



STC Test Report

Date : 2016-03-23
No. : HP293571

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- Applicant** : Recent Toys
1001 Je Amsterdam
Netherlands

Attn: Uwe Meffert/ Jing Meffert
- Description of Samples** : Four pieces of submitted sample said to be:
GHOST CUBE (see attached photo)
- Date Samples Received** : 2016-03-10
- Date Tested** : 2016-03-10 to 2016-03-17
- Investigation Requested** :
- (1) ASTM Standard Consumer Safety Specification on Toy Safety, F963-11:
 - physical and mechanical tests
 - flammability test
 - heavy metals content
 - (2) USA Consumer Product Safety Improvement Act
 - Sec. 101(a): Children's products containing lead - Total lead content for substrate
 - Phthalates content as required by
 - Section 108, USA Consumer Product Safety Improvement Act
 - Proposed rule of 16 CFR 1307
 - (3) European Standard for Safety of Toys
 - EN71-1:2014
 - EN71-2:2011+A1:2014
 - EN71-3:2013+A1:2014
 - (4) European Regulation (EU) No. 1907/2006(REACH) Annex XVII and its amendment – Phthalate content (Formerly directive: EC Directive 2005/84/EC).
 - (5) Polycyclic Aromatic Hydrocarbons (PAHs).

WONG Wing-cheung, Benny
Authorized Signatory

Toys & Children's Products Department
For and on behalf of
The Hong Kong Standards and Testing Centre Ltd.





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Conclusions : The submitted sample(s) **complied** with the test requirements:

ASTM F963-11: physical and mechanical tests

ASTM F963-11: flammability test

ASTM F963-11: heavy metals content

USA Consumer Product Safety Improvement Act, Sec. 101(a): Total lead content for substrate in children's products

USA Consumer Product Safety Improvement Act, Sec. 108 & proposed rule of 16 CFR1307: Phthalates content

EN71-1:2014

EN71-2:2011+A1:2014

EN71-3:2013+A1:2014

European Regulation (EU) No. 1907/2006(REACH) Annex XVII and its amendment – Phthalate content

Polycyclic Aromatic Hydrocarbons (PAHs) requirement in Annex XVII Item 50 of the REACH Regulation (EC) No. 1907/2006 and Amendment (EU) No. 1272/2013

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AGE GRADING:

The sample was age graded with the marking of “age 9+”; However, it was considered appropriate for children of 72 months and up.

AGE GRADING FOR TESTING:

72 months and up.

Test Results :

1. ASTM F963-11

1.1 Mechanical and physical hazards

Ref.: ASTM F963-11

Applicable requirements before and after normal use testing according to section 8.5:

<u>Applicable Section</u>	<u>Description</u>	<u>Result</u>
4	<u>Safety requirements</u>	
4.1	Material quality	Pass
4.2	Flammability	Pass* ¹
4.3	Toxicology	Pass* ¹
4.7	Accessible edges	Pass
4.9	Accessible Points	Pass
4.11	Nails and Fasteners	Pass
5	<u>Labeling requirements</u>	
5.2	Age grading labeling	Pass
5.16	Promotional materials	Pass
7	<u>Producer's markings</u>	
7.1	Name and address of the producer or distributor	Pass

*¹ = Refer to the relevant test results at the following pages.

1.2 Flammability test of material other than textiles

Ref.: ASTM F963-11 Section 4.2

Method used: FHSA 16 CFR 1500.44

Result: Pass

<u>Sample</u>	<u>Burn rate (in/sec.)</u>
Cube	DNI

DNI = Did Not Ignite.

Note 1: The burning rate should not be greater than 0.1 inch per second.

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1.3 Heavy element

Ref.: ASTM F963-11 Section 4.3.5

Method: ASTM F963-11 Section 8.3

Determined by: Inductively Coupled Argon Plasma Atomic Emission Spectrophotometer

Toys Substrate Materials

Ref.: ASTM F963-11 Section 4.3.5.2

Polymeric material

(a) Sticker: white plastic with black/yellow/red/green/multicolor printing

(b) Base: black plastic

Sample no.	Total Lead content, ppm
(a)	<10
(b)	<10
Limit	100

Sample no.	Soluble heavy metal content, ppm							
	Lead	Cadmium	Chromium	Barium	Antimony	Arsenic	Mercury	Selenium
(a)	<2	<2	<2	<2	<2	<2	<2	<2
(b)	<2	<2	<2	<2	<2	<2	<2	<2
Limit	90	75	60	1000	60	25	60	500

ppm = mg/kg (milligram per kilogram)

2. USA Consumer Product Safety Improvement Act

2.1 Children's products containing lead - Total lead content in substrate

Ref.: CPSIA Sec 101(a).

Determined by: Inductively Coupled Argon Plasma Atomic Emission Spectrophotometer

Polymeric material

Test method: Standard operation procedure for determining total lead (Pb) in non-metal children's products, CPSC-CH-E1002-08.1

(a) Sticker: white plastic with black/yellow/red/green/multicolor printing

(b) Base: black plastic

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Sample No.	Total lead content, ppm
(a)	<10
(b)	<10
Limit	100

2.2 Phthalates content (in composite condition)

Ref.: CPSIA Sec. 108 & 16 CFR 1307

Test method: CPSC-CH-C1001-09.3 by Gas Chromatography with Mass Selective Detector

- (a) 1. Sticker: white plastic with black/yellow/red/green/multicolor printing
2. Base: black plastic

Sample No.	Phthalates content, %(w/w)									
	DBP	BBP	DEHP	DNOP	DINP	DIDP	DHEXP	DIBP	DPENP	DCHP
(a)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Limit	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	See Note 2					See Note 3				

Remark:

- DBP =Di-n-butyl phthalate
- BBP =Benzyl-n-butyl phthalate
- DEHP = Di (2-ethylhexyl) phthalate
- DNOP = Di-n-octyl phthalate
- DINP = Diisononyl phthalate
- DIDP = Diisodecyl phthalate
- DHEXP =Di-n-hexyl phthalate
- DIBP =Diisobutyl phthalate
- DPENP =Di-n-pentyl phthalate
- DCHP =Dicyclohexyl phthalate
- %(w/w) =percentage weight per weight

Note 2: The requirements of DNOP, DINP and DIDP are only applicable to components that can be placed in children's mouths.

Note 3: The test results of DHEXP, DIBP, DPENP and DCHP are included for reference according to the requirements of the proposed rule of 16 CFR 1307.

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3. EN71

3.1 EN71-1:2014 - Part 1: Mechanical and physical properties

<u>Applicable Clause</u>	<u>Description</u>	<u>Result</u>
4	<u>General requirements</u>	
4.1	Materials cleanliness	Pass
4.7	Edges	Pass
4.8	Points and metallic wires	Pass
7	<u>Markings and instructions for use</u>	* ²
7.1	General	Pass
7.2	Toys not intended for children under 36 months	Pass

*² = The manufacturer or his authorized representative or the importer into the community shall in a visible, easily legible and indelible form affix his name and/or trade name and/or mark and address on the toy or on its packaging.

3.2 EN71-2:2011+A1:2014 - Part 2: Flammability

<u>Applicable Clause</u>	<u>Description</u>	<u>Result</u>
4.1	General requirements	Pass

3.3 EN71-3 :2013+A1:2014 - Part 3: Migration of certain elements

Test Method: EN71-3: 2013+A1:2014

Determined by: Inductively Coupled Argon Plasma Atomic Emission Spectrophotometer and Inductively Coupled Plasma Mass Spectrometry

Category III: Scraped-off toy material

Polymeric material

- (a) Sticker: white plastic with black/yellow/red/green/multicolor printing
- (b) Base: black plastic

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Elements	Result (mg/kg)		Limit(mg/kg)
	a	b	
Aluminium	34	ND	70000
Antimony	ND	ND	560
Arsenic	ND	ND	47
Barium	ND	ND	18750
Boron	ND	ND	15000
Cadmium	ND	ND	17
Chromium(III)	0.21	ND	460
Chromium (VI)	ND	ND	0.2
Cobalt	ND	ND	130
Copper	ND	ND	7700
Lead	ND	ND	160
Manganese	ND	ND	15000
Mercury	ND	ND	94
Nickel	ND	ND	930
Selenium	ND	ND	460
Strontium	10	ND	56000
Tin	ND	ND	180000
Organic tin	ND	ND	12
Zinc	11	ND	46000

Remark: ND = Not detected (see Table A)
mg/kg = milligram per kilogram

The Chromium content was reported as Chromium (III) and Chromium (VI). Whenever the result of Chromium exceeded the limit of Chromium (III) and Chromium (VI), confirmation test was performed.

The Tin content was reported as Organic tin unless specified.

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Table A. Detection limit	
Elements	Limit of Detection (mg/kg)
Aluminium	5
Antimony	5
Arsenic	5
Barium	5
Boron	5
Cadmium	2.5
Chromium(III)	0.1
Chromium (VI)	0.1
Cobalt	5
Copper	5
Lead	5
Manganese	5
Mercury	5
Nickel	5
Selenium	5
Strontium	5
Tin	0.2
Organic tin	0.2
Zinc	5

4. Phthalate content (in composite condition)

Ref.: EU Directive 1907/2006(REACH) Annex XVII

Method used: Gas Chromatography Mass Spectrometer

- (a) 1. Sticker: white plastic with black/yellow/red/green/multicolor printing
 (b) 2. Base: black plastic

Sample	Phthalates content, %(w/w)					
	DBP	BBP	DEHP	DNOP	DINP	DIDP
(a)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
(b)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Limit	The cumulative total of DBP, BBP and DEHP shall not be greater than 0.1% by mass of the plasticised material.			The cumulative total of DNOP, DINP and DIDP shall not be greater than 0.1% by mass of the plasticised material.		

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Remark:

- DBP = Di-n-butyl phthalate
- BBP = Benzyl-n-butyl phthalate
- DEHP = Di (2-ethylhexyl) phthalate
- DNOP = Di-n-octyl phthalate
- DINP = Diisononyl phthalate
- DIDP = Diisodecyl phthalate
- %(w/w) = percentage weight per weight
- Method detection limit = 0.01%(w/w)
- The requirements of DNOP, DINP and DIDP are only applicable on tested material which can be placed in the mouth by children.

5. Polycyclic Aromatic Hydrocarbons (PAHs) (in composite condition)

Method used: Ref. to ZEK 01.4-08

Determined by: Gas Chromatography with Mass Selective Detector

- (a)
1. Sticker: white plastic with black/yellow/red/green/multicolor printing
 2. Base: black plastic

Test Item	(a)	Specification
Polycyclic Aromatic Hydrocarbons (PAHs)		
- Benzo[a]pyrene	Not Detected	<1 mg/kg of any of the listed PAHs
- Benzo[e]pyrene	Not Detected	
- Benzo[a]anthracene	Not Detected	
- Chrysen	Not Detected	
- Benzo[b]fluoranthene	Not Detected	
- Benzo[j]fluoranthene	Not Detected	
- Benzo[k]fluoranthene	Not Detected	
- Dibenzo[a,h]anthracene	Not Detected	

Notes: mg/kg denotes milligram per kilogram

Method detection limit of each PAH is 0.3 mg/kg

***** End of Test Report *****

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Appendix for Photos of the Submitted Sample





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