



## Test Report

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**Date** : 2020-12-28  
**No.** : HP20120620

**Applicant** : Recent Toys  
1001 Je Amsterdam Netherlands

Attn: Guido Lap

**Supplier** : MEFFERT'S PUZZLES & GAMES

**Description of Samples** : Five pieces of submitted sample said to be:  
**GHOST XTREME** (see attached photo)  
STYLE/ITEM NO.: M5109  
COUNTRY OF ORIGIN: CHINA  
COUNTRY OF DESTINATION: USA & EUROPE  
BUYER: RECENT TOYS INTL.  
AGE GRADING: 9 YEARS OLD AND UP

**Date Samples Received** : 2020-12-18

**Date Tested** : 2020-12-18 to 2020-12-28

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

ASTM F963-17: physical and mechanical

ASTM F963-17: flammability test

ASTM F963-17: heavy metals content

A handwritten signature in black ink, appearing to read 'Wong Wing-cheung'.

WONG Wing-cheung, Benny  
Authorized Signatory





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

USA Consumer Product Safety Improvement Act

- Sec. 101(a) and 15 U.S. Code § 1278a: Total lead content for substrate in children's products
- Sec. 108, 16 CFR 1307 and 15 U.S. Code § 2057c: Phthalates content

EN71-1:2014+A1:2018 physical and mechanical properties

EN71-2:2011+A1:2014 flammability

EN71-3:2019 Migration of certain elements

European Regulation (EU) No. 1907/2006(REACH) Annex XVII Entry 51 and its amendment Commission Regulation (EU) 2018/2005- Phthalate content

European Regulation (EU) No. 1907/2006 (REACH) Annex XVII and its amendment(s) on Polycyclic Aromatic Hydrocarbons (PAHs) content

A handwritten signature in black ink, appearing to read 'Wong Wing-cheung'.

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WONG Wing-cheung, Benny  
Authorized Signatory

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- Investigation Requested :**
- (1) ASTM Standard Consumer Safety Specification on Toy Safety, F963-17:
    - physical and mechanical tests
    - flammability test
    - heavy metals content
  - (2) USA Consumer Product Safety Improvement Act
    - Sec. 101(a) and 15 U.S. Code § 1278a: Children's products containing lead - Total lead content for substrate
    - Phthalates content as required by section 108, USA Consumer Product Safety Improvement Act and 16 CFR 1307 and 15 U.S. Code § 2057c.
  - (3) European Standard for Safety of Toys
    - EN71-1:2014+A1:2018
    - EN71-2:2011+A1:2014
    - EN71-3:2019
  - (4) European Regulation (EU) No. 1907/2006(REACH) Annex XVII Entry 51 & 52 and its amendment Commission Regulation (EU) 2018/2005 – Phthalate content.
  - (5) European Regulation (EU) No. 1907/2006 (REACH) Annex XVII and its amendment(s) on Polycyclic Aromatic Hydrocarbons (PAHs) content.

### AGE GRADING:

The sample was appropriately age graded with the marking of “Age: 9-99”.

### AGE GRADING FOR TESTING:

9 years and up.

### Tested Components :

<u>Sample</u>	<u>Polymeric material</u>
1	Main body: black plastic
2	Sticker: transparent plastic with white printing at the base

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### Test Results :

1. ASTM F963-17

1.1 Mechanical and physical

Ref.: ASTM F963-17

Applicable requirements before and after use and abuse testing:

<u>Applicable Section</u>	<u>Description</u>	<u>Result</u>
4	<u>Safety requirements</u>	
4.1	Material quality (by visual assessment)	Pass
4.2	Flammability	Pass* <sup>1</sup>
4.3	<u>Toxicology</u>	Pass* <sup>1</sup>
4.7	Accessible edges	Pass
4.11	Nails and fasteners	Pass
5	<u>Labeling requirements</u>	
5.2	Age grading labeling	Pass
5.16	Promotional materials	Pass
6	<u>Instructional literature</u>	
6.1	Definition and description	Pass
7	<u>Producer's markings</u>	
7.1	Name and address of the producer or distributor	Pass

\*<sup>1</sup> = Refer to the relevant test results at the following pages.

1.2 Flammability test of material other than textiles

Ref.: ASTM F963-17 Section 4.2

Method used: ASTM F963-17 Annex A5

Result: Pass

<u>Sample</u>	<u>Burn rate (in/sec.)</u>
Ghost Xtreme	0.02

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



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1.3 Heavy element

Ref.: ASTM F963-17 Section 4.3.5

Method: ASTM F963-17 Section 8.3

Determined by: Inductively Coupled Argon Plasma Atomic Emission Spectrophotometer

Total Lead Content

<u>Substrate</u>	
Sample	Result, ppm
1	<10
2	<10
Limit	100

Note: ppm = mg/kg (milligram per kilogram)  
Paint sample was tested in dried paint basis

Soluble heavy metal content

Sample	Wt., mg	Result, ppm							
		Pb	Cd	Cr	Ba	Sb	As	Hg	Se
1	≥100	<2	<2	<2	<2	<2	<2	<2	<2
2	≥100	<2	<2	<2	<2	<2	<2	<2	<2
Limit		60	75	60	1000	60	25	60	500

Note: ppm = mg/kg (milligram per kilogram)  
mg = milligram  
≥100 = larger or equal to 100mg in one sample for soluble element test  
Pb= Lead; Cd= Cadmium; Cr= Chromium; Ba= Barium; Sb= Antimony; As= Arsenic;  
Hg= Mercury; Se= Selenium

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2. USA Consumer Product Safety Improvement Act

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

Ref.: CPSIA Sec 101(a) and 15 U.S. Code § 1278a.

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

Test method: Standard operation procedure for determining total lead (Pb) in metal children's products, CPSC-CH-E1001-08.3

Determined by: Inductively Coupled Argon Plasma Atomic Emission Spectrophotometer

<u>Substrate</u>	
Sample	Result, ppm
1	<10
2	<10
Limit	100

Note: Limit: 100ppm  
ppm = mg/kg (milligram per kilogram)

2.2 Phthalates content

Ref.: CPSIA Sec. 108 & 16 CFR 1307 and 15 U.S. Code § 2057c.

Test method: CPSC-CH-C1001-09.4 by Gas Chromatography with Mass Selective Detector

Sample	Phthalates content, %(w/w)							
	DBP	BBP	DEHP	DINP	DHEXP	DIBP	DPENP	DCHP
1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2	<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

Remark:

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

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3. EN71

3.1 EN71-1:2014+A1:2018 – 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>	
7.1	General	Pass

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: 2019 -Part 3: Migration of certain elements

Test Method: EN71-3: 2019

Determined by: Inductively Coupled Plasma Mass Spectrometry

Category III: Scraped-off toy material

Polymeric material

(a) Main body: black plastic

(b) Sticker: transparent plastic with white printing at the base

	Result (mg/kg)		Limit of Detection (mg/kg)	Limit (mg/kg)
	a	b		
Weight, mg	≥100	≥100		
Elements				
Aluminium	ND	ND	5	70000/28130*2
Antimony	ND	ND	5	560
Arsenic	ND	ND	5	47
Barium	ND	ND	5	18750
Boron	ND	ND	5	15000
Cadmium	ND	ND	2.5	17
Chromium	ND	ND	0.05	
Chromium(III)	BL	BL	0.05	460

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	Result (mg/kg)		Limit of Detection (mg/kg)	Limit (mg/kg)
	a	b		
Weight, mg	≥100	≥100		
Elements				
Chromium (VI)	BL	BL	0.02	0.053
Cobalt	ND	ND	5	130
Copper	ND	ND	5	7700
Lead	ND	ND	5	23
Manganese	ND	ND	5	15000
Mercury	ND	ND	5	94
Nickel	ND	ND	5	930
Selenium	ND	ND	5	460
Strontium	ND	ND	5	56000
Tin	ND	ND	0.2	180000
Organic tin	ND	ND	0.49	12
Zinc	ND	ND	5	46000

≥100mg =larger or equal to 100mg in one sample for soluble element test

\*2 The migration limit for Aluminium has been amended by Commission Directive (EU) 2019/1922. The new limit value applies from 2021-05-20. Before this date the current limit value applies.

Remark: ND = Not detected  
 BL = Below Limit  
 mg/kg = milligram per kilogram

The Chromium (III) and Chromium (VI) content was determined by screening the soluble Chromium content. When the result of Chromium exceeded the limit of Chromium (III) and Chromium (VI), confirmation test was performed and the Chromium III content was determined by subtracting the Chromium (VI) content from the total Chromium content.

The organic tin content was determined by screening the soluble tin content. When the tin content exceeded the limit of organic tin after conversion, confirmation test was performed in accordance with the EN 71-3:2019



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4. Phthalate content  
 Ref.: EU Directive 1907/2006(REACH) Annex XVII and EU 2018/2005  
 Method used: Gas Chromatography Mass Spectrometer

- (a) Main body: black plastic  
 (b) Sticker: transparent plastic with white printing at the base

Sample	Phthalates content, %(w/w)						
	DBP	BBP	DEHP	DIBP	DNOP	DINP	DIDP
(a)	<0.01	<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	<0.01
Limit	Individually or in any combination of the DBP, BBP DEHP and DIBP shall not be equal to or 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.		

**Remark:**

- DBP =Di-n-butyl phthalate
- BBP =Benzyl-n-butyl phthalate
- DEHP = Di (2-ethylhexyl) phthalate
- DIBP = Diisobutyl 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) content  
 Ref.: EC Directive 1907/2006 (REACH) Annex XVII  
 Method used: Gas Chromatography Mass Spectrometer

Plastic and Rubber material

- (a) Main body: black plastic  
 (b) Sticker: transparent plastic with white printing at the base

Sample	PAHs content, mg/kg								
	BaP	BeP	BaA	CHR	BbFA	BjFA	BkFA	DBAhA	Sum
(a)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
(b)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

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Requirement:

(For sample category 1)

Toys, including activity toys, and childcare articles shall not be placed on the market, if any of their rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use, contain more than 0,5 mg/kg of any of the listed PAHs.

(For sample category 2)

Articles shall not be placed on the market for supply to the general public, if any of their rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use, contain more than 1 mg/kg of any of the listed PAHs.

Remark

mg/kg = milligram per kilogram  
BaP = Benzo (a) pyrene  
BeP = Benzo (e) pyrene  
BaA = Benzo (a) anthracene  
CHR = Chrysene  
BbFA = Benzo (b) fluoranthene  
BjFA = Benzo (j) fluoranthene  
BkFA = Benzo (k) fluoranthene  
DBaHA = Dibenzo (a,h) anthracene

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

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### Appendix for Photos of the Submitted Sample



## Conditions of Issuance of Test Reports

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4. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
5. The results in Report apply only to the sample as received and do not apply to the bulk, unless the sampling has been carried out by the Company and is stated as such in the Report.
6. When a statement of conformity to a specification or standard is provided, the ILAC-G8 Guidance document (and/or IEC Guide 115 in the electrotechnical sector) will be adopted as a decision rule for the determination of conformity unless it is inherent in the requested specification or standard, or otherwise specified in the Report.
7. In the event of the improper use the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
8. Sample submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
9. The Company will not be liable for or accept responsibility for any loss or damage howsoever arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
10. Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
11. Subject to the variable length of retention time for test data and report stored hereinto as to otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of this test report for a period of three years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after the retention period. Under no circumstances shall we be liable for damages of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.
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