



Test Report No. 64.166.23.05381.01
Rev. 01
Dated 2024-01-22

Applicant: Qingdao Economic and Technological Development District Haier Water Heater Co., Ltd.

Address: Haier Industrial Park, Huangdao Zone, Qingdao, Shandong, P.R. China

Sample Description: Electric Water Heater

Model No.: ES50V-D3C(R)

Ref. Model No.: ES80V-D3C(R), ES100V-D3C(R), ES50V-TF7W(EU), ES80V-TF7W(EU), ES100V-TF7(EU), ES100V-VH3W(EU), ES80V-VH3W(EU), ES50V-VH3W(EU), ES30V-VH3W(EU), ES30V-VE1, ES50V-VE1, ES80V-VE1, ES100V-VE1

Sample Received Date: 2023-11-06, 2024-01-08

Test Period: From 2023-11-06 to 2023-11-20, 2024-01-08 to 2024-01-19

Purpose of examination: Verification of RoHS (Restriction of Hazardous Substances) directive 2011/65/EU and its amendment (EU) 2015/863 on submitted samples

Test Result: Refer to following page(s)

Remark: The result relates only to the items tested.

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
TÜV SÜD Group

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Reviewed by:

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Ben Shao
Designated Reviewer

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Disclaimer Measurement Uncertainty: Unless otherwise agreed upon, pass or fail verdicts are given based on the measured values without consideration of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as pass or fail.

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SUMMARY OF TEST RESULTS

No.	Test Requested	Conclusion	Remarks
1.	Heavy Metal (Pb, Cd, Hg and Cr VI) Content	PASS	/
2.	Polybrominated Biphenyls (PBBs) and Polybrominated Diphenyl Ethers (PBDEs) Content	PASS	/
3.	Phthalates (DEHP, BBP, DBP and DIBP) Content	PASS	/








1. TESTED SUBJECT DESCRIPTION





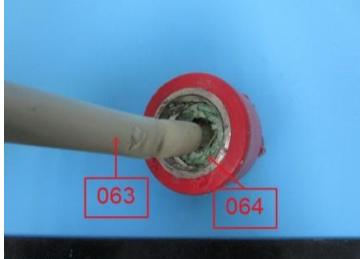
Sample Number	Tested Material Description	Photo
001	White coating on case	
002	Silvery metal substrate case	
003	Black plastic shell	
004	Transparent plastic with colour coating and adhesive backing panel	
005	Silvery metal screw	
006	Green/white PCB	
007	Silvery metal solder	
008	Black body	
009	Black body	
010	Black body	
011	Black printed white body (SMD capacity)	
012	Brown/silvery body (SMD resistor)	

Sample Number	Tested Material Description	Photo
013	White plastic black coated sheet (Display)	
014	Black printed white plastic shell (Display)	
015	Black/white PCB	
016	Yellow LED	
017	Black plastic (button)	
018	Silvery metal (button)	
019	Black plastic white printed sleeve (Capacitor)	
020	Silvery metal body	
021	Black soft plastic holder	
022	Green plastic white printed sleeve (Capacitor)	

Sample Number	Tested Material Description	Photo
023	Beige plastic port	
024	Silvery metal pin	
025	Grey soft plastic cable jacket (LONSID-OUPU)	
026	Green soft plastic wire jacket	
027	Pink soft plastic wire jacket	
028	Yellow soft plastic wire jacket	
029	Black soft plastic wire jacket	
030	Purple soft plastic wire jacket	
031	White soft plastic wire jacket	
032	Coppery metal wire	
033	Grey soft plastic part	
034	Dark white plastic socket	
035	Silvery metal pin	



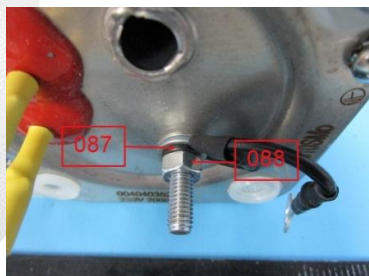
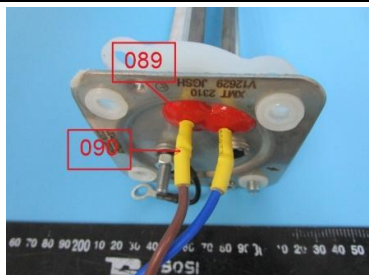
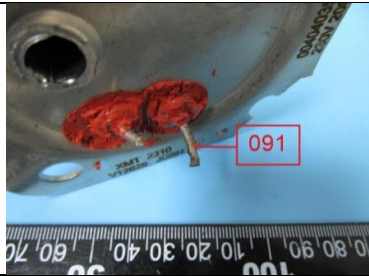
Sample Number	Tested Material Description	Photo
036	White plastic black printed sticker	
037	Grey coating on part	
038	Silvery metal substrate part	
039	Silvery metal screw	
040	Black plastic part	
041	Silvery metal ring	
042	Grey plastic ring	

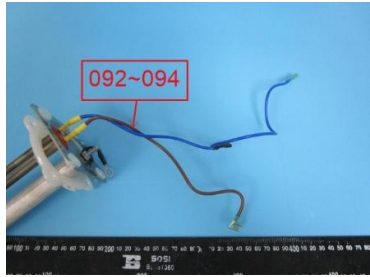
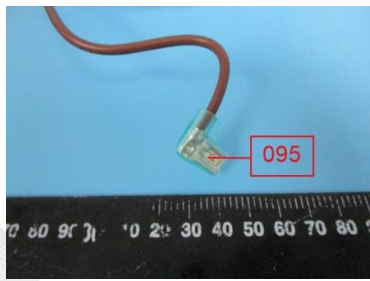


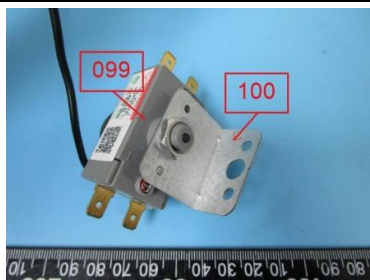
Sample Number	Tested Material Description	Photo
043	White soft plastic cable jacket (HONGLIN)	
044	Brown soft plastic wire jacket	
045	Blue soft plastic wire jacket	
046	Yellow/green soft plastic wire jacket	
047	Coppery metal wire	
048	White soft plastic plug (HONGLIN HL-013)	
049	Silvery metal pin	
050	Silvery metal plate	
051	White plastic holder	
052	Black soft plastic heating shrinkable tube	
053	Silvery metal terminal	
054	Grey plastic cover	
055	White foam	

Sample Number	Tested Material Description	Photo
056	Dark grey plastic cover	
057	Silvery metal part	
058	Blue plastic nut	
059	Blue soft plastic part	
060	Red plastic nut	
061	Red soft plastic part	
062	Silvery metal tube	
063	Beige plastic tuber	
064	Green soft plastic ring	


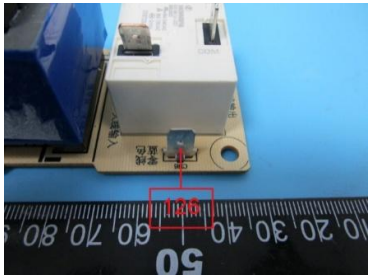
Sample Number	Tested Material Description	Photo
065	Silvery metal screw	
066	Grey adhesive plastic part	
067	White plastic part	
068	Beige foam with transparent film	
069	White sponge	
070	Black sponge	
071	Black plated metal tube	
072	Grey plastic block	

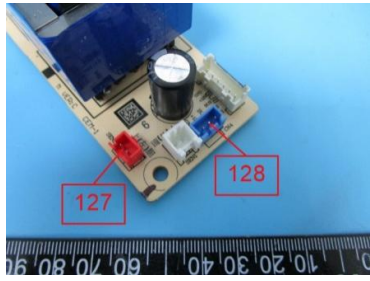
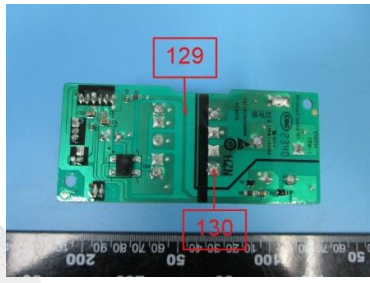
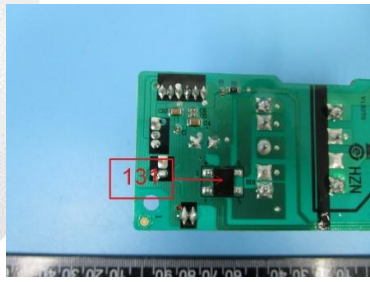
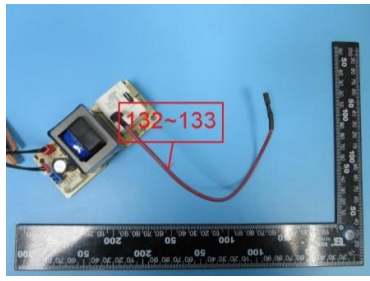
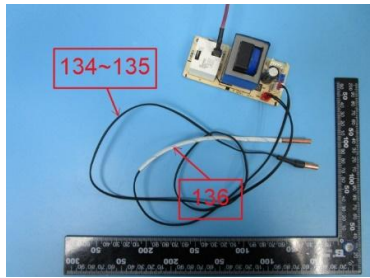
Sample Number	Tested Material Description	Photo
073	Silvery metal plate	
074	Silvery metal screw	
075	Silvery metal washer	
076	Silvery metal tube	
077	White powder inner	
078	Silvery metal thread inner	
079	Silvery metal part	
080	White soft plastic ring	
081	Silvery metal screw	
082	White soft plastic part	


Sample Number	Tested Material Description	Photo
083	Black soft plastic wire jacket (HANGZHOU SHI XUEXIANG DIANXUN)	
084	Copper metal wire	
085	White plastic tube	
086	Blue body with colour printed (Carbon film resistor)	
087	Black plated metal ring	
088	Silvery metal nut	
089	Red plastic glue	
090	Yellow soft plastic heating shrinkable tube	
091	Silvery metal pin	

Sample Number	Tested Material Description	Photo
092	Blue plastic soft plastic wire jacket (HONGCHANG)	
093	Brown soft plastic wire jacket	
094	Coppery metal wire	
095	Transparent green soft plastic tube	
096	Silvery metal with blue glaze	
097	Grey plastic shell	
098	White paper colour printed sticker	
099	Grey plastic cover	
100	Silvery metal plate	

Sample Number	Tested Material Description	Photo
101	Coppery metal part	
102	Blue plated metal screw	
103	Silvery metal plate	
104	Golden metal plate	
105	Blue plated metal rivet	
106	Coppery/silvery metal contact point	
107	Coppery metal plate	
108	Black plastic pin	
109	Black soft plastic sleeve	
110	Coppery metal tube	

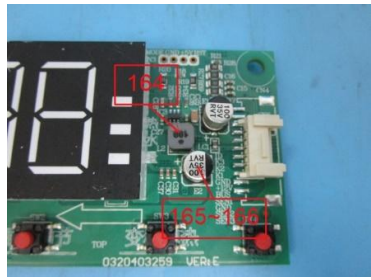
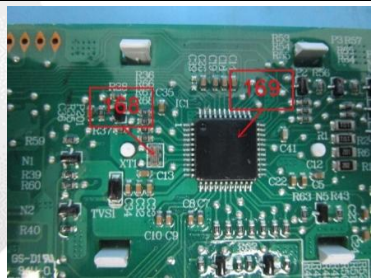
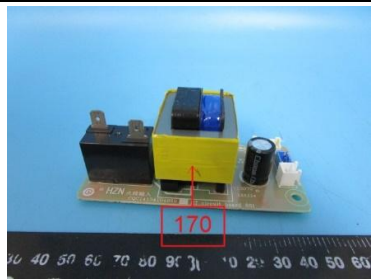

Sample Number	Tested Material Description	Photo
111	Black soft plastic part	
112	Red soft plastic heating shrinkable tube	
113	Coppery metal part	
114	Silvery metal screw	
115	Silvery metal washer	
116	Blue plastic tape (Transformer)	
117	Black plastic holder	
118	Coppery metal coil	
119	Silvery metal plate	
120	Grey body (Capacitor)	
121	White plastic shell with black glue (Transformer)	
122	Yellow plastic tape	
123	Coppery metal parts	
124	Silvery metal parts	
125	Coppery/Silvery metal contact point	
126	Silvery metal terminal	


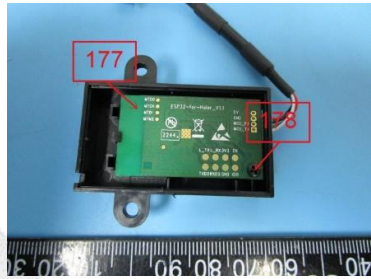
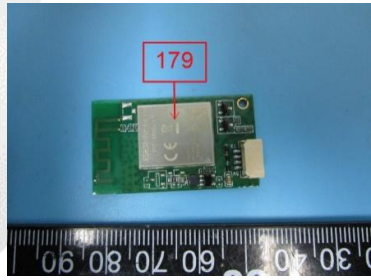
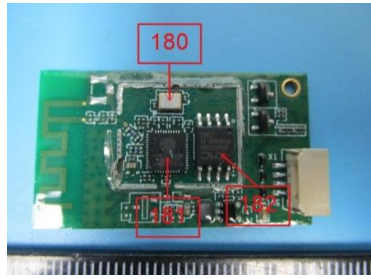
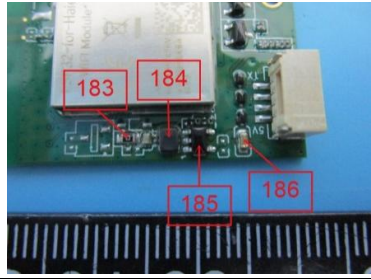
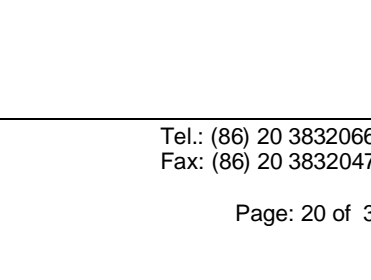
Sample Number	Tested Material Description	Photo
127	Red plastic port	
128	Blue plastic port	
129	Green/yellow PCB	
130	Silvery metal solder	
131	Black body	
132	Brown soft plastic wire jacket (XINYA)	
133	Silvery metal wire	
134	Black soft plastic wire jacket	
135	Silvery metal wire	
136	White/blue fiber glass tube	


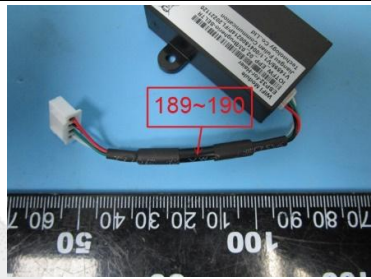
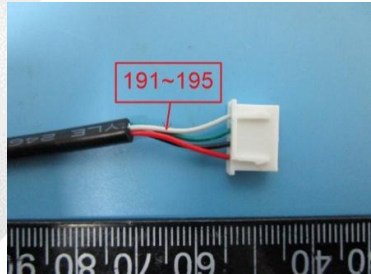
Sample Number	Tested Material Description	Photo
137	Copper metal shell	
138	Black plastic part	
139	Red plastic socket	
140	White plastic socket	
141	Golden metal part	
142	Golden metal rivet	
143	Green plastic knob	
144	Transparent plastic red printed sticker	
145	Yellow plastic part	

Sample Number	Tested Material Description	Photo
146	Silvery metal net	
147	Silvery metal spring	
148	White soft plastic ring	
149	Dark yellow plastic pin	
150	Silvery metal ring	
151	Black plastic part	
152	White plastic pin	
153	White soft plastic ring	
154	Blue plated metal nut	
155	Blue plated metal tube	
156	Blue plated metal screw	

Sample Number	Tested Material Description	Photo
157	White plastic cover	
158	White plastic cover	
159	White soft plastic ring	
160	Green PCB	
161	Red plastic button (button)	
162	Black plastic shell	
163	Silvery metal parts	

Sample Number	Tested Material Description	Photo
164	Black magnet body (Capacitor)	
165	Silvery metal black printed body	
166	Black plastic base	
167	Silvery metal solder	
168	Silvery metal body	
169	Black body	
170	Yellow adhesive plastic tape	
171	Black plastic shell (Transformer)	
172	Copper metal parts	
173	Silvery metal parts	
174	Copper/Silvery metal contact point	

Sample Number	Tested Material Description	Photo
175	White plastic black printed sticker	
176	Black plastic shell	
177	Green PCB	
178	Black plated metal screw	
179	Silvery metal cover	
180	Silvery metal body	
181	Black body	
182	Black body	
183	Black printed white body (SMD capacity)	
184	Black magnet body	
185	Black body	
186	Brown/silvery body (SMD resistor)	

Sample Number	Tested Material Description	Photo
187	Beige plastic port	
188	Silvery metal pin	
189	Black soft plastic cable jacket	
190	Silvery/blue metal aluminum foil	
191	White soft plastic wire jacket	
192	Green soft plastic wire jacket	
193	Red soft plastic wire jacket	
194	Black soft plastic wire jacket	
195	Silvery metal wire	



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2. TEST RESULTS

2.1. SCREENING TEST

Test method: With reference to EN 62321-1:2013, EN IEC 62321-2:2021, EN 62321-3-1:2014 and EN 62321-8:2017. For Heavy Metals and Flame Retardants, analyzed by Energy Dispersive X-ray Fluorescence Spectrometers (XRF); for phthalates, analyzed by Gas Chromatography and Mass Spectrometry (GC-MS).

Sample No.	Heavy Metals and Flame Retardants					Phthalates			
	Cd	Cr	Hg	Pb	Br	DEHP	BBP	DBP	DIBP
001	BL	BL	BL	BL	BL	BL	BL	BL	BL
002	BL	BL	BL	BL	NA	NA	NA	NA	NA
003	BL	BL	BL	BL	BL	BL	BL	BL	BL
004	BL	BL	BL	BL	BL	BL	BL	BL	BL
005	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
006	BL	BL	BL	BL	Inc. ^(a)	BL	BL	BL	BL
007	BL	BL	BL	BL	NA	NA	NA	NA	NA
008	BL	BL	BL	BL	BL	BL	BL	BL	BL
009	BL	BL	BL	BL	BL	BL	BL	BL	BL
010	BL	BL	BL	BL	BL	BL	BL	BL	BL
011	BL	Inc. ^(a)	BL	OL ^(a)	BL	BL	BL	BL	BL
012	BL	BL	BL	BL	BL	BL	BL	BL	BL
013	BL	BL	BL	BL	BL	BL	BL	BL	BL
014	BL	BL	BL	BL	BL	BL	BL	BL	BL
015	BL	BL	BL	BL	Inc. ^(a)	BL	BL	BL	BL
016	OL ^(a)	BL	BL	BL	Inc. ^(a)	BL	BL	BL	BL
017	BL	BL	BL	BL	BL	BL	BL	BL	BL
018	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
019	BL	BL	BL	BL	BL	BL	BL	BL	BL
020	BL	BL	BL	BL	NA	NA	NA	NA	NA
021	BL	BL	BL	BL	BL	BL	BL	BL	BL
022	BL	BL	BL	BL	BL	BL	BL	BL	BL
023	Inc. ^(a)	BL	BL	BL	Inc. ^(a)	BL	BL	BL	BL
024	BL	BL	BL	BL	NA	NA	NA	NA	NA
025	BL	BL	BL	BL	BL	BL	BL	BL	BL
026	BL	BL	BL	BL	BL	BL	BL	BL	BL
027	BL	BL	BL	BL	BL	BL	BL	BL	BL



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Sample No.	Heavy Metals and Flame Retardants					Phthalates			
	Cd	Cr	Hg	Pb	Br	DEHP	BBP	DBP	DIBP
028	BL	BL	BL	BL	BL	BL	BL	BL	BL
029	BL	BL	BL	BL	BL	BL	BL	BL	BL
030	BL	BL	BL	BL	BL	BL	BL	BL	BL
031	BL	BL	BL	BL	BL	BL	BL	BL	BL
032	BL	BL	BL	BL	NA	NA	NA	NA	NA
033	BL	BL	BL	BL	BL	BL	BL	BL	BL
034	BL	BL	BL	BL	Inc. ^(a)	BL	BL	BL	BL
035	BL	BL	BL	BL	NA	NA	NA	NA	NA
036	BL	BL	BL	BL	BL	BL	BL	BL	BL
037	BL	BL	BL	BL	BL	BL	BL	BL	BL
038	BL	BL	BL	BL	NA	NA	NA	NA	NA
039	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
040	BL	BL	BL	BL	BL	BL	BL	BL	BL
041	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
042	BL	BL	BL	BL	BL	BL	BL	BL	BL
043	BL	BL	BL	BL	BL	BL	BL	BL	BL
044	BL	BL	BL	BL	BL	BL	BL	BL	BL
045	BL	BL	BL	BL	BL	BL	BL	BL	BL
046	BL	BL	BL	BL	BL	BL	BL	BL	BL
047	BL	BL	BL	BL	NA	NA	NA	NA	NA
048	BL	BL	BL	BL	BL	BL	BL	BL	BL
049	BL	BL	BL	OL ^(a)	NA	NA	NA	NA	NA
050	BL	BL	BL	BL	NA	NA	NA	NA	NA
051	BL	BL	BL	BL	Inc. ^(a)	BL	BL	BL	BL
052	BL	BL	BL	BL	BL	BL	BL	BL	BL
053	BL	BL	BL	BL	NA	NA	NA	NA	NA
054	BL	BL	BL	BL	BL	BL	BL	BL	BL
055	BL	BL	BL	BL	BL	BL	BL	BL	BL
056	BL	BL	BL	BL	BL	BL	BL	BL	BL
057	BL	BL	BL	OL ^(a)	NA	NA	NA	NA	NA
058	BL	BL	BL	BL	BL	BL	BL	BL	BL
059	BL	BL	BL	BL	BL	BL	BL	BL	BL



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Sample No.	Heavy Metals and Flame Retardants					Phthalates			
	Cd	Cr	Hg	Pb	Br	DEHP	BBP	DBP	DIBP
060	BL	BL	BL	BL	BL	BL	BL	BL	BL
061	BL	BL	BL	BL	BL	BL	BL	BL	BL
062	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
063	BL	BL	BL	BL	BL	BL	BL	BL	BL
064	BL	BL	BL	BL	BL	BL	BL	BL	BL
065	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
066	BL	BL	BL	BL	BL	BL	BL	BL	BL
067	BL	BL	BL	BL	BL	BL	BL	BL	BL
068	BL	BL	BL	BL	BL	BL	BL	BL	BL
069	BL	BL	BL	BL	BL	BL	BL	BL	BL
070	BL	BL	BL	BL	BL	BL	BL	BL	BL
071	BL	BL	BL	BL	NA	NA	NA	NA	NA
072	BL	BL	BL	BL	BL	BL	BL	BL	BL
073	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
074	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
075	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
076	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
077	BL	BL	BL	BL	BL	BL	BL	BL	BL
078	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
079	BL	BL	BL	BL	NA	NA	NA	NA	NA
080	BL	BL	BL	BL	BL	BL	BL	BL	BL
081	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
082	BL	BL	BL	BL	BL	BL	BL	BL	BL
083	BL	BL	BL	BL	BL	BL	BL	BL	BL
084	BL	BL	BL	BL	NA	NA	NA	NA	NA
085	BL	BL	BL	BL	BL	BL	BL	BL	BL
086	BL	Inc. ^(a)	BL	BL	BL	BL	BL	BL	BL
087	BL	BL	BL	BL	NA	NA	NA	NA	NA
088	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
089	BL	BL	BL	BL	BL	BL	BL	BL	BL
090	BL	BL	BL	BL	Inc. ^(a)	BL	BL	BL	BL
091	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA



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	Cd	Cr	Hg	Pb	Br	DEHP	BBP	DBP	DIBP
092	BL	BL	BL	BL	BL	BL	BL	BL	BL
093	BL	BL	BL	BL	BL	BL	BL	BL	BL
094	BL	BL	BL	BL	NA	NA	NA	NA	NA
095	BL	BL	BL	BL	BL	BL	BL	BL	BL
096	BL	BL	BL	BL	NA	NA	NA	NA	NA
097	BL	BL	BL	BL	Inc. ^(a)	BL	BL	BL	BL
098	BL	BL	BL	BL	BL	BL	BL	BL	BL
099	BL	BL	BL	BL	BL	BL	BL	BL	BL
100	BL	BL	BL	BL	NA	NA	NA	NA	NA
101	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
102	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
103	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
104	BL	BL	BL	BL	NA	NA	NA	NA	NA
105	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
106	OL ^(a)	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
107	BL	BL	BL	BL	NA	NA	NA	NA	NA
108	BL	BL	BL	BL	BL	BL	BL	BL	BL
109	BL	BL	BL	BL	BL	BL	BL	BL	BL
110	BL	BL	BL	BL	NA	NA	NA	NA	NA
111	BL	BL	BL	BL	BL	BL	BL	BL	BL
112	BL	BL	BL	BL	BL	BL	BL	BL	BL
113	BL	BL	BL	BL	NA	NA	NA	NA	NA
114	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
115	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
116	BL	BL	BL	BL	BL	BL	BL	BL	BL
117	BL	BL	BL	BL	Inc. ^(a)	BL	BL	BL	BL
118	BL	BL	BL	BL	NA	NA	NA	NA	NA
119	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
120	BL	BL	BL	OL ^(a)	BL	BL	BL	BL	BL
121	BL	BL	BL	BL	Inc. ^(a)	BL	BL	BL	BL
122	Inc. ^(a)	BL	BL	BL	Inc. ^(a)	BL	BL	BL	BL
123	BL	BL	BL	BL	NA	NA	NA	NA	NA



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	Cd	Cr	Hg	Pb	Br	DEHP	BBP	DBP	DIBP
124	BL	BL	BL	BL	NA	NA	NA	NA	NA
125	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
126	BL	BL	BL	BL	NA	NA	NA	NA	NA
127	BL	BL	BL	BL	BL	BL	BL	BL	BL
128	BL	BL	BL	BL	BL	BL	BL	BL	BL
129	BL	BL	BL	BL	Inc. ^(a)	BL	BL	BL	BL
130	OL ^(a)	BL	BL	BL	NA	NA	NA	NA	NA
131	BL	BL	BL	BL	BL	BL	BL	BL	BL
132	BL	BL	BL	BL	BL	BL	BL	BL	BL
133	BL	BL	BL	BL	NA	NA	NA	NA	NA
134	BL	BL	BL	BL	BL	BL	BL	BL	BL
135	BL	BL	BL	BL	NA	NA	NA	NA	NA
136	BL	BL	BL	BL	BL	BL	BL	BL	BL
137	BL	BL	BL	BL	NA	NA	NA	NA	NA
138	BL	BL	BL	BL	BL	BL	BL	BL	BL
139	BL	BL	BL	BL	BL	BL	BL	BL	BL
140	BL	BL	BL	BL	BL	BL	BL	BL	BL
141	BL	BL	BL	OL ^(a)	NA	NA	NA	NA	NA
142	BL	BL	BL	BL	NA	NA	NA	NA	NA
143	BL	BL	BL	BL	BL	BL	BL	BL	BL
144	BL	BL	BL	BL	BL	BL	BL	BL	BL
145	BL	BL	BL	BL	BL	BL	BL	BL	BL
146	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
147	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
148	BL	BL	BL	BL	BL	BL	BL	BL	BL
149	BL	BL	BL	BL	BL	BL	BL	BL	BL
150	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
151	BL	BL	BL	BL	BL	BL	BL	BL	BL
152	BL	BL	BL	BL	BL	BL	BL	BL	BL
153	BL	BL	BL	BL	BL	BL	BL	BL	BL
154	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
155	BL	BL	BL	BL	NA	NA	NA	NA	NA



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	Cd	Cr	Hg	Pb	Br	DEHP	BBP	DBP	DIBP
156	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
157	BL	BL	BL	BL	BL	BL	BL	BL	BL
158	BL	BL	BL	BL	BL	BL	BL	BL	BL
159	BL	BL	BL	BL	BL	BL	BL	BL	BL
160	BL	BL	BL	BL	Inc. ^(a)	BL	BL	BL	BL
161	BL	BL	BL	BL	BL	BL	BL	BL	BL
162	BL	BL	BL	BL	BL	BL	BL	BL	BL
163	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
164	BL	BL	BL	BL	BL	BL	BL	BL	BL
165	BL	BL	BL	BL	NA	NA	NA	NA	NA
166	BL	BL	BL	BL	BL	BL	BL	BL	BL
167	BL	BL	BL	BL	NA	NA	NA	NA	NA
168	BL	BL	BL	BL	NA	NA	NA	NA	NA
169	BL	BL	BL	BL	BL	BL	BL	BL	BL
170	BL	BL	BL	BL	BL	BL	BL	BL	BL
171	BL	BL	BL	BL	Inc. ^(a)	BL	BL	BL	BL
172	BL	BL	BL	BL	NA	NA	NA	NA	NA
173	BL	BL	BL	BL	NA	NA	NA	NA	NA
174	OL ^(a)	BL	BL	BL	NA	NA	NA	NA	NA
175	BL	BL	BL	BL	BL	BL	BL	BL	BL
176	BL	BL	BL	BL	BL	BL	BL	BL	BL
177	BL	BL	BL	BL	BL	BL	BL	BL	BL
178	BL	Inc. ^(a)	BL	BL	NA	NA	NA	NA	NA
179	BL	BL	BL	BL	NA	NA	NA	NA	NA
180	BL	BL	BL	BL	NA	NA	NA	NA	NA
181	BL	BL	BL	BL	BL	BL	BL	BL	BL
182	BL	BL	BL	BL	BL	BL	BL	BL	BL
183	BL	Inc. ^(a)	BL	BL	BL	BL	BL	BL	BL
184	BL	BL	BL	BL	BL	BL	BL	BL	BL
185	BL	BL	BL	BL	BL	BL	BL	BL	BL
186	BL	BL	BL	BL	Inc. ^(a)	BL	BL	BL	BL
187	BL	BL	BL	BL	BL	BL	BL	BL	BL

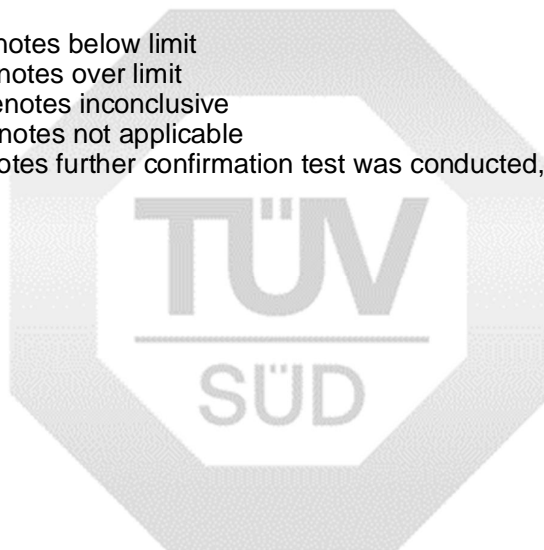


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Sample No.	Heavy Metals and Flame Retardants					Phthalates			
	Cd	Cr	Hg	Pb	Br	DEHP	BBP	DBP	DIBP
188	BL	BL	BL	BL	NA	NA	NA	NA	NA
189	BL	BL	BL	BL	BL	BL	BL	BL	BL
190	BL	BL	BL	BL	NA	NA	NA	NA	NA
191	BL	BL	BL	BL	BL	BL	BL	BL	BL
192	BL	BL	BL	BL	BL	BL	BL	BL	BL
193	BL	BL	BL	BL	BL	BL	BL	BL	BL
194	BL	BL	BL	BL	BL	BL	BL	BL	BL
195	BL	BL	BL	BL	NA	NA	NA	NA	NA

Note:

- “BL” denotes below limit
- “OL” denotes over limit
- “Inc.” denotes inconclusive
- “NA” denotes not applicable
- “(a)” denotes further confirmation test was conducted, results are listed in 2.2, 2.3.



— XRF screening limits in mg/kg for regulated elements in various matrices

ELEMENT	POLYMER		
	BL	INCONCLUSIVE	OL
Cd	$X \leq (70-3\sigma)$	$(70-3\sigma) < X < (130+3\sigma)$	$X \geq (130+3\sigma)$
Pb	$X \leq (700-3\sigma)$	$(700-3\sigma) < X < (1300+3\sigma)$	$X \geq (1300+3\sigma)$
Hg	$X \leq (700-3\sigma)$	$(700-3\sigma) < X < (1300+3\sigma)$	$X \geq (1300+3\sigma)$
Br	$X \leq (300-3\sigma)$	$X > (300-3\sigma)$	NA
Cr	$X \leq (700-3\sigma)$	$X > (700-3\sigma)$	NA

ELEMENT	METAL		
	BL	INCONCLUSIVE	OL
Cd	$X \leq (70-3\sigma)$	$(70-3\sigma) < X < (130+3\sigma)$	$X \geq (130+3\sigma)$
Pb	$X \leq (700-3\sigma)$	$(700-3\sigma) < X < (1300+3\sigma)$	$X \geq (1300+3\sigma)$
Hg	$X \leq (700-3\sigma)$	$(700-3\sigma) < X < (1300+3\sigma)$	$X \geq (1300+3\sigma)$
Cr	$X \leq (700-3\sigma)$	$X > (700-3\sigma)$	NA

ELEMENT	COMPLEX MATERIAL		
	BL	INCONCLUSIVE	OL
Cd	$X \leq (50-3\sigma)$	$(50-3\sigma) < X < (150+3\sigma)$	$X \geq (150+3\sigma)$
Pb	$X \leq (500-3\sigma)$	$(500-3\sigma) < X < (1500+3\sigma)$	$X \geq (1500+3\sigma)$
Hg	$X \leq (500-3\sigma)$	$(500-3\sigma) < X < (1500+3\sigma)$	$X \geq (1500+3\sigma)$
Br	$X \leq (250-3\sigma)$	$X > (250-3\sigma)$	NA
Cr	$X \leq (500-3\sigma)$	$X > (500-3\sigma)$	NA

— Screening limits in mg/kg for regulated phthalates in various matrices

PHTHALATES	BL	INCONCLUSIVE
DEHP	$X < 600$	$X \geq 600$
BBP	$X < 600$	$X \geq 600$
DBP	$X < 600$	$X \geq 600$
DIBP	$X < 600$	$X \geq 600$

2.2. HEAVY METAL CONTENT

Test method: With reference to EN 62321-4:2014 /A1:2017, EN 62321-5:2014, EN 62321-7-1:2015 and EN 62321-7-2:2017, analyzed by Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES) and Ultraviolet-visible spectrophotometer (UV-Vis). [Reporting Limit: 2 mg/kg for Cadmium; 10 mg/kg or 0.10 µg/cm² for Hexavalent Chromium, 10 mg/kg for Lead and Mercury.]

Sample No.	Result				
	Total Cadmium	Hexavalent Chromium	Hexavalent Chromium	Total Mercury	Total Lead
005	--	/	Negative	--	--
011	--	<10	/	--	820
016	< 2	--	/	--	--
018	--	/	Negative	--	--
023	< 2	--	/	--	--
039	--	/	Negative	--	--
041	--	/	Negative	--	--
049	--	/	--	--	2.29×10 ^{4(c)}
057	--	/	--	--	2.30×10 ^{4(c)}
062	--	/	Negative	--	--
065	--	/	Negative	--	--
073	--	/	Negative	--	--
074	--	/	Negative	--	--
075	--	/	Negative	--	--
076	--	/	Negative	--	--
078	--	/	Negative	--	--
081	--	/	Negative	--	--
086	--	<10	/	--	--
088	--	/	Negative	--	--
091	--	/	Negative	--	--
101	--	/	Negative	--	--
102	--	/	Negative	--	--
103	--	/	Negative	--	--
105	--	/	Negative	--	--



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Sample No.	Result				
	Total Cadmium	Hexavalent Chromium	Hexavalent Chromium	Total Mercury	Total Lead
106	2.94×10 ^{3(f)}	/	Negative	--	--
114	--	/	Negative	--	--
115	--	/	Negative	--	--
119	--	/	Negative	--	--
120	--	--	/	--	4.06×10 ^{3(e)}
122	< 2	--	/	--	--
125	--	/	Negative	--	--
130	< 2	/	--	--	--
141	--	/	--	--	1.95×10 ^{4(c)}
146	--	/	Negative	--	--
147	--	/	Negative	--	--
150	--	/	Negative	--	--
154	--	/	Negative	--	--
156	--	/	Negative	--	--
163	--	/	Negative	--	--
174	2.94×10 ^{3(f)}	/	--	--	--
178	--	/	Negative	--	--
183	--	<10	/	--	--
Unit	mg/kg	mg/kg	µg/cm ²	mg/kg	mg/kg
RoHS Requirement	100	1000	Negative [#]	1000	1000

Note:

- “mg/kg” denotes milligram per kilogram
- “µg/cm²” denotes micrograms per square centimeter
- “<” denotes less than
- “Negative” denotes the absorbance value of sample is < 0.10 µg/cm², the sample is considered to be negative for Hexavalent Chromium.
- “#” According to DIRECTIVE 2011/65/EU Article 4(1) and Annex II. While, positive means the presence of CrVI on tested areas and the result(s) was (were) regarded as in conflict with European Parliament and Council Directive 2011/65/EU, Article 4(1) and Annex II.
- “--” denotes tested by XRF, result is listed in 2.1



- “(c)” denotes the exempt item according to DIRECTIVE 2011/65/EU Annex III item 6(c) *“Copper alloy containing up to 4 % lead by weight”*.
- “(e)” denotes the exempt item according to DIRECTIVE 2011/65/EU Annex III item 7(c)-I *“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”*
- “(f)” denotes the exempt item according to DIRECTIVE 2011/65/EU Annex III item 8(b) *“Cadmium and its compounds in electrical contacts”*



2.3. POLYBROMINATED BIPHENYLS (PBBs) AND POLYBROMINATED DIPHENYL ETHERS (PBDEs) CONTENT

Test Method: With reference to EN 62321-6:2015, extracted by toluene and analyzed by Gas Chromatography and Mass Spectrometry (GC-MS). [Reporting Limit: 5 mg/kg]

Test Item		Result [mg/kg]		RoHS Requirement [mg/kg]
		Sample 006+129	Sample 015+016+023	
PBBs	Monobromobiphenyl	< 5	< 5	Sum of PBBs 1000
	Dibromobiphenyl	< 5	< 5	
	Tribromobiphenyl	< 5	< 5	
	Tetrabromobiphenyl	< 5	< 5	
	Pentabromobiphenyl	< 5	< 5	
	Hexabromobiphenyl	< 5	< 5	
	Heptabromobiphenyl	< 5	< 5	
	Octabromobiphenyl	< 5	< 5	
	Nonabromobiphenyl	< 5	< 5	
	Decabromobiphenyl	< 5	< 5	
	Sum of PBBs	< 5	< 5	
PBDEs	Monobromodiphenyl Ether	< 5	< 5	Sum of PBDEs 1000
	Dibromodiphenyl Ether	< 5	< 5	
	Tribromodiphenyl Ether	< 5	< 5	
	Tetrabromodiphenyl Ether	< 5	< 5	
	Pentabromodiphenyl Ether	< 5	< 5	
	Hexabromodiphenyl Ether	< 5	< 5	
	Heptabromodiphenyl Ether	< 5	< 5	
	Octabromodiphenyl Ether	< 5	< 5	
	Nonabromodiphenyl Ether	< 5	< 5	
	Decabromodiphenyl Ether	< 5	< 5	
	Sum of PBDEs	< 5	< 5	

Note:

- “mg/kg” denotes miligram per kilogram
- “<” denotes less than



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Test Item		Result [mg/kg]		RoHS Requirement [mg/kg]
		Sample 034+051+090	Sample 097+117	
PBBs	Monobromobiphenyl	< 5	< 5	Sum of PBBs 1000
	Dibromobiphenyl	< 5	< 5	
	Tribromobiphenyl	< 5	< 5	
	Tetrabromobiphenyl	< 5	< 5	
	Pentabromobiphenyl	< 5	< 5	
	Hexabromobiphenyl	< 5	< 5	
	Heptabromobiphenyl	< 5	< 5	
	Octabromobiphenyl	< 5	< 5	
	Nonabromobiphenyl	< 5	< 5	
	Decabromobiphenyl	< 5	< 5	
	Sum of PBBs	< 5	< 5	
PBDEs	Monobromodiphenyl Ether	< 5	< 5	Sum of PBDEs 1000
	Dibromodiphenyl Ether	< 5	< 5	
	Tribromodiphenyl Ether	< 5	< 5	
	Tetrabromodiphenyl Ether	< 5	< 5	
	Pentabromodiphenyl Ether	< 5	< 5	
	Hexabromodiphenyl Ether	< 5	< 5	
	Heptabromodiphenyl Ether	< 5	< 5	
	Octabromodiphenyl Ether	< 5	< 5	
	Nonabromodiphenyl Ether	< 5	9	
	Decabromodiphenyl Ether	< 5	126	
	Sum of PBDEs	< 5	135	

Note:

- “mg/kg” denotes miligram per kilogram
- “<” denotes less than



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Test Item		Result [mg/kg]		RoHS Requirement [mg/kg]
		Sample 121+122	Sample 160+171	
PBBs	Monobromobiphenyl	< 5	< 5	Sum of PBBs 1000
	Dibromobiphenyl	< 5	< 5	
	Tribromobiphenyl	< 5	< 5	
	Tetrabromobiphenyl	< 5	< 5	
	Pentabromobiphenyl	< 5	< 5	
	Hexabromobiphenyl	< 5	< 5	
	Heptabromobiphenyl	< 5	< 5	
	Octabromobiphenyl	< 5	< 5	
	Nonabromobiphenyl	< 5	< 5	
	Decabromobiphenyl	< 5	< 5	
	Sum of PBBs	< 5	< 5	
PBDEs	Monobromodiphenyl Ether	< 5	< 5	Sum of PBDEs 1000
	Dibromodiphenyl Ether	< 5	< 5	
	Tribromodiphenyl Ether	< 5	< 5	
	Tetrabromodiphenyl Ether	< 5	< 5	
	Pentabromodiphenyl Ether	< 5	< 5	
	Hexabromodiphenyl Ether	< 5	< 5	
	Heptabromodiphenyl Ether	< 5	< 5	
	Octabromodiphenyl Ether	< 5	< 5	
	Nonabromodiphenyl Ether	< 5	9	
	Decabromodiphenyl Ether	< 5	126	
	Sum of PBDEs	< 5	135	

Note:

- “mg/kg” denotes miligram per kilogram
- “<” denotes less than



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Test Item		Result [mg/kg]	RoHS Requirement [mg/kg]
		Sample 186	
PBBs	Monobromobiphenyl	< 5	Sum of PBBs 1000
	Dibromobiphenyl	< 5	
	Tribromobiphenyl	< 5	
	Tetrabromobiphenyl	< 5	
	Pentabromobiphenyl	< 5	
	Hexabromobiphenyl	< 5	
	Heptabromobiphenyl	< 5	
	Octabromobiphenyl	< 5	
	Nonabromobiphenyl	< 5	
	Decabromobiphenyl	< 5	
	Sum of PBBs	< 5	
PBDEs	Monobromodiphenyl Ether	< 5	Sum of PBDEs 1000
	Dibromodiphenyl Ether	< 5	
	Tribromodiphenyl Ether	< 5	
	Tetrabromodiphenyl Ether	< 5	
	Pentabromodiphenyl Ether	< 5	
	Hexabromodiphenyl Ether	< 5	
	Heptabromodiphenyl Ether	< 5	
	Octabromodiphenyl Ether	< 5	
	Nonabromodiphenyl Ether	< 5	
	Decabromodiphenyl Ether	< 5	
	Sum of PBDEs	< 5	

Note:

- “mg/kg” denotes milligram per kilogram
- “<” denotes less than

3. REMARK

The chemical testing was performed in TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch Chemical lab and the test results were reviewed at TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch.

APPENDIX:

Photos of submitted products



-----End of Report-----

