

# Test Report

Report No.:ECL01G009420

Page 1 of 9

**Applicant :** Leader Joy Industrial Group LTD

**Address :** Floor 5, Building 1, JuHeYun E-Commerce Base, ChunHua Road, Yiwu, Zhejiang, China

**Report on the submitted sample(s) said to be:**

Sample Name : Multiple Shape Puzzles  
Item No. : LT004  
Quantity of Sample : 1 PC  
Exported to : Europe, USA  
Client Specified Age Grading : 0-3 YEARS  
Labeled Age Grading : AGE: 0-3  
Age Group Applied in Testing : ALL AGES  
Sample Received Date : Aug. 12, 2014  
Further Information Date : Sep. 12, 2014  
Sample Tested Date : Aug. 12, 2014 to Sep. 12, 2014

**Test Conducted:**

As requested by the applicant, for details refer to next page(s)

Tested by Helen Tang

Reviewed by Hester Huang

Approved by Victor Wang

Date Sep. 12, 2014

Victor Wang  
Lab Manager

No. T166588800

Centre Testing International Co., Ltd. Shanghai Branch

No.1996, New Jinqiao Road, Pudong District, Shanghai, China



# Test Report

Report No.:ECL01G009420

Page 2 of 9

## Executive Summary:

### TEST REQUEST

- 1) ASTM F963-11 Standard Consumer Safety Specification for Toy Safety
  - Mechanical and Physical test
  - Clause 4.2 Flammability of toys
  - Clause 4.3.5 Heavy elements – Total Lead content
  - Clause 4.3.5 Heavy elements – Migration of certain elements
- 2) US Consumer Product Safety Improvement Act of 2008 (CPSIA) with amendment (H.R.2715)
  - Lead in surface-coatings and similar materials of children’s products
  - Lead in substrate materials of children’s products
  - Phthalates in children’s toys and child care articles

### CONCLUSION

**PASS**  
**PASS**  
**PASS**  
**PASS**  
**PASS**  
**PASS**  
**PASS**

For chemical test, the tested components are identified by the applicant.

\*\*\*\*\* For Further Details, Please Refer To the Following Page(s) \*\*\*\*\*

# Test Report

Report No.:ECL01G009420

Page 3 of 9

**1) ASTM F963-11**

**▼ Mechanical and Physical test**

As specified in ASTM F963-11 standard consumer safety specification for toy safety.

<u>Clause</u>	<u>Description</u>	<u>Assessment</u>
4.	Safety Requirements	
4.1	Material Quality (Visual Examination).....	Pass
4.6	Small Objects	
4.6.1	Toys that are intended for children under 36 months of age.....	Pass
4.7	Accessible Edges.....	Pass
4.9	Accessible Points.....	Pass
4.11	Nails & Fasteners.....	Pass
5.	Safety Labeling Requirements	
5.2	Age Grading Labeling.....	Pass
5.16	Promotional Materials.....	Pass
7.	Producers Markings	
7.1	Producers Markings.....	Pass
8.	Test Method	
8.5	Normal Use Testing.....	Pass
8.7	Impact Test .....	Pass
8.8	Torque Test.....	Pass
8.9	Tension Test.....	Pass
8.10	Compression Test.....	Pass

**▼ Clause 4.2 Flammability of toys**

As specified in ASTM F963-11 standard consumer safety specification for toy safety.

Flammability Test on Solid

<u>Burning Rate (inch/sec)</u>	<u>Limit (inch/sec)</u>
DNI	0.1

-- DNI = Did Not Ignite

# Test Report

Report No.:ECL01G009420

Page 4 of 9

## ▼ Heavy elements test - Total Lead content

As specified in ASTM F963-11 standard consumer safety specification for toy safety clause 4.3.5, acid digestion methods specified in clause 8.3 were used and total Lead content was determined by ICP-OES and/or AAS.

### 1. Paint and similar surface coating materials:

<u>Tested Item</u>	<u>Result (mg/kg)</u>			<u>MDL</u> (mg/kg)	<u>Limit</u> (mg/kg)
	(1)	(2)	(3)		
Total Lead (Pb)	ND	ND	ND	10	90

### 2. Toy substrate materials:

<u>Tested Item</u>	<u>Result (mg/kg)</u>	<u>MDL</u> (mg/kg)	<u>Limit</u> (mg/kg)
	Beige wood		
Total Lead (Pb)	ND	10	100

### Tested Component(s):

- (1) Red coating
- (2) Yellow coating
- (3) Blue coating

### Remark:

- mg/kg = milligram per kilogram = ppm
- ND = Not Detected (less than MDL)
- MDL = Method Detection Limit

# Test Report

Report No.:ECL01G009420

Page 5 of 9

## ▼ Heavy elements test - Migration of certain elements

As specified in ASTM F963-11 standard consumer safety specification for toy safety clause 4.3.5, acid extraction methods specified in clause 8.3 were used and toxic elements content were determined by ICP-OES.

### 1. Heavy elements test - Migration of certain elements

Tested Item	Result (mg/kg)				MDL (mg/kg)	Limit (mg/kg)
	(1)	(2)	(3)	(4)		
Soluble Antimony (Sb)	ND	ND	ND	ND	5	60
Soluble Arsenic (As)	ND	ND	ND	ND	2.5	25
Soluble Barium (Ba)	ND	41	ND	ND	5	1000
Soluble Cadmium (Cd)	ND	ND	ND	ND	5	75
Soluble Chromium (Cr)	ND	ND	ND	ND	2.5	60
Soluble Lead (Pb)	ND	ND	ND	ND	5	90
Soluble Mercury (Hg)	ND	ND	ND	ND	2.5	60
Soluble Selenium (Se)	ND	ND	ND	ND	5	500

### 2. Special soluble Cadmium test on metallic small parts:

**N/A = Not Applicable** (Before and after use and abuse testing, there was no metallic small parts on the submitted samples, so it is not applicable to the requirement of this standard)

Tested Component(s):

- (1) Red coating
- (2) Yellow coating
- (3) Blue coating
- (4) Beige wood

# Test Report

Report No.:ECL01G009420

Page 6 of 9

Remark:

- mg/kg = milligram per kilogram = ppm
- ND = Not Detected (less than MDL)
- MDL = Method Detection Limit
- Results shown of soluble elements are of adjusted analytical results by subtracting analytical correction factor.
- Filter paper was used instead of 0.45 $\mu$ m membrane filter in lab testing.

Note:

- Only applicable clauses were shown.

# Test Report

Report No.:ECL01G009420

Page 7 of 9

## 2) US CPSIA WITH AMENDMENT (H.R.2715)

### ▼ Lead in surface-coating and similar materials of children's products

As specified in Consumer Product Safety Improvement Act of 2008 (CPSIA) and 16 CFR Ch.II part 1303 of Consumer Product Safety Commission of U.S.A, method CPSC-CH-E1003-09.1 was used and total lead content was determined by ICP-OES and/or AAS.

<u>Tested Item</u>	<u>Result (ppm)</u>			<u>MDL</u> (ppm)	<u>Limit</u> (ppm)
	(1)	(2)	(3)		
Total Lead (Pb)	ND	ND	ND	10	90

Tested Component(s):

- (1) Red coating
- (2) Yellow coating
- (3) Blue coating

Remark:

- ppm = parts per million = mg/kg
- ND = Not Detected (less than MDL)
- MDL = Method Detection Limit

### ▼ Lead in substrate materials of children's products

As specified in Consumer Product Safety Improvement Act of 2008 (CPSIA), method(s) CPSC-CH-E1001-08.3/CPSC-CH-E1002-08.3 were used and total lead content was determined by ICP-OES and/or AAS.

<u>Tested Item</u>	<u>Result (ppm)</u>	<u>MDL</u> (ppm)	<u>Limit</u> (ppm)
	Beige wood		
Total Lead (Pb)	ND	10	100

Remark:

- ppm = parts per million = mg/kg
- ND = Not Detected (less than MDL)
- MDL = Method Detection Limit

# Test Report

Report No.:ECL01G009420

Page 8 of 9

## ▼ Phthalates in children's toys and childcare articles

As specified in Consumer Product Safety Improvement Act of 2008 (CPSIA), method CPSC-CH-C1001-09.3 was used and phthalates were determined by gas chromatograph with mass spectrometry (GC-MS).

<u>Tested Item</u>	<u>Result (%)</u>			<u>MDL</u> (%)	<u>Limit</u> (%)
	(1)	(2)	(3)		
Di-2-ethylhexyl Phthalate (DEHP)	ND	ND	ND	0.003	0.1
Dibutyl Phthalate (DBP)	ND	ND	ND	0.003	0.1
Benzylbutyl Phthalate (BBP)	ND	ND	ND	0.003	0.1

<u>Tested Item</u>	<u>Result (%)</u>			<u>MDL</u> (%)	<u>Limit</u> (%)
	(1)	(2)	(3)		
Diisononyl Phthalate (DINP)	ND	ND	ND	0.005	0.1
Di-n-octyl Phthalate (DNOP)	ND	ND	ND	0.003	0.1
Diisodecyl Phthalate (DIDP)	ND	ND	ND	0.005	0.1

Tested Component(s):

- (1) Red coating
- (2) Yellow coating
- (3) Blue coating

Remark:

- % = percentage
- ND = Not Detected (less than MDL)
- MDL = Method Detection Limit

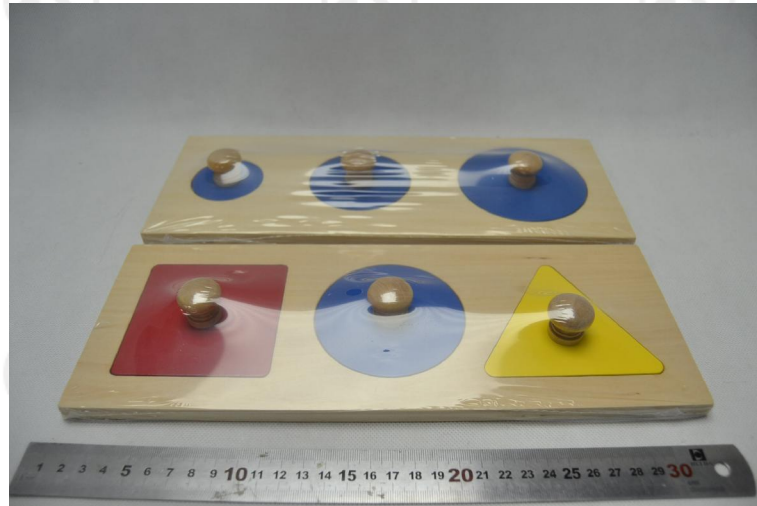


# Test Report

Report No.:ECL01G009420

Page 9 of 9

## Photo of the sample



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

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