



CONSUMER PRODUCTS SERVICES DIVISION

## CARPENTERS MANUFACTORY LIMITED

**Technical Report:** (8518)030-0024  
Date Received: January 30, 2018

February 08, 2018  
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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: BOTTOM LIGHT GAME TRAY (USED WITH MASTERKIDZ 600L SQUARE LED LIGHT BOX) /3 COLOUR TRANSLUCENT ACRYLIC BALLS 45 PIECE SET / 6 COLOUR TRANSLUCENT ACRYLIC CYLINDERS 48 PIECE SET

1. ) A
2. ) B
3. ) C

Vendor:	CARPENTERS MANUFACTORY LIMITED	Sample Size:	6
Manufacturer:	N/A	Style No(s):	ME12388, ME13040, ME13057
Buyer:	N/A	SKN/SKU No.:	N/A
Labeled Age Grade:	N/A	PO No.:	N/A
Appropriate Age Grade:	N/A	Ref #:	N/A
Client Specified Age Grade:	N/A	Country of Origin:	CHINA
Tested Age Grade:	OVER 3 YEARS OF AGE	Assortment No.:	N/A
UPC Code:	N/A	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 mechanical and physical properties requirements of the tested subclauses of the AS/NZS Standard, "Safety of toys", AS/NZS 8124: Part 1: 2016.
- The flammability requirements of the AS/NZS Standard, "Safety of toys", AS/NZS 8124: Part 2: 2016.
- 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, clauses 1-6.
- The flammability requirements of the European Standard "Safety of Toys", EN 71: Part 2: 2011+ A1: 2014.
- The total lead content of 100ppm requirements by composite testing in substrate materials (Consumer Products Safety Improvement Act (CPSIA) of 2008).
- 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).



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### **EXECUTIVE SUMMARY:**

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

- 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+A1:2014.
- 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 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 BBP, DBP & DEHP content requirements by composite testing of the Consumer Product Safety Improvement Act (CPSIA) of 2008 Sec. 108(a) Prohibition On Sale of Certain Products Containing Specified Phthalates.
- The DNOP, DIDP & DINP content requirements by composite testing of the Consumer Product Safety Improvement Act (CPSIA) of 2008 Sec. 108(b)(1) Prohibition On Sale of Certain Products Containing Specified Phthalates.
- 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 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 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 17 phthalates content requirements of the client's specifications.
- The Polycyclic Aromatic Hydrocarbons (PAHs) Content requirement of German Product Safety Commission GS Specification AfPS GS 2014:01 PAK, "Testing and validation of PAHs in products in the course of GS-Mark Certification".

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: No relevant packaging was provided with the submitted sample(s). Consequently, evaluation of the applicable labelling requirements of the ASTM F963, "Standard Consumer Safety Specification on Toy Safety", was not conducted.



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**EXECUTIVE SUMMARY:**

- Note: No relevant packaging was provided with the submitted sample(s), consequently, evaluation of the labeling requirements of the European Standard, "Safety of toys", EN 71:Part 1:2014, Clause 7, was not conducted.
- Note: No relevant packaging was provided with the submitted sample(s). Consequently, evaluation for the applicable labeling requirements of the Australian Standard AS/NZS 8124 – Part 1 Mechanical and Physical Properties, was not conducted.
- Note: No packaging was provided with the submitted sample(s).
- Note: No accessible surface coating was present on the received sample(s). Consequently, the lead content analysis of surface coatings according to modified 16 CFR 1303, "Ban of lead-containing paint and certain consumer products bearing lead-containing paint" (Consumer Products Safety Improvement Act (CPSIA) of 2008), was not conducted.
- Note: No accessible surface coating was present on the received sample(s). Consequently, the heavy metals content analysis of surface coatings according to ASTM F963-17, "Standard consumer safety specification on toy safety", Section 4.3.5.1(2), was not conducted.
- Note: No surface coating was present on the received sample(s). Consequently, the heavy metals content analysis on surface coatings according to the Canada Consumer Product Safety Act - Toys Regulations, SOR/2011-17 Sec. 23 with Amendment in SOR/2016-195 or the lead content analysis on surface coatings according to the Canada Consumer Product Safety Act, Surface Coating Materials Regulation, SOR/2016-193 Sec 2 and 6 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 NO.1907/2006 amines (azodyes) content / EC Directive 2009/48/EC formamide 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/ zm



**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 F963-16, "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

<b>Test</b>	<b>Test Parameters</b>	<b>Standard Reference</b>
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)



**RESULTS:**

**PHYSICAL AND MECHANICAL HAZARDS (ASTM F963-16)**

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	N/A
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	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)	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:**

**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**

**Test Method : CANADA CONSUMER PRODUCT SAFETY ACT**

<b>REASONABLY FORESEEABLE USE TESTS</b>	
<b>Test</b>	<b>Test Parameters</b>
Drop	4 x 3 ft
Push/Pull	10 lbs



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**RESULTS:**

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

Section	Parameter / Requirement	Result
<b>Mechanical Hazards</b>		
4	Flexible film bag used for package	NA
7	Small Toys and Detachable component	NA
8	Metal edge	NA
9	Wires frames	NA
10	Plastic Edges	M
11	Wood	NA
12	Glass	NA
13	Nails and fasteners	NA
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
<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
<b>Specific Products</b>		
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



**RESULTS:**

**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*





**RESULTS:**

**APPROPRIATE AGE GRADE DETERMINATION**

<p>The Appropriate Age Grade is determined with reference to the EN71 : Part 1 : 2014, 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).</p>	
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				
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
SF	Finnish language	I	Italian language	SZ	Swiss language
FR	French language	N	Norwegian language		

**RESULTS:**

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

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
4.17.1	Projectiles – General	NA
4.17.2	Projectiles toys without stored energy	NA
4.17.3 & 7.7	Projectile toys with stored energy	NA

**RESULTS:**

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

Subclause	Requirement	Result
4.17.4 & 7.7	Bows and arrows	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
<b>FOR TOYS INTENDED FOR CHILDREN UNDER 36 MONTHS</b>		
5	Cleaning instruction for item intended for child under 3 years of age	NA
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 &	Cords on toys	NA
5.4(a)	Cords connected to self-retraction mechanism or in pull along toys	NA
5.4(b) & 7.22	Cords and chains that can form tangled loop or noose	NA
5.4(c) & 7.22	Fixed loop of cords or chains	NA
5.4(d)	Nooses	NA
5.4(e)	Self-retraction mechanism	NA
5.4(f) & 7.11	Toy across cradle, cot or perambulator	NA
5.4(g) & 7.22	Cords and chains with free end (exclude pull along toy)	NA
5.4(h)	Cords and chains with free end on pull along toy	NA
5.4(i) & 7.21	Electrical cables	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)**

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
6	Packaging	NA
<b>WARNINGS, INSTRUCTIONS FOR USE</b>		
7.1	General	NA
7.2	Toys not intended for children under 36 months	NA
7.5	Functional toys	NA



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**RESULTS:**

**REQUIREMENTS & TEST METHODS CROSS REFERENCE TABLE FOR PART 1**

Sub-clause	Test Method	Sub-clause	Test Method	Sub-clause	Test Method	Sub-clause	Test Method
4.3	8.25.1	4.14.2	8.3, 8.4.2.1, 8.5, 8.7, 8.8, 8.11, 8.12	4.17.3	8.24.1	5.3	8.4.2.1, 8.25
4.5	8.5, 8.7, 8.11, 8.12	4.15.1.3	8.11, 8.12, 8.21, 8.22	4.17.4	8.24.2	5.4	8.20, 8.36, 8.38, 8.39, 8.40
4.6	8.2, 8.3, 8.4.2.1, 8.5, 8.7, 8.8, 8.14	4.15.1.4	8.23.1	4.18	8.2, 8.3, 8.4.2.1	5.5	8.15
4.7	8.11	4.15.1.5	8.26.1	4.20	8.28	5.6	8.29
4.8	8.12, 8.13	4.15.1.8	8.29	4.21	8.30	5.8	8.16
4.9	8.4.2.3, 8.11, 8.12	4.15.2.4	8.26.2	4.22	8.3, 8.4.2.1, 8.5, 8.6, 8.7, 8.8, 8.32	5.10	8.3, 8.4.2.1, 8.5, 8.6, 8.7, 8.8, 8.9, 8.32
4.10.1	8.18.2, 8.18.3	4.15.3	8.21, 8.23.1	4.23	8.2, 8.3, 8.4.2.1, 8.4.2.2, 8.5, 8.6, 8.7, 8.8, 8.34, 8.35	5.11	8.33
4.10.2	8.5, 8.6, 8.7, 8.11, 8.12	4.15.4	8.21, 8.23.1	4.24	8.37	5.12	8.3, 8.4.2.1, 8.5, 8.6, 8.7, 8.8, 8.9,
4.11	8.2, 8.3, 8.4.2.1, 8.9, 8.17	4.15.5	8.11, 8.12, 8.21, 8.22, 8.26.3, 8.27	4.25	8.2, 8.3, 8.4.2.1, 8.5, 8.7, 8.8, 8.32.1	5.13	8.3, 8.4.2.1, 8.5, 8.7, 8.8, 8.32
4.13	8.19	4.16	8.23.2	5.1	8.2, 8.3, 8.4.2.1, 8.5, 8.7, 8.8, 8.9, 8.11, 8.12		
4.14.1	8.31.1, 8.31.2	4.17.1	8.4.2.3				



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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:**

**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 ISO Standard, "Safety of toys", ISO 8124:Part 1:2016.

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 8124.1:2016)**

Subclause	Requirement	Result
4.1	Normal use	M
4.2	Reasonably foreseeable abuse	M
4.3	Material	-
4.3.1	Material quality	M
4.3.2	Expanding materials	N/A
4.4	Small parts	-
4.4.1	Small parts (under 36 months)	N/A
4.4.2	Small parts warning (36 months and over but under 72 months)	N/A
4.5	Shape, size and strength of certain toys	-
4.5.1	Squeeze toys, rattles, fasteners, and certain other toys and components of toys	N/A
4.5.2a	Small ball (under 36 months)	N/A
4.5.2b	Small ball warning (36 months and over but under 96 months)	N/A
4.5.3	Pompoms	N/A
4.5.4	Pre-school play figures	N/A
4.5.5	Toy pacifiers	N/A
4.5.6	Balloons Warning	N/A
4.5.7	Marbles Warning	N/A
4.5.8	Hemispheric-shaped toys	N/A
4.6	Edges	-
4.6.1	Accessible sharp edges of glass or metal	N/A
4.6.2	Functional sharp edges warning	N/A
4.6.3	Edges on metal toys	N/A
4.6.4	Edges on moulded toys	M
4.6.5	Edges on exposed bolts or threaded rods	N/A
4.7	Points	-
4.7.1	Accessible sharp points	M
4.7.2	Functional sharp points warning	N/A
4.7.3	Wooden toys	N/A
4.8	Projections	-
4.8.1	General	N/A
4.8.2	Special considerations for bath toy projections	-
4.9	Metal wires and rods	-
4.9a	Metal wires and rods intended to be bent	N/A
4.9b	Metal wires and rods likely to be bent	N/A
4.9c	End of spokes	N/A
4.10	Plastic film or plastic bags in packaging and in toys	N/A
4.11	Cords and elastics	-
4.11.1	Cords and elastics (under 18 months)	N/A
4.11.2	Self-retracting pull cords (under 18 months)	N/A





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**RESULTS:**

**MECHANICAL & PHYSICAL PROPERTIES – (AS/NZS 8124.1:2016)**

Subclause	Requirement	Result
4.11.3	Cords for pull toys (under 36 months)	N/A
4.11.4	Cords on toy bags	N/A
4.11.5	Crib or playpen toys and mobiles warning & instruction for use	N/A
4.11.6	Crib gyms and similar toys warning & instruction for use	N/A
4.11.7	Cords, strings and lines for flying toys	N/A
	Warning - Toy kites and other flying toys with cord	N/A
4.12	Folding mechanisms	-
4.12.1	Toy pushchairs, perambulators and similar toys	N/A
4.12.2	Other toys with folding mechanisms	N/A
4.12.3	Hinge-line clearance	N/A
4.13	Holes, clearances and accessibility of mechanisms	-
4.13.1	Circular holes in rigid materials (under 60 months)	M
4.13.2	Accessible clearances for movable segments (under 96 months)	N/A
4.13.3	Chains or belts in ride-on toys	N/A
4.13.4	Other driving mechanisms	N/A
4.13.5	Winding keys (under 36 months)	N/A
4.14	Springs	N/A
4.15	Stability and overload requirements	-
4.15.1	Stability of ride-on toys and seats (under 60 months)	-
4.15.1.1	Sideways stability, feet available for stabilization	N/A
4.15.1.2	Sideways stability, feet unavailable for stabilization	N/A
4.15.1.3	Fore and aft stability	N/A
4.15.2	Overload requirements for ride-on toys and seats	N/A
4.15.3	Stability of stationary floor toys	N/A
4.16	Enclosures	-
4.16.1	Ventilation	N/A
4.16.2	Closures	-
4.16.2.1	Lids, doors and similar devices	N/A
4.16.2.2	Lid support for toy chests and similar toys	N/A
	Instruction for assembly	N/A
4.16.3	Toys that enclose the head	N/A
4.17	Simulated protective equipment	N/A
	Warning	N/A
4.18	Projectile toys	-
4.18.1	General	-
4.18.2	Projectiles	N/A
4.18.3	Projectile toys with stored energy	N/A
	Instruction for use	N/A
4.18.4	Projectile toys without stored energy	N/A
	Instruction for use	N/A
4.19	Rotors and propellers	N/A



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**RESULTS:**

**MECHANICAL & PHYSICAL PROPERTIES – (AS/NZS 8124.1:2016)**

Subclause	Requirement	Result
4.20	Aquatic toys	N/A
	Warning	N/A
4.21	Braking	N/A
4.22	Toy bicycles	-
4.22.1	Toy bicycles – Instruction for use	N/A
4.22.2	Toy bicycles – Maximum saddle height	N/A
4.22.3	Toy bicycles – Braking requirements	N/A
4.23	Speed limitation of electrically driven ride-on toys	N/A
4.24	Toys containing a heat source	N/A
4.25	Liquid-filled toys	N/A
	Warning	N/A
4.26	Mouth-actuated toys	N/A
4.27	Toy roller skates, toy inline skates and toy skateboards	N/A
	Warning	N/A
4.28	Percussion caps	N/A
	Warning	N/A
4.29	Acoustic requirement	N/A
	Warning	N/A
4.30	Toy scooters	N/A
4.31	Magnets and magnetic components	-
4.31.1	Magnetic/electrical experimental sets (for children 8 years and over)	N/A
	Warning	N/A
4.31.2	All other toys with magnets and magnetic components (under 8 years)	-
4.31.2 a	Loose-as-received magnet(s) and magnetic component(s)	N/A
4.31.2 b	Wooden toys, toys intended in water and mouth pieces of mouth-actuated toys with magnets or magnetic components	N/A
4.31.2 c	Magnet(s) and magnetic component(s) liberated from toy	N/A

*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*

**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	Ignited but Self-Extinguished.



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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-E1001-08.1 (June 21, 2010) or U.S. CPSC-CH-E1002-08.1 (June 21, 2010).

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

Analyte			Lead (Pb)	Conclusion	
Sample Description			Result (mg/kg)		
Color / Component	Location	Style			
(A)	Black plastic	Game tray	A	LT 10	Pass
	Translucent red plastic	Balls	B		
		Cylinders	C		
	Translucent yellow plastic	Balls	B		
Cylinders		C			
(B)	Translucent blue plastic	Balls	B	LT 10	Pass
		Cylinders	C		
	Translucent orange plastic	Cylinders	C		
(C)	Translucent purple plastic	Cylinders	C	LT 10	Pass
	Translucent green plastic	Cylinders	C		

LT = Less Than

\* = Average of duplicate analyses

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



**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	Black plastic	Game tray	A
B	Translucent red plastic	Balls Cylinders	B C
C	Translucent yellow plastic	Balls Cylinders	B C
D	Translucent blue plastic	Balls Cylinders	B C
E	Translucent orange plastic	Cylinders	C
F	Translucent purple plastic	Cylinders	C
G	Translucent green plastic	Cylinders	C



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**RESULTS:**

**SOLUBLE HEAVY METALS CONTENT IN SUBSTRATE (ASTM F963-17, Section 4.3.5.2(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)	
A	LT 2	3	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		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+A1:2014)**

Test Method : European Standard EN 71 Part 3: 2013+A1:2014, Annex E.

Class: Category III - Scraped off toy material

Sample Identity	Color	Location	Style
A.	Black plastic	Game tray	A
B.	Translucent red plastic	Balls Cylinders	B C
C.	Translucent yellow plastic	Balls Cylinders	B C
D.	Translucent blue plastic	Balls Cylinders	B C
E.	Translucent orange plastic	Cylinders	C
F.	Translucent purple plastic	Cylinders	C
G.	Translucent green plastic	Cylinders	C







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**RESULTS:**

**MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2013+A1:2014)**

Test Method : European Standard EN 71 Part 3: 2013+A1:2014, Annex E.

Class: Category III - Scraped off toy material

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
		Category III	G.	-	-	-	-
Aluminium (Al)	70000	LT 2	-	-	-	-	-
Arsenic (As)	47	LT 2	-	-	-	-	-
Boron (B)	15000	LT 2	-	-	-	-	-
Barium (Ba)	18750	LT 2	-	-	-	-	-
Cadmium (Cd)	17	LT 2	-	-	-	-	-
Cobalt (Co)	130	LT 2	-	-	-	-	-
Chromium III (Cr III)	460	LT 0.15	-	-	-	-	-
Chromium VI (Cr VI)	0.2		-	-	-	-	-
Copper (Cu)	7700	LT 2	-	-	-	-	-
Mercury (Hg)	94	LT 2	-	-	-	-	-
Manganese (Mn)	15000	LT 2	-	-	-	-	-
Nickel (Ni)	930	LT 2	-	-	-	-	-
Lead (Pb)	160	LT 2	-	-	-	-	-
Antimony (Sb)	560	LT 2	-	-	-	-	-
Selenium (Se)	460	LT 2	-	-	-	-	-
Tin (Sn)	180000	LT 2	-	-	-	-	-
Organic tin	12	LT 2	-	-	-	-	-
Strontium (Sr)	56000	LT 2	-	-	-	-	-
Zinc (Zn)	46000	LT 2	-	-	-	-	-
Mass of trace amount (gram)		-	-	-	-	-	-
Conclusion		Pass	-	-	-	-	-



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**RESULTS:**

*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+A1:2014, 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)	Black plastic	Game tray	A	LT 10	LT 10	LT 10	Pass
	Translucent red plastic	Balls	B				
		Cylinders	C				
	Translucent yellow plastic	Balls	B				
		Cylinders	C				
	Translucent blue plastic	Balls	B				
Cylinders		C					
(B)	Translucent orange plastic	Cylinders	C	LT 10	LT 10	LT 10	Pass
	Translucent purple plastic	Cylinders	C				
	Translucent green plastic	Cylinders	C				

LT = Less than  
 # = Insufficient sample for duplicate analyses

mg/kg = milligrams per kilogram (ppm = parts per million)  
 Operator: Tsui Chi Piu, Cyrus



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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.	Black plastic	Game tray	A
B.	Translucent red plastic	Balls	B
		Cylinders	C
C.	Translucent yellow plastic	Balls	B
		Cylinders	C
D.	Translucent blue plastic	Balls	B
		Cylinders	C
E.	Translucent orange plastic	Cylinders	C
F.	Translucent purple plastic	Cylinders	C
G.	Translucent green plastic	Cylinders	C



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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 (g)	Conclusion
Sample	Result (mg/kg)								(g)	
A.	LT 2	3	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		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:**

**PHthalATES CONTENT IN CHILDREN'S TOYS AND CHILDCARE ARTICLES BY COMPOSITE TESTING (Consumer Product Safety Improvement Act (CPSIA) of 2008 Sec. 108(a) Prohibition On Sale of Certain Products Containing Specified Phthalates - BBP / DBP / DEHP CONTENT)**

**Test Method:** With reference to U. S. CPSC-CH-C1001-09.3 (April 1, 2010).

Sample Identity	Color / Component	Location	Style
A	Black plastic	Game tray	A
	Translucent red plastic	Balls	B
		Cylinders	C
	Translucent yellow plastic	Balls	B
		Cylinders	C
B	Translucent blue plastic	Balls	B
		Cylinders	C
	Translucent orange plastic	Cylinders	C
C	Translucent purple plastic	Cylinders	C
	Translucent green plastic	Cylinders	C

Analyte:	BBP	DBP	DEHP
Limit (%):	0.1	0.1	0.1

Analyte	BBP	DBP	DEHP	Conclusion
Sample	Result (%)			
A	LT 0.005	LT 0.005	LT 0.005	PASS
B	LT 0.005	LT 0.005	LT 0.005	PASS
C	LT 0.005	LT 0.005	LT 0.005	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:**

**PHthalATES CONTENT IN CHILDREN'S TOYS AND CHILDCARE ARTICLES BY COMPOSITE TESTING (Consumer Product Safety Improvement Act (CPSIA) of 2008 Sec. 108(b)(1) Prohibition On Sale of Certain Products Containing Specified Phthalates - DNOP / DINP / DIDP CONTENT)**

**Test Method:** With reference to U. S. CPSC-CH-C1001-09.3 (April 1, 2010).

Sample Identity	Color / Component	Location	Style
A	Black plastic	Game tray	A
	Translucent red plastic	Balls	B
	Translucent yellow plastic	Cylinders	C
		Balls	B
B	Translucent blue plastic	Cylinders	C
		Balls	B
	Translucent orange plastic	Cylinders	C
C	Translucent purple plastic	Cylinders	C
	Translucent green plastic	Cylinders	C

Analyte:	DNOP	DINP	DIDP
Limit (%):	0.1	0.1	0.1

Analyte	DNOP	DINP	DIDP	Conclusion
Sample	Result (%)			
A	LT 0.005	LT 0.005	LT 0.005	PASS
B	LT 0.005	LT 0.005	LT 0.005	PASS
C	LT 0.005	LT 0.005	LT 0.005	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:**

**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).

Sample Identity	Color / Component	Location	Style
A.	Black plastic	Game tray	A
	Translucent red plastic	Balls	B
	Translucent yellow plastic	Cylinders	C
		Balls	B
B.	Translucent blue plastic	Cylinders	C
		Balls	B
	Translucent orange plastic	Cylinders	C
		Balls	B
C.	Translucent purple plastic	Cylinders	C
	Translucent green plastic	Cylinders	C

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

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:**

**BBP/DBP/DEHP CONTENTS IN TOYS AND CHILDCARE ARTICLES (European Regulation (EC)**

**No. 1907/2006 REACH Annex XVII, Item no. 51)**

Test Method: Sample was extracted with organic solvent and then analyzed by Liquid Chromatograph Mass Spectrometer / Gas Chromatograph Mass Spectrometer.

Sample Identity	Test Component	Location	Style
A.	Black plastic	Game tray	A
	Translucent red plastic	Balls	B
	Translucent yellow plastic	Cylinders	C
B.	Translucent blue plastic	Balls	B
	Translucent orange plastic	Cylinders	C
	Translucent purple plastic	Cylinders	C
C.	Translucent green plastic	Cylinders	C

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

*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: Sample was extracted with organic solvent and then analyzed by Liquid Chromatograph Mass Spectrometer / Gas Chromatograph Mass Spectrometer.

Sample Identity	Test Component	Location	Style
A.	Black plastic	Game tray	A
	Translucent red plastic	Balls	B
	Translucent yellow plastic	Cylinders	C
B.	Translucent blue plastic	Balls	B
	Translucent orange plastic	Cylinders	C
	Translucent purple plastic	Cylinders	C
C.	Translucent purple plastic	Cylinders	C
	Translucent green plastic	Cylinders	C

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

*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:**

**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

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

**RESULTS:**

**Polycyclic Aromatic Hydrocarbons (PAHs) Content - German Product Safety Commission GS Specification AfPS GS 2014:01 PAK**

Test Method : With reference to test method mentioned in German AfPS GS 2014:01 PAK

Sample Identity	Test Component	Location	Style
A.	Composite of Black plastic	Game tray	A
B.	Translucent red plastic	Balls Cylinders	B C
C.	Translucent yellow plastic	Balls Cylinders	B C
D.	Translucent blue plastic	Balls Cylinders	B C
E.	Translucent orange plastic	Cylinders	C
F.	Translucent purple plastic	Cylinders	C
G.	Translucent green plastic	Cylinders	C

Type ( See Comment for the List of Types )	I	IIa	IIb	IIIa	IIIb
<b>Test Parameter(s)</b>	<b>Limit<sup>[a]</sup> ( mg/kg )</b>				
Each of Benzo (a) pyrene, Benzo (e) pyrene, Benzo (a) anthracene, Benzo (b) fluoranthene, Benzo (j) fluoranthene, Benzo (k) fluoranthene, Chrysene, Dibenzo (a,h) anthracene, Benzo (g,h,i) perylene and Indeno (1,2,3-cd) pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Naphthalene	< 1	< 2	< 2	< 10	< 10
Sum of Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Pyrene, Anthracene and Fluoranthene ( Sum of No. 11to No. 17 of listed PAHs )	< 1	< 5	< 10	< 20	< 50
Sum of all listed PAHs	< 1	< 5	< 10	< 20	< 50

Tested Item(s)	Type	Result		Conclusion
		Detected Analyte(s)	Conc. (mg/Kg)	
A.	IIa	ND	ND	Pass
B.	IIa	ND	ND	Pass
C.	IIa	ND	ND	Pass
D.	IIa	ND	ND	Pass
E.	IIa	ND	ND	Pass
F.	IIa	ND	ND	Pass
G.	IIa	ND	ND	Pass



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**RESULTS:**

ND = Not detected

">" = More than

Conc. = Concentration

mg/kg = milligram per kilogram

"<" = Less than

Detection Limit : Each PAHs 0.2 mg/kg; Sum of all PAHs:0.2 mg/kg

Remark:

- The list of polycyclic aromatic hydrocarbons is summarized in table of Appendix.
- Plasticized and rubberized prints, coatings and plastic materials of product are applicable to be tested.
- Denotes as this (these) limit(s) applies to product(s) with GS-Mark dated on or after July 01, 2015.

List of Types [ Categories defined in German AfPS GS 2014:01 PAK ] :		
Category	Category Description(s)	Type
1	Category 1: Materials intended for mouth contact or materials in toys with intended long-term skin contact for more than 30 seconds	I
2	Category 2: Materials which are not covered in Category 1 with foreseeable contact to skin longer than 30 seconds (Long-term skin contact) or repeated short-term skin contact	IIa <sup>[a]</sup> or IIb <sup>[b]</sup>
3	Category 3: Materials which are not covered in Category 1 or Category 2 with foreseeable skin contact up to 30 seconds (Short-term skin contact)	IIIa <sup>[a]</sup> or IIIb <sup>[b]</sup>
<p><sup>[a]</sup> denotes as toys according to European Parliament and Council Directive 2009/48/EC</p> <p><sup>[b]</sup> denotes as other products according to German ProdSG</p>		

**APPENDIX**

List of Polycyclic Aromatic Hydrocarbons (PAHs) [ German AfPS GS 2014:01 PAK ] :					
No.	Name of Analyte(s)	CAS-No.	No.	Name of Analyte(s)	CAS-No.
1	Benzo (a) pyrene	50-32-8	10	Indeno (1,2,3-cd) pyrene	193-39-5
2	Benzo (e) pyrene	192-97-2	11	Acenaphthylene	208-96-8
3	Benzo (a) anthracene	56-55-3	12	Acenaphthene	83-32-9
4	Benzo (b) fluoranthene	205-99-2	13	Fluorene	86-73-7
5	Benzo (j) fluoranthene	205-82-3	14	Phenanthrene	85-01-8
6	Benzo (k) fluoranthene	207-08-9	15	Pyrene	129-00-0
7	Chrysene	218-01-9	16	Anthracene	120-12-7
8	Dibenzo (a,h) anthracene	53-70-3	17	Fluoranthene	206-44-0
9	Benzo (g,h,i) perylene	191-24-2	18	Naphthalene	91-20-3
CAS-No. = Chemical Abstracts Service registry number					

**RESULTS:**

