



## STC Test Report



**Date** : 2012-08-31  
**No.** : HP247392

**Applicant (YOC004)** : Yoshiritsu Co Ltd  
1563 Koshibe Oyodo Yoshino Nara  
638-0803 Japan

Attn: Mo Saeki

**Manufacturer** : Yoshiritsu Co Ltd  
1563 Koshibe Oyodo Yoshino Nara  
638-0803 Japan  
Tel: 81-42-382-3955

**Description of Samples** : Two groups of submitted sample said to be:  
(A) Three pieces of  
**LAQ (PLASTIC CONSTRUCTION TOY BLOCK)**  
**PAX (PLASTIC CONSTRUCTION TOY BLOCK)**  
**HAMACRON PARTS** (see attached photo)  
(B) One bag of PARTS used for (A)  
COUNTRY OF ORIGIN: JAPAN  
COUNTRY OF DESTINATION: USA AND EUROPE  
BUYER: LAQ USA INC  
1293 NORTH PLANO ROAD  
RICHARDSON TX 75081 USA

**Date Samples Received** : 2012-08-23

**Date Tested** : 2012-08-23 to 2012-08-30

**Investigation Requested** : Selected test(s) as detailed herein.



CHAN Man-kit, Calvin  
Toys & Children's Products Department  
HOKLAS Approved Signatory

WONG Wing-cheung, Benny  
Toys & Children's Products Department  
HOKLAS Approved Signatory

Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this report were determined in accordance with its terms of accreditation.

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- Conclusions** :
- ASTM F963-11: physical and mechanical tests  
The submitted sample complied with the test requirement.
  - ASTM F963-11: flammability test  
The submitted sample complied with the test requirement.
  - ASTM F963-11: heavy metals content  
The submitted sample complied with the test requirement.
  - USA Consumer Product Safety Improvement Act, Sec. 101 (f) and 16 CFR 1303: Total lead content in paint and surface coating  
The submitted sample complied with the test requirement.
  - USA Consumer Product Safety Improvement Act, Sec. 108: Phthalates content  
The submitted sample complied with the test requirement.
  - EN71-1:2011  
The submitted sample complied with the test requirement.
  - EN71-2:2011  
The submitted sample complied with the test requirement.
  - EN71-3:1994, amendment A1:2000/AC:2002  
The submitted sample complied with the test requirement.
- Remarks** :
- The heavy metals analysis of ASTM F963-11 Section 4.3.5.1 and Total lead content in paint and surface coating of USA Consumer Product Safety Improvement Act, Sec. 101 (f) and 16 CFR 1303\_ were not applicable to the submitted sample.

CHAN Man-kit, Calvin  
Toys & Children's Products Department  
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- 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
    - Sec. 101 (f) and 16 CFR 1303: Children's products containing lead - Total lead content in paint and surface coating
    - Sec. 108: Phthalates content
  - (3) European Standard for Safety of Toys
    - EN71-1:2011
    - EN71-2:2011
    - EN71-3:1994, amendment A1:2000/AC:2002

### AGE GRADING:

The sample was appropriately age graded with the marking of "AGES 5+".

### AGE GRADING FOR TESTING:

5 years and up.

### Test Results :

#### 1. ASTM\*<sup>3</sup>

##### 1.1 Mechanical and physical hazards

Ref.: ASTM F963-11

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	Toxicology	Pass* <sup>1</sup>
4.6	Small objects	Pass
4.7	Accessible edges	Pass
4.9	Accessible points	Pass
5	<u>Labeling requirements</u>	
5.2	Age grading labeling	* <sup>2</sup>
7	<u>Producer's markings</u>	
7.1	Name and address of the producer or distributor	Pass

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Use and abuse testing:

<u>Applicable section</u>	<u>Description</u>	<u>Test Condition</u>
8.5	Normal use testing	
8.6	Abuse testing	
8.7	Impact tests	4 drops at 3 ft.
8.8	Torque tests	4 in-lbs.
8.9	Tension tests	15 lbs.
8.10	Compression tests	30 lbs.

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

\*<sup>2</sup> = See age grading.

## 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>
CASE	0.02
BLOCK	0.02

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

## 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

### Paint and Similar Surface-Coating Materials

Ref.: ASTM F963-11 Section 4.3.5.1

Test not applicable because the submitted samples did not contain any paint or similar surface coatings.

### Toys Substrate Materials

Ref.: ASTM F963-11 Section 4.3.5.2

### Polymeric material

- (a) Puzzle (#1/#2): red ABS
- (b) Puzzle (#3/#4/#5/#6/#7)/pex red (#1)/pex red (#2): red POM
- (c) Puzzle (#1/#2): blue ABS
- (d) Puzzle (#3/#4/#5/#6/#7)/pex blue (#1)/pex blue (#2): blue POM
- (e) Puzzle (#1/#2): yellow ABS

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### Polymeric material

- (f) Puzzle (#3/#4/#5/#6/#7)/pex yellow (#1)/pex yellow (#2): yellow POM
- (g) Puzzle (#1/#2): green ABS
- (h) Puzzle (#3/#4/#5/#6/#7)/pex green (#1)/pex green (#2): green POM
- (i) Puzzle (#1/#2): pink ABS
- (j) Puzzle (#3/#4/#5/#6/#7): pink POM
- (k) Puzzle (#1/#2): sky blue ABS
- (l) Puzzle (#3/#4/#5/#6/#7): sky blue POM
- (m) Puzzle (#1/#2): orange ABS
- (n) Puzzle (#3/#4/#5/#6/#7): orange POM
- (o) Puzzle (#1/#2): lime ABS
- (p) Puzzle (#3/#4/#5/#6/#7): lime POM
- (q) Puzzle (#1/#2): brown ABS
- (r) Puzzle (#3/#4/#5/#6/#7): brown POM
- (s) Puzzle (#1/#2): white ABS
- (t) Puzzle (#3/#4/#5/#6/#7)/hamacron mini wheel: white POM
- (u) Puzzle (#1/#2): gray ABS
- (v) Puzzle (#3/#4/#5/#6/#7): gray POM
- (w) Puzzle (#1/#2): black ABS
- (x) Puzzle (#3/#4/#5/#6/#7)/hamacron shaft/hamacron mini shaft: black POM
- (y) Hamacron wheel: grey blue POM
- (z) Hamacron mini wheel tire: black TPE
- (aa) Headband part: white PP
- (ab) Plastic case: blue PP

Sample	Total Lead content, ppm
(a)	<10
(b)	<10
(c)	<10
(d)	<10
(e)	<10
(f)	<10
(g)	<10
(h)	<10
(i)	<10
(j)	<10
(k)	<10
(l)	<10
(m)	<10
(n)	<10
(o)	<10
(p)	<10
(q)	<10

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Sample	Total Lead content, ppm
(r)	<10
(s)	<10
(t)	<10
(u)	<10
(v)	<10
(w)	<10
(x)	<10
(y)	<10
(z)	<10
(aa)	<10
(ab)	<10
Limit	100

Sample	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
(c)	<2	<2	<2	4	<2	<2	<2	<2
(d)	<2	<2	<2	3	<2	<2	<2	<2
(e)	<2	<2	<2	<2	<2	<2	<2	<2
(f)	<2	<2	<2	<2	<2	<2	<2	<2
(g)	<2	<2	<2	<2	<2	<2	<2	<2
(h)	<2	<2	<2	<2	<2	<2	<2	<2
(i)	<2	<2	<2	<2	<2	<2	<2	<2
(j)	<2	<2	<2	<2	<2	<2	<2	<2
(k)	<2	<2	<2	2	<2	<2	<2	<2
(l)	<2	<2	<2	<2	<2	<2	<2	<2
(m)	<2	<2	<2	<2	<2	<2	<2	<2
(n)	<2	<2	<2	<2	<2	<2	<2	<2
(o)	<2	<2	<2	<2	<2	<2	<2	<2
(p)	<2	<2	<2	2	<2	<2	<2	<2
(q)	<2	<2	<2	2	<2	<2	<2	<2
(r)	<2	<2	<2	2	<2	<2	<2	<2
(s)	<2	<2	<2	<2	<2	<2	<2	<2
(t)	<2	<2	<2	<2	<2	<2	<2	<2
(u)	<2	<2	<2	<2	<2	<2	<2	<2
(v)	<2	<2	<2	<2	<2	<2	<2	<2
(w)	<2	<2	<2	<2	<2	<2	<2	<2
(x)	<2	<2	<2	2	<2	<2	<2	<2
(y)	<2	<2	<2	<2	<2	<2	<2	<2

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Sample	Soluble heavy metal content, ppm							
	Lead	Cadmium	Chromium	Barium	Antimony	Arsenic	Mercury	Selenium
(z)	<2	<2	<2	<2	<2	<2	<2	<2
(aa)	<2	<2	<2	2	<2	<2	<2	<2
(ab)	<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/Paper and Board/Textile

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

- (a) Puzzle (#1/#2): red ABS
- (b) Puzzle (#3/#4/#5/#6/#7)/pex red (#1)/pex red (#2): red POM
- (c) Puzzle (#1/#2): blue ABS
- (d) Puzzle (#3/#4/#5/#6/#7)/pex blue (#1)/pex blue (#2): blue POM
- (e) Puzzle (#1/#2): yellow ABS
- (f) Puzzle (#3/#4/#5/#6/#7)/pex yellow (#1)/pex yellow (#2): yellow POM
- (g) Puzzle (#1/#2): green ABS
- (h) Puzzle (#3/#4/#5/#6/#7)/pex green (#1)/pex green (#2): green POM
- (i) Puzzle (#1/#2): pink ABS
- (j) Puzzle (#3/#4/#5/#6/#7): pink POM
- (k) Puzzle (#1/#2): sky blue ABS
- (l) Puzzle (#3/#4/#5/#6/#7): sky blue POM
- (m) Puzzle (#1/#2): orange ABS
- (n) Puzzle (#3/#4/#5/#6/#7): orange POM
- (o) Puzzle (#1/#2): lime ABS
- (p) Puzzle (#3/#4/#5/#6/#7): lime POM
- (q) Puzzle (#1/#2): brown ABS
- (r) Puzzle (#3/#4/#5/#6/#7): brown POM
- (s) Puzzle (#1/#2): white ABS
- (t) Puzzle (#3/#4/#5/#6/#7)/hamacron mini wheel: white POM
- (u) Puzzle (#1/#2): gray ABS
- (v) Puzzle (#3/#4/#5/#6/#7): gray POM
- (w) Puzzle (#1/#2): black ABS
- (x) Puzzle (#3/#4/#5/#6/#7)/hamacron shaft/hamacron mini shaft: black POM

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Polymeric material/Paper and Board/Textile

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

- (y) Hamacron wheel: grey blue POM
- (z) Hamacron mini wheel tire: black TPE
- (aa) Headband part: white PP
- (ab) Plastic case: blue PP

Sample No.	Total lead content, ppm
(a)	<10
(b)	<10
(c)	<10
(d)	<10
(e)	<10
(f)	<10
(g)	<10
(h)	<10
(i)	<10
(j)	<10
(k)	<10
(l)	<10
(m)	<10
(n)	<10
(o)	<10
(p)	<10
(q)	<10
(r)	<10
(s)	<10
(t)	<10
(u)	<10
(v)	<10
(w)	<10
(x)	<10
(y)	<10
(z)	<10
(aa)	<10
(ab)	<10
Limit	100

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2.2 Children's products containing lead - Total lead content in paint and surface coating

Ref.: CPSIA Sec. 101 (f) and 16 CFR 1303.

Test method: CPSC-CH-E 1003-09.1

Determined by: Inductively Coupled Argon Plasma Atomic Emission Spectrophotometer

Test not applicable because the submitted samples did not contain any paint or similar surface coatings.

2.3 Phthalates content (in composite condition)

Ref.: CPSIA Sec. 108

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

- (a) 1. Puzzle (#1/#2): red ABS  
2. Puzzle (#3/#4/#5/#6/#7)/pex red (#1)/pex red (#2): red POM  
3. Puzzle (#1/#2): blue ABS
- (b) 1. Puzzle (#3/#4/#5/#6/#7)/pex blue (#1)/pex blue (#2): blue POM  
2. Puzzle (#1/#2): yellow ABS  
3. Puzzle (#3/#4/#5/#6/#7)/pex yellow (#1)/pex yellow (#2): yellow POM
- (c) 1. Puzzle (#1/#2): green ABS  
2. Puzzle (#3/#4/#5/#6/#7)/pex green (#1)/pex green (#2): green POM  
3. Puzzle (#1/#2): pink ABS
- (d) 1. Puzzle (#3/#4/#5/#6/#7): pink POM  
2. Puzzle (#1/#2): sky blue ABS  
3. Puzzle (#3/#4/#5/#6/#7): sky blue POM
- (e) 1. Puzzle (#1/#2): orange ABS  
2. Puzzle (#3/#4/#5/#6/#7): orange POM  
3. Puzzle (#1/#2): lime ABS
- (f) 1. Puzzle (#3/#4/#5/#6/#7): lime POM  
2. Puzzle (#1/#2): brown ABS  
3. Puzzle (#3/#4/#5/#6/#7): brown POM
- (g) 1. Puzzle (#1/#2): white ABS  
2. Puzzle (#3/#4/#5/#6/#7)/hamacron mini wheel: white POM  
3. Puzzle (#1/#2): gray ABS
- (h) 1. Puzzle (#3/#4/#5/#6/#7): gray POM  
2. Puzzle (#1/#2): black ABS  
3. Puzzle (#3/#4/#5/#6/#7)/hamacron shaft/hamacron mini shaft: black POM
- (i) 1. Hamacron wheel: grey blue POM  
2. Hamacron mini wheel tire: black TPE  
3. Headband part: white PP
- (j) Plastic case: blue PP

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Sample No.	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
(c)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
(d)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
(e)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
(f)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
(g)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
(h)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
(i)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
(j)	<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

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
- The requirements of DNOP, DINP and DIDP are only applicable to components that can be placed in children’s mouths.

3. EN71

3.1 EN71-1:2011 - 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 - Part 2: Flammability

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

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3.3 EN71-3:1994, amendment A1:2000/AC:2002 - Part 3: Migration of certain elements  
Method used: Inductively Coupled Argon Plasma Atomic Emission Spectrophotometer

### Polymeric material

- (a) Puzzle (#1/#2/): red ABS
- (b) Puzzle (#3/#4/#5/#6/#7)/pex red (#1)/pex red (#2): red POM
- (c) Puzzle (#1/#2): blue ABS
- (d) Puzzle (#3/#4/#5/#6/#7)/pex blue (#1)/pex blue (#2): blue POM
- (e) Puzzle (#1/#2): yellow ABS
- (f) Puzzle (#3/#4/#5/#6/#7)/pex yellow (#1)/pex yellow (#2): yellow POM
- (g) Puzzle (#1/#2): green ABS
- (h) Puzzle (#3/#4/#5/#6/#7)/pex green (#1)/pex green (#2): green POM
- (i) Puzzle (#1/#2): pink ABS
- (j) Puzzle (#3/#4/#5/#6/#7): pink POM
- (k) Puzzle (#1/#2): sky blue ABS
- (l) Puzzle (#3/#4/#5/#6/#7): sky blue POM
- (m) Puzzle (#1/#2): orange ABS
- (n) Puzzle (#3/#4/#5/#6/#7): orange POM
- (o) Puzzle (#1/#2): lime ABS
- (p) Puzzle (#3/#4/#5/#6/#7): lime POM
- (q) Puzzle (#1/#2): brown ABS
- (r) Puzzle (#3/#4/#5/#6/#7): brown POM
- (s) Puzzle (#1/#2): white ABS
- (t) Puzzle (#3/#4/#5/#6/#7)/hamacron mini wheel: white POM
- (u) Puzzle (#1/#2): gray ABS
- (v) Puzzle (#3/#4/#5/#6/#7): gray POM
- (w) Puzzle (#1/#2): black ABS
- (x) Puzzle (#3/#4/#5/#6/#7)/hamacron shaft/hamacron mini shaft: black POM
- (y) Hamacron wheel: grey blue POM
- (z) Hamacron mini wheel tire: black TPE
- (aa) Headband part: white PP
- (ab) Plastic case: blue PP

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Sample no.	Soluble heavy metal content, mg/kg							
	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
(c)	<2	<2	<2	4	<2	<2	<2	<2
(d)	<2	<2	<2	3	<2	<2	<2	<2
(e)	<2	<2	<2	<2	<2	<2	<2	<2
(f)	<2	<2	<2	<2	<2	<2	<2	<2
(g)	<2	<2	<2	<2	<2	<2	<2	<2
(h)	<2	<2	<2	<2	<2	<2	<2	<2
(i)	<2	<2	<2	<2	<2	<2	<2	<2
(j)	<2	<2	<2	<2	<2	<2	<2	<2
(k)	<2	<2	<2	2	<2	<2	<2	<2
(l)	<2	<2	<2	<2	<2	<2	<2	<2
(m)	<2	<2	<2	<2	<2	<2	<2	<2
(n)	<2	<2	<2	<2	<2	<2	<2	<2
(o)	<2	<2	<2	<2	<2	<2	<2	<2
(p)	<2	<2	<2	2	<2	<2	<2	<2
(q)	<2	<2	<2	2	<2	<2	<2	<2
(r)	<2	<2	<2	2	<2	<2	<2	<2
(s)	<2	<2	<2	<2	<2	<2	<2	<2
(t)	<2	<2	<2	<2	<2	<2	<2	<2
(u)	<2	<2	<2	<2	<2	<2	<2	<2
(v)	<2	<2	<2	<2	<2	<2	<2	<2
(w)	<2	<2	<2	<2	<2	<2	<2	<2
(x)	<2	<2	<2	2	<2	<2	<2	<2
(y)	<2	<2	<2	<2	<2	<2	<2	<2
(z)	<2	<2	<2	<2	<2	<2	<2	<2
(aa)	<2	<2	<2	2	<2	<2	<2	<2
(ab)	<2	<2	<2	<2	<2	<2	<2	<2
Limit	90	75	60	1000	60	25	60	500

mg/kg = milligram per kilogram

\*<sup>3</sup> = **The test item was not accredited by HOKLAS.**  
**\*\*\*\*\* End of Test Report \*\*\*\*\***

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### Appendix for Photos of the Submitted Sample



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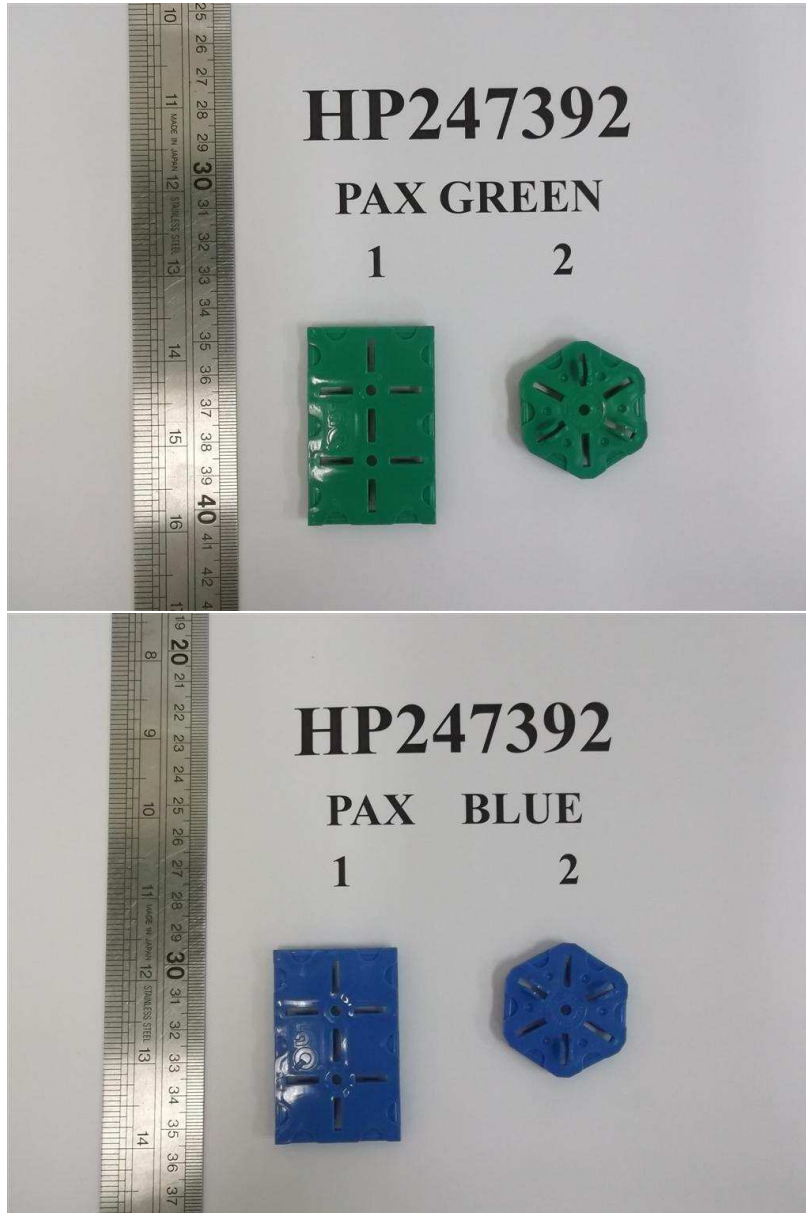
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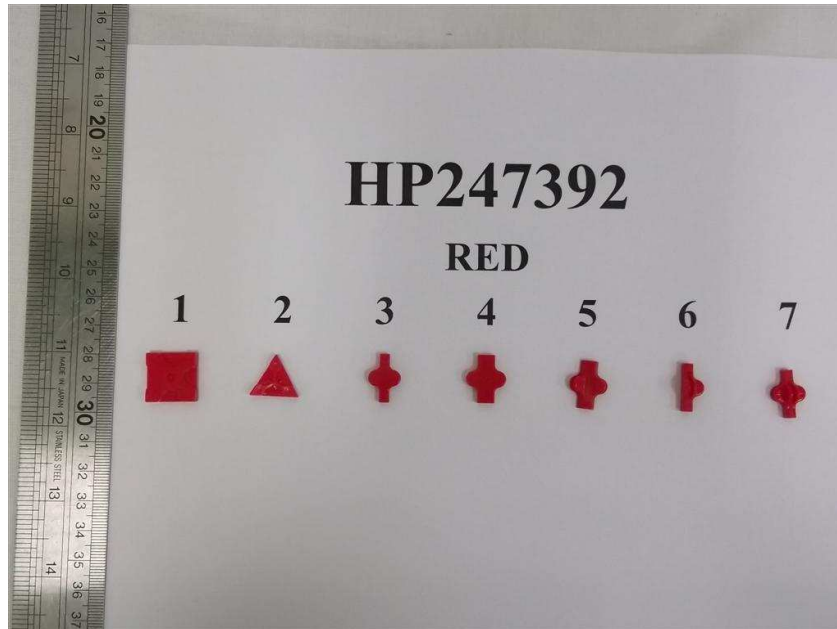
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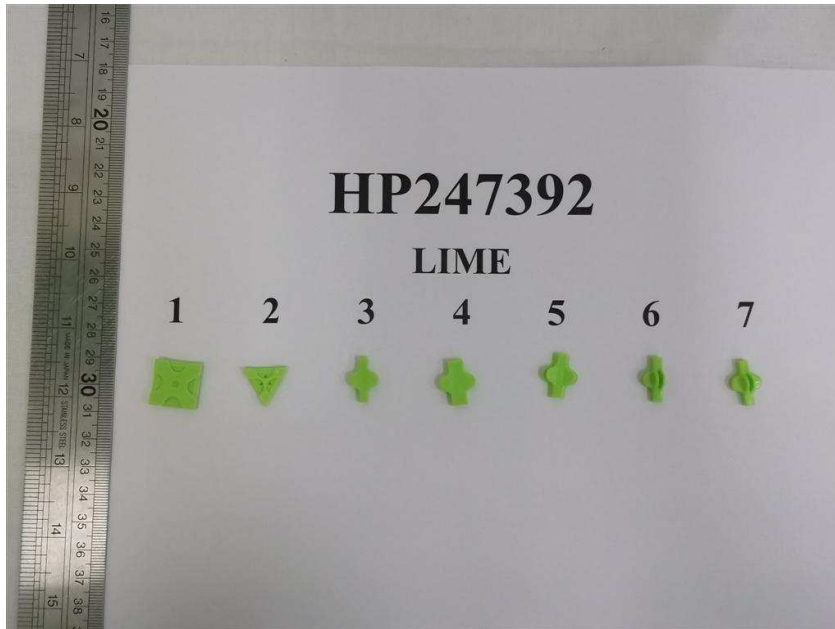




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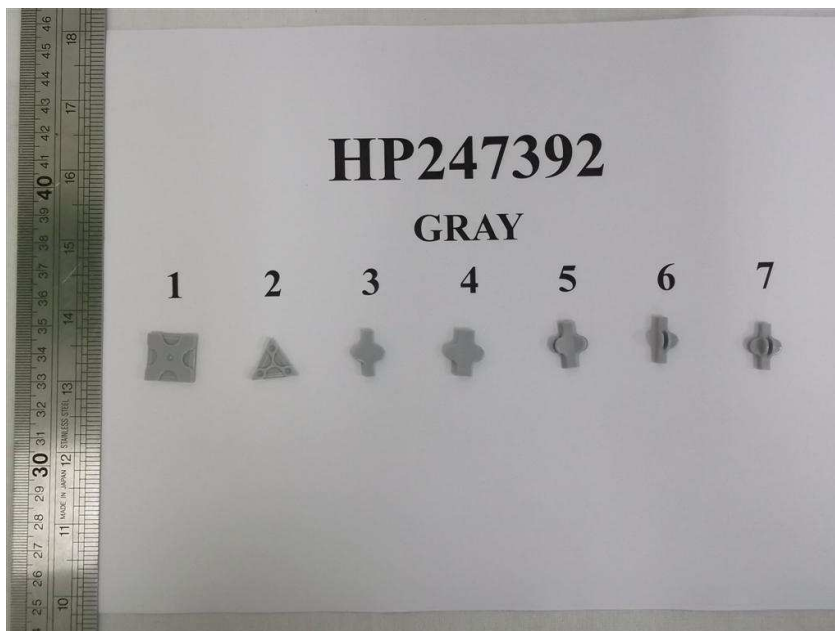
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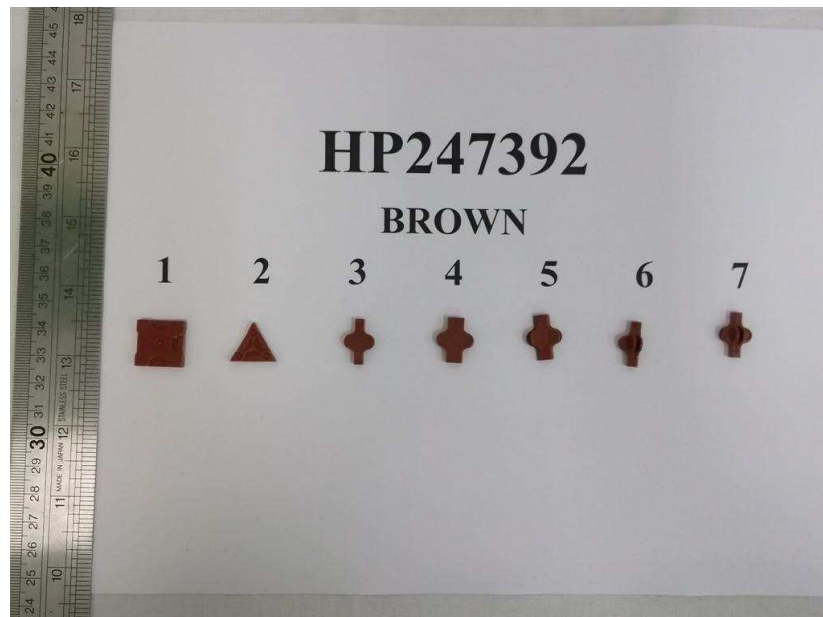
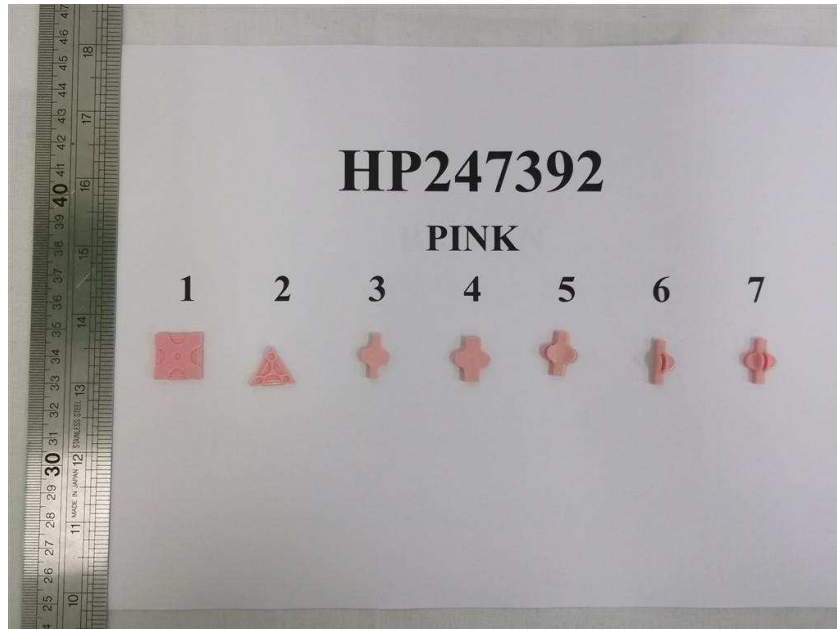
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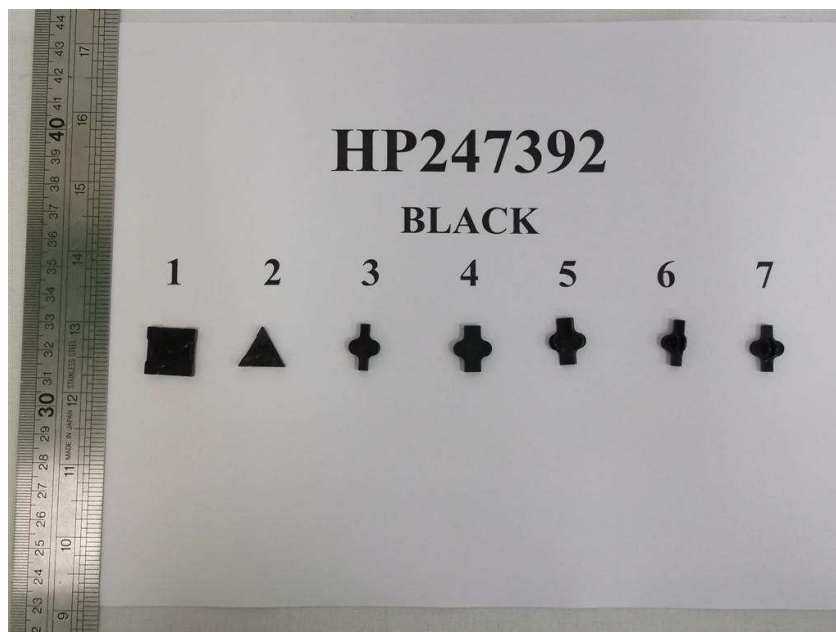
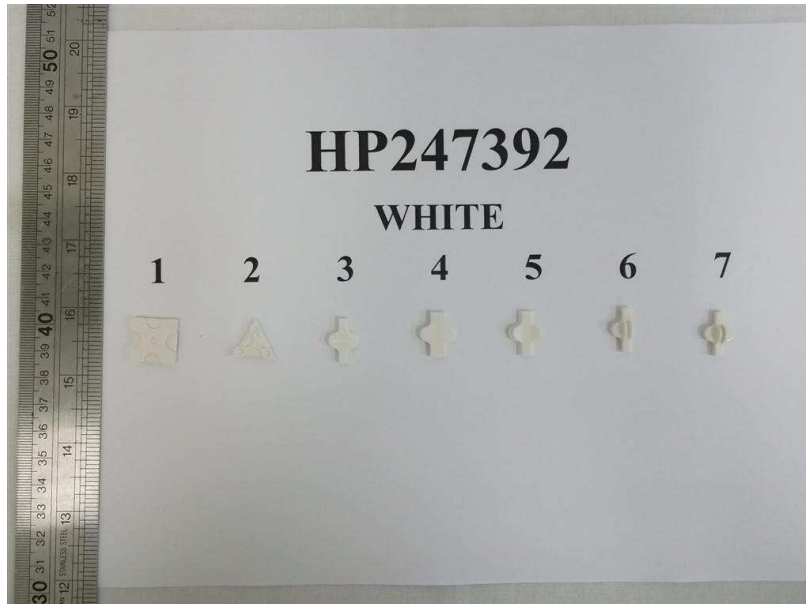
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