



TEST REPORT

Client: ThinkFun Inc.
Address: 1321 Cameron St, Alexandria Virginia USA
22314

REPORT NO: C80231824
DATE: April 17, 2018

Attn: Kirsten Bloxom

Sample Description: COLOR FOLD
Quantity Submitted: 3 pieces
Style No.: 4850
PO No.: Not provided
Labeled Age Grading: 8+
Test Age Grading: Ages 8+
Destination: USA, Europe, Canada
Country of Origin: China
Date(s) of samples received: March 20, 2018

TEST METHOD & RESULTS: Please refer to next page(s)

CONCLUSION:

ASTM F963-17 Physical & Mechanical Requirements	PASS
16 CFR 1500 Physical & Mechanical Requirements	PASS
Canada Toys Regulations SOR/2011-17 And Regulations Amending Toys Regulations SOR/2016-195 & SOR/2016-302 Physical And Mechanical Requirements	PASS
EN 71-1:2014 Mechanical & Physical Properties	PASS
ASTM F963-17 Flammability Requirements	PASS
16 CFR 1500.3 (c) (6) (vi) / 16 CFR 1500.44 Flammability Requirements	PASS
Canada Toys Regulations SOR/2011-17 And Regulations Amending Toys Regulations SOR/2016-195 & SOR/2016-302 Flammability Requirements (Cellulose Nitrate And Celluloid)	PASS
EN 71-2:2011+A1:2014 Flammability	PASS
Flammability Requirements For Textile Fibres: SOR/2016-194	PASS
Total Heavy Metals In Packaging [NERC Heavy Metals in Packaging Wastes]	PASS
Total Heavy Metals In Packaging [94/62/EC]	PASS
Specific Substance In Surface Coatings [Canada Toys Regulations (SOR/2011-17) with SOR/2016-195 & SOR/2016-302 amendment , Toxicological Hazards, Section 23]	PASS
Total Lead And Mercury In Surface Coatings [Canada Toys Regulations (SOR/2011-17) with SOR/2016-195 & SOR/2016-302 amendment, Toxicological Hazards, Section 23 and SOR/2016-193 Surface Coating Materials Regulations]	PASS
Soluble Migrated Elements [ASTM F963-17 Section 4.3.5.1 (2), 4.3.5.2 (2)(b) & 8.3]	PASS
ASTM F963-17 Clause 4.3.5.2 (2) (c) Soluble Cadmium in metallic Small Part	NOT APPLICABLE#
Total Cadmium Content In Surface Coating [Point 23 of the Annex XVII of the Regulation (EC) no. 1907/2006 (REACH) with further amendment]	PASS
Total Cadmium Content In Plastic [Point 23 of the Annex XVII of the Regulation (EC) no. 1907/2006 (REACH) with further amendment]	PASS
Total Lead Content In Paints And Surface Coatings [ASTM F963-17 Section 4.3.5.1(1)]	PASS
Total Lead Content In Substrates [ASTM F963-17 Section 4.3.5.2 (2)(a)]	PASS
Total Lead Content In Paints And Surface Coatings [Consumer Product Safety Improvement Act of 2008 Section 101]	PASS
Total Lead Content In Substrates [Consumer Product Safety Improvement Act of 2008 Section 101]	PASS
Total Lead Content In Paints And Surface Coatings [16 CFR 1303]	PASS
Total Lead Content [Canada Consumer Products Containing Lead (Contact With Mouth) Regulations (SOR/2016-171 Amending SOR/2010-273)]	NOT APPLICABLE#

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Total Lead Content In Paints And Surface Coatings [California Proposition 65 settlements of Alameda Superior Court, BG07350969, RG08378050 and San Francisco Superior Court 07-462991]	NOT APPLICABLE#
Total Lead Content In Substrates [California Proposition 65 settlements of Alameda Superior Court, BG07350969, RG08378050 and San Francisco Superior Court 07-462991]	NOT APPLICABLE#
Total Lead Content In Paints And Surface Coatings [California Proposition 65 settlements of Alameda Superior Court, BG07356892]	PASS
Total Lead Content In Substrates [California Proposition 65 settlements of Alameda Superior Court, RG07356892]	PASS
Total Phthalates Content [California Proposition 65 settlements of County of Sacramento case number 07AS04683, and the Alameda Superior Court case numbers BG07350969, RG08367601, RG07351032 and RG08378050]	NOT APPLICABLE#
Total Phthalates Content In Toys And Child Care Articles [Point 51, 52 of the Annex XVII of the Regulation (EC) no. 1907/2006 (REACH) with further amendment]	PASS
Prohibition Of Children's Toys And Child Care Articles Containing Specified Phthalates [16 CFR 1307.3 & CPSIA Section 108]	PASS
Total Phthalates Content In Toys And Child Care Articles [Phthalates Regulation SOR/2016-188 Phthalates Content]	PASS
Determination Of Azo Colorants [Regulation (EC) No. 1907/2006 on REACH Annex XVII item no. 43 and appendix 8 as amended by commission regulation (EC) no. 552/2009]	PASS

#: There is no component on the submitted test samples under the testing scopes.

For and on behalf of :
UL VS Shanghai Limited Shenzhen Branch

Stephen Chan
Operation Manager - Toys Department

Important Notes :
The results relate only to the samples tested.

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TEST RESULTS

1. MECHANICAL AND PHYSICAL TEST

1.1 AS PER ASTM STANDARD CONSUMER SAFETY SPECIFICATION FOR TOYS SAFETY F963-17

The following clauses are identified to be applicable:

Age grading for testing : Ages 8 and up
Samples Quantity : 1 piece

Clause	Test Items	Assessment
4.1	Material(visual check on cleanness)	P
4.3.7	Stuffing Materials (Visual Check On Contaminations)	NA
4.5	Sound producing toys	NA
4.6	Small Objects	NA
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	P
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, Such As Helmets, Hats And Goggles	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
4.31	Balloons	NA

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Clause	Test Items	Assessment
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	Yoyo Elastic Tether Toys	NA
4.38	Magnets	NA
4.39	Jaw Entrapment In Handles And Steering Wheels	NA
4.40	Expanding Materials	NA
4.41	Toy Chests	NA
5	Safety Labeling Requirements	P
6	Instructional Literature	P
7	Producer's Markings	P

Remark: P=Pass N/A=Not Applicable

#: Section 4.7 Accessible Edges and Section 4.9 Accessible Points are only applicable for toys children under 96 months, and the assessment was for reference only.

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1.2 AS PER 16 CFR 1500.50, THE HAZARDS OF SHARP POINTS, SHARP EDGE AND SMALL PARTS ARE ASSESSED BOTH BEFORE AND AFTER APPLICABLE USE AND ABUSE TESTS:

The following clauses are identified to be applicable:

Age grading for testing : Ages 8 and up
Samples Quantity : 1 piece

	<u>TEST ITEMS</u>	<u>SHARP POINT</u>	<u>SHARP EDGE</u>	
		(1500.48)	(1500.49)	
	As received	P [#]	P [#]	
1500.121	Labeling requirement; prominence, placement, and conspicuousness			NA
1500.19	Misbranded toys and other articles intended for use by children			NA

REMARK: P = Pass N/A=Not Applicable

#: The Mechanical and Physical Tests Requirements of U.S. Consumer Products Safety Commission for Toys and Articles intended for use by the children Specified in U.S. Code of Federal Regulations Title 16, Part 1500.48 and 1500.49 are only for children under 8 years of age. Only As Received Sharp Point and Sharp Edge were assessed, and the assessment was for reference only.

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1.3 AS PER CANADA TOYS REGULATIONS SOR/2011-17 and REGULATIONS AMENDING TOYS REGULATION SOR/2016-195 &SOR/2016-302

The following clauses are identified to be applicable:

Age grading for testing : Ages 8 and up
 Samples Quantity : 1 piece

(A)	Test Items	Assessment
3	General -- English and French bilingual statement	P
4	Packaging	P
	<u>Mechanical hazard</u>	
7	Small parts	NA
8	Exposed Metal Edges	NA
9	Ends	P
10	Exposed Plastic Parts	P
11	Exposed Wooden Surfaces, Edges And Corners	NA
12	Glass	NA
13	Fasteners	NA
14	Folding Mechanisms, Bracket Or Bracing	NA
15	Spring-Wound Driving Mechanism	NA
16	Projectile Component, Other Than A Rocketry Component.	NA
17	Toys Which A Child Can Enter And Which Can Be Closed By A Lid Or Door	NA
18	Toys Which Are Stationary And Intended To Bear The Weight Of A Child	NA
19	Impulsive noise	NA
20	Thermal hazards	NA
	<u>Dolls and soft toys</u>	NA
28	Fastening to attach parts, clothing or ornamentation.	NA
29	Stuffing materials	NA
(A)	Clean And Free From Vermin	NA
(B)	Free From Hard And Sharp Foreign Matter	NA
30	Squeaker, reed, valve or other similar device	NA
31	Eyes or nose	NA
35	Plant seeds-Noise	NA
36	Plant seeds-Stuffing material	NA
37	Pull and push toys	NA
38	Toy steam engines	NA
40	Rattle	NA
41	Elastic	NA
42	Yo-yo type balls	NA

Remark: P=Pass N/A=Not Applicable

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1.4 PHYSICAL AND MECHANICAL TESTS OF THE MOST STRINGENT REQUIREMENTS OF THE FOLLOWING STANDARDS:

A) EN71-1:2014

Applicant Specified / Appropriate Age Grading for testing: Ages 8 and up
Sample size: 1 piece

Clause	Test Items	Assessment
4.1	Material cleanliness	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
4.10.1	Folding and sliding mechanisms	NA
4.10.2	Driving mechanisms	NA
4.10.3	Hinges	NA
4.10.4	Springs	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 toys kites and other flying toys	NA
4.14.1	Toys which a child can enter	NA
4.14.2	Masks and helmets	NA
4.15	Toys intended to bear the mass of a child	NA
4.16	Heavy immobile toys	NA
4.17	Projectiles	NA
4.18	Aquatic toys and inflatable toys	NA
4.19	Percussion caps specifically designed for use in toys and toy 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	NA
4.24	Yo-yo balls	NA
4.25	Toys attached to food	NA
5.1	General Requirements – Toys intended for children under 36 months	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

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Clause	Test Items	Assessment
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
6	Packaging	P
7	Warnings, markings and instructions for use	NA
7.1	General	NA
7.2	Warning on toys not intended for children under 36 months	NA
7.5	Warnings on functional toys and their packaging	NA

Warnings and safety instructions shall be written in the languages easily understood by consumers of the country in which the toy is to be sold. Only English version was reviewed.

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2. FLAMMABILITY TEST

2.1 AS PER ASTM STANDARD ON SAFETY OF TOYS F963-17 ANNEX A5:

Samples Quantity: 1 piece
Requirement: Burning rate should not exceed 0.1 inch per second along the major axis.

Results: The sample was tested to be ignited but extinguished.

2.2 AS PER U.S. CODE OF FEDERAL REGULATIONS TITLE 16 PART 1500.44 FOR RIGID AND PLIABLE SOLIDS defined under 16 CFR 1500.3 section (c) (6) (vi):

Samples Quantity: 1 piece
Requirement: Burning rate should not exceed 0.1 inch per second along the major axis.

Results: The sample was tested to be ignited but extinguished.

2.3 AS PER CANADA TOYS REGULATIONS SOR/2011-17 AND REGULATIONS AMENDING TOYS REGULATIONS SOR/2016-195 & SOR/2016-302 SECTION 21 (CELLULOSE NITRATE AND CELLULOID)

Requirement: Celluloid (cellulose nitrate) and materials with the same behaviour in fire (except when used in varnish or paint) shall not be used in the manufacture of toys.

Results: The submitted sample(s) complied with this requirement.

2.4 AS PER EUROPEAN STANDARD ON SAFETY OF TOYS EN 71-2:2011+ A1:2014 SECTION 4.1 GENERAL REQUIREMENT (CELLULOSE NITRATE):

Requirement: Celluloid (cellulose nitrate), except when used in varnish, paint or glue, or in balls of the type used for table tennis or similar games, and materials with the same behaviour in fire as celluloid, shall not be used in the manufacture of toys.

Results: The submitted sample(s) complied with this requirement.

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2.5 FLAMMABILITY REQUIREMENT FOR TEXTILE FIBRES: SOR/2016-194

Key to sample(s):

Sample 1 = Multicolor printed fabric (game cloth)

Sample: 1		Rate of Burning(second)		Requirement
	Original	After 1 [] Dry Clean [] Wash		
Plain Surface	Specimen 1)	---	Specimen 1)	Greater than 3.5 seconds
	2)	---	2)	
	3)	---	3)	
	4)	---	4)	
	5)	---	5)	
	Average	IBE	Average	
Code Description:	IBE= Ignited But Extinguished			
TEST RESULT:	PASS			

Date(s) of test(s) conducted: April 8, 2018 to April 16, 2018

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SZ-FAF-001 (2017-10-12)



TEST REPORT

Client: ThinkFun Inc.
Address: 1321 Cameron St, Alexandria Virginia USA
22314

REPORT NO: C80231824
DATE: April 17, 2018

TEST RESULTS

3. CHEMICAL TESTS:

Tested Sample ID	Product Description / Sample Group Desc.
001	Color fold
002	Transparent plastic film (shrink film of box/ cards) (From 001)
003	Transparent plastic (tray) (From 001)
004	Transparent plastic with black coating (poly-bag) (From 001)
005	Multicolor coatings (instruction manual) (From 001)
006	White paper sheet excluding coatings (instruction manual) (From 001)
007	Multicolor coatings (cards) (From 001)
008	White/grey paper board with transparent plastic film and inaccessible multicolor coatings (box) (From 001)
009	Multicolor printed fabric (game cloth) (From 001)

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SZ-FAF-001 (2017-10-12)



TEST REPORT

Client: ThinkFun Inc.
Address: 1321 Cameron St, Alexandria Virginia USA
22314

REPORT NO: C80231824
DATE: April 17, 2018

TEST RESULTS

3.1 TOTAL HEAVY METALS IN PACKAGING [NERC Heavy Metals in Packaging Wastes]

Test Method : In-house Method

Elements	Requirement (Max.)	Reporting Limit	Sample, mg/kg			
			002	003	004	005
Lead (Pb)	100	10	<10	<10	<10	<10
Cadmium (Cd)	100	10	<10	<10	<10	<10
Chromium VI (Cr VI)	100	10	<10	<10	<10	<10
Mercury (Hg)	100	10	<10	<10	<10	<10
Sum	100	40	<40	<40	<40	<40
Rating			PASS	PASS	PASS	PASS

Elements	Requirement (Max.)	Reporting Limit	Sample, mg/kg			
			006			
Lead (Pb)	100	10	<10			
Cadmium (Cd)	100	10	<10			
Chromium VI (Cr VI)	100	10	<10			
Mercury (Hg)	100	10	<10			
Sum	100	40	<40			
Rating			PASS			

Remark:

- All concentrations expressed in milligrams per kilogram
- “<” means less than
- Method for determination of Lead (Pb), Cadmium(Cd), Chromium VI (Cr VI) and Mercury(Hg) are determined by Inductively Coupled Plasma Spectroscopy.
- The test results only apply to the items tested.

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SZ-FAF-001 (2017-10-12)



TEST REPORT

Client: ThinkFun Inc.
Address: 1321 Cameron St, Alexandria Virginia USA
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REPORT NO: C80231824
DATE: April 17, 2018

TEST RESULTS

3.2 TOTAL HEAVY METALS IN PACKAGING [94/62/EC]

Test Method : In-house Method

Elements	Requirement (Max.)	Reporting Limit	Sample, mg/kg			
			002	003	004	005
Lead (Pb)	100	10	<10	<10	<10	<10
Cadmium (Cd)	100	10	<10	<10	<10	<10
Chromium VI (Cr VI)	100	10	<10	<10	<10	<10
Mercury (Hg)	100	10	<10	<10	<10	<10
Sum	100	40	<40	<40	<40	<40
Rating			PASS	PASS	PASS	PASS

Elements	Requirement (Max.)	Reporting Limit	Sample, mg/kg			
			006			
Lead (Pb)	100	10	<10			
Cadmium (Cd)	100	10	<10			
Chromium VI (Cr VI)	100	10	<10			
Mercury (Hg)	100	10	<10			
Sum	100	40	<40			
Rating			PASS			

Remark:
 -All concentrations expressed in milligrams per kilogram
 -“<” means less than
 -Method for determination of Lead (Pb), Cadmium(Cd), Chromium VI (Cr VI) and Mercury(Hg) are determined by Inductively Coupled Plasma Spectroscopy.
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SZ-FAF-001 (2017-10-12)



TEST REPORT

Client: ThinkFun Inc.
Address: 1321 Cameron St, Alexandria Virginia USA
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REPORT NO: C80231824
DATE: April 17, 2018

TEST RESULTS

3.3 SPECIFIC SUBSTANCE IN SURFACE COATINGS [Canada Toys Regulations (SOR/2011-17) with SOR/2016-195 & SOR/2016-302 amendment, Toxicological Hazards, Section 23]

Test Method : Health Canada Product Safety Reference Manual, Book 5, Part B, Method C-03

<u>Elements</u>	<u>Requirement (Max.)</u>	<u>Reporting Limit</u>	<u>Sample, mg/kg</u>
			<u>007</u>
Antimony (Sb)	1000	50	<50
Arsenic (As)	1000	50	<50
Barium (Ba)	1000	50	<50
Cadmium (Cd)	1000	50	<50
Selenium (Se)	1000	50	<50
<u>Rating</u>			PASS

Remark:
 -All concentrations expressed in milligrams per kilogram
 -“<” means less than
 -Method for determination of each soluble element present: Antimony(Sb), Arsenic(As), Barium(Ba), Cadmium(Cd) and Selenium(Se) are determined by Inductively Coupled Plasma Spectroscopy.
 -The test results only apply to the items tested.

3.4 TOTAL LEAD AND MERCURY IN SURFACE COATINGS [Canada Toys Regulations (SOR/2011-17) with SOR/2016-195 & SOR/2016-302 amendment, Toxicological Hazards, Section 23 and SOR/2016-193 Surface Coating Materials Regulations]

Test Method : In-house method reference with CPSC-CH-E1003-09.1

<u>Elements</u>	<u>Requirement (Max.)</u>	<u>Reporting Limit</u>	<u>Sample, mg/kg</u>
			<u>007</u>
Lead (Pb)	90	10	< 10
Mercury (Hg)	10	10	< 10
<u>Rating</u>			PASS

Remark:
 -All concentrations expressed in milligrams per kilogram
 -“<” means less than
 -Method for determination of each element present: Lead (Pb) and Mercury (Hg) are determined by Inductively Coupled Plasma Mass Spectrometry.
 -The test results only apply to the items tested.

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SZ-FAF-001 (2017-10-12)



TEST REPORT

Client: ThinkFun Inc.
 Address: 1321 Cameron St, Alexandria Virginia USA
 22314

REPORT NO: C80231824
 DATE: April 17, 2018

TEST RESULTS

3.5 SOLUBLE MIGRATED ELEMENTS [ASTM F963-17 Section 4.3.5.1 (2), 4.3.5.2 (2)(b) & 8.3]

Test Method : ASTM F963-17 Section 8.3

Elements	Requirement (Max.)	Sample, mg/kg	
		007	
*Sample weight (g)		--	
Antimony (Sb)	60	<6.0	
Arsenic (As)	25	<2.5	
Barium (Ba)	1000	<6.0	
Cadmium (Cd)	75	<6.0	
Chromium (Cr)	60	<6.0	
Lead (Pb)	90	<6.0	
Mercury (Hg)	60	<6.0	
Selenium (Se)	500	<6.0	
Rating		PASS	
<i>Remark:</i> -All concentrations expressed in milligrams per kilogram and unadjusted unless otherwise stated -“<” means less than -Method for determination of each soluble element present: Antimony(Sb), Arsenic(As), Barium(Ba), Cadmium(Cd), Chromium(Cr), Lead(Pb), Mercury(Hg) and Selenium(Se) are determined by Inductively Coupled Plasma Spectroscopy. -*Sample weight between 0.01g - 0.1g should be reported in according to ASTM F963-17 -** Test specimen less than 10 mg is not required to test soluble migrated elements according to ASTM F963-17 Section 8.3.3.6 (2). -The test results only apply to the items tested. -Any deviation from the standard method was specified as follow:			

3.6 TOTAL CADMIUM CONTENT IN SURFACE COATING [Point 23 of the Annex XVII of the Regulation (EC) no. 1907/2006 (REACH) with further amendment]

Test Method : In-house method reference with CPSC-CH-E1003-09.1

Elements	Requirement (Max.)	Reporting Limit	Sample, mg/kg	
			005	007
Cadmium (Cd)	100	10	<10	<10
Rating			PASS	PASS
<i>Remark:</i> -All concentrations expressed in milligrams per kilograms -“<” means less than -Method for determination of cadmium (Cd) is determined by Inductively Coupled Plasma Spectroscopy. -The test results only apply to the items tested.				

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TEST REPORT

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REPORT NO: C80231824
 DATE: April 17, 2018

TEST RESULTS

3.7 TOTAL CADMIUM CONTENT IN PLASTIC [Point 23 of the Annex XVII of the Regulation (EC) no. 1907/2006 (REACH) with further amendment]

Test Method : EN 1122:2001

Elements	Requirement (Max.)	Reporting Limit	Sample, mg/kg			
			002	003	004	008
Cadmium (Cd)	100	10	<10	<10	<10	<10
Rating			PASS	PASS	PASS	PASS
<i>Remark:</i> -All concentrations expressed in milligrams per kilograms -"<" means less than -Method for determination of cadmium (Cd) is determined by Inductively Coupled Plasma Spectroscopy. -The test results only apply to the items tested.						

3.8 TOTAL LEAD CONTENT IN PAINTS AND SURFACE COATINGS [ASTM F963-17 Section 4.3.5.1(1)]

Test Method : CPSC-CH-E1003-09.1 (Paints and Surface Coatings)

Elements	Requirement (Max.)	Reporting Limit	Sample, mg/kg
			007
Lead (Pb)	90	10	<10
Rating			PASS
<i>Remark:</i> -All concentrations expressed in milligrams per kilogram of Tested Parts -"<" means less than -Method for determination of Lead (Pb) is determined by Inductively Coupled Plasma Spectroscopy. -The test results only apply to the items tested.			

3.9 TOTAL LEAD CONTENT IN SUBSTRATES [ASTM F963-17 Section 4.3.5.2 (2)(a)]

Test Method : CPSC-CH-E1001-08.3 (Metal Substrates) / CPSC-CH-E1002-08.3 Section IA & IIA (Non-Metal Substrates)

Elements	Requirement (Max.)	Reporting Limit	Sample, mg/kg	
			008	009
Lead (Pb)	100	10	<10	<10
Rating			PASS	PASS
<i>Remark:</i> -All concentrations expressed in milligrams per kilogram of Tested Parts -"<" means less than -Method for determination of Lead (Pb) is determined by Inductively Coupled Plasma Spectroscopy. -The test results only apply to the items tested.				

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SZ-FAF-001 (2017-10-12)



TEST REPORT

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 Address: 1321 Cameron St, Alexandria Virginia USA
 22314

REPORT NO: C80231824
 DATE: April 17, 2018

TEST RESULTS

3.10 TOTAL LEAD CONTENT IN PAINTS AND SURFACE COATINGS [Consumer Product Safety Improvement Act of 2008 Section 101]

Test Method : CPSC-CH-E1003-09.1 (Paints and Surface Coatings)

Elements	Requirement (Max.)	Reporting Limit	Sample ,mg/kg	
			007	
Lead (Pb)	90	10	<10	
Rating			PASS	
<i>Remark:</i> -All concentrations expressed in milligrams per kilogram of Tested Parts -“<” means less than -Method for determination of Lead (Pb) is determined by Inductively Coupled Plasma Spectroscopy. -The test results only apply to the items tested.				

3.11 TOTAL LEAD CONTENT IN SUBSTRATES [Consumer Product Safety Improvement Act of 2008 Section 101]

Test Method : CPSC-CH-E1001-08.3 (Metal Substrates) / CPSC-CH-E1002-08.3 Section IA & IIA (Non-Metal Substrates)

Elements	Requirement (Max.)	Reporting Limit	Sample, mg/kg	
			008	009
Lead (Pb)	100	10	<10	<10
Rating			PASS	PASS
<i>Remark:</i> -All concentrations expressed in milligrams per kilogram of Tested Parts -“<” means less than -Method for determination of Lead (Pb) is determined by Inductively Coupled Plasma Spectroscopy. -The test results only apply to the items tested.				

3.12 TOTAL LEAD CONTENT IN PAINTS AND SURFACE COATINGS [16 CFR 1303]

Test Method : CPSC-CH-E1003-09.1 (Paints and Surface Coatings)

Elements	Requirement (Max.)	Reporting Limit	Sample, mg/kg	
			007	
Lead (Pb)	90	10	<10	
Rating			PASS	
<i>Remark:</i> -All concentrations expressed in milligrams per kilogram of Tested Parts -“<” means less than -Method for determination of Lead (Pb) is determined by Inductively Coupled Plasma Spectroscopy. -The test results only apply to the items tested.				

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SZ-FAF-001 (2017-10-12)



TEST REPORT

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 22314

REPORT NO: C80231824
 DATE: April 17, 2018

TEST RESULTS

3.13 TOTAL LEAD CONTENT IN IN PAINTS AND SURFACE COATINGS [California Proposition 65 Settlements of Alameda Superior Court, RG07356892]

Test Method : CPSC-CH-E1001-09.1 (Paint or Surface Coatings)

Elements	Requirement (Max.)	Reporting Limit	Sample, mg/kg	
			007	
Lead (Pb)	90	10	<10	
Rating			PASS	
<i>Remark:</i> -All concentrations expressed in milligrams per kilogram of Tested Parts -“<” means less than -Method for determination of Lead (Pb) is determined by Inductively Coupled Plasma Spectroscopy. -The test results only apply to the items tested.				

3.14 TOTAL LEAD CONTENT IN SUBSTRATES [California Proposition 65 settlements of Alameda Superior Court, RG07356892]

Test Method : CPSC-CH-E1001-08.3 (Metal Substrates) / CPSC-CH-E1002-08.3 Section IA & IIA (Non-Metal Substrates)

Elements	Requirement (Max.)	Reporting Limit	Sample ,mg/kg	
			008	009
Lead (Pb)	100	10	<10	<10
Rating			PASS	PASS
<i>Remark:</i> -All concentrations expressed in milligrams per kilogram of Tested Parts -“<” means less than -Method for determination of Lead (Pb) is determined by Inductively Coupled Plasma Spectroscopy. -The test results only apply to the items tested.				

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TEST REPORT

Client: ThinkFun Inc.
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REPORT NO: C80231824
 DATE: April 17, 2018

TEST RESULTS

3.15 **TOTAL PHTHALATES CONTENT IN TOYS AND CHILD CARE ARTICLES [Point 51, 52 of the Annex XVII of the Regulation (EC) no. 1907/2006 (REACH) with further amendment]**
 Test Method : CPSC-CH-C1001-09.3

Analyte	CAS No.	Requirement (Max.)	Reporting Limit	Sample.%	
				007	008
Dibutyl Phthalate, DBP	84-74-2	0.1	0.005	<0.005	<0.005
Benzyl Butyl Phthalate, BBP	85-68-7		0.005	<0.005	<0.005
Diethylhexyl Phthalate, DEHP	117-81-7		0.005	<0.005	<0.005
Sum of DBP, BBP & DEHP			0.005	<0.005	<0.005
Diisononyl Phthalate, DINP	28553-12-0 /68515-48-0	0.1	0.005	<0.005	<0.005
Di-n-octyl Phthalate, DNOP	117-84-0		0.005	<0.005	<0.005
Diisodecyl Phthalate, DIDP	26761-40-0/ 68515-49-1		0.005	<0.005	<0.005
Sum of DINP, DNOP & DIDP			0.005	<0.005	<0.005
Rating				PASS	PASS
Remark: -All concentrations expressed in percentage (%) -“<” means less than -Method for determination of Phthalates are determined by Gas Chromatography Mass Selective Detector (GC-MSD) -Toys and child care articles need to determine DEHP, DBP, or BBP. Component in any part of a toy or child care article that can be placed in the mouth of a child: DINP, DIDP, or DNOP -The test results only apply to the items tested.					

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SZ-FAF-001 (2017-10-12)



TEST REPORT

Client: ThinkFun Inc.
 Address: 1321 Cameron St, Alexandria Virginia USA
 22314

REPORT NO: C80231824
 DATE: April 17, 2018

TEST RESULTS

3.16 Prohibition of children's toys and child care articles containing specified phthalates [16 CFR 1307.3 & CPSIA Section 108]

Test Method : CPSC-CH-C1001-09.3

Analyte	CAS No.	Requirement (Max.)	Reporting Limit	Sample,%	
				007	008
Dibutyl Phthalate, DBP	84-74-2	0.1	0.005	<0.005	<0.005
Benzyl Butyl Phthalate, BBP	85-68-7	0.1	0.005	<0.005	<0.005
Diethylhexyl Phthalate, DEHP	117-81-7	0.1	0.005	<0.005	<0.005
Diisononyl Phthalate, DINP	28553-12-0 /68515-48-0	0.1	0.005	<0.005	<0.005
Diisobutyl Phthalate, DIBP	84-69-5	0.1	0.005	<0.005	<0.005
Dipentyl Phthalate, DPENP	131-18-0	0.1	0.005	<0.005	<0.005
Di-n-hexyl Phthalate, DHEXP	84-75-3	0.1	0.005	<0.005	<0.005
Dicyclohexyl Phthalate, DCHP	84-61-7	0.1	0.005	<0.005	<0.005
Diisodecyl Phthalate, DIDP	26761-40-0 /68515-49-1	0.1	0.005	<0.005	<0.005
Di-n-octyl Phthalate, DNOP	117-84-0	0.1	0.005	<0.005	<0.005
Rating				PASS	PASS
Remark: -All concentrations expressed in percentage (%) -“<” means less than -Method for determination of Phthalates are determined by Gas Chromatography Mass Selective Detector (GC-MSD) -The test results only apply to the items tested.					

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SZ-FAF-001 (2017-10-12)



TEST REPORT

Client: ThinkFun Inc.
Address: 1321 Cameron St, Alexandria Virginia USA
22314

REPORT NO: C80231824
DATE: April 17, 2018

TEST RESULTS

3.17 TOTAL PHTHALATES CONTENT IN TOYS AND CHILD CARE ARTICLES [Phthalates Regulation SOR/2016-188 Phthalates Content]

Test Method : CPSC-CH-C1001-09.3

Analyte	CAS No.	Requirement (Max.)	Reporting Limit	Sample,%	
				007	008
Dibutyl Phthalate, DBP	84-74-2	0.1	0.005	<0.005	<0.005
Benzyl Butyl Phthalate, BBP	85-68-7	0.1	0.005	<0.005	<0.005
Diethylhexyl Phthalate, DEHP	117-81-7	0.1	0.005	<0.005	<0.005
Diisononyl Phthalate, DINP	68515-48-0	0.1	0.005	<0.005	<0.005
Di-n-octyl Phthalate, DNOP	117-84-0	0.1	0.005	<0.005	<0.005
Diisodecyl Phthalate, DIDP	26761-40-0	0.1	0.005	<0.005	<0.005
Rating				PASS	PASS
<i>Remark:</i> -All concentrations expressed in percentage (%) -"<" means less than -Method for determination of Phthalates are determined by Gas Chromatography Mass Selective Detector (GC-MSD) -Vinyl in toys and child care articles need to determine DEHP, DBP, or BBP. Vinyl in any part of a toy or child care article that can be placed in the mouth of a child under four years of age: DINP, DIDP, or DNOP -The test results only apply to the items tested.					

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SZ-FAF-001 (2017-10-12)



TEST REPORT

Client: ThinkFun Inc.
 Address: 1321 Cameron St, Alexandria Virginia USA
 22314

REPORT NO: C80231824
 DATE: April 17, 2018

TEST RESULTS

3.18 **DETERMINATION OF AZO COLORANTS [Regulation (EC) No. 1907/2006 on REACH Annex XVII item no. 43 and appendix 8 as amended by commission regulation (EC) no. 552/2009]**
 Test Method :EN ISO 14362-1:2017 & EN ISO 14362-3:2017

Analyte	CAS No.	Requirement (Max)	Reporting Limit	Sample, mg/kg
				009
With Xylene Extraction (Y/N)				Y
BENZIDINE	92-87-5	30	5	<5
4-AMINODIPHENYL	92-67-1	30	5	<5
4-CHLORO-O-TOLUIDINE	95-69-2	30	5	<5
2-NAPHTHYLAMINE	91-59-8	30	5	<5
O-AMINOAZOTOLUENE	97-56-3	30	5	<5
5-NITRO-O-TOLUIDINE	99-55-8	30	5	<5
4-CHLOROANILINE	106-47-8	30	5	<5
4-METHOXY-M-PHENYLENEDIAMINE	615-05-4	30	5	<5
4,4'-DIAMINODIPHENYLMETHANE	101-77-9	30	5	<5
3,3'-DICHLOROBENZIDINE	91-94-1	30	5	<5
3,3'-DIMETHOXYBENZIDINE	119-90-4	30	5	<5
3,3'-DIMETHYLBENZIDINE	119-93-7	30	5	<5
4,4'-METHYLENEDI-O-TOLUIDINE	838-88-0	30	5	<5
P-CRESIDINE	120-71-8	30	5	<5
4,4'-METHYLENE-BIS-(2-CHLOROANILINE)	101-14-4	30	5	<5
4,4'-OXYDIANILINE	101-80-4	30	5	<5
4,4'-THIODIANILINE	139-65-1	30	5	<5
O-TOLUIDINE	95-53-4	30	5	<5
2,4,5-TRIMETHYLANILINE	137-17-7	30	5	<5
4-METHYL-M-PHENYLENEDIAMINE	95-80-7	30	5	<5
O-ANISIDINE	90-04-0	30	5	<5
4-AMINOAZOBENZENE	60-09-3	30	5	<5
Rating				PASS

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SZ-FAF-001 (2017-10-12)



TEST REPORT

Client: ThinkFun Inc.
Address: 1321 Cameron St, Alexandria Virginia USA
22314

REPORT NO: C80231824
DATE: April 17, 2018

TEST RESULTS

Remark:

- All concentrations expressed in milligrams per kilogram
- “<” means less than ; "Y" means "Yes"; "N" means "No"
- Method for determination of Azo-derived amines are determined by GC-MSD and LC-DAD
- The test results only apply to the items tested.
- The following samples were not tested due to insufficient weight of samples (less than 0.2g):
- The following samples were not tested due to white colour:

Interpretation of test results:

(1) In the case of levels per amine component $\leq 30\text{mg/kg}$

According to the analysis as carried out, azo colorants which can release one or more of certain listed amines by cleavage of their azo groups were not detected in the commodity submitted.

(2) In the case of levels per amine components $> 30\text{ mg/kg}$, the following statement should be marked

i. 4-aminodiphenyl, 2-naphthylamine: The use of certain azo colorants cannot be reliably ascertained without additional information, e.g. the chemical structure of the colorants used. The product from which the sample was taken may have been coloured with colorants whose structures contain the amines but not azo bound.

ii. 4-methoxy-m-phenylenediamine: The use of certain azo colorants cannot be reliably ascertained without additional information, e.g. the chemical structure of the colorants used. The product from which the sample was taken may been coloured with an azo colorant whose structure does not contain performed 4-methoxy-m-phenylenediamine but 2-amino-4-nitroanisole; in the course of the analytical procedure, the azo colorant will release 2-amino-4-nitroanisole, which in turn will form 4-methoxy-m-phenylenediamine.

Date(s) of test(s) conducted: April 1, 2018 to April 3, 2018

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SZ-FAF-001 (2017-10-12)



TEST REPORT

Client: ThinkFun Inc.
Address: 1321 Cameron St, Alexandria Virginia USA
22314

REPORT NO: C80231824
DATE: April 17, 2018

Product Photo:



***** THE END *****

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