



**Test Report**

Number: SZHH01092038

Applicant: DONGGUAN LIYANG TOYS LTD.  
Floor 3, Building 2, Daxingwei Industry  
Xianxi, Wusha, Changan Town,  
Dongguan City, Guangdong Province

Date: Oct 22, 2016

Attn: 陈效

Sample Description:

Six (6) pieces of submitted sample said to be :

- Item Name : **Noje.**
- Item No. : **BL-76220,BL-76221,BL-76222.**
- Reference No. : **BL-76121,BL-76122,BL-76120,BL-76330,BL-76331,BL-76332.**
- Applicant Specified Age : **Adult.**
- Grading for Testing
- Date Sample Received : **Sep 13, 2016.**



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Tests conducted:

As requested by the applicant, refer to attached page(s) for details.

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To be continued

Authorized by:  
For Intertek Testing Services  
Shenzhen Ltd.




Ben N.L. Lin  
General Manager



**Intertek Testing Services Shenzhen Ltd.- Hardlines**

深圳天祥质量技术服务有限公司-轻工产品事业部

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**Test Report**

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Conclusion:

<u>Tested Sample</u>	<u>Standard</u>	<u>Result</u>
Tested components of submitted samples	Consent Judgment No. RG- 356892 for total Lead content based on the California Proposition 65	Se test conducted
Submitted samples	EU REACH Regulation No 1907/2006 Article 33(1) Obligation to provide information of safe use (see REACH requirement in report for details)	Meet requirement
Tested components of submitted samples	Screening by XRF spectroscopy and chemical confirmation test for RoHS Directive 2011/65/EU	Pass

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Tests Conducted

1 Total Lead Content

Acid digestion method was used and total Lead content was determined by Inductively Coupled Argon Plasma Spectrometry.

Element	Result (mg/kg)	Reporting Limit (mg/kg)	Limit (mg/kg)
	Tested Component		
	(13)		
Lead (Pb)	23200^	10	100

Element	Result (mg/kg) <sup>θ</sup>	Reporting Limit (mg/kg)	Limit (mg/kg)
	Tested Component		
	(1),(2+3+4)		
Lead (Pb)	ND	10	90

Element	Result (mg/kg)	Reporting Limit (mg/kg)	Limit (mg/kg)
	Tested Component		
	(5+6+7),(8+9),(10+11),(12)		
Lead (Pb)	ND	10	100

The above limit was referred to the Consent Judgment No. RG- 356892 settled by superior court of the State of California for the county of Alameda, for toys based on the California Proposition 65.

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ND = Not detected

θ = Single result for each test component/group

^ = As claimed by the declaration submitted by the client, the Lead content of the component is coming from copper alloy only. According to 16 CFR Part 1500.88 exemptions from lead limits under section 101 of the consumer product safety improvement act for certain electronic device, lead as an alloying element in copper alloy can be containing up to 4% (40,000ppm) lead by weight.

Tested components:

- (1) White coating on plastic (button)
- (2) Pearl pink coating on plastic (body of pink style)
- (3) Pearl purple coating on plastic (body of purple style)
- (4) Pearl aqua green coating on plastic (body of aqua green style)
- (5) Pink plastic excluding coatings (body of pink style)
- (6) Purple plastic excluding coatings (body of purple style)
- (7) Aqua green plastic excluding coatings (body of aqua green style)
- (8) White plastic (handle of all styles)
- (9) White plastic (head and joint of all styles)
- (10) Translucent plastic (button of all styles)
- (11) White plastic (socket of all styles)
- (12) Silver color metal (socket of all styles)
- (13) Gold color metal (socket of all styles)

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Tests Conducted

2 (I) SVHC Testing Results

By Inductively Coupled Plasma Optical Emission Spectrometry, Ion Chromatography, UV-Visible Spectrophotometry, Gas Chromatographic - Mass Spectrometry, Liquid Chromatographic - Mass Spectrometry and High Performance Liquid Chromatography analysis.

Chemical Substance	Results % (w/w) $\theta$	
	Tested groups	Whole product
	(A1)to(A4),(B1)to(B4),(C1)to(C4),(D1)to(D4)	(A)to(D)
All tested SVHCs in Chemical list	ND	ND

SVHC = Substance of very high concern

ND = Not detected

Reporting limit = 0.050%

$\Delta$  = Determination was based on elemental analysis. The content was calculated based on assumption of worst-case.

$\theta$  = Single result for each test component/group

SVHC Chemical list:

	Chemical Substance	CAS No.		Chemical Substance	CAS No.
1	Cobalt Dichloride $\Delta$	7646-79-9	85	Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)	1163-19-5
2	Diarsenic Pentaoxide $\Delta$	1303-28-2	86	Pentacosaflluorotridecanoic acid	72629-94-8
3	Diarsenic Trioxide $\Delta$	1327-53-3	87	Tricosaflluorododecanoic acid	307-55-1
4	Lead Hydrogen Arsenate $\Delta$	7784-40-9	88	Henicosaflluoroundecanoic acid	2058-94-8
5	Triethyl Arsenate $\Delta$	15606-95-8	89	Heptacosaflluorotetradecanoic acid	376-06-7

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Tests Conducted

	Chemical Substance	CAS No.		Chemical Substance	CAS No.
6	Sodium Dichromate Δ	7789-12-0, 10588-01-9	90	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3
7	Bis (Tributyltin) Oxide (TBTO) Δ	56-35-9	91	Cyclohexane-1,2-dicarboxylic anhydride [1]  cis-cyclohexane-1,2-dicarboxylic anhydride [2]  trans-cyclohexane-1,2-dicarboxylic anhydride [3]  [The individual cis- [2] and trans- [3] isomer substances and all possible combinations of the cis- and trans-isomers [1] are covered by this entry].	85-42-7  13149-00-3  14166-21-3
8	Anthracene	120-12-7	92	Hexahydromethylphthalic anhydride [1],  Hexahydro-4-methylphthalic anhydride [2],  Hexahydro-1-methylphthalic anhydride [3],  Hexahydro-3-methylphthalic anhydride [4]  [The individual isomers [2], [3] and [4] (including their cis- and trans-stereo isomeric forms) and all possible combinations of the isomers [1] are covered by this entry]	25550-51-0 19438-60-9 48122-14-1 57110-29-9

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Tests Conducted

	Chemical Substance	CAS No.		Chemical Substance	CAS No.
9	4,4'-Diaminodiphenylmethane (MDA)	101-77-9	93	4-Nonylphenol, branched and linear  [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]	--
10	Hexabromocyclodecane (HBCDD) and All Major Diastereoisomers Identified ( $\alpha$ -HBCDD, $\beta$ -HBCDD, $\gamma$ -HBCDD)	25637-99-4 and 3194-55-6 (134237-50-6, 134237-51-7, 134237-52-8)	94	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated  [covering well-defined substances and UVCB substances, polymers and homologues]	--
11	5-Tert-Butyl-2,4,6-Trinitro-m-Xylene (Musk Xylene)	81-15-2	95	Methoxyacetic acid	625-45-6
12	Bis (2-Ethylhexyl) Phthalate (DEHP)	117-81-7	96	N,N-dimethylformamide	68-12-2
13	Dibutyl Phthalate (DBP)	84-74-2	97	Dibutyltin dichloride (DBTC) $\Delta$	683-18-1
14	Benzyl Butyl Phthalate (BBP)	85-68-7	98	Lead monoxide (Lead oxide) $\Delta$	1317-36-8
15	Short Chain Chlorinated Paraffins (C <sub>10-13</sub> )	85535-84-8	99	Orange lead (Lead tetroxide) $\Delta$	1314-41-6
16	Lead Chromate $\Delta$	7758-97-6	100	Lead bis(tetrafluoroborate) $\Delta$	13814-96-5

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Tests Conducted

	Chemical Substance	CAS No.		Chemical Substance	CAS No.
17	Lead Chromate Molybdate Sulphate Red (C.I. Pigment Red 104) Δ	12656-85-8	101	Trilead bis(carbonate)dihydroxide Δ	1319-46-6
18	Lead Sulfochromate Yellow (C.I. Pigment Yellow 34) Δ	1344-37-2	102	Lead titanium trioxideΔ	12060-00-3
19	Tris (2-Chloroethyl) Phosphate	115-96-8	103	Lead titanium zirconium oxideΔ	12626-81-2
20	2,4-Dinitrotoluene	121-14-2	104	Silicic acid, lead salt Δ	11120-22-2
21	Diisobutyl Phthalate (DIBP)	84-69-5	105	Silicic acid (H <sub>2</sub> Si <sub>2</sub> O <sub>5</sub> ), barium salt (1:1), lead-dopedΔ  [with lead (Pb) content above the applicable generic concentration limit for 'toxicity for reproduction' Repr. 1A (CLP) or category 1 (DSD); the substance is a member of the group entry of lead compounds, with index number 082-001-00-6 in Regulation (EC) No 1272/2008]	68784-75-8
22	Coal Tar Pitch, High Temperature	65996-93-2	106	1-bromopropane (n-propyl bromide)	106-94-5
23	Anthracene Oil	90640-80-5	107	Methyloxirane (Propylene oxide)	75-56-9
24	Anthracene Oil, Anthracene Paste, Distr. Lights	91995-17-4	108	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0
25	Anthracene Oil, Anthracene Paste, Anthracene Fraction	91995-15-2	109	Diisopentylphthalate (DIPP)	605-50-5

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Tests Conducted

	Chemical Substance	CAS No.		Chemical Substance	CAS No.
26	Anthracene Oil, Anthracene-low	90640-82-7	110	N-pentyl-isopentylphthalate	776297-69-9
27	Anthracene Oil, Anthracene Paste	90640-81-6	111	1,2-diethoxyethane	629-14-1
28	Acrylamide	79-06-1	112	Acetic acid, lead salt, basic $\Delta$	51404-69-4
29	Boric Acid $\Delta$	10043-35-3, 11113-50-1	113	Lead oxide sulfate $\Delta$	12036-76-9
30	Disodium Tetraborate, Anhydrous $\Delta$	1330-43-4, 12179-04-3, 1303-96-4	114	[Phthalato(2-)]dioxotrilead $\Delta$	69011-06-9
31	Tetraboron Disodium Heptaoxide, Hydrate $\Delta$	12267-73-1	115	Dioxobis(stearato)trilead $\Delta$	12578-12-0
32	Sodium Chromate $\Delta$	7775-11-3	116	Fatty acids, C16-18, lead salts $\Delta$	91031-62-8
33	Potassium Chromate $\Delta$	7789-00-6	117	Lead cyanamidate $\Delta$	20837-86-9
34	Ammonium Dichromate $\Delta$	7789-09-5	118	Lead dinitrate $\Delta$	10099-74-8
35	Potassium Dichromate $\Delta$	7778-50-9	119	Pentalead tetraoxide sulphate $\Delta$	12065-90-6
36	Trichloroethylene	79-01-6	120	Pyrochlore, antimony lead yellow $\Delta$	8012-00-8
37	2-Methoxyethanol	109-86-4	121	Sulfurous acid, lead salt, dibasic $\Delta$	62229-08-7
38	2-Ethoxyethanol	110-80-5	122	Tetraethyllead $\Delta$	78-00-2
39	Cobalt Sulphate $\Delta$	10124-43-3	123	Tetralead trioxide sulphate $\Delta$	12202-17-4
40	Cobalt Dinitrate $\Delta$	10141-05-6	124	Trilead dioxide phosphonate $\Delta$	12141-20-7
41	Cobalt Carbonate $\Delta$	513-79-1	125	Furan	110-00-9
42	Cobalt Diacetate $\Delta$	71-48-7	126	Diethyl sulphate	64-67-5
43	Chromium Trioxide $\Delta$	1333-82-0	127	Dimethyl sulphate	77-78-1

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Tests Conducted

	Chemical Substance	CAS No.		Chemical Substance	CAS No.
44	Chromic Acid Δ Dichromic Acid Δ Oligomers of Chromic Acid and Dichromic Acid Δ	7738-94-5 13530-68-2 --	128	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2
45	Strontium ChromateΔ	7789-06-2	129	Dinoseb (6-sec-butyl-2,4-dinitrophenol)	88-85-7
46	2-ethoxyethyl acetate (2-EEA)	111-15-9	130	4,4'-methylenedi-o-toluidine	838-88-0
47	1,2-Benzenedicarboxylic acid, di-C <sub>7-11</sub> -branched and linear alkyl esters (DHNUP)	68515-42-4	131	4,4'-oxydianiline and its salts	101-80-4
48	Hydrazine	7803-57-8 302-01-2	132	4-aminoazobenzene	60-09-3
49	1-methyl-2-pyrrolidone	872-50-4	133	4-methyl-m-phenylenediamine (toluene-2,4-diamine)	95-80-7
50	1,2,3-trichloropropane	96-18-4	134	6-methoxy-m-toluidine (p-cresidine)	120-71-8
51	1,2-Benzenedicarboxylic acid, di-C <sub>6-8</sub> -branched alkyl esters, C <sub>7</sub> -rich (DIHP)	71888-89-6	135	Biphenyl-4-ylamine	92-67-1
52	Lead dipicrateΔ	6477-64-1	136	o-aminoazotoluene [(4-o-tolylazo-o-toluidine)]	97-56-3
53	Lead styphnateΔ	15245-44-0	137	o-toluidine	95-53-4
54	Lead azide; Lead diazideΔ	13424-46-9	138	N-methylacetamide	79-16-3
55	Phenolphthalein	77-09-8	139	CadmiumΔ	7440-43-9
56	2,2'-dichloro-4,4'-methylenedianiline (MOCA)	101-14-4	140	Cadmium oxideΔ	1306-19-0
57	N,N-dimethylacetamide (DMAC)	127-19-5	141	Dipentyl phthalate (DPP)	131-18-0

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Tests Conducted

	Chemical Substance	CAS No.		Chemical Substance	CAS No.
58	Trilead diarsenate $\Delta$	3687-31-8	142	4-Nonylphenol, branched and linear, ethoxylated [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering UVCB- and well-defined substances, polymers and homologues, which include any of the individual isomers and/or combinations thereof]	--
59	Calcium arsenate $\Delta$	7778-44-1	143	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1
60	Arsenic acid $\Delta$	7778-39-4	144	Pentadecafluorooctanoic acid (PFOA)	335-67-1
61	Bis(2-methoxyethyl) ether	111-96-6	145	Cadmium sulphide $\Delta$	1306-23-6
62	1,2-Dichloroethane	107-06-2	146	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0
63	4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol)	140-66-9	147	Disodium 4-amino-3-[[4'-[[2,4-diaminophenyl]azo][1,1'-biphenyl]-4-yl]azo] -5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7

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Tests Conducted

	Chemical Substance	CAS No.		Chemical Substance	CAS No.
64	2-Methoxyaniline; o-Anisidine	90-04-0	148	Dihexyl phthalate (DnHP)	84-75-3
65	Bis(2-methoxyethyl) phthalate (DMEP)	117-82-8	149	Imidazolidine-2-thione (2-imidazoline-2-thiol)	96-45-7
66	Formaldehyde, oligomeric reaction products with aniline (technical MDA)	25214-70-4	150	Lead di(acetate) Δ	301-04-2
67	Pentazinc chromate octahydroxideΔ	49663-84-5	151	Trixylyl phosphate	25155-23-1
68	Potassium hydroxyoctaoxidizincate di-chromateΔ	11103-86-9	152	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear (Diisohexyl phthalate(DIHP))	68515-50-4
69	Dichromium tris(chromate)Δ	24613-89-6	153	Cadmium chlorideΔ	10108-64-2
70	Aluminosilicate Refractory Ceramic Fibres Δ	(Index No. 650-017-00-8)	154	Sodium perborate; perboric acid, sodium saltΔ	--
71	Zirconia Aluminosilicate Refractory Ceramic Fibres Δ	(Index No. 650-017-00-8)	155	Sodium peroxometaborateΔ	7632-04-4
72	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	156	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1
73	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	157	2-benzotriazol-2-yl-4,6-ditert-butylphenol (UV-320)	3846-71-7

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Tests Conducted

	Chemical Substance	CAS No.		Chemical Substance	CAS No.
74	Diboron trioxide $\Delta$	1303-86-2	158	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1
75	Formamide	75-12-7	159	Cadmium fluoride $\Delta$	7790-79-6
76	Lead(II) bis(methanesulfonate) $\Delta$	17570-76-2	160	Cadmium sulphate $\Delta$	10124-36-4; 31119-53-6
77	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9	161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)	15571-58-1; 27107-89-7
78	$\beta$ -TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with $\geq$ 0.3% of dihexyl phthalate (EC No. 201-559-5)	68515-51-5 68648-93-1

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Tests Conducted

	Chemical Substance	CAS No.		Chemical Substance	CAS No.
79	4,4'-bis(dimethylamino) benzophenone (Michler's ketone)	90-94-8	163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	117933-89-8
80	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	164	Nitrobenzene	98-95-3
81	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	548-62-9	165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1
82	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	2580-56-5	166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3

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Tests Conducted

	Chemical Substance	CAS No.		Chemical Substance	CAS No.
83	α,α-Bis[4-(dimethylamino)phenyl]-4-(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	6786-83-0	167	1,3-propanesultone	1120-71-4
84	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	561-41-1	168	Perfluorononan-1-oi-c-acid and its sodium and ammonium salts	375-95-1 21049-39-8 4149-60-4
--	--	--	169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8

(II) Tested groups:

- (A1)&(B1)&(C1)&(D1): Plastic materials
- (A2)&(B2)&(C2)&(D2): Magnet materials
- (A3)&(B3)&(C3)&(D3): Battery materials
- (A4)&(B4)&(C4)&(D4): Metal materials

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**Test Report**

Number: SZHH01092038

Tests Conducted

Notes:

Substances of very high concern (SVHC) are classified as:

Carcinogenic, mutagenic or toxic to reproduction category 1 (proven on humans) and category 2 (proven on animals)

Persistent, bioaccumulative and toxic chemicals (PBT)

Very persistent and very bioaccumulative chemicals (vPvB)

Other similar substances such as endocrine disrupters

If the imported or manufactured volume of each individual SVHC in article is more than 0.1% (w/w) and if it exceeds 1 tonne per year across all product ranges, then importer or manufacturer require notification to the European Chemical Agency (ECHA). For substances included in the Candidate List on or after 1 December 2010, the notifications have to be submitted no later than 6 months after the inclusion. The following information has to be submitted for notification:

Identification of the registrant and the substance

Classification and labelling of the substance

Description of use of the substance and the article

Registration number, if available

Tonnage range

REACH requirement:

As per article 33(1) of regulation (EC) No. 1907/2006 (REACH), recipients of product must be provided with information of safe use if any of the tested substances (SVHC) exceeded 0.1% (w/w). A product meets the requirement of article 33(1) by default when no SVHC exceeds 0.1% (w/w).

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**Intertek Testing Services Shenzhen Ltd.- Hardlines**

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Tests Conducted

3 RoHS Chemical Test

(A) Screening Test by XRF Spectroscopy

Cadmium (Cd), Lead (Pb), Mercury (Hg), Chromium (Cr) and Bromine (Br) content were measured with reference to IEC 62321-3-1 Edition 1.0 : 2013 by XRF spectroscopy and chemical confirmation test for RoHS restricted substances.

Screened Components	XRF Results		Chemical Confirmation Result
1	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
2	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
3	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
4	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	

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**Test Report**

Number: SZHH01092038

Tests Conducted

Screened Components	XRF Results		Chemical Confirmation Result
5	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
6	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
7	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
8	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
9	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	

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**Test Report**

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Tests Conducted

Screened Components	XRF Results		Chemical Confirmation Result
10	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
11	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NT	
12	Cd	ND	Pb:27200mg/kg #
	Pb	>1300mg/kg	
	Hg	ND	
	Cr	ND	
	Br	NT	
13	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
14	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	Detected	

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**Test Report**

Number: SZHH01092038

Tests Conducted

Screened Components	XRF Results		Chemical Confirmation Result
15	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NT	
16	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
17	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
18	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
19	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	

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**Test Report**

Number: SZHH01092038

Tests Conducted

Screened Components	XRF Results		Chemical Confirmation Result
20	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
21	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
22	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
23	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NT	
24	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NT	

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**Test Report**

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Tests Conducted

Screened Components	XRF Results		Chemical Confirmation Result
25	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NT	
26	Cd	ND	PBBs:ND(<5mg/kg) PBDEs:ND(<5mg/kg)
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	Inconclusive	
27	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
28	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
29	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	

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**Test Report**

Number: SZHH01092038

Tests Conducted

Screened Components	XRF Results		Chemical Confirmation Result
30	Cd	ND	PBBs:ND(<5mg/kg) PBDEs:ND(<5mg/kg)
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	Inconclusive	
31	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NT	
32a	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
32b	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NT	
32c	Cd	ND	Cr <sup>6+</sup> :Negative(<0.10µg/cm <sup>2</sup> )
	Pb	ND	
	Hg	ND	
	Cr	Inconclusive	
	Br	NT	

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**Test Report**

Number: SZHH01092038

Tests Conducted

Screened Components	XRF Results		Chemical Confirmation Result
32d	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
32e	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NT	
33	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
34	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
35	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	

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**Test Report**

Number: SZHH01092038

Tests Conducted

Screened Components	XRF Results		Chemical Confirmation Result
36	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
37	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
38	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
39a	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
39b	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NT	

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**Test Report**

Number: SZHH01092038

Tests Conducted

Screened Components	XRF Results		Chemical Confirmation Result
40a	Cd	ND	PBBs:ND(<5mg/kg) PBDEs:ND(<5mg/kg)
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	Inconclusive	
40b	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NT	
41a	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NT	
41b	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NT	
41c	Cd	ND	Cr <sup>6+</sup> :Negative(<0.10µg/cm <sup>2</sup> )
	Pb	ND	
	Hg	ND	
	Cr	Inconclusive	
	Br	NT	

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**Test Report**

Number: SZHH01092038

Tests Conducted

Screened Components	XRF Results		Chemical Confirmation Result
41d	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
41e	Cd	ND	Cr <sup>6+</sup> :Negative(<0.10µg/cm <sup>2</sup> )
	Pb	ND	
	Hg	ND	
	Cr	Inconclusive	
	Br	NT	
41f	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
41g	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
41h	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NT	

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**Test Report**

Number: SZHH01092038

Tests Conducted

Screened Components	XRF Results		Chemical Confirmation Result
41i	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NT	
41j	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
41k	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NT	
41l	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NT	
41m	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	

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**Test Report**

Number: SZHH01092038

Tests Conducted

Screened Components	XRF Results		Chemical Confirmation Result
41n	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NT	
41o	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
41p	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NT	
41q	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
41r	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NT	

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**Test Report**

Number: SZHH01092038

Tests Conducted

Screened Components	XRF Results		Chemical Confirmation Result
41s	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
41t	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
41u	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
41v	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	

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**Test Report**

Number: SZHH01092038

Tests Conducted

Screened Components	XRF Results		Chemical Confirmation Result
41w	Cd	ND	NT
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NT	

Detected = Below the lower screening limit of table (C) and pass

ND = Not detected

NT = Not tested

Positive = A positive test result indicated the concentration of Cr(VI) is greater than threshold of 0.13µg/cm<sup>2</sup> for boiling-water-extraction procedures by visual comparison / by UV-VIS Spectrophotometer analysis. The sample coating is considered to contain Cr(VI).

Negative = A negative test result indicated the concentration of Cr(VI) is less than threshold of 0.10µg/cm<sup>2</sup> for boiling-water-extraction procedures by UV-VIS Spectrophotometer analysis. The coating is considered a non-Cr(VI) based coating.

Remark:

# = As claimed by the declaration submitted from the applicant, the Lead content of the component comes from Copper alloy only. According to EU RoHS Directive (2011/65/EU), Lead in Copper alloy containing up to 4% (40,000 mg/kg) Lead by weight can be exempted.

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**Test Report**

Number: SZHH01092038

Tests Conducted

(B) XRF Screening Limits in mg/kg for Regulated Elements in Various Matrices

Element	Polymer Materials	Metallic Materials	Composite Materials
Cd	$P \leq 70 < X < 130 \leq F$	$P \leq 70 < X < 130 \leq F$	$P \leq 70 < X < 150 \leq F$
Pb	$P \leq 700 < X < 1300 \leq F$	$P \leq 700 < X < 1300 \leq F$	$P \leq 500 < X < 1500 \leq F$
Hg	$P \leq 700 < X < 1300 \leq F$	$P \leq 700 < X < 1300 \leq F$	$P \leq 500 < X < 1500 \leq F$
Cr	$P \leq 700 < X$	$P \leq 700 < X$	$P \leq 500 < X$
Br	$P \leq 300 < X$	Not applicable	$P \leq 250 < X$

P = Pass

X = Inconclusive result

F = Fail

mg/kg = milligram per kilogram = ppm

(C) Estimated Detection Limits in mg/kg for Regulated Elements in Various Matrices

Element	Polymer Materials	Metallic Materials	Composite Materials
Cd	50	70	70
Pb	100	200	200
Hg	100	200	200
Cr	100	200	200
Br	200	Not applicable	200

**Disclaimers:**

This XRF Screening and Chemical Confirmation Test Report is for reference purposes only. The applicant shall make its/his/her own judgment as to whether the information provided in this XRF Screening and Chemical Confirmation Test Report is sufficient for its/his/her purposes.

The results shown in this XRF Screening and Chemical Confirmation Test Report will differ based on various factors, including but not limited to, the sample size, thickness, area, surface flatness, equipment parameters and matrix effect (e.g. plastic, rubber, metal, glass, ceramic etc.). Further wet chemical pre-treatment with relevant chemical equipment analysis is required to obtain quantitative data.

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**Test Report**

Number: SZHH01092038

Tests Conducted

(D) Chemical Confirmation Test Methods:

Testing Item	Testing Method	Reporting Limit
Lead (Pb) Content	With reference to IEC 62321-5 Edition 1.0:2013, by acid digestion and determined by ICP - OES	2 mg/kg
Polybrominated Biphenyls (PBBs)& Polybrominated Diphenyl Ethers (PBDEs)	With reference to IEC 62321-6 Edition 1.0:2015, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary	5 mg/kg
Chromium (VI) (Cr <sup>6+</sup> ) Content	With reference to IEC 62321-7-1 Edition 1.0:2015, by boiling water extraction and determined by UV-VIS Spectrophotometer	0.10µg/cm <sup>2</sup>

(E) RoHS Requirement:

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr <sup>6+</sup> )	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)

Tested Components:

- (1) Pearl pink coating on plastic (body of pink style)
- (2) Pearl purple coating on plastic (body of purple style)
- (3) Pearl aqua green coating on plastic(body of aqua green style)
- (4) Pink plastic excluding coatings (body of pink style)
- (5) Purple plastic excluding coatings(body of purple style)
- (6) Aqua green plastic excluding coatings(body of aqua green style)
- (7) White plastic (handle of all styles)
- (8) White plastic (head and joint of all styles)
- (9) Translucent plastic with white coating (button of all styles)
- (10) White plastic (socket of all styles)
- (11) Silver color metal (socket of all styles)
- (12) Gold color metal (socket of all styles)
- (13) white plastic
- (14) translucnet plastic (ring)
- (15) black treated metal (screw)
- (16) black foam with adhesive

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Tests Conducted

Tested Components:

- (17) transparent glue
- (18) translucent plastic (socket)
- (19) cream paper adhesive tape
- (20) ivory plastic (wire covering)
- (21) red plastic with black printing (wire covering)
- (22) Black plastic (wire covering)
- (23) copper color metal (wire)
- (24) red treated metal (wire)
- (25) silver color metal (wire)
- (26) Conformal coating with green solder mask & copper color metal pad & fibreboard (PCB).
- (27) Transparent plastic & white fibreboard with green coating & gold color metal (SMD LED).
- (28) Black plastic with brown printing & silver color metal (SMD diode).
- (29) Brown ceramic with silver color metal (SMD capacitor)
- (30) Black plastic with beige printing & silver color metal (SMD triode)
- (31) Silver color solder.
- (32) **Button**
  - (a) Black plastic (button).
  - (b) Silver color metal sheet.
  - (c) Silver color metal sheet.
  - (d) Black plastic (holder).
  - (e) Silver color metal (lead).
- (33) White ceramic with black material & white printing & silver color metal (SMD resistor)
- (34) Beige ceramic with silver color metal (SMD capacitor)
- (35) Grey ceramic with silver color metal (SMD capacitor)
- (36) Light brown ceramic with silver color metal (SMD capacitor)
- (37) Black plastic with beige printing & silver color metal (SMD triode)
- (38) Dark grey ceramic with silver color metal (SMD inductor)
- (39) **IC**
  - (a) Black plastic body.
  - (b) Silver color metal (lead).
- (40) **IC**
  - (a) Black plastic body.
  - (b) Silver color metal (lead).

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Tests Conducted

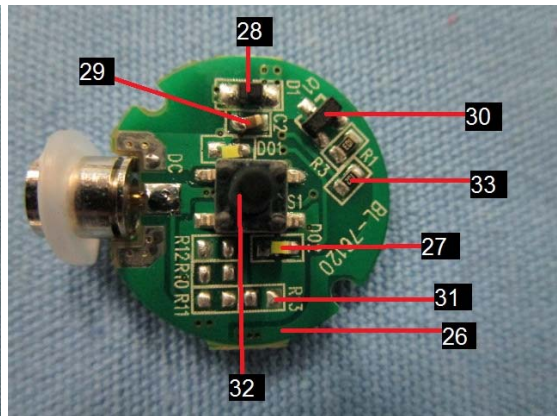
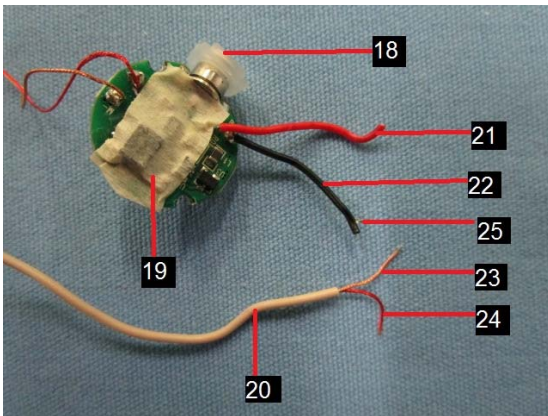
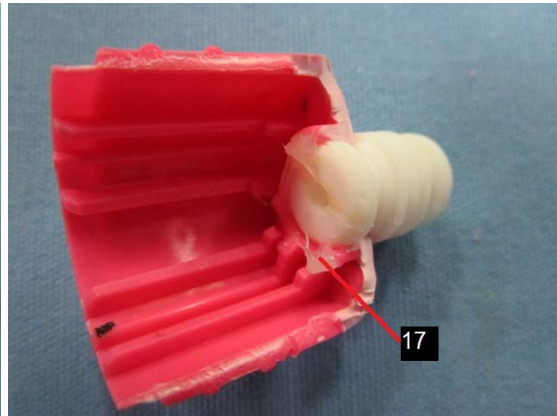
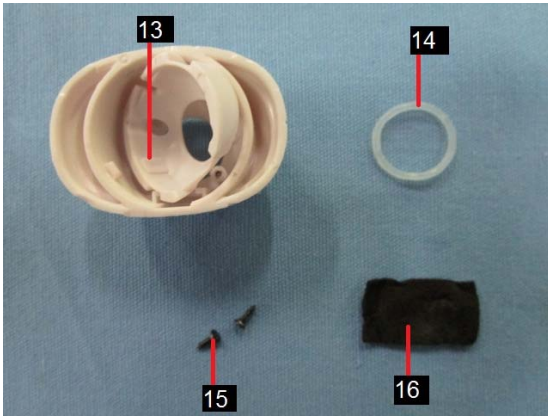
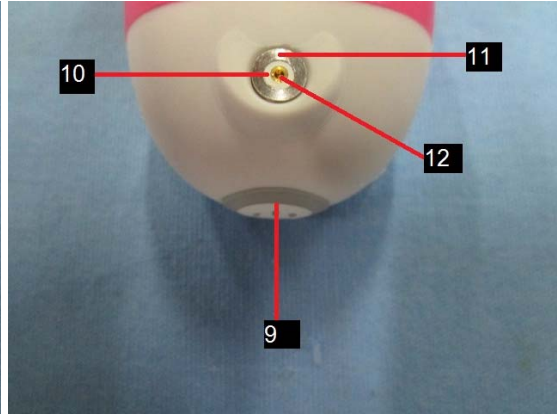
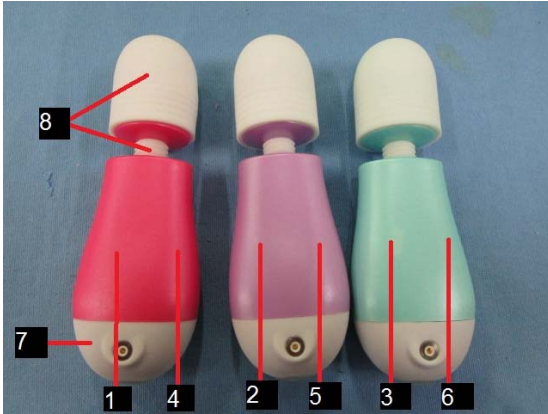
Tested Components:

- (41) motor
  - (a) Silver color metal (case).
  - (b) Black magnetic
  - (c) Silver-grey metal
  - (d) White plastic.
  - (e) Silver color metal (axle).
  - (f) Copper color enamelled wire.
  - (g) White plastic (washer).
  - (h) Gold color metal.
  - (i) Silver color metal
  - (j) white plastic.
  - (k) gold color metal (washer).
  - (l) Silver color metal.
  - (m) White plastic label.
  - (n) Black magnet with silver color metal & solder.
  - (o) White plastic (washer).
  - (p) Silver color metal.
  - (q) black plastic.
  - (r) Silver color metal with solder (lead).
  - (s) transparent plastic (washer).
  - (t) pink plastic (washer).
  - (u) brown felt (washer).
  - (v) translucent plastic (washer inner cover).
  - (w) Silver color metal (cover)

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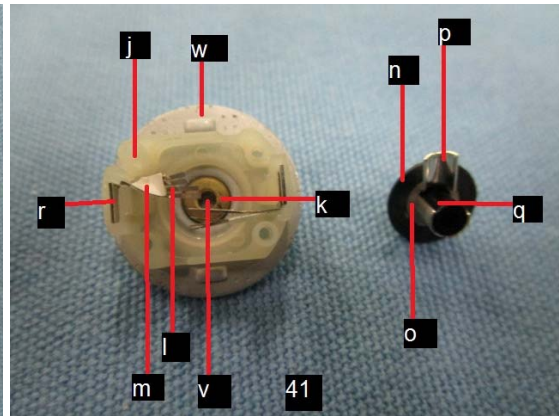
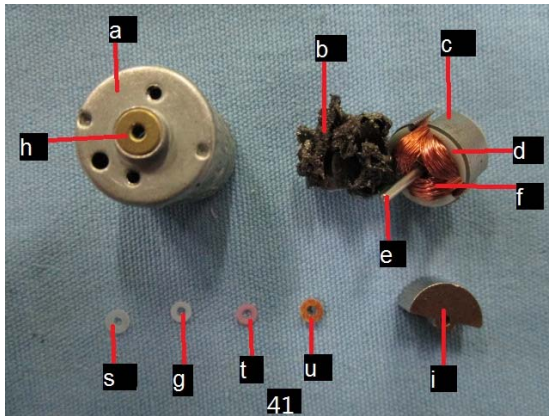
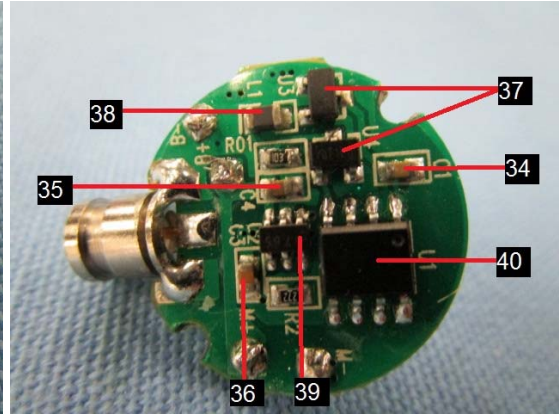
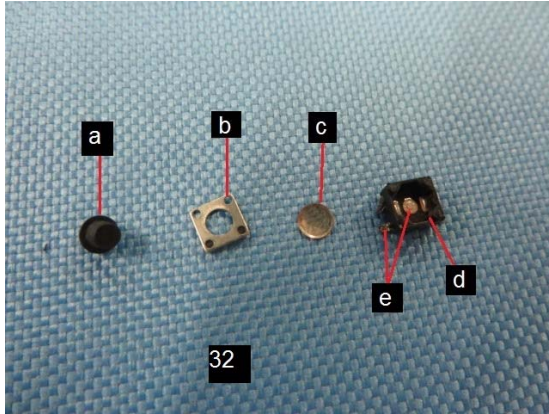
Tests Conducted



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Tests Conducted



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End of report

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