



Test Report



中国认可
国际互认
检测
TESTING
CNAS L7462

Report No.: SFT21031119021E

Date: Apr.09, 2021

Page 1 of 16

Applicant: ShenZhen DAVO Electronics Co., Ltd

Address: 4th Floor, Building A, Tongxinhao Technology Industrial Park, Qiaotou Community, Fuhai Street, Baoan District, Shenzhen, China.

The following merchandise was (were) submitted and identified by client as:

Sample Name: Industrial metal keyboard

Model No.: D-8602, D-8601, D-8603, D-8605, D-8605T, D-8606G, D-8606T, D-8607, D-8608, D-8608 Desk, D-8609, D-8609 Desk, D-8610, D-8611, D-8611 Desk, D-8612, D-8615, D-8635T, D-8635T-GB, D-8635G, D-8635G-BG, D-8620, D-8623, D-8625, D-8625 Desk, D-8626, D-8628, D-8630, D-8641, D-8669, D-8656, D-86XX

Test Period: From Mar.11, 2021 to Apr.06, 2021

SUMMARY OF TEST RESULTS

TEST REQUESTED	CONCLUSION
Heavy Metals , Flame Retardants and Phthalates Content - European Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendments Commission Delegated Directive (EU) 2015/863	PASS

Test Result(s): Please refer to next page(s).

Signed for and on Behalf of SFT



Jack Zhong / Technical Manager
Guangdong Safety Testing Co., Ltd.

Unless otherwise stated the results shown in this report refer only to the sample(s) tested. This test report cannot be reproduced, except in full. Without prior written permission of the company,

Guangdong Safety Testing Co., Ltd.

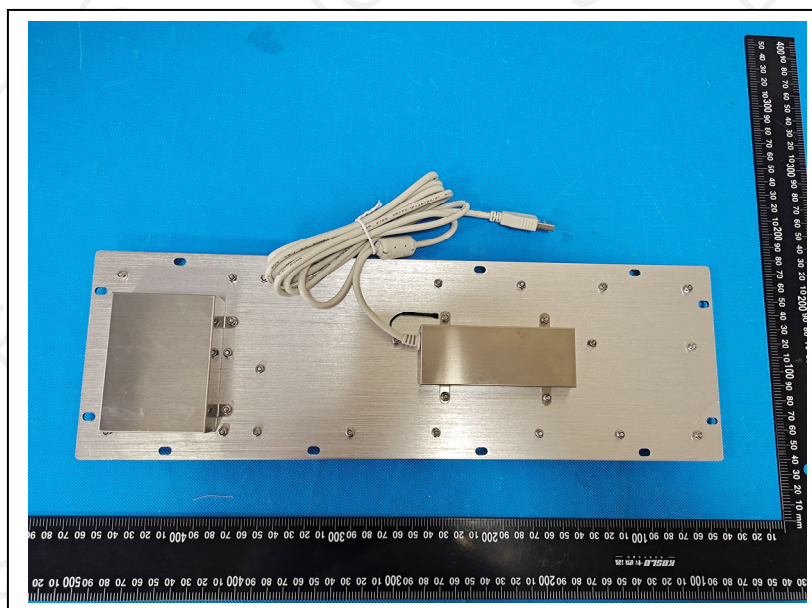
No.1, the 1st North Industry Road, Songshan Lake Sci.&Tech. Park, Dongguan, Guangdong, China
Tel:86-769-23105888 Fax: 86-769-22899858 <http://www.sft-cert.com/>

Report No.: SFT21031119021E

Date: Apr.09, 2021

Page 2 of 16

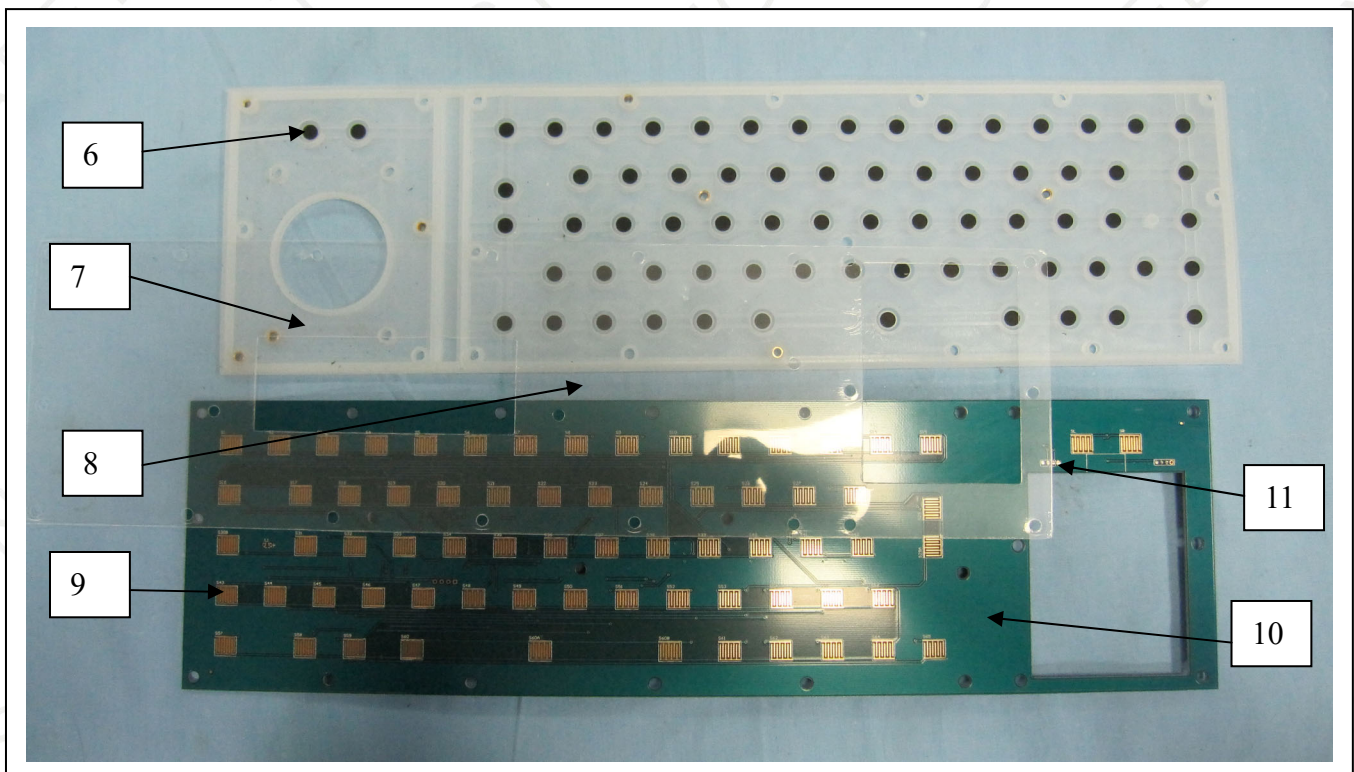
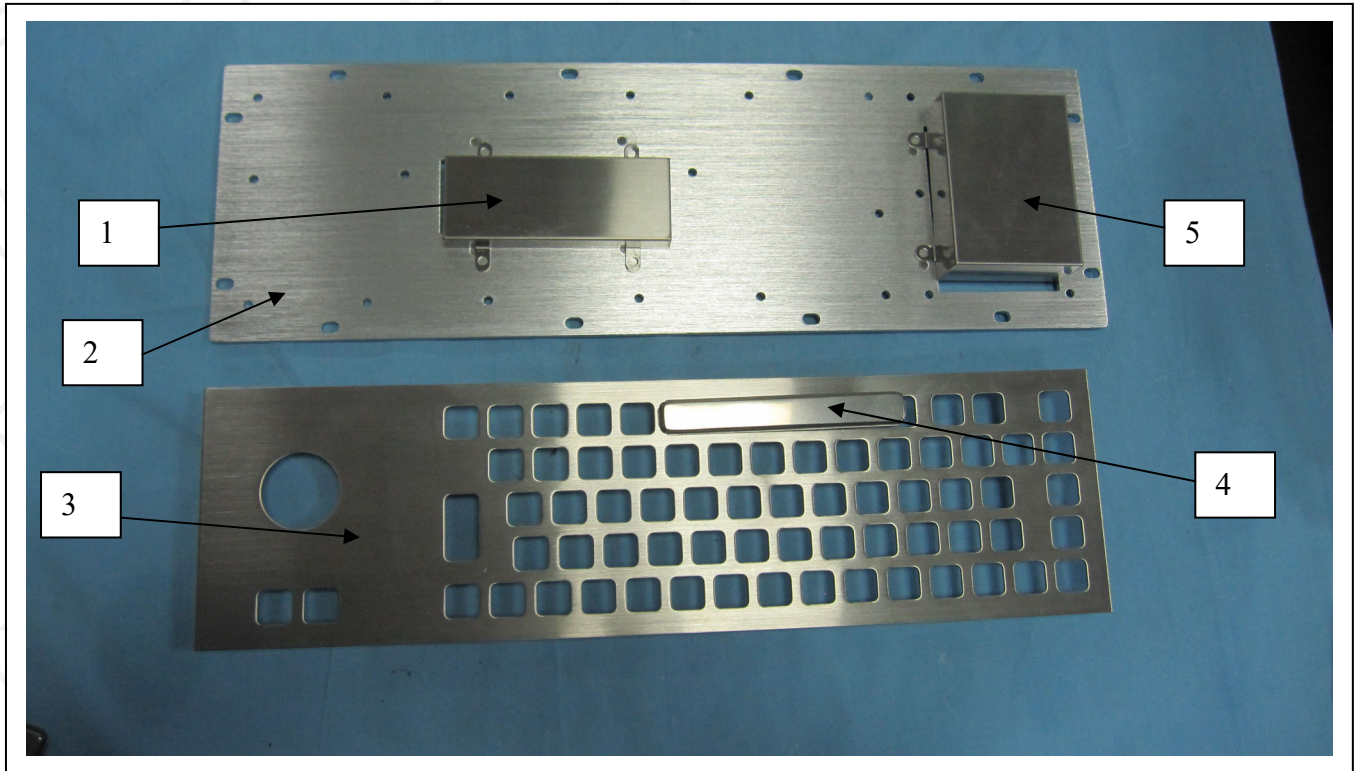
Photo of the Submitted Sample



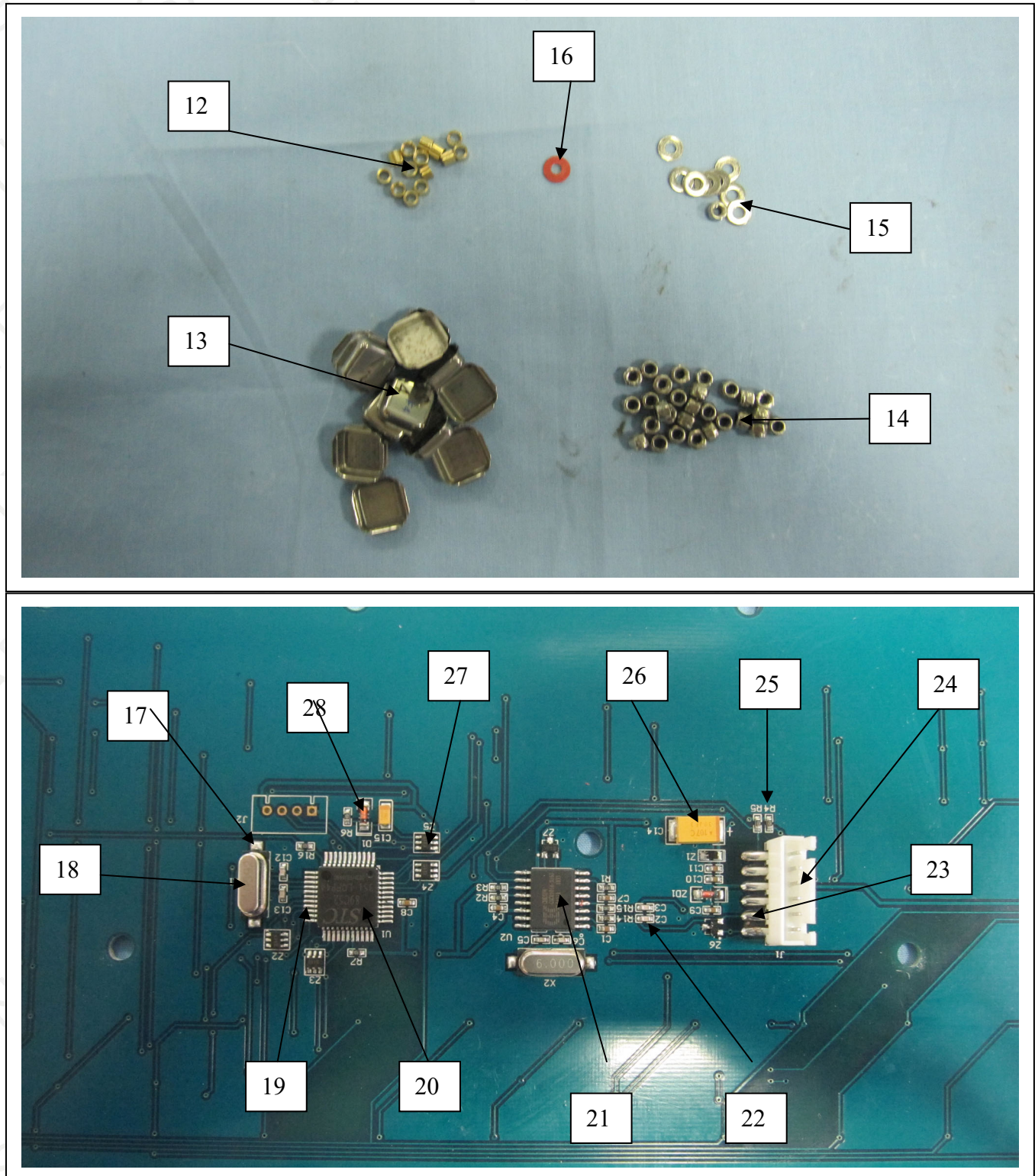
Unless otherwise stated the results shown in this report refer only to the sample(s) tested. This test report cannot be reproduced, except in full. Without prior written permission of the company,

Guangdong Safety Testing Co., Ltd.

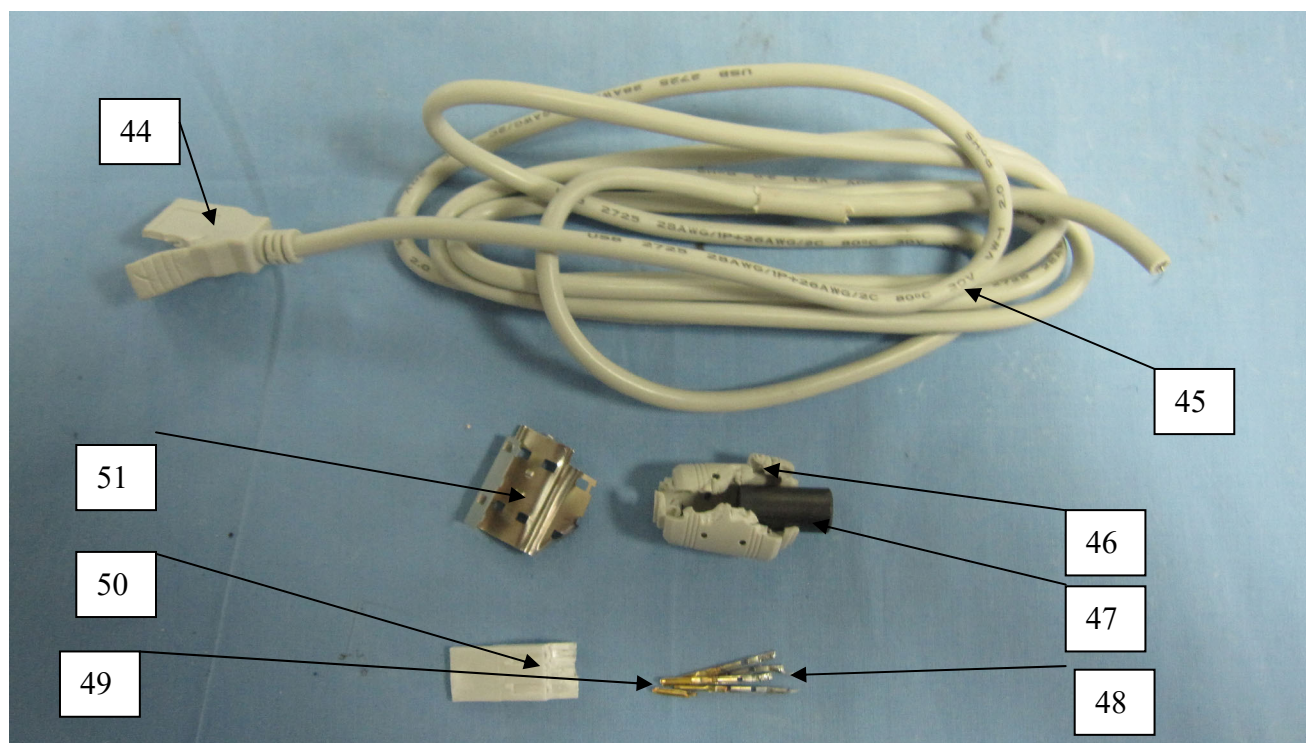
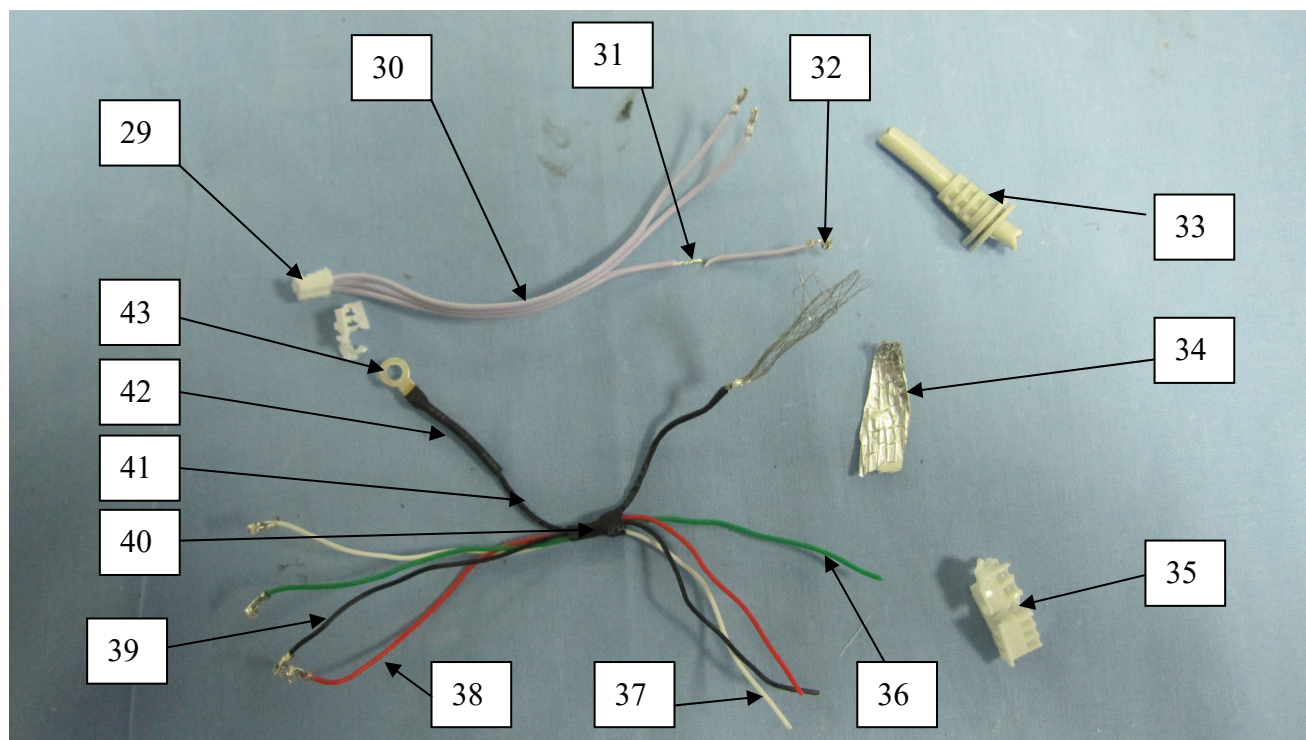
No.1, the 1st North Industry Road, Songshan Lake Sci.&Tech. Park, Dongguan,
Guangdong, China
Tel:86-769-23105888 Fax: 86-769-22899858 <http://www.sft-cert.com/>



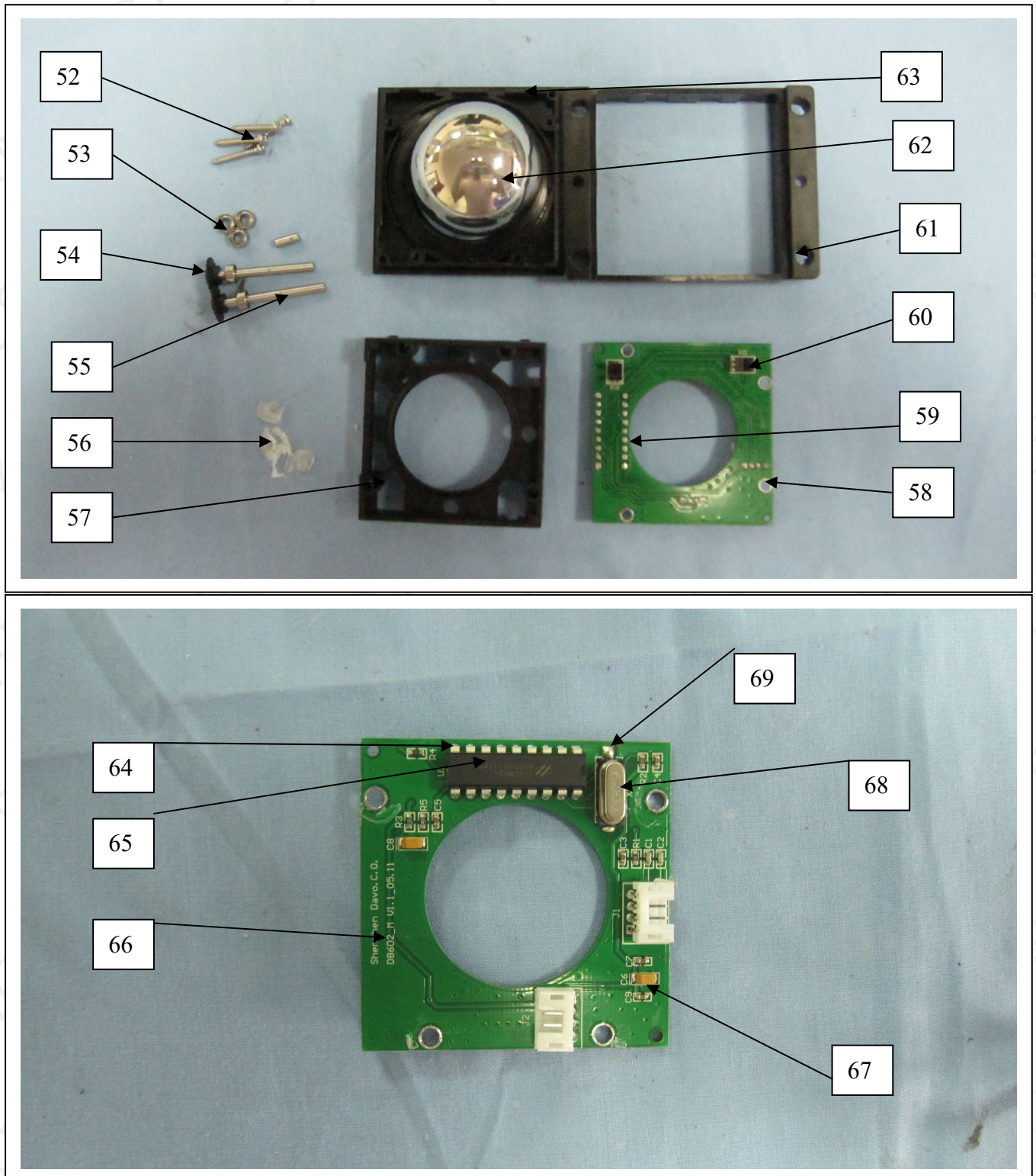
Unless otherwise stated the results shown in this report refer only to the sample(s) tested. This test report cannot be reproduced, except in full. Without prior written permission of the company,



Unless otherwise stated the results shown in this report refer only to the sample(s) tested. This test report cannot be reproduced, except in full. Without prior written permission of the company,



Unless otherwise stated the results shown in this report refer only to the sample(s) tested. This test report cannot be reproduced, except in full. Without prior written permission of the company,



Unless otherwise stated the results shown in this report refer only to the sample(s) tested. This test report cannot be reproduced, except in full. Without prior written permission of the company,

Guangdong Safety Testing Co., Ltd.

No.1, the 1st North Industry Road, Songshan Lake Sci.&Tech. Park, Dongguan, Guangdong, China
Tel:86-769-23105888 Fax: 86-769-22899858 <http://www.sft-cert.com/>

<u>Test Item(s)</u>	<u>Component Description(s)</u>	<u>Style</u>
1	Silver metal	-
2	Silver metal	-
3	Silver metal	-
4	Silver metal	-
5	Silver metal	-
6	Black soft plastic	-
7	Translucent soft plastic	-
8	Transparent plastic film	-
9	Gold metal film	-
10	Blue PCB	-
11	Silver solder tin	-
12	Silver metal	-
13	Silver metal	-
14	Silver metal	-
15	Silver metal	-
16	Red plastic	-
17	Silver solder tin	-
18	Crystal oscillator	-
19	Silver metal	-
20	IC	-
21	IC	-
22	SMD capacitor	-
23	Silver solder tin	-
24	Silver metal pin	-
25	SMD resistance	-
26	Capacitor	-
27	IC	-
28	Diode	-
29	White plastic	-
30	Light purple wire jacket	-
31	Silver metal wire	-
32	Silver metal	-
33	Off-white soft plastic	-
34	Silver film	-

Unless otherwise stated the results shown in this report refer only to the sample(s) tested. This test report cannot be reproduced, except in full. Without prior written permission of the company,

35	White plastic	-
36	Green plastic wire jacket	-
37	White plastic wire jacket	-
38	Red plastic wire jacket	-
39	Black plastic wire jacket	-
40	Black plastic tube	-
41	Black plastic wire jacket	-
42	Black plastic tube	-
43	Silver metal	-
44	Off-white soft plastic	-
45	Off-white plastic with black printing	-
46	Off-white soft plastic	-
47	Black metal	-
48	Silver solder tin	-
49	Gold metal	-
50	White plastic	-
51	Silver metal	-
52	Silver metal	-
53	Silver metal	-
54	Black plastic	-
55	Silver metal	-
56	Transparent glue	-
57	Black plastic	-
58	Silver metal	-
59	Silver solder tin	-
60	IC	-
61	Black plastic	-
62	silver metal ball	-
63	Black plastic	-
64	Silver metal	-
65	IC	-
66	Green PCB	-
67	Capacitor	-
68	Crystal oscillator	-
69	Silver solder tin	-

Unless otherwise stated the results shown in this report refer only to the sample(s) tested. This test report cannot be reproduced, except in full. Without prior written permission of the company,

Report No.: SFT21031119021E

Date: Apr.09, 2021

Page 9 of 16

Test Result(s):

Heavy Metals , Flame Retardants Content - European Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendments Commission Delegated Directive (EU) 2015/863

Test Method:	See Appendix.
--------------	---------------

See Analytes and their corresponding Maximum Allowable Limit in Appendix

Parameter	Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium VI (Cr VI)	PBBs	PBDEs	Conclusion
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
Test Component(s)	-	-	-	-	-	-	-
001	ND	ND	ND	ND	NA	NA	PASS
002	ND	ND	ND	ND	NA	NA	PASS
003	ND	ND	ND	Negative*	NA	NA	PASS
004	ND	ND	ND	Negative*	NA	NA	PASS
005	ND	ND	ND	Negative*	NA	NA	PASS
006	ND	ND	ND	ND	ND	ND	PASS
007	ND	ND	ND	ND	ND	ND	PASS
008	ND	ND	ND	ND	ND	ND	PASS
009	ND	ND	ND	ND	NA	NA	PASS
010	ND	ND	ND	ND	ND*	ND*	PASS
011	ND	ND	ND	ND	NA	NA	PASS
012	ND	ND	ND	ND	NA	NA	PASS
013	ND	ND	ND	Negative*	NA	NA	PASS
014	ND	ND	ND	Negative*	NA	NA	PASS
015	ND	ND	ND	Negative*	NA	NA	PASS
016	ND	ND	ND	ND	ND	ND	PASS
017	ND	ND	ND	ND	NA	NA	PASS
018	ND	ND	ND	ND	ND	ND	PASS
019	ND	ND	ND	ND	NA	NA	PASS
020	ND	ND	ND	ND	ND	ND	PASS
021	ND	ND	ND	ND	ND	ND	PASS
022	ND	ND	ND	ND	ND	ND	PASS
023	ND	ND	ND	ND	NA	NA	PASS
024	ND	ND	ND	ND	NA	NA	PASS
025	ND	ND	ND	ND	ND	ND	PASS
026	ND	ND	ND	ND	ND	ND	PASS
027	ND	ND	ND	ND	ND	ND	PASS
028	238659*	ND	ND	ND	ND	ND	EX-EMPTED
029	ND	ND	ND	ND	ND	ND	PASS
030	ND	ND	ND	ND	ND	ND	PASS

Unless otherwise stated the results shown in this report refer only to the sample(s) tested. This test report cannot be reproduced, except in full. Without prior written permission of the company,

Guangdong Safety Testing Co., Ltd.

No.1, the 1st North Industry Road, Songshan Lake Sci.&Tech. Park, Dongguan, Guangdong, China
Tel:86-769-23105888 Fax: 86-769-22899858 <http://www.sft-cert.com/>

031	ND	ND	ND	ND	NA	NA	PASS
032	ND	ND	ND	ND	NA	NA	PASS
033	ND	ND	ND	ND	ND	ND	PASS
034	ND	ND	ND	ND	ND	ND	PASS
035	ND	ND	ND	ND	ND	ND	PASS
036	ND	ND	ND	ND	ND	ND	PASS
037	ND	ND	ND	ND	ND	ND	PASS
038	ND	ND	ND	ND	ND	ND	PASS
039	ND	ND	ND	ND	ND	ND	PASS
040	ND	ND	ND	ND	ND	ND	PASS
041	ND	ND	ND	ND	ND	ND	PASS
042	ND	ND	ND	ND	ND	ND	PASS
043	ND	ND	ND	ND	NA	NA	PASS
044	ND	ND	ND	ND	ND	ND	PASS
045	ND	ND	ND	ND	ND	ND	PASS
046	ND	ND	ND	ND	ND	ND	PASS
047	ND	ND	ND	ND	NA	NA	PASS
048	ND	ND	ND	ND	NA	NA	PASS
049	ND	ND	ND	ND	NA	NA	PASS
050	ND	ND	ND	ND	ND	ND	PASS
051	ND	ND	ND	ND	NA	NA	PASS
052	ND	ND	ND	Negative*	NA	NA	PASS
053	ND	ND	ND	Negative*	NA	NA	PASS
054	ND	ND	ND	ND	ND	ND	PASS
055	ND	ND	ND	Negative*	NA	NA	PASS
056	ND	ND	ND	ND	ND	ND	PASS
057	ND	ND	ND	ND	ND	ND	PASS
058	ND	ND	ND	ND	NA	NA	PASS
059	ND	ND	ND	ND	NA	NA	PASS
060	ND	ND	ND	ND	ND	ND	PASS
061	ND	ND	ND	ND	ND	ND	PASS
062	ND	ND	ND	ND	NA	NA	PASS
063	ND	ND	ND	ND	ND	ND	PASS
064	ND	ND	ND	Negative*	NA	NA	PASS
065	ND	ND	ND	ND	ND	ND	PASS
066	ND	ND	ND	ND	ND	ND	PASS
067	ND	ND	ND	ND	ND	ND	PASS
068	ND	ND	ND	ND	ND	ND	PASS
069	ND	ND	ND	ND	NA	NA	PASS

Note / Key:

ND = Not detected

NA = Not applicable

% = percent

Detection Limit : See Appendix.

">" = Greater than

mg/kg = milligram(s) per kilogram = ppm = part(s) per million

10000 mg/kg = 1 %

Unless otherwise stated the results shown in this report refer only to the sample(s) tested. This test report cannot be reproduced, except in full. Without prior written permission of the company,

Phthalates Content - European Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendments Commission Delegated Directive (EU) 2015/863

Analyte	Requirement (mg/kg)	Result (mg/kg)		
		Test Component		
		6+7+30	8+29	33+36+37
Dibutyl phthalate (DBP)	1000	ND	ND	ND
Di-(2-ethyl hexyl) phthalate (DEHP)	1000	ND	ND	ND
Benzyl butyl phthalate (BBP)	1000	ND	ND	ND
Di-(iso-butyl) phthalate (DIBP)	1000	ND	ND	ND
Conclusion		PASS	PASS	PASS

Analyte	Requirement (mg/kg)	Result (mg/kg)		
		Test Component		
		35+50	38+39+40	41+42+44
Dibutyl phthalate (DBP)	1000	ND	ND	ND
Di-(2-ethyl hexyl) phthalate (DEHP)	1000	ND	ND	ND
Benzyl butyl phthalate (BBP)	1000	ND	ND	ND
Di-(iso-butyl) phthalate (DIBP)	1000	ND	ND	ND
Conclusion		PASS	PASS	PASS

Analyte	Requirement (mg/kg)	Result (mg/kg)		
		Test Component		
		45+46+56	54+57	61+63
Dibutyl phthalate (DBP)	1000	ND	ND	ND
Di-(2-ethyl hexyl) phthalate (DEHP)	1000	ND	ND	ND
Benzyl butyl phthalate (BBP)	1000	ND	ND	ND
Di-(iso-butyl) phthalate (DIBP)	1000	ND	ND	ND
Conclusion		PASS	PASS	PASS

Note / Key:

ND = Not detected

NA = Not applicable

% = percent

Report Limit: See Appendix.

“>” = Greater than

mg/kg = milligram(s) per kilogram = ppm = part(s) per million

10000 mg/kg = 1 %

Remark:

- The testing approach is listed in table of Appendix.
- * denotes as reported result(s) was (were) performed by wet chemistry method. Others were screened by XRF. For XRF screening, the result(s) of Cr VI was (were) reported as total chromium and the result(s) of PBBs and PBDEs was (were) reported as total bromine. Also, the XRF result(s) may be different to the actual content based on various factors including, but not limit to, sample size, thickness, area, non-uniformity composition, surface flatness.

Unless otherwise stated the results shown in this report refer only to the sample(s) tested. This test report cannot be reproduced, except in full. Without prior written permission of the company,

- Only selected example(s) is (are) indicated on the photograph(s) in Comment.
- According to European Council Directive 2011/65/EU, Article 5 "Adaptation of the Annexes to scientific and technical progress", exemption(s) should be granted to the materials and components of Test Item(s) in the lists in Annexes III and IV of this directive.
- Result(s) of Cr VI for metallic material(s) was (were) expressed in term of positive and negative. Negative means the absence of Cr VI on the tested areas and the result(s) was (were) regarded as in compliance with European Council Directive 2011/65/EU, Article 4(1). While, positive means the presence of Cr VI on tested areas and the result(s) was (were) regarded as in conflict with European Council Directive 2011/65/EU, Article 4(1).
- a. The sample is positive for Cr⁶⁺ if the Cr⁶⁺ concentration is greater than 0.13μg/cm², The sample coating is considered to contain Cr⁶⁺.
- b. The sample is negative for Cr⁶⁺ if the Cr⁶⁺ is N.D. (concentration less than 0.10μg/cm²), The coating is considered a non-Cr⁶⁺ based coating.
- c. The result between 0.10μg/cm² and 0.13μg/cm² is considered to be inconclusive-unavoidable coating variations may influence the determination information on storage conditions and production date of the tested sample is unavailable and thus Cr⁶⁺ results represent status of the sample at the time of testing.
- "According to Annex III of European Parliament and Council Directive 2011/65/EU, exemptions were granted a few materials and Clause 7(c)-I is reiterated here "Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound.". Test Item(s) < 28 > was (were) claimed as is by client (received as is). Therefore, this (these) Test Item(s) containing the found lead level should be exempted.
- The test items (12, 28, 58) were semi-product and provided by client dated on April 02, 2021.

APPENDIX

List of Analytes and their Corresponding Test Methods, Detection Limit and Maximum Allowable Limit [for European Council Directive 2011/65/EU&(EU) 2015/863] :						
No.	Name of Analytes	Report Limit (mg/kg)				Maximum Allowable Limit (mg/kg)
		X-ray fluorescence (XRF) ^[a]			Wet Chemistry	
		Plastic	Metallic / glass / ceramic	Others		
1	Lead (Pb)	100	200	200	10 ^[b]	1000
2	Cadmium (Cd)	50	50	50	10 ^[b]	100
3	Mercury (Hg)	100	200	200	10 ^[c]	1000
4	Chromium (Cr)	100	200	200	NA	NA
5	Chromium VI (Cr VI)	NA	NA	NA	10 ^[d] / See ^[e]	1000 / Negative
6	Bromine (Br)	200	NA	200	NA	NA
7	Polybromobiphenyls (PBBs) - Bromobiphenyl (MonoBB) - Dibromobiphenyl (DiBB) - Tribromobiphenyl (TriBB) - Tetrabromobiphenyl (TetraBB) - Pentabromobiphenyl (PentaBB) - Hexabromobiphenyl (HexaBB)	NA	NA	NA	Each 50 ^[f]	Sum 1000

Unless otherwise stated the results shown in this report refer only to the sample(s) tested. This test report cannot be reproduced, except in full. Without prior written permission of the company,

	- Heptabromobiphenyl (HeptaBB) - Octabromobiphenyl (OctaBB) - Nonabromobiphenyl (NonaBB) - Decabromobiphenyl (DecaBB)					
8	Polybromodiphenyl ethers (PBDEs) - Bromodiphenyl ether (MonoBDE) - Dibromodiphenyl ether (DiBDE) - Tribromodiphenyl ether (TriBDE) - Tetrabromodiphenyl ether (TetraBDE) - Pentabromodiphenyl ether (PentaBDE) - Hexabromodiphenyl ether (HexaBDE) - Heptabromodiphenyl ether (HeptaBDE) - Octabromodiphenyl ether (OctaBDE) - Nonabromodiphenyl ether (NonaBDE) - Decabromodiphenyl ether (DecaBDE)	NA	NA	NA	Each 50 ^[f]	Sum 1000
9	Dibutyl phthalate (DBP) Di-(2-ethyl hexyl) phthalate (DEHP) Benzyl butyl phthalate (BBP) Di-(iso-butyl) phthalate (DIBP)	NA	NA	NA	Each 50 ^[g]	Each 1000

NA = Not applicable

[a] Test method with reference to IEC 62321-3-1:2013.

[b] Test method with reference to IEC 62321-5:2013.

[c] Test method with reference to IEC 62321-4:2013.

[d] Polymers and Electronic-Test method with reference to European standard IEC 62321-7-2:2017.

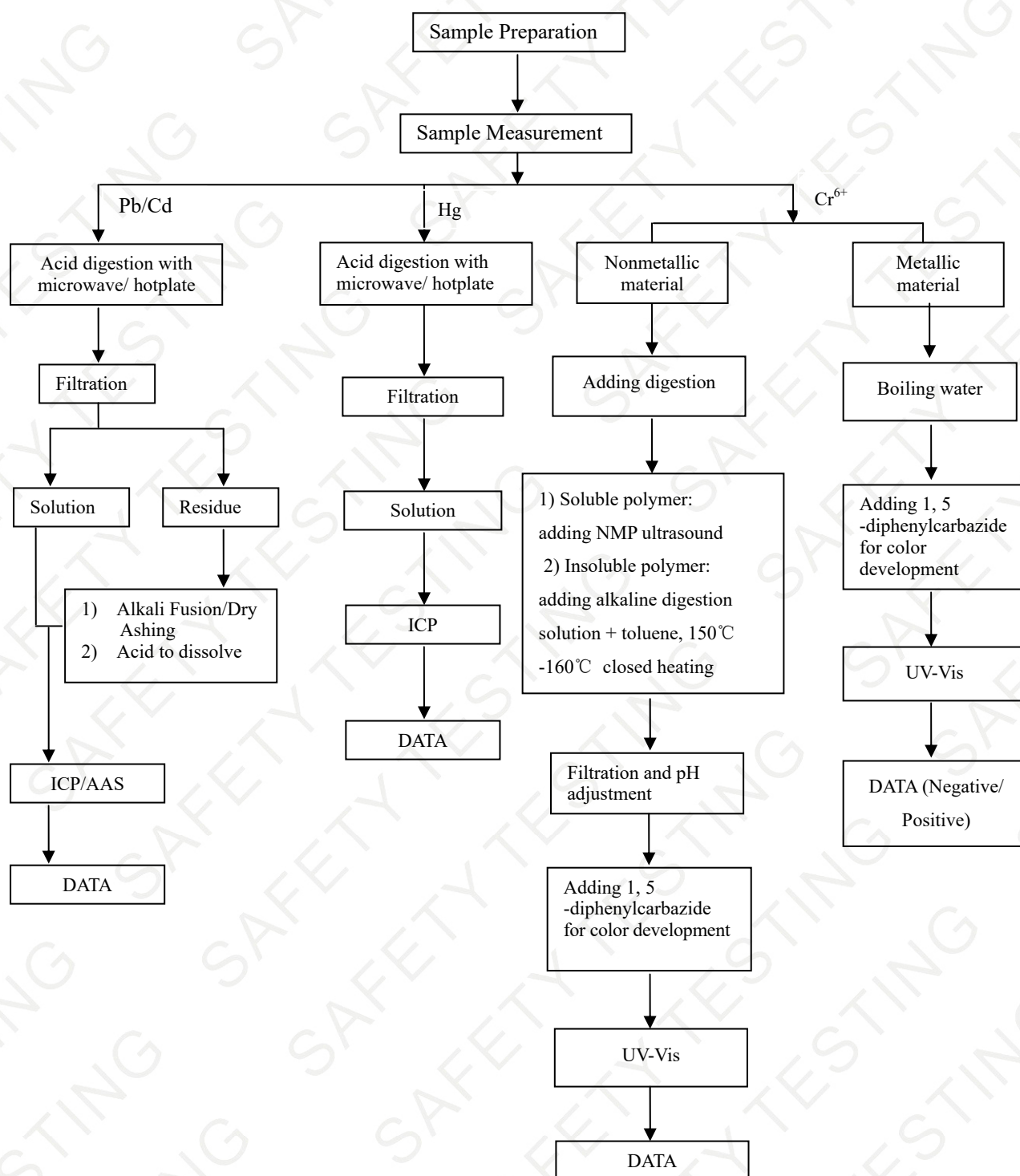
[e] Metal-Test method with reference to European standard IEC 62321-7-1:2015.

[f] Test method with reference to European standard IEC 62321-6: 2015.

[g] Test method with reference to IEC 62321-8:2017.

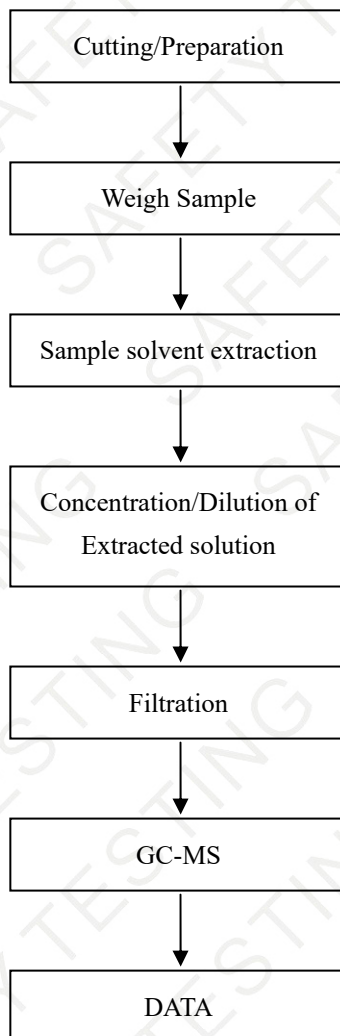
Unless otherwise stated the results shown in this report refer only to the sample(s) tested. This test report cannot be reproduced, except in full. Without prior written permission of the company,

Pb/Cd/Hg/Cr⁶⁺ Testing Flow Chart



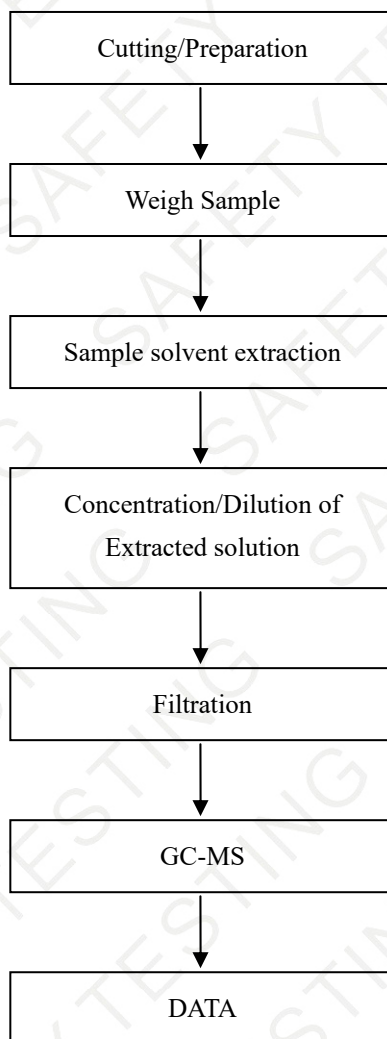
Unless otherwise stated the results shown in this report refer only to the sample(s) tested. This test report cannot be reproduced, except in full. Without prior written permission of the company,

PBBs/PBDEs Testing Flow Chart



Unless otherwise stated the results shown in this report refer only to the sample(s) tested. This test report cannot be reproduced, except in full. Without prior written permission of the company,

Phthalates Testing Flow Chart



End of Report

Unless otherwise stated the results shown in this report refer only to the sample(s) tested. This test report cannot be reproduced, except in full. Without prior written permission of the company,