GUANGDONG XIN YU TECHNOLOGY INDUSTRIAL CO.,LTD

Technical Report: **(8519)088-0363** April 17, 2019
Date Received: March 29, 2019

GUANGDONG XIN YU TECHNOLOGY INDUSTRIAL CO.,LTD
LAIMEI INDUSTRIAL ZONE, CHENGHAI DISTRICT,
SHANTOU, GUANGDONG

Sample Description:	BLAZE SPLENDOR		
Vendor:	N/A	Sample Size:	4
Manufacturer:	N/A	Style No(s):	3391(3571)
Buyer:	N/A	SKN/SKU No.:	N/A
Labeled Age Grade:	AGES 6+	PO No.:	N/A
Appropriate Age Grade:	OVER 6 YEARS OF AGE	Ref #:	N/A
Client Specified Age Grade:	NOT SPECIFIED	Country of Origin:	CHINA
Tested Age Grade:	OVER 6 YEARS OF AGE	Assortment No.:	N/A
UPC Code:	4895181835710	Test Starting Date:	MARCH 29, 2019
		Test Finished Date:	APRIL 17, 2019

EXECUTIVE SUMMARY:

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

- 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: 2011+ A1: 2014.
- 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 DIBP content requirements of the European Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its amendments up to EU No. 2015/863.
- European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)

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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 & 6

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	NA
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	M
4.10.3	Hinges	NA
4.10.4	Springs	M
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	NA
4.15.5 & 7.18	Toy scooters	NA
4.16	Heavy immobile toys	NA
4.17.2	All projectiles	NA

RESULTS:

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

Subclause	Requirement	Result
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
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

RESULTS:

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

Subclause	Requirement	Result
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
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	NA
	WARNINGS, INSTRUCTIONS FOR USE	
7.1	General	NA
7.2	Toys not intended for children under 36 months	NA
7.5	Functional toys	NA

RESULTS:

FLAMMABILITY (EN 71 PART 2: 2011 + A1: 2014)

Subclause	Requirement	Result
4.1	Cellulose nitrate	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: 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.	Shiny silver plastic	Car body	
B.	Silver coating	Remote control	
C.	Bright black plastic	Car body and chassis,remote control	
D.	Black plastic	Bumper and frame	
E.	Green plastic	Wheels	
F.	Yellow plastic	Holder of spring	
G.	Black soft plastic	Tyres	
H.	Transparent plastic	Lights	
I.	Translucent red plastic	Windows	
J.	Multi-color printed clear plastic sticker	Plastic sticker	
K.	White plastic	Pin and lock of battery cover	
L.	Matt black plastic	Switch of remote control and chassis	

Analyte	Requirement (mg/kg)	Result (mg/kg)					
		Sample ID					
	Category III	A.	B.	C.	D.	E.	F.
Aluminium (Al)	70000	1600	7300	5	5	LT 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	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	0.11	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	2	4	LT 2	LT 2	LT 2	LT 2
Mass of trace amount (gram)		0.0146	0.0168				
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	LT 2	LT 2	LT 2	5	LT 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	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	0.075	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	3	LT 2	LT 2
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:

DIBP CONTENT (European Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendments)

Test method: IEC 62321-8: 2017

Test Parameter:				DIBP	
Limit (%):				0.1	
	Color / Component	Location	Style	Result (%)	Conclusion
A.	Multicolor printed transparent plastic sticker Dull black plastic Translucent red plastic	Sticker Case, car Window, car		ND	Pass
B.	Silver printed grey plastic Clear plastic Black plastic	Pedal Lamp, case Bumper		ND	Pass
C.	Yellow plastic Black plastic Light black plastic	Bumper bar Battery case Sleeve, rivet		ND	Pass
D.	Translucent plastic Green plastic Translucent plastic	Sleeve, rivet Wheel Gear		ND	Pass
E.	Black soft plastic Red soft plastic Black soft plastic	Tyre Wire jacket Wire jacket		ND	Pass
F.	Transparent plastic / glue Clear plastic Silver printed black plastic	Adhesive tape Washer, screw Case, remote control		ND	Pass
G.	Translucent black plastic Translucent plastic Transparent / silvery body	Case, USB Case, plug LED		ND	Pass
H.	White printed black soft plastic White printed black soft plastic Black soft plastic	Sleeve, wire jacket Wire jacket, charger Sleeve, wire jacket, charger		ND	Pass
I.	Black plastic Brown plastic Translucent red plastic	Slide, slide switch Base, slide switch LED, PCB “ZS-TX-4”		ND	Pass
J.	Black plastic Brown plastic Black / white printed green coated beige plastic / coppery metal	Slide, slide switch, PCB “ZS-TX-4” Base, slide switch, PCB “ZS-TX-4” PCB “ZS-TX-4”		ND	Pass
K.	Grey printed green plastic Black printed green coated beige plastic / coppery metal White plastic	Sleeve, capacitor, PCB “ZS-RCLORX2.4G” PCB “ZS-RCLORX2.4G” Base, USB PCB		ND	Pass

RESULTS:

DIBP CONTENT (European Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendments)

Test method: IEC 62321-8: 2017

Test Parameter:				DIBP	
Limit (%):				0.1	
	Color / Component	Location	Style	Result (%)	Conclusion
L.	White printed green coated beige plastic / coppery metal White printed green coated brown plastic / coppery metal Translucent plastic	USB PCB Motor PCB End bell, motor		ND	Pass
M.	Green plastic Beige plastic Light brown plastic	Insulator, motor Washer, motor Washer, motor		ND	Pass

Remark:
DIBP (CAS No: 84-69-5) = Diisobutyl phthalate

Results reported in percentage
ND = None detected
Detection Limit: Each Phthalate (0.005%)

RESULTS:

Compliance Test - European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)

Test Method : See Appendix.

Test Item(s)	Item / Component Description(s)	Location(s)	Style(s)
1.	Multicolor printed transparent plastic sticker	Sticker	
2.	Dull black plastic	Case, car	
3.	Translucent red plastic	Window, car	
4.	Silver printed grey plastic	Pedal	
5.	Clear plastic	Lamp, case	
6.	Black plastic	Bumper	
7.	Yellow plastic	Bumper bar	
8.	Silvery metal	Spring, bumper bar	
9.	Black plastic	Battery case	
10.	Light black plastic	Sleeve, rivet	
11.	Translucent plastic	Sleeve, rivet	
12.	Silvery metal	Rivet	
13.	Black soft plastic	Tyre	
14.	Green plastic	Wheel	
15.	Translucent plastic	Gear	
16.	Silvery metal	Shaft L:23 mm	
17.	Silvery metal	Shaft L:47 mm	
18.	Silvery metal	Long shaft	
19.	Transparent plastic / glue	Adhesive tape	
20.	Clear plastic	Washer, screw	
21.	Silvery metal	Shaft L:11 mm	
22.	Silvery metal	Shaft L:21 mm	
23.	Silvery metal	Support	
24.	Silver printed black plastic	Case, remote control	
25.	Translucent black plastic	Case, USB	
26.	Translucent plastic	Case, plug	
27.	Silver plated golden metal	Connector, plug	
28.	Red soft plastic	Wire jacket	
29.	Black soft plastic	Wire jacket	
30.	White printed black soft plastic	Sleeve, wire jacket	
31.	White printed black soft plastic	Wire jacket, charger	
32.	Black soft plastic	Sleeve, wire jacket, charger	
33.	Silver plated coppery metal	Wire	
34.	Silver plated golden metal	Connector, wire	
35.	Silvery solder	Connector, wire	
36.	Silvery metal	Battery spring	
37.	Silvery metal	Battery contact plate	
38.	Silvery solder	Battery contact plate	

RESULTS:

Compliance Test - European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)

Test Method : See Appendix.

Test Item(s)	Item / Component Description(s)	Location(s)	Style(s)
39.	Transparent / silvery body	LED	
40.	Silvery metal	Pin, LED	
41.	Silvery solder	Pin, LED	
42.	Black plastic	Slide, slide switch	
43.	Silvery metal	Case, slide switch	
44.	Silvery metal	Spring, slide switch	
45.	Silver plated golden metal	Connector, slide switch	
46.	Brown plastic	Base, slide switch	
47.	Silver plated golden metal	Pin, slide switch	
48.	Silvery solder	Pin, slide switch	
49.	Translucent red plastic	LED, PCB “ZS-TX-4”	
50.	Silvery metal	Pin, LED, PCB “ZS-TX-4”	
51.	Black plastic	Slide, slide switch, PCB “ZS-TX-4”	
52.	Silvery metal	Case, slide switch, PCB “ZS-TX-4”	
53.	Silvery metal	Spring, slide switch, PCB “ZS-TX-4”	
54.	Silver plated golden metal	Connector, slide switch, PCB “ZS-TX-4”	
55.	Brown plastic	Base, slide switch, PCB “ZS-TX-4”	
56.	Silver plated golden metal	Pin, slide switch, PCB “ZS-TX-4”	
57.	Black body	SMD IC, PCB “ZS-TX-4”	
58.	Brown body	SMD capacitor, PCB “ZS-TX-4”	
59.	Black / white body	SMD resistor, PCB “ZS-TX-4”	
60.	Silvery body	Crystal, PCB “ZS-TX-4”	
61.	Black / white printed green coated beige plastic / coppery metal	PCB “ZS-TX-4”	
62.	Silvery solder	PCB “ZS-TX-4”	
63.	Grey printed green plastic	Sleeve, capacitor, PCB “ZS-RCLORX2.4G”	
64.	Silvery body	Capacitor, PCB “ZS-RCLORX2.4G”	
65.	Yellow body	Capacitor, PCB “ZS-RCLORX2.4G”	

RESULTS:

Compliance Test - European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)

Test Method : See Appendix.

Test Item(s)	Item / Component Description(s)	Location(s)	Style(s)
66.	White body	Resistor, PCB "ZS-RCLORX2.4G"	
67.	Black body	FLKM, PCB "ZS-RCLORX2.4G"	
68.	Multicolor printed grey body	Resistor, PCB "ZS-RCLORX2.4G"	
69.	Transparent / coppery body	Diode, PCB "ZS-RCLORX2.4G"	
70.	Black body	SMD transistor, PCB "ZS-RCLORX2.4G"	
71.	Black body	SMD diode, PCB "ZS-RCLORX2.4G"	
72.	Black printed green coated beige plastic / coppery metal	PCB "ZS-RCLORX2.4G"	
73.	Silvery solder	PCB "ZS-RCLORX2.4G"	
74.	Silver plated golden metal	Case, USB PCB	
75.	White plastic	Base, USB PCB	
76.	Silver plated golden metal	Pin, USB PCB	
77.	Transparent / white body	LED, USB PCB	
78.	Black / coppery body	Inductor, USB PCB	
79.	White printed green coated beige plastic / coppery metal	USB PCB	
80.	Silvery solder	USB PCB	
81.	Brown body	Capacitor, motor PCB	
82.	Pink plated coppery / black body	Inductor, motor PCB	
83.	White printed green coated brown plastic / coppery metal	Motor PCB	
84.	Silvery solder	Motor PCB	
85.	Multicolor printed green body	Inductor, motor	
86.	Silvery metal	Pin, inductor, motor	
87.	Golden metal	Gear, motor	
88.	Silvery metal	Case, motor	
89.	Black magnet	Motor	
90.	Translucent plastic	End bell, motor	
91.	Coppery metal	Copper brush, motor	
92.	Coppery core	Inner copper brush, motor	
93.	Golden metal	Connector, copper brush, motor	
94.	Silvery solder	Connector, copper brush, motor	
95.	Deep copper plated coppery metal	Coil, motor	

RESULTS:

Compliance Test - European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)

Test Method : See Appendix.

Test Item(s)	Item / Component Description(s)	Location(s)	Style(s)
96.	Silvery metal	Spring, motor	
97.	Silvery metal	Shaft, motor	
98.	Golden metal	Bearing, motor	
99.	Golden plated silvery metal	Bearing, motor	
100.	Bronze plated silvery metal	Bearing, motor	
101.	Silvery metal	Plate, motor	
102.	Green plastic	Insulator, motor	
103.	Beige plastic	Washer, motor	
104.	Light brown plastic	Washer, motor	
105.	Black core	Commutator, motor	
106.	Black / white core	Ring, motor	
107.	Coppery metal	Connector, motor	
108.	Silvery solder	Connector, motor	
109.	Bright silvery metal	Screw L:6 mm Φ:4 mm	
110.	Silvery metal	Screw L:6 mm Φ:4 mm	
111.	Silvery metal	Screw L:7 mm Φ:4 mm	
112.	Silvery metal	Screw L:9 mm Φ:4 mm	
113.	Silvery metal	Screw L:10 mm Φ:4 mm	
114.	Silvery metal	Screw L:9 mm Φ:5 mm	
115.	Silvery metal	Screw L:11 mm Φ:5 mm	
116.	Silvery metal	Screw L:13 mm Φ:5 mm	
117.	Silvery metal	Screw L:7 mm Φ:6 mm	
118.	Silvery metal	Screw L:7 mm Φ:8 mm	
119.	Silvery metal	Screw L:9 mm Φ:8 mm	
120.	Silvery metal	Screw L:11 mm Φ:8 mm	
121.	Silvery metal	Nut	
122.	Silvery metal	Big nut	

RESULTS:

Compliance Test - European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)

Test Method : See Appendix.

See Analytes and their corresponding Maximum Allowable Limit in Appendix

-	Result						
Parameter	Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium VI (Cr VI)	PBBs	PBDEs	**Conclusion**
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
Test Item(s)	-	-	-	-	-	-	-
1.	ND	ND	ND	ND	ND	ND	PASS
2.	ND	ND	ND	ND	ND	ND	PASS
3.	ND	ND	ND	ND	ND	ND	PASS
4.	ND	ND	ND	ND	ND	ND	PASS
5.	ND	ND	ND	ND	ND	ND	PASS
6.	ND	ND	ND	ND	ND	ND	PASS
7.	ND	ND	ND	ND	ND	ND	PASS
8.	ND	ND	ND	ND	NA	NA	PASS
9.	ND	ND	ND	ND	ND	ND	PASS
10.	ND	ND	ND	ND	ND	ND	PASS
11.	ND	ND	ND	ND	ND	ND	PASS
12.	ND	ND	ND	Negative#	NA	NA	PASS
13.	ND	ND	ND	ND	ND	ND	PASS
14.	ND	ND	ND	ND	ND	ND	PASS
15.	ND	ND	ND	ND	ND	ND	PASS
16.	ND	ND	ND	ND	NA	NA	PASS
17.	ND	ND	ND	Negative#	NA	NA	PASS
18.	ND	ND	ND	ND	NA	NA	PASS
19.	ND	ND	ND	ND	ND	ND	PASS
20.	ND	ND	ND	ND	ND	ND	PASS
21.	ND	ND	ND	ND	NA	NA	PASS
22.	ND	ND	ND	Negative#	NA	NA	PASS
23.	ND	ND	ND	Negative#	NA	NA	PASS
24.	ND	ND	ND	ND	ND	ND	PASS
25.	ND	ND	ND	ND	ND	ND	PASS
26.	ND	ND	ND	ND	ND	ND	PASS
27.	ND	ND	ND	ND	NA	NA	PASS
28.	ND	ND	ND	ND	ND	ND	PASS
29.	ND	ND	ND	ND	ND	ND	PASS
30.	ND	ND	ND	ND	ND	ND	PASS
31.	ND	ND	ND	ND	ND	ND	PASS
32.	ND	ND	ND	ND	ND	ND	PASS
33.	ND	ND	ND	ND	NA	NA	PASS
34.	ND	ND	ND	ND	NA	NA	PASS

RESULTS:

Compliance Test - European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)

Test Method : See Appendix.

See Analytes and their corresponding Maximum Allowable Limit in Appendix

-	Result						
Parameter	Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium VI (Cr VI)	PBBs	PBDEs	**Conclusion**
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
Test Item(s)	-	-	-	-	-	-	-
35.	<500	ND	ND	ND	NA	NA	PASS
36.	ND	ND	ND	ND	NA	NA	PASS
37.	ND	ND	ND	Negative#	NA	NA	PASS
38.	ND	ND	ND	ND	NA	NA	PASS
39.	ND	ND	ND	ND	ND#	ND#	PASS
40.	ND	ND	ND	ND	NA	NA	PASS
41.	ND	ND	ND	ND	NA	NA	PASS
42.	ND	ND	ND	ND	ND	ND	PASS
43.	ND	ND	ND	Negative#	NA	NA	PASS
44.	ND	ND	ND	ND	NA	NA	PASS
45.	ND	ND	ND	ND	NA	NA	PASS
46.	ND	ND	ND	ND	ND	ND	PASS
47.	ND	ND	ND	ND	NA	NA	PASS
48.	ND	ND	ND	ND	NA	NA	PASS
49.	ND	ND	ND	ND	ND	ND	PASS
50.	ND	ND	ND	ND	NA	NA	PASS
51.	ND	ND	ND	ND	ND	ND	PASS
52.	ND	ND	ND	Negative#	NA	NA	PASS
53.	ND	ND	ND	ND	NA	NA	PASS
54.	ND	ND	ND	ND	NA	NA	PASS
55.	ND	ND	ND	ND	ND	ND	PASS
56.	ND	ND	ND	ND	NA	NA	PASS
57.	ND	ND	ND	ND	ND	ND	PASS
58.	ND	ND	ND	ND	ND	ND	PASS
59.	<500	ND	ND	ND	ND	ND	PASS
60.	ND	ND	ND	ND	ND	ND	PASS
61.	ND	ND	ND	ND	ND#	ND#	PASS
62.	ND	ND	ND	ND	NA	NA	PASS
63.	ND	ND	ND	ND	ND	ND	PASS
64.	ND	ND	ND	ND	ND	ND	PASS
65.	ND	ND	ND	ND	ND	ND	PASS
66.	ND	ND	ND	ND	ND	ND	PASS
67.	ND	ND	ND	ND	ND#	ND#	PASS
68.	ND	ND	ND	ND	ND	ND	PASS

RESULTS:

Compliance Test - European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)

Test Method : See Appendix.

See Analytes and their corresponding Maximum Allowable Limit in Appendix

-	**Result**						
Parameter	Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium VI (Cr VI)	PBBs	PBDEs	**Conclusion**
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
Test Item(s)	-	-	-	-	-	-	-
69.	>1500	ND	ND	ND	NA	NA	EXEMPTED
70.	ND	ND	ND	ND	ND	ND	PASS
71.	ND	ND	ND	ND	ND	ND	PASS
72.	ND	ND	ND	ND	ND#	ND#	PASS
73.	ND	ND	ND	ND	NA	NA	PASS
74.	ND	ND	ND	ND	NA	NA	PASS
75.	ND	ND	ND	ND	ND#	ND#	PASS
76.	ND	ND	ND	ND	NA	NA	PASS
77.	ND	ND	ND	ND	ND#	ND#	PASS
78.	ND	ND	ND	ND	ND	ND	PASS
79.	ND	ND	ND	ND	ND#	ND#	PASS
80.	ND	ND	ND	ND	NA	NA	PASS
81.	ND	ND	ND	ND	ND	ND	PASS
82.	ND	ND	ND	ND	ND	ND	PASS
83.	ND	ND	ND	ND	ND	ND	PASS
84.	ND	ND	ND	ND	NA	NA	PASS
85.	ND	ND	ND	ND	ND	ND	PASS
86.	ND	ND	ND	ND	NA	NA	PASS
87.	>1500	ND	ND	ND	NA	NA	EXEMPTED
88.	ND	ND	ND	Negative#	NA	NA	PASS
89.	ND	ND	ND	ND	NA	NA	PASS
90.	ND	ND	ND	ND	ND	ND	PASS
91.	ND	ND	ND	ND	NA	NA	PASS
92.	ND	ND	ND	ND	ND	ND	PASS
93.	ND	ND	ND	ND	NA	NA	PASS
94.	ND	ND	ND	ND	NA	NA	PASS
95.	ND	ND	ND	ND	NA	NA	PASS
96.	ND	ND	ND	Negative#	NA	NA	PASS
97.	ND	ND	ND	Negative#	NA	NA	PASS
98.	ND	ND	ND	ND	NA	NA	PASS
99.	ND	ND	ND	ND	NA	NA	PASS
100.	ND	ND	ND	ND	NA	NA	PASS

RESULTS:

Compliance Test - European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)

Test Method : See Appendix.

See Analytes and their corresponding Maximum Allowable Limit in Appendix

-	Result						
Parameter	Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium VI (Cr VI)	PBBs	PBDEs	**Conclusion**
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
Test Item(s)	-	-	-	-	-	-	-
101.	ND	ND	ND	Negative#	NA	NA	PASS
102.	ND	ND	ND	Negative#	NA	NA	PASS
103.	ND	ND	ND	ND	ND	ND	PASS
104.	ND	ND	ND	ND	ND	ND	PASS
105.	ND	ND	ND	ND	ND	ND	PASS
106.	ND	ND	ND	ND	ND	ND	PASS
107.	ND	ND	ND	ND	NA	NA	PASS
108.	<500	ND	ND	ND	NA	NA	PASS
109.	ND	ND	ND	Negative#	NA	NA	PASS
110.	ND	ND	ND	ND	NA	NA	PASS
111.	ND	ND	ND	Negative#	NA	NA	PASS
112.	ND	ND	ND	ND	NA	NA	PASS
113.	ND	ND	ND	ND	NA	NA	PASS
114.	ND	ND	ND	Negative#	NA	NA	PASS
115.	ND	ND	ND	Negative#	NA	NA	PASS
116.	ND	ND	ND	ND	NA	NA	PASS
117.	ND	ND	ND	Negative#	NA	NA	PASS
118.	ND	ND	ND	ND	NA	NA	PASS
119.	ND	ND	ND	ND	NA	NA	PASS
120.	ND	ND	ND	ND	NA	NA	PASS
121.	ND	ND	ND	ND	NA	NA	PASS
122.	ND	ND	ND	ND	NA	NA	PASS

Note / Key :

ND = Not detected
NR = Not requested
% = percent
Detection Limit : See Appendix.
">" = Greater than
mg/kg = milligram(s) per kilogram = ppm = part(s) per million
10 000 mg/kg = 1 %

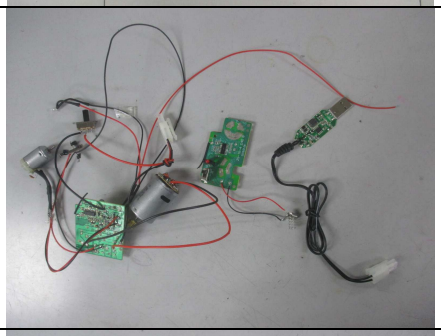
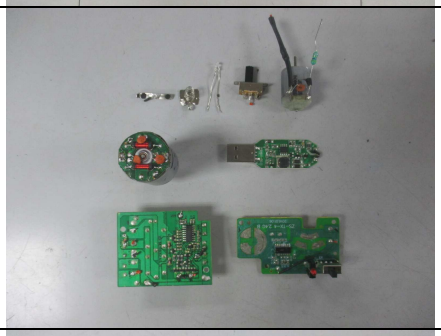
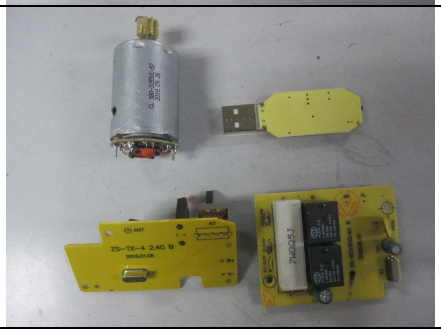
RESULTS:

Remark :

- The testing approach is listed in table of Appendix.
- # denotes as reported result(s) was (were) performed by wet chemistry method. Others were screened by XRF. For XRF screening, the result(s) of Cr VI was (were) reported as total chromium and the result(s) of PBBs and PBDEs was (were) reported as total bromine. Also, the XRF result(s) may be different to the actual content based on various factors including, but not limit to, sample size, thickness, area, non-uniformity composition, surface flatness.
- Only selected example(s) is (are) indicated on the photograph(s) in Comment.
- According to European Parliament and Council Directive 2011/65/EU, Article 5 “Adaptation of the Annexes to scientific and technical progress”, exemption(s) should be granted to the materials and components of Test Item(s) in the lists in Annexes III and IV of this directive.
- According to Annex III of European Parliament and Council Directive 2011/65/EU, exemptions were granted a few materials and Clause 7(c)-I is reiterated here “Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound.”. Test Item(s) < 69 > was (were) claimed as is by client (received as is). Therefore, this (these) Test Item(s) containing the found lead level should be exempted.
- According to Annex III of European Parliament and Council Directive 2011/65/EU, exemptions were granted a few materials and Clause 6(c) is reiterated here “Copper alloy containing up to 4 % lead by weight.”. Test Item(s) < 87 > was (were) claimed as is by client (received as is). Therefore, this (these) Test Item(s) containing the found lead level should be exempted.

RESULTS:

Comment :

Photograph(s) [Compliance Test for European Parliament and Council Directive 2011/65/EU] :	
Photograph of Test Item(s)	
	
	
	

END

RESULTS:

APPENDIX

List of Analytes and their Corresponding Test Methods, Detection Limit and Maximum Allowable Limit [Compliance Test for European Parliament and Council Directive 2011/65/EU] :

No.	Name of Analytes	Detection Limit (mg/kg)				Maximum Allowable Limit (mg/kg)
		X-ray fluorescence (XRF)[a]			Wet Chemistry	
		Plastic	Metallic / glass / ceramic	Others		
1	Lead (Pb)	100	200	200	10[b]	1 000
2	Cadmium (Cd)	50	50	50	10[b]	100
3	Mercury (Hg)	100	200	200	10[c]	1 000
4	Chromium (Cr)	100	200	200	NA	NA
5	Chromium VI (Cr VI)	NA	NA	NA	3[g, h] / 10[d] / See [e, j]	1 000 / Negative[j]
6	Bromine (Br)	200	NA	200	NA	NA
7	Polybromobiphenyls (PBBs) - Bromobiphenyl (MonoBB) - Dibromobiphenyl (DiBB) - Tribromobiphenyl (TriBB) - Tetrabromobiphenyl (TetraBB) - Pentabromobiphenyl (PentaBB) - Hexabromobiphenyl (HexaBB) - Heptabromobiphenyl (HeptaBB) - Octabromobiphenyl (OctaBB) - Nonabromobiphenyl (NonaBB) - Decabromobiphenyl (DecaBB)	NA	NA	NA	Each 50[f]	Sum 1 000
8	Polybromodiphenyl ethers (PBDEs) - Bromodiphenyl ether (MonoBDE) - Dibromodiphenyl ether (DiBDE) - Tribromodiphenyl ether (TriBDE) - Tetrabromodiphenyl ether (TetraBDE) - Pentabromodiphenyl ether (PentaBDE) - Hexabromodiphenyl ether (HexaBDE) - Heptabromodiphenyl ether (HeptaBDE) - Octabromodiphenyl ether (OctaBDE) - Nonabromodiphenyl ether (NonaBDE) - Decabromodiphenyl ether (DecaBDE)	NA	NA	NA	Each 50[f]	Sum 1 000

RESULTS:

	NA = Not applicable
[a]	Test method with reference to International Standard IEC 62321-3-1: 2013.
[b]	Test method with reference to International Standard IEC 62321-5: 2013.
[c]	Test method with reference to International Standard IEC 62321-4: 2017.
[d]	Polymers and Electronics - Test method with reference to European Standard EN 62321-7-2: 2017.
[e]	Metal - Test method with reference to International Standard IEC 62321-7-1: 2015 [i].
[f]	Test method with reference to International Standard IEC 62321-6: 2015.
[g]	Leather - Test method International Standard ISO 17075: 2007.
[h]	Other Than Metal, Leather, Polymers and Electronics - Test method with reference to International Standard ISO 17075: 2007.
[i]	The principle of this method was evaluated and supported by two studies organized by IEC TC 111 WG3. These studies were focused on detecting the presence of Cr VI in the corrosion protection coatings on metallic samples.
[j]	Result(s) of Cr VI for metallic material(s) was (were) expressed in term of positive and negative. Negative means the absence of Cr VI on the tested areas and the result(s) was (were) regarded as in compliance with European Parliament and Council Directive 2011/65/EU, Article 4(1). While, positive means the presence of Cr VI on tested areas and the result(s) was (were) regarded as in conflict with European Parliament and Council Directive 2011/65/EU, Article 4(1).

Testing Approach [Compliance Test for European Parliament and Council Directive 2011/65/EU] :	
The testing approach was with reference to the following document(s).	
1	International Standards IEC 62321-1: 2013 and IEC 62321-2: 2013
2	“RoHS Enforcement Guidance Document Version 1” by EU RoHS Enforcement Authorities Informal Network. (May 2006)
3	“RoHS Regulations - Government Guidance Notes” by United Kingdom Department for Business Innovation & Skills. (February 2011)
4	“Final Report to RoHS substances (Hg, Pb, Cr(VI), Cd, PBB and PBDE) in electrical and electronic equipment in Belgium” by Belgium Federal Public Service Health, Food Chain Safety and Environment. (November 2005)

RESULTS:

END OF REPORT