SILVERLIT TOYS MANUFACTORY LIMITED

Technical Report: **(5219)350-0506(E)** January 09, 2020
Date Received: January 09, 2020 Page 1 of 23

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Sample Description:	ROBO KOMBAT - BALLOON PUNCHER 1.) CHANNEL A/B 2.) CHANNEL C/D		
Vendor:	N/A	Sample Size:	12
Manufacturer:	N/A	Style No(s):	88038
Buyer:	N/A	SKN/SKU No.:	N/A
Labeled Age Grade:	5+	PO No.:	N/A
Appropriate Age Grade:	OVER 6 YEARS OF AGE	Ref #:	N/A
Client Specified Age Grade:	5+	Country of Origin:	CHINA
Tested Age Grade:	OVER 5 YEARS OF AGE	Assortment No.:	N/A
UPC Code:	4891813880387		

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 BBP, DBP and DEHP content requirements of the European Regulation (EC) No. 1907/2006 of the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex XVII concerning the Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles, Item no. 51.
- The BBP, DBP DEHP and DIBP content requirements of the European Regulation (EC) No. 1907/2006 of the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex XVII concerning the Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles, Item no. 51 (amended up to EU No. 2018/2005).
- The DNOP, DINP and DIDP content requirements of the European Regulation (EC) No. 1907/2006 of the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex XVII concerning the Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles, Item no. 52.
- 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 polycyclic aromatic hydrocarbons (PAHs) content requirement of European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 50, Paragraph 5 and 6 and its amendments.
- The cadmium content in plastics requirement of the Swiss “Informations concernant L’Ordonnance sur les substances (Osubst)”, No. 22 (1991).

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EXECUTIVE SUMMARY:

Note: At the request of the client, the sample(s) was evaluated for use by children 5+.

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 50 milligrams by weight on one single sample, therefore such component(s) was not subject to the Polycyclic Aromatic Hydrocarbons (PAHs) Content requirement of European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 50, Paragraph 5 and 6.

BUREAU VERITAS HONG KONG LIMITED

Lai Ka Ming, Kent
Director
Toys and Juvenile Products Department

KL/by

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.

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:

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.	white/ deep yellow coating	pattern of robot	1
B.	yellow/ light green coating	pattern of robot	2
C.	orange/ light purple coating	pattern of robot	2
D.	red soft plastic	balloon	1,2
E.	orange soft plastic	balloon	1,2
F.	yellow soft plastic	balloon	1,2
G.	green soft plastic	balloon	1,2
H.	blue soft plastic	balloon	1,2
I.	pink soft plastic	balloon	1,2
J.	translucent soft plastic	rubber band	1,2
K.	dull deep silvery plastic	goggle, balloon mount support	1,2
L.	black plastic	remote	1,2
M.	grey plastic	button of remote	1,2
N.	black plastic	body of robot	1,2
O.	dull black plastic	arms of robot	1,2
P.	black soft plastic	tires of robot	1,2
Q.	metallic red plastic	robot	1
R.	orange plastic	robot	1
S.	deep silvery plastic	robot	1
T.	metallic blue plastic	robot	1
U.	yellow plastic	robot	1
V.	metallic green plastic	robot	2
W.	metallic purple plastic	robot	2
X.	clear red plastic	light of remote and robot	1,2
Y.	clear plastic	LED of remote	1,2
Z.	multicolor printed white paper sticker	paper sticker of goggle	1,2
AA.	clear/ grey printed white/ grey paper card	banner	1,2

RESULTS:

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

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	A.	B.	C.	D.	E.	F.
Aluminium (Al)	70000	9	4	LT 2	7	8	16
Arsenic (As)	47	LT 0.15	LT 0.15	LT 0.15	LT 0.15	0.296	0.241
Boron (B)	15000	LT 5	LT 5	LT 5	LT 5	LT 5	LT 5
Barium (Ba)	18750	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cadmium (Cd)	17	LT 0.15	LT 0.15	LT 0.15	LT 0.15	LT 0.15	LT 0.15
Cobalt (Co)	130	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Chromium III (Cr III)	460	0.039	0.036	0.023	0.044	0.024	0.117
Chromium VI (Cr VI)	0.053						LT 0.002#
Copper (Cu)	7700	LT 2	3	LT 2	LT 2	LT 2	LT 2
Mercury (Hg)	94	LT 0.25	LT 0.25	LT 0.25	LT 0.25	LT 0.25	LT 0.25
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 0.2	LT 0.2	LT 0.2	LT 0.2	0.776	LT 0.2
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 5	9	LT 5	335	225	235
Mass of trace amount (gram)		0.0108	0.0106	0.0103			
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

RESULTS:

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

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	G.	H.	I.	J.	K.	L.
Aluminium (Al)	70000	16	16	11	3	LT 2	4
Arsenic (As)	47	LT 0.15	LT 0.15	LT 0.15	LT 0.15	LT 0.15	LT 0.15
Boron (B)	15000	LT 5	LT 5	LT 5	LT 5	LT 5	LT 5
Barium (Ba)	18750	8	LT 2	LT 2	LT 2	LT 2	LT 2
Cadmium (Cd)	17	LT 0.15	LT 0.15	LT 0.15	LT 0.15	LT 0.15	LT 0.15
Cobalt (Co)	130	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Chromium III (Cr III)	460	0.48	0.05	0.072	0.055	LT 0.02	LT 0.02
Chromium VI (Cr VI)	0.053	LT 0.002#	LT 0.002#	LT 0.002#	LT 0.002#		
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	27	LT 2
Mercury (Hg)	94	LT 0.25	LT 0.25	LT 0.25	LT 0.25	LT 0.25	LT 0.25
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	12	LT 0.2	LT 0.2	LT 0.2	LT 0.2	LT 0.2
Antimony (Sb)	560	LT 2	LT 2	LT 2	LT 2	LT 2	3
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	382	264	405	72	LT 5	LT 5
Mass of trace amount (gram)							
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

RESULTS:

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

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	M.	N.	O.	P.	Q.	R.
Aluminium (Al)	70000	LT 2	12	LT 2	LT 2	88	LT 2
Arsenic (As)	47	LT 0.15	LT 0.15	LT 0.15	LT 0.15	LT 0.15	LT 0.15
Boron (B)	15000	LT 5	LT 5	LT 5	LT 5	LT 5	LT 5
Barium (Ba)	18750	LT 2	3	LT 2	LT 2	LT 2	LT 2
Cadmium (Cd)	17	LT 0.15	LT 0.15	LT 0.15	LT 0.15	LT 0.15	LT 0.15
Cobalt (Co)	130	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Chromium III (Cr III)	460	LT 0.02	LT 0.02	LT 0.02	0.04	0.143	LT 0.02
Chromium VI (Cr VI)	0.053					LT 0.002#	
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Mercury (Hg)	94	LT 0.25	LT 0.25	LT 0.25	LT 0.25	LT 0.25	LT 0.25
Manganese (Mn)	15000	LT 2	360	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 0.2	LT 0.2	LT 0.2	LT 0.2	LT 0.2	LT 0.2
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	12	LT 2	LT 2	LT 2	LT 2
Zinc (Zn)	46000	LT 5	22	LT 5	LT 5	LT 5	LT 5
Mass of trace amount (gram)							
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

RESULTS:

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

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	S.	T.	U.	V.	W.	X.
Aluminium (Al)	70000	LT 2	20	2	LT 2	LT 2	41
Arsenic (As)	47	LT 0.15	0.173	LT 0.15	LT 0.15	LT 0.15	LT 0.15
Boron (B)	15000	LT 5	5	LT 5	LT 5	LT 5	LT 5
Barium (Ba)	18750	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Cadmium (Cd)	17	LT 0.15	LT 0.15	LT 0.15	LT 0.15	LT 0.15	LT 0.15
Cobalt (Co)	130	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Chromium III (Cr III)	460	LT 0.02	0.024	LT 0.02	LT 0.02	LT 0.02	0.126
Chromium VI (Cr VI)	0.053						LT 0.002#
Copper (Cu)	7700	LT 2	LT 2	LT 2	LT 2	LT 2	LT 2
Mercury (Hg)	94	LT 0.25	LT 0.25	LT 0.25	LT 0.25	LT 0.25	LT 0.25
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 0.2	LT 0.2	LT 0.2	LT 0.2	LT 0.2	LT 0.2
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 5	LT 5	LT 5	LT 5	26	5
Mass of trace amount (gram)							
Conclusion		Pass	Pass	Pass	Pass	Pass	Pass

RESULTS:

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

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	Y.	Z.	AA.			
Aluminium (Al)	70000	3	60	549			
Arsenic (As)	47	LT 0.15	LT 0.15	0.3			
Boron (B)	15000	7	LT 5	7			
Barium (Ba)	18750	LT 2	4	13			
Cadmium (Cd)	17	LT 0.15	LT 0.15	LT 0.15			
Cobalt (Co)	130	LT 2	LT 2	LT 2			
Chromium III (Cr III)	460	LT 0.02	0.299	0.354			
Chromium VI (Cr VI)	0.053		LT 0.002#	LT 0.002#			
Copper (Cu)	7700	LT 2	LT 2	LT 2			
Mercury (Hg)	94	LT 0.25	LT 0.25	LT 0.25			
Manganese (Mn)	15000	LT 2	6	20			
Nickel (Ni)	930	LT 2	LT 2	LT 2			
Lead (Pb)	23	LT 0.2	0.563	0.744			
Antimony (Sb)	560	LT 2	LT 2	LT 2			
Selenium (Se)	460	LT 2	LT 2	LT 2			
Tin (Sn)	180000	LT 2	LT 2	LT 2			
Organic tin	12	LT 2	LT 2	LT 2			
Strontium (Sr)	56000	LT 2	23	40			
Zinc (Zn)	46000	LT 5	7	30			
Mass of trace amount (gram)							
Conclusion		Pass	Pass	Pass			

mg/kg = milligrams per kilogram (ppm=parts per million) *LT = Less Than*
** = 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)

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:

CADMIUM CONTENT IN PLASTICS

Reference: Swiss "Informations concernant L'Ordonnance sur les substances (Osubst)", No. 22 (1991).

Category:				Plastics			
Element:				Cadmium			
Test Method				BS EN 1122: 2001, Method B			
Maximum Allowable Limit:				100 mg/kg			
Sample Description				Reading 1	Reading 2	Average	Conclusion
	Color / Component	Location	Style	Result (mg/kg)			
(A)	red soft plastic	balloon	1,2	LT 10	LT 10	LT 10	Pass
	orange soft plastic	balloon	1,2				
	yellow soft plastic	balloon	1,2				
	green soft plastic	balloon	1,2				
(B)	blue soft plastic	balloon	1,2	LT 10	LT 10	LT 10	Pass
	pink soft plastic	balloon	1,2				
	translucent soft plastic	rubber band	1,2				
	dull deep silvery plastic	goggle, balloon mount support	1,2				
(C)	black plastic	remote, inner part of robot	1,2	LT 10	LT 10	LT 10	Pass
	grey plastic	button of remote	1,2				
	black plastic	body of robot	1,2				
	dull black plastic	arms of robot	1,2				
(D)	black soft plastic	tires of robot	1,2	LT 10	LT 10	LT 10	Pass
	metallic red plastic	robot	1				
	orange plastic	robot	1				
	deep silvery plastic	robot	1				
(E)	metallic blue plastic	robot	1	LT 10	LT 10	LT 10	Pass
	yellow plastic	robot	1				
	metallic green plastic	robot	2				
(F)	metallic purple plastic	robot	2	LT 10	LT 10	LT 10	Pass
	clear red plastic	light of remote and robot	1,2				
	clear plastic	LED of remote	1,2				

RESULTS:

CADMIUM CONTENT IN PLASTICS

Reference: Swiss "Informations concernant L'Ordonnance sur les substances (Osubst)", No. 22 (1991).

Category:			Plastics			
Element:			Cadmium			
Test Method			BS EN 1122: 2001, Method B			
Maximum Allowable Limit:			100 mg/kg			
Sample Description			Reading 1	Reading 2	Average	Conclusion
	Color / Component	Location	Style	Result (mg/kg)			
(G)	black printed dull red PVC	wire link to battery compartment of robot	1,2	LT 10	LT 10	LT 10	Pass
	white printed dull black PVC	wire link to battery compartment of robot	1,2				
	black printed yellow PVC	wire link to sound module of robot	1,2				
(H)	black printed purple PVC	wire link to motor of robot	1,2	LT 10	LT 10	LT 10	Pass
	black printed white PVC	wire link to motor of robot	1,2				
	black printed orange PVC	wire between PCB of robot	1,2				
(I)	black printed red PVC	wire between PCB of robot	1,2	LT 10	LT 10	LT 10	Pass
	black printed brown PVC	wire between PCB of robot	1,2				
	black PVC	wire between PCB of robot	1,2				
(J)	grey/ black soft plastic	inner button of remote	1,2	LT 10	#	-	Pass
	matt black plastic	inner switch of robot	1,2				
(K)	green plastic/ black glue	sound module of robot	1,2	LT 10	#	-	Pass
	bright clear plastic/ glue	sound module of robot	1,2				
(L)	black foam sticker	sound module of robot	1,2	LT 10	#	-	Pass
	sharp black plastic	sensor in robot	1,2				
	white plastic	pin holder in arms of robot	1,2				
	matt white plastic	gear and inner part of robot	1,2				

LT = Less than
 # = Insufficient sample for duplicate analyses
mg/kg = milligrams per kilogram (ppm = parts per million)
Operator: Leung Hon Kei, Tony

RESULTS:

BBP/DBP/DEHP CONTENTS IN TOYS AND CHILDCARE ARTICLES (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 51)

Test Method: With referenced to EN 14372:2004 Section 6.3.2, sample was extracted with organic solvent and then analyzed by Gas Chromatograph Mass Spectrometer

Sample Identity	Test Component	Location	Style
A.	all coating	paper sticker of goggle	1,2
	clear/ grey coating	banner	1,2
	red coating	pattern of remote	1
B.	blue coating	pattern of remote	1
	black coating	pattern of robot	1
	deep blue coating	pattern of robot	1
C.	white/ deep yellow coating	pattern of robot	1
	green coating	pattern of remote	2
	purple coating	pattern of remote	2
D.	yellow/ light green coating	pattern of robot	2
	orange/ light purple coating	pattern of robot	2
E.	red soft plastic	balloon	1,2
	orange soft plastic	balloon	1,2
	yellow soft plastic	balloon	1,2
F.	green soft plastic	balloon	1,2
	blue soft plastic	balloon	1,2
	pink soft plastic	balloon	1,2
G.	translucent soft plastic	rubber band	1,2
	dull deep silvery plastic	goggle, balloon mount support	1,2
	black plastic	remote, inner part of robot	1,2
H.	grey plastic	button of remote	1,2
	black plastic	body of robot	1,2
	dull black plastic	arms of robot	1,2
I.	black soft plastic	tires of robot	1,2
	metallic red plastic	robot	1
	orange plastic	robot	1
J.	deep silvery plastic	robot	1
	metallic blue plastic	robot	1
	yellow plastic	robot	1
K.	metallic green plastic	robot	2
	metallic purple plastic	robot	2

RESULTS:

BBP/DBP/DEHP CONTENTS IN TOYS AND CHILDCARE ARTICLES (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 51)

Test Method: With referenced to EN 14372:2004 Section 6.3.2, sample was extracted with organic solvent and then analyzed by Gas Chromatograph Mass Spectrometer

Sample Identity	Test Component	Location	Style
L.	clear red plastic	light of remote and robot	1,2
	clear plastic	LED of remote	1,2
M.	black printed dull red PVC	wire link to battery compartment of robot	1,2
	white printed dull black PVC	wire link to battery compartment of robot	1,2
	black printed yellow PVC	wire link to sound module of robot	1,2
N.	black printed purple PVC	wire link to motor of robot	1,2
	black printed white PVC	wire link to motor of robot	1,2
	black printed orange PVC	wire between PCB of robot	1,2
O.	black printed red PVC	wire between PCB of robot	1,2
	black printed brown PVC	wire between PCB of robot	1,2
	black PVC	wire between PCB of robot	1,2
P.	grey/ black soft plastic	inner button of remote	1,2
	matt black plastic	inner switch of robot	1,2
	green plastic/ black glue	sound module of robot	1,2
Q.	bright clear plastic/ glue	sound module of robot	1,2
	black foam sticker	sound module of robot	1,2
	sharp black plastic	sensor in robot	1,2
R.	white plastic	pin holder in arms of robot	1,2
	matt white plastic	gear and inner part of robot	1,2
S.	translucent plastic	motor of robot	1,2
	green/ white plastic	inner motor of robot	1,2
	white printed black plastic	capacitor of remote and robot	1,2
T.	black soft plastic	capacitor of remote and robot	1,2
	green/ white printed deep brown PCB/ black body/ clear body/ black paste	PCB of remote	1,2
	green printed translucent PCB	PCB of sound module of robot	1,2
U.	light brown PCB	PCB of switch of robot	1,2
	green/ white printed dull translucent PCB/ black body	small PCB of robot	1,2
	green/ white printed brown PCB/ black body	large PCB of robot	1,2

RESULTS:

BBP/DBP/DEHP CONTENTS IN TOYS AND CHILDCARE ARTICLES (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 51)

Test Parameter:	BBP	DBP	DEHP	Sum of three phthalates	
Limit (%):	0.1	0.1	0.1	0.1	
Sample	Result (%)				Conclusion
A.	LT 0.005	LT 0.005	0.025	0.025	Pass
B.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
C.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
D.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
E.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
F.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
G.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
H.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
I.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
J.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
K.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
L.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
M.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
N.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
O.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
P.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
Q.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
R.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
S.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
T.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
U.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass

Detection Limit :
BBP = Butyl benzyl phthalate (0.005%)
DBP = Dibutyl phthalate (0.005%)
DEHP = Di(2-ethylhexyl) phthalate (0.005%)

Results reported in percentage
LT = Less than
ND = None detected

RESULTS:

BBP/DBP/DEHP/DIBP CONTENTS (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 51 (amended up to EU No. 2018/2005))

Test Method: With referenced to EN 14372:2004 Section 6.3.2, sample was extracted with organic solvent and then analyzed by Gas Chromatograph Mass Spectrometer

Sample Identity	Test Component	Location	Style
A.	all coating	paper sticker of goggle	1,2
	clear/ grey coating	banner	1,2
	red coating	pattern of remote	1
B.	blue coating	pattern of remote	1
	black coating	pattern of robot	1
	deep blue coating	pattern of robot	1
C.	white/ deep yellow coating	pattern of robot	1
	green coating	pattern of remote	2
	purple coating	pattern of remote	2
D.	yellow/ light green coating	pattern of robot	2
	orange/ light purple coating	pattern of robot	2
E.	red soft plastic	balloon	1,2
	orange soft plastic	balloon	1,2
	yellow soft plastic	balloon	1,2
F.	green soft plastic	balloon	1,2
	blue soft plastic	balloon	1,2
	pink soft plastic	balloon	1,2
G.	translucent soft plastic	rubber band	1,2
	dull deep silvery plastic	goggle, balloon mount support	1,2
	black plastic	remote, inner part of robot	1,2
H.	grey plastic	button of remote	1,2
	black plastic	body of robot	1,2
	dull black plastic	arms of robot	1,2
I.	black soft plastic	tires of robot	1,2
	metallic red plastic	robot	1
	orange plastic	robot	1
J.	deep silvery plastic	robot	1
	metallic blue plastic	robot	1
	yellow plastic	robot	1
K.	metallic green plastic	robot	2
	metallic purple plastic	robot	2

RESULTS:

BBP/DBP/DEHP/DIBP CONTENTS (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 51 (amended up to EU No. 2018/2005))

Test Method: With referenced to EN 14372:2004 Section 6.3.2, sample was extracted with organic solvent and then analyzed by Gas Chromatograph Mass Spectrometer

Sample Identity	Test Component	Location	Style
L.	clear red plastic	light of remote and robot	1,2
	clear plastic	LED of remote	1,2
M.	black printed dull red PVC	wire link to battery compartment of robot	1,2
	white printed dull black PVC	wire link to battery compartment of robot	1,2
	black printed yellow PVC	wire link to sound module of robot	1,2
N.	black printed purple PVC	wire link to motor of robot	1,2
	black printed white PVC	wire link to motor of robot	1,2
	black printed orange PVC	wire between PCB of robot	1,2
O.	black printed red PVC	wire between PCB of robot	1,2
	black printed brown PVC	wire between PCB of robot	1,2
	black PVC	wire between PCB of robot	1,2
P.	grey/ black soft plastic	inner button of remote	1,2
	matt black plastic	inner switch of robot	1,2
	green plastic/ black glue	sound module of robot	1,2
Q.	bright clear plastic/ glue	sound module of robot	1,2
	black foam sticker	sound module of robot	1,2
	sharp black plastic	sensor in robot	1,2
R.	white plastic	pin holder in arms of robot	1,2
	matt white plastic	gear and inner part of robot	1,2
S.	translucent plastic	motor of robot	1,2
	green/ white plastic	inner motor of robot	1,2
	white printed black plastic	capacitor of remote and robot	1,2
T.	black soft plastic	capacitor of remote and robot	1,2
	green/ white printed deep brown PCB/ black body/ clear body/ black paste	PCB of remote	1,2
	green printed translucent PCB	PCB of sound module of robot	1,2
U.	light brown PCB	PCB of switch of robot	1,2
	green/ white printed dull translucent PCB/ black body	small PCB of robot	1,2
	green/ white printed brown PCB/ black body	large PCB of robot	1,2

RESULTS:

BBP/DBP/DEHP/DIBP CONTENTS (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 51 (amended up to EU No. 2018/2005))

Test Parameter:	BBP	DBP	DEHP	DIBP	Sum of four phthalates	
Limit (%):	0.1	0.1	0.1	0.1	0.1	
Sample	Result (%)					Conclusion
A.	LT 0.005	LT 0.005	0.025	LT 0.005	0.025	Pass
B.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
C.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
D.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
E.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
F.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
G.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
H.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
I.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
J.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
K.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
L.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
M.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
N.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
O.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
P.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
Q.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
R.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
S.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
T.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass
U.	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.020	Pass

Detection Limit :
BBP = Butyl benzyl phthalate (0.005%)
DBP = Dibutyl phthalate (0.005%)
DEHP = Di(2-ethylhexyl) phthalate (0.005%)
DIBP = Diisobutyl phthalate (0.005%)

Results reported in percentage
LT = Less than
ND = None detected

RESULTS:

DNOP/DINP/DIDP CONTENTS IN TOYS AND CHILDCARE ARTICLES WHICH CAN BE PLACED IN MOUTH BY THE CHILDREN (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 52)

Test Method: With referenced to EN 14372:2004 Section 6.3.2, sample was extracted with organic solvent and then analyzed by Gas Chromatograph Mass Spectrometer

Sample Identity	Test Component	Location	Style
A.	all coating	paper sticker of goggle	1,2
	clear/ grey coating	banner	1,2
	red coating	pattern of remote	1
B.	blue coating	pattern of remote	1
	black coating	pattern of robot	1
	deep blue coating	pattern of robot	1
C.	white/ deep yellow coating	pattern of robot	1
	green coating	pattern of remote	2
	purple coating	pattern of remote	2
D.	yellow/ light green coating	pattern of robot	2
	orange/ light purple coating	pattern of robot	2
E.	red soft plastic	balloon	1,2
	orange soft plastic	balloon	1,2
	yellow soft plastic	balloon	1,2
F.	green soft plastic	balloon	1,2
	blue soft plastic	balloon	1,2
	pink soft plastic	balloon	1,2
G.	translucent soft plastic	rubber band	1,2
	dull deep silvery plastic	goggle, balloon mount support	1,2
	black plastic	remote, inner part of robot	1,2
H.	grey plastic	button of remote	1,2
	black plastic	body of robot	1,2
	dull black plastic	arms of robot	1,2
I.	black soft plastic	tires of robot	1,2
	metallic red plastic	robot	1
	orange plastic	robot	1
J.	deep silvery plastic	robot	1
	metallic blue plastic	robot	1
	yellow plastic	robot	1
K.	metallic green plastic	robot	2
	metallic purple plastic	robot	2

RESULTS:

DNOP/DINP/DIDP CONTENTS IN TOYS AND CHILDCARE ARTICLES WHICH CAN BE PLACED IN MOUTH BY THE CHILDREN (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 52)

Test Method: With referenced to EN 14372:2004 Section 6.3.2, sample was extracted with organic solvent and then analyzed by Gas Chromatograph Mass Spectrometer

Sample Identity	Test Component	Location	Style
L.	clear red plastic	light of remote and robot	1,2
	clear plastic	LED of remote	1,2
M.	black printed dull red PVC	wire link to battery compartment of robot	1,2
	white printed dull black PVC	wire link to battery compartment of robot	1,2
	black printed yellow PVC	wire link to sound module of robot	1,2
N.	black printed purple PVC	wire link to motor of robot	1,2
	black printed white PVC	wire link to motor of robot	1,2
	black printed orange PVC	wire between PCB of robot	1,2
O.	black printed red PVC	wire between PCB of robot	1,2
	black printed brown PVC	wire between PCB of robot	1,2
	black PVC	wire between PCB of robot	1,2
P.	grey/ black soft plastic	inner button of remote	1,2
	matt black plastic	inner switch of robot	1,2
	green plastic/ black glue	sound module of robot	1,2
Q.	bright clear plastic/ glue	sound module of robot	1,2
	black foam sticker	sound module of robot	1,2
	sharp black plastic	sensor in robot	1,2
R.	white plastic	pin holder in arms of robot	1,2
	matt white plastic	gear and inner part of robot	1,2
S.	translucent plastic	motor of robot	1,2
	green/ white plastic	inner motor of robot	1,2
	white printed black plastic	capacitor of remote and robot	1,2
T.	black soft plastic	capacitor of remote and robot	1,2
	green/ white printed deep brown PCB/ black body/ clear body/ black paste	PCB of remote	1,2
	green printed translucent PCB	PCB of sound module of robot	1,2
U.	light brown PCB	PCB of switch of robot	1,2
	green/ white printed dull translucent PCB/ black body	small PCB of robot	1,2
	green/ white printed brown PCB/ black body	large PCB of robot	1,2

RESULTS:

DNOP/DINP/DIDP CONTENTS IN TOYS AND CHILDCARE ARTICLES WHICH CAN BE PLACED IN MOUTH BY THE CHILDREN (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 52)

Test Parameter:	DNOP	DINP	DIDP	Sum of three phthalates	
Limit (%):	0.1	0.1	0.1	0.1	
Sample	Result (%)				Conclusion
A.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
B.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
C.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
D.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
E.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
F.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
G.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
H.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
I.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
J.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
K.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
L.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
M.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
N.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
O.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
P.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
Q.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
R.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
S.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
T.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass
U.	LT 0.005	LT 0.005	LT 0.005	LT 0.015	Pass

Detection Limit :
DNOP = Di-n-octyl phthalate (0.005%)
DINP = Di-iso-nonyl phthalate (0.005%)
DIDP = Di-iso-decyl phthalate (0.005%)

Results reported in percentage
LT = Less than
ND = None detected

RESULTS:

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) CONTENT (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 50, Paragraph 5 and 6 and its amendments)

Test Method : With reference to test method mentioned in German AfPS GS 2014:01 PAK

Sample Identity	Test Component	Location	Style
A.	Composite of clear/ grey coating	 banner	 1,2
B.	red soft plastic orange soft plastic	balloon balloon	1,2 1,2
C.	yellow soft plastic green soft plastic	balloon balloon	1,2 1,2
D.	blue soft plastic pink soft plastic	balloon balloon	1,2 1,2
E.	translucent soft plastic dull deep silvery plastic	rubber band goggle, balloon mount support	1,2 1,2
F.	black plastic grey plastic	remote button of remote	1,2 1,2
G.	black plastic dull black plastic	body of robot arms of robot	1,2 1,2
H.	black soft plastic metallic red plastic	tires of robot robot	1,2 1
I.	orange plastic deep silvery plastic	robot robot	1 1
J.	metallic blue plastic yellow plastic	robot robot	1 1
K.	metallic green plastic metallic purple plastic	robot robot	2 2
L.	clear red plastic clear plastic	light of remote and robot LED of remote	1,2 1,2

RESULTS:

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) CONTENT (European Regulation (EC) No. 1907/2006 REACH Annex XVII, Item no. 50, Paragraph 5 and 6 and its amendments)

Maximum Allowable Limit:	**Type I**	Articles includes amongst others: - sport equipment such as bicycles, golf clubs, racquets - household utensils, trolleys, walking frames tools for domestic use - clothing, footwear, gloves and sportswear - watch-straps, wrist-bands, masks, head-bands **1 mg/kg (Each of all listed PAHs)**
	Type II	Toys, including activity toys, and childcare articles **0.5 mg/kg (Each of all listed PAHs)**

Tested Item(s)	**Type**	**Result**		**Conclusion**
		Detected Analyte(s)	**Conc. (mg/Kg)**	
A.	II	ND	ND	Pass
B.	II	ND	ND	Pass
C.	II	ND	ND	Pass
D.	II	ND	ND	Pass
E.	II	ND	ND	Pass
F.	II	ND	ND	Pass
G.	II	ND	ND	Pass
H.	II	ND	ND	Pass
I.	II	ND	ND	Pass
J.	II	ND	ND	Pass
K.	II	ND	ND	Pass
L.	II	ND	ND	Pass

ND = Not detected ">" = More than Conc. = Concentration
mg/kg = milligram per kilogram
Detection Limit : Each PAHs 0.2 mg/kg

Remark:
- The list of polycyclic aromatic hydrocarbons is summarized in table of Appendix.

APPENDIX

List of Polynuclear Aromatic Hydrocarbons:					
No.	**Name of Analytes**	**CAS-No.**	**No.**	**Name of Analytes**	**CAS-No.**
1	Benzo[a]pyrene (BaP)	50-32-8	5	Benzo[b]fluoranthene (BbFA)	205-99-2
2	Benzo[e]pyrene (BeP)	192-97-2	6	Benzo[j]fluoranthene (BjFA)	205-82-3
3	Benzo[a]anthracene (BaA)	56-55-3	7	Benzo[k]fluoranthene (BkFA)	207-08-9
4	Chrysene (CHR)	218-01-9	8	Dibenzo[a,h]anthracene (DBAhA)	53-70-3

RESULTS: