



# TEST REPORT

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

REPORT NO.: C81121919  
UL ORDER NO.: 13055937  
DATE: October 14, 2019

Attn: Natalie Tapia  
Sample Description: Yoga Spinner  
Quantity Submitted: 3 pieces  
Style No.: 1842  
P.O. No.: Not provided  
Labeled Age Grade: Ages 5 and up  
Appropriate Age Grade: Ages 5+  
Tested Age Grade: Ages 5+  
Destination: USA, Europe, Canada  
Country of Origin: China  
Date(s) of samples received: September 23, 2019  
Date of Test Period: September 23, 2019 – October 14, 2019

**TEST METHOD & RESULTS:** Please refer to next page(s)  
**CONCLUSION:** Please refer to page two and three (2 and 3)

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## CONCLUSION:

ASTM F963-17 Physical & Mechanical Requirements	PASS
16 CFR 1500 Physical & Mechanical Requirements	PASS
EN71-1:2014+A1:2018 Mechanical & Physical Properties	PASS
Canada Toys Regulations SOR/2011-17 Physical And Mechanical Requirements	PASS
ASTM F963-17 Flammability Requirements	PASS
16 CFR 1500.3 (c) (6) (vi) /1500.44 Flammability Requirements	PASS
EN 71-2:2011 + A1:2014 Flammability Test	PASS
Canada Toys Regulations SOR/2011-17 Flammability Requirements (Cellulose Nitrate And Celluloid)	PASS
Flammability Requirements For Textile Fibres: SOR/2016-194	NOT APPLICABLE#
Total Heavy Metals In Packaging [NERC Heavy Metals in Packaging Wastes]	PASS
Soluble Migrated Elements [ASTM F963-17 Section 4.3.5.1 (2), 4.3.5.2 (2)(b) & 8.3]	PASS
Total Lead Content In Paints And Surface Coatings [ASTM F963-17 Section 4.3.5.1(1)]	NOT APPLICABLE#
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]	NOT APPLICABLE#
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]	NOT APPLICABLE#
Total Lead Content In Paint 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]	PASS
Prohibition Of Children's Toys And Child Care Articles Containing Specified Phthalates [16 CFR 1307.3]	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]	PASS
Total Lead And Mercury In Surface Coatings [Canada Toys Regulations (SOR/2011-17) Toxicological Hazards, Section 23 And SOR/2016-193 Surface Coating Materials Regulations]	NOT APPLICABLE#
Specific Substance In Surface Coatings [Canada Toys Regulations (SOR/2011-17) Toxicological Hazards, Section 23]	NOT APPLICABLE#
Total Lead Content [Canada Consumer Products Containing Lead Regulations (SOR/2018-83)]	PASS
Total Phthalates Content In Toys And Child Care Articles [Phthalates Regulation SOR/2016-188 Phthalates Content]	PASS
Migration Of Certain Elements [EN71-3: 2013 + A3:2018 Under 2009/48/EC Toy Safety Directive]	PASS
Total Phthalates Content In Toys And Child Care Articles [Point 51, 52 Of The Annex XVII Of The Regulation (EC) No. 1907/2006 (REACH) And Amending Commission Regulation (EU) 2018/2005]	PASS
Total Cadmium Content In Surface Coating [Point 23 Of The Annex XVII Of The Regulation (EC) No. 1907/2006 (REACH) With Further Amendment]	NOT APPLICABLE#
Total Cadmium Content In Plastic [Point 23 Of The Annex XVII Of The Regulation (EC) No. 1907/2006 (REACH) With Further Amendment]	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]	NOT APPLICABLE#
Determination Of Pentachlorophenol As Per Client's Specification [Point 22 Of The Annex XVII Of The Regulation (EC) No. 1907/2006 (REACH) With Further Amendment]	PASS

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



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## CONCLUSION:

Determination Of Pentachlorophenol As Per Client's Specification [German Ordinance on Prohibition of Chemical (ChemVerbotsV) Attachment 15]	PASS
Determination Of Benzene Content As Per Client's Specification [Point 5 Of The Annex XVII Of The Regulation (EC) No. 1907/2006 (REACH) And Further Amendment]	PASS
Determination Of Polycyclic Aromatic Hydrocarbon [Point 50 Of The Annex XVII Of The Regulation (EC) No. 1907/2006 (REACH) With Further Amendment]	PASS
Determination Of HBCDD As Per Client's Specification.	PASS
Determination of Flame Retardant Content As Per Client's Specification [(EU) No. 757/2010 And (EU) No.2016/293 Amending Regulation (EC) No 850/2004 On Persistent Organic Pollutants]	PASS
Determination of PBB & PBDEs Content As Per Client's Specification [(EU) No. 757/2010 And (EU) No.2016/293 Amending Regulation (EC) No 850/2004 On Persistent Organic Pollutants]	NOT APPLICABLE#
Flame Retardant (PBBs & PBDES) As Per Client's Specification with Reference to Chem.VerbotsV Regulation.	NOT APPLICABLE#
Determination Of Flame Retardant Content As Per Client's Specification [Bedarfsgegenständeverordnung Annex 1 (to § 3)	NOT APPLICABLE#
Substances which may not be used in the manufacture or treatment of certain consumer goods]	
Determination Of Flame Retardant Content As Per Client's Specification [Point 4,7,8,45, 67 Of The Annex XVII Of The Regulation (EC) No. 1907/2006 (REACH) With Further Amendment]	NOT APPLICABLE#
Total Heavy Metals In Packaging [94/62/EC]	PASS

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

Note: The results relate only to the items tested.

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



Stephen Chan  
Operation Manager

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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 5+  
Samples Quantity : 1 piece(s) x 1 style(s)

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	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, 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

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## TEST RESULTS

Clause	Test Items	Assessment
4.30	Toy Gun Marking	NA
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	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 NA = Not Applicable

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## TEST RESULTS

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 5+  
Samples Quantity :1 piece(s) x 1 style(s)

	<u>TEST ITEMS</u>	<u>SHARP POINT</u>	<u>SHARP EDGE</u>
		(1500.48)	(1500.49)
	As received	P	P
1500.53	Impact Test	P	P
1500.53	Torque Test	P	P
1500.53	Tension Test	P	P
1500.53	Compression	P	P
1500.121	Labeling requirements; prominence, placement, and conspicuousness		NA
1500.19	Misbranded toys and other articles intended for use by children		NA

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## TEST RESULTS

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

A)EN71-1:2014+A1:2018

The following clauses are identified to be applicable:

Age grading for testing : Ages 5+  
Samples Quantity : 1 piece(s) x 1 style(s)

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 toys	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
4.26	Toy disguise costumes	NA
4.27	Flying toys	NA

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Clause	Test Items	Assessment
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
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	P
7.1	General	P
7.2	Warning on toys not intended for children under 36 months	P

Remark: P = Pass NA = Not Applicable

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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## TEST RESULTS

### 1.4 AS PER CANADA TOYS REGULATIONS SOR/2011-17

The following clauses are identified to be applicable:

Age grading for testing : Ages 5+  
Samples Quantity : 1 piece(s) x 1 style(s)

(A)	Test Items	Assessment
3	General -- English and French bilingual statement	NA
4	Packaging	NA
	<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>	
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
43	Magnetic Toys	NA
44	Warning for Magnet Kit	NA

Remark: P=Pass N/A=Not Applicable

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## TEST RESULTS

### 2. FLAMMABILITY TEST

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

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

Results: The burn rate of sample was less than 0.1 inch per second.

#### 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(s) x 1 style(s)  
Requirement: Burning rate should not exceed 0.1 inch per second along the major axis.

Results: The burn rate of sample was less than 0.1 inch per second.

#### 2.3 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.

#### 2.4 AS PER CANADA TOYS REGULATIONS SOR/2011-17 SECTION 21 (CELLULOSE NITRATE AND CELLULOID)

Requirement: Celluloid (cellulose nitrate) and materials with the same behavior 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.

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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.: C81121919  
 UL ORDER NO.: 13055937  
 DATE: October 14, 2019

## TEST RESULTS

### 3. CHEMICAL TESTS:

Tested Sample ID	Product Description / Sample Group Desc.
001	Yoga Spinner
002	White paper card with transparent plastic film and inaccessible multicolor coatings (box) (From 001)
003	Transparent plastic tape (round tape of box) (From 001)
004	Transparent plastic (tray, cover of tray) (From 001)
005	Transparent plastic film with adhesive (shrink film for cards) (From 001)
006	White paper sheet with multicolor coatings (instruction sheet) (From 001)
007	White paper label with transparent plastic film and inaccessible multicolor coatings (sticker on spinner) (From 001)
008	White paper card with translucent plastic film and inaccessible multicolor coatings (cards) (From 001)
009	Yellow plastic (spinner) (From 001)
010	Black plastic (pointer on spinner) (From 001)

#### 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	006
Lead (Pb)	100	10	<10	<10	<10
Cadmium (Cd)	100	5	<5	<5	<5
Chromium VI (Cr VI)	100	10	<10	<10	<10
Mercury (Hg)	100	5	<5	<5	<5
Sum	100	30	<30	<30	<30
<b>Rating</b>			PASS	PASS	PASS
<i>Remark:</i> -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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# TEST REPORT

Client: ThinkFun Inc.  
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 USA 22314

REPORT NO.: C81121919  
 UL ORDER NO.: 13055937  
 DATE: October 14, 2019

## 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	006
Lead (Pb)	100	10	<10	<10	<10
Cadmium (Cd)	100	5	<5	<5	<5
Chromium VI (Cr VI)	100	10	<10	<10	<10
Mercury (Hg)	100	5	<5	<5	<5
Sum	100	30	<30	<30	<30
<b>Rating</b>			PASS	PASS	PASS
<i>Remark:</i> -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.					

### 3.3 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	
			007+008	009+010
Cadmium (Cd)	100	10	<10	<10
<b>Rating</b>			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.				

### 3.4 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	
			007+008	009+010
Lead (Pb)	100	10	<10	<10
<b>Rating</b>			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

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Address: 1321 Cameron St, Alexandria Virginia  
USA 22314

REPORT NO.: C81121919  
UL ORDER NO.: 13055937  
DATE: October 14, 2019

## TEST RESULTS

### 3.5 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	
			007+008	009+010
Lead (Pb)	100	10	<10	<10
<b>Rating</b>			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.				

### 3.6 Total Lead Content In Substrates [California Proposition 65 Settlements Of Alameda Superior Court, BG07350969, RG08378050 And San Francisco Superior Court 07-462991] 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	
			007+008	009+010
Lead (Pb)	600	10	<10	<10
<b>Rating</b>			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.				

### 3.7 Total Lead Content [Canada Consumer Products Containing Lead Regulations (SOR/2018-83)] Test Method : In-house method reference with CPSC-CH-E1001-08.3 (Metal Substrates) / CPSC-CH-E1002-08.3 Section IA & IIA (Non-Metal Substrates) / CPSC-CH-E1003-09.1 (Paints and Surface Coatings)

Elements	Requirement (Max.)	Reporting Limit	Sample, mg/kg	
			007+008	009+010
Lead (Pb)	90	10	< 10	< 10
<b>Rating</b>			PASS	PASS
<i>Remark:</i> -All concentrations expressed in milligrams per kilogram -“<” means less than -Method for determination of each element present: Lead (Pb) 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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Address: 1321 Cameron St, Alexandria Virginia  
USA 22314

REPORT NO.: C81121919  
UL ORDER NO.: 13055937  
DATE: October 14, 2019

## TEST RESULTS

### 3.8 Determination Of Benzene Content As Per Client's Specification [Point 5 Of The Annex XVII Of The Regulation (EC) No. 1907/2006 (REACH) And Further Amendment]

Test Method : Headspace followed GC-MSD analysis

Analyte	CAS No.	Requirement (Max)	Reporting Limit	Sample, mg/kg	
				007+008	009+010
Benzene	71-43-2	5	1	<1.0	<1.0
<b>Rating</b>				PASS	PASS
<i>Remark:</i> -All concentrations expressed in milligrams per kilogram of tested parts -"<" means less than -Method for determination of analyte are determined by GC-MSD -The test results only apply to the items tested.					

### 3.9 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]

Test Method: CPSC-CH-C1001-09.4

Analyte	CAS No.	Requirement (Max.)	Reporting Limit	Sample, %
				007+008
Dibutyl Phthalate, DBP	84-74-2	0.1	0.005	<0.005
Benzyl Butyl Phthalate, BBP	85-68-7	0.1	0.005	<0.005
Diethylhexyl Phthalate, DEHP	117-81-7	0.1	0.005	<0.005
Diisodecyl Phthalate, DIDP	26761-40-0 /68515-49-1	0.1	0.005	<0.005
Dihexyl Phthalate, DHEXP	84-75-3	0.1	0.005	<0.005
<b>Rating</b>				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) -The test results only apply to the items tested.				

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# TEST REPORT

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

REPORT NO.: C81121919  
UL ORDER NO.: 13055937  
DATE: October 14, 2019

## TEST RESULTS

3.10 Total Phthalates Content In Toys And Child Care Articles [Point 51, 52 Of The Annex XVII Of The Regulation (EC) No. 1907/2006 (REACH) And Amending Commission Regulation (EU) 2018/2005]  
Test Method : CPSC-CH-C1001-09.4

Analyte	CAS No.	Requirement (Max.)	Reporting Limit	Sample, %
				007+008
Dibutyl Phthalate, DBP	84-74-2	0.1	0.005	<0.005
Benzyl Butyl Phthalate, BBP	85-68-7		0.005	<0.005
Diethylhexyl Phthalate, DEHP	117-81-7		0.005	<0.005
Diisobutyl Phthalate, DIBP	84-69-5		0.005	<0.005
<b>Sum of DBP, BBP, DEHP &amp; DIBP</b>			0.005	<0.005
Diisononyl Phthalate, DINP	28553-12-0/ 68515-48-0	0.1	0.005	<0.005
Di-n-octyl Phthalate, DNOP	117-84-0		0.005	<0.005
Diisodecyl Phthalate, DIDP	26761-40-0/ 68515-49-1		0.005	<0.005
<b>Sum of DINP, DNOP &amp; DIDP</b>			0.005	<0.005
<b>Rating</b>				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) -Toys and child care articles need to determine DEHP, DBP, BBP or DIBP. 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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# TEST REPORT

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

REPORT NO.: C81121919  
UL ORDER NO.: 13055937  
DATE: October 14, 2019

## TEST RESULTS

### 3.11 Prohibition Of Children's Toys And Child Care Articles Containing Specified Phthalates [16 CFR 1307.3] Test Method : CPSC-CH-C1001-09.4

<u>Analyte</u>	<u>CAS No.</u>	<u>Requirement (Max.)</u>	<u>Reporting Limit</u>	<u>Sample, %</u>
				<u>007+008</u>
Dibutyl Phthalate, DBP	84-74-2	0.1	0.005	<0.005
Benzyl Butyl Phthalate, BBP	85-68-7	0.1	0.005	<0.005
Diethylhexyl Phthalate, DEHP	117-81-7	0.1	0.005	<0.005
Diisononyl Phthalate, DINP	28553-12-0 /68515-48-0	0.1	0.005	<0.005
Diisobutyl Phthalate, DIBP	84-69-5	0.1	0.005	<0.005
Dipentyl Phthalate, DPENP	131-18-0	0.1	0.005	<0.005
Di-n-hexyl Phthalate, DHEXP	84-75-3	0.1	0.005	<0.005
Dicyclohexyl Phthalate, DCHP	84-61-7	0.1	0.005	<0.005
<b>Rating</b>				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) -The test results only apply to the items tested.				

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USA 22314

REPORT NO.: C81121919  
UL ORDER NO.: 13055937  
DATE: October 14, 2019

## TEST RESULTS

### 3.12 Total Phthalates Content In Toys And Child Care Articles [Phthalates Regulation SOR/2016-188 Phthalates Content]

Test Method : CPSC-CH-C1001-09.4

Analyte	CAS No.	Requirement (Max.)	Reporting Limit	Sample, %
				007+008
Dibutyl Phthalate, DBP	84-74-2	0.1	0.005	<0.005
Benzyl Butyl Phthalate, BBP	85-68-7	0.1	0.005	<0.005
Diethylhexyl Phthalate, DEHP	117-81-7	0.1	0.005	<0.005
Diisononyl Phthalate, DINP	28553-12-0/ 68515-48-0	0.1	0.005	<0.005
Di-n-octyl Phthalate, DNOP	117-84-0	0.1	0.005	<0.005
Diisodecyl Phthalate, DIDP	26761-40-0/ 68515-49-1	0.1	0.005	<0.005
<b>Rating</b>				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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REPORT NO.: C81121919  
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 DATE: October 14, 2019

## TEST RESULTS

### 3.13 Determination Of Polycyclic Aromatic Hydrocarbon [Point 50 Of The Annex XVII Of The Regulation (EC) No. 1907/2006 (REACH) With Further Amendment]

Test Method : AfPS GS 2014:01 PAK

Analyte	CAS No.	Requirement (Max)	Reporting Limit	Sample, mg/kg	
				007+008	009+010
Benzo[a]pyrene	50-32-8	0.5	0.1	<0.1	<0.1
Benzo[e]pyrene	192-97-2	0.5	0.1	<0.1	<0.1
Benzo[a]anthracene	56-55-3	0.5	0.1	<0.1	<0.1
Chrysene	218-01-9	0.5	0.1	<0.1	<0.1
Benzo[b]fluoranthene	205-99-2	0.5	0.1	<0.1	<0.1
Benzo[j]fluoranthene	205-82-3	0.5	0.1	<0.1	<0.1
Benzo[k]fluoranthene	207-08-9	0.5	0.1	<0.1	<0.1
Dibenzo[a,h]anthracene	53-70-3	0.5	0.1	<0.1	<0.1
<b>Rating</b>				PASS	PASS
<p><i>Remark:</i></p> <ul style="list-style-type: none"> <li>-All concentrations expressed in milligrams per kilogram</li> <li>-“&lt;” means less than</li> <li>-Method for determination of analyte are determined by GC-MSD</li> <li>-The test results only apply to the items tested.</li> <li>-Articles shall not be placed on the market for supply to the general public, if any of their rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use, contain more than 1 mg/kg (0,0001 % by weight of this component) of any of the listed PAHs</li> <li>-Toys, including activity toys, and childcare articles, shall not be placed on the market, if any of their rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use, contain more than 0,5 mg/kg (0,00005 % by weight of this component) of any of the listed PAHs.</li> </ul>					

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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.: C81121919  
 UL ORDER NO.: 13055937  
 DATE: October 14, 2019

## TEST RESULTS

### 3.14 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	008	009	010
*Sample weight (g)		--	--	--	--
Antimony (Sb)	60	<6.0	<6.0	<6.0	<6.0
Arsenic (As)	25	<2.5	<2.5	<2.5	<2.5
Barium (Ba)	1000	<6.0	<6.0	<6.0	<6.0
Cadmium (Cd)	75	<6.0	<6.0	<6.0	<6.0
Chromium (Cr)	60	<6.0	<6.0	<6.0	<6.0
Lead (Pb)	90	<6.0	<6.0	<6.0	<6.0
Mercury (Hg)	60	<6.0	<6.0	<6.0	<6.0
Selenium (Se)	500	<6.0	<6.0	<6.0	<6.0
<b>Rating</b>		PASS	PASS	PASS	PASS
<p><i>Remark:</i></p> <ul style="list-style-type: none"> <li>-All concentrations expressed in milligrams per kilogram and unadjusted unless otherwise stated</li> <li>-“&lt;” means less than</li> <li>-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.</li> <li>-*Sample weight between 0.01g - 0.1g should be reported in according to ASTM F963-17</li> <li>-** 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).</li> <li>-The test results only apply to the items tested.</li> <li>-Any deviation from the standard method was specified as follow:</li> </ul>					

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# TEST REPORT

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

REPORT NO.: C81121919  
 UL ORDER NO.: 13055937  
 DATE: October 14, 2019

## TEST RESULTS

### 3.15 Migration Of Certain Elements [EN71-3: 2013 + A3:2018 Under 2009/48/EC Toy Safety Directive]

<u>Soluble Elements</u>	<u>CAS No.</u>	<u>Requirements</u>	<u>Sample, mg/kg</u>			
		<u>Category III, mg/kg (Scraped-off material)</u>	<u>007</u>	<u>008</u>	<u>009</u>	<u>010</u>
Sample weight between (0.01g) 10 mg and (0.1g) 100 mg			--	--	--	--
Aluminum	7429-90-5	70,000	300.0	<50.0	<50.0	<50.0
Antimony	7440-36-0	560	<5.0	<5.0	<5.0	<5.0
Arsenic	7440-38-2	47	<2.5	<2.5	<2.5	<2.5
Barium	7440-39-3	18,750	8.5	<5.0	<5.0	<5.0
Boron	7440-42-8	15,000	<50.0	<50.0	<50.0	<50.0
Cadmium	7440-43-9	17	<5.0	<5.0	<5.0	<5.0
Chromium <sup>(2)</sup>	7440-47-3	---	0.5	< 0.2	< 0.2	< 0.2
(Chromium III)	-	460	0.5	< 0.2	< 0.2	< 0.2
(Chromium VI)	-	0.2	< 0.2 <sup>#</sup>	< 0.2	< 0.2	< 0.2
Cobalt	7440-48-4	130	<5.0	<5.0	<5.0	<5.0
Copper	7440-50-8	7,700	<50.0	<50.0	<50.0	<50.0
Lead	7439-92-1	23	<5.0	<5.0	<5.0	<5.0
Manganese	7439-96-5	15,000	7.5	6.0	<5.0	<5.0
Mercury	7439-97-6	94	<5.0	<5.0	<5.0	<5.0
Nickel	7440-02-0	930	<5.0	<5.0	<5.0	<5.0
Selenium	7782-49-2	460	<5.0	<5.0	<5.0	<5.0
Strontium	7440-24-6	56,000	16.5	30.5	<5.0	<5.0
Tin	7440-31-5	180,000	<4.0	<4.0	<4.0	<4.0
Organic Tin <sup>(3)</sup>	Various	12	<12.0	<12.0	<12.0	<12.0
Zinc	7440-66-6	46,000	<50.0	<50.0	<50.0	<50.0
<b>Rating</b>			PASS	PASS	PASS	PASS
<" means less than ; ">" means greater than ; "mg/kg" means milligrams per kilogram						

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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.: C81121919  
UL ORDER NO.: 13055937  
DATE: October 14, 2019

## TEST RESULTS

### Remarks :

- Soluble migrated elements are determined by ICP-MS (Induced Couple Plasma Mass Spectrometry)
- If the chromium content of the tested sample does not exceed 0.2 mg/kg, it is deemed to comply on the respective migration requirements of chromium III and/or chromium VI under 2009/48/EC. Otherwise, the compliance on the migration requirements of the individual chromium III and/or chromium VI are confirmed by LC-ICP-MS technique.  
# denotes: The chromium VI content is determined by LC-ICP-MS
- If the soluble tin content of the tested sample projected by the tin content does not exceed 4.0 mg/kg, it is deemed to comply on the respective migration requirement of Organic Tin under 2009/48/EC. Otherwise, the compliance on the migration requirement of Organic Tin is confirmed by GC-MS analysis.  
## denotes: The Organic Tin content is determined by GC-MS.
- \*\*Sample weight less than 10 mg is not required to test soluble elements according to EN71-3: 2013 +A3:2018
- Any deviation from the standard method was specified as follow:
- The test results only apply to the items tested

### 3.16 Determination Of Pentachlorophenol As Per Client's Specification [German Ordinance on Prohibition of Chemical (ChemVerbotsV) Attachment 15]

Test Method : In house method

Analyte	Requirement (Max.)	Reporting Limit	Sample, mg/kg
			007+008
PCP	5	1	<1.0
<b>Rating</b>			PASS
<i>Remark:</i> -All concentrations expressed in milligrams per kilogram of Tested Parts -“<” means less than; PCP denotes as pentachlorophenol (87-86-5) -Method for determination of PCP is determined by GC-MSD -The test results only apply to the items tested.			

### 3.17 Determination Of Pentachlorophenol As Per Client's Specification [Point 22 Of The Annex XVII Of The Regulation (EC) No. 1907/2006 (REACH) With Further Amendment]

Test Method : ISO 17070:2015

Analyte	Requirement (Max.)	Reporting Limit	Sample, mg/kg
			007+008
PCP	1000	1	<1.0
<b>Rating</b>			PASS
<i>Remark:</i> -All concentrations expressed in milligrams per kilogram of Tested Parts -“<” means less than; PCP denotes as pentachlorophenol (87-86-5) -Method for determination of PCP is determined by GC-MSD -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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USA 22314

REPORT NO.: C81121919  
UL ORDER NO.: 13055937  
DATE: October 14, 2019

## TEST RESULTS

### 3.18 Determination Of HBCDD As Per Client's Specification.

Test Method : In-house method

Analyte	Client's Requirement (Max.)	Reporting Limit		
			007+008	009+010
HBCDD	Not Detected	5	< 5.0	< 5.0
<b>Rating</b>			PASS	PASS
<i>Remark:</i> -All concentrations expressed in milligrams per kilogram of Tested Parts -"<" means less than -Method for determination of analyte is determined by GC-MSD - hexabromocyclododecane (HBCDD) - Not Detected denotes "less than reporting limit (5 mg/kg)				

### 3.19 Determination of Flame Retardant Content As Per Client's Specification [(EU) No. 757/2010 And (EU) No.2016/293 Amending Regulation (EC) No 850/2004 On Persistent Organic Pollutants]

Test Method : In-house method

Analyte	Requirement (Max.)	Reporting Limit		
			007+008	009+010
Hexabromocyclododecane	100	5	< 5.0	< 5.0
<b>Rating</b>			PASS	PASS
<i>Remark:</i> -All concentrations expressed in milligrams per kilogram of Tested Parts -"<" means less than -Method for determination of analyte is determined by GC-MSD - Not Detected denotes "less than reporting limit (5 mg/kg)				

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



# TEST REPORT

Client: ThinkFun Inc.  
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USA 22314

REPORT NO.: C81121919  
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### Product Photo:



\*\*\*\*\* THE END \*\*\*\*\*

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