASTIC (Canada Consumer Product Safety Act - Toys Regulations, SOR/2011-17 Sec. 27(a) with Amendment in SOR/2016-302)

Test Method: ASTM International Standard ASTM F963-16, Section 8.3.5 (Excluding 8.3.5.5(3))

Sample Identity	Color	Location	Style
A	clear yellow plastic	board	
B	clear orange plastic	board	
C	clear red plastic	board	
D	clear green plastic	board	
E	clear purple plastic	board	
F	clear deep blue plastic	board	

Analyte	As	Ba	Cd	Cr	Hg	Sb	Se	
Maximum Limit (mg/kg)	25	1000	75	60	60	60	500	

Analyte	As	Ba	Cd	Cr	Hg	Sb	Se	
Sample	Result (mg/kg)							Conclusion
A	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	PASS
B	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	PASS
C	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	PASS
D	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	PASS
E	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	PASS
F	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	PASS

mg/kg = milligrams per kilogram (ppm=parts per million)
**= Average of duplicate analysis*
ND = Not detected
LT = Less Than

As = Arsenic, Ba = Barium, Cd = Cadmium,
Cr = Chromium, Hg = Mercury, Sb = Antimony,
Se = Selenium
Detection limit (mg/kg): Each element 2

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (AS/NZS 8124 Part 3: 2012 with Amendment No. 1: 2016)

Test Method: Soluble heavy metals content analysis was determined by Inductively Coupled Plasma Spectrometry.

Sample Identity	Color / Component	Location	Style
Type II: Polymeric Materials			
A.	clear yellow plastic	board	
B.	clear orange plastic	board	
C.	clear red plastic	board	
D.	clear green plastic	board	
E.	clear purple plastic	board	
F.	clear deep blue plastic	board	
Type I: Coatings			
G.	Bright red coating	A1Y	
H.	Orange coating	A2Y	
I.	Light yellow coating	A3Y	
J.	Dark green coating	A5Y	
K.	Light blue coating	A8Y	
L.	Purple coating	A11Y	
M.	White coating	A16Y	
N.	Black coating	A19Y	
O.	Clear coating	A21Y	
Type VI: Other Materials Whether Mass Coloured Or Not			
P.	Flesh wood	wood panel	

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (AS/NZS 8124 Part 3: 2012 with Amendment No. 1: 2016)

Test Method: Soluble heavy metals content analysis was determined by Inductively Coupled Plasma Spectrometry.

Analyte	As	Ba	Cd	Cr	Hg	Pb	Sb	Se
Max. Limit All except Type VIII (mg/kg)	25	1000	75	60	60	90	60	500
Max. Limit Type VIII (mg/kg)	25	250	50	25	25	90	60	500
Analytical Correction	60%	30%	30%	30%	50%	30%	60%	60%

Analyte	As	Ba	Cd	Cr	Hg	Pb	Sb	Se	Mass of Trace Amount	Conclusion
Sample	Result (mg/kg)								(g)	
A.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2		PASS
B.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2		PASS
C.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2		PASS
D.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2		PASS
E.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2		PASS
F.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2		PASS
G.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	0.0609	PASS
H.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	0.0494	PASS
I.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	0.0385	PASS
J.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	0.0541	PASS
K.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	0.0404	PASS
L.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	0.0417	PASS
M.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	0.0461	PASS
N.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	0.0548	PASS
O.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	0.0324	PASS
P.	LT 2	4	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	-	PASS

mg/kg = milligrams per kilogram (ppm=parts per million)
CR = adjusted analytical result
LT = Less Than
** = Average of duplicate analysis*

As = Arsenic, Ba = Barium, Cd = Cadmium,
Cr = Chromium, Hg = Mercury, Pb = Lead,
Sb = Antimony, Se = Selenium

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2013+A3:2018)

Test Method : European Standard EN 71 Part 3: 2013+A3:2018, Annex E.

Class: Category III - Scraped off toy material

Sample Identity	Color	Location	Style
A.	clear yellow plastic	board	
B.	clear orange plastic	board	
C.	clear red plastic	board	
D.	clear green plastic	board	
E.	clear purple plastic	board	
F.	clear deep blue plastic	board	
G.	Bright red coating	A1Y	
H.	Orange coating	A2Y	
I.	Light yellow coating	A3Y	
J.	Dark green coating	A5Y	
K.	Light blue coating	A8Y	
L.	Purple coating	A11Y	
M.	White coating	A16Y	
N.	Black coating	A19Y	
O.	Clear coating	A21Y	
P.	Flesh wood	wood panel	

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2013+A3:2018)

Test Method : European Standard EN 71 Part 3: 2013+A3:2018, Annex E.

Class: Category III - Scraped off toy material

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	A.	B.	C.	D.	E.	F.
Aluminium (Al)	70000	43	35	34	2	34	LT 2
Arsenic (As)	47	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Boron (B)	15000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Barium (Ba)	18750	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cadmium (Cd)	17	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cobalt (Co)	130	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Chromium III (Cr III)	460	LT 0.050	LT 0.050	0.14	LT 0.050	LT 0.050	LT 0.050
Chromium VI (Cr VI)	0.2			#LT 0.0020			
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Mercury (Hg)	94	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Manganese (Mn)	15000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Nickel (Ni)	930	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Lead (Pb)	23	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Antimony (Sb)	560	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Selenium (Se)	460	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Tin (Sn)	180000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Organic tin	12	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Strontium (Sr)	56000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Zinc (Zn)	46000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Mass of trace amount (gram)		-	-	-	-	-	-
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2013+A3:2018)

Test Method : European Standard EN 71 Part 3: 2013+A3:2018, Annex E.

Class: Category III - Scraped off toy material

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	G.	H.	I.	J.	K.	L.
Aluminium (Al)	70000	8	73	70	4	4	76
Arsenic (As)	47	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Boron (B)	15000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Barium (Ba)	18750	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cadmium (Cd)	17	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cobalt (Co)	130	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Chromium III (Cr III)	460	LT 0.050	0.054	0.85	LT 0.050	LT 0.050	LT 0.050
Chromium VI (Cr VI)	0.2		#LT 0.0020	#LT 0.0020			
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Mercury (Hg)	94	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Manganese (Mn)	15000	LT 2	LT 2	4	LT 2	LT 2	LT 2
Nickel (Ni)	930	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Lead (Pb)	23	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Antimony (Sb)	560	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Selenium (Se)	460	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Tin (Sn)	180000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Organic tin	12	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Strontium (Sr)	56000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Zinc (Zn)	46000	LT 2	LT 2	620	4	LT 2	15
Mass of trace amount (gram)		0.0609	0.0494	0.0385	0.0541	0.0404	0.0497
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2013+A3:2018)

Test Method : European Standard EN 71 Part 3: 2013+A3:2018, Annex E.

Class: Category III - Scraped off toy material

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	M.	N.	O.	P.	-	-
Aluminium (Al)	70000	46	LT 2	LT 2	LT 2	-	-
Arsenic (As)	47	LT 2	LT 2	LT 2	LT 2	-	-
Boron (B)	15000	LT 2	LT 2	LT 2	LT 2	-	-
Barium (Ba)	18750	LT 2	LT 2	LT 2	4	-	-
Cadmium (Cd)	17	LT 2	LT 2	LT 2	LT 2	-	-
Cobalt (Co)	130	LT 2	LT 2	LT 2	LT 2	-	-
Chromium III (Cr III)	460	LT 0.050	LT 0.050	LT 0.050	LT 0.050	-	-
Chromium VI (Cr VI)	0.2						
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	-	-
Mercury (Hg)	94	LT 2	LT 2	LT 2	LT 2	-	-
Manganese (Mn)	15000	LT 2	LT 2	LT 2	4	-	-
Nickel (Ni)	930	LT 2	LT 2	LT 2	LT 2	-	-
Lead (Pb)	23	LT 2	LT 2	LT 2	LT 2	-	-
Antimony (Sb)	560	LT 2	LT 2	LT 2	LT 2	-	-
Selenium (Se)	460	LT 2	LT 2	LT 2	LT 2	-	-
Tin (Sn)	180000	LT 2	LT 2	LT 2	LT 2	-	-
Organic tin	12	LT 2	LT 2	LT 2	LT 2	-	-
Strontium (Sr)	56000	LT 2	LT 2	LT 2	5	-	-
Zinc (Zn)	46000	LT 2	5	LT 2	6	-	-
Mass of trace amount (gram)		0.0461	0.0546	0.0324	-	-	-
Conclusion		Pass	Pass	Pass	Pass	-	-

mg/kg = milligrams per kilogram (ppm=parts per million) *LT = Less Than*
** = Average of duplicate analysis* *FR = Failed Result*
Organic tin = migration of total organic tin is expressed as tributyl tin cation content in mg/kg
 # = Verified results (see note)

Remark: - Results of Cr III and Cr VI were reported as sum of soluble Chromium content unless specified.
- Result(s) of organic tin was (were) calculated while assuming the tin content wholly contributed from tributyltin cation unless specified.

Note: If soluble chromium content or soluble tin content exceeded the screening limits of soluble chromium (VI) or organic tin content, the results were verified by below method
- Chromium VI: In house Ion-chromatography analysis
- Organic tin: EN71 part 3:2013+A3:2018, Annex G by Gas Chromatography – Mass Spectroscopy analysis.

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019)

Test Method : European Standard EN 71 Part 3: 2019, Section 9.

Class: Category III - Scraped off toy material

Sample Identity	Color	Location	Style
A.	clear yellow plastic	board	
B.	clear orange plastic	board	
C.	clear red plastic	board	
D.	clear green plastic	board	
E.	clear purple plastic	board	
F.	clear deep blue plastic	board	
G.	Bright red coating	A1Y	
H.	Orange coating	A2Y	
I.	Light yellow coating	A3Y	
J.	Dark green coating	A5Y	
K.	Light blue coating	A8Y	
L.	Purple coating	A11Y	
M.	White coating	A16Y	
N.	Black coating	A19Y	
O.	Clear coating	A21Y	
P.	Flesh wood	wood panel	

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	A.	B.	C.	D.	E.	F.
Aluminium (Al)	70000	43	35	34	2	34	LT 2
Arsenic (As)	47	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Boron (B)	15000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Barium (Ba)	18750	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cadmium (Cd)	17	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cobalt (Co)	130	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Chromium III (Cr III)	460	LT 0.050	LT 0.050	0.14	LT 0.050	LT 0.050	LT 0.050
Chromium VI (Cr VI)	0.053			#LT 0.0020			
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Mercury (Hg)	94	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Manganese (Mn)	15000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Nickel (Ni)	930	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Lead (Pb)	23	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Antimony (Sb)	560	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Selenium (Se)	460	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Tin (Sn)	180000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Organic tin	12	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Strontium (Sr)	56000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Zinc (Zn)	46000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Mass of trace amount (gram)		-	-	-	-	-	-
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019)

Test Method : European Standard EN 71 Part 3: 2019, Section 9.

Class: Category III - Scraped off toy material

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	G.	H.	I.	J.	K.	L.
Aluminium (Al)	70000	8	73	70	4	4	76
Arsenic (As)	47	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Boron (B)	15000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Barium (Ba)	18750	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cadmium (Cd)	17	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cobalt (Co)	130	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Chromium III (Cr III)	460	LT 0.050	0.054	0.85	LT 0.050	LT 0.050	LT 0.050
Chromium VI (Cr VI)	0.053		#LT 0.0020	#LT 0.0020			
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Mercury (Hg)	94	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Manganese (Mn)	15000	LT 2	LT 2	4	LT 2	LT 2	LT 2
Nickel (Ni)	930	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Lead (Pb)	23	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Antimony (Sb)	560	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Selenium (Se)	460	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Tin (Sn)	180000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Organic tin	12	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Strontium (Sr)	56000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Zinc (Zn)	46000	LT 2	LT 2	620	4	LT 2	15
Mass of trace amount (gram)		0.0609	0.0494	0.0385	0.0541	0.0404	0.0497
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019)

Test Method : European Standard EN 71 Part 3: 2019, Section 9.

Class: Category III - Scraped off toy material

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	M.	N.	O.	P.	-	-
Aluminium (Al)	70000	46	LT 2	LT 2	LT 2	-	-
Arsenic (As)	47	LT 2	LT 2	LT 2	LT 2	-	-
Boron (B)	15000	LT 2	LT 2	LT 2	LT 2	-	-
Barium (Ba)	18750	LT 2	LT 2	LT 2	4	-	-
Cadmium (Cd)	17	LT 2	LT 2	LT 2	LT 2	-	-
Cobalt (Co)	130	LT 2	LT 2	LT 2	LT 2	-	-
Chromium III (Cr III)	460	LT 0.050	LT 0.050	LT 0.050	LT 0.050	-	-
Chromium VI (Cr VI)	0.053						
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	-	-
Mercury (Hg)	94	LT 2	LT 2	LT 2	LT 2	-	-
Manganese (Mn)	15000	LT 2	LT 2	LT 2	4	-	-
Nickel (Ni)	930	LT 2	LT 2	LT 2	LT 2	-	-
Lead (Pb)	23	LT 2	LT 2	LT 2	LT 2	-	-
Antimony (Sb)	560	LT 2	LT 2	LT 2	LT 2	-	-
Selenium (Se)	460	LT 2	LT 2	LT 2	LT 2	-	-
Tin (Sn)	180000	LT 2	LT 2	LT 2	LT 2	-	-
Organic tin	12	LT 2	LT 2	LT 2	LT 2	-	-
Strontium (Sr)	56000	LT 2	LT 2	LT 2	5	-	-
Zinc (Zn)	46000	LT 2	5	LT 2	6	-	-
Mass of trace amount (gram)		0.0461	0.0546	0.0324	-	-	-
Conclusion		Pass	Pass	Pass	Pass	-	-

mg/kg = milligrams per kilogram (ppm=parts per million) *LT = Less Than*
** = Average of duplicate analysis* *FR = Failed Result*
Organic tin = migration of total organic tin is expressed as tributyl tin cation content in mg/kg
 # = Verified results (see note)

Remark: - Results of Cr III and Cr VI were reported as sum of soluble Chromium content unless specified.
- Result(s) of organic tin was (were) calculated while assuming the tin content wholly contributed from tributyltin cation unless specified.

Note: If soluble chromium content or soluble tin content exceeded the screening limits of soluble chromium (VI) or organic tin content, the results were verified by below method
- Chromium VI: EN71 part 3:2019, Annex F
- Organic tin: EN71 part 3:2019, Annex G by Gas Chromatography – Mass Spectroscopy analysis.

RESULTS:

CADMIUM CONTENT (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 23)

Category:	Plastics
Element:	Cadmium
Test Method	BS EN 1122: 2001, Method B
Maximum Allowable Limit:	100 mg/kg (0.01% by weight)

Sample Description				Reading 1	Reading 2	Average	Conclusion
Color / Component		Location	Style	Result (mg/kg)			
(A)	clear yellow plastic clear orange plastic clear red plastic	board board board		LT 10	LT 10	LT 10	Pass
(B)	clear green plastic clear purple plastic clear deep blue plastic	board board board		LT 10	LT 10	LT 10	Pass

LT = Less than
 # = Insufficient sample for duplicate analyses
mg/kg = milligrams per kilogram (ppm = parts per million)
Operator: Zhang Shao Zheng, Ryan

Category:	Paints on Painted Article
Element:	Cadmium
Test Method:	In house acid digestion
Maximum Allowable Limit:	1000 mg/kg (0.1% by weight)

Test Component				Result (mg/kg)	Conclusion
Colour/Component		Location	Style		
(A)	shiny silver coating	inner board		LT 10	Pass
(B)	Bright red coating	A1Y		LT 10	Pass
(C)	Orange coating	A2Y		LT 10	Pass
(D)	Light yellow coating	A3Y		LT 10	Pass
(E)	Dark green coating	A5Y		LT 10	Pass
(F)	Light blue coating	A8Y		LT 10	Pass
(G)	Purple coating	A11Y		LT 10	Pass
(H)	White coating	A16Y		LT 10	Pass
(I)	Black coating	A19Y		LT 10	Pass
(J)	Clear coating	A21Y		LT 10	Pass

LT = Less than
** = Average of duplicate analyses*
mg/kg = milligrams per kilogram (ppm = parts per million)

RESULTS:

FORMALDEHYDE RELEASE IN ACCESSIBLE RESIN-BONDED WOOD COMPONENTS (EN 71: Part 9: 2005 and Amendment A1: 2007)

Test Method: BS EN 717 Part 3, Wood-based panels - Determination of formaldehyde release - Part 3: Formaldehyde release by the flask method.

Parameter:					Formaldehyde Release	
Maximum allowable limit:					80 (mg/kg (ppm))	
Test Component				Moisture Content (%)	Result (mg/kg (ppm))	Conclusion
	Color/Component	Location	Style No.			
A.	Flesh wood	Wood panel		9.85	LT 16	PASS

LT = Less than *mg/kg (ppm) = milligrams per kilogram (ppm = parts per million)*

RESULTS:

SOLUBLE HEAVY METALS CONTENT IN SURFACE COATING (ASTM F963-17, Section 4.3.5.1(2))

Test Method: ASTM International Standard ASTM F963-17, Section 8.3.2 to 8.3.4

Sample Identity	Color	Location	Style
A.	Bright red coating	A1Y	
B.	Orange coating	A2Y	
C.	Light yellow coating	A3Y	
D.	Dark green coating	A5Y	
E.	Light blue coating	A8Y	
F.	Purple coating	A11Y	
G.	White coating	A16Y	
H.	Black coating	A19Y	
I.	Clear coating	A21Y	

Analyte	As	Ba	Cd	Cr	Hg	Pb	Sb	Se
Maximum Limit (mg/kg)	25	1000	75	60	60	90	60	500
Analytical Correction	60%	30%	30%	30%	50%	30%	60%	60%

Analyte	As	Ba	Cd	Cr	Hg	Pb	Sb	Se	Mass of Trace Amount	Conclusion
Sample	Result (mg/kg)								(g)	
A.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	0.0609	PASS
B.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	0.0494	PASS
C.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	0.0385	PASS
D.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	0.0541	PASS
E.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	0.0404	PASS
F.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	0.0417	PASS
G.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	0.0461	PASS
H.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	0.0548	PASS
I.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	0.0324	PASS

LT = Less Than
CR = adjusted analytical result
mg/kg = milligrams per kilogram (ppm=parts per million)
** = Average of duplicate analysis*

As = Arsenic, Ba = Barium, Cd = Cadmium,
Cr = Chromium, Hg = Mercury, Pb = Lead,
Sb = Antimony, Se = Selenium

RESULTS:

TOTAL LEAD CONTENT IN SURFACE COATING BY COMPOSITE TESTING ("Ban of Lead-containing paint and certain consumer products bearing Lead-containing paint", Consumer Product Safety Improvement Act (CPSIA) of 2008)

Test Method: U.S. CPSC-CH-E1003.09.1:2011

Element:				Lead		
Requirement: Maximum allowable limit:				90 mg/kg		
Sample Description				Result (mg/kg)		Conclusion
Color / Component		Location	Style	Overall	Potential	
(A)	Bright red coating	A1Y		LT 10	-	Pass
(B)	Orange coating	A2Y		LT 10	-	Pass
(C)	Light yellow coating	A3Y		LT 10	-	Pass
(D)	Dark green coating	A5Y		LT 10	-	Pass
(E)	Light blue coating	A8Y		LT 10	-	Pass
(F)	Purple coating	A11Y		LT 10	-	Pass
(G)	White coating	A16Y		LT 10	-	Pass
(H)	Black coating	A19Y		LT 10	-	Pass
(I)	Clear coating	A21Y		LT 10	-	Pass

LT = Less Than
** = Average of duplicate analyses*

mg/kg = milligrams per kilogram (ppm = parts per million)
Potential = Estimated lead content per component is based on calculation by component individual weight

RESULTS:

HEAVY METALS CONTENT IN SURFACE COATING (Canada Consumer Product Safety Act - Toys Regulations, SOR/2011-17 Sec. 23 with Amendment in SOR/2016-195)

Sample Identity	Color	Location	Style
(A)	Bright red coating	A1Y	
(B)	Orange coating	A2Y	
(C)	Light yellow coating	A3Y	
(D)	Dark green coating	A5Y	
(E)	Light blue coating	A8Y	
(F)	Purple coating	A11Y	
(G)	White coating	A16Y	
(H)	Black coating	A19Y	
(I)	Clear coating	A21Y	

RESULTS:

HEAVY METALS CONTENT IN SURFACE COATING (Canada Consumer Product Safety Act - Toys Regulations, SOR/2011-17 Sec. 23 with Amendment in SOR/2016-195)

Analyte		As	Ba	Cd	Hg	Pb	Sb	Se	
Maximum Limit (mg/kg)	(T)	-	-	-	ND	90	-	-	
	(S)	1000	1000	1000	-	-	1000	1000	

Analyte		As	Ba	Cd	Hg	Pb	Sb	Se	
	Method	Result (mg/kg)							Conclusion
(A)	(T)	LT 10	LT 10	LT 10	ND	LT 10	LT 10	LT 10	PASS
	(S)	-	-	-	-	-	-	-	
(B)	(T)	LT 10	LT 10	LT 10	ND	LT 10	LT 10	LT 10	PASS
	(S)	-	-	-	-	-	-	-	
(C)	(T)	LT 10	LT 10	LT 10	ND	LT 10	LT 10	LT 10	PASS
	(S)	-	-	-	-	-	-	-	
(D)	(T)	LT 10	LT 10	LT 10	ND	LT 10	LT 10	LT 10	PASS
	(S)	-	-	-	-	-	-	-	
(E)	(T)	LT 10	LT 10	LT 10	ND	LT 10	LT 10	LT 10	PASS
	(S)	-	-	-	-	-	-	-	
(F)	(T)	LT 10	LT 10	LT 10	ND	LT 10	LT 10	LT 10	PASS
	(S)	-	-	-	-	-	-	-	
(G)	(T)	LT 10	LT 10	LT 10	ND	LT 10	LT 10	LT 10	PASS
	(S)	-	-	-	-	-	-	-	
(H)	(T)	LT 10	LT 10	LT 10	ND	LT 10	LT 10	LT 10	PASS
	(S)	-	-	-	-	-	-	-	
(I)	(T)	LT 10	50	LT 10	ND	LT 10	LT 10	LT 10	PASS
	(S)	-	-	-	-	-	-	-	

mg/kg = milligrams per kilogram (ppm=parts per million)
**= Average of duplicate analysis*
ND = Not detected (Detection Limit = 10 mg/kg)
(T) = Total Analysis (With referenced to ASTM F963-17 Sec. 8.3)
(S) = Soluble analysis (Canada Product Safety Manual Book 5, Part-B, C-03 (2014))

LT = Less Than
As = Arsenic, Ba = Barium, Cd = Cadmium, Hg = Mercury, Pb = Lead, Sb = Antimony, Se = Selenium

RESULTS:

END OF REPORT