



CONSUMER PRODUCTS SERVICES DIVISION

LIFETIME PRODUCTS INC

Technical Report: (8522)228-0080
Date Received: August 16, 2022

September 01, 2022

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MELINDA COLE
LIFETIME PRODUCTS INC
FREEPORT CENTER BLDG, D12
CLEARFIELD, UT 84016-0010
UNITED STATES

Sample Description:	PLAYSET ADVENTURE TOWER, EARTHTONE		
Vendor:	N/A	Sample Size:	1
Manufacturer:	DONGGUAN L'S GIANT METAL PRODUCTS CO., LTD	Style No(s):	90830
Buyer:	LIFETIME PRODUCTS INC.	SKN/SKU No.:	N/A
Labeled Age Grade:	FROM AGES 3 TO 12	PO No.:	N/A
Appropriate Age Grade:	FROM 3 TO 12 YEARS OF AGE	Ref #:	90830
Client Specified Age Grade:	NOT SPECIFIED	Country of Origin:	CHINA
Tested Age Grade:	FROM 3 TO 12 YEARS OF AGE	Assortment No.:	N/A
UPC Code:	N/A	Test Starting Date:	AUGUST 16, 2022
		Test Finished Date:	SEPTEMBER 01, 2022

EXECUTIVE SUMMARY:

The sample(s) MEET the following requirement(s):

- Labeling requirements of "CE marking, manufacturer/ Importer name and address, and product identification" under "Directive 2009/48/EC Safety of Toy".
- The mechanical and physical properties requirements of the tested subclauses of the European Standard, "Safety of toys", EN71: Part 1:2014+A1:2018, clauses 1-7.
- The flammability requirements of the European Standard "Safety of Toys", EN 71: Part 2: 2020.
- The migration of certain elements in Category III - Scraped off toy material requirements of the European Standard, "Safety of Toys", EN 71 Part 3: 2019.
- The migration of certain elements in Category III - Scraped off toy material requirements of the European Standard, "Safety of Toys", EN 71 Part 3: 2019+A1:2021.



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EXECUTIVE SUMMARY:

Note: The received sample(s) contained accessible component(s) of less than 10 milligrams by weight on one single sample, therefore such component(s) was not subject to migration of certain elements of European Standard, "Safety of Toys", EN 71 Part 3: 2019, as specified in Clause 7.1 - Selection of test portions.

Note: The received sample(s) contained accessible component(s) of less than 10 milligrams by weight on one single sample, therefore such component(s) was not subject to migration of certain elements of European Standard, "Safety of Toys", EN 71 Part 3: 2019+A1:2021, as specified in Clause 7.1 - Selection of test portions.

BUREAU VERITAS SHENZHEN CO.,LTD

Choy Hon Kwong, Adams
Deputy Director
Analytical Department

BUREAU VERITAS SHENZHEN CO., LTD.

Victor Pang
Assistant Manager
Toys And Juvenile Products Department

AC/ VP / ct

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RESULTS:

APPROPRIATE AGE GRADE DETERMINATION

The Appropriate Age Grade is determined with reference to the EN71: Part 1 : 2014 +A1:2018, CEN ISO/TR 8124-8:2016 Safety of toys - Part 8: Age Determination Guidelines prepared by Technical Committee CEN/TC 52 and Age Grade Determination Guidelines of the Consumer Product Safety Commission (CPSC).	
Note :	The most stringent age grade from the Labeled Age Grade and the Appropriate Age Grade will be used for testing.
Note :	If the client does not specify an age grade for testing or request Bureau Veritas Consumer Products Services, Inc. to determine an appropriate age grade, the labeled age grade will be used for testing.

EXPLANATION OF THE ABBREVIATIONS FOR PART 1, 2

Symbol	Explanation				
NM	The sample(s) DOES NOT MEET the requirement of this Subclause				
M	The sample(s) MEETS the requirement of this Subclause				
N/A	Not Applicable				
NR	Not Requested				
NE	Not Evaluated				
NT	Not Tested				
NP	None Present				
P	Present				
R	Refer to Comment Section of this report				
Symbol	Language Present	Symbol	Language Present	Symbol	Language Present
B	Belgian language	G	German language	PR	Portuguese language
D	Danish language	GR	Greek language	S	Spanish language
E	English language	H	Dutch language	SD	Swedish language
F	Finnish language	I	Italian language	SZ	Swiss language
FR	French language	N	Norwegian language		

RESULTS:

**MECHANICAL & PHYSICAL PROPERTIES
 (EN 71: PART 1 – 2014+A1 – 2018)**

Subclause	Requirement	Result
4.1	Material cleanliness	M
4.2	Assembly	M
4.3	Flexible plastic sheeting	NA
4.4	Toy Bags	NA
4.5	Glass	NA
4.6	Expanding materials	NA
4.7 & 7.6	Edges	M
4.8 & 7.6	Points and metallic wires	M
4.8e	Splinters	M
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 & 7.3	Balloons	NA
4.13 & 7.9	Cord of toy kites and other flying toys	NA
4.14.1	Toys which a child can enter	NA
4.14.2 & 7.8	Masks and helmets	NA
4.15.1	Toys propelled by child	
4.15.1.2 & 7.10.1 & 7.10.2 & 7.10.3 & 7.10.4 & 7.16	Toys propelled by child – Instructions for use	NA
4.15.1.3	Toys propelled by child – Strength	NA
4.15.1.4	Toys propelled by child – Stability	NA
4.15.1.5	Toys propelled by child – Braking	NA
4.15.1.6	Toys propelled by child - Transmission	NA
4.15.1.7	Toys propelled by child – insertion mark	NA
4.15.1.8	Electrically-driven ride-on toys	NA
4.15.2	Toy bicycles	
4.15.2.2 & 7.15	Toy bicycles – Warnings and instructions for use	NA
4.15.2.3	Toy bicycles – Braking	NA
4.15.3 & 7.16 & 7.19	Rocking horses and similar toys	NA
4.15.4 & 7.16	Toys not propelled by child	M
4.15.5 & 7.18	Toy scooters	NA
4.16	Heavy immobile toys	NA
4.17.2	All projectiles	NA
4.17.3 & 7.7	Projectile toys with stored energy	NA
4.17.4 & 7.26	Certain projectiles toys without stored energy	NA
4.18 & 7.4	Aquatic toys and inflatable toys	NA
4.19 & 7.13 & 7.14	Percussion caps	NA

RESULTS:

**MECHANICAL & PHYSICAL PROPERTIES
(EN 71: PART 1 – 2014+A1 – 2018)**

Subclause	Requirement	Result
4.20.2.1- 4.20.2.8, 4.20.2.10, 4.20.2.12	Acoustics	NA
4.20.2.9, 4.20.2.11 & 7.14	Acoustics – percussion toys & cap-firing toys	NA
4.21	Toys containing a non-electrical heat source	NA
4.22 & 7.2	Small balls	NA
4.23	Magnet	
4.23.2 a, b & c	Toy other than magnetic / electrical experimental sets intended for children over 8 years	NA
4.23.3 & 7.20	Magnetic / electrical experimental sets intended for children over 8 years	NA
4.24	Yo-yo ball	NA
4.25	Toys attached to food	NA
4.26	Toy Disguise Costumes	NA
4.27.1	Flying toys – General	NA
4.27.2 & 7.25.1	Rotors and propellers on flying toys	NA
4.27.3 & 7.25.2	Rotors and propellers on remote controlled flying toys	NA
FOR TOYS INTENDED FOR CHILDREN UNDER 36 MONTHS		
5.1	General	NA
5.1a	Small parts – as received	NA
5.1b	Small parts, sharp points, sharp edges – after tests	NA
5.1c	Cross section <2mm metal points & wires	NA
5.1e	Toys contain glue	NA
5.1f	Casing of toys	NA
5.2	Fillings, coverings and seams	NA
5.3	Adhesion of plastic sheeting	NA
5.4.2	Cords and chains in toys intended for children under 18 months	NA
5.4.3 & 7.22	Cords and chains in toys intended for children of 18 months or over but under 36 months	NA
5.4.4	Fixed loops, tangled loops and nooses	NA
5.4.5	Cords and chains on pull along toys	NA
5.4.6 & 7.21	Electrical cables	NA
5.4.7	Cross-sectional dimension of certain cords	NA
5.4.8	Self-retracting cords	NA
5.4.9 & 7.11 & 7.23	Toys attached to or intended to be strung across a cradle, cot or perambulator	NA
5.5 & 7.12	Liquid filled toys	NA
5.6	Electrically driven toys	NA
5.7	Glass and porcelain	NA
5.8	Shape and size	NA
5.9 & 7.17	Monofilament fibres	NA
5.10	Small balls	NA
5.11	Play figures	NA
5.12	Hemispheric shaped toys	NA



RESULTS:

**MECHANICAL & PHYSICAL PROPERTIES
 (EN 71: PART 1 – 2014+A1 – 2018)**

Subclause	Requirement	Result
5.13	Suction cups	NA
5.14	Straps intended to be worn fully or partially around the neck	NA
5.15 & 7.24	Sledges with cords for pulling	NA
6	Packaging	M
WARNINGS, INSTRUCTIONS FOR USE		
7.1	General	NA
7.2	Toys not intended for children under 36 months	NA
7.5	Functional toys	NA

2009/48/EC GENERAL LABELING REQUIREMENT

Requirement	Result
CE Mark	M
Manufacturer/ Importer name and address	M
Product Identification	M

M = Meet NM = Not Meet N/A = Not Applicable R = Refer to Comment Section



RESULTS:

FLAMMABILITY (EN 71 PART 2: 2020)

Subclause	Requirement	Result
4.1	Cellulose nitrate	NP
4.1	Highly flammable solids	NP
4.1	Surface flash on a piled surface	NA
4.1	Flammable gases	NA
4.1	Extremely flammable liquids, highly flammable liquids, flammable liquids and flammable gels	NA
4.2	Toys to be worn on the head	NA
4.3	Toy disguise costumes and toys intended to be worn by child in play	NA
4.3	warning on product and packaging (10 - 30 mm/s)	NA
4.4	Toys intended to be entered by a child	NA
4.4	warning on product and packaging (10 – 30 mm/s)	NA
4.5	Soft-filled toys	NA

REQUIREMENTS & TEST METHODS CROSS REFERENCE TABLE FOR PART 2

Sub-clause	Test Method	Sub-clause	Test Method	Sub-clause	Test Method	Sub-clause	Test Method
4.2.2	5.2	4.2.4	5.3	4.3	5.4	4.5	5.5
4.2.3	5.3	4.2.5	5.4	4.4	5.4	-	-



RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019)

Test Method : European Standard EN 71 Part 3: 2019, Section 9.

Class: Category III - Scraped off toy material

Sample Identity	Color	Location	Style
A.	Brown coating	Frame	
B.	Green coating	Frame	
C.	Matt silver coating	Quick lock & s hook	
D.	Deep green PVC	Cover of chain	
E.	Dull green PVC	Cap of stick	
F.	Off white plastic	Board	
G.	Ivory plastic	Board	
H.	Light brown plastic	Board	
I.	Matt green plastic	Seat	
J.	Flat black plastic	Joint of seat	
K.	Soft black plastic	Holder of quick lock	
L.	Black plastic	Cap nut	
M.	Clear laminated multicolor printed bright white plastic sticker	Warning label	
N.	Clear laminated black printed soft clear plastic sticker	Logo sticker	
O.	Matt black plastic	Washer	
P.	Dull black plastic	Foot pad	
Q.	Soft green plastic	Roof	
R.	Dull soft green plastic	Slide & hand hold	
S.	Matt yellow plastic	Hand hold	
T.	Matt blue plastic	Hand hold	
U.	Matt red plastic	Hand hold	
V.	Matt dark green plastic	Steering wheel	
W.	Dull soft black plastic	End of tube	
X.	Flat soft black plastic	Joint of thick tube	



RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019)

Test Method : European Standard EN 71 Part 3: 2019, Section 9.

Class: Category III - Scraped off toy material

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	A.	B.	C.	D.	E.	F.
Aluminium (Al)	70000	36	11	5100	5	2	LT 2
Arsenic (As)	47	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Boron (B)	15000	LT 2	LT 2	31	11	6	4
Barium (Ba)	18750	84	24	22	LT 2	LT 2	LT 2
Cadmium (Cd)	17	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cobalt (Co)	130	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Chromium III (Cr III)	460	0.77	0.42	4	0.25	0.053	LT 0.025
Chromium VI (Cr VI)	0.053	#LT 0.025	#LT 0.025	#LT 0.025	#LT 0.025	#LT 0.025	
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Mercury (Hg)	94	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Manganese (Mn)	15000	5	6	9	LT 2	LT 2	LT 2
Nickel (Ni)	930	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Lead (Pb)	23	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Antimony (Sb)	560	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Selenium (Se)	460	LT 2	LT 2	2	LT 2	LT 2	LT 2
Tin (Sn)	180000	LT 2	LT 2	82	14	37	7
Organic tin	12	LT 2	LT 2	#LT 2	#LT 2	# 5.51	#LT 2
Strontium (Sr)	56000	24	25	LT 2	LT 2	LT 2	LT 2
Zinc (Zn)	46000	20	29	11000	38	5	3
Mass of trace amount (gram)				0.0184			
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass



RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019)

Test Method : European Standard EN 71 Part 3: 2019, Section 9.

Class: Category III - Scraped off toy material

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	G.	H.	I.	J.	K.	L.
Aluminium (Al)	70000	LT 2	LT 2	LT 2	3	4	4
Arsenic (As)	47	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Boron (B)	15000	3	2	LT 2	2	4	6
Barium (Ba)	18750	LT 2	LT 2	LT 2	9	10	LT 2
Cadmium (Cd)	17	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cobalt (Co)	130	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Chromium III (Cr III)	460	0.033	0.038	LT 0.025	0.092	0.12	5.0
Chromium VI (Cr VI)	0.053				#LT 0.025	#LT 0.025	#LT 0.025
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Mercury (Hg)	94	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Manganese (Mn)	15000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Nickel (Ni)	930	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Lead (Pb)	23	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Antimony (Sb)	560	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Selenium (Se)	460	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Tin (Sn)	180000	4	2	LT 2	2	2	LT 2
Organic tin	12	10	5	LT 2	5	5	LT 2
Strontium (Sr)	56000	LT 2	LT 2	LT 2	3	3	LT 2
Zinc (Zn)	46000	3	2	LT 2	63	30	66
Mass of trace amount (gram)							0.0941
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass



RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019)

Test Method : European Standard EN 71 Part 3: 2019, Section 9.

Class: Category III - Scraped off toy material

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	M.	N.	O.	P.	Q.	R.
Aluminium (Al)	70000	2	4	LT 2	LT 2	LT 2	LT 2
Arsenic (As)	47	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Boron (B)	15000	3	3	LT 2	LT 2	LT 2	LT 2
Barium (Ba)	18750	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cadmium (Cd)	17	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cobalt (Co)	130	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Chromium III (Cr III)	460	0.23	0.20	0.48	0.074	0.027	LT 0.025
Chromium VI (Cr VI)	0.053	#LT 0.025	#LT 0.025	#LT 0.025	#LT 0.025		
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Mercury (Hg)	94	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Manganese (Mn)	15000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Nickel (Ni)	930	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Lead (Pb)	23	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Antimony (Sb)	560	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Selenium (Se)	460	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Tin (Sn)	180000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Organic tin	12	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Strontium (Sr)	56000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Zinc (Zn)	46000	26	17	11	3	LT 2	LT 2
Mass of trace amount (gram)			0.0239				
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass



RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019)

Test Method : European Standard EN 71 Part 3: 2019, Section 9.

Class: Category III - Scraped off toy material

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	S.	T.	U.	V.	W.	X.
Aluminium (Al)	70000	LT 2	2	LT 2	LT 2	3	LT 2
Arsenic (As)	47	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Boron (B)	15000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Barium (Ba)	18750	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cadmium (Cd)	17	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cobalt (Co)	130	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Chromium III (Cr III)	460	0.033	0.040	0.037	0.050	0.25	0.059
Chromium VI (Cr VI)	0.053					#LT 0.025	#LT 0.025
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Mercury (Hg)	94	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Manganese (Mn)	15000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Nickel (Ni)	930	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Lead (Pb)	23	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Antimony (Sb)	560	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Selenium (Se)	460	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Tin (Sn)	180000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Organic tin	12	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Strontium (Sr)	56000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Zinc (Zn)	46000	3	LT 2	LT 2	4	9	3
Mass of trace amount (gram)							
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

mg/kg = milligrams per kilogram (ppm=parts per million)

* = Average of duplicate analysis

Organic tin = migration of total organic tin is expressed as tributyl tin cation content in mg/kg

= Verified results (see note)

LT = Less Than

FR = Failed Result

Remark: - Results of Cr III and Cr VI were reported as sum of soluble Chromium content unless specified.
 - Result(s) of organic tin was (were) calculated while assuming the tin content wholly contributed from tributyltin cation unless specified.

Note: If soluble chromium content or soluble tin content exceeded the screening limits of soluble chromium (VI) or organic tin content, the results were verified by below method
 - Chromium VI: EN71 part 3:2019, Annex F
 - Organic tin: EN71 part 3:2019, Annex G by Gas Chromatography – Mass Spectroscopy analysis.



RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019+A1:2021)

Test Method : European Standard EN 71 Part 3: 2019+A1:2021, Section 9.

Class: Category III - Scraped off toy material

Sample Identity	Color	Location	Style
A.	Brown coating	Frame	
B.	Green coating	Frame	
C.	Matt silver coating	Quick lock & s hook	
D.	Deep green PVC	Cover of chain	
E.	Dull green PVC	Cap of stick	
F.	Off white plastic	Board	
G.	Ivory plastic	Board	
H.	Light brown plastic	Board	
I.	Matt green plastic	Seat	
J.	Flat black plastic	Joint of seat	
K.	Soft black plastic	Holder of quick lock	
L.	Black plastic	Cap nut	
M.	Clear laminated multicolor printed bright white plastic sticker	Warning label	
N.	Clear laminated black printed soft clear plastic sticker	Logo sticker	
O.	Matt black plastic	Washer	
P.	Dull black plastic	Foot pad	
Q.	Soft green plastic	Roof	
R.	Dull soft green plastic	Slide & hand hold	
S.	Matt yellow plastic	Hand hold	
T.	Matt blue plastic	Hand hold	
U.	Matt red plastic	Hand hold	
V.	Matt dark green plastic	Steering wheel	
W.	Dull soft black plastic	End of tube	
X.	Flat soft black plastic	Joint of thick tube	



RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019+A1:2021)

Test Method : European Standard EN 71 Part 3: 2019+A1:2021, Section 9.

Class: Category III - Scraped off toy material

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	A.	B.	C.	D.	E.	F.
Aluminium (Al)	28130	36	11	5100	5	2	LT 2
Arsenic (As)	47	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Boron (B)	15000	LT 2	LT 2	31	11	6	4
Barium (Ba)	18750	84	24	22	LT 2	LT 2	LT 2
Cadmium (Cd)	17	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cobalt (Co)	130	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Chromium III (Cr III)	460	0.77	0.42	4	0.25	0.053	LT 0.025
Chromium VI (Cr VI)	0.053	#LT 0.025	#LT 0.025	#LT 0.025	#LT 0.025	#LT 0.025	
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Mercury (Hg)	94	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Manganese (Mn)	15000	5	6	9	LT 2	LT 2	LT 2
Nickel (Ni)	930	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Lead (Pb)	23	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Antimony (Sb)	560	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Selenium (Se)	460	LT 2	LT 2	2	LT 2	LT 2	LT 2
Tin (Sn)	180000	LT 2	LT 2	82	14	37	7
Organic tin	12	LT 2	LT 2	#LT 2	#LT 2	# 5.51	#LT 2
Strontium (Sr)	56000	24	25	LT 2	LT 2	LT 2	LT 2
Zinc (Zn)	46000	20	29	11000	38	5	3
Mass of trace amount (gram)				0.0184			
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass



RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019+A1:2021)

Test Method : European Standard EN 71 Part 3: 2019+A1:2021, Section 9.

Class: Category III - Scraped off toy material

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	G.	H.	I.	J.	K.	L.
Aluminium (Al)	28130	LT 2	LT 2	LT 2	3	4	4
Arsenic (As)	47	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Boron (B)	15000	3	2	LT 2	2	4	6
Barium (Ba)	18750	LT 2	LT 2	LT 2	9	10	LT 2
Cadmium (Cd)	17	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cobalt (Co)	130	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Chromium III (Cr III)	460	0.033	0.038	LT 0.025	0.092	0.12	5.0
Chromium VI (Cr VI)	0.053				#LT 0.025	#LT 0.025	#LT 0.025
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Mercury (Hg)	94	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Manganese (Mn)	15000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Nickel (Ni)	930	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Lead (Pb)	23	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Antimony (Sb)	560	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Selenium (Se)	460	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Tin (Sn)	180000	4	2	LT 2	2	2	LT 2
Organic tin	12	10	5	LT 2	5	5	LT 2
Strontium (Sr)	56000	LT 2	LT 2	LT 2	3	3	LT 2
Zinc (Zn)	46000	3	2	LT 2	63	30	66
Mass of trace amount (gram)							0.0941
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass



RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019+A1:2021)

Test Method : European Standard EN 71 Part 3: 2019+A1:2021, Section 9.

Class: Category III - Scraped off toy material

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	M.	N.	O.	P.	Q.	R.
Aluminium (Al)	28130	2	4	LT 2	LT 2	LT 2	LT 2
Arsenic (As)	47	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Boron (B)	15000	3	3	LT 2	LT 2	LT 2	LT 2
Barium (Ba)	18750	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cadmium (Cd)	17	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cobalt (Co)	130	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Chromium III (Cr III)	460	0.23	0.20	0.48	0.074	0.027	LT 0.025
Chromium VI (Cr VI)	0.053	#LT 0.025	#LT 0.025	#LT 0.025	#LT 0.025		
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Mercury (Hg)	94	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Manganese (Mn)	15000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Nickel (Ni)	930	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Lead (Pb)	23	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Antimony (Sb)	560	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Selenium (Se)	460	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Tin (Sn)	180000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Organic tin	12	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Strontium (Sr)	56000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Zinc (Zn)	46000	26	17	11	3	LT 2	LT 2
Mass of trace amount (gram)			0.0239				
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass



RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019+A1:2021)

Test Method : European Standard EN 71 Part 3: 2019+A1:2021, Section 9.

Class: Category III - Scraped off toy material

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	S.	T.	U.	V.	W.	X.
Aluminium (Al)	28130	LT 2	2	LT 2	LT 2	3	LT 2
Arsenic (As)	47	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Boron (B)	15000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Barium (Ba)	18750	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cadmium (Cd)	17	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cobalt (Co)	130	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Chromium III (Cr III)	460	0.033	0.040	0.037	0.050	0.25	0.059
Chromium VI (Cr VI)	0.053					#LT 0.025	#LT 0.025
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Mercury (Hg)	94	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Manganese (Mn)	15000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Nickel (Ni)	930	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Lead (Pb)	23	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Antimony (Sb)	560	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Selenium (Se)	460	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Tin (Sn)	180000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Organic tin	12	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Strontium (Sr)	56000	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Zinc (Zn)	46000	3	LT 2	LT 2	4	9	3
Mass of trace amount (gram)							
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

mg/kg = milligrams per kilogram (ppm=parts per million)

* = Average of duplicate analysis

Organic tin = migration of total organic tin is expressed as tributyl tin cation content in mg/kg

= Verified results (see note)

LT = Less Than

FR = Failed Result

Remark: - Results of Cr III and Cr VI were reported as sum of soluble Chromium content unless specified.
 - Result(s) of organic tin was (were) calculated while assuming the tin content wholly contributed from tributyltin cation unless specified.

Note: If soluble chromium content or soluble tin content exceeded the screening limits of soluble chromium (VI) or organic tin content, the results were verified by below method
 - Chromium VI: EN71 part 3:2019+A1:2021, Annex F
 - Organic tin: EN71 part 3:2019+A1:2021, Annex G by Gas Chromatography – Mass Spectroscopy analysis.



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RESULTS:



Sample Number:
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END OF REPORT