



CONSUMER PRODUCTS SERVICES DIVISION

## CARPENTERS MANUFACTORY LIMITED

**Technical Report:** (8520)070-0409

Date Received: March 10, 2020

April 03, 2020

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CARPENTERS MANUFACTORY LIMITED  
HUANG JIN JI INDUSTRIAL ZONE, SHANG JIE  
VILLAGE, QI SHI TOWN, DONG GUAN CITY,  
GUANG DONG PROVINCE, P.R.CHINA

Sample Description:	A. ) STEM WALL 6 PIECE HAND TOOL PACK B. ) STEM WALL 8 PIECE POWER TOOL PACK C. ) STEM WALL 72 PIECE GEM STONE BLOCKS (MIXED COLOURS) D. ) STEM WALL 548HX548L DOUBLE SIDED DRY WIPE AND MIRROR PANEL	Sample Size:	7
Vendor:	CARPENTERS MANUFACTORY LIMITED	Style No(s):	ME13101, ME13118, ME13989, ME13774
Manufacturer:	N/A	SKN/SKU No.:	N/A
Buyer:	N/A	PO No.:	N/A
Labeled Age Grade:	3 YEARS+	Ref #:	N/A
Appropriate Age Grade:	NOT REQUESTED	Country of Origin:	CHINA
Client Specified Age Grade:	3+	Assortment No.:	N/A
Grade:		Country of Destination:	GLOBAL
Tested Age Grade:	OVER 3 YEARS OF AGE		
UPC Code:	6955920013101, 6955920013118, 6955920013989, 6955920013774		

### 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).
- 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 cellulose nitrate requirements of Canada Toys Regulations, SOR/2011-17, section 21.



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### **EXECUTIVE SUMMARY:**

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

- The mechanical hazards requirements of the tested sections of Canada Consumer Product Safety Act, Toys Regulations, SOR/2011-17 and Schedule 2.
- 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.
- 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 initial total heavy metals content analysis for 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 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 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.



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### **EXECUTIVE SUMMARY:**

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

- 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.
- The migration of certain elements requirements of the European Standard, "Safety of Toys", EN 71 Part 3: 2019.
- The 17 phthalates content requirements of the client's specifications.
- The migration of certain elements requirements of the European Standard, "Safety of Toys", EN 71 Part 3: 2013+A3:2018.

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: The manufacturer / importer information was present on the packaging only. It has to be noted that, according to TSD 2009/48/EC, the manufacturers/ importer shall indicate their name, registered trade name or registered trade mark and the address at which they can be contacted on the toy, or, where that is not possible, on its packaging or in a document accompanying the toy.

Note: The product identification is present on the packaging only. It has to be noted that, according to TSD 2009/48/EC, manufacturers shall ensure that their toys bear a type, batch, serial or model number or other element allowing their identification, or, where the size or nature of the toy does not allow it, that the required information is provided on the packaging or in a document accompanying the toy.

Note: According to the associated documents of Consumer Product Safety Improvement Act (CPSIA) of 2008, exemptions were granted to certain materials or products, such as natural materials / paper and similar materials / CMYK process printing inks / metal & alloys / electronics devices components / ordinary books / dyed & undyed textiles. Therefore, the lead content analysis of some components was not conducted.

Note: According to ASTM F963-17, "Standard consumer safety specification on toy safety", Annex A11.10.1.5, exemption were granted to paper and paperboard. Therefore, the heavy metals content in substrate analysis of some components of ASTM F963-17, Section 4.3.5.2(2)(b) was not conducted.

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 (2017) has/have not been conducted.



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**EXECUTIVE SUMMARY:**

- Note: Exemptions were granted to certain materials or products, such as natural materials / paper and similar materials / CMYK process printing inks / metal & alloys / dyed & undyed textiles. Therefore, the lead content analysis of some components was not 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/ is



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**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	1500.53(b)
Torque Test	4 in-lbs	1500.53(e)
Tension Test	15 lbs	1500.53(f)
Compression Test	30 lbs	1500.53(g)



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**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	N/A
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	M
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	M
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)	M
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*



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## **RESULTS:**

### **LABELING AND INSTRUCTIONAL REQUIREMENT (ASTM F963-17)**

<b>Section</b>	<b>Requirement</b>	<b>Result</b>
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	M
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)	M
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	M
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))**

<b>Requirement</b>	<b>Test Method Reference</b>	<b>Findings</b>
Burn rate no greater than 0.1 of an inch per second	16 CFR 1500.44	Ignited but Self-Extinguished.



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## **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.

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

<b>Section</b>	<b>Parameter / Requirement</b>	<b>Result</b>
<b>Mechanical Hazards</b>		
4	Flexible film bag used for package	M
7	Small Toys and Detachable component	NA
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	M
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	M
<b>Specific Products - Dolls, Plush Toys and Soft Toys</b>		
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





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## **RESULTS:**

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

Section	Parameter / Requirement	Result
<b>Specific Products</b>		
35*&36*	Plant seeds	M
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

### **CANADA CONSUMER PRODUCT SAFETY ACT, SCHEDULE 2**

Section	Parameter / Requirement	Result
<b>Mechanical Hazards</b>		
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-accredited 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*



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**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.



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**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	M
4.11	Cords	NA
4.12	Folding mechanisms	NA
4.13	Holes, clearances and accessibility of mechanisms	M
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*



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**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*



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## **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) MEETS the requirement of this Subclause				
N/A	Not Applicable				
NR	Not Requested				
NE	Not Evaluated				
NT	Not Tested				
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
4.17.4 & 7.26	Certain projectiles toys without stored energy	NA
4.18 & 7.4	Aquatic toys and inflatable toys	NA



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**RESULTS:**

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

Subclause	Requirement	Result
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
<b>FOR TOYS INTENDED FOR CHILDREN UNDER 36 MONTHS</b>		
5.1	General	NA
5.1a	Small parts – as received	NA
5.1b	Small parts, sharp points, sharp edges – after tests	NA
5.1c	Cross section <2mm metal points & wires	NA
5.1e	Toys contain glue	NA
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
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



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**RESULTS:**

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

Subclause	Requirement	Result
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	M
<b>WARNINGS, INSTRUCTIONS FOR USE</b>		
7.1	General	M
7.2	Toys not intended for children under 36 months	M
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*





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**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	-	-



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## **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.	Grey plastic	Tools Drill	A-B B
B.	Green plastic	Handle	A-B
C.	Red plastic	Drill	B
D.	Clear plastic	LED	B
E.	Flesh plastic	Block	C
F.	Clear red plastic	Gem	C
G.	Clear orange plastic	Gem	C
H.	Clear yellow plastic	Gem	C
I.	Clear green plastic	Gem	C
J.	Clear blue plastic	Gem	C
K.	Clear purple plastic	Gem	C
L.	Clear laminated multicolor printed white paper board	Shape card	C
M.	Shiny silver printed bright clear plastic / white plastic	Mirror	D
N.	Light flesh plastic	Plastic screw	D
Type VI: Other Materials Whether Mass Coloured Or Not			
O.	Multicolor printed white paper	Instruction	C
Type I: Coatings			
P.	Clear lacquer	Clear lacquer paint (A21Y)	B
Type VI: Other Materials Whether Mass Coloured Or Not			
Q.	Light brown wood	Wooden board	B





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## 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)	
O.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2		PASS
P.	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	0.0606	PASS
Q.	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

\* = Average of duplicate analysis

As = Arsenic, Ba = Barium, Cd = Cadmium,

Cr = Chromium, Hg = Mercury, Pb = Lead,

Sb = Antimony, Se = Selenium



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## 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)	Grey plastic	Tools	A-B	LT 10	LT 10	LT 10	Pass
	Green plastic	Drill	B				
	Red plastic	Handle	A-B				
	Clear plastic	Drill	B				
(B)	Flesh plastic	LED	B	LT 10	LT 10	LT 10	Pass
	Clear red plastic	Block	C				
	Clear orange plastic	Gem	C				
	Clear yellow plastic	Gem	C				
(C)	Clear green plastic	Gem	C	LT 10	LT 10	LT 10	Pass
	Clear blue plastic	Gem	C				
	Clear purple plastic	Gem	C				
(D)	Clear laminated	Shape card	C	LT 10	LT 10	LT 10	Pass
	multicolor printed						
	white paper board						
	Shiny silver printed	Mirror	D				
	bright clear plastic /						
	white plastic						
	Light flesh plastic	Plastic screw	D				
(E)	Black soft plastic	Wire	B	LT 10	LT 10	LT 10	Pass
	Red soft plastic	Wire	B				
	Translucent red soft plastic	Wire	B				
(F)	Flat black plastic	Switch	B	LT 10	LT 10	LT 10	Pass
	Flat white plastic	Gear	B				
	Dull translucent white plastic /	Motor	B				
	Matt black foam sticker	Washer of motor	B				

LT = Less than

# = Insufficient sample for duplicate analyses

mg/kg = milligrams per kilogram (ppm = parts per million)

Operator: Zhang Shao Zheng, Ryan



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**RESULTS:**

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

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) All coating	Instruction	C	LT 10	Pass
(B) Clear lacquer	Clear lacquer paint (A21Y)	B	LT 10	Pass

*LT = Less than*

*\* = Average of duplicate analyses*

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

**RESULTS:**

**CLIENT'S 17 PHTHALATES CONTENT SPECIFICATION**

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

Color / Component	Location	Style
A. Composite of All coating	Instruction	C
B. Grey plastic	Tools	A-B
Green plastic	Drill	B
Red plastic	Handle	A-B
C. Clear plastic	Drill	B
Flesh plastic	LED	B
Clear red plastic	Block	C
D. Clear orange plastic	Gem	C
Clear yellow plastic	Gem	C
Clear green plastic	Gem	C
E. Clear blue plastic	Gem	C
Clear purple plastic	Gem	C
Clear laminated multicolor printed white paper board	Shape card	C
F. Shiny silver printed bright clear plastic / white plastic	Mirror	D
Light flesh plastic	Plastic screw	D
G. Black soft plastic	Wire	B
Red soft plastic	Wire	B
Translucent red soft plastic	Wire	B
H. Flat black plastic	Switch	B
Flat white plastic	Gear	B
I. Dull translucent white plastic / Matt black foam sticker	Motor	B
	Washer of motor	B
J. Clear lacquer	Clear lacquer paint (A21Y)	B



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## **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	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

*Detection Limit :*

*DNOP = Di-n-octyl phthalate (0.005%) 117-84-0*

*DINP p = 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*







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## 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

Results reported in percentage

LT = Less than

ND = None detected

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  $\geq 0.3\%$  of dihexyl phthalate 68515-51-5 / 68648-93-1



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## **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.	All coating	Instruction	C
B.	Grey plastic	Tools	A-B
	Green plastic	Drill	B
	Red plastic	Handle	A-B
C.	Clear plastic	Drill	B
	Flesh plastic	LED	B
	Clear red plastic	Block	C
D.	Clear orange plastic	Gem	C
	Clear yellow plastic	Gem	C
	Clear green plastic	Gem	C
E.	Clear blue plastic	Gem	C
	Clear purple plastic	Gem	C
	Clear laminated multicolor printed white paper board	Shape card	C
F.	Shiny silver printed bright clear plastic / white plastic	Mirror	D
	Light flesh plastic	Plastic screw	D
G.	Black soft plastic	Wire	B
	Red soft plastic	Wire	B
	Translucent red soft plastic	Wire	B
H.	Flat black plastic	Switch	B
	Flat white plastic	Gear	B
I.	Dull translucent white plastic /	Motor	B
	Matt black foam sticker	Washer of motor	B
J.	Clear lacquer	Clear lacquer paint (A21Y)	B



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## **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	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

#### *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*



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## 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.	All coating	Instruction	C
B.	Grey plastic	Tools	A-B
	Green plastic	Drill	B
	Red plastic	Handle	A-B
C.	Clear plastic	Drill	B
	Flesh plastic	LED	C
	Clear red plastic	Block	C
D.	Clear orange plastic	Gem	C
	Clear yellow plastic	Gem	C
	Clear green plastic	Gem	C
E.	Clear blue plastic	Gem	C
	Clear purple plastic	Gem	C
	Clear laminated multicolor printed white paper board	Shape card	C
F.	Shiny silver printed bright clear plastic / white plastic	Mirror	D
	Light flesh plastic	Plastic screw	D
G.	Clear lacquer	Clear lacquer paint (A21Y)	B

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

#### 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



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## **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.	All coating	Instruction	C
B.	Grey plastic	Tools	A-B
	Green plastic	Drill	B
	Red plastic	Handle	A-B
C.	Clear plastic	Drill	B
	Flesh plastic	LED	C
	Clear red plastic	Block	C
D.	Clear orange plastic	Gem	C
	Clear yellow plastic	Gem	C
	Clear green plastic	Gem	C
E.	Clear blue plastic	Gem	C
	Clear purple plastic	Gem	C
	Clear laminated multicolor printed white paper board	Shape card	C
F.	Shiny silver printed bright clear plastic / white plastic	Mirror	D
	Light flesh plastic	Plastic screw	D
G.	Black soft plastic	Wire	B
	Red soft plastic	Wire	B
	Translucent red soft plastic	Wire	B
H.	Flat black plastic	Switch	B
	Flat white plastic	Gear	B
I.	Dull translucent white plastic /	Motor	B
	Matt black foam sticker	Washer of motor	B
J.	Clear lacquer	Clear lacquer paint (A21Y)	B



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## **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	LT 0.005	LT 0.005	LT 0.005	LT 0.020	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

### *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



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# **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.	All coating	Instruction	C
B.	Clear lacquer	Clear lacquer paint (A21Y)	B

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	40	LT 10	ND	LT 10	LT 10	LT 10	PASS
	(S)	-	-	-	-	-	-	-	
(B)	(T)	LT 10	12	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





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## 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 (mg/kg)	
	Color / Component	Location	Style		
(A)	All coating	Instruction	C	LT 10	PASS
(B)	Grey plastic	Tools	A-B	LT 10	PASS
	Green plastic	Drill	B		
	Red plastic	Handle	A-B		
(C)	Clear plastic	Drill	B	LT 10	PASS
	Flesh plastic	LED	B		
	Clear red plastic	Block	C		
(D)	Clear orange plastic	Gem	C	LT 10	PASS
	Clear yellow plastic	Gem	C		
	Clear green plastic	Gem	C		
(E)	Clear blue plastic	Gem	C	LT 10	PASS
	Clear purple plastic	Gem	C		
	Clear laminated multicolor printed white paper board	Shape card	C		
(F)	Shiny silver printed bright clear plastic / white plastic	Mirror	D	LT 10	PASS
	Light flesh plastic	Plastic screw	D		
(G)	Silvery metal	Staple	C	LT 10	PASS
(H)	Dull silvery metal	Screw	B	LT 10	PASS
(I)	Clear lacquer	Clear lacquer paint (A21Y)	B	LT 10	PASS

LT = Less Than

\* = Average of duplicate analyses

mg/kg =milligrams per kilogram (ppm=parts per million)

ND=Not detected



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**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.	All coating	Instruction	C
B.	Grey plastic	Tools	A-B
	Green plastic	Drill	B
	Red plastic	Handle	A-B
C.	Clear plastic	Drill	B
	Flesh plastic	LED	B
	Clear red plastic	Block	C
D.	Clear orange plastic	Gem	C
	Clear yellow plastic	Gem	C
	Clear green plastic	Gem	C
E.	Clear blue plastic	Gem	C
	Clear purple plastic	Gem	C
	Clear laminated multicolor printed white paper board	Shape card	C
F.	Shiny silver printed bright clear plastic / white plastic	Mirror	D
	Light flesh plastic	Plastic screw	D
G.	Clear lacquer	Clear lacquer paint (A21Y)	B



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## 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).

Test Parameter:	Listed Phthalates (See Remark)		
Requirement:	Each 0.1%		
Sample ID	Detected Analyte	Concentration (%)	Conclusion
A.	ND	ND	PASS
B.	ND	ND	PASS
C.	ND	ND	PASS
D.	ND	ND	PASS
E.	ND	ND	PASS
F.	ND	ND	PASS
G.	ND	ND	PASS

Results reported in percentage

ND = None detected

Detection Limit: Each Phthalate (0.005%)

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



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**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)	All coating	Instruction	C	LT 10	-	PASS
(B)	Clear lacquer	Clear lacquer paint (A21Y)	B	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*



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# **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 (mg/kg)	
	Color / Component	Location	Style		
(A)	Grey plastic	Tools	A-B	LT 10	PASS
	Green plastic	Drill	B		
	Red plastic	Handle	A-B		
(B)	Clear plastic	Drill	B	LT 10	PASS
	Flesh plastic	LED	C		
	Clear red plastic	Block	C		
(C)	Clear orange plastic	Gem	C	LT 10	PASS
	Clear yellow plastic	Gem	C		
	Clear green plastic	Gem	C		
(D)	Clear blue plastic	Gem	C	LT 10	PASS
	Clear purple plastic	Gem	C		
	Clear laminated multicolor printed white paper board	Shape card	C		
(E)	Shiny silver printed bright clear plastic / white plastic	Mirror	D	LT 10	PASS
	Light flesh plastic	Plastic screw	D		
(F)	Silvery metal	Staple	C	LT 10	PASS
(G)	Dull silvery metal	Screw	B	LT 10	PASS

LT = Less Than

\* = Average of duplicate analyses

mg/kg = milligrams per kilogram (ppm = parts per million)



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**RESULTS:**

**TOTAL HEAVY METALS CONTENT - INITIAL ANALYSIS FOR 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 8.3.1 and Annex A7.

Sample Identity	Color	Location	Style
A	All coating	Instruction	C

Analyte	As	Ba	Cd	Cr	Hg	Pb	Sb	Se	
Max. Limit (mg/kg)	25	1000	75	60	60	90	60	500	

Analyte	As	Ba	Cd	Cr	Hg	Pb	Sb	Se	Conclusion
Sample	Result (mg/kg)								
A	LT 7	40	LT 10	LT 7	LT 5	LT 10	LT 10	LT 10	Pass

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

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



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**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.	Clear lacquer	Clear lacquer paint (A21Y)	B

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	0.0606	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



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**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	Grey plastic	Tools Drill	A-B B
B	Green plastic	Handle	A-B
C	Red plastic	Drill	B
D	Clear plastic	LED	B
E	Flesh plastic	Block	C
F	Clear red plastic	Gem	C
G	Clear orange plastic	Gem	C
H	Clear yellow plastic	Gem	C
I	Clear green plastic	Gem	C
J	Clear blue plastic	Gem	C
K	Clear purple plastic	Gem	C
L	Clear laminated multicolor printed white paper board	Shape card	C
M	Shiny silver printed bright clear plastic / white plastic	Mirror	D
N	Light flesh plastic	Plastic screw	D
O	Light brown wood	Wooden board	B







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## **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))

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)	
M	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2		PASS
N	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2		PASS
O	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.



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## **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.	Grey plastic	Tools Drill	A-B B
B.	Green plastic	Handle	A-B
C.	Red plastic	Drill	B
D.	Clear plastic	LED	B
E.	Flesh plastic	Block	C
F.	Clear red plastic	Gem	C
G.	Clear orange plastic	Gem	C
H.	Clear yellow plastic	Gem	C
I.	Clear green plastic	Gem	C
J.	Clear blue plastic	Gem	C
K.	Clear purple plastic	Gem	C
L.	Clear laminated multicolor printed white paper board	Shape card	C
M.	Shiny silver printed bright clear plastic / white plastic	Mirror	D
N.	Light flesh plastic	Plastic screw	D
O.	Multicolor printed white paper	Instruction	C
P.	Clear lacquer	Clear lacquer paint (A21Y)	B
Q.	Light brown wood	Wooden board	B



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## **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					
		A.	B.	C.	D.	E.	F.
Aluminium (Al)	70000	LT 2	LT 2	LT 2	LT 2	LT 2	3
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	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	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)		-	-	-	0.0158	-	0.0650
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass



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## 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					
		G.	H.	I.	J.	K.	L.
Aluminium (Al)	70000	3	3	3	4	3	46
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	LT 0.050	LT 0.050	LT 0.050	0.079
Chromium VI (Cr VI)	0.2						#LT0.0020
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	5
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	34
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



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## 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.	Q.
Aluminium (Al)	70000		15	LT 2	LT 2	LT 2	LT 2
Arsenic (As)	47		LT 2	LT 2	LT 2	LT 2	LT 2
Boron (B)	15000		LT 2	LT 2	LT 2	LT 2	LT 2
Barium (Ba)	18750		LT 2	LT 2	LT 2	LT 2	LT 2
Cadmium (Cd)	17		LT 2	LT 2	LT 2	LT 2	LT 2
Cobalt (Co)	130		LT 2	LT 2	LT 2	LT 2	LT 2
Chromium III (Cr III)	460		0.12	LT 0.050	LT 0.050	LT 0.050	LT 0.050
Chromium VI (Cr VI)	0.2		#LT0.0020				
Copper (Cu)	7700		LT 2	LT 2	LT 2	LT 2	LT 2
Mercury (Hg)	94		LT 2	LT 2	LT 2	LT 2	LT 2
Manganese (Mn)	15000		LT 2	LT 2	4	LT 2	LT 2
Nickel (Ni)	930		2	LT 2	LT 2	LT 2	LT 2
Lead (Pb)	23		LT 2	LT 2	LT 2	LT 2	LT 2
Antimony (Sb)	560		LT 2	LT 2	LT 2	LT 2	LT 2
Selenium (Se)	460		LT 2	LT 2	LT 2	LT 2	LT 2
Tin (Sn)	180000		LT 2	LT 2	LT 2	LT 2	LT 2
Organic tin	12		LT 2	LT 2	LT 2	LT 2	LT 2
Strontium (Sr)	56000		LT 2	LT 2	81	LT 2	LT 2
Zinc (Zn)	46000		2	LT 2	LT 2	77	LT 2
Mass of trace amount (gram)			-	-	-	0.0606	-
Conclusion			Pass	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.



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## **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.	Grey plastic	Tools Drill	A-B B
B.	Green plastic	Handle	A-B
C.	Red plastic	Drill	B
D.	Clear plastic	LED	B
E.	Flesh plastic	Block	C
F.	Clear red plastic	Gem	C
G.	Clear orange plastic	Gem	C
H.	Clear yellow plastic	Gem	C
I.	Clear green plastic	Gem	C
J.	Clear blue plastic	Gem	C
K.	Clear purple plastic	Gem	C
L.	Clear laminated multicolor printed white paper board	Shape card	C
M.	Shiny silver printed bright clear plastic / white plastic	Mirror	D
N.	Light flesh plastic	Plastic screw	D
O.	Multicolor printed white paper	Instruction	C
P.	Clear lacquer	Clear lacquer paint (A21Y)	B
Q.	Light brown wood	Wooden board	B



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## 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					
		R.	S.	T.	U.	V.	W.
Aluminium (Al)	70000	LT 2	LT 2	LT 2	LT 2	LT 2	3
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	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	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)		-	-	-	0.0158	-	0.0650
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass





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## 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					
		X.	Y.	Z.	AA.	BB.	CC.
Aluminium (Al)	70000	3	3	3	4	3	46
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	LT 0.050	LT 0.050	LT 0.050	0.079
Chromium VI (Cr VI)	0.053						#LT0.0020
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	5
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	34
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



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## 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					
		DD.	EE.	FF.	GG.	HH.	-
Aluminium (Al)	70000	15	LT 2	LT 2	LT 2	LT 2	-
Arsenic (As)	47	LT 2	LT 2	LT 2	LT 2	LT 2	-
Boron (B)	15000	LT 2	LT 2	LT 2	LT 2	LT 2	-
Barium (Ba)	18750	LT 2	LT 2	LT 2	LT 2	LT 2	-
Cadmium (Cd)	17	LT 2	LT 2	LT 2	LT 2	LT 2	-
Cobalt (Co)	130	LT 2	LT 2	LT 2	LT 2	LT 2	-
Chromium III (Cr III)	460	0.12	LT 0.050	LT 0.050	LT 0.050	LT 0.050	-
Chromium VI (Cr VI)	0.053	#LT0.0020					
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	LT 2	-
Mercury (Hg)	94	LT 2	LT 2	LT 2	LT 2	LT 2	-
Manganese (Mn)	15000	LT 2	LT 2	4	LT 2	LT 2	-
Nickel (Ni)	930	2	LT 2	LT 2	LT 2	LT 2	-
Lead (Pb)	23	LT 2	LT 2	LT 2	LT 2	LT 2	-
Antimony (Sb)	560	LT 2	LT 2	LT 2	LT 2	LT 2	-
Selenium (Se)	460	LT 2	LT 2	LT 2	LT 2	LT 2	-
Tin (Sn)	180000	LT 2	LT 2	LT 2	LT 2	LT 2	-
Organic tin	12	LT 2	LT 2	LT 2	LT 2	LT 2	-
Strontium (Sr)	56000	LT 2	LT 2	81	LT 2	LT 2	-
Zinc (Zn)	46000	2	LT 2	LT 2	77	LT 2	-
Mass of trace amount (gram)		-	-	-	0.0606	-	-
Conclusion		Pass	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.

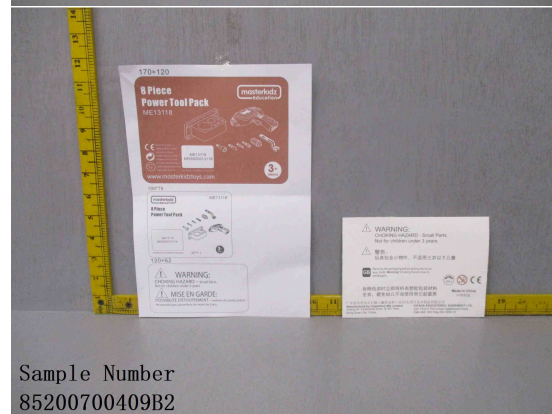
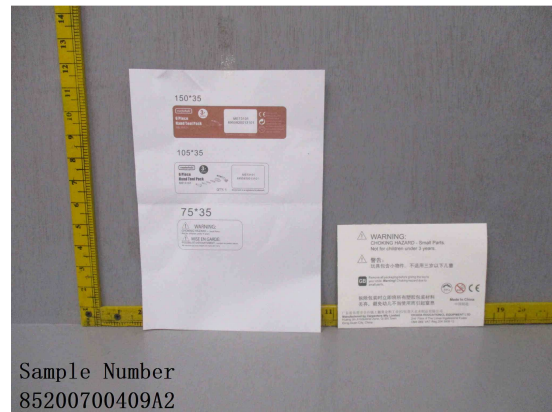
- Result(s) of organic tin was (were) calculated while assuming the tin content wholly contributed from tributyltin cation unless specified.

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:**



**RESULTS:**



Sample Number  
85200700409C1



Sample Number  
85200700409C2



Sample Number  
85200700409D1

END OF REPORT