

Report No.: **168492904a 002**

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Client: NINGBO PRINCE TOYS CO.,LTD.

Contact Information: No.777 East Taoyuan Road, Guanhaiwei Town, Cixi City, Zhejiang, China

Test item(s): Toys

**Identification/
Model No(s):** BABY RIDE ON CAR
667/668/668-P/664

Sample obtaining method: Sending by customer

Condition at delivery: Test item complete and undamaged.

Sample Receiving date: 2024-07-01; 2024-07-04

Testing Period: 2024-07-08 to 2024-07-26

Place of testing: Chemical laboratory Shenzhen, Toys laboratory Shenzhen

Test Specification:

Please refer to "Test Result Summary List" on page 2 for details

Other information:

- (1) The provided age grade of the item(s) : For age of 12-36 months (667/668/668-P).
For age of 18-36 months (664).
The appropriate age grade of the item(s) : For age of 12-36 months (667/668/668-P).
For age of 18-36 months (664).
The item(s) was/ were tested for the age of 12-36 months (667/668/668-P).
For the age of 18-36 months (664).

(2) Packaging provided: Artwork

(3) Information provided by customer:
Country of Origin: CHINA

(4) The report 168492904a 002 superseded report 168492904a 001 issued on Jul. 26th 2024.

For and on behalf of
TÜV Rheinland (Shenzhen) Co., Ltd.



Candy He/
Lab. Supervisor

2024-07-31

Date

Name/Position



Lucy Wang/
Senior Technical Executive

2024-07-31

Date

Name/Position

Sample information is provided by customer. Test result is drawn according to the kind and extent of tests performed.
This test report relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.
"Decision Rule" document announced in our website (<https://www.tuv.com/landingpage/en/qm-gcn/>) describes the statement of conformity and its rule of enforcement for test results are applicable throughout this test report.

Test Result Summary :

Test Specification:

Test result:

1 EN 71-1:2014+A1:2018 Mechanical and physical properties	PASS
2 2009/48/EC CE marking	PASS
3 2009/48/EC Labeling Requirement(Importer/ Manufacturer Mark, Product Identification, Washing/ Cleaning instruction)	PASS
4 EN 71-2:2020 Flammability	PASS
5 BS EN 71-1:2014+A1:2018 Mechanical and physical properties	PASS
6 The Toys (Safety) Regulations 2011 of UK, UKCA mark	PASS
7 The Toys (Safety) Regulations 2011 of UK, labelling requirements	PASS
8 BS EN 71-2:2020 Flammability	PASS
9 EN 71-3:2019+A1:2021 / BS EN 71-3:2019+A1:2021 Migration of 19 Elements - with reference to 2009/48/EC and its amendments	PASS
10 EN IEC 62115:2020+A11:2020 Electric toys - Safety	PASS
11 BS EN IEC 62115:2020+A11:2020 Electric toys - Safety	PASS
12 Cadmium content according to Annex XVII Entry 23 of Regulation (EC) No 1907/2006 and its amendments	PASS
Cadmium content - According to UK REACH regulation (EC) No. 1907/2006 last amended by SI 2021/904 Annex XVII Entry 23	PASS
13 REACH regulation (EC) No. 1907/2006 and its amendment regulations on Annex XVII entry 51 and entry 52 : Phthalates	PASS
Phthalates -According to UK REACH regulation (EC) No. 1907/2006 last amended by SI 2021/904 Annex XVII Entry 51 and entry 52	PASS
14 Polycyclic aromatic hydrocarbons (PAHs) - according to GS Specification - AfPS GS 2019:01 PAK	PASS
15 According to RoHS (recast): Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, 2011/65/EU Annex II and its amendment.	PASS
16 According to UK RoHS: The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012, Statutory Instrument 2012/3032 and its amendments	PASS

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Material List:

Item: BABY RIDE ON CAR
 667/668/668-P/664

Material No.	Material	Color	Location
A001	Plastic	black	refer to photo
A002	Plastic	light grey	refer to photo
A003	Plastic	white	refer to photo
A004	Metal	black	refer to photo
A005	Coating	black	refer to photo
A006	Plastic + adhesive	transparent	refer to photo
A007	Plastic	grey	refer to photo
A008	Plastic	black	refer to photo
A009	Plastic	transparent	refer to photo
A010	Plastic + plating	silver	refer to photo
A011	Coating	silver	refer to photo
A012	Metal	black	refer to photo
A013	Metal	silver	refer to photo
A014	Metal	silver	refer to photo
A015	Metal	silver	refer to photo
A016	Metal	silver	refer to photo
A017	Metal	black	refer to photo
A018	Metal	black	refer to photo
A019	Metal	silver	refer to photo
A020	Metal	silver	refer to photo
A021	Metal	silver	refer to photo
A022	Metal	silver	refer to photo
A023	Metal	silver	refer to photo
A024	Plastic	blue	refer to photo
A025	Metal	silver	refer to photo
A026	Metal	silver	refer to photo
A027	Plastic	dark grey	refer to photo
A028	Metal	silver	refer to photo
A029	Metal	silver	refer to photo

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A030	Metal	silver	refer to photo
A031	PCB board	green	refer to photo
A032	Polymer	black	refer to photo
A033	Plastic + printing	white/black	refer to photo
A034	Plastic	red	refer to photo
A035	Plastic	black	refer to photo
A036	Plastic	blue	refer to photo
A037	Plastic	yellow	refer to photo
A038	Solder	silver	refer to photo
A039	Electronic components	brown	refer to photo
A040	Metal	silver	refer to photo
A041	Solder	silver	refer to photo
A042	Plastic	translucent/black	refer to photo
A043	PCB board	green	refer to photo
A044	Plastic	green	refer to photo
A045	Solder	silver	refer to photo
A046	Solder	silver	refer to photo
A048	PCB board	green	refer to photo
A049	Metal	silver	refer to photo
A050	Magnet	black	refer to photo
A051	Plastic	transparent	refer to photo
A052	Metal	copper	refer to photo
A053	Metal	silver	refer to photo
A054	Plastic	dark grey	refer to photo
A055	Plastic	red	refer to photo
A056	Plastic	pink	refer to photo
A057	Plastic + plating	light grey/silver	refer to photo
A058	Plastic	transparent red	refer to photo
A059	Coating	silver	refer to photo
A060	Metal	silver	refer to photo
A061	Metal	silver	refer to photo
A062	Plastic	dull black	refer to photo

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A063	Metal	silver	refer to photo
A064	Coating	black	refer to photo
A065	Metal	silver	refer to photo
A066	Metal	silver	refer to photo
A067	Textile	black	refer to photo
A068	Textile	blue	refer to photo
A069	Coating	white	refer to photo
A070	Metal	silver	refer to photo
A071	Metal	silver	refer to photo
A072	Metal	silver	refer to photo
A073	Plastic	white	refer to photo
A074	Metal	silver	refer to photo
A075	Metal	silver	refer to photo
A076	Metal	silver	refer to photo
A077	Metal	silver	refer to photo
A078	Plastic	blue	refer to photo
A079	Textile	black	refer to photo
A080	Textile	red	refer to photo
A081	Textile	white	refer to photo
A082	Textile	pink	refer to photo
A083	Coating	multicolor	refer to photo
A084	Paper + adhesive	white	refer to photo
A085	Metal	silver	refer to photo
M001	Whole Product	Multicolor	Baby ride on car
M002	Plastic	black	body, steering wheel, parts (all styles)
M003	Plastic	light grey	steering wheel (all style), wheel (#667, #668, #669-P)
M004	Plastic	white	body (all styles)
M006	Coating	black	sticker (#664)
M007	Plastic + adhesive	transparent	sticker (#664)
M008	Plastic	grey	wheel (#664)
M009	Plastic	black	wheel (all styles)
M010	Plastic	transparent	head light (all styles)

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M011	Plastic + plating	black/silver	head light (all styles), grill (#667, #668, #669-P)
M012	Coating	silver	sticker (#664)
M025	Plastic	dark grey	body (#664)
M026	Plastic	red	body (all styles)
M027	Plastic	pink	body (all styles)
M028	Plastic + plating	light grey/silver	logo ring (#667, #668, #668P)
M029	Plastic	transparent red	rear light (#667, #668, #668P)
M030	Coating	silver	logo pattern (#667, #668, #668P)
M033	Plastic	dull black	handle (#668, #668P)
M035	Coating	black	pole, tube (#668, #668P)
M038	Textile	black	binding of canopy (#668P)
M039	Textile	blue	body of canopy (#668P)
M040	Coating	white	inner wire of canopy (#668P)
M047	Plastic	blue	body (#667, #668, #668P)
M048	Textile	black	body of canopy (#668P)
M049	Textile	red	body of canopy (#668P)
M050	Textile	white	body of canopy (#668P)
M051	Textile	pink	body of canopy (#668P)
M052	Plastic + coating + adhesive	transparent/black/silver	sticker (#664)
M053	Plastic + coating	blue/silver	body & logo pattern (#667, #668, #668P)
M054	Plastic	white	inner canopy holder (#668P)
M055	Plastic	blue	washer of nut (all styles)
M056	Plastic	dark grey	washer of battery cover (all styles)
M057	PCB board	green/black	main PCB & IC packaging (all styles)
M058	Plastic + printing	white/black	wire covering (all styles)
M059	Plastic	red	wire covering (all styles)
M060	Plastic	black	wire covering (all styles)
M061	Plastic	blue	wire covering (all styles)
M062	Plastic	yellow	wire covering (all styles)
M063	Plastic	translucent/black	button (all styles)
M064	PCB board	green	PCB (all styles)

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M065	Plastic	green	speaker (all styles)
M066	PCB board	green/black	PCB of speaker (all styles)
M067	Plastic	transparent	speaker (all styles)
M068	Coating	multicolor	sticker (all styles)
M070	Paper + coating + adhesive	white/multicolor	sticker (all styles)

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1. EN 71-1:2014+A1:2018 Mechanical and physical properties

Test No:	T001
Material No:	M001
4. General requirements	
4.1 Material cleanliness	Pass
4.2 Assembly	Pass
4.7 Edges	Pass
4.8 Points and metallic wires	Pass
4.9 Protruding parts	Pass
4.10 Parts moving against each other	Pass
4.15 Toys intended to bear the mass of a child	Pass
4.20 Acoustics	Pass
5. Toys intended for children under 36 months	
5.1 General requirements	Pass
6. Packaging	
7. Warnings, markings and instructions for use	
7.1 General	Pass
7.10 Roller skates, inline skates, skateboards and certain other ride-on toys	Pass

The clause and/or sub-clause would be indicated only in the test report whichever applicable. The comprehensive result report is available upon request.

Remark:

^ The manufacturer/trader/applicant has provided the artwork for assessment in this test report.

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2. 2009/48/EC CE Marking**Test result:**

Test No:	T001
Material No:	M001
CE-marking	Pass

Remark:

^ The manufacturer/trader/applicant has provided the artwork for assessment in this test report.

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3. 2009/48/EC Labeling Requirement (Importer/ Manufacturer Mark, Product Identification, Washing/ Cleaning instruction)**Test result:**

Test No:	T001
Material No:	M001
Importer/ Manufacturer Mark (European Company name and address)+	Absent
Product Identification - type, batch, serial or model number+	Present (Package)
Washing/ Cleaning instruction ^	Not Applicable

Remark:

- + These labeling shall be indicated on the toy, or where that is not possible, on its packaging or in documents accompanying the toys.

The correct adherence to all requirements according to directive 2009/48/EC in regards to the marking (name or trademark and contact address of the manufacturer respectively the marking for identification [type, batch, model or serial no.]) of the toy can only be confirmed by the manufacturer, his delegate or the person who brings it onto the market. The marked article were assessed, however, they can not be evaluated in the frame of this test.

- ^ According to Directive 2009/48/EC, a toy intended for use by children under 36 months must be designed and manufactured in such a way that it can be cleaned. A textile toy shall, to this end, be washable, except if it contains a mechanism that may be damaged if soak washed. The toy shall fulfill the safety requirements also after having been cleaned in accordance with this point and the manufacturer's instructions.

- ** The manufacturer/trader/applicant has provided the artwork for assessment in this test report.

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4. EN 71-2:2020 Flammability**Test result:**

Test No:	T001
Material No:	M001
4.1 General requirements	Pass
4.4 Toys intended to be entered by a child	Pass

The clause and/or sub-clause would be indicated only in the test report whichever applicable. The comprehensive result report is available upon request.

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5. BS EN 71-1:2014+A1:2018 Mechanical and physical properties

Test No:	T001
Material No:	M001
4. General requirements	
4.1 Material cleanliness	Pass
4.2 Assembly	Pass
4.7 Edges	Pass
4.8 Points and metallic wires	Pass
4.9 Protruding parts	Pass
4.10 Parts moving against each other	Pass
4.15 Toys intended to bear the mass of a child	Pass
4.20 Acoustics	Pass
5. Toys intended for children under 36 months	
5.1 General requirements	Pass
6. Packaging	
	Pass
7. Warnings, markings and instructions for use	
7.1 General	Pass
7.10 Roller skates, inline skates, skateboards and certain other ride-on toys	Pass

The clause and/or sub-clause would be indicated only in the test report whichever applicable. The comprehensive result report is available upon request.

Remark:

^ The manufacturer/trader/applicant has provided the artwork for assessment in this test report.

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6. The Toys (Safety) Regulations 2011 of UK, UKCA mark**Test result:**

Test No:	T001
Material No:	M001
UKCA-marking	Pass

Remark:

- § The assessment was made in accordance to the "Guidance - Using the UKCA mark from 1 January 2021" as published on 1 September, 2020.
- ^ The manufacturer/trader/applicant has provided the artwork for assessment in this test report.

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7.The Toys (Safety) Regulations 2011 of UK, labelling requirements**Test Result:**

Test No:	T001
Material No:	M001
UK Importer Name and Address	Absent

Remark:

- * According to Toys (Safety) Regulations 2011: Guidance (GB) published by Department for Business, Energy and Industrial Strategy in November 2020, starting from 1 January 2021, importers have legal obligations checking that manufacturers have included their (the importer's) name, registered trade name or mark and a postal address on the toy or on its packaging or in accompanying documentation.
To assist with the transition, the UK is applying a transitional period ending on 31 December 2025 to allow that the details being shown on the accompanying documentation or packaging as an alternative to placing them on the toy.
- ** The manufacturer/trader/applicant has provided the artwork for assessment in this test report.

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8. BS EN 71-2:2020 Flammability**Test result:**

	Test No:	T001
	Material No:	M001
4.1 General requirements		Pass
4.4 Toys intended to be entered by a child		Pass

The clause and/or sub-clause would be indicated only in the test report whichever applicable. The comprehensive result report is available upon request.

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9. EN 71-3:2019+A1:2021 / BS EN 71-3:2019+A1:2021 Migration of 19 Elements - with reference to 2009/48/EC and its amendments

Test Method: with reference to EN 71-3:2019+A1:2021 / BS EN 71-3:2019+A1:2021, analyzed by ICP-OES / ICP-MS / LC-ICP-MS/IC-UV/GC-MS.

3) For scraped-off toy materials:
Test Result:

Test No.				T001	T002	T003
Material No.				M002	M003	M004
Test Parameter	Unit	RL	Regulatory Requirement	Result	Result	Result
Aluminium (Al)	mg/kg	10	28,130	< RL	< RL	< RL
Antimony (Sb)	mg/kg	5	560	< RL	< RL	< RL
Arsenic (As)	mg/kg	5	47	< RL	< RL	< RL
Barium (Ba)	mg/kg	2.5	18,750	< RL	< RL	< RL
Boron (B)	mg/kg	10	15,000	< RL	< RL	< RL
Cadmium (Cd)	mg/kg	1	17	< RL	< RL	< RL
Chromium III (Cr(III))	mg/kg	10	460	< RL	< RL	< RL
Chromium VI (Cr(VI))	mg/kg	0.045	0.053	< RL	< RL	< RL
Cobalt (Co)	mg/kg	2.5	130	< RL	< RL	< RL
Copper (Cu)	mg/kg	2.5	7,700	17	< RL	< RL
Lead (Pb)	mg/kg	2.5	23	< RL	< RL	< RL
Manganese (Mn)	mg/kg	2.5	15,000	< RL	< RL	< RL
Mercury (Hg)	mg/kg	2.5	94	< RL	< RL	< RL
Nickel (Ni)	mg/kg	2.5	930	< RL	< RL	< RL
Selenium (Se)	mg/kg	10	460	< RL	< RL	< RL
Strontium (Sr)	mg/kg	2.5	56,000	< RL	< RL	< RL
Tin (Sn)	mg/kg	1.0	180,000	< RL	< RL	< RL
Organic Tin [^]	mg/kg	0.2	12	-	-	-
Zinc (Zn)	mg/kg	10	46,000	< RL	< RL	< RL
Mass of trace amount	mg	--	--	-	-	-

Abbreviation:

- < = less than
- RL = Reporting Limit
- mg/kg denotes milligram per kilogram
- mg denotes milligram
- [^] denotes Organic tin are not necessary to be determined when the Tin concentration is less than calculated limit (3.6 mg/kg) or the components were confirmed to be pure metal

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Test Result:

Test No.				T004	T005	T006
Material No.				M006	M007	M008
Test Parameter	Unit	RL	Regulatory Requirement	Result	Result	Result
Aluminium (Al)	mg/kg	10	28,130	-	< RL	< RL
Antimony (Sb)	mg/kg	5	560	-	< RL	< RL
Arsenic (As)	mg/kg	5	47	-	< RL	< RL
Barium (Ba)	mg/kg	2.5	18,750	-	< RL	< RL
Boron (B)	mg/kg	10	15,000	-	< RL	< RL
Cadmium (Cd)	mg/kg	1	17	-	< RL	< RL
Chromium III (Cr(III))	mg/kg	10	460	-	< RL	< RL
Chromium VI (Cr(VI))	mg/kg	0.045	0.053	-	< RL	< RL
Cobalt (Co)	mg/kg	2.5	130	-	< RL	< RL
Copper (Cu)	mg/kg	2.5	7,700	-	< RL	< RL
Lead (Pb)	mg/kg	2.5	23	-	< RL	< RL
Manganese (Mn)	mg/kg	2.5	15,000	-	< RL	< RL
Mercury (Hg)	mg/kg	2.5	94	-	< RL	< RL
Nickel (Ni)	mg/kg	2.5	930	-	< RL	< RL
Selenium (Se)	mg/kg	10	460	-	< RL	< RL
Strontium (Sr)	mg/kg	2.5	56,000	-	< RL	< RL
Tin (Sn)	mg/kg	1.0	180,000	-	< RL	< RL
Organic Tin [^]	mg/kg	0.2	12	-	-	-
Zinc (Zn)	mg/kg	10	46,000	-	< RL	< RL
Mass of trace amount	mg	--	--	<10	-	-

Abbreviation:

- < = less than
- RL = Reporting Limit
- mg/kg denotes milligram per kilogram
- mg denotes milligram
- [^] denotes Organic tin are not necessary to be determined when the Tin concentration is less than calculated limit (3.6 mg/kg) or the components were confirmed to be pure metal

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Test Result:

Test No.				T007	T008	T009
Material No.				M009	M010	M011
Test Parameter	Unit	RL	Regulatory Requirement	Result	Result	Result
Aluminium (Al)	mg/kg	10	28,130	< RL	< RL	< RL
Antimony (Sb)	mg/kg	5	560	< RL	< RL	< RL
Arsenic (As)	mg/kg	5	47	< RL	< RL	< RL
Barium (Ba)	mg/kg	2.5	18,750	< RL	< RL	< RL
Boron (B)	mg/kg	10	15,000	< RL	< RL	< RL
Cadmium (Cd)	mg/kg	1	17	< RL	< RL	< RL
Chromium III (Cr(III))	mg/kg	10	460	< RL	< RL	< RL
Chromium VI (Cr(VI))	mg/kg	0.045	0.053	< RL	< RL	< RL
Cobalt (Co)	mg/kg	2.5	130	< RL	< RL	< RL
Copper (Cu)	mg/kg	2.5	7,700	< RL	< RL	< RL
Lead (Pb)	mg/kg	2.5	23	< RL	< RL	< RL
Manganese (Mn)	mg/kg	2.5	15,000	< RL	< RL	< RL
Mercury (Hg)	mg/kg	2.5	94	< RL	< RL	< RL
Nickel (Ni)	mg/kg	2.5	930	< RL	< RL	< RL
Selenium (Se)	mg/kg	10	460	< RL	< RL	< RL
Strontium (Sr)	mg/kg	2.5	56,000	< RL	< RL	< RL
Tin (Sn)	mg/kg	1.0	180,000	< RL	< RL	< RL
Organic Tin [^]	mg/kg	0.2	12	-	-	-
Zinc (Zn)	mg/kg	10	46,000	< RL	< RL	< RL
Mass of trace amount	mg	--	--	-	-	-

Abbreviation:

- < = less than
- RL = Reporting Limit
- mg/kg denotes milligram per kilogram
- mg denotes milligram
- [^] denotes Organic tin are not necessary to be determined when the Tin concentration is less than calculated limit (3.6 mg/kg) or the components were confirmed to be pure metal

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Test Result:

Test No.				T010	T011	T012
Material No.				M012	M025	M026
Test Parameter	Unit	RL	Regulatory Requirement	Result	Result	Result
Aluminium (Al)	mg/kg	10	28,130	-	< RL	< RL
Antimony (Sb)	mg/kg	5	560	-	< RL	< RL
Arsenic (As)	mg/kg	5	47	-	< RL	< RL
Barium (Ba)	mg/kg	2.5	18,750	-	< RL	< RL
Boron (B)	mg/kg	10	15,000	-	< RL	< RL
Cadmium (Cd)	mg/kg	1	17	-	< RL	< RL
Chromium III (Cr(III))	mg/kg	10	460	-	< RL	< RL
Chromium VI (Cr(VI))	mg/kg	0.045	0.053	-	< RL	< RL
Cobalt (Co)	mg/kg	2.5	130	-	< RL	< RL
Copper (Cu)	mg/kg	2.5	7,700	-	< RL	< RL
Lead (Pb)	mg/kg	2.5	23	-	< RL	< RL
Manganese (Mn)	mg/kg	2.5	15,000	-	< RL	< RL
Mercury (Hg)	mg/kg	2.5	94	-	< RL	< RL
Nickel (Ni)	mg/kg	2.5	930	-	< RL	< RL
Selenium (Se)	mg/kg	10	460	-	< RL	< RL
Strontium (Sr)	mg/kg	2.5	56,000	-	< RL	< RL
Tin (Sn)	mg/kg	1.0	180,000	-	< RL	< RL
Organic Tin [^]	mg/kg	0.2	12	-	-	-
Zinc (Zn)	mg/kg	10	46,000	-	< RL	< RL
Mass of trace amount	mg	--	--	<10	-	-

Abbreviation:

- < = less than
- RL = Reporting Limit
- mg/kg denotes milligram per kilogram
- mg denotes milligram
- [^] denotes Organic tin are not necessary to be determined when the Tin concentration is less than calculated limit (3.6 mg/kg) or the components were confirmed to be pure metal

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Test Result:

Test No.				T013	T014	T015
Material No.				M027	M028	M029
Test Parameter	Unit	RL	Regulatory Requirement	Result	Result	Result
Aluminium (Al)	mg/kg	10	28,130	< RL	< RL	< RL
Antimony (Sb)	mg/kg	5	560	< RL	< RL	< RL
Arsenic (As)	mg/kg	5	47	< RL	< RL	< RL
Barium (Ba)	mg/kg	2.5	18,750	< RL	< RL	< RL
Boron (B)	mg/kg	10	15,000	< RL	< RL	< RL
Cadmium (Cd)	mg/kg	1	17	< RL	< RL	< RL
Chromium III (Cr(III))	mg/kg	10	460	< RL	< RL	< RL
Chromium VI (Cr(VI))	mg/kg	0.045	0.053	< RL	< RL	< RL
Cobalt (Co)	mg/kg	2.5	130	< RL	< RL	< RL
Copper (Cu)	mg/kg	2.5	7,700	< RL	< RL	< RL
Lead (Pb)	mg/kg	2.5	23	< RL	< RL	< RL
Manganese (Mn)	mg/kg	2.5	15,000	< RL	< RL	< RL
Mercury (Hg)	mg/kg	2.5	94	< RL	< RL	< RL
Nickel (Ni)	mg/kg	2.5	930	< RL	< RL	< RL
Selenium (Se)	mg/kg	10	460	< RL	< RL	< RL
Strontium (Sr)	mg/kg	2.5	56,000	< RL	< RL	< RL
Tin (Sn)	mg/kg	1.0	180,000	< RL	< RL	< RL
Organic Tin [^]	mg/kg	0.2	12	-	-	-
Zinc (Zn)	mg/kg	10	46,000	< RL	< RL	< RL
Mass of trace amount	mg	--	--	-	-	-

Abbreviation:

- < = less than
- RL = Reporting Limit
- mg/kg denotes milligram per kilogram
- mg denotes milligram
- [^] denotes Organic tin are not necessary to be determined when the Tin concentration is less than calculated limit (3.6 mg/kg) or the components were confirmed to be pure metal

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Test Result:

Test No.				T016	T017	T018
Material No.				M030	M033	M035
Test Parameter	Unit	RL	Regulatory Requirement	Result	Result	Result
Aluminium (Al)	mg/kg	10	28,130	-	< RL	< RL
Antimony (Sb)	mg/kg	5	560	-	< RL	< RL
Arsenic (As)	mg/kg	5	47	-	< RL	< RL
Barium (Ba)	mg/kg	2.5	18,750	-	< RL	306
Boron (B)	mg/kg	10	15,000	-	< RL	< RL
Cadmium (Cd)	mg/kg	1	17	-	< RL	< RL
Chromium III (Cr(III))	mg/kg	10	460	-	< RL	< RL
Chromium VI (Cr(VI))	mg/kg	0.045	0.053	-	< RL	< RL
Cobalt (Co)	mg/kg	2.5	130	-	< RL	< RL
Copper (Cu)	mg/kg	2.5	7,700	-	< RL	4.3
Lead (Pb)	mg/kg	2.5	23	-	< RL	< RL
Manganese (Mn)	mg/kg	2.5	15,000	-	< RL	10
Mercury (Hg)	mg/kg	2.5	94	-	< RL	< RL
Nickel (Ni)	mg/kg	2.5	930	-	< RL	< RL
Selenium (Se)	mg/kg	10	460	-	< RL	< RL
Strontium (Sr)	mg/kg	2.5	56,000	-	< RL	9.1
Tin (Sn)	mg/kg	1.0	180,000	-	< RL	< RL
Organic Tin [^]	mg/kg	0.2	12	-	-	-
Zinc (Zn)	mg/kg	10	46,000	-	< RL	8855
Mass of trace amount	mg	--	--	<10	-	-

Abbreviation:

- < = less than
- RL = Reporting Limit
- mg/kg denotes milligram per kilogram
- mg denotes milligram
- [^] denotes Organic tin are not necessary to be determined when the Tin concentration is less than calculated limit (3.6 mg/kg) or the components were confirmed to be pure metal

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Test Result:

Test No.				T019	T020	T021
Material No.				M038	M039	M047
Test Parameter	Unit	RL	Regulatory Requirement	Result	Result	Result
Aluminium (Al)	mg/kg	10	28,130	22	< RL	< RL
Antimony (Sb)	mg/kg	5	560	< RL	< RL	< RL
Arsenic (As)	mg/kg	5	47	5.4	< RL	< RL
Barium (Ba)	mg/kg	2.5	18,750	2.7	2.9	< RL
Boron (B)	mg/kg	10	15,000	< RL	< RL	< RL
Cadmium (Cd)	mg/kg	1	17	< RL	< RL	< RL
Chromium III (Cr(III))	mg/kg	10	460	< RL	< RL	< RL
Chromium VI (Cr(VI))	mg/kg	0.045	0.053	< RL	< RL	< RL
Cobalt (Co)	mg/kg	2.5	130	< RL	< RL	< RL
Copper (Cu)	mg/kg	2.5	7,700	< RL	< RL	< RL
Lead (Pb)	mg/kg	2.5	23	< RL	< RL	< RL
Manganese (Mn)	mg/kg	2.5	15,000	< RL	< RL	< RL
Mercury (Hg)	mg/kg	2.5	94	< RL	< RL	< RL
Nickel (Ni)	mg/kg	2.5	930	< RL	< RL	< RL
Selenium (Se)	mg/kg	10	460	< RL	< RL	< RL
Strontium (Sr)	mg/kg	2.5	56,000	< RL	< RL	< RL
Tin (Sn)	mg/kg	1.0	180,000	< RL	< RL	< RL
Organic Tin [^]	mg/kg	0.2	12	-	-	-
Zinc (Zn)	mg/kg	10	46,000	12	84	< RL
Mass of trace amount	mg	--	--	-	-	-

Abbreviation:

- < = less than
- RL = Reporting Limit
- mg/kg denotes milligram per kilogram
- mg denotes milligram
- [^] denotes Organic tin are not necessary to be determined when the Tin concentration is less than calculated limit (3.6 mg/kg) or the components were confirmed to be pure metal

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Test Result:

Test No.				T022	T023	T024
Material No.				M048	M049	M050
Test Parameter	Unit	RL	Regulatory Requirement	Result	Result	Result
Aluminium (Al)	mg/kg	10	28,130	50	< RL	< RL
Antimony (Sb)	mg/kg	5	560	< RL	< RL	< RL
Arsenic (As)	mg/kg	5	47	< RL	< RL	< RL
Barium (Ba)	mg/kg	2.5	18,750	< RL	< RL	< RL
Boron (B)	mg/kg	10	15,000	< RL	< RL	< RL
Cadmium (Cd)	mg/kg	1	17	< RL	< RL	< RL
Chromium III (Cr(III))	mg/kg	10	460	< RL	< RL	< RL
Chromium VI (Cr(VI))	mg/kg	0.045	0.053	< RL	< RL	< RL
Cobalt (Co)	mg/kg	2.5	130	< RL	< RL	< RL
Copper (Cu)	mg/kg	2.5	7,700	< RL	< RL	< RL
Lead (Pb)	mg/kg	2.5	23	< RL	< RL	< RL
Manganese (Mn)	mg/kg	2.5	15,000	< RL	< RL	< RL
Mercury (Hg)	mg/kg	2.5	94	< RL	< RL	< RL
Nickel (Ni)	mg/kg	2.5	930	< RL	< RL	< RL
Selenium (Se)	mg/kg	10	460	< RL	< RL	< RL
Strontium (Sr)	mg/kg	2.5	56,000	< RL	< RL	< RL
Tin (Sn)	mg/kg	1.0	180,000	< RL	< RL	< RL
Organic Tin [^]	mg/kg	0.2	12	-	-	-
Zinc (Zn)	mg/kg	10	46,000	12	< RL	< RL
Mass of trace amount	mg	--	--	-	-	-

Abbreviation:

- < = less than
- RL = Reporting Limit
- mg/kg denotes milligram per kilogram
- mg denotes milligram
- [^] denotes Organic tin are not necessary to be determined when the Tin concentration is less than calculated limit (3.6 mg/kg) or the components were confirmed to be pure metal

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Test Result:

Test No.				T025	T026
Material No.				M051	M070
Test Parameter	Unit	RL	Regulatory Requirement	Result	Result
Aluminium (Al)	mg/kg	10	28,130	< RL	14
Antimony (Sb)	mg/kg	5	560	< RL	< RL
Arsenic (As)	mg/kg	5	47	< RL	< RL
Barium (Ba)	mg/kg	2.5	18,750	< RL	< RL
Boron (B)	mg/kg	10	15,000	< RL	< RL
Cadmium (Cd)	mg/kg	1	17	< RL	< RL
Chromium III (Cr(III))	mg/kg	10	460	< RL	< RL
Chromium VI (Cr(VI))	mg/kg	0.045	0.053	< RL	< RL
Cobalt (Co)	mg/kg	2.5	130	< RL	< RL
Copper (Cu)	mg/kg	2.5	7,700	< RL	< RL
Lead (Pb)	mg/kg	2.5	23	< RL	< RL
Manganese (Mn)	mg/kg	2.5	15,000	< RL	4.0
Mercury (Hg)	mg/kg	2.5	94	< RL	< RL
Nickel (Ni)	mg/kg	2.5	930	< RL	3.2
Selenium (Se)	mg/kg	10	460	< RL	< RL
Strontium (Sr)	mg/kg	2.5	56,000	< RL	17
Tin (Sn)	mg/kg	1.0	180,000	< RL	< RL
Organic Tin [^]	mg/kg	0.2	12	-	-
Zinc (Zn)	mg/kg	10	46,000	< RL	< RL
Mass of trace amount	mg	--	--	-	-

Abbreviation: < = less than
 RL = Reporting Limit
 mg/kg denotes milligram per kilogram
 mg denotes milligram
 ^ denotes Organic tin are not necessary to be determined when the Tin concentration is less than calculated limit (3.6 mg/kg) or the components were confirmed to be pure metal

Remark:

- * Categorization of toys materials is based on the material texture. According to point H.11 of Annex H to EN 71-3:2019+A1:2021 / BS EN 71-3:2019+A1:2021, cosmetic materials with dry, brittle, powder like or pliable texture such as lipstick and eyeshadow are considered as category I materials. However, as a reminder, it cannot preclude the possibility that some national enforcement authorities might take a more stringent action to treat cosmetic materials as sticky and evaluate according to category II requirement as they are intended to be applied on skin and retained for long time.
- ** For any test portion containing grease, oil, wax or similar material, such materials would have been removed with isooctane by using Soxhlet extraction.
- *** The highlighted result was found to be more than the maximum permissible limit.
- # According to EN 71-3:2019+A1:2021 / BS EN 71-3:2019+A1:2021, if the weight of a test portion of toy material is less than 10mg, the analysis of migration of certain elements would not be required. If the weight of a test portion of toy material is between 10mg and 100mg, the analytical results would be calculated as though 100mg of the test portion had been used.

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10.EN IEC 62115:2020+A11:2020 Electric toys - Safety

Test Method: EN IEC 62115:2020+A11:2020

Power Information :

Component No.	Description	Power Type
T1	RIDE ON CAR	2X1.5V(LR03) DURACELL Replaceable Battery

EN IEC 62115:2020+A11:2020 Electric toys - Safety

Clause	Assessment
1 Scope	--
2 Normative references	--
3 Definitions	--
4 General requirement	--
5 General conditions for the tests	--
6 Criteria for reduced testing	--
7 Marking and Instructions	PASS (*1)
8 Power input	N.A.
9 Heating and abnormal operation	PASS
10 Electric strength	PASS
11 Electric toys used in water, electric toys used with liquid and electric toys cleaned with liquid	N.A.
12 Mechanical strength	PASS
13 Construction	PASS
14 Protection of cords and wires	PASS
15 Components	PASS (*2)
16 Screws and connections	PASS
17 Clearances and creepage distances	PASS
18 Resistance to heat and fire	PASS
19 Radiation and similar hazards	--
19.2 Optical radiation	N.A.
19.3 Other electromagnetic radiation	N.A.

The clause and/or sub-clause would be indicated only in the test report whichever applicable. The comprehensive result report is available upon request.

N.A. = Not Applicable; N.C. = Not conducted

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Remark:

- *1 Only the English version of the marking and instructions were assessed. According to the standard, instruction and other texts required by the standard should be written in the official language(s) of the country in which the product is to be sold.
- *2 Components shall comply with the safety requirements specified in the relevant IEC standards as far as they reasonably apply.

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11.BS EN IEC 62115:2020+A11:2020 Electric toys - Safety

Test Method: BS EN IEC 62115:2020+A11:2020

Power Information :

Component No.	Description	Power Type
T1	RIDE ON CAR	2 X 1.5V(LR03) DURACELL Replaceable Battery

BS EN IEC 62115:2020+A11:2020 Electric toys - Safety

Clause	Assessment
1 Scope	--
2 Normative references	--
3 Definitions	--
4 General requirement	--
5 General conditions for the tests	--
6 Criteria for reduced testing	--
7 Marking and Instructions	PASS (*1)
8 Power input	N.A.
9 Heating and abnormal operation	PASS
10 Electric strength	PASS
11 Electric toys used in water, electric toys used with liquid and electric toys cleaned with liquid	N.A.
12 Mechanical strength	PASS
13 Construction	PASS
14 Protection of cords and wires	PASS
15 Components	PASS (*2)
16 Screws and connections	PASS
17 Clearances and creepage distances	PASS
18 Resistance to heat and fire	PASS
19 Radiation and similar hazards	--
19.2 Optical radiation	N.A.
19.3 Other electromagnetic radiation	N.A.

The clause and/or sub-clause would be indicated only in the test report whichever applicable. The comprehensive result report is available upon request.

N.A. = Not Applicable; N.C. = Not conducted

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Remark:

- *1 Only the English version of the marking and instructions were assessed. According to the standard, instruction and other texts required by the standard should be written in the official language(s) of the country in which the product is to be sold.
- *2 Components shall comply with the safety requirements specified in the relevant IEC standards as far as they reasonably apply.

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12.Total Cadmium Content

Test Method: EN 1122:2001 (method B)

Test Result:

Test No.	Material No.	Test Parameter	Unit	RL	Test Result
T001	M002 + M003 + M004	Trial 1	mg/kg	10	< RL
		Trial 2	mg/kg	10	-
		Average	mg/kg	10	-
T002	M008 + M009 + M010	Trial 1	mg/kg	10	< RL
		Trial 2	mg/kg	10	-
		Average	mg/kg	10	-
T003	M011 + M025 + M026	Trial 1	mg/kg	10	< RL
		Trial 2	mg/kg	10	-
		Average	mg/kg	10	-
T004	M027 + M028 + M029	Trial 1	mg/kg	10	< RL
		Trial 2	mg/kg	10	-
		Average	mg/kg	10	-
T005	M033 + M052 + M053	Trial 1	mg/kg	10	< RL
		Trial 2	mg/kg	10	-
		Average	mg/kg	10	-
T007	M054 + M055 + M056	Trial 1	mg/kg	10	< RL
		Trial 2	mg/kg	10	-
		Average	mg/kg	10	-
T008	M057 + M058 + M059	Trial 1	mg/kg	10	< RL
		Trial 2	mg/kg	10	-
		Average	mg/kg	10	-
T009	M060 + M061 + M062	Trial 1	mg/kg	10	< RL
		Trial 2	mg/kg	10	-
		Average	mg/kg	10	-
T010	M063 + M064 + M065	Trial 1	mg/kg	10	< RL
		Trial 2	mg/kg	10	-
		Average	mg/kg	10	-
T011	M066 + M067	Trial 1	mg/kg	10	< RL
		Trial 2	mg/kg	10	-
		Average	mg/kg	10	-
T012	M068 + M035 + M040	Trial 1	mg/kg	10	< RL
		Trial 2	mg/kg	10	-
		Average	mg/kg	10	-

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Abbreviation: < = less than
RL = Reporting Limit
mg/kg = milligram per kilogram

Remark:

- * Requirements for Cadmium content according to Annex XVII Entry 23 of Regulation (EC) No 1907/2006 (REACH) and its amendments
 - Mixtures and articles produced from plastic material < 0.01 % (100 mg/kg)
 - Coated / painted articles < 0.1 % (1000 mg/kg)
 - Jewellery components < 0.01 % (100 mg/kg)
 - Paints and varnishes (excluding the applicable exemptions) < 0.01 % (100 mg/kg)

- ** Swiss requirements for cadmium content according to the Switzerland Chemikalien-Risikoreduktions-Verordnung- ChemRRV, 814.81
 - Mixtures and articles produced from plastic material < 0.01 % (100 mg/kg)
 - Articles / objects treated with paints / coating with cadmium is prohibited
 - Paints and varnishes < 0.01 % (100 mg/kg)

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13. Phthalates content

Test Method: Ref. to CPSC-CH-C1001-09.4

Test Result:

Test No.				T001	T002	T003
Material No.				M002 + M003 + M004	M008 + M009 + M010	M011 + M025 + M026
Test Parameter	CAS NO	Unit	RL	Result	Result	Result
Diethylhexyl phthalate (DEHP)	117-81-7	%	0.005	< RL	< RL	< RL
Dibutyl phthalate (DBP)	84-74-2	%	0.005	< RL	< RL	< RL
Benzylbutyl phthalate (BBP)	85-68-7	%	0.005	< RL	< RL	< RL
Diisobutyl phthalate (DIBP)	84-69-5	%	0.005	< RL	< RL	< RL
Sum (DEHP+DBP+BBP+DIBP)	-	%	0.005	<RL	<RL	<RL
Diisononyl phthalate (DINP)	28553-12-0, 68515-48-0	%	0.01	< RL	< RL	< RL
Diisodecyl phthalate (DIDP)	26761-40-0, 68515-49-1	%	0.005	< RL	< RL	< RL
Di-n-octyl phthalate (DNOP)	117-84-0	%	0.005	< RL	< RL	< RL
Sum (DINP+ DIDP+ DNOP)	--	%	0.005	<RL	<RL	<RL
Conclusion: REACH regulation (EC) No. 1907/2006 and its amendment Annex XVII entries 51 and 52				Pass	Pass	Pass

Test No.				T004	T005	T007
Material No.				M027 + M028 + M029	M033 + M052 + M053	M054 + M055 + M056
Test Parameter	CAS NO	Unit	RL	Result	Result	Result
Diethylhexyl phthalate (DEHP)	117-81-7	%	0.005	< RL	< RL	< RL
Dibutyl phthalate (DBP)	84-74-2	%	0.005	< RL	< RL	< RL
Benzylbutyl phthalate (BBP)	85-68-7	%	0.005	< RL	< RL	< RL
Diisobutyl phthalate (DIBP)	84-69-5	%	0.005	< RL	< RL	< RL
Sum (DEHP+DBP+BBP+DIBP)	-	%	0.005	<RL	<RL	<RL
Diisononyl phthalate (DINP)	28553-12-0, 68515-48-0	%	0.01	< RL	< RL	< RL
Diisodecyl phthalate (DIDP)	26761-40-0, 68515-49-1	%	0.005	< RL	< RL	< RL
Di-n-octyl phthalate (DNOP)	117-84-0	%	0.005	< RL	< RL	< RL
Sum (DINP+ DIDP+ DNOP)	--	%	0.005	<RL	<RL	<RL
Conclusion: REACH regulation (EC) No. 1907/2006 and its amendment Annex XVII entries 51 and 52				Pass	Pass	Pass

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Test No.				T008	T009	T010
Material No.				M057 + M058 + M059	M060 + M061 + M062	M063 + M064 + M065
Test Parameter	CAS NO	Unit	RL	Result	Result	Result
Diethylhexyl phthalate (DEHP)	117-81-7	%	0.005	< RL	< RL	< RL
Dibutyl phthalate (DBP)	84-74-2	%	0.005	< RL	< RL	< RL
Benzylbutyl phthalate (BBP)	85-68-7	%	0.005	< RL	< RL	< RL
Diisobutyl phthalate (DIBP)	84-69-5	%	0.005	< RL	< RL	< RL
Sum (DEHP+DBP+BBP+DIBP)	-	%	0.005	<RL	<RL	<RL
Diisononyl phthalate (DINP)	28553-12-0, 68515-48-0	%	0.01	< RL	< RL	< RL
Diisodecyl phthalate (DIDP)	26761-40-0, 68515-49-1	%	0.005	< RL	< RL	< RL
Di-n-octyl phthalate (DNOP)	117-84-0	%	0.005	< RL	< RL	< RL
Sum (DINP+ DIDP+ DNOP)	--	%	0.005	<RL	<RL	<RL
Conclusion: REACH regulation (EC) No. 1907/2006 and its amendment Annex XVII entries 51 and 52				Pass	Pass	Pass

Test No.				T011	T012
Material No.				M066 + M067	M068 + M035 + M040
Test Parameter	CAS NO	Unit	RL	Result	Result
Diethylhexyl phthalate (DEHP)	117-81-7	%	0.005	< RL	< RL
Dibutyl phthalate (DBP)	84-74-2	%	0.005	< RL	< RL
Benzylbutyl phthalate (BBP)	85-68-7	%	0.005	< RL	< RL
Diisobutyl phthalate (DIBP)	84-69-5	%	0.005	< RL	< RL
Sum (DEHP+DBP+BBP+DIBP)	-	%	0.005	<RL	<RL
Diisononyl phthalate (DINP)	28553-12-0, 68515-48-0	%	0.01	< RL	< RL
Diisodecyl phthalate (DIDP)	26761-40-0, 68515-49-1	%	0.005	< RL	< RL
Di-n-octyl phthalate (DNOP)	117-84-0	%	0.005	< RL	< RL
Sum (DINP+ DIDP+ DNOP)	--	%	0.005	<RL	<RL
Conclusion: REACH regulation (EC) No. 1907/2006 and its amendment Annex XVII entries 51 and 52				Pass	Pass

Abbreviation: < = less than
 RL = Reporting Limit
 % = percentage

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Remark:

- Requirement of REACH regulation (EC) No. 1907/2006 and its amendment Annex XVII entries 51 and 52:

Parameter	Unit	Maximum Permissible Limit
Plasticised materials in toys and childcare articles, or other articles# place on the market;		
Diethylhexyl phthalate (DEHP) Dibutyl phthalate (DBP) Benzylbutyl phthalate (BBP) Diisobutyl phthalate (DIBP)	%	0.1 (individually or sum of the four phthalates) Effective after 7 July 2020.
Plasticised materials in children's toy and childcare articles which can be placed in the mouth by children:		
Di-n-octyl phthalate (DNOP) Diisodecyl phthalate (DIDP) Diisononyl phthalate (DINP)	%	0.1 (sum of the three phthalates)

Denote:

Examples of articles that are excluded from the restriction

- Articles exclusively for industrial / agricultural use / use in open air, provided that no plasticised material comes into contact with human mucous membranes or into prolonged contact with human skin (i.e. Continuous contact of more than 10 minutes duration or intermittent contact over a period of 30 minutes, per day.)
 - Aircraft and motor vehicles (Directive 2007/46/EC) placed on the market before 7 January 2024, or articles for use exclusively in the maintenance or repair of them
 - Measuring devices for laboratory use;
 - Food contact material and articles within the scope of Regulation (EC) No 1935/2004 or Commission Regulation (EU) No 10/2011
 - Medical devices (Directive 90/385/EEC, 93/42/EEC or 98/79/EC)
 - Electrical and electronic equipment within the scope of Directive 2011/65/EU
 - Immediate packaging of medicinal products (Regulation (EC) No 726/2004, Directive 2001/82/EC or Directive 2001/83/EC)
- Single component with an amount below reporting limit was not considered by the calculation of the sum. In the case of all phthalates were not detected, the result is stated <RL.

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14. Polycyclic aromatic hydrocarbons (PAHs) according to GS Specification - AfPS GS 2019:01 PAK

Test Method: AfPS GS 2019:01 PAK

Test Result:

Test No.				T001	T002	T003
Material No.				M002	M003	M004
Test Parameter	CAS NO	Unit	RL	Result	Result	Result
Anthracene	120-12-7	mg/kg	0.2	< RL	< RL	< RL
Benzo[a]anthracene	56-55-3	mg/kg	0.2	< RL	< RL	< RL
Benzo[a]pyrene(BaP)	50-32-8	mg/kg	0.2	< RL	< RL	< RL
Benzo[b]fluoranthene	205-99-2	mg/kg	0.2	< RL	< RL	< RL
Benzo[k]fluoranthene	207-08-9	mg/kg	0.2	< RL	< RL	< RL
Benzo[j]fluoranthene	205-82-3	mg/kg	0.2	< RL	< RL	< RL
Benzo[g,h,i]perylene	191-24-2	mg/kg	0.2	< RL	< RL	< RL
Benzo[e]pyrene	192-97-2	mg/kg	0.2	< RL	< RL	< RL
Chrysene	218-01-9	mg/kg	0.2	< RL	< RL	< RL
Dibenzo[a,h]anthracene	53-70-3	mg/kg	0.2	< RL	< RL	< RL
Fluoranthene	206-44-0	mg/kg	0.2	< RL	< RL	< RL
Indeno[1,2,3-cd]pyrene	193-39-5	mg/kg	0.2	< RL	< RL	< RL
Naphthalene	91-20-3	mg/kg	0.2	< RL	< RL	< RL
Phenanthrene	85-01-8	mg/kg	0.2	< RL	< RL	< RL
Pyrene	129-00-0	mg/kg	0.2	< RL	< RL	< RL
Sum of, Anthracene, Fluoranthene, Phenanthrene, Pyrene	-	mg/kg	0.2	<RL	<RL	<RL
Sum of 15 PAHs	-	mg/kg	0.2	<RL	<RL	<RL
Category*	-	--	-	1	1	1
Conclusion				PASS	PASS	PASS

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Test No.				T004(*1)	T005	T006
Material No.				M006	M007	M008
Test Parameter	CAS NO	Unit	RL	Result	Result	Result
Anthracene	120-12-7	mg/kg	0.2	-	< RL	< RL
Benzo[a]anthracene	56-55-3	mg/kg	0.2	-	< RL	< RL
Benzo[a]pyrene(BaP)	50-32-8	mg/kg	0.2	-	< RL	< RL
Benzo[b]fluoranthene	205-99-2	mg/kg	0.2	-	< RL	< RL
Benzo[k]fluoranthene	207-08-9	mg/kg	0.2	-	< RL	< RL
Benzo[j]fluoranthene	205-82-3	mg/kg	0.2	-	< RL	< RL
Benzo[g,h,i]perylene	191-24-2	mg/kg	0.2	-	< RL	< RL
Benzo[e]pyrene	192-97-2	mg/kg	0.2	-	< RL	< RL
Chrysene	218-01-9	mg/kg	0.2	-	< RL	< RL
Dibenzo[a,h]anthracene	53-70-3	mg/kg	0.2	-	< RL	< RL
Fluoranthene	206-44-0	mg/kg	0.2	-	< RL	< RL
Indeno[1,2,3-cd]pyrene	193-39-5	mg/kg	0.2	-	< RL	< RL
Naphthalene	91-20-3	mg/kg	0.2	-	< RL	< RL
Phenanthrene	85-01-8	mg/kg	0.2	-	< RL	< RL
Pyrene	129-00-0	mg/kg	0.2	-	< RL	< RL
Sum of, Anthracene, Fluoranthene, Phenanthrene, Pyrene	-	mg/kg	0.2	-	<RL	<RL
Sum of 15 PAHs	-	mg/kg	0.2	-	<RL	<RL
Category*	-	--	-	1	1	1
Conclusion				PASS	PASS	PASS

Test No.				T007	T008	T009
Material No.				M009	M010	M011
Test Parameter	CAS NO	Unit	RL	Result	Result	Result
Anthracene	120-12-7	mg/kg	0.2	< RL	< RL	< RL
Benzo[a]anthracene	56-55-3	mg/kg	0.2	< RL	< RL	< RL
Benzo[a]pyrene(BaP)	50-32-8	mg/kg	0.2	< RL	< RL	< RL
Benzo[b]fluoranthene	205-99-2	mg/kg	0.2	< RL	< RL	< RL
Benzo[k]fluoranthene	207-08-9	mg/kg	0.2	< RL	< RL	< RL
Benzo[j]fluoranthene	205-82-3	mg/kg	0.2	< RL	< RL	< RL
Benzo[g,h,i]perylene	191-24-2	mg/kg	0.2	< RL	< RL	< RL
Benzo[e]pyrene	192-97-2	mg/kg	0.2	< RL	< RL	< RL
Chrysene	218-01-9	mg/kg	0.2	< RL	< RL	< RL
Dibenzo[a,h]anthracene	53-70-3	mg/kg	0.2	< RL	< RL	< RL
Fluoranthene	206-44-0	mg/kg	0.2	< RL	< RL	< RL
Indeno[1,2,3-cd]pyrene	193-39-5	mg/kg	0.2	< RL	< RL	< RL
Naphthalene	91-20-3	mg/kg	0.2	< RL	< RL	< RL
Phenanthrene	85-01-8	mg/kg	0.2	0.2	< RL	0.3
Pyrene	129-00-0	mg/kg	0.2	0.6	< RL	0.5
Sum of, Anthracene, Fluoranthene, Phenanthrene, Pyrene	-	mg/kg	0.2	0.8	<RL	0.8
Sum of 15 PAHs	-	mg/kg	0.2	0.8	<RL	0.8
Category*	-	--	-	1	1	1
Conclusion				PASS	PASS	PASS

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Test No.				T010(*1)	T011	T012
Material No.				M012	M025	M026
Test Parameter	CAS NO	Unit	RL	Result	Result	Result
Anthracene	120-12-7	mg/kg	0.2	-	< RL	< RL
Benzo[a]anthracene	56-55-3	mg/kg	0.2	-	< RL	< RL
Benzo[a]pyrene(BaP)	50-32-8	mg/kg	0.2	-	< RL	< RL
Benzo[b]fluoranthene	205-99-2	mg/kg	0.2	-	< RL	< RL
Benzo[k]fluoranthene	207-08-9	mg/kg	0.2	-	< RL	< RL
Benzo[j]fluoranthene	205-82-3	mg/kg	0.2	-	< RL	< RL
Benzo[g,h,i]perylene	191-24-2	mg/kg	0.2	-	< RL	< RL
Benzo[e]pyrene	192-97-2	mg/kg	0.2	-	< RL	< RL
Chrysene	218-01-9	mg/kg	0.2	-	< RL	< RL
Dibenzo[a,h]anthracene	53-70-3	mg/kg	0.2	-	< RL	< RL
Fluoranthene	206-44-0	mg/kg	0.2	-	< RL	< RL
Indeno[1,2,3-cd]pyrene	193-39-5	mg/kg	0.2	-	< RL	< RL
Naphthalene	91-20-3	mg/kg	0.2	-	< RL	< RL
Phenanthrene	85-01-8	mg/kg	0.2	-	< RL	< RL
Pyrene	129-00-0	mg/kg	0.2	-	< RL	< RL
Sum of, Anthracene, Fluoranthene, Phenanthrene, Pyrene	-	mg/kg	0.2	-	<RL	<RL
Sum of 15 PAHs	-	mg/kg	0.2	-	<RL	<RL
Category*	-	--	-	1	1	1
Conclusion				PASS	PASS	PASS

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Test No.				T013	T014	T015
Material No.				M027	M028	M029
Test Parameter	CAS NO	Unit	RL	Result	Result	Result
Anthracene	120-12-7	mg/kg	0.2	< RL	< RL	< RL
Benzo[a]anthracene	56-55-3	mg/kg	0.2	< RL	< RL	< RL
Benzo[a]pyrene(BaP)	50-32-8	mg/kg	0.2	< RL	< RL	< RL
Benzo[b]fluoranthene	205-99-2	mg/kg	0.2	< RL	< RL	< RL
Benzo[k]fluoranthene	207-08-9	mg/kg	0.2	< RL	< RL	< RL
Benzo[j]fluoranthene	205-82-3	mg/kg	0.2	< RL	< RL	< RL
Benzo[g,h,i]perylene	191-24-2	mg/kg	0.2	< RL	< RL	< RL
Benzo[e]pyrene	192-97-2	mg/kg	0.2	< RL	< RL	< RL
Chrysene	218-01-9	mg/kg	0.2	< RL	< RL	< RL
Dibenzo[a,h]anthracene	53-70-3	mg/kg	0.2	< RL	< RL	< RL
Fluoranthene	206-44-0	mg/kg	0.2	< RL	< RL	< RL
Indeno[1,2,3-cd]pyrene	193-39-5	mg/kg	0.2	< RL	< RL	< RL
Naphthalene	91-20-3	mg/kg	0.2	< RL	< RL	0.4
Phenanthrene	85-01-8	mg/kg	0.2	< RL	< RL	< RL
Pyrene	129-00-0	mg/kg	0.2	< RL	< RL	< RL
Sum of, Anthracene, Fluoranthene, Phenanthrene, Pyrene	-	mg/kg	0.2	<RL	<RL	<RL
Sum of 15 PAHs	-	mg/kg	0.2	<RL	<RL	0.4
Category*	-	--	-	1	1	1
Conclusion				PASS	PASS	PASS

Test No.				T016(*1)	T017	T018
Material No.				M030	M033	M035
Test Parameter	CAS NO	Unit	RL	Result	Result	Result
Anthracene	120-12-7	mg/kg	0.2	-	< RL	< RL
Benzo[a]anthracene	56-55-3	mg/kg	0.2	-	< RL	< RL
Benzo[a]pyrene(BaP)	50-32-8	mg/kg	0.2	-	< RL	< RL
Benzo[b]fluoranthene	205-99-2	mg/kg	0.2	-	< RL	< RL
Benzo[k]fluoranthene	207-08-9	mg/kg	0.2	-	< RL	< RL
Benzo[j]fluoranthene	205-82-3	mg/kg	0.2	-	< RL	< RL
Benzo[g,h,i]perylene	191-24-2	mg/kg	0.2	-	< RL	< RL
Benzo[e]pyrene	192-97-2	mg/kg	0.2	-	< RL	< RL
Chrysene	218-01-9	mg/kg	0.2	-	< RL	< RL
Dibenzo[a,h]anthracene	53-70-3	mg/kg	0.2	-	< RL	< RL
Fluoranthene	206-44-0	mg/kg	0.2	-	< RL	< RL
Indeno[1,2,3-cd]pyrene	193-39-5	mg/kg	0.2	-	< RL	< RL
Naphthalene	91-20-3	mg/kg	0.2	-	< RL	< RL
Phenanthrene	85-01-8	mg/kg	0.2	-	< RL	< RL
Pyrene	129-00-0	mg/kg	0.2	-	0.3	< RL
Sum of, Anthracene, Fluoranthene, Phenanthrene, Pyrene	-	mg/kg	0.2	-	0.3	<RL
Sum of 15 PAHs	-	mg/kg	0.2	-	0.3	<RL
Category*	-	--	-	1	1	1
Conclusion				PASS	PASS	PASS

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Test No.				T019	T020
Material No.				M047	M068
Test Parameter	CAS NO	Unit	RL	Result	Result
Anthracene	120-12-7	mg/kg	0.2	< RL	< RL
Benzo[a]anthracene	56-55-3	mg/kg	0.2	< RL	< RL
Benzo[a]pyrene(BaP)	50-32-8	mg/kg	0.2	< RL	< RL
Benzo[b]fluoranthene	205-99-2	mg/kg	0.2	< RL	< RL
Benzo[k]fluoranthene	207-08-9	mg/kg	0.2	< RL	< RL
Benzo[j]fluoranthene	205-82-3	mg/kg	0.2	< RL	< RL
Benzo[g,h,i]perylene	191-24-2	mg/kg	0.2	< RL	< RL
Benzo[e]pyrene	192-97-2	mg/kg	0.2	< RL	< RL
Chrysene	218-01-9	mg/kg	0.2	< RL	< RL
Dibenzo[a,h]anthracene	53-70-3	mg/kg	0.2	< RL	< RL
Fluoranthene	206-44-0	mg/kg	0.2	< RL	< RL
Indeno[1,2,3-cd]pyrene	193-39-5	mg/kg	0.2	< RL	< RL
Naphthalene	91-20-3	mg/kg	0.2	< RL	< RL
Phenanthrene	85-01-8	mg/kg	0.2	< RL	< RL
Pyrene	129-00-0	mg/kg	0.2	< RL	< RL
Sum of, Anthracene, Fluoranthene, Phenanthrene, Pyrene	-	mg/kg	0.2	<RL	<RL
Sum of 15 PAHs	-	mg/kg	0.2	<RL	<RL
Category*	-	--	-	1	1
Conclusion				PASS	PASS

Abbreviation: < = less than
 RL = Reporting Limit
 NA = Not Applicable
 mg/kg = milligram per kilogram

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Remark:

- * PAH maximum permissible limits requirement from the GS-Mark Approval published by the German Federal Institute for Occupational Safety and Health (BAuA)

Parameter	Unit	Category 1	Category 2		Category 3	
		Materials intended to be placed into the mouth, or Materials in toys or articles for children up to 3 years of age with intended long-term skin contact (more than 30 s)	Materials that do not fall into Category 1 with intended or foreseeable long-term skin contact (more than 30 s) or repeated short-term skin contact		Materials not covered by category 1 or 2, with foreseeable short term contact (shorter than 30 s)	
		-	Cat. 2a Use by children	Cat. 2b Other consumer products	Cat. 3a Use by children	Cat. 3b Other consumer products
Benzo[a]pyrene(BaP)	mg/kg	<0.2	<0.2	<0.5	<0.5	<1
Benzo[e]pyrene	mg/kg	<0.2	<0.2	<0.5	<0.5	<1
Benzo[a]anthracene	mg/kg	<0.2	<0.2	<0.5	<0.5	<1
Benzo[b]fluoranthene	mg/kg	<0.2	<0.2	<0.5	<0.5	<1
Benzo[j]fluoranthene	mg/kg	<0.2	<0.2	<0.5	<0.5	<1
Benzo[k]fluoranthene	mg/kg	<0.2	<0.2	<0.5	<0.5	<1
Chrysene	mg/kg	<0.2	<0.2	<0.5	<0.5	<1
Dibenzo[a,h]anthracene	mg/kg	<0.2	<0.2	<0.5	<0.5	<1
Benzo[g,h,i]perylene	mg/kg	<0.2	<0.2	<0.5	<0.5	<1
Indeno[1,2,3-cd]pyrene	mg/kg	<0.2	<0.2	<0.5	<0.5	<1
Naphthalene	mg/kg	<1	<2	<2	<10	<10
Sum of Anthracene Fluoranthene Phenanthrene Pyrene	mg/kg	<1	<5	<10	<20	<50
Sum of 15 PAHs	mg/kg	<1	<5	<10	<20	<50

Limit: Specific evaluation required according to type of foreseeable use.

The definition of "child" means persons before the age of 14 years. "Use by children" includes both active and passive direct contact by children.

- ** Single components with an amount of <0.2 mg/kg were not considered by the calculation of the sum. In the case of all 15 PAHs were not detected, the result is stated < RL

- *1 The weight of test portion was less than 50mg, so the test was not performed.

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15.Screening Test by XRF spectroscopy

Test Method: Cadmium, Lead, Mercury, Chromium, Bromine
 -- With reference to IEC 62321-3-1:2013

Test Result:

Material No.	Cd	Cr	Pb	Hg	Br
A001	BL	BL	BL	BL	BL
A002	BL	BL	BL	BL	BL
A003	BL	BL	BL	BL	BL
A004	BL	d.(*1)	BL	BL	n.a.
A005	BL	BL	BL	BL	BL
A006	BL	BL	BL	BL	BL
A007	BL	BL	BL	BL	BL
A008	BL	BL	BL	BL	BL
A009	BL	BL	BL	BL	BL
A010	BL	BL	BL	BL	BL
A011	BL	BL	BL	BL	BL
A012	BL	BL	BL	BL	n.a.
A013	BL	d.(*1)	BL	BL	n.a.
A014	BL	d.(*1)	BL	BL	n.a.
A015	BL	d.(*1)	BL	BL	n.a.
A016	BL	d.(*1)	BL	BL	n.a.
A017	BL	d.(*1)	BL	BL	n.a.
A018	BL	d.(*1)	BL	BL	n.a.
A019	BL	d.(*1)	BL	BL	n.a.
A020	BL	d.(*1)	BL	BL	n.a.
A021	BL	d.(*1)	BL	BL	n.a.
A022	BL	d.(*1)	BL	BL	n.a.
A023	BL	BL	BL	BL	n.a.
A024	BL	BL	BL	BL	BL
A025	BL	d.(*1)	BL	BL	n.a.
A026	BL	d.(*1)	BL	BL	n.a.
A027	BL	BL	BL	BL	BL
A028	BL	d.(*1)	BL	BL	n.a.
A029	BL	BL	BL	BL	n.a.
A030	BL	d.(*1)	BL	BL	n.a.
A031	BL	BL	BL	BL	BL
A032	BL	BL	BL	BL	BL
A033	BL	BL	BL	BL	BL
A034	BL	BL	BL	BL	BL
A035	BL	BL	BL	BL	BL
A036	BL	BL	BL	BL	BL
A037	BL	BL	BL	BL	BL

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A038	BL	BL	BL	BL	n.a.
A039	BL	BL	d.(*1)	BL	BL
A040	BL	BL	BL	BL	n.a.
A041	BL	BL	BL	BL	n.a.
A042	BL	BL	BL	BL	BL
A043	BL	BL	BL	BL	d.(*1)
A044	BL	BL	BL	BL	BL
A045	BL	BL	BL	BL	n.a.
A046	BL	BL	BL	BL	n.a.
A048	BL	BL	BL	BL	d.(*1)
A049	BL	d.(*1)	BL	BL	n.a.
A050	BL	d.(*1)	BL	BL	n.a.
A051	BL	BL	BL	BL	BL
A052	BL	BL	BL	BL	n.a.
A053	BL	d.(*1)	BL	BL	n.a.
A054	BL	BL	BL	BL	BL
A055	BL	BL	BL	BL	BL
A056	BL	BL	BL	BL	BL
A057	BL	BL	BL	BL	BL
A058	BL	BL	BL	BL	BL
A059	BL	BL	BL	BL	BL
A060	BL	BL	BL	BL	n.a.
A061	BL	BL	BL	BL	n.a.
A062	BL	BL	BL	BL	BL
A063	BL	d.(*1)	BL	BL	n.a.
A064	BL	BL	BL	BL	BL
A065	BL	d.(*1)	BL	BL	n.a.
A066	BL	d.(*1)	BL	BL	n.a.
A067	BL	BL	BL	BL	BL
A068	BL	BL	BL	BL	BL
A069	BL	BL	BL	BL	BL
A070	BL	BL	BL	BL	n.a.
A071	BL	BL	BL	BL	n.a.
A072	BL	d.(*1)	BL	BL	n.a.
A073	BL	BL	BL	BL	BL
A074	BL	d.(*1)	BL	BL	n.a.
A075	BL	d.(*1)	BL	BL	n.a.
A076	BL	d.(*1)	BL	BL	n.a.
A077	BL	d.(*1)	BL	BL	n.a.
A078	BL	BL	BL	BL	BL
A079	BL	BL	BL	BL	BL
A080	BL	BL	BL	BL	BL
A081	BL	BL	BL	BL	BL

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A082	BL	BL	BL	BL	BL
A083	BL	BL	BL	BL	BL
A084	BL	BL	BL	BL	BL
A085	BL	d.(*1)	BL	BL	n.a.

Abbreviation:	Pb	=	Lead
	Cd	=	Cadmium
	Hg	=	Mercury
	Cr	=	Chromium
	Br	=	Bromine
	n.a.	=	Not applicable
	BL	=	Below limit
	OL	=	Over limit
	d.	=	Detected

Remark:

- (*1) The screening result was detected in the inconclusive region or over limits, thus the further wet chemistry tests are suggested.
- (*2) Component(s)/ materials(s) with an area of less than 2 mm x 2 mm will not be selected for testing according to RoHS Directive 2011/65/EU due to technical reason.
 For the test sample does not have detail materials information provided by client, visually identical materials (e.g. wire insulation, solder points, etc.) will be considered as the same material.
 Solder points on a printing circuit board will be examined several times based on optical anomalies or discoloration of the solder point(s) unless the solder point(s) is obviously generated automatically during production.
 All other materials will be sampled and tested at one test point representatively.

XRF Screening limits for different matrices :

Material	Concentration (%)				
	Cd	Cr	Pb	Hg	Br
Polymeric	BL≤0.006<X<0.014≤ OL	BL≤0.064<X	BL≤0.067<X<0.133≤ OL	BL≤0.066<X< 0.134≤OL	BL≤0.029<X
Metallic	BL≤0.006<X<0.014≤ OL	BL≤0.064<X	BL≤0.067<X<0.133≤ OL	BL≤0.066<X< 0.134≤OL	n.a.
Composite materials	BL≤0.004<X<0.016≤ OL	BL≤0.044<X	BL≤0.047<X<0.153≤ OL	BL≤0.046<X< 0.154≤OL	BL≤0.024<X

Remark: The symbol "X" marks the region where further investigation is necessary.

	Cd	Cr(VI)	Pb	Hg	PBBs	PBDEs
Maximum permissible Limit (%)	0.01	0.1	0.1	0.1	0.1	0.1

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Cadmium, Lead, Chromium (VI), Mercury, Polybrominated biphenyls (PBB) and Polybrominated diphenyl ethers (PBDE)

Test Method: Total Cadmium, Lead, Mercury, Chromium
 - Ref. to IEC 62321-4:2013+AMD1:2017 and IEC 62321-5:2013

Chromium (VI)
 - For Metal material - Ref. to IEC 62321-7-1:2015
 - For Polymer, Electronic material or others materials – Ref. to IEC 62321-7-2:2017

PBBs, PBDEs – Ref. to IEC 62321-6:2015

Test Result:

	Cd	Cr(VI)	Pb	Hg	PBBs	PBDEs
Maximum Permissible Limit (%)	0.01	0.1	0.1	0.1	0.1	0.1

Material No.	(%)					
	Cd	Cr ^{VI}	Pb	Hg	PBBs	PBDEs
	RL (%)					
	0.001	0.001	0.001	0.001	0.01	0.01
A039	n.a.	n.a.	3.19(*2)	n.a.	n.a.	n.a.
A043	n.a.	n.a.	n.a.	n.a.	< RL	< RL
A048	n.a.	n.a.	n.a.	n.a.	< RL	< RL

Material No.	Chromium VI content for metal materials (µg/cm²) (*1) RL: 0.10 µg/cm²
A004	Negative
A013	Negative
A014	Negative
A015	Negative
A016	Negative
A017	Negative
A018	Negative
A019	Negative
A020	Negative
A021	Negative
A022	Negative
A025	Negative
A026	Negative
A028	Negative
A030	Negative
A049	Negative
A050	Negative

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A053	Negative
A063	Negative
A065	Negative
A066	Negative
A072	Negative
A074	Negative
A075	Negative
A076	Negative
A077	Negative
A085	Negative

Abbreviation:

Pb	= Lead
Cd	= Cadmium
Hg	= Mercury
Cr	= Chromium
Cr (VI)	= Chromium (VI)
PBBs	= Total Polybrominated Biphenyls
PBDEs	= Total Polybrominated Diphenyl Ethers
<	= Less than
RL	= Reporting Limit
n.a.	= Not Applicable
^	= The total Chromium have been determined
%	= Percentage

Abbreviation:

Pb	= Lead
Cd	= Cadmium
Hg	= Mercury
Cr	= Chromium
Cr (VI)	= Chromium (VI)
PBBs	= Total Polybrominated Biphenyls
PBDEs	= Total Polybrominated Diphenyl Ethers
<	= Less than
RL	= Reporting Limit
n.a.	= Not Applicable
^	= The total Chromium have been determined
%	= percentage

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Remark:

- (*1) The Chromium (VI) content of metal sample in surface layer have been confirmed with reference to IEC 62321-7-1:2015 Annex.

	Chromium (VI) concentration	Qualitative result
Negative	$<0.1\mu\text{g}/\text{cm}^2$	The sample is negative (-ve) for Cr(VI). The Cr(VI) concentration is below the limit of quantification. The coating is considered a non-Cr(VI) based coating
Inconclusive	$\geq 0.1\mu\text{g}/\text{cm}^2$ and $\leq 0.13\mu\text{g}/\text{cm}^2$	The result is considered to be inconclusive. Unavoidable coating variations may influence the determination. Recommendation: if additional samples are available, perform a total of 3 trials to increase sampling surface area. Use the averaged result of the 3 trails for the final determination.
Positive	$>0.13\mu\text{g}/\text{cm}^2$	The sample is positive (+ve) for Cr(VI). Concentration is above the limit of quantification and the statistical margin of error. The sample coating is considered to contain Cr(VI).

- (*2) According to Annex of 2011/65/EU and its amendments, "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." is exempt from the requirements of Article 4(1). This exemption applies to material No. A039.
- (*3) As requested by the applicant, only the appointed material(s) was (were) tested.

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BBP, DBP, DEHP, DIBP content

Test Method: ref. to IEC 62321-8:2017

Test Result:

	BBP	DBP	DEHP	DIBP
Maximum permissible Limit (%)	0.1	0.1	0.1	0.1

Test No.	Material No.	RL (%)			
		BBP	DBP	DEHP	DIBP
		RL (%)			
		0.005	0.005	0.005	0.005
T001	M002 + M003 + M004	< RL	< RL	< RL	< RL
T002	M008 + M009 + M010	< RL	< RL	< RL	< RL
T003	M011 + M025 + M026	< RL	< RL	< RL	< RL
T004	M027 + M028 + M029	< RL	< RL	< RL	< RL
T005	M033 + M052 + M053	< RL	< RL	< RL	< RL
T007	M054 + M055 + M056	< RL	< RL	< RL	< RL
T008	M057 + M058 + M059	< RL	< RL	< RL	< RL
T009	M060 + M061 + M062	< RL	< RL	< RL	< RL
T010	M063 + M064 + M065	< RL	< RL	< RL	< RL
T011	M066 + M067	< RL	< RL	< RL	< RL
T012	M068 + M035 + M040	< RL	< RL	< RL	< RL

Abbreviation: BBP= Benzylbutyl phthalate
 DBP= Dibutyl phthalate
 DEHP= Bis(2-ethylhexyl) phthalate
 DIBP= Diisobutyl phthalate
 < = less than
 RL = Reporting Limit
 %= percentage

Remark:

- * The maximum permissible limit is required from the amendment (EU) 2015/863 of RoHS Directive 2011/65/EU.

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16.Screening Test by XRF spectroscopy

Test Method: Cadmium, Lead, Mercury, Chromium, Bromine
 -- With reference to IEC 62321-3-1:2013

Test Result:

Material No.	Cd	Cr	Pb	Hg	Br
A001	BL	BL	BL	BL	BL
A002	BL	BL	BL	BL	BL
A003	BL	BL	BL	BL	BL
A004	BL	d.(*1)	BL	BL	n.a.
A005	BL	BL	BL	BL	BL
A006	BL	BL	BL	BL	BL
A007	BL	BL	BL	BL	BL
A008	BL	BL	BL	BL	BL
A009	BL	BL	BL	BL	BL
A010	BL	BL	BL	BL	BL
A011	BL	BL	BL	BL	BL
A012	BL	BL	BL	BL	n.a.
A013	BL	d.(*1)	BL	BL	n.a.
A014	BL	d.(*1)	BL	BL	n.a.
A015	BL	d.(*1)	BL	BL	n.a.
A016	BL	d.(*1)	BL	BL	n.a.
A017	BL	d.(*1)	BL	BL	n.a.
A018	BL	d.(*1)	BL	BL	n.a.
A019	BL	d.(*1)	BL	BL	n.a.
A020	BL	d.(*1)	BL	BL	n.a.
A021	BL	d.(*1)	BL	BL	n.a.
A022	BL	d.(*1)	BL	BL	n.a.
A023	BL	BL	BL	BL	n.a.
A024	BL	BL	BL	BL	BL
A025	BL	d.(*1)	BL	BL	n.a.
A026	BL	d.(*1)	BL	BL	n.a.
A027	BL	BL	BL	BL	BL
A028	BL	d.(*1)	BL	BL	n.a.
A029	BL	BL	BL	BL	n.a.
A030	BL	d.(*1)	BL	BL	n.a.

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A031	BL	BL	BL	BL	BL
A032	BL	BL	BL	BL	BL
A033	BL	BL	BL	BL	BL
A034	BL	BL	BL	BL	BL
A035	BL	BL	BL	BL	BL
A036	BL	BL	BL	BL	BL
A037	BL	BL	BL	BL	BL
A038	BL	BL	BL	BL	n.a.
A039	BL	BL	d.(*1)	BL	BL
A040	BL	BL	BL	BL	n.a.
A041	BL	BL	BL	BL	n.a.
A042	BL	BL	BL	BL	BL
A043	BL	BL	BL	BL	d.(*1)
A044	BL	BL	BL	BL	BL
A045	BL	BL	BL	BL	n.a.
A046	BL	BL	BL	BL	n.a.
A048	BL	BL	BL	BL	d.(*1)
A049	BL	d.(*1)	BL	BL	n.a.
A050	BL	d.(*1)	BL	BL	n.a.
A051	BL	BL	BL	BL	BL
A052	BL	BL	BL	BL	n.a.
A053	BL	d.(*1)	BL	BL	n.a.
A054	BL	BL	BL	BL	BL
A055	BL	BL	BL	BL	BL
A056	BL	BL	BL	BL	BL
A057	BL	BL	BL	BL	BL
A058	BL	BL	BL	BL	BL
A059	BL	BL	BL	BL	BL
A060	BL	BL	BL	BL	n.a.
A061	BL	BL	BL	BL	n.a.
A062	BL	BL	BL	BL	BL
A063	BL	d.(*1)	BL	BL	n.a.
A064	BL	BL	BL	BL	BL
A065	BL	d.(*1)	BL	BL	n.a.
A066	BL	d.(*1)	BL	BL	n.a.
A067	BL	BL	BL	BL	BL

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A068	BL	BL	BL	BL	BL
A069	BL	BL	BL	BL	BL
A070	BL	BL	BL	BL	n.a.
A071	BL	BL	BL	BL	n.a.
A072	BL	d.(*1)	BL	BL	n.a.
A073	BL	BL	BL	BL	BL
A074	BL	d.(*1)	BL	BL	n.a.
A075	BL	d.(*1)	BL	BL	n.a.
A076	BL	d.(*1)	BL	BL	n.a.
A077	BL	d.(*1)	BL	BL	n.a.
A078	BL	BL	BL	BL	BL
A079	BL	BL	BL	BL	BL
A080	BL	BL	BL	BL	BL
A081	BL	BL	BL	BL	BL
A082	BL	BL	BL	BL	BL
A083	BL	BL	BL	BL	BL
A084	BL	BL	BL	BL	BL
A085	BL	d.(*1)	BL	BL	n.a.

Abbreviation: Pb = Lead
 Cd = Cadmium
 Hg = Mercury
 Cr = Chromium
 Br = Bromine
 n.a. = not applicable
 BL= Below limit
 OL= Over limit
 d.= detected

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Remark:

- (*1) The screening result was detected in the inconclusive region or over limits, thus the further wet chemistry tests are suggested.
- (*2) Component(s)/ materials(s) with an area of less than 2 mm x 2 mm will not be selected for testing according to RoHS Directive 2011/65/EU due to technical reason.
 For the test sample does not have detail materials information provided by client, visually identical materials (e.g. wire insulation, solder points, etc.) will be considered as the same material.
 Solder points on a printing circuit board will be examined several times based on optical anomalies or discoloration of the solder point(s) unless the solder point(s) is obviously generated automatically during production.
 All other materials will be sampled and tested at one test point representatively.

XRF Screening limits for different matrices :

Materials	Concentration (%)				
	Cd	Cr	Pb	Hg	Br
Polymeric	BL≤0.006<X<0.014≤ OL	BL≤0.064<X	BL≤0.067<X<0.133≤ OL	BL≤0.066<X<0.134≤ OL	BL≤0.029<X
Metallic	BL≤0.006<X<0.014≤ OL	BL≤0.064<X	BL≤0.067<X<0.133≤ OL	BL≤0.066<X<0.134≤ OL	n.a.
Composite materials	BL≤0.004<X<0.016≤ OL	BL≤0.044<X	BL≤0.047<X<0.153≤ OL	BL≤0.046<X<0.154≤ OL	BL≤0.024<X

Remark: The symbol "X" marks the region where further investigation is necessary.

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Cadmium, Lead, Chromium (VI), Mercury, Polybrominated biphenyls (PBB) and Polybrominated diphenyl ethers (PBDE)

Test Method: Total Cadmium, Lead, Mercury, Chromium
 - Ref. to IEC 62321-4:2013+AMD1:2017 and IEC 62321-5:2013

Chromium (VI)
 - For Metal material - Ref. to IEC 62321-7-1:2015
 - For Polymer, Electronic material or others materials – # Ref. to IEC 62321-7-2:2017

PBBs, PBDEs - Ref. to IEC 62321-6:2015

Test Result:

	Cd	Cr(VI)	Pb	Hg	PBBs	PBDEs
Maximum Permissible Limit (%)	0.01	0.1	0.1	0.1	0.1	0.1

Material No.	(%)					
	Cd	Cr^{VI}	Pb	Hg	PBBs	PBDEs
	RL (%)					
	0.001	0.001	0.001	0.001	0.01	0.01
A039	n.a.	n.a.	3.19(*2)	n.a.	n.a.	n.a.
A043	n.a.	n.a.	n.a.	n.a.	< RL	< RL
A048	n.a.	n.a.	n.a.	n.a.	< RL	< RL

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Material No.	Hexavalent Chromium Content ($\mu\text{g}/\text{cm}^2$) (*1) RL: 0.10 $\mu\text{g}/\text{cm}^2$
A004	Negative
A013	Negative
A014	Negative
A015	Negative
A016	Negative
A017	Negative
A018	Negative
A019	Negative
A020	Negative
A021	Negative
A022	Negative
A025	Negative
A026	Negative
A028	Negative
A030	Negative
A049	Negative
A050	Negative
A053	Negative
A063	Negative
A065	Negative
A066	Negative
A072	Negative
A074	Negative
A075	Negative
A076	Negative
A077	Negative
A085	Negative

Abbreviation:	Pb	= Lead
	Cd	= Cadmium
	Hg	= Mercury
	Cr	= Chromium
	Cr (VI)	= Chromium (VI)
	PBBs	= Total Polybrominated Biphenyls
	PBDEs	= Total Polybrominated Diphenyl Ethers
	<	= less than
	RL	= Reporting Limit
	n.a.	= Not Applicable
	^	= The total Chromium have been determined
	%	= Percentage

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Remark:

- (*1) The Chromium (VI) content in metal sample in surface layer have been confirmed with reference to IEC 62321-7-1:2015 Annex.

	Chromium (VI) concentration	Qualitative result
Negative	$<0.1\mu\text{g}/\text{cm}^2$	The sample is negative (-ve) for Cr(VI). The Cr(VI) concentration is below the limit of quantification. The coating is considered a non-Cr(VI) based coating
Inconclusive	$\geq 0.1\mu\text{g}/\text{cm}^2$ and $\leq 0.13\mu\text{g}/\text{cm}^2$	The result is considered to be inconclusive. Unavoidable coating variations may influence the determination. Recommendation: if additional samples are available, perform a total of 3 trials to increase sampling surface area. Use the averaged result of the 3 trails for the final determination.
Positive	$>0.13\mu\text{g}/\text{cm}^2$	The sample is positive (+ve) for Cr(VI). Concentration is above the limit of quantification and the statistical margin of error. The sample coating is considered to contain Cr(VI).

- (*2) According to Annex of 2011/65/EU and its amendments, "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." is exempt from the requirements of Article 4(1). This exemption applies to material No. A039.
- (*3) As requested by the applicant, only the appointed material(s) was (were) tested.

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BBP, DBP, DEHP, DIBP content

Test Method: Ref. to IEC 62321-8:2017

Test Result:

	BBP	DBP	DEHP	DIBP
Maximum permissible Limit (%)	0.1	0.1	0.1	0.1

Test No.	Material No.	RL (%)			
		BBP	DBP	DEHP	DIBP
		RL (%)			
		0.005	0.005	0.005	0.005
T001	M002 + M003 + M004	< RL	< RL	< RL	< RL
T002	M008 + M009 + M010	< RL	< RL	< RL	< RL
T003	M011 + M025 + M026	< RL	< RL	< RL	< RL
T004	M027 + M028 + M029	< RL	< RL	< RL	< RL
T005	M033 + M052 + M053	< RL	< RL	< RL	< RL
T006	M054 + M055 + M056	< RL	< RL	< RL	< RL
T007	M057 + M058 + M059	< RL	< RL	< RL	< RL
T008	M060 + M061 + M062	< RL	< RL	< RL	< RL
T009	M063 + M064 + M065	< RL	< RL	< RL	< RL
T010	M066 + M067	< RL	< RL	< RL	< RL
T011	M068 + M035 + M040	< RL	< RL	< RL	< RL

Abbreviation:
 BBP= Benzylbutyl phthalate
 DBP= Dibutyl phthalate
 DEHP= Bis(2-ethylhexyl) phthalate
 DIBP= Diisobutyl phthalate
 < = less than
 RL = Reporting Limit
 %= percentage

Remark:

- * The maximum permissible limit is required from the amendment (EU) 2015/863 of RoHS Directive 2011/65/EU.

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Sample Photos



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Sample Photos



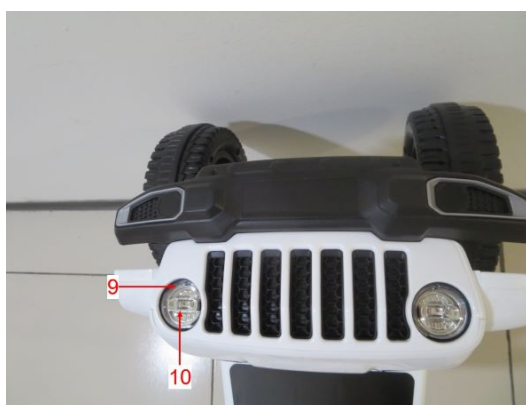
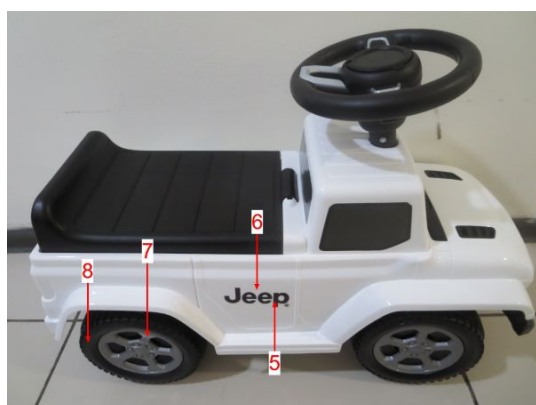
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Sample Photos



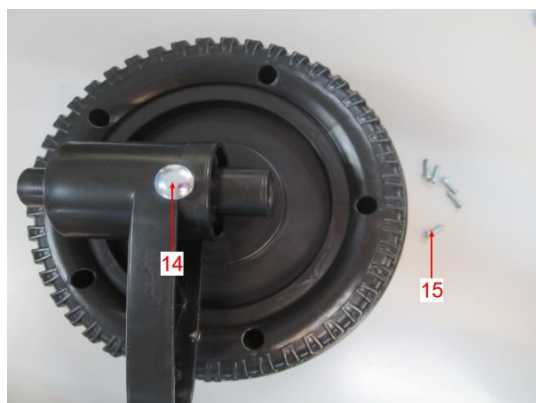
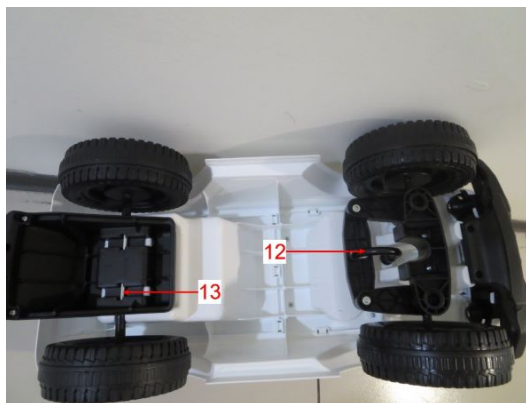
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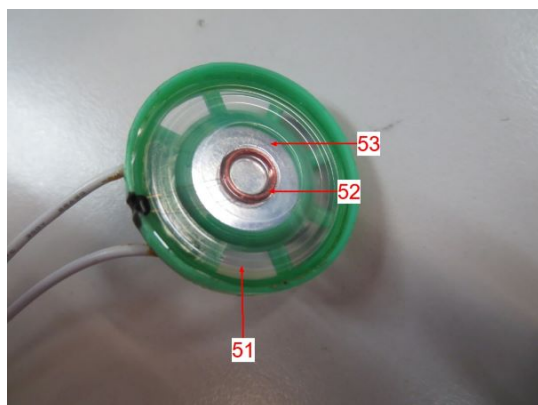
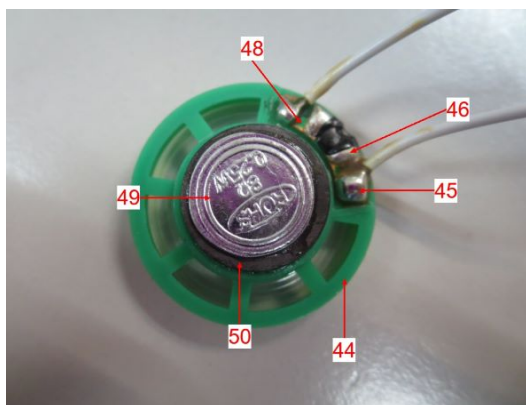
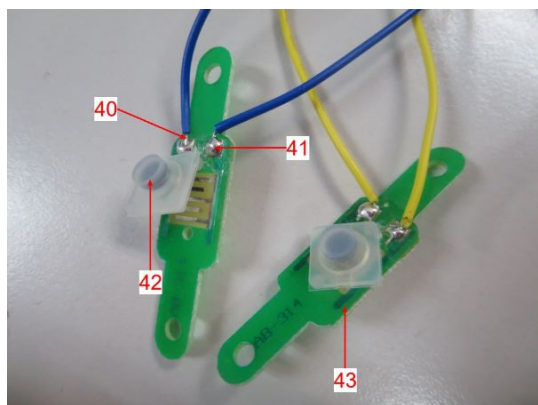
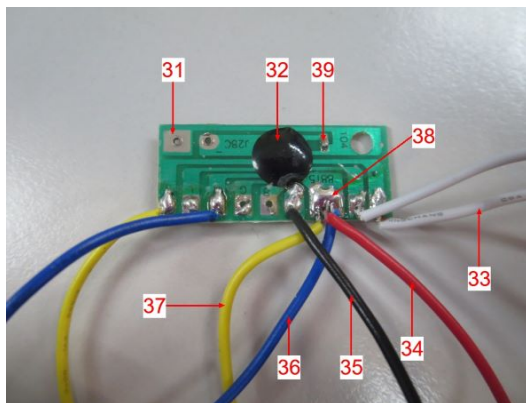
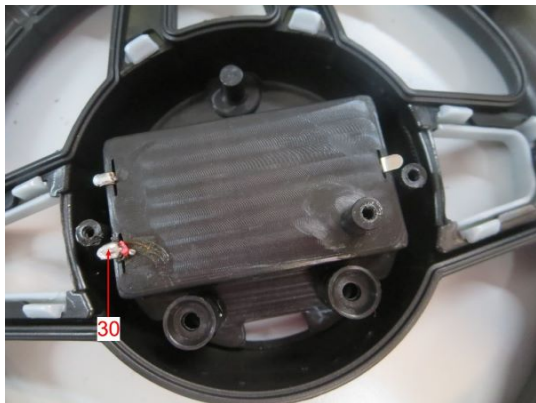
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Sample Photos



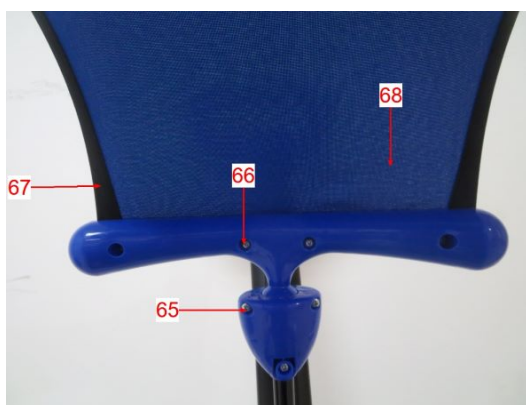
Sample Photos



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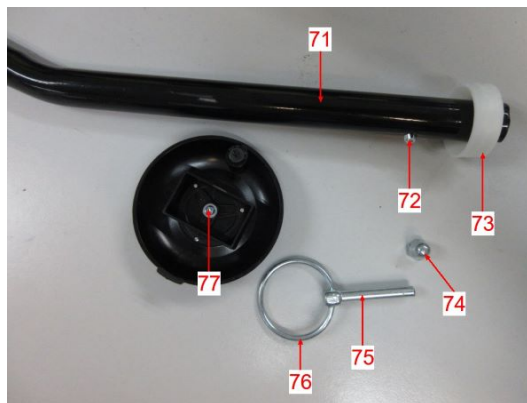
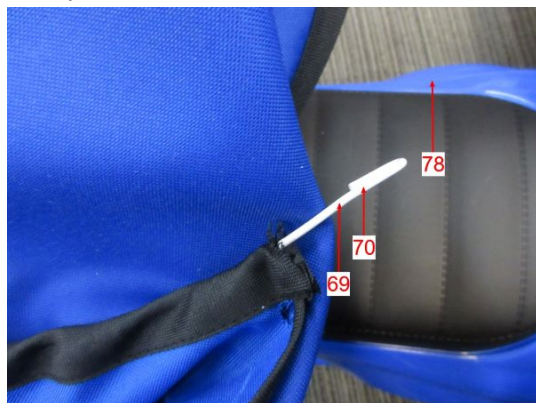
Sample Photos



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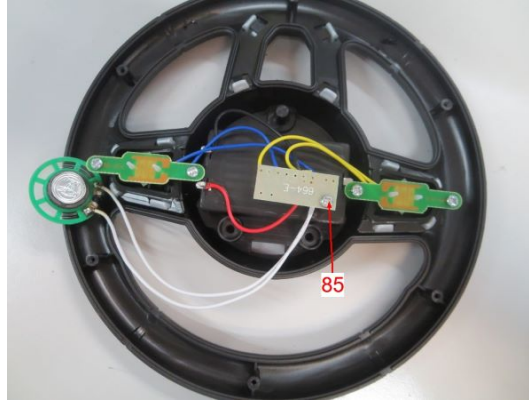
Sample Photos



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Sample Photos



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