CONSUMER PRODUCTS SERVICES DIVISION

NEW BRIGHT INDUSTRIAL CO., LTD

Technical Report: **(8520)354-0005** December 28, 2020
Date Received: December 21, 2020

ERIC KWOK
NEW BRIGHT INDUSTRIAL CO., LTD
9/F NEW BRIGHT BUILDING
11 SHEUNG YUET ROAD
KOWLOON BAY, HONG KONG

Sample Description:	TOY 18" R/C FULL FUNCTION SEA RAY BOAT TOY 1:12 R/C FULL FUNCTION DUNE REBEL 1.) A-27 MHZ 2.) B-2.4 GHZ 3.) C-2.4 GHZ		
Vendor:	N/A	Sample Size:	6
Manufacturer:	N/A	Style No(s):	7185,1272
Buyer:	N/A	SKN/SKU No.:	N/A
Labeled Age Grade:	NOT PRESENT	PO No.:	N/A
Appropriate Age Grade:	N/A	Ref #:	N/A
Client Specified Age Grade:	NOT SPECIFIED	Country of Origin:	CHINA
Tested Age Grade:	N/A	Assortment No.:	N/A
UPC Code:	N/A	Test Starting Date:	DECEMBER 21, 2020
		Test Finished Date:	DECEMBER 28, 2020

EXECUTIVE SUMMARY:

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

- The migration of certain elements in Category III - Scraped off toy material requirements of the European Standard, “Safety of Toys”, EN 71 Part 3: 2013+A3:2018.

- The migration of certain elements requirements of the European Standard, “Safety of Toys”, EN 71 Part 3: 2019 (with new aluminium limit with amendment up to Directive (EU) 2019/1922).

- The migration of certain elements requirements of the European Standard, “Safety of Toys”, EN 71 Part 3: 2019.

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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: 2013 + A3:2018, 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, as specified in Clause 7.1 - Selection of test portions.

BUREAU VERITAS SHENZHEN CO., LTD

Choy Hon Kwong, Adams
Senior Manager
Analytical Department

AC/jf

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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.

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2013+A3:2018)

Test Method : European Standard EN 71 Part 3: 2013+A3:2018, Annex E.

Class: Category III - Scraped off toy material

Sample Identity	Color	Location	Style
A.	Black coating	Boat	A
B.	Deep grey coating	Boat	A
C.	All coating / white coating	Car body	B-C
D.	Brown PVC	Wire	A
E.	Flat blue PVC	Wire	A-C
F.	Soft black PVC	Wire	A
G.	Matt black PVC	Antenna of remote control	A
H.	Soft grey PVC	Wire	B-C
I.	Tea brown PVC	Wire & antenna of car	B-C
J.	Soft green PVC	Wire	B-C
K.	Dull matt black plastic	Remote control	A-C
L.	Silver grey plastic	Joystick	A-C
M.	Clear laminated multicolor printed bright white plastic sticker	Plastic sticker	A-C
N.	Translucent yellowish green plastic	Cover of antenna of remote control	A
O.	White plastic	Boat	A
P.	Blue plastic / glitter	Boat	A
Q.	Light grey plastic	Fence of boat	A
R.	Dull white soft plastic	Airscrew & plug	A
S.	Flat grey plastic	Lock & alignment	A
T.	Pale grey plastic	Lock of boat	A
U.	Soft dull black plastic	Tip of antenna of boat	A
V.	Red plastic	Inner boat	A
W.	Clear laminated multicolor printed white paper sticker	Paper sticker of battery	A
X.	Flat black plastic	Inner boat Cover of gear	A B-C
Y.	Dull soft white plastic	Inner boat	A
Z.	Matt pale black plastic	Cover of motor	A

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2013+A3:2018)

Test Method : European Standard EN 71 Part 3: 2013+A3:2018, Annex E.

Class: Category III - Scraped off toy material

Sample Identity	Color	Location	Style
AA.	Pale black plastic	Switch	A
AB.	Soft flat white plastic	Port	A-C
AC.	Soft flat black plastic	Stem rudder	A
AD.	Clear plastic	Car body	B-C
AE.	Dull soft black plastic	Car body	B-C
AF.	Night black plastic	Fixture of car body	B-C
AG.	Dark grey plastic / glitter	Car body	B-C
AH.	Shadow black soft plastic	Tyre	B-C
AI.	Flat soft black plastic	Wheels	B-C
AJ.	Orange plastic	Bumper	B
AK.	Soft red plastic	Bumper	C
AL.	Light red plastic	Switch	B-C
AM.	Dull red plastic	Wheel alignment	B-C
AN.	Soft clear plastic	Joint of front wheels	B-C
AO.	Clear laminated multicolor printed dull clear plastic sticker	Plastic sticker	B-C
AP.	Multicolor printed soft white paper sticker	Paper sticker	B-C

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2013+A3:2018)

Test Method : European Standard EN 71 Part 3: 2013+A3:2018, Annex E.

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	8	36	150	4	4	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	4	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	0.11	0.15	0.22	LT 0.050	LT 0.050	LT 0.050
Chromium VI (Cr VI)	0.2	#LT 0.0020	#LT 0.0020	#LT 0.0020			
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	LT 2	3
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	3	LT 2	LT 2	LT 2	LT 2
Zinc (Zn)	46000	6	6	7	4	4	3
Mass of trace amount (gram)		0.0253	0.0137	0.0331	-	-	-
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2013+A3:2018)

Test Method : European Standard EN 71 Part 3: 2013+A3:2018, Annex E.

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	3	6	3	8	2	11
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	0.050	LT 0.050	LT 0.050	LT 0.050	LT 0.050	LT 0.050
Chromium VI (Cr VI)	0.2						
Copper (Cu)	7700	3	LT 2	7	4	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	2	5	8	9	LT 2	LT 2
Mass of trace amount (gram)		-	-	-	-	-	-
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2013+A3:2018)

Test Method : European Standard EN 71 Part 3: 2013+A3:2018, Annex E.

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	4	LT 2	LT 2	LT 2	4	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	0.11	LT 0.050	LT 0.050	LT 0.050	0.094	LT 0.050
Chromium VI (Cr VI)	0.2	#LT 0.0020				#LT 0.0020	
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	LT 2	LT 2	LT 2	LT 2	LT 2	2
Mass of trace amount (gram)		-	-	-	-	-	-
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2013+A3:2018)

Test Method : European Standard EN 71 Part 3: 2013+A3:2018, Annex E.

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	2	5	4	2	10	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	2	LT 2	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	LT 0.050	LT 0.050	0.061	LT 0.050	0.097	0.054
Chromium VI (Cr VI)	0.2			#LT 0.0020		#LT 0.0020	#LT 0.0020
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	6	LT 2
Nickel (Ni)	930	LT 2	LT 2	11	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	31	LT 2
Zinc (Zn)	46000	LT 2	LT 2	6	LT 2	LT 2	LT 2
Mass of trace amount (gram)		-	-	0.0678	-	-	-
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2013+A3:2018)

Test Method : European Standard EN 71 Part 3: 2013+A3:2018, Annex E.

Class: Category III - Scraped off toy material

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	Y.	Z.	AA.	AB.	AC.	AD.
Aluminium (Al)	70000	4	2	2	3	LT 2	200
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	0.060	LT 0.050	LT 0.050	0.088	LT 0.050	LT 0.050
Chromium VI (Cr VI)	0.2	#LT 0.0020			#LT 0.0020		
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	5	LT 2	3	LT 2	LT 2	LT 2
Mass of trace amount (gram)		-	-	-	-	-	-
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2013+A3:2018)

Test Method : European Standard EN 71 Part 3: 2013+A3:2018, Annex E.

Class: Category III - Scraped off toy material

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	AE.	AF.	AG.	AH.	AI.	AJ.
Aluminium (Al)	70000	5	LT 2	7	2	3	3
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	LT 0.050	LT 0.050	LT 0.050	LT 0.050	LT 0.050	LT 0.050
Chromium VI (Cr VI)	0.2						
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	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Mass of trace amount (gram)		-	-	-	-	-	-
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2013+A3:2018)

Test Method : European Standard EN 71 Part 3: 2013+A3:2018, Annex E.

Class: Category III - Scraped off toy material

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	AK.	AL.	AM.	AN.	AO.	AP.
Aluminium (Al)	70000	2	2	2	LT 2	7	100
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	3	LT 2	LT 2	LT 2	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	LT 0.050	LT 0.050	LT 0.050	LT 0.050	0.13	0.19
Chromium VI (Cr VI)	0.2					#LT 0.0020	#LT 0.0020
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	8
Nickel (Ni)	930	LT 2	LT 2	6	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	34
Zinc (Zn)	46000	LT 2	LT 2	2	LT 2	2	3
Mass of trace amount (gram)		-	-	-	-	-	-
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

mg/kg = milligrams per kilogram (ppm=parts per million) *LT = Less Than*
** = Average of duplicate analysis* *FR = Failed Result*
Organic tin = migration of total organic tin is expressed as tributyl tin cation content in mg/kg
 # = Verified results (see note)

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: In house Ion-chromatography analysis.
- Organic tin: EN71 part 3:2013+A3:2018, Annex G by Gas Chromatography – Mass Spectroscopy analysis.

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.	Black coating	Boat	A
B.	Deep grey coating	Boat	A
C.	All coating / white coating	Car body	B-C
D.	Brown PVC	Wire	A
E.	Flat blue PVC	Wire	A-C
F.	Soft black PVC	Wire	A
G.	Matt black PVC	Antenna of remote control	A
H.	Soft grey PVC	Wire	B-C
I.	Tea brown PVC	Wire & antenna of car	B-C
J.	Soft green PVC	Wire	B-C
K.	Dull matt black plastic	Remote control	A-C
L.	Silver grey plastic	Joystick	A-C
M.	Clear laminated multicolor printed bright white plastic sticker	Plastic sticker	A-C
N.	Translucent yellowish green plastic	Cover of antenna of remote control	A
O.	White plastic	Boat	A
P.	Blue plastic / glitter	Boat	A
Q.	Light grey plastic	Fence of boat	A
R.	Dull white soft plastic	Airscrew & plug	A
S.	Flat grey plastic	Lock & alignment	A
T.	Pale grey plastic	Lock of boat	A
U.	Soft dull black plastic	Tip of antenna of boat	A
V.	Red plastic	Inner boat	A
W.	Clear laminated multicolor printed white paper sticker	Paper sticker of battery	A
X.	Flat black plastic	Inner boat Cover of gear	A B-C
Y.	Dull soft white plastic	Inner boat	A
Z.	Matt pale black plastic	Cover of motor	A

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
AA.	Pale black plastic	Switch	A
AB.	Soft flat white plastic	Port	A-C
AC.	Soft flat black plastic	Stem rudder	A
AD.	Clear plastic	Car body	B-C
AE.	Dull soft black plastic	Car body	B-C
AF.	Night black plastic	Fixture of car body	B-C
AG.	Dark grey plastic / glitter	Car body	B-C
AH.	Shadow black soft plastic	Tyre	B-C
AI.	Flat soft black plastic	Wheels	B-C
AJ.	Orange plastic	Bumper	B
AK.	Soft red plastic	Bumper	C
AL.	Light red plastic	Switch	B-C
AM.	Dull red plastic	Wheel alignment	B-C
AN.	Soft clear plastic	Joint of front wheels	B-C
AO.	Clear laminated multicolor printed dull clear plastic sticker	Plastic sticker	B-C
AP.	Multicolor printed soft white paper sticker	Paper sticker	B-C

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	8	36	150	4	4	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	4	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	0.11	0.15	0.22	LT 0.050	LT 0.050	LT 0.050
Chromium VI (Cr VI)	0.053	#LT 0.0020	#LT 0.0020	#LT 0.0020			
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	LT 2	3
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	3	LT 2	LT 2	LT 2	LT 2
Zinc (Zn)	46000	6	6	7	4	4	3
Mass of trace amount (gram)		0.0253	0.0137	0.0331	-	-	-
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	3	6	3	8	2	11
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	0.050	LT 0.050	LT 0.050	LT 0.050	LT 0.050	LT 0.050
Chromium VI (Cr VI)	0.053						
Copper (Cu)	7700	3	LT 2	7	4	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	2	5	8	9	LT 2	LT 2
Mass of trace amount (gram)		-	-	-	-	-	-
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	4	LT 2	LT 2	LT 2	4	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	0.11	LT 0.050	LT 0.050	LT 0.050	0.094	LT 0.050
Chromium VI (Cr VI)	0.053	#LT 0.0020				#LT 0.0020	
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	LT 2	LT 2	LT 2	LT 2	LT 2	2
Mass of trace amount (gram)		-	-	-	-	-	-
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	2	5	4	2	10	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	2	LT 2	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	LT 0.050	LT 0.050	0.061	LT 0.050	0.097	0.054
Chromium VI (Cr VI)	0.053			#LT 0.0020		#LT 0.0020	#LT 0.0020
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	6	LT 2
Nickel (Ni)	930	LT 2	LT 2	11	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	31	LT 2
Zinc (Zn)	46000	LT 2	LT 2	6	LT 2	LT 2	LT 2
Mass of trace amount (gram)		-	-	0.0678	-	-	-
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	Y.	Z.	AA.	AB.	AC.	AD.
Aluminium (Al)	70000	4	2	2	3	LT 2	200
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	0.060	LT 0.050	LT 0.050	0.088	LT 0.050	LT 0.050
Chromium VI (Cr VI)	0.053	#LT 0.0020			#LT 0.0020		
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	5	LT 2	3	LT 2	LT 2	LT 2
Mass of trace amount (gram)		-	-	-	-	-	-
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	AE.	AF.	AG.	AH.	AI.	AJ.
Aluminium (Al)	70000	5	LT 2	7	2	3	3
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	LT 0.050	LT 0.050	LT 0.050	LT 0.050	LT 0.050	LT 0.050
Chromium VI (Cr VI)	0.053						
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	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Mass of trace amount (gram)		-	-	-	-	-	-
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	AK.	AL.	AM.	AN.	AO.	AP.
Aluminium (Al)	70000	2	2	2	LT 2	7	100
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	3	LT 2	LT 2	LT 2	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	LT 0.050	LT 0.050	LT 0.050	LT 0.050	0.13	0.19
Chromium VI (Cr VI)	0.053					#LT 0.0020	#LT 0.0020
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	8
Nickel (Ni)	930	LT 2	LT 2	6	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	34
Zinc (Zn)	46000	LT 2	LT 2	2	LT 2	2	3
Mass of trace amount (gram)		-	-	-	-	-	-
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

mg/kg = milligrams per kilogram (ppm=parts per million) *LT = Less Than*
** = Average of duplicate analysis* *FR = Failed Result*
Organic tin = migration of total organic tin is expressed as tributyl tin cation content in mg/kg
 # = Verified results (see note)

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 with new aluminium limit with amendment up to Directive (EU) 2019/1922)

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

Class: Category III - Scraped off toy material

Sample Identity	Color	Location	Style
A.	Black coating	Boat	A
B.	Deep grey coating	Boat	A
C.	All coating / white coating	Car body	B-C
D.	Brown PVC	Wire	A
E.	Flat blue PVC	Wire	A-C
F.	Soft black PVC	Wire	A
G.	Matt black PVC	Antenna of remote control	A
H.	Soft grey PVC	Wire	B-C
I.	Tea brown PVC	Wire & antenna of car	B-C
J.	Soft green PVC	Wire	B-C
K.	Dull matt black plastic	Remote control	A-C
L.	Silver grey plastic	Joystick	A-C
M.	Clear laminated multicolor printed bright white plastic sticker	Plastic sticker	A-C
N.	Translucent yellowish green plastic	Cover of antenna of remote control	A
O.	White plastic	Boat	A
P.	Blue plastic / glitter	Boat	A
Q.	Light grey plastic	Fence of boat	A
R.	Dull white soft plastic	Airscrew & plug	A
S.	Flat grey plastic	Lock & alignment	A
T.	Pale grey plastic	Lock of boat	A
U.	Soft dull black plastic	Tip of antenna of boat	A
V.	Red plastic	Inner boat	A
W.	Clear laminated multicolor printed white paper sticker	Paper sticker of battery	A
X.	Flat black plastic	Inner boat Cover of gear	A B-C
Y.	Dull soft white plastic	Inner boat	A
Z.	Matt pale black plastic	Cover of motor	A

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019 with new aluminium limit with amendment up to Directive (EU) 2019/1922)

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

Class: Category III - Scraped off toy material

Sample Identity	Color	Location	Style
AA.	Pale black plastic	Switch	A
AB.	Soft flat white plastic	Port	A-C
AC.	Soft flat black plastic	Stem rudder	A
AD.	Clear plastic	Car body	B-C
AE.	Dull soft black plastic	Car body	B-C
AF.	Night black plastic	Fixture of car body	B-C
AG.	Dark grey plastic / glitter	Car body	B-C
AH.	Shadow black soft plastic	Tyre	B-C
AI.	Flat soft black plastic	Wheels	B-C
AJ.	Orange plastic	Bumper	B
AK.	Soft red plastic	Bumper	C
AL.	Light red plastic	Switch	B-C
AM.	Dull red plastic	Wheel alignment	B-C
AN.	Soft clear plastic	Joint of front wheels	B-C
AO.	Clear laminated multicolor printed dull clear plastic sticker	Plastic sticker	B-C
AP.	Multicolor printed soft white paper sticker	Paper sticker	B-C

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019 with new aluminium limit with amendment up to Directive (EU) 2019/1922)

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)	28130	8	36	150	4	4	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	4	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	0.11	0.15	0.22	LT 0.050	LT 0.050	LT 0.050
Chromium VI (Cr VI)	0.053	#LT 0.0020	#LT 0.0020	#LT 0.0020			
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	LT 2	3
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	3	LT 2	LT 2	LT 2	LT 2
Zinc (Zn)	46000	6	6	7	4	4	3
Mass of trace amount (gram)		0.0253	0.0137	0.0331	-	-	-
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019 with new aluminium limit with amendment up to Directive (EU) 2019/1922)

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)	28130	3	6	3	8	2	11
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	0.050	LT 0.050	LT 0.050	LT 0.050	LT 0.050	LT 0.050
Chromium VI (Cr VI)	0.053						
Copper (Cu)	7700	3	LT 2	7	4	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	2	5	8	9	LT 2	LT 2
Mass of trace amount (gram)		-	-	-	-	-	-
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019 with new aluminium limit with amendment up to Directive (EU) 2019/1922)

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)	28130	4	LT 2	LT 2	LT 2	4	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	0.11	LT 0.050	LT 0.050	LT 0.050	0.094	LT 0.050
Chromium VI (Cr VI)	0.053	#LT 0.0020				#LT 0.0020	
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	LT 2	LT 2	LT 2	LT 2	LT 2	2
Mass of trace amount (gram)		-	-	-	-	-	-
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019 with new aluminium limit with amendment up to Directive (EU) 2019/1922)

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)	28130	2	5	4	2	10	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	2	LT 2	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	LT 0.050	LT 0.050	0.061	LT 0.050	0.097	0.054
Chromium VI (Cr VI)	0.053			#LT 0.0020		#LT 0.0020	#LT 0.0020
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	6	LT 2
Nickel (Ni)	930	LT 2	LT 2	11	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	31	LT 2
Zinc (Zn)	46000	LT 2	LT 2	6	LT 2	LT 2	LT 2
Mass of trace amount (gram)		-	-	0.0678	-	-	-
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019 with new aluminium limit with amendment up to Directive (EU) 2019/1922)

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	Y.	Z.	AA.	AB.	AC.	AD.
Aluminium (Al)	28130	4	2	2	3	LT 2	200
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	0.060	LT 0.050	LT 0.050	0.088	LT 0.050	LT 0.050
Chromium VI (Cr VI)	0.053	#LT 0.0020			#LT 0.0020		
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	5	LT 2	3	LT 2	LT 2	LT 2
Mass of trace amount (gram)		-	-	-	-	-	-
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019 with new aluminium limit with amendment up to Directive (EU) 2019/1922)

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	AE.	AF.	AG.	AH.	AI.	AJ.
Aluminium (Al)	28130	5	LT 2	7	2	3	3
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	LT 0.050	LT 0.050	LT 0.050	LT 0.050	LT 0.050	LT 0.050
Chromium VI (Cr VI)	0.053						
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	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Mass of trace amount (gram)		-	-	-	-	-	-
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

RESULTS:

MIGRATION OF CERTAIN ELEMENTS (European Standard EN 71 Part 3: 2019 with new aluminium limit with amendment up to Directive (EU) 2019/1922)

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	AK.	AL.	AM.	AN.	AO.	AP.
Aluminium (Al)	28130	2	2	2	LT 2	7	100
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	3	LT 2	LT 2	LT 2	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	LT 0.050	LT 0.050	LT 0.050	LT 0.050	0.13	0.19
Chromium VI (Cr VI)	0.053					#LT 0.0020	#LT 0.0020
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	8
Nickel (Ni)	930	LT 2	LT 2	6	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	34
Zinc (Zn)	46000	LT 2	LT 2	2	LT 2	2	3
Mass of trace amount (gram)		-	-	-	-	-	-
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

mg/kg = milligrams per kilogram (ppm=parts per million) *LT = Less Than*
** = Average of duplicate analysis* *FR = Failed Result*
Organic tin = migration of total organic tin is expressed as tributyl tin cation content in mg/kg
 # = Verified results (see note)

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:

END OF REPORT