Test Report Number: SHAH01213837

Applicant: MELISSA AND DOUG CHILDREN'S PRODUCTS
UNIT 2H, BLOCK 210, TAI RAN INDUSTRIAL
ZONE SHEN NAN XI ROAD, FUTIAN DISTRICT,
SHENZHEN,518040
Attn: MELISSA & DOUG,LLC

Date: 18 May, 2020

Sample Description:

Overall Result	:	Pass.
Sample Description	:	Magnetic Pretend Play-Joey.
Item No.	:	3550/13550.
Original/Purpose	:	Global Protocol.
PO No.	:	1930/1931.
PDC	:	20100.
Carton No.	:	--
Factory Name	:	HV.
Customer Name	:	--
Category	:	Pretend Play (small playsets).
Country Of Origin	:	China.
Destination	:	--
Labelled Age Grading	:	3+.
Age Grading Evaluated by Lab	:	Over 3 Years.
Age Grading for Testing	:	Over 3 Years.
Date Samples Received	:	Apr 30,2020.
Date Test Completed	:	May 11,2020.

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To be continued

Authorized By:
Intertek Testing Services Ltd, Shanghai, Ningbo Branch

Peter Chen
General Manager

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Intertek Testing Services Ltd., Shanghai Ningbo Branch
上海天祥质量技术服务有限公司宁波分公司

5/F No. 6 Building, Lingyun Industry Park, No.1177 Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, China, 315000
宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

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Fax: +86 574 8818 3680
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Tests Conducted：

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

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To be continued

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Peter Chen
General Manager

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Test Report Number: SHAH01213837

Conclusion:

Tested samples	Standard	Result
Submitted sample set	U.S. ASTM F963-17 Physical And Mechanical Tests	Pass
	U.S. ASTM F963-17 Flammability Test of Materials Other Than Textile Materials	Pass
Tested components of submitted sample	U.S. ASTM F963-17 on soluble heavy elements test & Customer's requirements	Pass
	U.S. ASTM F963-17 total Lead content in surface coating & Customer's requirements	Pass
	U.S. ASTM F963-17 total Lead content in substrate & Customer's requirements	Pass
	Consent Judgment No. RG- 356892 for total Lead content based on the California Proposition 65	Pass

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To be continued

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Conclusion:

Tested Sample	Standard	Result
Submitted sample set	U.S. CFR Title 16 (CPSC Regulations) Mechanical and Physical Tests	Pass
	U.S. CFR Title 16 (CPSC Regulations) Part 1500.3(c)(6)(vi) Flammability Test On Rigid and Pliable Solids	Pass
Tested components of submitted sample	US 16 CFR Part 1303 total Lead content in surface coating & Customer's requirements	Pass
Submitted sample set	Consumer Product Safety Improvement Act (CPSIA) 2008 Section 103 Tracking labels for children product	Pass
Tested component of submitted sample	U.S. Consumer Product Safety Improvement Act 2008 title I, section 101 for total Lead content in surface coating & Customer's requirements	Pass
	U.S. Consumer Product Safety Improvement Act 2008 title I, section 101 for total Lead content in non-surface coating materials (substrate) & Customer's requirements	Pass
	US 16 CFR Part 1307 for Prohibition of Children's Toys and Child Care Articles Containing Specified Phthalates & Customer's requirements	Pass
	Model toxics in packaging legislation (packaging materials) for toxic elements test	Pass
Submitted sample set	TSCA (EPA) label requirement	See remark
	Canada Consumer Product Safety Act Toys Regulations SOR/2011-17 and Regulations Amending the Toys Regulations SOR/2016-195 - Mechanical and Physical test	Pass
	Canada Consumer Product Safety Act Toys Regulations SOR/2011-17 section 21 and Regulations Amending the Toys Regulations SOR/2016-195 - Celluloid or Cellulose Nitrate	Pass

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General Manager

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Conclusion:

Tested samples	Standard	Result
Tested components of submitted sample	Canada Consumer Products Containing Lead Regulations SOR/2018-83	Pass
	Canada Consumer Product Safety Act Toys Regulations SOR/2011-17 Section 23 on toxic elements test & Customer's requirements	Pass
	Canada Consumer Product Safety Act Phthalates Regulations SOR/2016-188 on phthalate content & Customer's requirements	Pass
Submitted Sample Set	EN71-1: 2014+ A1: 2018 for Mechanical And Physical Properties	Pass
	EN71-2: 2011+A1: 2014 Flammability Test	Pass
Tested components of submitted samples	EN71-3:2013+A3:2018 on migration of certain elements & Customer's requirements	Pass
	EU 2018/725 amending 2009/48/EC (effective from Nov 18,2019) for chromium (VI) migration	Pass
	Applicant's requirement with reference to EN 71-3:2019 on migration of certain elements	Pass
	Cadmium content requirement in Commission Regulation (EU) No. 494/2011 of 20 May 2011, (EU) No. 835/2012 of 18 September 2012 and (EU) No. 2016/217 of 16 February 2016 Amending Annex XVII Items 23 of the Reach Regulation (EC) No. 1907/2006 & Customer's requirements	Pass
	Phthalates content requirement in Annex XVII Items 51 & 52 of the REACH Regulation (EC) No. 1907/2006 & Amendment No. 552/2009 (formerly known as Directive 2005/84/EC) & Customer's requirements	Pass
	European Directive 94/62/EC and Amendments 2004/12/EC & 2005/20/EC & 2013/2/EU on packaging and packaging waste for Toxic Elements Test	Pass

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Peter Chen
General Manager

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Test Report Number： SHAH01213837

Conclusion：

Tested samples	Standard	Result
Tested components of submitted samples	Polycyclic Aromatic Hydrocarbons (PAHs) content in Annex XVII Item 50 of the REACH Regulation (EC) No. 1907/2006 & amendment (EU) No. 1272/2013	Pass
	Client's requirement on AfPS GS 2014:01 PAK for Polycyclic Aromatic Hydrocarbons (PAHs) content	Pass
	AfPS GS 2019:01 PAK (PAH) on Polycyclic Aromatic Hydrocarbons (PAHs) Content for GS Certification	Pass
	EN71-9:2005 + A1:2007 on wood preservatives requirement	Pass
	EN71-9：2005+A1：2007 – formaldehyde content in wood	Pass
Submitted Sample set	Australian / New Zealand Standard AS/NZS 8124.1：2016 Safety Aspects Related to Mechanical and Physical Properties	Pass
	Australian Trade Practice Act 1974 with Consumer Protection Notice NO. 5 of 2010 Consumer Product Safety Standard for Children's Toys Containing Magnets	Pass
	Competition Consumer Act 2010 with Consumer Protection Notice NO. 5 of 2012 for Magnetic Objects	Pass
	Australian / New Zealand Standard on Safety of Toys AS/NZS 8124.2：2016 Flammability Test	Pass

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Peter Chen
General Manager

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Conclusion:

Tested samples	Standard	Result
Tested components of submitted sample	Australian / New Zealand Standard AS/NZS 8124.3:2012/Amdt 1:2016 on toxic elements test & Customer's requirements	Pass
Submitted sample set	Mexican Standard NOM-015-SCFI-2007 Commercial Information - Toy Labeling	Not request
Tested components of submitted sample	Mexican standard NOM-252-SSA1-2011-- toy safety and commercial information - toy and school material safety. Limits on the bioavailability of metals used on articles with paints and dyes. Chemical specifications and test methods.	Pass
Submitted Sample set	GB 6675.1-2014 Safety Of Toys – Part 1: Basic Code	Pass
	National Standard of People's Republic of China GB6675.2-2014 Safety Of Toys – Part 2: Mechanical And Physical Properties	Pass
	National Standard of People's Republic of China GB6675.3-2014 Safety Of Toys - Part3: Flammability	Pass
Tested components of submitted sample	National standard of People's Republic Of China on safety of toys GB 6675-2014 part 4 for migration of certain elements	Pass
	GB 6675.1-2014 Toy Safety Part 1: Basic Specification Clause 5.3.7 About Phthalates In Children's Toys	Pass

Remark: EPA label was found on the product.

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Intertek Testing Services Ltd, Shanghai, Ningbo Branch

Peter Chen
General Manager

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上海天祥质量技术服务有限公司宁波分公司

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Test Report Number: SHAH01213837

Tests Conducted

1 Physical and Mechanical Tests

As per ASTM Standard Consumer Safety Specification for Toy Safety F963-17.

Applicant's Specified Age Group for Testing: For ages 3 years and up

The submitted samples were undergone the use and abuse tests in accordance with the Federal Hazardous Substances Act (FHSA), Title 16, Code of Federal Regulations: -

Test	FHSA	Parameter
Impact Test	Section 1500.53(b)	4 x 3.0 ft
Torque Test	Section 1500.53(e)	4 in-lbf
Tension Test	Section 1500.53(f)	15 lbf
Compression Test	Section 1500.53(g)	30 lbf

Section	Testing Items	Assessment
4.1	Material Quality	P
4.5	Sound-Producing Toys	NA
4.6.1	Toys Intended for Children under 36 Months (Small Objects)	NA
4.6.2	Mouth-Actuated Toys	NA
4.6.3	Toys And Games for 36 Months to 72 Months (Small Part Warning)	P
4.7	Accessible Edges	P
4.8	Projections	NA
4.9	Accessible Points	P
4.10	Wires Or Rods	NA
4.11	Nails And Fasteners	NA
4.12	Plastic Film	NA
4.13	Folding Mechanisms and Hinges	NA
4.14	Cords, Straps, and Elastics	NA
4.15	Stability and Over-Load Requirements	NA
4.16	Confined Spaces	NA
4.17	Wheels, Tires and Axles	NA
4.18	Holes, Clearance, and Accessibility of Mechanisms	NA
4.19	Simulated Protective Devices	NA
4.20	Pacifiers	NA
4.21	Projectile Toys	NA
4.22	Teethers and Teething Toys	NA
4.23	Rattles	NA
4.24	Squeeze Toys	NA
4.25	Battery-Operated Toys	NA
4.26	Toys Intended to be Attached to a Crib or Playpen	NA
4.27	Stuffed and Beanbag-Type Toys	NA
4.28	Stroller and Carriage Toys	NA
4.29	Art Materials	NA
4.30	Toy Gun Marking	NA

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上海天祥质量技术服务有限公司宁波分公司
5/F No. 6 Building, Lingyun Industry Park, No.1177 Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, China, 315000
宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000
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Tests Conducted

Section	Testing Items	Assessment
4.31	Balloons	NA
4.32	Certain Toys with Nearly Spherical Ends	NA
4.33	Marbles	NA
4.34	Balls	NA
4.35	Pompoms	NA
4.36	Hemispheric-Shaped Objects	NA
4.37	Yo Yo Elastic Tether Toys	NA
4.38	Magnets	P
4.39	Jaw Entrapment in Handles and Steering Wheels	NA
4.40	Expanding Materials	NA
4.41	Toy Chests	NA
5	Labelling Requirement	P
6	Instructional Literature	P
7	Producer's Markings - Name of Producer/Distributor (Toy)	Yes
	- Address (Toy)	Yes

Remark：The submitted samples were undergone the tests in accordance with Section 8.5 through Section 8.18 and 8.21 through 8.26 on normal use, abuse and specific tests for different types of toys whichever is applicable.

P = Pass NA = Not Applicable

Date Sample Received：30 Apr, 2020
Testing Period：30 Apr, 2020 To 06 May, 2020

2 Flammability Test

As per section 4.2 of the ASTM Standard Consumer Safety Specification On Toy Safety F963-17.

Result = Ignited But Self-Extinguished before Burn Rate Could be Determined

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To be continued

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宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

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Tests Conducted

3 Heavy Elements Analysis (except modelling clay)

As per Section 4.3.5 and Section 8.3.2 to 8.3.5 of the ASTM Standard Consumer Safety Specification on Toy Safety F963-17, heavy elements migration content were determined by Inductively Coupled Argon Plasma Spectrometry.

Element	Result (ppm) θ Tested component (2) to (8)	Detection Limit (ppm)	Regulatory Limit (ppm)	Design Limit ω (ppm)
Sol. Barium (Ba)	ND	5	1000	500
Sol. Lead (Pb)	ND	5	90	30
Sol. Cadmium (Cd)	ND	5	75	40
Sol. Antimony (Sb)	ND	5	60	25
Sol. Selenium (Se)	ND	5	500	200
Sol. Chromium (Cr)	ND	5	60	40
Sol. Mercury (Hg)	ND	5	60	30
Sol. Arsenic (As)	ND	2.5	25	10

Remark:
Sol. = Soluble
ppm = part per million = mg/kg
ND = Not detected
ω = Design limit is only for reference of Melissa & Doug (M&D)
θ = Single result for each test component/group

Tested Components: See component list in the last section of this report

@: Since the sample weight of the component (1) was less than 10 mg, soluble heavy metal analysis was not applicable.

Date Sample Received: 30 Apr, 2020
Testing Period: 30 Apr, 2020 To 09 May, 2020

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Tests Conducted

4 Total Lead (Pb) Content

As per test method CPSC-CH-E1003-09.1 and/or CPSC-CH-E1002-08.3 and/or CPSC-CH-E1001-08.3, and total Lead content was followed by Inductively Coupled Argon Plasma Spectrometry.

(I) Surface coating

Element	Result (ppm) θ Tested component (1) to (5)	Detection Limit (ppm)	Design Limit (ppm)	Regulatory Limit (ppm)
Lead (Pb)	ND	10	30	40

(II) Non-Surface Coating

Element	Result (ppm) θ Tested component (6) to (8)	Detection Limit (ppm)	Design Limit (ppm)	Regulatory Limit (ppm)
Lead (Pb)	ND	10	40	100

Remark:
ND = Not detected
θ = Single result for each test component/group

Tested component(s)：See component list in the last section of this report

Date Sample Received：30 Apr, 2020
Testing Period：30 Apr, 2020 To 09 May, 2020

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To be continued

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Tests Conducted

5 Total Lead (Pb) Content

With reference to US EPA method 3050B,acid digestion method was used and total Lead content was determined by Inductively Coupled Argon Plasma Spectrometry.

Tested Components	Result (ppm)	Requirement (ppm)
(1) to (5)	<10	90
(6) to (8)	<10	100

The above limit was quoted from the Consent Judgement No. RG-356892, settled by superior court of the state of California for the County of Alameda, for Toys based on the California proposition 65.

Remark：ppm = Parts per million = mg/kg

Tested Components：See component list in the last section of this report.

Date Sample Received：30 Apr, 2020
Testing Period：30 Apr, 2020 To 09 May, 2020

6 Physical and Mechanical Test

As per U.S. Code of Federal Regulations title 16 Part 1500.50, the hazards of sharp points, sharp edge and small parts are assessed both before and after applicable use and abuse tests.

Applicant's Specified Age Group for Testing： For ages 3 years and up

	No. of SampleTested	Sharp Point (1500.48)	Sharp Edge (1500.49)	Small Part (1501)
As Received	1	P	NA	NA
Impact (1500.53 (b))	1	P	NA	NA
Flexure (1500.53 (d))	0	NA	NA	NA
Torque (1500.53 (e))	1	P	NA	NA
Tension (1500.53 (f))	1	P	NA	NA
Compression (1500.53 (g))	1	P	NA	NA

Remark：P = Pass NA = Not Applicable

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Tests Conducted

7 Flammability Test

As per U.S. Code of Federal Regulations title 16 Part 1500.44 for rigid and pliable solids.

Result = Ignited but Self-Extinguished before Burn Rate Could be Determined

8 Total Lead (Pb) content in surface coating

As per test method CPSC-CH-E1003-09.1, and total Lead content was followed by Inductively Coupled Argon Plasma Spectrometry.

Tested Components	Result (ppm)	Detection Limit (ppm)	Design Limit (ppm)	Regulatory Limit (ppm)
(1) to (5)	ND	10	30	90

Remark: ppm = mg/kg
ND = Not detected

Tested Components: See component list in the last section of this report.

Date Sample Received: 30 Apr, 2020
Testing Period: 30 Apr, 2020 To 09 May, 2020

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To be continued

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Tests Conducted

9 Tracking Label Assessment

As per Consumer Product Safety Improvement Act (CPSIA) 2008 Section 103 Tracking Labels For Children Products.

Tracking Label Found on the Packaging：

Item No.	#3550&13550
Name of manufacturer/distributor	Melissa & Doug
Location of production	HV
Date code	20126

Tracking Label Found on the Product：

Item No.	/
Name of manufacturer/distributor	/
Location of production	HV
Date code	20126

Note：The tracking label assessment was based on the submitted sample and the information provided by the applicant. There was no verification on the validity of such information.

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Tests Conducted

10 Phthalate Content

With reference to CPSC-CH-C1001-09.3, and followed by Gas Chromatographic-Mass Spectrometric (GC-MS) and **High** Performance Liquid Chromatographic (HPLC) analysis.

(I) For accessible component

Test item	Result (ppm) Tested component (1)to(7)	Detection Limit (ppm)	Regulatory Limit ø (ppm)	Design Limit ω (ppm)
Dibutyl phthalate (DBP)	ND	30	175	100
Di-(2-ethyl hexyl) phthalate (DEHP)	ND	30	175	100
Benzyl butyl phthalate (BBP)	ND	30	175	100
Sum (DBP+DEHP+BBP)	ND	--	1000	1000
Di-iso-nonyl phthalate (DINP)	ND	30	175	100
Di-n-octyl phthalate (DNOP)	ND	30	175	100
Di-iso-decyl phthalate (DIDP)	ND	30	175	100
Sum (DINP+DNOP+DIDP)	ND	--	1000	1000
Di-n-hexyl Phthalate (DnHP/DHEXP)	ND	30	175	100
Di-n-Pentyl Phthalate (DPP/DPENP)	ND	30	175	100
Dicyclohexyl Phthalate(DCHP)	ND	30	175	100
Di-isobutyl Phthalate(DIBP)	ND	30	175	100
Di-(iso-octyl) phthalate (DIOP)	ND	30	175	100
Diethyl phthalate (DEP)	ND	30	175	100
Monobutyl phthalate (MBP)	ND	30	175	100
Phthalic acid, bis (2-methoxyethyl) ester (Di-(2 Methoxyethyl)phthalate) (Dimethoxyethyl Phthalate) (Dimethyl glycol phthalate), (DMEP)	ND	30	175	100
Sum of 14 phthalates	ND	--	1000	1000

ND = Not detected
ω= Design limit is only for reference of Melissa & Doug (M&D)
ø= Regulatory limits for accessible phthalates may vary according to different regulations and standards. M&D has chosen 175ppm for a lower limit

Tested Component(s): See component list in the last section of this report / See W/S

Date Sample Received：30 Apr, 2020
Testing Period：30 Apr, 2020 To 08 May, 2020

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Tests Conducted

11 Toxic Elements Analysis

As per Model Toxics in packaging legislation requirement of packaging and packaging components, acid digestion method was used and toxic elements content were determined by Inductively Coupled Argon Plasma Spectrometry, and Hexavalent Chromium content was determined by UV-Visible Spectrophotometry.

	Result in ppm		Limit (ppm)
	(10+11)	(12+13)	
Lead (Pb)	<5	<5	--
Cadmium (Cd)	<1	<1	--
Mercury (Hg)	<5	<5	--
Chromium VI (Cr (VI))	<1	<1	--
Total	0-12	0-12	100

Remark：ppm = Parts per million = mg/kg

Date Sample Received：30 Apr, 2020
Testing Period：30 Apr, 2020 To 09 May, 2020

12 Tested Sample	Requirement	Result
Submitted samples	TSCA (EPA) label requirement	See remark

Remark: EPA label was found on the product.

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To be continued

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5/F No. 6 Building, Lingyun Industry Park, No.1177 Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, China, 315000
宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

Tel: +86 574 8818 3650
Fax: +86 574 8818 3680
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Tests Conducted

13 Physical and Mechanical Test

Test Standard: Canada Consumer Product Safety Act Toys Regulations SOR/2011-17 with amendments SOR/2016-195, SOR/2016-302 and SOR/2018-138.

Applicant specified age group for testing:For ages 3 years and up

The submitted samples were undergone the use and abuse tests in accordance with Canada Consumer Product Safety Act Toys Regulations SOR/2011-17 with amendments SOR/2016-195, SOR/2016-302 and SOR/2018-138.

Test	Parameter
Drop test	4 x (0.909±0.005) m
Pull test	42.5±2 N
Push test	42.5±2 N

No.	Testing Items	Assessment
3	General - English and French bilingual statement	NA
4	Packaging	
	(a) The opening perimeter is less than 14 inches	NA
	(b) The opening perimeter is more than 14 inches	NA
	Electrical hazard	
5	Electrically operated toys	NA
6	Electrically heated toys	NA
	Mechanical hazard	
7	Small parts	NA
8	Metal edges	NA
9	Wire frames	NA
10	Plastic edges	P
11	Wooden surfaces, edges and corners	P
12	Glass	NA
13	Fasteners	NA
14	Folding mechanism, bracket or bracing	NA
15	Spring-wound driving mechanisms	NA
16	Projectile components	NA
17	Toys which a child can enter and which can be closed by a lid or door	NA
18	Stationary toy that is intended to bear the weight of a child	NA
	Auditory hazards	
19	Noise limit	NA
	Thermal hazards	
20	Heated surfaces, parts or substances	NA
	Dolls, plush toys and soft toys	
28	Fastenings to attach parts, clothing or ornamentation	NA
29	Stuffing materials	
	(a) Clean and free from vermin	NA
	(b) Free from hard and sharp foreign matter	NA
30	Small parts -Squeaker, reed, valve or other similar device	NA

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宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

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Tests Conducted

No.	Testing Items	Assessment
31	Eyes and noses	NA
	Plant seeds	
35	Plant seeds for making noise	NA
36	Plant seeds for stuffing material	NA
37	Shaft-like handle	NA
38	Toy steam engines boilers	NA
39	Finger paints	NA
40	Rattle	NA
41	Elastics	NA
42	Yo-yo type balls	
	(a) Stretchable cords	NA
	(b) Similar product	NA
43	Magnetic force	P
44	Warning of magnetic toys	NA

Remark: P = Pass NA = Not Applicable

14 Cellulose Nitrate and Celluloid

Test Standard: Canada Consumer Product Safety Act Toys Regulations SOR/2011-17 section 21 with amendments SOR/2016-195, SOR/2016-302.and SOR/2018-138

	Assessment	Requirement
Cellulose Nitrate/Celluloid	Absent	Absent

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宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

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Tests Conducted

15 Total Lead (Pb) content

As per method C02.2, C02.3 and C02.4, published in Health Canada Product safety reference manual Book 5 - Laboratory Policies and Procedures Part B: test methods section, acid digestion was used and Total Lead content was determined by Inductively Coupled Argon Plasma Spectrometry.

Tested Components	Result (mg/kg)	Requirement (mg/kg)
(1) to (8)	ND	90

Remark: The above limit was quoted according to Canada Consumer Products Containing Lead Regulations SOR/2018-83.
Reporting Limit = 10 mg/kg
ND=Not Detected

Date Sample Received: 30 Apr, 2020
Testing Period: 30 Apr, 2020 To 09 May, 2020

16 Toxic Elements Analysis

As per Method C-02.2,C-07,C-03 published in Health Canada Product safety reference manual Book 5 - Laboratory Policies and Procedures Part B: Test Methods Section, acid digestion and extraction methods were used and toxic elements content were determined by Inductively Coupled Plasma-mass Spectrometry.

Element	Result(ppm) θ Tested component (1) to (5)	Detection Limit (ppm)	Regulatory Limit (ppm)	Design Limit ω (ppm)
Tot. Lead (Pb)	ND	10	90	30
Tot. Mercury (Hg)	ND	0.028	ND	ND
Sol. Cadmium (Cd)	ND	5	1000	40
Sol. Antimony (Sb)	ND	10	1000	25
Sol. Selenium (Se)	ND	5	1000	200
Sol. Arsenic (As)	ND	4	1000	40
Sol. Barium (Ba)	ND	10	1000	500

Remark:
Tot. = Total
Sol. = Soluble
ND = Not detected
θ = Single result for each test component/group
ω = Design limit is only for reference of Melissa & Doug (M&D)

Tested Component(s): See component list in the last section of this report / See W/S

Date Sample Received: 30 Apr, 2020
Testing Period: 30 Apr, 2020 To 09 May, 2020

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5/F No. 6 Building, Lingyun Industry Park, No.1177 Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, China, 315000
宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

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Fax: +86 574 8818 3680
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Tests Conducted

17 Phthalate Content

As per Method CPSC-CH-C1001-09.3 and followed by Gas Chromatographic-Mass Spectrometric (GC-MS) analysis.

(II) For accessible component

Test item	Result (ppm) Tested component (1)to(7)	Detection Limit (ppm)	Regulatory Limit ø (ppm)	Design Limit ω (ppm)
Dibutyl phthalate (DBP)	ND	30	175	100
Di-(2-ethyl hexyl) phthalate (DEHP)	ND	30	175	100
Benzyl butyl phthalate (BBP)	ND	30	175	100
Sum (DBP+DEHP+BBP)	ND	--	1000	1000
Di-iso-nonyl phthalate (DINP)	ND	30	175	100
Di-n-octyl phthalate (DNOP)	ND	30	175	100
Di-iso-decyl phthalate (DIDP)	ND	30	175	100
Sum (DINP+DNOP+DIDP)	ND	--	1000	1000
Di-n-hexyl Phthalate (DnHP/DHEXP)	ND	30	175	100
Di-n-Pentyl Phthalate (DPP/DPENP)	ND	30	175	100
Dicyclohexyl Phthalate(DCHP)	ND	30	175	100
Di-isobutyl Phthalate(DIBP)	ND	30	175	100
Di-(iso-octyl) phthalate (DIOP)	ND	30	175	100
Diethyl phthalate (DEP)	ND	30	175	100
Monobutyl phthalate (MBP)	ND	30	175	100
Phthalic acid, bis (2-methoxyethyl) ester (Di-(2 Methoxyethyl)phthalate) (Dimethoxyethyl Phthalate) (Dimethyl glycol phthalate), (DMEP)	ND	30	175	100
Sum of 14 phthalates	ND	--	1000	1000

ND = Not detected
ω= Design limit is only for reference of Melissa & Doug (M&D)
ø= Regulatory limits for accessible phthalates may vary according to different regulations and standards. M&D has chosen 175ppm for a lower limit

Tested Component(s): See component list in the last section of this report / See W/S

Date Sample Received：30 Apr, 2020
Testing Period：30 Apr, 2020 To 09 May, 2020

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宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

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Tests Conducted

18 Mechanical and Physical Test

As Per European Standard on Safety of Toys EN71-1: 2014+ A1: 2018.

Applicant's Specified Age Group for Testing: For ages 3 years and up

The submitted samples were undergone the following abuse tests:		
Test	Clause	Parameter
Torque Test	8.3	0.34 Nm
Tension Test	8.4.2.1	90 N
Drop Test	8.5	850 mm x 5times
Impact Test	8.7	1 kg
Compression Test	8.8	110 N
Soaking Test	8.9	--

Clause	Testing Items	Assessment
4	General Requirements	
4.1	Material	P
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	Edges	P
4.8	Points and metallic wires	P
4.9	Protruding parts	NA
4.10	Parts moving against each other	NA
4.11	Mouth actuated toys and other toys intended to be put in the mouth	NA
4.12	Balloons	NA
4.13	Cords of toy kites and other flying toys	NA
4.14	Enclosures	NA
4.15	Toys intended to bear the mass of a child	NA
4.16	Heavy immobile toys	NA
4.17	Projectile toys	NA
4.18	Aquatic toys and inflatable toys	NA
4.19	Percussion caps specifically designed for use in toys and toys using percussion caps	NA
4.20	Acoustics	NA
4.21	Toys containing a non-electrical heat source	NA
4.22	Small balls	NA
4.23	Magnets	P
4.24	Yo-yo balls	NA
4.25	Toys attached to food	NA
4.26	Toy disguise costumes	NA

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宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000
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Clause	Testing Items	Assessment
4.27	Flying toys	NA
5	Toys intended for Children under 36 Months	
5.1	General requirements	NA
5.2	Soft-filled toys and soft-filled parts of a toy	NA
5.3	Plastic sheeting	NA
5.4	Cords, chains and electrical cables in toys	NA
5.5	Liquid filled toys	NA
5.6	Speed limitation of electrically-driven ride-on toys	NA
5.7	Glass and porcelain	NA
5.8	Shape and size of certain toys	NA
5.9	Toys comprising 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
5.15	Sledges with cords for pulling	NA
6	Packaging	NA
7	Warnings, markings and instructions for use	
7.1	General	P
7.2	Toys not intended for children under 36 months	P
7.3	Latex balloons	NA
7.4	Aquatic toys	NA
7.5	Functional toys	NA
7.6	Hazardous sharp functional edges and points	NA
7.7	Projectile toys	NA
7.8	Imitation protective masks and helmets	NA
7.9	Toy kites	NA
7.10	Roller skates, inline skates and skateboards and certain other ride-on toys	NA
7.11	Toys intended to be strung across a cradle, cot, or perambulator	NA
7.12	Liquid-filled teethers	NA
7.13	Percussion caps specifically designed for use in toys	NA
7.14	Acoustics	NA
7.15	Toy bicycles	NA
7.16	Toys intended to bear the mass of a child	NA
7.17	Toys comprising monofilament fibres	NA
7.18	Toy scooters	NA
7.19	Rocking horses and similar toys	NA
7.20	Magnetic/electrical experimental sets	NA
7.21	Toys with electrical cables exceeding 300 mm in length	NA
7.22	Toys with cords or chains intended for children of 18 months and over but under 36 months	NA

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宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000
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Fax: +86 574 8818 3680
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Tests Conducted

Clause	Testing Items	Assessment
7.23	Toys intended to be attached to a cradle, cot or perambulator	NA
7.24	Sledges with cords for pulling	NA
7.25	Flying toys	NA
7.26	Improvised projectiles	NA

Remark： P = Pass NA = Not Applicable

Remark：Additional information according to the Toy Safety Directives 2009/48/EC requirement. These information also appears as a note within the EN71 but are not standard requirements:
1. Marking
The manufacturer's and importer's name, registered trade name or registered trade mark, the address and the CE-marking shall be indicated on the toy or, where that is not possible, on its packaging or in a document accompany the toy. In addition, manufacturers shall ensure that their toys bear a type, batch, serial or model number or other element allowing their identification, or where the size or nature of the toy does not allow it, that the required information is provided on the packaging or in a document accompanying the toy.
- All the above markings were presented on the packaging.

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To be continued

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5/F No. 6 Building, Lingyun Industry Park, No.1177 Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, China, 315000
宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000
Tel: +86 574 8818 3650
Fax: +86 574 8818 3680
www.intertek.com
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Tests Conducted

19 Flammability Test

As per European Standard on Safety of Toys EN71-2: 2011+A1: 2014

Clause	Testing Items	Assessment
4.1	General	P
4.2	Toys to be worn on the head	
4.2.2	Beards, moustaches, wigs, etc., made from hair, pile or material with similar features, which protrude 50 mm or more from the surface of the toy	NA
4.2.3	Beards, moustaches, wigs, etc., made from hair, pile or material with similar features, which protrude less than 50 mm from the surface of the toy	NA
4.2.4	Full or partial moulded head masks	NA
4.2.5	Flowing elements of 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
4.4	Toys Intended to be Entered by a Child	NA
4.5	Soft Filled Toys	NA

Remark： P = Pass NA = Not Applicable

****

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宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

Tel: +86 574 8818 3650
Fax: +86 574 8818 3680
www.intertek.com
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Tests Conducted

20 19 Toxic Element Migration Test

(A) Test Result

As per EN71-3:2013+A3:2018 and followed by Inductively Coupled Plasma Atomic Emission Spectrometry, Inductively Coupled Argon Mass Spectrometry, Ion Chromatography- Inductively Coupled Plasma-Mass Spectrometry, and Gas Chromatographic - Mass Spectrometry

Category (III): Scraped-off toy material

Element	Result (ppm) Tested Component (9)#	Detection Limit (ppm)	Regulatory Limit (ppm)	Design Limit ω (ppm)
Lead (Pb)	ND	10	23	23
Cadmium (Cd)	ND	5	17	17
Mercury (Hg)	ND	1.0	94	30
Arsenic (As)	ND	1.0	47	10
Barium (Ba)	ND	10	18750	500
Chromium (III) (Cr III) ++	ND	5.0	460	40
Antimony (Sb)	ND	10	560	25
Selenium (Se)	ND	10	460	200
Nickel (Ni)	ND	10	930	930
Aluminium (Al)	ND	300	70000	70000
Boron (B)	ND	50	15000	15000
Cobalt (Co)	ND	10	130	130
Copper (Cu)	ND	10	7700	7700
Manganese (Mn)	ND	10	15000	15000
Strontium (Sr)	ND	100	56000	56000
Tin (Sn)	ND	2.5	180000	180000
Zinc (Zn)	ND	100	46000	46000
Chromium (VI) (Cr VI) ++	ND	0.025	0.2/0.053◎	0.053
Organic tin ++	ND	2.0	12	12

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To be continued

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宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

Tel: +86 574 8818 3650
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Tests Conducted

Element	Result (ppm) θ Tested Component (2) to (4),(6) to (8)	Detection Limit (ppm)	Regulatory Limit (ppm)	Design Limit ω (ppm)
Lead (Pb)	ND	10	23	23
Cadmium (Cd)	ND	5	17	17
Mercury (Hg)	ND	1.0	94	30
Arsenic (As)	ND	1.0	47	10
Barium (Ba)	ND	10	18750	500
Chromium (III) (Cr III) ++	ND	5.0	460	40
Antimony (Sb)	ND	10	560	25
Selenium (Se)	ND	10	460	200
Nickel (Ni)	ND	10	930	930
Aluminium (Al)	ND	300	70000	70000
Boron (B)	ND	50	15000	15000
Cobalt (Co)	ND	10	130	130
Copper (Cu)	ND	10	7700	7700
Manganese (Mn)	ND	10	15000	15000
Strontium (Sr)	ND	100	56000	56000
Tin (Sn)	ND	2.5	180000	180000
Zinc (Zn)	ND	100	46000	46000
Chromium (VI) (Cr VI) ++	ND	0.025	0.2/0.053◎	0.053
Organic tin ++	ND	2.0	12	12

Remark: mg/kg = milligram per kilogram
++ = Unless the test results were marked with "#" or "Δ", Chromium (III) & Chromium (VI) and Organic tin contents were not directly determined and were derived from migration results of total chromium and tin respectively.
- Organic tin test result was expressed as tributyl tin.
ND = Not detected (less than reporting limit)
θ = Single result for each test component/group
◎ = The new chromium (VI) migration limit [(0.053mg/kg for Category (III)] were quoted from directive (EU) 2018/725 amending 2009/48/EC effective from 18 November 2019.
ω = Design limit is only for reference of Melissa & Doug (M&D)
= Confirmation of Chromium (VI) test was performed on the tested component. And the reported value of migration of Chromium (III) = migration value of total Chromium – migration value of Chromium(VI).

Tested Component(s): See component list in the last section of this report / See W/S

@: Since the sample weight of the component (1) was less than 10 mg, soluble heavy metal analysis was not applicable.

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Tests Conducted

(B) Categories of various toy materials

Category I: Dry, brittle, powder like or pliable

Solid toy material from which powder-like material is released during playing and semi-solid materials that may also leave residues on the hands during play. The material can be ingested. Contamination of the hands with the material may contribute to the oral exposure of the material. (e.g. the cores of colouring pencils, chalk, crayons, modelling clays and plaster).

Category II: Liquid or sticky

Fluid or viscous toy material, which can be ingested or to which dermal exposure may occur during playing. (e.g. liquid paints, finger paints, liquid ink in pens, glue sticks, slimes, bubble solution).

Category III: Scraped-off

Solid toy material with or without a coating, which can be ingested as a result of biting, tooth scraping, sucking or licking. (e.g. coatings, lacquers, plastics, paper, textiles, glass, ceramic, metallic, wooden, bone, leather and other materials).

Date Sample Received：Apr 30.2020
Testing Period：Apr 30.2020 To May 09.2020

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宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

Tel: +86 574 8818 3650
Fax: +86 574 8818 3680
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www.intertek.com.cn

Tests Conducted

21 19 Toxic Element Migration Test

(A) Test Result

As per EN 71-3:2019 and followed by Inductively Coupled Plasma Atomic Emission Spectrometry, Inductively Coupled Argon Mass Spectrometry, Ion Chromatography- Inductively Coupled Plasma-Mass Spectrometry, Ion Chromatography with UV-VIS and Gas Chromatographic - Mass Spectrometry.

Category (III): Scraped-off toy material

Element	Result (ppm) Tested Component (9)#	Detection Limit (ppm)	Regulatory limit (ppm)	Design Limit ω (ppm)
Lead (Pb)	ND	10	23	23
Cadmium (Cd)	ND	5	17	17
Mercury (Hg)	ND	1.0	94	30
Arsenic (As)	ND	1.0	47	10
Barium (Ba)	ND	10	18750	500
Chromium (III) (Cr III) ++	ND	5.0	460	40
Antimony (Sb)	ND	10	560	25
Selenium (Se)	ND	10	460	200
Nickel (Ni)	ND	10	930	930
Aluminium (Al)	ND	300	70000	70000
Boron (B)	ND	50	15000	15000
Cobalt (Co)	ND	10	130	130
Copper (Cu)	ND	10	7700	7700
Manganese (Mn)	ND	10	15000	15000
Strontium (Sr)	ND	100	56000	56000
Tin (Sn)	ND	2.5	180000	180000
Zinc (Zn)	ND	100	46000	46000
Chromium (VI) (Cr VI) ++	ND	0.025	0.053◎	0.053
Organic tin ++	ND	2.0	12	12

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To be continued

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Fax: +86 574 8818 3680
www.intertek.com
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Tests Conducted

Element	Result (ppm) θ Tested Component (2) to (4),(6) to (8)	Detection Limit (ppm)	Regulatory limit (ppm)	Design Limit ω (ppm)
Lead (Pb)	ND	10	23	23
Cadmium (Cd)	ND	5	17	17
Mercury (Hg)	ND	1.0	94	30
Arsenic (As)	ND	1.0	47	10
Barium (Ba)	ND	10	18750	500
Chromium (III) (Cr III) ++	ND	5.0	460	40
Antimony (Sb)	ND	10	560	25
Selenium (Se)	ND	10	460	200
Nickel (Ni)	ND	10	930	930
Aluminium (Al)	ND	300	70000	70000
Boron (B)	ND	50	15000	15000
Cobalt (Co)	ND	10	130	130
Copper (Cu)	ND	10	7700	7700
Manganese (Mn)	ND	10	15000	15000
Strontium (Sr)	ND	100	56000	56000
Tin (Sn)	ND	2.5	180000	180000
Zinc (Zn)	ND	100	46000	46000
Chromium (VI) (Cr VI) ++	ND	0.025	0.053◎	0.053
Organic tin ++	ND	2.0	12	12

Remark : mg/kg = milligram per kilogram
++ = Unless the test results were marked with "#" or "Δ", Chromium (III) & Chromium (VI) and Organic tin contents were not directly determined and were derived from migration results of total chromium and tin respectively.
- Organic tin test result was expressed as tributyl tin.
ND = Not detected (less than detection limit)
θ = Single result for each test component/group
◎ = The new chromium (VI) migration limit [(0.053mg/kg for Category (III)] were quoted from directive (EU) 2018/725 amending 2009/48/EC effective from 18 November 2019.
ω = Design limit is only for reference of Melissa & Doug (M&D)
= Confirmation of Chromium (VI) test was performed on the tested component. And the reported value of migration of Chromium (III) = migration value of total Chromium – migration value of Chromium(VI).

Tested Component(s): See component list in the last section of this report / See W/S

@: Since the sample weight of the component (1) was less than 10 mg, soluble heavy metal analysis was not applicable.

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To be continued

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上海天祥质量技术服务有限公司宁波分公司
5/F No. 6 Building, Lingyun Industry Park, No.1177 Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, China, 315000
宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000
Tel: +86 574 8818 3650
Fax: +86 574 8818 3680
www.intertek.com
www.intertek.com.cn

Tests Conducted

(B) Categories of various toy materials

Category I: Dry, brittle, powder like or pliable

Solid toy material from which powder-like material is released during playing and semi-solid materials that may also leave residues on the hands during play. The material can be ingested. Contamination of the hands with the material may contribute to the oral exposure of the material. (e.g. the cores of colouring pencils, chalk, crayons, modelling clays and plaster).

Category II: Liquid or sticky

Fluid or viscous toy material, which can be ingested or to which dermal exposure may occur during playing. (e.g. liquid paints, finger paints, liquid ink in pens, glue sticks, slimes, bubble solution).

Category III: Scraped-off

Solid toy material with or without a coating, which can be ingested as a result of biting, tooth scraping, sucking or licking. (e.g. coatings, lacquers, plastics, paper, textiles, glass, ceramic, metallic, wooden, bone, leather and other materials).

Date Sample Received：30 Apr, 2020
Testing Period：30 Apr, 2020 To 09 May, 2020

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To be continued

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5/F No. 6 Building, Lingyun Industry Park, No.1177 Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, China, 315000
宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

Tel: +86 574 8818 3650
Fax: +86 574 8818 3680
www.intertek.com
www.intertek.com.cn

Tests Conducted

22 Cadmium (Cd) Content

With reference to test method IEC 62321-5:2013, acid digestion method was used and total Cadmium content was determined by Inductively Coupled Argon Plasma Spectrometry.

(1) For surface coating

Element	Result (ppm)θ Tested Component (1) to (5)	Detection limit (ppm)
Cadmium (Cd)	ND	5

(2) For substrate

Element	Result (ppm) Tested Component (6)	(7)				Detection limit (ppm)
Cadmium (Cd)	ND	ND				5

Requirement	REACH Regulation Annex XVII Total Cd content	Wet paint : 100ppm
		Surface coating:1000ppm
		Plastic:100ppm
		Metal parts of jewelry & hair accessories:100ppm
	Design Limit ω	40ppm for surface coating; 40ppm for substrate

Remark：
ND = Not detected (less than detection limit)
θ = Single result for each test component/group
ω = Design limit is only for reference of Melissa & Doug (M&D)

Tested Component(s): See component list in the last section of this report

Date Sample Received：30 Apr, 2020
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To be continued

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5/F No. 6 Building, Lingyun Industry Park, No.1177 Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, China, 315000
宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

Tel: +86 574 8818 3650
Fax: +86 574 8818 3680
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Test Report Number： SHAH01213837

Tests Conducted

23 Phthalate Content

With reference to ISO 8124-6:2018, and followed by Gas Chromatographic-Mass Spectrometric (GC-MS) and Liquid Chromatographic / Tandem Mass Spectrometer (LC/MS/MS) analysis.

(III) For accessible component

Test item	Result (ppm) Tested component (1)to(7)	Detection Limit (ppm)	Regulatory Limit ø (ppm)	Design Limit ω (ppm)
Dibutyl phthalate (DBP)	ND	30	175	100
Di-(2-ethyl hexyl) phthalate (DEHP)	ND	30	175	100
Benzyl butyl phthalate (BBP)	ND	30	175	100
Sum (DBP+DEHP+BBP)	ND	--	1000	1000
Di-iso-nonyl phthalate (DINP)	ND	30	175	100
Di-n-octyl phthalate (DNOP)	ND	30	175	100
Di-iso-decyl phthalate (DIDP)	ND	30	175	100
Sum (DINP+DNOP+DIDP)	ND	--	1000	1000
Di-n-hexyl Phthalate (DnHP/DHEXP)	ND	30	175	100
Di-n-Pentyl Phthalate (DPP/DPENP)	ND	30	175	100
Dicyclohexyl Phthalate(DCHP)	ND	30	175	100
Di-isobutyl Phthalate(DIBP)	ND	30	175	100
Di-(iso-octyl) phthalate (DIOP)	ND	30	175	100
Diethyl phthalate (DEP)	ND	30	175	100
Monobutyl phthalate (MBP)	ND	30	175	100
Phthalic acid, bis (2-methoxyethyl) ester (Di-(2 Methoxyethyl)phthalate) (Dimethoxyethyl Phthalate) (Dimethyl glycol phthalate), (DMEP)	ND	30	175	100
Sum of 14 phthalates	ND	--	1000	1000

ND = Not detected
ω= Design limit is only for reference of Melissa & Doug (M&D)
ø= Regulatory limits for accessible phthalates may vary according to different regulations and standards. M&D has chosen 175ppm for a lower limit

Tested Component(s): See component list in the last section of this report / See W/S

Date Sample Received：30 Apr, 2020
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To be continued

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Tel: +86 574 8818 3650
Fax: +86 574 8818 3680
www.intertek.com
www.intertek.com.cn

Tests Conducted

24 Toxic Elements Analysis

As per European Directive 94/62/EC and Amendments 2004/12/EC & 2005/20/EC & 2013/2/EU on packaging and packaging waste, acid digestion method was used and total toxic elements and Hexavalent Chromium content were determined by Inductively Coupled Argon Plasma Spectrometry and by UV-Visible Spectrophotometry.

	Result (ppm)		Limit (ppm)
	(10+11)	(12+13)	
Lead (Pb)	<5	<5	--
Cadmium (Cd)	<1	<1	--
Mercury (Hg)	<5	<5	--
Chromium VI (Cr (VI))	<1	<1	--
Total	0-12	0-12	100

Remark：ppm = Parts per million = mg/kg

Tested Components：See component list in the last section of this report.

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Testing Period：30 Apr, 2020 To 09 May, 2020

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To be continued

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宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

Tel: +86 574 8818 3650
Fax: +86 574 8818 3680
www.intertek.com
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Tests Conducted

25 Polycyclic Aromatic Hydrocarbons (PAHs) Content

With reference to AfPS GS 2014:01 PAK, by solvent extraction and determined by Gas Chromatographic - Mass Spectrometry (GC/MS).

Toy for children :

Compound	Result (mg/kg)		Requirement (mg/kg) (Max.)
	(6)	(7)	
Benzo(a)pyrene	ND	ND	0.5
Benzo(e)pyrene	ND	ND	0.5
Benzo(a)anthracene	ND	ND	0.5
Chrysene	ND	ND	0.5
Benzo(b)fluoranthene	ND	ND	0.5
Benzo(j)fluoranthene	ND	ND	0.5
Benzo(k)fluoranthene	ND	ND	0.5
Dibenzo(a,h)anthracene	ND	ND	0.5

Remark ： The above limit was quoted according to Annex XVII Items 50 of the REACH Regulation (EC) No.1907/2006 & amendment (EU) No. 1272/2013 for Polycyclic Aromatic Hydrocarbons (PAHs).

ND = Not Detected
Detection limit = 0.2 mg/kg

Tested components：See component list in the last section of this report.

Date Sample Received：30 Apr, 2020
Testing Period：30 Apr, 2020 To 09 May, 2020

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To be continued

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宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

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Fax: +86 574 8818 3680
www.intertek.com
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Tests Conducted

26 Polycyclic Aromatic Hydrocarbons (PAHs) Content

As Per AfPS GS 2014:01 PAK, by solvent extraction and determined by Gas Chromatography – Mass Spectrometer (GC/MS).

(Ⅰ) Test Results

Testing Item	Result (in mg/kg)	
	(6)	(7)
1. Benzo[a]anthracene	ND	ND
2. Chrysene	ND	ND
3. Benzo[b]fluoranthene	ND	ND
4. Benzo[j]fluoranthene	ND	ND
5. Benzo[k]fluoranthene	ND	ND
6. Benzo[e]pyrene	ND	ND
7. Benzo[a]pyrene	ND	ND
8. Indeno[1,2,3-c,d]pyrene	ND	ND
9. Dibenzo[a,h]anthrancene	ND	ND
10. Benzo[g,h,i]perylene	ND	ND
11. Acenaphthylene	ND	ND
12. Acenaphthene	ND	ND
13. Fluorene	ND	ND
14. Phenanthrene	ND	ND
15. Anthracene	ND	ND
16. Fluoranthene	ND	ND
17. Pyrene	ND	ND
Sum of 11-17 PAHs	ND	ND
18. Naphthalene	ND	ND
Sum of 1-18 PAHs	ND	ND
Classification of Samples (toys): Category	2	2
Classification of Samples (other products): Category	-	-

ND= Not detected
Detection limit = 0.2 mg/kg

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To be continued

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宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

Tel: +86 574 8818 3650
Fax: +86 574 8818 3680
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Tests Conducted

(Ⅱ) Limits for PAH in Products (for reference)

Parameter	Category 1	Category 2		Category 3	
/	To be taken material, which are intended in the mouth,or materials in toys intended and with long-term skin contact (longer than 30 s)	Materials that do not fall into category 1, with foreseeable contact to skin longer than 30 s (long-term skin contact) or short-term repeated skin contact [a)]		Materials that do not fall into category 1 or 2, with foreseeable contact to skin up to 30 s (short-term skin contact)	
/	/	Toys by RL 2009/48/EC	other products by ProdSG	Toys by RL 2009/48/EC	other products by ProdSG
Benzo[a]pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[e]pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[a]anthracene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[b]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[j]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[k]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo[a,h]anthrancene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[g,h,i]perylene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno[1,2,3-c,d]pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Acenaphthylen, Acenaphthen, Fluoren, Phenanthren, Pyren, Anthracen, Fluoranthen	< 1 (Sum)	< 5 (Sum)	< 10 (Sum)	<20 (Sum)	< 50 (Sum)
Naphthalene	< 1	< 2		< 10	
Sum 18 PAHs	< 1	< 5	< 10	< 20	< 50

[a)] Formulation "of repeated short-term skin contact" REACH Annex XVII No. 50 supplement (REGULATION (EU) No 1272/2013)

Tested Component(s)：See component list in the last section of this report

Date Sample Received：30 Apr, 2020
Testing Period：30 Apr, 2020 To 09 May, 2020

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To be continued

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上海天祥质量技术服务有限公司宁波分公司

5/F No. 6 Building, Lingyun Industry Park, No.1177 Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, China, 315000
宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

Tel: +86 574 8818 3650
Fax: +86 574 8818 3680
www.intertek.com
www.intertek.com.cn

Test Report Number: SHAH01213837

Tests Conducted

27 Polycyclic Aromatic Hydrocarbons (PAHs) Content for GS Certification

As Per AfPS GS 2019:01 PAK, by solvent extraction and determined by Gas Chromatography – Mass Spectrometer (GC/MS).

(Ⅰ) Test Results

Testing Item	CAS No.	Result (in mg/kg)	
		(6)	(7)
1.Phenanthrene	85-01-8	ND	ND
2.Anthracene	120-12-7	ND	ND
3.Fluoranthene	206-44-0	ND	ND
4.Pyrene	129-00-0	ND	ND
Sum (4 PAHs):	--	ND	ND
5.Naphthalene	91-20-3	ND	ND
6.Benzo(a)Anthracene	56-55-3	ND	ND
7.Chrysene	218-01-9	ND	ND
8.Indeno(1,2,3-cd)Pyrene	193-39-5	ND	ND
9.Benzo(b)Fluoranthene	205-99-2	ND	ND
10.Benzo(k)Fluoranthene	207-08-9	ND	ND
11.Benzo(a)Pyrene	50-32-8	ND	ND
12.Dibenzo(a,h)Anthracene	53-70-3	ND	ND
13.Benzo(g,h,i)Perylene	191-24-2	ND	ND
14.Benzo(e)Pyrene	192-97-2	ND	ND
15. Benzo(j)Fluoranthene	205-82-3	ND	ND
Sum (15 PAHs):	--	ND	ND
Classification of Samples: Category		1#	1#

ND= Not detected (less than reporting limit)
Reporting limit = 0.2 mg/kg
#=Category was provided by the Applicant
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To be continued

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5/F No. 6 Building, Lingyun Industry Park, No.1177 Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, China, 315000
宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

Tel: +86 574 8818 3650
Fax: +86 574 8818 3680
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Test Report Number： SHAH01213837

Tests Conducted

(Ⅱ) Limits for PAHs in Products

Parameter	Category 1	Category 2		Category 3	
/	Materials intended to be put into the mouth, or materials in toys according to Directive 2009/48/EC, or materials in articles for use by children up to three years of age with long-term skin contact (longer than 30s) when used as intended	Materials that are not covered by Category 1, with long-term skin contact (longer than 30s) or repeated short-term skin contact if used as intended or foreseeable 2a. used by children 2b. other consumer products		Materials that are not covered by Category 1 or 2, with short-term skin contact (up to 30 s) when used as intended or foreseeable 3a. used by children 3b. other consumer products	
/	/	2a	2b	3a	3b
Phenanthrene	--	--	--	--	--
Anthracene	--	--	--	--	--
Fluoranthene	--	--	--	--	--
Pyrene	--	--	--	--	--
Sum (4 PAHs):	<1	<5	<10	<20	<50
Naphthalene	<1	<2	<2	<10	<10
Benzo(a)Anthracene	<0.2	<0.2	<0.5	<0.5	<1
Chrysene	<0.2	<0.2	<0.5	<0.5	<1
Indeno(1,2,3-cd)Pyrene	<0.2	<0.2	<0.5	<0.5	<1
Benzo(b)Fluoranthene	<0.2	<0.2	<0.5	<0.5	<1
Benzo(k)Fluoranthene	<0.2	<0.2	<0.5	<0.5	<1
Benzo(a)Pyrene	<0.2	<0.2	<0.5	<0.5	<1
Dibenzo(a,h)Anthracene	<0.2	<0.2	<0.5	<0.5	<1
Benzo(g,h,i)Perylene	<0.2	<0.2	<0.5	<0.5	<1
Benzo(e)Pyrene	<0.2	<0.2	<0.5	<0.5	<1
Benzo(j)Fluoranthene	<0.2	<0.2	< 0.5	<0.5	<1
Sum (15 PAHs):	<1	<5	<10	<20	<50

Assessment: Since no accessible plastic, rubber, synthetic fabric and lacquer / coating were found on the submitted sample or the sample weight were less than 50mg of the above-mentioned material, the testing scope of AfPS GS 2019:01 PAK (PAH) on Polycyclic Aromatic hydrocarbons (PAHs) Content was not applicable to the submitted sample(s).

Tested Component(s)：See component list in the last section of this report

Date Sample Received：30 Apr, 2020
Testing Period：30 Apr, 2020 To 09 May, 2020

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To be continued

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上海天祥质量技术服务有限公司宁波分公司

5/F No. 6 Building, Lingyun Industry Park, No.1177 Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, China, 315000
宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

Tel: +86 574 8818 3650
Fax: +86 574 8818 3680
www.intertek.com
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Tests Conducted

28 Wood preservatives

With reference to EN71 part 10 and 11.

Tested compound	Result (mg/kg)	Limit(mg/kg) (Max.)
	(8)	
Pentachlorophenol and its salts	<1	2
Lindane	<1	2
Cyfluthrin	<5	10
Cypermethrin	<5	10
Deltamethrin	<5	10
Permethrin	<5	10

Tested Components：See component list in the last section of this report.

Date Sample Received：30 Apr, 2020
Testing Period：30 Apr, 2020 To 08 May, 2020

29 Formaldehyde Content In Wood

As per EN 717-3, formaldehyde content was detected by UV-VIS spectrophotometer.

Tested Component	Result (mg/kg)	Limit (mg/kg)
(8)	9.1	80 (MAX.)

Remark：Detection Limit = 5.0mg/kg
mg/kg = Milligram per kilogram

Tested Components：See component list in the last section of this report.

Date Sample Received：30 Apr, 2020
Testing Period：30 Apr, 2020 To 08 May, 2020

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5/F No. 6 Building, Lingyun Industry Park, No.1177 Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, China, 315000
宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

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Fax: +86 574 8818 3680
www.intertek.com
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Tests Conducted

30 Physical and Mechanical Tests

As per the Australian / New Zealand Standard AS/NZS 8124.1：2016 safety aspects related to mechanical and physical properties.

Applicant's Specified Age Group for Testing：For ages 3 years and up

The submitted samples were undergone the normal use and the following reasonable foreseeable abuse tests in accordance with the Clause 5.24 of AS/NZS 8124.1：2016 before the assessment of the relevant requirement in Clause 4 ：

Clause	Test	Parameter
5.24.2	Drop Test	4x93±5cm
5.24.5	Torque Test	0.45±0.02Nm
5.24.6	Tension Test	70±2N
5.24.7	Compression Test	136±2N

Section	Testing Items	Assessment
4.1	Normal Use	P
4.2	Reasonably Foreseeable Abuse	P
4.3	Material	P
4.4.1	Small Parts	NA
4.4.2	Small Part Warning	P
4.5	Shape, Size and Strength of Certain Toys	NA
4.6	Edges	P
4.7	Points	P
4.8	Projections	NA
4.9	Metal Wires and Rods	NA
4.10	Plastic Film or Plastic Bags in Packaging and in Toys	NA
4.11	Cords and Elastic	NA
4.12	Folding Mechanisms	NA
4.13	Holes, Clearances and Accessibility of Mechanisms	NA
4.14	Springs	NA
4.15	Stability and Overload Requirement	NA
4.16	Enclosures	NA
4.17	Simulated Protective Equipment, such as Helmets, Hats and Goggles	NA
4.18	Projectile Toys	NA
4.19	Rotors and Propellers	NA
4.20	Aquatic Toys	NA
4.21	Braking	NA
4.22	Toy Bicycles	NA
4.23	Speed limitation of Electrically Driven Ride-on Toys	NA

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宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

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Tests Conducted

Section	Testing Items	Assessment
4.24	Toys Containing a Heat Source	NA
4.25	Liquid-filled Toys	NA
4.26	Mouth-actuated Toys	NA
4.27	Toy Roller Skates, Toy Inline Skates and Toys Skateboards	NA
4.28	Percussion Caps	NA
4.29	Acoustic Requirements	NA
4.30	Toy Scooters	NA
4.31	Magnets and Magnetic Components	P
Annex B	Safety Labelling Guidelines and Manufacturer's Markings	P
Annex D	Toy Gun Marking	NA

Remark： P = Pass NA = Not Applicable

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To be continued

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宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

Tel: +86 574 8818 3650
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www.intertek.com
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Tests Conducted

31 Physical and Mechanical Tests for Children's Toys Containing Magnets

Australian Trade Practice Act 1974- Consumer Protection Notice No. 5 of 2010 Consumer Product Safety Standard for Children's Toys Containing Magnets using relevant cl. of AS/NZS ISO 8124.1:2002 and Amendment 2:2009.

Applicant's Specified Age Group for Testing: For ages 3 years and up

The submitted samples were undergone the normal use and the following reasonable foreseeable abuse tests in accordance with the Clause 5.24 of AS/NZS ISO 8124.1: 2002 + A2: 2009 before the assessment of the relevant requirement in Clause 4.28:

Clause	Test	Parameter
5.24.2	Drop test	4x93±5cm
5.24.5	Torque test	0.45±0.02Nm
5.24.6.1	Tension test	70±2N
5.24.7	Compression test	136±2N

Section	Testing Items	Assessment
4.1	Normal use	P
4.28	Magnets	P
Annex C.2.19	Warning for loose as-received hazardous magnets or loose as-received hazardous magnetic components	NA

Remark: P = Pass NA = Not applicable

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To be continued

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上海天祥质量技术服务有限公司宁波分公司

5/F No. 6 Building, Lingyun Industry Park, No.1177 Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, China, 315000
宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

Tel: +86 574 8818 3650
Fax: +86 574 8818 3680
www.intertek.com
www.intertek.com.cn

Tests Conducted

32 Physical and Mechanical Tests for Magnetic Objects

Australian Competition And Consumer Act 2010-Consumer Protection Notice No.5 of 2012 Imposition of Permanent Ban on Small, High Powered Magnets using relevant cl. of AS/NZS ISO 8124.1:2010.

Applicant's Specified Age Group for Testing: For ages 3 years and up

Clause	Testing Items	Assessment
4.1	Normal Use	P
4.2	Reasonably Foreseeable Abuse	P
4.30	Magnets (Mod.)	P

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To be continued

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5/F No. 6 Building, Lingyun Industry Park, No.1177 Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, China, 315000
宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

Tel: +86 574 8818 3650
Fax: +86 574 8818 3680
www.intertek.com
www.intertek.com.cn

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Tests Conducted

33 Flammability Test

As per Australian/New Zealand Standard on Safety of Toys AS/NZS 8124.2：2016.

Clause	Testing Items	Assessment
4.1	General Requirements	P
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 a Play	NA
4.4	Toys Intended to be Entered by a Child	NA
4.5	Soft-Filled Toys	NA

Remark： P = Pass NA = Not Applicable

34 Toxic Elements Analysis

As per the Australian / New Zealand Standard AS/NZS 8124.3:2012/Amdt 1:2016, acid extraction method was used and toxic elements content were determined by Inductively Coupled Argon Plasma Spectrometry.

Element	Result (ppm) θ Tested component (2)to(4),(6)to(9)	Detection Limit (ppm)	Regulatory Limit (ppm)	Design Limit ω (ppm)
Sol. Barium (Ba)	ND	5	1000	500
Sol. Lead (Pb)	ND	5	90	30
Sol. Cadmium (Cd)	ND	5	75	40
Sol. Antimony (Sb)	ND	5	60	25
Sol. Selenium (Se)	ND	5	500	200
Sol. Chromium (Cr)	ND	5	60	40
Sol. Mercury (Hg)	ND	5	60	30
Sol. Arsenic (As)	ND	2.5	25	10

Remark:
Sol. = Soluble
ND = Not detected
θ = Single result for each test component/group
ω = Design limit is only for reference of Melissa & Doug (M&D)

Tested Component(s): See component list in the last section of this report

@: Since the sample weight of the component (1) was less than 10 mg, soluble heavy metal analysis was not applicable.

Date Sample Received：Apr 30.2020
Testing Period：Apr 30.2020 To May 09.2020

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To be continued

Intertek Testing Services Ltd., Shanghai Ningbo Branch
上海天祥质量技术服务有限公司宁波分公司
5/F No. 6 Building, Lingyun Industry Park, No.1177 Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, China, 315000
宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000
Tel: +86 574 8818 3650
Fax: +86 574 8818 3680
www.intertek.com
www.intertek.com.cn

Tests Conducted

35 Soluble Toxic Elements Analysis (Mexico)

As per Mexican standard NOM-252-SSA1-2011, acid extraction method was used and toxic elements content were determined by Inductively Coupled Argon Plasma Spectrometry.

	Result (mg/kg)		Limit (mg/kg)	
	(2) to (4)	(6) to (9)	I	II
Sol. Barium (Ba)	<5	<5	1000	250
Sol. Lead (Pb)	<5	<5	90	90
Sol. Cadmium (Cd)	<5	<5	75	50
Sol. Antimony (Sb)	<5	<5	60	60
Sol. Selenium (Se)	<5	<5	500	500
Sol. Chromium (Cr)	<5	<5	60	25
Sol. Mercury (Hg)	<5	<5	60	25
Sol. Arsenic (As)	<2.5	<2.5	25	25

I) Limit for any toys (<3 years) and school supply material for preschooler (<6 years)
II) Limit for modeling clay and finger paint

Remark：Sol. = Soluble
mg/kg = Milligram per kilogram

Tested Component(s)：See component list in the last section of this report.

Remark：The sample weight of individual tested component (1) was less than 10mg, according to Mexican standard NOM-252-SSA1-2011, test portions where less than 10mg of material do not need to be tested.

Date Sample Received：30 Apr, 2020
Testing Period：30 Apr, 2020 To 09 May, 2020

36 Basic Code

As per GB 6675.1-2014 Safety of Toys – Part1: Basic Code:

Section	Testing Items	Test result	Assessment
5.1	Physical and Mechanical	Meet	P
5.2	Flammability	Meet	P
5.3	Chemical	Meet	P
5.4	Electrical	NA	NA
5.5	Hygiene requirement	Meet	P
5.6	Radiance	NA	NA
5.7	Toy marking	#	-

= Safety labeling and manufacturer name and address or trade mark shall be written in simplified Chinese.

Remark: P=Pass F= Fail NA= Not Applicable

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To be continued

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5/F No. 6 Building, Lingyun Industry Park, No.1177 Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, China, 315000
宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

Tel: +86 574 8818 3650
Fax: +86 574 8818 3680
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www.intertek.com.cn

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Tests Conducted

37 Mechanical And Physical Properties

As Per National Standard Of People's Republic Of China GB6675.2-2014 Safety Of Toys – Part 2: Mechanical And Physical Properties

Applicant's Specified Age Group for Testing：For ages 3 years and up

The Submitted Samples were Undergone the Normal Use and the Following Reasonable Foreseeable Abuse Tests in accordance with the Clause 5.24 of GB6675.2-2014 before the Assessment of the Relevant Requirement in Clause 4 :

Clause	Test	Parameter
5.24.2	Drop Test	4X93±5cm
5.24.5	Torque Test	0.45±0.02Nm
5.24.6	Tension Test	70±2N
5.24.7	Compression Test	136±2N
5.28	Impact Test	1±0.02kg
5.29	Soaking Test	--

Clause	Testing Items	Assessment
4.1	Normal Use	P
4.2	Reasonably Foreseeable Abuse	P
4.3	Material	P
4.4	Small Parts	P
4.5	Shape, Size and Strength of Certain Toys	NA
4.6	Edges	P
4.7	Points	P
4.8	Projections	NA
4.9	Metal Wires and Rods	NA
4.10	Plastic Film or Plastic Bags in Packaging and in Toys	NA
4.11	Cords and Elastic	NA
4.12	Folding Mechanisms	NA
4.13	Hole, Clearances and Accessibility of Mechanisms	NA
4.14	Springs	NA
4.15	Stability and Overload Requirement	NA
4.16	Enclosures	NA
4.17	Simulated Protective Equipment(such as Helmets, Hats and Goggles)	NA
4.18	Projectile Toys	NA
4.19	Aquatic Toys	NA
4.20	Braking	NA
4.21	Toy Bicycles	NA
4.22	Speed Limitation of Electrically Driven Ride-on Toys	NA
4.23	Toys Containing a Heat Source	NA
4.24	Liquid-Filled Toys	NA
4.25	Mouth-Actuated Toys	NA
4.26	Toy Roller Skates、In-line Roller Skates And Toy Skateboards	NA

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Fax: +86 574 8818 3680
www.intertek.com
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Clause	Testing Items	Assessment
4.27	Toy Percussion Caps	NA
4.28	Acoustic Requirement	NA
4.29	Magnet And Magnetic Component	P
Annex B	Safety Labeling Guidelines and Manufacturer's Markings	#
Annex D	Toy Guns Marking	NA

= Safety labeling and manufacturer name and address or trade mark shall be written in simplified Chinese.

38 Flammability

As per National Standard of People's Republic of China GB6675.3-2014 Safety Of Toys - Part3: Flammability:

Clause	Testing Item	Assessment
4.1	General Requirements	P
4.2	Toys to be Worn on the Head	NA
4.3	Disguise Costumes	NA
4.4	Toys Intended to be Entered by a Child	NA
4.5	Soft-Filled Toys (Animals and Dolls, etc.) with a Piled or Textile Surface	NA

Remark： P = Pass NA = Not Applicable

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To be continued

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上海天祥质量技术服务有限公司宁波分公司

5/F No. 6 Building, Lingyun Industry Park, No.1177 Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, China, 315000
宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

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Tests Conducted

39 Toxic Elements Analysis

As per National Standard of People's Republic Of China on safety of toys GB 6675.4 -2014, acid extraction method was used and toxic elements content were determined by Inductively Coupled Argon Plasma Spectrometry.

	Result (mg/kg)		Limit (mg/kg)
	(2) to (4)	(6) to (9)	
Sol. Barium (Ba)	<5	<5	1000
Sol. Lead (Pb)	<5	<5	90
Sol. Cadmium (Cd)	<5	<5	75
Sol. Antimony (Sb)	<5	<5	60
Sol. Selenium (Se)	<5	<5	500
Sol. Chromium (Cr)	<5	<5	60
Sol. Mercury (Hg)	<5	<5	60
Sol. Arsenic (As)	<2.5	<2.5	25

Remark：Sol. = Soluble
mg/kg = Milligram per kilogram

Tested Components：See component list in the last section of this report

Remark：The sample weight of individual tested component (1) was less than 10mg, according to standard GB 6675.4-2014, test portions where less than 10mg of material do not need to be tested.

Date Sample Received：30 Apr, 2020
Testing Period：30 Apr, 2020 To 08 May, 2020

40 Phthalate content test

As per GB/T 22048-2015 method A, by Gas Chromatography-Mass Spectrometry (GC-MS) analysis.

Tested compound	Result (%,w/w)	Limit(%,w/w) (Max.)
	(1)to(7)	
Di-butyl phthalate (DBP)	ND	-
Di(2-ethyl hexyl) phthalate(DEHP)	ND	-
Benzyl butyl phthalate (BBP)	ND	-
Sum of above three phthalates	ND	0.1
Di-iso-nonyl phthalate (DINP)	ND	-
Di-n-octyl phthalate (DNOP)	ND	-
Di-iso-decyl phthalate (DIDP)	ND	-
Sum of above three phthalates	ND	0.1

Remark：Detection Limit = 0.01%(w/w)
ND = Not Detected

Tested Components：see test components list in the last section of this report

Date Sample Received： 30 APR, 20202020.04.30
Testing Period： 30 APR, 2020 2020.04.30 To 2020.05.08

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5/F No. 6 Building, Lingyun Industry Park, No.1177 Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, China, 315000
宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

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Components:

(1) Black coating on wood(logo).
(2) Coatings on wood (box).
(3) Blue coating on wood(box/pedestal).
(4) Sky blue coating on wood (back of body).
(5) Coatings on paper label (puzzle).
(6) Black soft magnetic rubber (back of puzzle).
(7) Gray soft magnetic rubber (magnet between paper and fiberboard).
(8) Brown fiberboard.
(9) White paper with multicolor printings (puzzle).
(10) Brown corrugated paper with blue printing (tray of package).
(11) Transparent plastic sheet (lid of package).
(12) White paper with multicolor printings (sticker on shrink film/under box).
(13) Transparent plastic film (shrink film of package).

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End of report

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上海天祥质量技术服务有限公司宁波分公司

5/F No. 6 Building, Lingyun Industry Park, No.1177 Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, China, 315000
宁波市高新区凌云路 1177 号凌云产业园 6 号楼 5 层 315000

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Fax: +86 574 8818 3680
www.intertek.com
www.intertek.com.cn