



75732-1016

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TEST REPORT

APPLICANT : OOLY, LLC
ADDRESS : 3923 Oceanic Drive, Suite 100 Oceanside, CA 92056
SAMPLE DESCRIPTION : Yummy Yummy Scented Twist-Up Crayons (Set of 10)
ITEM NO. : 133-092
BUYER : OOLY, LLC
COUNTRY OF ORIGIN : South Korea
COUNTRY OF DESTINATION : USA, Canada, Europe and Asia
AGE REQUESTED ON APPLICATION FORM : Not suitable for 3 and under
LABELED AGE GRADE : 3+
AGE GRADE APPLIED IN TESTING : Over 3 Years
SAMPLE RECEIVED DATE : 03-Dec-2019
TURN AROUND TIME : 03-Dec-2019 to 09-Dec-2019



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The following test item(s) was/were performed on selected sample(s) and/or component(s) confirmed by applicant

TEST REQUESTED	TEST METHOD/REGULATION	RESULT
Physical and Mechanical Hazards	CPSC Regulations	Pass
Flammability Test	CPSC Regulations-1500.3(c)(6)(vi)	Pass
Total Lead Content in Paint / Surface Coating	US 16 CFR 1303	Pass
Phthalates Content	CPSC 16 CFR part 1307	Pass
Total Lead Content in Paint / Surface Coating	US CPSIA, Section 101	Pass
Total Lead Content in Substrate	US CPSIA, Section 101	Pass
Phthalates Content	US CPSIA, Section 108	Pass
Total Lead Content	US California Proposition 65	Pass
Phthalates Content	US California Proposition 65	Pass
TPCH - Toxics in Packaging Clearinghouse (formerly CONEG)	US TPCH Legislation	Pass
Mechanical and Physical Properties	EN71 Part 1:2014+A1:2018	Pass
Labeling Requirement	Directive 2009/48/EC	See Test Result
Flammability of Toys	EN71 Part 2:2011+A1:2014	Pass
Migration of Certain Elements	EN71 Part 3:2019	Pass
Total Cadmium Content	REACH Annex XVII, Entry 23	Pass
Polycyclic Aromatic Hydrocarbons (PAHs)	REACH Annex XVII, Entry 50	Pass
Phthalates Content	REACH Annex XVII, Entry 51 & 52, (EU) 2018/2005	Pass
Packaging and Packaging Waste	Directive 94/62/EC	Pass

Eurofins (Shanghai) contact information

Customer service: OlivaLiu@eurofins.com / 021-36202801

Sales specialist: MariaJohnson@eurofins.com / 858-5687175 / 858-3549036

Sales specialist: MartyImler@eurofins.com / 858-568-7175 / 858-243-2464

***** FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S) *****

Signed for and on behalf of
 Eurofins Product Testing Service (Shanghai) Co., Ltd

Joyce Liu
 Lab Manager

Results obtained refer only to samples, products or material received in Laboratory, as described in point related to sample description, and tested in conditions shown in present report. Eurofins Product Testing Service (Shanghai) Co., Ltd ensures that this job has been performed according to our Quality System and complying contract and legal conditions. If you happen to have any comments, please do it by sending email to info.sh@eurofins.com and referring to this report number. Reproduction of this document is only valid if it is done completely and under the written permission of Eurofins Product Testing Service (Shanghai) Co., Ltd. If you happen to have any complaints, please do it by sending email to chinacomplaint@eurofins.com and referring to this report number.



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SAMPLE PHOTO



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COMPONENT LIST

Component No.	Component
1	White coating with plastic
2	Red crayon
3	Yellow crayon
4	Orange crayon
5	Green crayon
6	Dark green crayon
7	Blue crayon
8	Dark blue crayon
9	Purple crayon
10	Black crayon
11	Red plastic (rotary knob)
12	Orange plastic (rotary knob)
13	Yellow plastic (rotary knob)
14	Green plastic (rotary knob)
15	Blue plastic (rotary knob)
16	Purple plastic (rotary knob)
17	Dark green plastic (rotary knob)
18	Brown plastic (rotary knob)
19	Light blue plastic (rotary knob)
20	Black plastic (rotary knob)
21	Transparent red plastic barrel
22	Transparent orange plastic barrel
23	Transparent yellow plastic barrel
24	Transparent green plastic barrel
25	Transparent blue plastic barrel
26	Transparent purple plastic barrel
27	Transparent black plastic barrel
28	Transparent dark blue plastic barrel
29	Multi-color coating on plastic (packaging)
30	Transparent plastic excluding coating (packaging)

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TEST RESULT

Physical and Mechanical Hazards

Test Request: The Mechanical Hazards Requirements of 16 CFR 1500, after Use and Abuse Tests.

Description	Result
The use and abuse tests conducted are:	As Received & Normal Use (1500.50) Impact Test (1500.53(b)) Torque Test (1500.53(e)) Tension Test (1500.53(f))
16 CFR 1500.47 & 1500.86(a)(6) – Sound Pressure Level produced by toy cap	N/A
16 CFR 1501 – Small Parts	N/A
16 CFR 1500.48 – Sharp Points	P
16 CFR 1500.49 – Sharp Edges	N/A
16 CFR 1510 – Rattles	N/A
16 CFR 1511 – Pacifier	N/A

Remark:

P – Pass

NA – Not Applicable

Flammability Test

Test Request: As per U.S. code of federal regulations title 16 CFR 1500.3(c)(6)(vi) for flammable solid, tested by the method described in 16 CFR 1500.44.

Sample	Limit	Result
Yummy Yummy Scented Twist-Up Crayons (Set of 10)	0.1 inch/second	Pass

Total Lead Content in Paint / Surface Coating

Test Request: Total lead content as specified in US 16 CFR 1303

Test Method: CPSC-CH-E1003-09.1

The sample was acid digested, and total lead content was determined by ICP-OES.

Tested Item(s)	Unit	Limit	MDL	Result
Total Lead(Pb)	mg/kg	90	10	ND

Remark:

mg/kg = milligram per kilogram

MDL = method detection limit

ND = Not detected, less than MDL

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TEST RESULT

Phthalates Content

Test Request: Prohibition of Children's Toys and Child Care Articles Containing Specified Phthalates as specified in CPSC 16 CFR part 1307.

Test Method: CPSC-CH-C1001-09.3

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result		
					1	5+6+7	8+9+10
Diisononylphthalate (DINP)	28553-12-0	%	0.1	0.005	ND	ND	ND
Di-n-pentyl phthalate (DPENP)	131-18-0	%	0.1	0.005	ND	ND	ND
Di-n-hexyl phthalate (DHEXP)	84-75-3	%	0.1	0.005	ND	ND	ND
Dicyclohexyl phthalate(DCHP)	84-61-7	%	0.1	0.005	ND	ND	ND
Diisobutyl phthalate(DIBP)	84-69-5	%	0.1	0.005	ND	ND	ND
Di-2-ethylhexylphthalate (DEHP)	117-81-7	%	0.1	0.005	ND	ND	ND
Dibutylphthalate (DBP)	84-74-2	%	0.1	0.005	ND	ND	ND
Benzylbutylphthalate (BBP)	85-68-7	%	0.1	0.005	ND	ND	ND

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result		
					17+18+19	20+21+22	26+27+28
Diisononylphthalate (DINP)	28553-12-0	%	0.1	0.005	ND	ND	ND
Di-n-pentyl phthalate (DPENP)	131-18-0	%	0.1	0.005	ND	ND	ND
Di-n-hexyl phthalate (DHEXP)	84-75-3	%	0.1	0.005	ND	ND	ND
Dicyclohexyl phthalate(DCHP)	84-61-7	%	0.1	0.005	ND	ND	ND
Diisobutyl phthalate(DIBP)	84-69-5	%	0.1	0.005	ND	ND	ND
Di-2-ethylhexylphthalate (DEHP)	117-81-7	%	0.1	0.005	ND	ND	ND
Dibutylphthalate (DBP)	84-74-2	%	0.1	0.005	ND	ND	ND
Benzylbutylphthalate (BBP)	85-68-7	%	0.1	0.005	ND	ND	ND

Remark:

MDL = method detection limit

ND = Not detected, less than MDL

As per client's request, only the appointed materials have been tested.

According to client's request, tests are combination tests. The experimental results are the total result of mixed samples.

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TEST RESULT

Total Lead Content In Paint and Other Similar Surface Coatings

Test Request: Total lead in paint/ similar surface coatings as specified in US Consumer Product Safety Improvement Act 2008 (CPSIA), Section 101
 Test Method: CPSC-CH-E1003-09.1
 The sample was acid digested, and total lead content was determined by ICP-OES.

Tested Item(s)	Unit	Limit	MDL	Result	
				1	
Total Lead	mg/kg	90	10	ND	

Remark:

mg/kg = milligram per kilogram
 MDL = method detection limit
 ND = Not detected, less than MDL

Total Lead Content in Substrate

Test Request: Total lead in substrate as specified in US Consumer Product Safety Improvement Act 2008 (CPSIA), Section 101
 Test Method: CPSC-CH-E1002-08.3
 The sample was acid digested, and total lead content was determined by ICP-OES.

Tested Item(s)	Unit	Limit	MDL	Result				
				2+3+4	5+6+7	11+12+13	14+15+16	23+24+25
Total Lead(Pb)	mg/kg	100	10	ND	ND	ND	ND	ND

Remark:

mg/kg = milligram per kilogram
 MDL = method detection limit
 ND = Not detected, less than MDL
 As per client's request, only the appointed materials have been tested.
 According to client's request, tests are combination tests. The experimental results are the total result of mixed samples.

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TEST RESULT

Phthalates Content

Test Request: Phthalates Content as specified in US Consumer Product Safety Improvement Act 2008 (CPSIA), Section 108

Test Method: CPSC-CH-C1001-09.3

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result	
					1	5+6+7
For toys and childcare articles						
Dibutylphthalate (DBP)	84-74-2	%	0.1	0.005	ND	ND
Di-2-ethylhexylphthalate (DEHP)	117-81-7	%	0.1	0.005	ND	ND
Benzylbutylphthalate (BBP)	85-68-7	%	0.1	0.005	ND	ND
Additional requirements for toys and childcare articles, which can be placed in the mouth by children						
Diisononyl phthalate (DINP)	68515-48-0	%	0.1	0.005	ND	ND
Di-n-octylphthalate (DNOP)	117-84-0	%	0.1	0.005	ND	ND
Di-iso-decylphthalate (DIDP)	26761-40-0	%	0.1	0.005	ND	ND

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result	
					8+9+10	17+18+19
For toys and childcare articles						
Dibutylphthalate (DBP)	84-74-2	%	0.1	0.005	ND	ND
Di-2-ethylhexylphthalate (DEHP)	117-81-7	%	0.1	0.005	ND	ND
Benzylbutylphthalate (BBP)	85-68-7	%	0.1	0.005	ND	ND
Additional requirements for toys and childcare articles, which can be placed in the mouth by children						
Diisononyl phthalate (DINP)	68515-48-0	%	0.1	0.005	ND	ND
Di-n-octylphthalate (DNOP)	117-84-0	%	0.1	0.005	ND	ND
Di-iso-decylphthalate (DIDP)	26761-40-0	%	0.1	0.005	ND	ND

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result	
					20+21+22	26+27+28
For toys and childcare articles						
Dibutylphthalate (DBP)	84-74-2	%	0.1	0.005	ND	ND
Di-2-ethylhexylphthalate (DEHP)	117-81-7	%	0.1	0.005	ND	ND
Benzylbutylphthalate (BBP)	85-68-7	%	0.1	0.005	ND	ND
Additional requirements for toys and childcare articles, which can be placed in the mouth by children						
Diisononyl phthalate (DINP)	68515-48-0	%	0.1	0.005	ND	ND
Di-n-octylphthalate (DNOP)	117-84-0	%	0.1	0.005	ND	ND
Di-iso-decylphthalate (DIDP)	26761-40-0	%	0.1	0.005	ND	ND

Remark:

MDL = method detection limit

ND = Not detected, less than MDL

As per client's request, only the appointed materials have been tested.

According to client's request, tests are combination tests. The experimental results are the total result of mixed samples.

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TEST RESULT

Total Lead Content

Test Request: Total lead content as specified in US California Proposition 65
 Test Method: EPA 3050B:1996, EPA 3051A:2007, EPA 3052:1996
 Acid digestion/ microwave digestion method was used and total lead content was determined by ICP-OES.

Tested Item(s)	Unit	Limit	MDL	Result	
				1	
Total Lead(Pb)	mg/kg	90	10	ND	

Tested Item(s)	Unit	Limit	MDL	Result				
				2+3+4	5+6+7	11+12+13	14+15+16	23+24+25
Total Lead(Pb)	mg/kg	100	10	ND	ND	ND	ND	ND

Remark:

mg/kg = milligram per kilogram

MDL = method detection limit

ND = Not detected, less than MDL

According to client's request, tests are combination tests. The experimental results are the total result of mixed samples.

The limit(s) was/were referred from various court cases.

Compliance with the above stated limit(s) does not show compliance with Proposition 65 or a guarantee against possible legal action but provides a relative level of assurance against potential lawsuits.

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TEST RESULT

Phthalates Content

Test Request: Phthalates Content as specified in US California Proposition 65
 Test Method: EPA 3550C:2007, EPA 8270E:2018, solvent extraction and quantification by GC-MS.

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result		
					1	5+6+7	8+9+10
Dibutylphthalate (DBP)	84-74-2	%	0.1	0.005	ND	ND	ND
Benzylbutylphthalate (BBP)	85-68-7	%	0.1	0.005	ND	ND	ND
Diethylhexylphthalate (DEHP)	117-81-7	%	0.1	0.005	ND	ND	ND
Diisononylphthalate (DINP)	28553-12-0	%	0.1	0.005	ND	ND	ND
Diisodecylphthalate (DIDP)	26761-40-0	%	0.1	0.005	ND	ND	ND
Di-n-hexyl phthalate (DnHP)	84-75-3	%	0.1	0.005	ND	ND	ND

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result		
					17+18+19	20+21+22	26+27+28
Dibutylphthalate (DBP)	84-74-2	%	0.1	0.005	ND	ND	ND
Benzylbutylphthalate (BBP)	85-68-7	%	0.1	0.005	ND	ND	ND
Diethylhexylphthalate (DEHP)	117-81-7	%	0.1	0.005	ND	ND	ND
Diisononylphthalate (DINP)	28553-12-0	%	0.1	0.005	ND	ND	ND
Diisodecylphthalate (DIDP)	26761-40-0	%	0.1	0.005	ND	ND	ND
Di-n-hexyl phthalate (DnHP)	84-75-3	%	0.1	0.005	ND	ND	ND

Remark:

MDL = method detection limit
 ND = Not detected, less than MDL

According to client's request, tests are combination tests. The experimental results are the total result of mixed samples.

The limit(s) was/were referred from various court cases.

Compliance with the above stated limit(s) does not show compliance with Proposition 65 or a guarantee against possible legal action but provides a relative level of assurance against potential lawsuits.

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TEST RESULT

TPCH - Toxics in Packaging Clearinghouse (formerly CONEG)

Test Request: Total Lead, Cadmium, Mercury and Chromium content as specified in TPCH legislation.
 Test Method: EPA 3050B:1996, EPA 3051A:2007, EPA 3052:1996.
 Acid digestion/ microwave digestion method was used, analysis of total Lead, Cadmium, Mercury and Chromium was performed by ICP-OES. Chromium VI determination was performed by UV-Vis Spectrophotometer.

Tested Item(s)	Unit	Limit	MDL	Result	
				29	30
Total Lead (Pb)	mg/kg	-	5	ND	ND
Total Cadmium (Cd)	mg/kg	-	5	ND	ND
Total Chromium VI (Cr VI)	mg/kg	-	5	ND	ND
Total Mercury (Hg)	mg/kg	-	5	ND	ND
Total (Pb+Cd+Hg+Cr VI)	mg/kg	100	-	ND	ND

Remark:

mg/kg = milligram per kilogram

MDL = method detection limit

ND = Not detected, less than MDL

"-" = Not Regulated

As per client's request, only the appointed materials have been tested.

The TPCH legislation has been enacted by California, Connecticut, Florida, Georgia, Illinois, Iowa, Maine, Maryland, Minnesota, Missouri, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, Washington and Wisconsin.

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TEST RESULT

Mechanical and Physical Properties

Test Request: As specified in European Standard on Safety of Toys EN71 Part 1:2014+A1:2018

Section	Description	Result
4	General requirements	
4.1	Material cleanliness (by visual assessment)	P
4.2	Assembly	N/A
4.3	Flexible plastic sheeting	N/A
4.4	Toy Bags	N/A
4.5	Glass	N/A
4.6	Expanding Materials	N/A
4.7	Edges	P
4.8	Points and Metallic Wires	P
4.9	Protruding parts	N/A
4.10	Parts moving against each other	
4.10.1	Folding and sliding mechanisms	N/A
4.10.2	Driving mechanisms	N/A
4.10.3	Hinges	N/A
4.10.4	Springs	N/A
4.11	Mouth-actuated toys and other toys intended to be put in the mouth	N/A
4.12	Balloons	N/A
4.13	Cords of toy kites and other flying toys	N/A
4.14	Enclosures	
4.14.1	Toys which a child can enter	N/A
4.14.2	Masks and helmets	N/A
4.15	Toys intended to bear the mass of a child	
4.15.1	Toys propelled by the child or by other means	N/A
4.15.2	Toy bicycles	N/A
4.15.3	Rocking horses and similar toys	N/A
4.15.4	Toys not propelled by a child	N/A
4.15.5	Toys scooters	N/A
4.16	Heavy immobile toys	N/A
4.17	Projectiles	N/A
4.17.1	General	N/A
4.17.2	All projectiles	N/A
4.17.3	Projectile toy with stored energy	N/A
4.17.4	Certain projectile toys without stored energy	N/A
4.18	Aquatic toys and inflatable toys	N/A
4.19	Percussion caps specifically designed for use in toys and toys using percussion caps	N/A
4.20	Acoustics	
4.20.2.1	General	N/A
4.20.2.2	Close-to-the-ear toys	N/A
4.20.2.3	Table-top or floor toys	N/A
4.20.2.4	Hand-held toys	N/A
4.20.2.5	Toys using headphones or earphones	N/A
4.20.2.6	Rattles	N/A
4.20.2.7	Squeeze toys	N/A
4.20.2.8	Pull-along or push toys	N/A
4.20.2.9	Percussion toys	N/A
4.20.2.10	Wind toys	N/A
4.20.2.11	Cap-firing toys	N/A



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Section	Description	Result
4.20.2.12	Voice toys	N/A
4.21	Toys containing a non-electrical heat source	N/A
4.22	Small balls	N/A
4.23	Magnets	N/A
4.24	Yo-yo balls	N/A
4.25	Toys attached to food	N/A
4.26	Toy disguise costumes	N/A
4.27	Flying toys	N/A
4.27.1	General	N/A
4.27.2	Rotors and propellers on flying toys	N/A
4.27.3	Rotors and propellers on remote controlled flying toys	N/A
5	Toys intended for children under 36 months	
5.1	General requirements	N/A
5.2	Soft-filled toys and soft-filled parts of a toy	N/A
5.3	Plastic sheeting	N/A
5.4	Cords, chains and electrical cables in toys	N/A
5.5	Liquid-filled toys	N/A
5.6	Speed limitation of electrically-driven ride-on toys	N/A
5.7	Glass and porcelain	N/A
5.8	Shape and size of certain toys	N/A
5.9	Toys comprising monofilament fibres	N/A
5.10	Small balls	N/A
5.11	Play figures	N/A
5.12	Hemispheric-shaped toys	N/A
5.13	Suction cups	N/A
5.14	Straps intended to be worn fully or partially around the neck	N/A
5.15	Sledges with cords for pulling	N/A
6	Packaging	N/A
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	N/A
7.4	Aquatic toys	N/A
7.5	Functional Toys	N/A
7.6	Hazardous sharp functional edges and points	N/A
7.7	Projectiles toys	N/A
7.8	Imitation protective masks and helmets	N/A
7.9	Toy kites	N/A
7.10	Roller skates, inline skates, skateboards and certain other ride-on toys	N/A
7.11	Toys intended to be attached to or strung across a cradle, cot, or perambulator	N/A
7.11	Toys intended to be strung across a cradle, cot, or perambulator	N/A
7.12	Liquid-filled teethers	N/A
7.13	Percussion caps specifically designed for use in toys	N/A
7.14	Acoustics	N/A
7.15	Toys bicycles	N/A
7.16	Toys intended to bear the mass of a child	N/A
7.17	Toys comprising monofilament fibres	N/A
7.18	Toy scooters	N/A
7.19	Rocking horses and similar toys	N/A
7.20	Magnetic/electrical experimental sets	N/A
7.21	Toy with electrical cables exceeding 300mm in length	N/A
7.22	Toys with cords or chains intended for children of 18 months and over but under 36 months	N/A



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Section	Description	Result
7.23	Toys intended to be attached to a cradle, cot or perambulator	N/A
7.24	Sledges with cords for pulling	N/A
7.25	Flying toys	N/A
7.25.1	Flying toys	N/A
7.25.2	Remote controlled flying toys	N/A
7.26	Improvised projectiles	N/A

Remark:

P – Pass

NA – Not Applicable

Labeling Requirement

Test Request: Labeling requirement including Washing/Cleaning instruction, CE mark, importer / manufacturer name and address, product identification as specified in Directive 2009/48/EC – Safety of toys

Labeling Content	Observation Result	Location	Conclusion
Washing/Cleaning Instruction	Not Applicable	-	-
CE Mark	Present, Correct form, CE marking (height = 5 mm)	Packaging	Pass
Importer's Name & Address	Not Present	-	Pass (See Remark)
Manufacturer's Name & Address	Present	Packaging	
Product ID	Present	Packaging	Pass

Remark:

According to TSD 2009/48/EC, importers shall indicate their name, registered trade name or registered trade mark and the address at which they can be contacted on the toy or, where that is not possible, on its packaging or in a document accompanying the toy.

Flammability of Toys

Test Request: As specified in European Standard on Safety of Toys EN71 Part 2:2011+A1:2014

Section	Description	Result
4	Requirements	
4.1	General Requirements	P
4.2	Toys to be worn on the head	N/A
4.3	Toy disguise costumes and toys intended to be worn by a child in play	N/A
4.4	Toys intended to be entered by a child.	N/A
4.5	Soft-filled toys (animals and dolls, etc) (Sample was not tested if its maximum dimension is 150mm or less.)	N/A

Remark:

P – Pass

NA – Not Applicable

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TEST RESULT

Migration of Certain Elements

Test Request: Migration of certain elements as specified in European Standard on Safety of Toys EN71 Part 3:2019

Test Method: General elements, with reference to EN 71 Part 3:2019, analysis was performed by ICP-MS; Extractable Chromium (VI), with reference to EN 71 Part 3:2019, analysis was performed by IC-ICP-MS; Extractable organic tin, with reference to EN 71 Part 3:2019, analysis was performed by GC-MS.

Test Item(s):	Unit	Result								
		1*	2	4	6	8	10	11	13	
Category Type		III	I	I	I	I	I	I	III	III
Extractable Lead (Pb)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Antimony (Sb)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Arsenic (As)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Barium (Ba)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Cadmium (Cd)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Mercury (Hg)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Selenium (Se)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Boron (B)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Cobalt (Co)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Manganese (Mn)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Strontium (Sr)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Zinc (Zn)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Copper (Cu)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Aluminum (Al)	mg/kg	78	ND	ND	ND	1.53x10 ⁻³	ND	ND	ND	ND
Extractable Nickel (Ni)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Tin (Sn)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Organic Tin#1	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Chromium#2	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Chromium (III) (Cr III)#3	mg/kg	-	-	-	-	-	-	-	-	-
Extractable Chromium (VI) (Cr VI)	mg/kg	-	-	-	-	-	-	-	-	-

Note:

- #1 - Result of Organic Tin is calculated by assuming the extractable Tin content is wholly contributed from tributyltin (TBT) cation unless further specified.
- #2 - If the migration of total Chromium is below the maximum limit for Chromium (VI), it can be inferred that the material complies with the requirements for both Chromium(III) and Chromium(VI).
- #3 - In particular Chromium (III) is calculated by subtracting the Chromium (VI) concentration from the total chromium concentration.

Remarks:

mg/kg = milligram per kilogram

MDL = Method Detection Limit

ND = Not Detected, less than MDL

* The test result was calculated as if 100 mg of test portion had been used and the sample weight of test portion is less than 100 mg.

As per client's request, only the appointed materials have been tested.

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TEST RESULT

Migration of Certain Elements

Test Request: Migration of certain elements as specified in European Standard on Safety of Toys EN71 Part 3:2019

Test Method: General elements, with reference to EN 71 Part 3:2019, analysis was performed by ICP-MS;
 Extractable Chromium (VI), with reference to EN 71 Part 3:2019, analysis was performed by IC-ICP-MS;
 Extractable organic tin, with reference to EN 71 Part 3:2019, analysis was performed by GC-MS.

Test Item(s):	Unit	Result							
		15	17	20	21	23	26	27	28
Category Type		III	III	III	III	III	III	III	III
Extractable Lead (Pb)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Antimony (Sb)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Arsenic (As)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Barium (Ba)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Cadmium (Cd)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Mercury (Hg)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Selenium (Se)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Boron (B)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Cobalt (Co)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Manganese (Mn)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Strontium (Sr)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Zinc (Zn)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Copper (Cu)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Aluminum (Al)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Nickel (Ni)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Tin (Sn)	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Organic Tin#1	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Chromium#2	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Extractable Chromium (III) (Cr III)#3	mg/kg	-	-	-	-	-	-	-	-
Extractable Chromium (VI) (Cr VI)	mg/kg	-	-	-	-	-	-	-	-

Note:

- #1 - Result of Organic Tin is calculated by assuming the extractable Tin content is wholly contributed from tributyltin (TBT) cation unless further specified.
- #2 - If the migration of total Chromium is below the maximum limit for Chromium (VI), it can be inferred that the material complies with the requirements for both Chromium(III) and Chromium(VI).
- #3 - In particular Chromium (III) is calculated by subtracting the Chromium (VI) concentration from the total chromium concentration.

Remarks:

mg/kg = milligram per kilogram
 MDL = Method Detection Limit
 ND = Not Detected, less than MDL
 As per client's request, only the appointed materials have been tested.

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TEST RESULT

Limits –MDL per category type:

Test Item(s):	Unit	Limit	MDL	Limit	MDL	Limit	MDL
Category Type		I		II		III	
Extractable Lead (Pb)	mg/kg	2.0	1.0	0.5	0.2	23	10
Extractable Antimony (Sb)	mg/kg	45	5	11.3	1	560	10
Extractable Arsenic (As)	mg/kg	3.8	0.2	0.9	0.1	47	5
Extractable Barium (Ba)	mg/kg	1500	50	375	10	18750	50
Extractable Cadmium (Cd)	mg/kg	1.3	0.1	0.3	0.05	17	1
Extractable Mercury (Hg)	mg/kg	7.5	0.5	1.9	0.2	94	10
Extractable Selenium (Se)	mg/kg	37.5	2	9.4	1	460	10
Extractable Boron (B)	mg/kg	1200	50	300	10	15000	50
Extractable Cobalt (Co)	mg/kg	10.5	1	2.6	0.2	130	10
Extractable Manganese (Mn)	mg/kg	1200	50	300	10	15000	50
Extractable Strontium (Sr)	mg/kg	4500	50	1125	50	56000	50
Extractable Zinc (Zn)	mg/kg	3750	50	938	50	46000	50
Extractable Copper (Cu)	mg/kg	622.5	10	156	10	7700	50
Extractable Aluminum (Al)	mg/kg	5625	50	1406	50	70000	50
Extractable Nickel (Ni)	mg/kg	75	5	18.8	2	930	10
Extractable Tin (Sn)	mg/kg	15000	50	3750	50	180000	50
Extractable Organic Tin	mg/kg	0.9	0.2	0.2	0.2	12	0.2
Extractable Chromium	mg/kg	-	0.02	-	0.005	-	0.02
Extractable Chromium (III) (Cr III)	mg/kg	37.5	2	9.4	1	460	10
Extractable Chromium (VI) (Cr VI)	mg/kg	0.02	0.02	0.005	0.005	0.053	0.02

Category I: dry, brittle, powder-like or pliable toy material

Category II: liquid or sticky toy material

Category III: scrapped-off toy material

"-" = Not Regulated

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TEST RESULT

Total Cadmium Content

Test Request: Total cadmium content as specified in Commission Regulation (EU) 2016/217 amending entry 23 of Annex XVII of REACH Regulation (EC) No 1907/2006.

Test Method: EPA 3050B:1996, EPA 3052:1996, EN 1122:2001 Method B, acid digestion method was used and total cadmium content was determined by ICP-OES.

Tested Item(s)	Unit	Limit	MDL	Result		
				1		
Total Cadmium(Cd)	%	0.1	0.0005	ND		

Tested Item(s)	Unit	Limit	MDL	Result		
				11+12+13	14+15+16	23+24+25
Total Cadmium(Cd)	%	0.01	0.0005	ND	ND	ND

Remark:

MDL = method detection limit

ND = Not detected, less than MDL

As per client's request, only the appointed materials have been tested.

According to client's request, tests are combination tests. The experimental results are the total result of mixed samples.

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TEST RESULT

Polycyclic Aromatic Hydrocarbons (PAHs)

Test Request: Polycyclic Aromatic Hydrocarbons (PAHs) content as specified in Regulation (EU) 2015/326 amending entry 50 of Annex XVII of REACH Regulation (EC) No 1907/2006.

Test Method: Solvent extraction and quantification by gas chromatography-mass selective detection (GC-MS) with respect to AfPS GS 2014:01 PAK (PAK=PAHs) requirement.

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result			
					1	11+12	13+14	15+16
For rubber or plastic of toys or child use articles, will direct contact with skin and mouth.								
Benzo(a)anthracene	56-55-3	mg/kg	0.5	0.2	ND	ND	ND	ND
Chrysene	218-01-9	mg/kg	0.5	0.2	ND	ND	ND	ND
Benzo(b)fluoranthene	205-99-2	mg/kg	0.5	0.2	ND	ND	ND	ND
Benzo(j)fluoranthene	205-82-3	mg/kg	0.5	0.2	ND	ND	ND	ND
Benzo(k)fluoranthene	207-08-9	mg/kg	0.5	0.2	ND	ND	ND	ND
Benzo(a)pyrene	50-32-8	mg/kg	0.5	0.2	ND	ND	ND	ND
Dibenzo(a,h)anthracene	53-70-3	mg/kg	0.5	0.2	ND	ND	ND	ND
Benzo(e)pyrene	192-97-2	mg/kg	0.5	0.2	ND	ND	ND	ND

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result		
					19+20	23+24	25+26
For rubber or plastic of toys or child use articles, will direct contact with skin and mouth.							
Benzo(a)anthracene	56-55-3	mg/kg	0.5	0.2	ND	ND	ND
Chrysene	218-01-9	mg/kg	0.5	0.2	ND	ND	ND
Benzo(b)fluoranthene	205-99-2	mg/kg	0.5	0.2	ND	ND	ND
Benzo(j)fluoranthene	205-82-3	mg/kg	0.5	0.2	ND	ND	ND
Benzo(k)fluoranthene	207-08-9	mg/kg	0.5	0.2	ND	ND	ND
Benzo(a)pyrene	50-32-8	mg/kg	0.5	0.2	ND	ND	ND
Dibenzo(a,h)anthracene	53-70-3	mg/kg	0.5	0.2	ND	ND	ND
Benzo(e)pyrene	192-97-2	mg/kg	0.5	0.2	ND	ND	ND

Remark:

mg/kg = milligram per kilogram

MDL = method detection limit

ND = Not detected, less than MDL

As per client's request, only the appointed materials have been tested.

According to client's request, tests are combination tests. The experimental results are the total result of mixed samples.

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TEST RESULT

Phthalates Content

Test Request: Phthalates content as specified in entry 51&52 of annex XVII of REACH Regulation (EC) No 1907/2006 and its amendment Commission Regulation (EU) 2018/2005.

Test Method: EPA 3550C:2007, EPA 8270E:2018, solvent extraction and quantification by GC-MS.

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result	
					1	5+6+7
Dibutylphthalate (DBP)	84-74-2	%	-	0.005	ND	ND
Benzylbutylphthalate (BBP)	85-68-7	%	-	0.005	ND	ND
Diethylhexylphthalate (DEHP)	117-81-7	%	-	0.005	ND	ND
Diisobutylphthalate (DIBP)	84-69-5	%	-	0.005	ND	ND
Sum (DBP + BBP + DEHP + DIBP)	-	%	0.1	-	ND	ND
Di-n-octylphthalate (DNOP)	117-84-0	%	-	0.005	ND	ND
Diisononylphthalate (DINP)	28553-12-0	%	-	0.005	ND	ND
Diisodecylphthalate (DIDP)	26761-40-0	%	-	0.005	ND	ND
Sum (DNOP + DINP + DIDP)	-	%	0.1	-	ND	ND

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result	
					8+9+10	17+18+19
Dibutylphthalate (DBP)	84-74-2	%	-	0.005	ND	ND
Benzylbutylphthalate (BBP)	85-68-7	%	-	0.005	ND	ND
Diethylhexylphthalate (DEHP)	117-81-7	%	-	0.005	ND	ND
Diisobutylphthalate (DIBP)	84-69-5	%	-	0.005	ND	ND
Sum (DBP + BBP + DEHP + DIBP)	-	%	0.1	-	ND	ND
Di-n-octylphthalate (DNOP)	117-84-0	%	-	0.005	ND	ND
Diisononylphthalate (DINP)	28553-12-0	%	-	0.005	ND	ND
Diisodecylphthalate (DIDP)	26761-40-0	%	-	0.005	ND	ND
Sum (DNOP + DINP + DIDP)	-	%	0.1	-	ND	ND

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result	
					20+21+22	26+27+28
Dibutylphthalate (DBP)	84-74-2	%	-	0.005	ND	ND
Benzylbutylphthalate (BBP)	85-68-7	%	-	0.005	ND	ND
Diethylhexylphthalate (DEHP)	117-81-7	%	-	0.005	ND	ND
Diisobutylphthalate (DIBP)	84-69-5	%	-	0.005	ND	ND
Sum (DBP + BBP + DEHP + DIBP)	-	%	0.1	-	ND	ND
Di-n-octylphthalate (DNOP)	117-84-0	%	-	0.005	ND	ND
Diisononylphthalate (DINP)	28553-12-0	%	-	0.005	ND	ND
Diisodecylphthalate (DIDP)	26761-40-0	%	-	0.005	ND	ND
Sum (DNOP + DINP + DIDP)	-	%	0.1	-	ND	ND

Remark:

MDL = method detection limit

ND = Not detected, less than MDL

As per client's request, only the appointed materials have been tested.

According to client's request, tests are combination tests. The experimental results are the total result of mixed samples.

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TEST RESULT

Packaging and Packaging Waste

Test Request: Total Lead, Cadmium, Mercury and Chromium VI content as specified in Directive 94/62/EC and its amendment Directive (EU) 2015/720.

Test Method: EPA 3050B:1996, EPA 3051A:2007, EPA 3052:1996
 Acid digestion/ microwave digestion method was used, analysis of total Lead, Cadmium, Mercury and Chromium was performed by ICP-OES. Chromium VI determination was performed by UV-Vis Spectrophotometer.

Tested Item(s)	Unit	Limit	MDL	Result	
				29	30
Total Lead (Pb)	mg/kg	-	5	ND	ND
Total Cadmium (Cd)	mg/kg	-	5	ND	ND
Total Chromium VI (Cr VI)	mg/kg	-	5	ND	ND
Total Mercury (Hg)	mg/kg	-	5	ND	ND
Total (Pb+Cd+Hg+Cr VI)	mg/kg	100	-	ND	ND

Remark:

mg/kg = milligram per kilogram

MDL = method detection limit

ND = Not detected, less than MDL

"-" = Not Regulated

As per client's request, only the appointed materials have been tested.

END OF THE REPORT