

Test Report No.: 70.400.19.775.01-00.01

Dated: 2019-08-30



Applicant : Ningbo Oubo Hardware Industrial Ltd.
No.185, Shunyu West Road, Yuyao, Ningbo 315400,
China

Attention : Mr. Tengfei Shi

Sample Description : Laser Distance Meter

Style No. / Name / Design No. : LD Meter A, LD Meter B, LD Meter C

PO No. / Order No. : NA

Test Sample Receipt Date, Location : 2019-06-06, Shanghai

Test Period, Location : From 2019-06-06 to 2019-07-30, Shanghai

Test Result(s) : Refer to Section 3



Disclaimer Measurement Uncertainty:

Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations 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 nor as Fail

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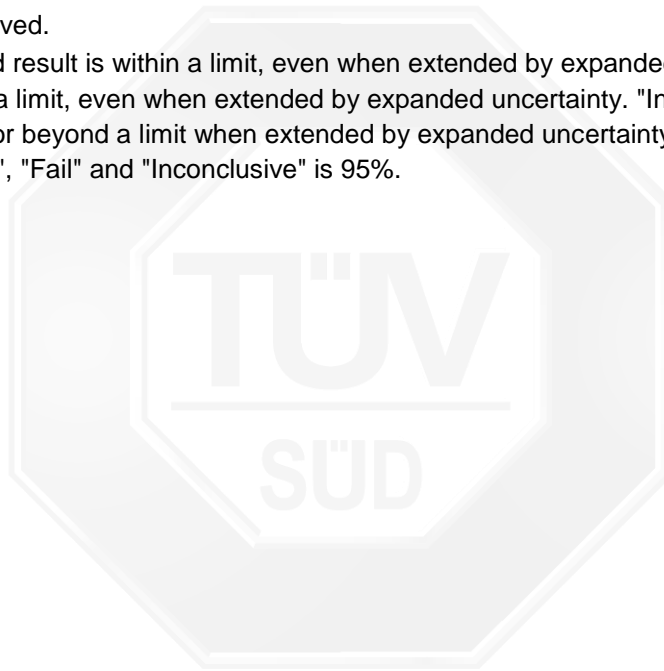


Purpose Of Examination / Conclusion:

No.	Test Item(s)	Conclusion
	Test according to Restriction of Hazardous Substances (RoHS) Directive 2011/65/EU and its amendment Directive (EU) 2015/863	Complied
1.	Quantitative screening of Lead, Cadmium, Mercury, Chromium and Bromine	Inconclusive
2.	Heavy Metals Content Test (Total Cadmium, Total Lead, Total Mercury, Hexavalent Chromium)	Pass
3.	Brominated Flame Retardants (PBBs & PBDEs)	Pass
4.	Phthalates (DEHP, BBP, DBP and DIBP)	Pass

Remarks:

- (1) The results relate only to the items tested.
- (2) Samples are tested as received.
- (3) "Pass" means the measured result is within a limit, even when extended by expanded uncertainty. "Fail" means the measured result is beyond a limit, even when extended by expanded uncertainty. "Inconclusive" means the measured result can be within or beyond a limit when extended by expanded uncertainty. The confidence level of the expanded uncertainty for "pass", "Fail" and "Inconclusive" is 95%.







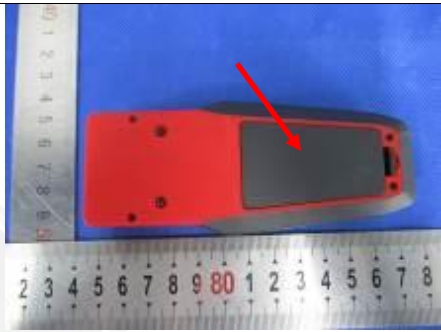
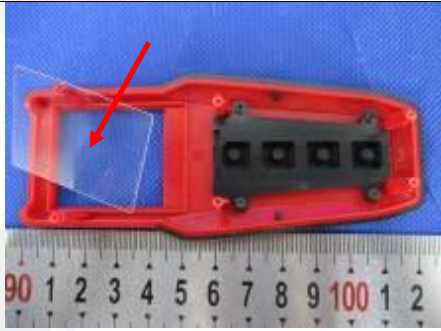
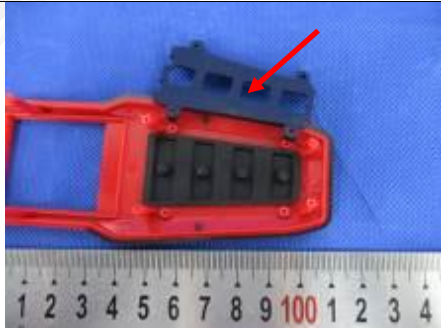
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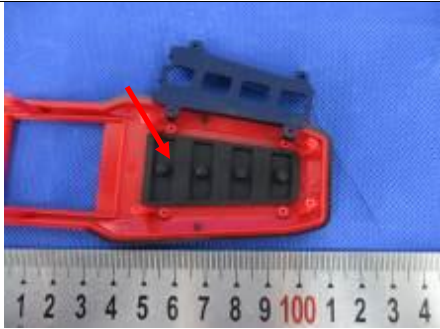
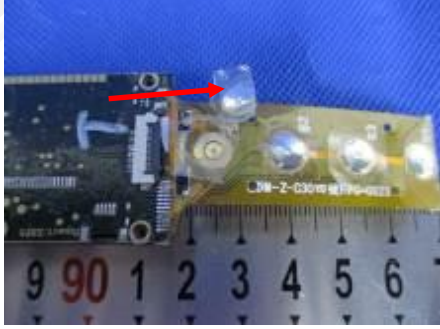
Sample Description	Laser Distance Meter
	 <p>LD Meter A, LD Meter B, LD Meter C</p>

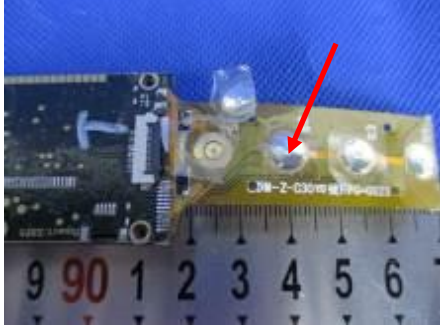
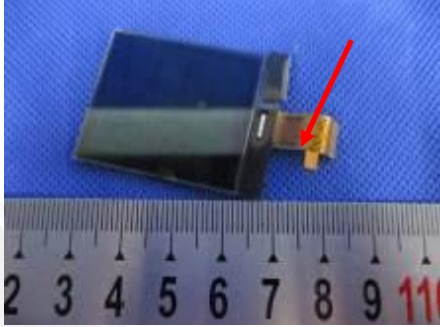
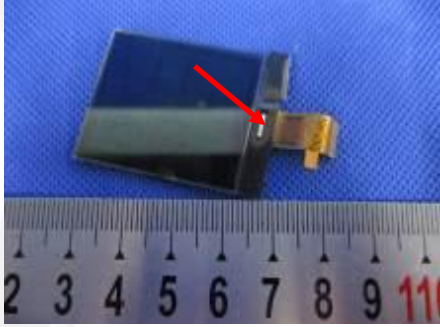
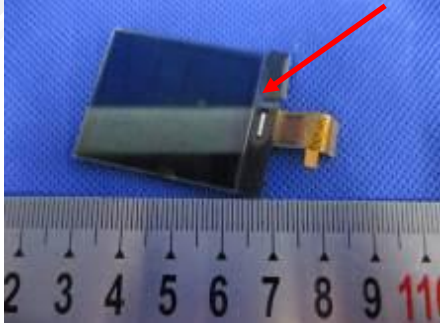


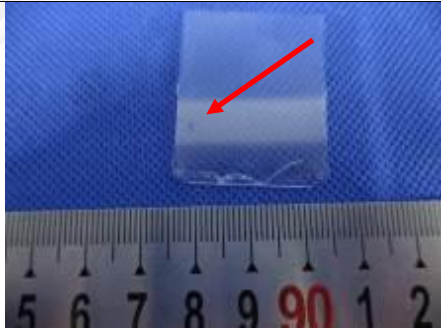
2. List of Materials as identified by the Laboratory:

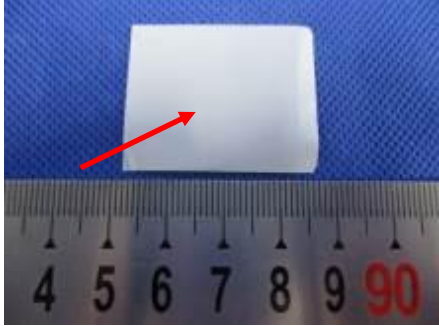
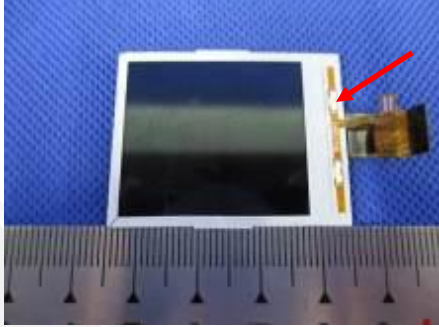
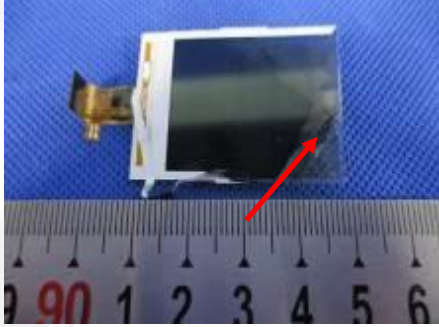
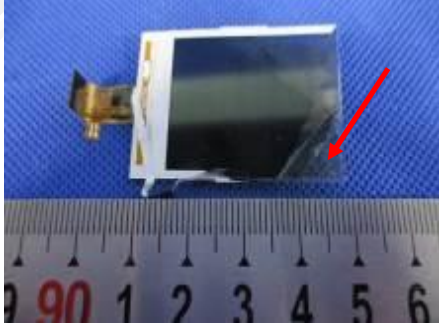
T. No.	Sample No.	Colour and Description	Photograph
T1	001	Black label with printing / (/)	
T2	002	Black label with printing / (/)	
T3	003	Black label with printing / (/)	
T4	004	Red plastic shell / (/)	


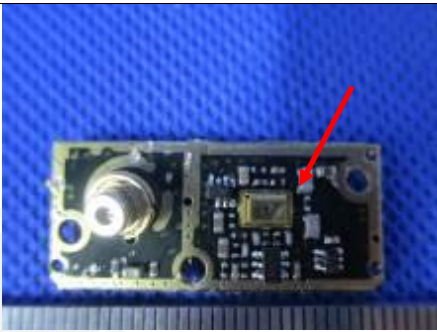
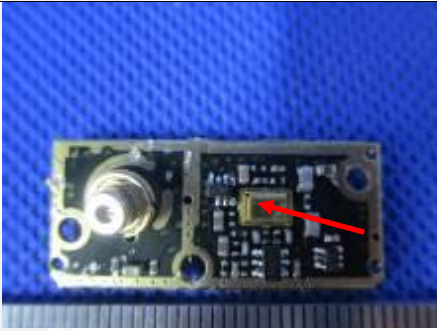

T. No.	Sample No.	Colour and Description	Photograph
T5	005	Black soft plastic block / (/)	
T6	006	Black plastic battery cover / (/)	
T7	007	Transparent plastic block / (/)	
T8	008	Black plastic block / (/)	




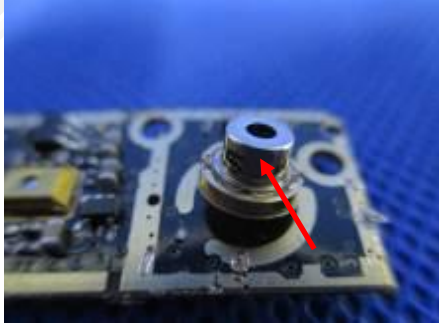
T. No.	Sample No.	Colour and Description	Photograph
T9	009	Black soft plastic block / (/)	
T10	010	Black metal screw / (/)	
T11	011	Yellow plastic block / (/)	
T12	012	Transparent plastic tape / (/)	




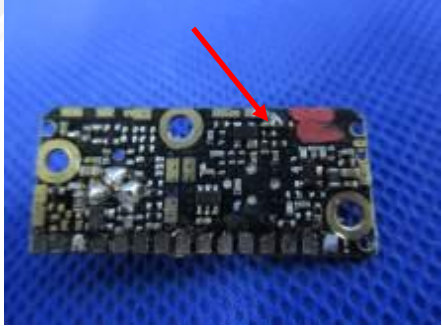
T. No.	Sample No.	Colour and Description	Photograph
T13	013	Silvery metal spring piece / (/)	
T14	014	Coppery metal wire / (/)	
T15	015	Silvery metal crystal / (/)	
T16	016	Black glue / (/)	



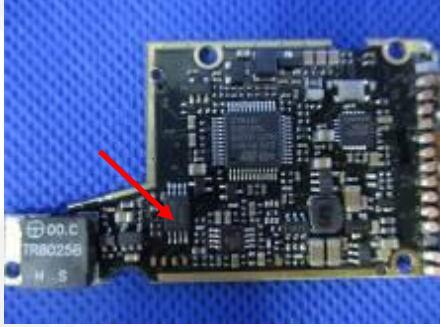

T. No.	Sample No.	Colour and Description	Photograph
T17	017	Black plastic block / (/)	
T18	018	White plastic block / (/)	
T19	019	Black and white plastic tape / (/)	
T20	020	Transparent plastic block / (/)	


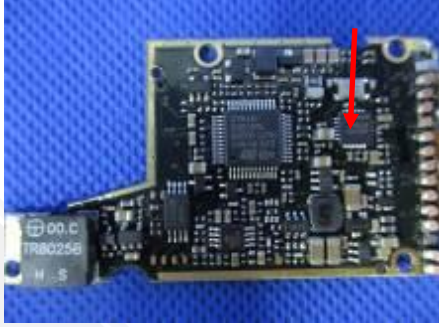
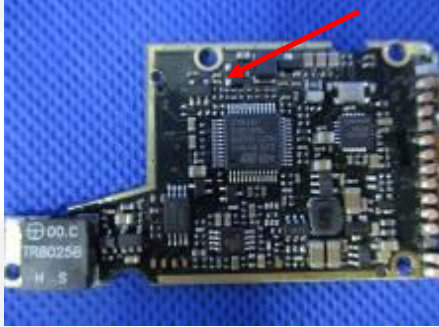

T. No.	Sample No.	Colour and Description	Photograph
T21	021	White plastic block / (/)	
T22	022	White LED / (/)	
T23	023	Transparent black plastic block / (/)	
T24	024	Transparent glass screen / (/)	



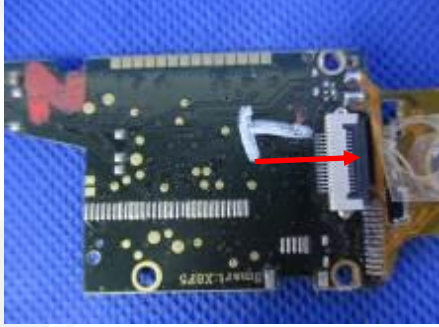
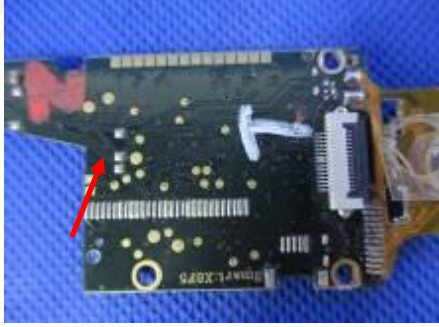
T. No.	Sample No.	Colour and Description	Photograph
T25	025	Black plastic shell / (/)	
T26	026	Brown trip capacitor / (/)	
T27	027	Silvery metal crystal / (/)	
T28	028	Black electric component / (/)	

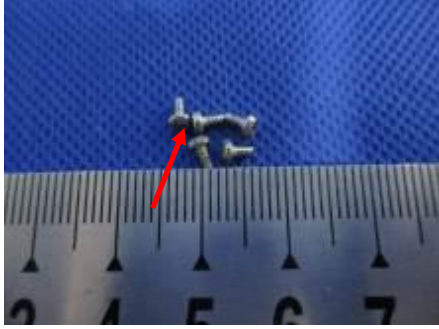

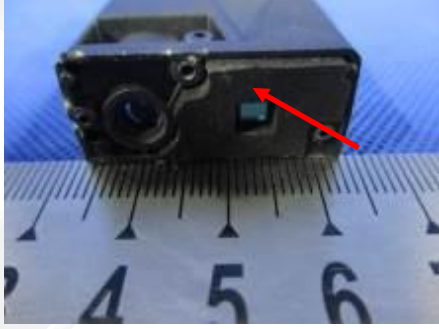
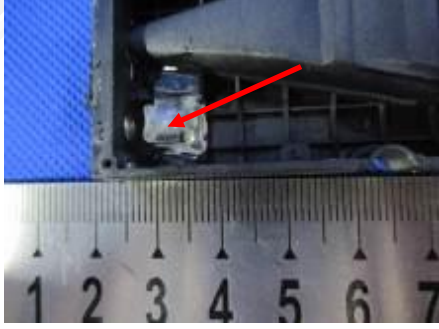
T. No.	Sample No.	Colour and Description	Photograph
T29	029	Black electric component / (/)	
T30	030	Black chip capacitor / (/)	
T31	031	Black electric component / (/)	
T32	032	Silvery metal part / (/)	

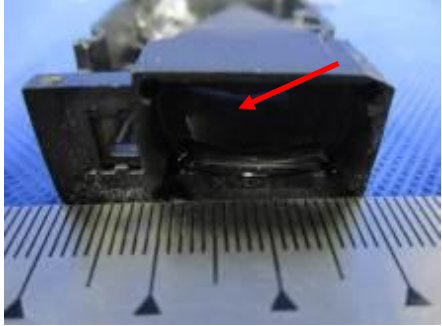
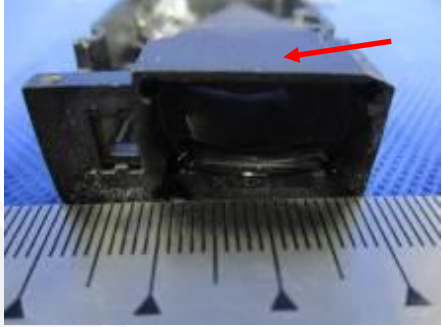

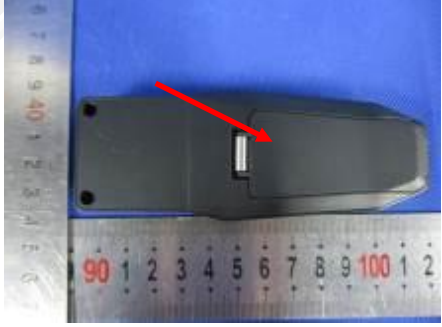
T. No.	Sample No.	Colour and Description	Photograph
T33	033	Golden metal part / (/)	
T34	034	Solder / (/)	
T35	035	Black electric component / (/)	
T36	036	Black chip resistor / (/)	

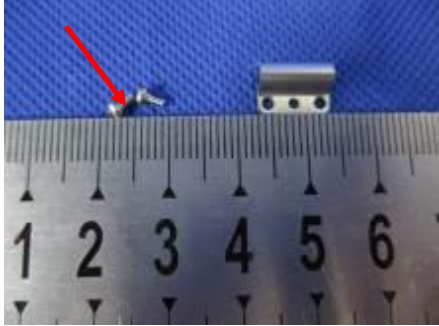
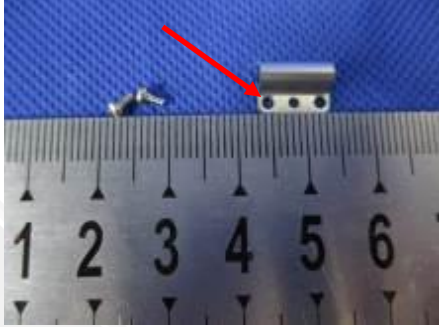


T. No.	Sample No.	Colour and Description	Photograph
T37	037	Green PCB board / (/)	
T38	038	Black plastic case / (/)	
T39	039	Black electric component / (/)	
T40	040	Black electric component / (/)	

T. No.	Sample No.	Colour and Description	Photograph
T41	041	Black magnet case / (/)	
T42	042	Black electric component / (/)	
T43	043	Black electric component / (/)	
T44	044	Black electric component / (/)	

T. No.	Sample No.	Colour and Description	Photograph
T45	045	Silvery metal pin / (/)	
T46	046	White plastic block / (/)	
T47	047	Black plastic block / (/)	
T48	048	Green PCB board / (/)	



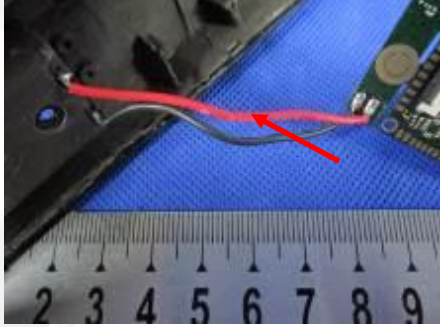
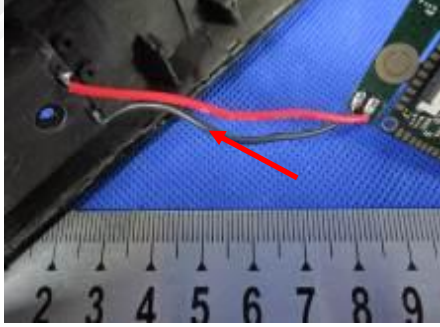
T. No.	Sample No.	Colour and Description	Photograph
T49	049	Silvery metal screw / (/)	
T50	050	Silvery metal piece / (/)	
T51	051	Black foam / (/)	
T52	052	Transparent plastic block / (/)	

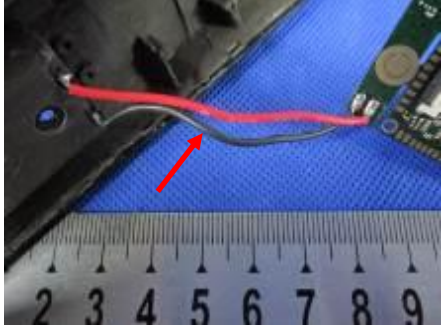
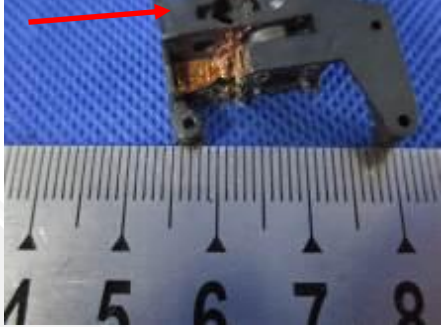


T. No.	Sample No.	Colour and Description	Photograph
T53	053	Transparent plastic block / (/)	
T54	054	Black plastic shell / (/)	
T55	055	Black plastic shell / (/)	
T56	056	Black plastic battery cover / (/)	


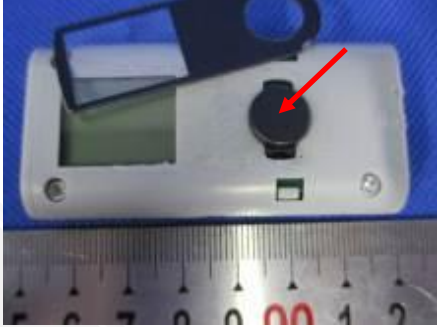

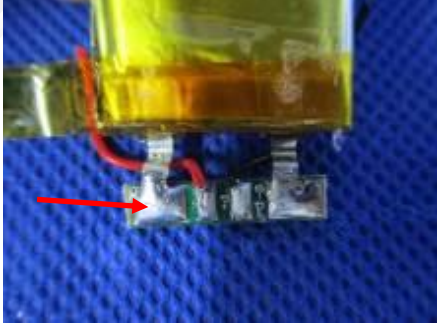
T. No.	Sample No.	Colour and Description	Photograph
T57	057	Silvery metal screw / (/)	
T58	058	Silvery metal block / (/)	
T59	059	Transparent plastic film / (/)	
T60	060	Transparent plastic with coating / (/)	

T. No.	Sample No.	Colour and Description	Photograph
T61	061	Black soft plastic block / (/)	
T62	062	Black glue / (/)	
T63	063	Silvery metal block / (/)	
T64	064	Solder / (/)	


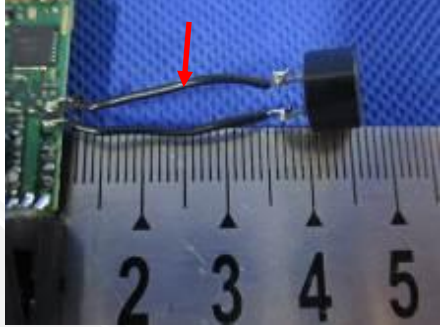
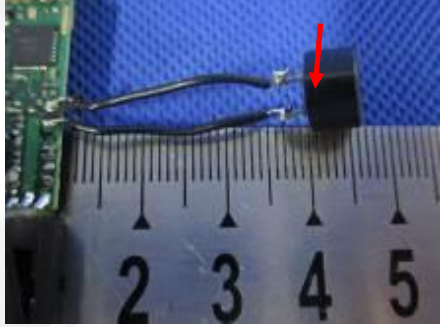
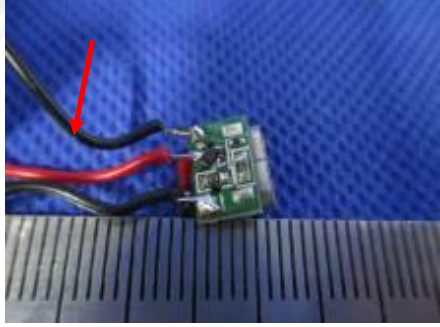
T. No.	Sample No.	Colour and Description	Photograph
T65	065	Green PCB board / (/)	
T66	066	Black electric component / (/)	
T67	067	Black electric component / (/)	
T68	068	Black electric component / (/)	


T. No.	Sample No.	Colour and Description	Photograph
T69	069	Silvery metal crystal / (/)	
T70	070	Green PCB board / (/)	
T71	071	Red soft cable jacket / (/)	
T72	072	Black soft cable jacket / (/)	

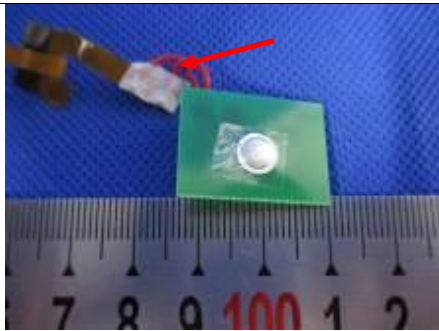
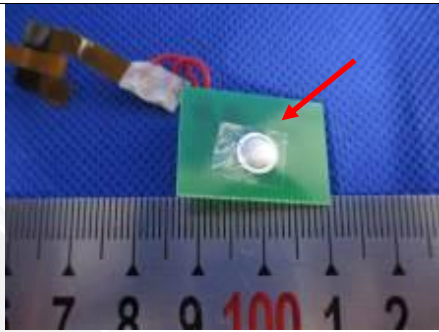
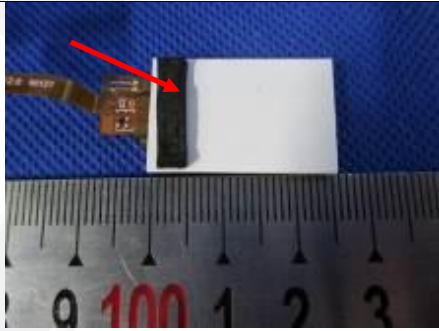

T. No.	Sample No.	Colour and Description	Photograph
T73	073	Silvery metal wire / (/)	
T74	074	Black plastic block / (/)	
T75	075	Silvery-grey metal shell / (/)	
T76	076	Transparent label with printing / (/)	

T. No.	Sample No.	Colour and Description	Photograph
T77	077	Transparent plastic with coating / (/)	
T78	078	Black plastic button / (/)	
T79	079	Grey plastic shell / (/)	
T80	080	Solder / (/)	

T. No.	Sample No.	Colour and Description	Photograph
T81	081	Green PCB board / (/)	
T82	082	Black electric component / (/)	
T83	083	White chip capacitor / (/)	
T84	084	Solder / (/)	

T. No.	Sample No.	Colour and Description	Photograph
T85	085	Green PCB board / (/)	
T86	086	Black soft cable jacket / (/)	
T87	087	Black plastic case / (/)	
T88	088	Black soft cable jacket / (/)	

T. No.	Sample No.	Colour and Description	Photograph
T89	089	Red soft cable jacket / (/)	
T90	090	Silvery metal connector / (/)	
T91	091	Black plastic pin holder / (/)	
T92	092	White plastic tape / (/)	

T. No.	Sample No.	Colour and Description	Photograph
T93	093	Red soft cable jacket / (/)	
T94	094	Green PCB board / (/)	
T95	095	Black foam / (/)	
T96	096	Silvery metal shell / (/)	

T. No.	Sample No.	Colour and Description	Photograph
T97	097	White plastic shell / (/)	
T98	098	Silvery-black metal shell / (/)	



3. Test Result

3.1 Quantitative screening of Lead, Cadmium, Mercury, Chromium and Bromine

Test Method: EN 62321-3-1:2014, EN 62321-2:2014, EN 62321-3-1:2014, analyzed by Energy-Dispersive X-Ray Fluorescence Spectrometers (XRF)

[Reporting Limit = 60 mg/kg for Cadmium, 300 mg/kg for Bromine, and 600 mg/kg for others]

Sample	Total Cadmium [mg/kg]	Total Lead [mg/kg]	Total Chromium [mg/kg]	Total Mercury [mg/kg]	Total Bromine [mg/kg]
001	BL	BL	BL	BL	BL
002	BL	BL	BL	BL	BL
003	BL	BL	BL	BL	BL
004	BL	BL	BL	BL	BL
005	BL	BL	BL	BL	BL
006	BL	BL	BL	BL	BL
007	BL	BL	BL	BL	BL
008	BL	BL	BL	BL	BL
009	BL	BL	BL	BL	BL
010	BL	BL	BL	BL	NA
011	BL	BL	BL	BL	BL
012	BL	BL	BL	BL	BL
013	BL	BL	Inconclusive ^(a)	BL	NA
014	BL	BL	BL	BL	NA
015	BL	BL	BL	BL	NA
016	BL	BL	BL	BL	BL
017	BL	BL	BL	BL	BL
018	BL	BL	BL	BL	BL
019	BL	BL	BL	BL	BL
RoHS Requirement	100	1000	1000	1000	1000

Note 1. "mg/kg" denotes milligram per kilogram

2. "BL" denotes below the limit

3. "OL" denotes over the limit

4. "NA" denotes Not Applicable

5. "(a)" denotes further confirmation test was conducted, results are listed in 3.2

6. "(b)" denotes further confirmation test was conducted, results are listed in 3.3

3.1 Quantitative screening of Lead, Cadmium, Mercury, Chromium and Bromine

Test Method: EN 62321-3-1:2014, EN 62321-2:2014, EN 62321-3-1:2014, analyzed by Energy-Dispersive X-Ray Fluorescence Spectrometers (XRF)

[Reporting Limit = 60 mg/kg for Cadmium, 300 mg/kg for Bromine, and 600 mg/kg for others]

Sample	Total Cadmium [mg/kg]	Total Lead [mg/kg]	Total Chromium [mg/kg]	Total Mercury [mg/kg]	Total Bromine [mg/kg]
020	BL	BL	BL	BL	BL
021	BL	BL	BL	BL	BL
022	BL	BL	BL	BL	Inconclusive ^(b)
023	BL	BL	BL	BL	BL
024	BL	BL	BL	BL	BL
025	BL	BL	BL	BL	BL
026	BL	BL	BL	BL	BL
027	BL	BL	BL	BL	NA
028	BL	BL	BL	BL	BL
029	BL	BL	BL	BL	BL
030	BL	BL	BL	BL	BL
031	BL	BL	BL	BL	BL
032	BL	BL	BL	BL	NA
033	BL	BL	BL	BL	NA
034	BL	BL	BL	BL	NA
035	BL	BL	BL	BL	Inconclusive ^(b)
036	BL	BL	BL	BL	Inconclusive ^(b)
037	BL	BL	BL	BL	Inconclusive ^(b)
038	BL	BL	BL	BL	BL
039	BL	BL	BL	BL	BL
RoHS Requirement	100	1000	1000	1000	1000

- Note
1. "mg/kg" denotes milligram per kilogram
 2. "BL" denotes below the limit
 3. "OL" denotes over the limit
 4. "NA" denotes Not Applicable
 5. "(a)" denotes further confirmation test was conducted, results are listed in 3.2
 6. "(b)" denotes further confirmation test was conducted, results are listed in 3.3

3.1 Quantitative screening of Lead, Cadmium, Mercury, Chromium and Bromine

Test Method: EN 62321-3-1:2014, EN 62321-2:2014, EN 62321-3-1:2014, analyzed by Energy-Dispersive X-Ray Fluorescence Spectrometers (XRF)

[Reporting Limit = 60 mg/kg for Cadmium, 300 mg/kg for Bromine, and 600 mg/kg for others]

Sample	Total Cadmium [mg/kg]	Total Lead [mg/kg]	Total Chromium [mg/kg]	Total Mercury [mg/kg]	Total Bromine [mg/kg]
040	BL	BL	BL	BL	BL
041	BL	BL	BL	BL	NA
042	BL	BL	BL	BL	BL
043	BL	BL	BL	BL	Inconclusive ^(b)
044	BL	BL	BL	BL	BL
045	BL	BL	BL	BL	NA
046	BL	BL	BL	BL	BL
047	BL	BL	BL	BL	BL
048	BL	BL	BL	BL	Inconclusive ^(b)
049	BL	BL	Inconclusive ^(a)	BL	NA
050	BL	BL	Inconclusive ^(a)	BL	NA
051	BL	BL	BL	BL	BL
052	BL	BL	BL	BL	BL
053	BL	BL	BL	BL	BL
054	BL	BL	BL	BL	BL
055	BL	BL	BL	BL	BL
056	BL	BL	BL	BL	BL
057	BL	BL	Inconclusive ^(a)	BL	NA
058	BL	BL	Inconclusive ^(a)	BL	NA
059	BL	BL	BL	BL	BL
RoHS Requirement	100	1000	1000	1000	1000

- Note
1. "mg/kg" denotes milligram per kilogram
 2. "BL" denotes below the limit
 3. "OL" denotes over the limit
 4. "NA" denotes Not Applicable
 5. "(a)" denotes further confirmation test was conducted, results are listed in 3.2
 6. "(b)" denotes further confirmation test was conducted, results are listed in 3.3



3.1 Quantitative screening of Lead, Cadmium, Mercury, Chromium and Bromine

Test Method: EN 62321-3-1:2014, EN 62321-2:2014, EN 62321-3-1:2014, analyzed by Energy-Dispersive X-Ray Fluorescence Spectrometers (XRF)

[Reporting Limit = 60 mg/kg for Cadmium, 300 mg/kg for Bromine, and 600 mg/kg for others]

Sample	Total Cadmium [mg/kg]	Total Lead [mg/kg]	Total Chromium [mg/kg]	Total Mercury [mg/kg]	Total Bromine [mg/kg]
060	BL	BL	BL	BL	BL
061	BL	BL	BL	BL	BL
062	BL	BL	BL	BL	BL
063	BL	BL	BL	BL	NA
064	Inconclusive ^(a)	Inconclusive ^(a)	BL	BL	NA
065	BL	BL	BL	BL	Inconclusive ^(b)
066	BL	BL	BL	BL	BL
067	BL	BL	BL	BL	BL
068	BL	BL	BL	BL	BL
069	BL	BL	BL	BL	NA
070	BL	BL	BL	BL	Inconclusive ^(b)
071	BL	BL	BL	BL	BL
072	BL	BL	BL	BL	BL
073	BL	BL	BL	BL	NA
074	BL	BL	BL	BL	BL
075	BL	BL	BL	BL	NA
076	BL	BL	BL	BL	BL
077	BL	BL	BL	BL	BL
078	BL	BL	BL	BL	BL
079	BL	BL	BL	BL	BL
RoHS Requirement	100	1000	1000	1000	1000

- Note
1. "mg/kg" denotes milligram per kilogram
 2. "BL" denotes below the limit
 3. "OL" denotes over the limit
 4. "NA" denotes Not Applicable
 5. "(a)" denotes further confirmation test was conducted, results are listed in 3.2
 6. "(b)" denotes further confirmation test was conducted, results are listed in 3.3

3.1 Quantitative screening of Lead, Cadmium, Mercury, Chromium and Bromine

Test Method: EN 62321-3-1:2014, EN 62321-2:2014, EN 62321-3-1:2014, analyzed by Energy-Dispersive X-Ray Fluorescence Spectrometers (XRF)

[Reporting Limit = 60 mg/kg for Cadmium, 300 mg/kg for Bromine, and 600 mg/kg for others]

Sample	Total Cadmium [mg/kg]	Total Lead [mg/kg]	Total Chromium [mg/kg]	Total Mercury [mg/kg]	Total Bromine [mg/kg]
080	Inconclusive ^(a)	Inconclusive ^(a)	BL	BL	NA
081	BL	BL	BL	BL	Inconclusive ^(b)
082	BL	BL	BL	BL	BL
083	BL	BL	BL	BL	BL
084	BL	BL	BL	BL	NA
085	BL	BL	BL	BL	Inconclusive ^(b)
086	BL	BL	BL	BL	BL
087	BL	BL	BL	BL	Inconclusive ^(b)
088	BL	BL	BL	BL	BL
089	BL	BL	BL	BL	BL
090	BL	BL	BL	BL	NA
091	BL	BL	BL	BL	BL
092	BL	BL	BL	BL	BL
093	BL	BL	BL	BL	BL
094	BL	BL	BL	BL	Inconclusive ^(b)
095	BL	BL	BL	BL	BL
096	BL	BL	BL	BL	NA
097	BL	BL	BL	BL	BL
098	BL	BL	BL	BL	NA
RoHS Requirement	100	1000	1000	1000	1000

- Note
1. "mg/kg" denotes milligram per kilogram
 2. "BL" denotes below the limit
 3. "OL" denotes over the limit
 4. "NA" denotes Not Applicable
 5. "(a)" denotes further confirmation test was conducted, results are listed in 3.2
 6. "(b)" denotes further confirmation test was conducted, results are listed in 3.3
- XRF screening limits in mg/kg for regulated elements in various matrices

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

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





3.2 Heavy Metals Content Test (Total Cadmium, Total Lead, Total Mercury, Hexavalent Chromium)

Test method: Microwave digestion / Acid digestion by ICP-OES with reference to EN 62321-4:2014+A1:2017, EN 62321-5:2014

EN 62321-7-1:2015 and EN 62321-7-2:2017 (For Hexavalent Chromium)

[Reporting Limit= 10.0 mg/kg for Lead and Mercury, 2.0 mg/kg for Cadmium and 5.0 mg/kg for Chromium VI, 0.1 µg/cm² for Chromium VI]

Sample	Total Cadmium [mg/kg]	Total Lead [mg/kg]	Total Mercury [mg/kg]	Hexavalent Chromium [µg/cm²]	Conclusion
013	--	--	--	<0.1	Pass
049	--	--	--	<0.1	Pass
050	--	--	--	<0.1	Pass
057	--	--	--	<0.1	Pass
058	--	--	--	<0.1	Pass
RoHS Requirement	--	--	--	0.1	--

Note 1. "<" denotes less than.

2. "mg/kg" denotes milligram per kilogram.

3. "#" denotes Limit for metal CrVI, according to EN 62321

Hexavalent Chromium [µg/cm²]	Conclusion
< 0.1	Pass
0.10 - 0.13	Inconclusive
>0.13	Positive



3.2 Heavy Metals Content Test (Total Cadmium, Total Lead, Total Mercury, Hexavalent Chromium)

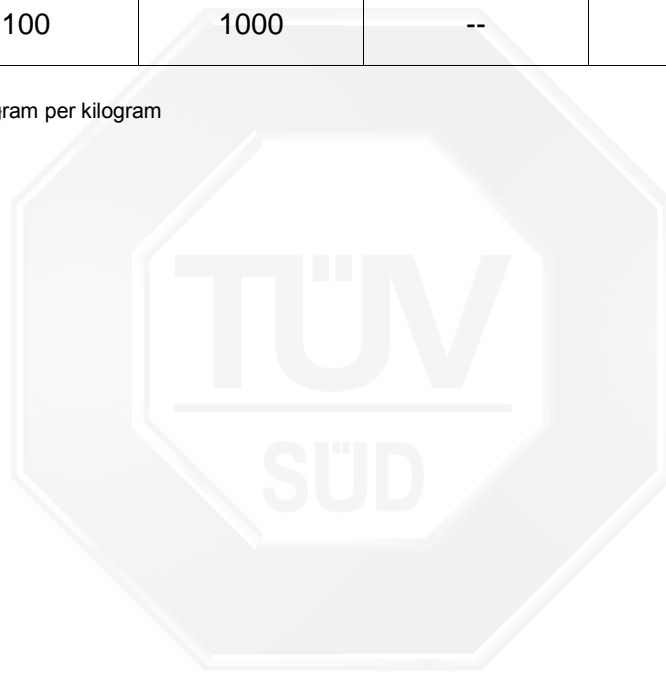
Test method: Microwave digestion / Acid digestion by ICP-OES with reference to EN 62321-4:2014+A1:2017, EN 62321-5:2014

EN 62321-7-1:2015 and EN 62321-7-2:2017 (For Hexavalent Chromium)

[Reporting Limit= 10.0 mg/kg for Lead and Mercury, 2.0 mg/kg for Cadmium and 5.0 mg/kg for Chromium VI, 0.1 µg/cm² for Chromium VI]

Sample	Total Cadmium [mg/kg]	Total Lead [mg/kg]	Total Mercury [mg/kg]	Hexavalent Chromium [mg/kg]	Conclusion
064	<2	255	--	--	Pass
080	<2	44	--	--	Pass
RoHS Requirement	100	1000	--	--	--

Note 1. "<" denotes less than
 2. "mg/kg" denotes milligram per kilogram



3.3 Brominated Flame Retardants (PBBs & PBDEs)

Test Method: With reference to EN 62321-6:2015, extraction with toluene and analyzed by Gas Chromatography and Mass Spectrometry (GC-MS).

[Reporting Limit = 5mg/kg]

Test Item		Results [mg/kg]			RoHS Requirement [mg/kg]
		Sample 022	Sample 035	Sample 036	
PBBs	Monobromobiphenyl	<5	<5	<5	Sum of PBBs < 1000
	Dibromobiphenyl	<5	<5	<5	
	Tribromobiphenyl	<5	<5	<5	
	Tetrabromobiphenyl	<5	<5	<5	
	Pentabromobiphenyl	<5	<5	<5	
	Hexabromobiphenyl	<5	<5	<5	
	Heptabromobiphenyl	<5	<5	<5	
	Octabromobiphenyl	<5	<5	<5	
	Nonabromobiphenyl	<5	<5	<5	
	Decabromobiphenyl	<5	<5	<5	
	Sum of detected PBBs	<50	<50	<50	
PBDEs	Monobromodiphenyl ether	<5	<5	<5	Sum of PBDEs < 1000
	Dibromodiphenyl ether	<5	<5	<5	
	Tribromodiphenyl ether	<5	<5	<5	
	Tetrabromodiphenyl ether	<5	<5	<5	
	Pentabromodiphenyl ether	<5	<5	<5	
	Hexabromodiphenyl ether	<5	<5	<5	
	Heptabromodiphenyl ether	<5	<5	<5	
	Octabromodiphenyl ether	<5	<5	<5	
	Nonabromodiphenyl ether	<5	<5	<5	
	Decabromodiphenyl ether	<5	<5	<5	
	Sum of detected PBDEs	<50	<50	<50	

Note 1. “<” denotes less than
 2. “mg/kg” denotes milligram per kilogram



3.3 Brominated Flame Retardants (PBBs & PBDEs)

Test Method: With reference to EN 62321-6:2015, extraction with toluene and analyzed by Gas Chromatography and Mass Spectrometry (GC-MS).

[Reporting Limit = 5mg/kg]

Test Item		Results [mg/kg]			RoHS Requirement [mg/kg]
		Sample 037	Sample 043	Sample 048	
PBBs	Monobromobiphenyl	<5	<5	<5	Sum of PBBs < 1000
	Dibromobiphenyl	<5	<5	<5	
	Tribromobiphenyl	<5	<5	<5	
	Tetrabromobiphenyl	<5	<5	<5	
	Pentabromobiphenyl	<5	<5	<5	
	Hexabromobiphenyl	<5	<5	<5	
	Heptabromobiphenyl	<5	<5	<5	
	Octabromobiphenyl	<5	<5	<5	
	Nonabromobiphenyl	<5	<5	<5	
	Decabromobiphenyl	<5	<5	<5	
	Sum of detected PBBs	<50	<50	<50	
PBDEs	Monobromodiphenyl ether	<5	<5	<5	Sum of PBDEs < 1000
	Dibromodiphenyl ether	<5	<5	<5	
	Tribromodiphenyl ether	<5	<5	<5	
	Tetrabromodiphenyl ether	<5	<5	<5	
	Pentabromodiphenyl ether	<5	<5	<5	
	Hexabromodiphenyl ether	<5	<5	<5	
	Heptabromodiphenyl ether	<5	<5	<5	
	Octabromodiphenyl ether	<5	<5	<5	
	Nonabromodiphenyl ether	<5	<5	<5	
	Decabromodiphenyl ether	<5	<5	<5	
	Sum of detected PBDEs	<50	<50	<50	

Note 1. “<” denotes less than
 2. “mg/kg” denotes milligram per kilogram

3.3 Brominated Flame Retardants (PBBs & PBDEs)

Test Method: With reference to EN 62321-6:2015, extraction with toluene and analyzed by Gas Chromatography and Mass Spectrometry (GC-MS).

[Reporting Limit = 5mg/kg]

Test Item		Results [mg/kg]			RoHS Requirement [mg/kg]
		Sample 065	Sample 070	Sample 081	
PBBs	Monobromobiphenyl	<5	<5	<5	Sum of PBBs < 1000
	Dibromobiphenyl	<5	<5	<5	
	Tribromobiphenyl	<5	<5	<5	
	Tetrabromobiphenyl	<5	<5	<5	
	Pentabromobiphenyl	<5	<5	<5	
	Hexabromobiphenyl	<5	<5	<5	
	Heptabromobiphenyl	<5	<5	<5	
	Octabromobiphenyl	<5	<5	<5	
	Nonabromobiphenyl	<5	<5	<5	
	Decabromobiphenyl	<5	<5	<5	
	Sum of detected PBBs	<50	<50	<50	
PBDEs	Monobromodiphenyl ether	<5	<5	<5	Sum of PBDEs < 1000
	Dibromodiphenyl ether	<5	<5	<5	
	Tribromodiphenyl ether	<5	<5	<5	
	Tetrabromodiphenyl ether	<5	<5	<5	
	Pentabromodiphenyl ether	<5	<5	<5	
	Hexabromodiphenyl ether	<5	<5	<5	
	Heptabromodiphenyl ether	<5	<5	<5	
	Octabromodiphenyl ether	<5	<5	<5	
	Nonabromodiphenyl ether	<5	<5	<5	
	Decabromodiphenyl ether	<5	<5	<5	
	Sum of detected PBDEs	<50	<50	<50	

Note 1. "<" denotes less than
 2. "mg/kg" denotes milligram per kilogram

3.3 Brominated Flame Retardants (PBBs & PBDEs)

Test Method: With reference to EN 62321-6:2015, extraction with toluene and analyzed by Gas Chromatography and Mass Spectrometry (GC-MS).

[Reporting Limit = 5mg/kg]

Test Item		Results [mg/kg]			RoHS Requirement [mg/kg]
		Sample 085	Sample 087	Sample 094	
PBBs	Monobromobiphenyl	<5	<5	<5	Sum of PBBs < 1000
	Dibromobiphenyl	<5	<5	<5	
	Tribromobiphenyl	<5	<5	<5	
	Tetrabromobiphenyl	<5	<5	<5	
	Pentabromobiphenyl	<5	<5	<5	
	Hexabromobiphenyl	<5	<5	<5	
	Heptabromobiphenyl	<5	<5	<5	
	Octabromobiphenyl	<5	<5	<5	
	Nonabromobiphenyl	<5	<5	<5	
	Decabromobiphenyl	<5	<5	<5	
	Sum of detected PBBs	<50	<50	<50	
PBDEs	Monobromodiphenyl ether	<5	<5	<5	Sum of PBDEs < 1000
	Dibromodiphenyl ether	<5	<5	<5	
	Tribromodiphenyl ether	<5	<5	<5	
	Tetrabromodiphenyl ether	<5	<5	<5	
	Pentabromodiphenyl ether	<5	<5	<5	
	Hexabromodiphenyl ether	<5	<5	<5	
	Heptabromodiphenyl ether	<5	<5	<5	
	Octabromodiphenyl ether	<5	<5	<5	
	Nonabromodiphenyl ether	<5	<5	<5	
	Decabromodiphenyl ether	<5	<5	<5	
	Sum of detected PBDEs	<50	<50	<50	

Note 1. “<” denotes less than
 2. “mg/kg” denotes milligram per kilogram



3.4 Phthalates (DEHP, BBP, DBP and DIBP)

Test Method: with reference to EN 62321-8:2017, extracted by organic solvent and analyzed by Gas Chromatography and Mass Spectrometry (GC-MS).

[Reporting Limit = 50mg/kg]

Test Item	CAS No.	Result [mg/kg]		
		Sample 001+002+003 +076	Sample 004+006+007 +008+011	Sample 005+009+061
Di-iso-butyl Phthalate (DIBP)	84-69-5	<50	<50	<50
Di-butyl Phthalate (DBP)	84-74-2	171	<50	<50
Butyl-benzyl Phthalate (BBP)	85-68-7	<50	<50	<50
Di-(2-ethyl-hexyl) Phthalate (DEHP)	117-81-7	<50	<50	<50
RoHS Requirement		Each < 1000		

Test Item	CAS No.	Result [mg/kg]		
		Sample 012+016+017 +018+019	Sample 020+021+023 +037+048	Sample 022+026+028 +029
Di-iso-butyl Phthalate (DIBP)	84-69-5	<50	<50	<50
Di-butyl Phthalate (DBP)	84-74-2	<50	<50	<50
Butyl-benzyl Phthalate (BBP)	85-68-7	<50	<50	<50
Di-(2-ethyl-hexyl) Phthalate (DEHP)	117-81-7	<50	<50	<50
RoHS Requirement		Each < 1000		

- Note 1. "<" denotes less than
 2. "mg/kg" denotes milligram per kilogram



3.4 Phthalates (DEHP, BBP, DBP and DIBP)

Test Method: with reference to EN 62321-8:2017, extracted by organic solvent and analyzed by Gas Chromatography and Mass Spectrometry (GC-MS).

[Reporting Limit = 50mg/kg]

Test Item	CAS No.	Result [mg/kg]		
		Sample 030+031+035 +036+038	Sample 039+040+042 +043+044	Sample 046+047+066 +067+068
Di-iso-butyl Phthalate (DIBP)	84-69-5	<50	<50	<50
Di-butyl Phthalate (DBP)	84-74-2	<50	<50	<50
Butyl-benzyl Phthalate (BBP)	85-68-7	<50	<50	<50
Di-(2-ethyl-hexyl) Phthalate (DEHP)	117-81-7	<50	<50	<50
RoHS Requirement		Each < 1000		

Test Item	CAS No.	Result [mg/kg]		
		Sample 051+062+095	Sample 052+053+054 +055+056	Sample 059+060+065 +070+074
Di-iso-butyl Phthalate (DIBP)	84-69-5	<50	<50	<50
Di-butyl Phthalate (DBP)	84-74-2	<50	<50	<50
Butyl-benzyl Phthalate (BBP)	85-68-7	<50	<50	<50
Di-(2-ethyl-hexyl) Phthalate (DEHP)	117-81-7	<50	<50	<50
RoHS Requirement		Each < 1000		

- Note 1. "<" denotes less than
 2. "mg/kg" denotes milligram per kilogram

3.4 Phthalates (DEHP, BBP, DBP and DIBP)

Test Method: with reference to EN 62321-8:2017, extracted by organic solvent and analyzed by Gas Chromatography and Mass Spectrometry (GC-MS).

[Reporting Limit = 50mg/kg]

Test Item	CAS No.	Result [mg/kg]		
		Sample 071+072+086	Sample 077+078+079 +081+082	Sample 083+085+087 +091+092
Di-iso-butyl Phthalate (DIBP)	84-69-5	<50	<50	<50
Di-butyl Phthalate (DBP)	84-74-2	171	<50	<50
Butyl-benzyl Phthalate (BBP)	85-68-7	<50	<50	<50
Di-(2-ethyl-hexyl) Phthalate (DEHP)	117-81-7	<50	<50	<50
RoHS Requirement		Each < 1000		

Test Item	CAS No.	Result [mg/kg]	
		Sample 088+089+093	Sample 094+097+025
Di-iso-butyl Phthalate (DIBP)	84-69-5	<50	<50
Di-butyl Phthalate (DBP)	84-74-2	<50	<50
Butyl-benzyl Phthalate (BBP)	85-68-7	<50	<50
Di-(2-ethyl-hexyl) Phthalate (DEHP)	117-81-7	<50	<50
RoHS Requirement		Each < 1000	

- Note 1. "<" denotes less than
 2. "mg/kg" denotes milligram per kilogram

Test Report No.: 70.400.19.775.01-00.01

Dated: 2019-08-30



TÜV SÜD Certification and Testing (China) Co., Ltd.
Shanghai Branch Chemical Lab

Prepared by:

Reviewed by:

Shen Jian



Bai Jian

Jian Shen
Project Engineer
SHENE

Bai, Jian
Project Engineer

~ End Of Report ~





1. General Information and Definitions

- (1.1) In the event that an order for any services is placed, the Client shall accept the General Terms and Conditions. The General Terms and Conditions shall be applicable to all orders, resulting contracts and other arrangements, including all offers made or services provided by the Company or any of its affiliated companies. They are not applicable if and as far as they are in conflict with the regulations on services performed on behalf of governments, government bodies or any other public entity, or they are in conflict with mandatory provisions of local law. The Client's placement of orders as well as the conclusion of contracts with the Company shall be regarded as awareness and acceptance of these General Terms and Conditions.
- (1.2) The Company strongly recommends any Client or potential Client to read the full text of these General Terms and Conditions prior to placement of any order to or conclusion of any contract with the Company. Ancillary agreements, promises and other statements made on the part of the Company staff or the experts called upon by them shall be binding only if they are expressly confirmed by the Company in writing. This shall also apply to any modifications of this clause.

2. Provision of Services

- (2.1) With due care and skill, the Company will provide services according to Client's specific instructions as made available by the Client. In the absence of Client's specific instructions, the following is deemed as instructions given to the Company:
- (a) The terms of any standard specification sheet or standard order form provided by the Company; and/or
- (b) Any relevant usage, practice or trade custom; and/or
- (c) Such methods the Company considers technically, operationally and/or on financial grounds appropriate.
- (2.2) No other party is entitled to give any instructions particularly on the scope and type of the services or the reports delivered, or on the resulting certificates (the "Reports of Findings"), unless the Company receives prior written instructions to the contrary from the Client. The Client hereby irrevocably authorizes the Company to deliver Reports of Findings to a third party where so instructed by the Client or, at the Company's discretion, where it implicitly follows from circumstances, trade custom, usage or practice.
- (2.3) The Information stated in the Report of Findings is derived from the results of inspection or testing procedures carried out in accordance with the instructions and/or Company's assessment of such results on the basis of any technical standards, trade custom or practice, or other circumstances which should in Company's professional experience be taken into account.
- (2.4) Reports of Findings issued after the testing of samples refer the Company's opinion only on samples under testing and not to the lot from which the samples were drawn.
- (2.5) Client agrees that the Company's sole responsibility is to be present at the time of the third party's intervention and to forward the results, or confirm the occurrence of the intervention, in case Client requests the Company to witness any third party's intervention. Client agrees that the Company will use the test methods for analysis as requested in the request form, and if none is stated in the form, the Company will choose the appropriate test methods for analysis.
- (2.6) The Reports of Findings issued by the Company will reflect the facts as recorded by it at the time of its intervention only and within the limits of the instructions received or, in the absence of such instructions, within the limits of the alternative parameters applied as provided for in Clause 2.1. The Company is under no obligation to refer to, or report upon, any facts or circumstances, which are outside the specific instructions received or alternative parameters applied.
- (2.7) The performance of all or part of the services may be delegated to an agent or subcontractor by the Company. The Client authorizes the Company to disclose all information necessary for such performance to the agent or subcontractor.
- (2.8) Documents reflecting engagements contracted between the Client and third parties or third party documents, e.g. sales contract copies, letters of credit, bills of lading, etc. should be made available to the Company. These are considered to be for information only, and do not extend or restrict the scope of the services or the obligations accepted by the Company.
- (2.9) The Company agrees that, by providing the services to the Client, it neither takes the place of Client or any third party, nor otherwise assumes, abridges, abrogates or undertakes to discharge any duty of the Client to any third party or that of any third party to the Client. Also, it does not release the Client or any third party from any of their obligations.
- (2.10) Depending on the nature of each sample, all samples given to the Company shall be retained for a maximum of 3 months or for such other shorter time period as the nature of the sample permits, and then sent back to Client or otherwise disposed of at the Company's discretion. After that time the Company will not be responsible for the samples. Storage of samples for more than 3 months shall incur a storage fee payable by the Client. If samples are returned to the Client, the Client will be billed a handling and freight fees. Special disposal charges will be billed to the Client if incurred.

3. Client's Obligations

The Client shall:

- (3.1) ensure that all required supporting documents, information and instructions as submitted are accurate, truthful and complete. These information are to be submitted in a timely not later than 2 working days from the date of which the services are requested by the Client
- (3.2) ensure to give all necessary access for the Company's representatives to the premises where the services are to be performed and to take all necessary steps to eliminate or remedy any obstacles to, or interruptions in the performance of the services;
- (3.3) make available any special equipment and personnel necessary for the performance of the services, if required;
- (3.4) ensure that for the safety and security of working conditions, sites and installations, all necessary measures are taken during the performance of services. In this respect, the Client will not rely on the Company's advice whether required or not;
- (3.5) inform the Company of any known hazards or dangers, actual or potential, associated with any order, samples, testing or any other service rendered by the Company well in advance. Those are, but are not limited to the presence or risk of radiation, environmental pollution or poisons-toxic or noxious or explosive elements or materials;
- (3.6) fully exercise all its rights and discharge all its liabilities under any relevant sales or other contract with a third party.

4. Fees and Payment

- (4.1) All Fees not agreed on between the Company and Client at the time the order is placed or a contract is concluded shall be determined by the Company's Schedule of Fees (which are subject to change). All applicable taxes shall be paid by Client, as far as mandatory laws do not provide otherwise.
- (4.2) Unless a specific period is established in the invoice, the Client shall pay upon receiving the invoice, but not later than 30 days from the relevant invoice date or within such other period as may be established by the Company in the invoice (the "Due Date").
- (4.3) The Client shall not be entitled to retain or defer due payment of any sums to the Company on account of any dispute, counter claim or set-off against the Company. The Company reserves the right to retain or defer any due payments if any dispute arises with or it raises any counterclaim against the Client. The Company is entitled to set off due payments against payments of the Client.

- (4.4) For the collection of unpaid fees, the Company may decide to bring action in any court with competent jurisdiction. The corresponding collection costs, including attorney's fees and related costs, shall be borne by the Client, as far as the mandatory local law does not provide otherwise.
- (4.5) In case of any unforeseen problems or expenses arise while carrying out the services, the Company informs the Client. In such cases, the Company shall be entitled to charge additional fees to cover extra time and to invoice extra costs necessarily incurred to complete the services.
- (4.6) If the Company is unable to perform all or parts of the services for any cause whatsoever beyond the Company's control, including the failure by Client to comply with any of its obligations provided for in the foregoing Clause 3, the Company shall nevertheless be entitled to payments of:
- (1) The amount of all non-refundable expenses incurred by the Company; and
- (2) A proportion of the agreed fee equal to the proportion of the services actually carried out.

5. Suspension or Termination of Services

In any case mentioned below, the Company shall be entitled to either suspend or terminate the provision of the services immediately and without any liability:

- (5.1) Failure by the Client to comply with any of its obligations under these General Terms and Conditions and such failure is not remedied within 10 days after a notice of such failure has been delivered to the Client; or
- (5.2) Any suspension of payment, arrangement with creditors, bankruptcy, insolvency, receivership or cessation of business by Client.

6. Liability and Indemnification

(6.1) Limitation of Liability:

- (1) Clients seeking a guarantee against loss or damage should obtain appropriate insurance. The Company is neither an insurer nor a guarantor and disclaims all liability in such capacity.
- (2) Reports of Findings are issued on the basis of the information, documents and/or samples provided by, or on behalf of the Client and solely for the benefit of the Client who is obliged to act on the basis of such Reports of Findings. Neither the Company nor any of its staff, agents or subcontractors shall be liable to the Client nor to any third party for any actions taken or not taken on the basis of such Reports of Findings, or for any incorrect results arising from unclear, erroneous, incomplete, misleading or false information provided to the Company.
- (3) For any delayed, total or partial non-performance of the services arising directly or indirectly from any event beyond the Company's control, including failure by Client to comply with any of its obligations hereunder, the Company shall not be liable.
- (4) The liability of the Company in respect of any claim for loss, damage or expense of any nature and howsoever arising shall in no circumstances exceed a total aggregate sum equal to 10 times the amount of the fee paid in respect of the specific service which gives rise to such claim, and shall in any case not exceed the equivalent of 25,000 EUR in CNY.
- (5) For any indirect or consequential loss (including loss of profits), the Company shall not have any liabilities.
- (6) In case of any claim, the Client must give written notice to the Company within 30 days of discovery of the facts with all necessary documents to justify such claim. In any case, the Company shall be discharged from all liability for all claims for loss, damage or expense unless a lawsuit is brought within two years from:
- (i) the performance date of the Company for its services which refers to the claim; or
- (ii) the date when the service should have been completed in the event of any alleged non-performance.
- (6.2) Indemnification: Against all claims (actual or threatened) by any third party for loss, damage or expenses of whatsoever nature including all legal expenses and related costs and howsoever arising relating to the performance, purported performance or non-performance of any services, the Client shall guarantee, hold harmless and indemnify the Company and its officers, employees, agents or subcontractors.

7. Obligation of Confidentiality, Copyright, Data Privacy Protection

- (7.1) The Company shall be authorized to make file copies of written documents, which have been made available to it for review and which are important for processing the order.
- (7.2) Insofar as Reports of Findings are prepared in the course of processing the order and which are subject to the protection of copyright, then the Company shall grant the Client a simple, non-transferable right to use, insofar as this is necessary and in accordance with the contractually presupposed purpose. Other rights shall not be transferred; in particular, the customer shall not be entitled to modify and/or edit audit reports or to make use of such outside of his business premises.
- (7.3) The Company and its staff which may be called in shall not disclose or use trade and business matters about which they have gained knowledge during the performance of their work without proper authorization, or unless instructed by a court or authorized body (e.g. regulatory authority, accreditation body or certification scheme owner) or otherwise legally required.

8. Miscellaneous

- (8.1) The validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired, even if any one or more provisions of these General Conditions are found to be illegal or unenforceable in any respect.
- (8.2) Client shall not directly or indirectly entice, encourage or make any offer to Company's employees to leave their employment with the Company, during the course of providing the services and for a period of one year thereafter.
- (8.3) Use of the Company's corporate name or registered marks for advertising purposes is not permitted without the Company's prior written authorization.

9. Governing Law, Jurisdiction and Dispute Settlement

- (9.1) Unless specifically agreed otherwise, all disputes arising out or in connection with contractual relationship(s) hereunder shall be governed by the applicable laws and regulations of the People's Republic of China.
- (9.2) Place of performance for any obligation arising out of this contract shall be Shanghai, the Place of the TÜV SÜD Certification and Testing (China) Co., Ltd., Shanghai branch, unless otherwise expressly agreed by the parties.

10. Languages

In the event of any discrepancy between the English and the Chinese version of these General Terms and Conditions, the English version shall prevail.