



## TEST REPORT

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REPORT No.: CTB231128047CX(REV1)

**Applicant:** Vonger Electronics and Technology Co.Ltd  
**Address:** Qinxianbei 50-2-711, Taiyuan, Shanxi, 030001, China

**Manufacturer:** Vonger Electronics and Technology Co.Ltd  
**Address:** Qinxianbei 50-2-711, Taiyuan, Shanxi, 030001, China




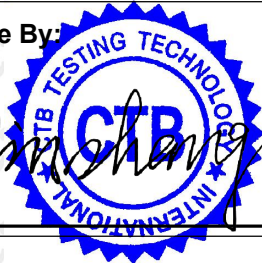
The following samples were submitted and identified on behalf of the clients as:

**Sample name:** Display screen  
**Brand:** /  
**Model(s):** 5.0 TFT、6.8 TFT、4.0 TFT、4.3 TFT  
**Batch No.:** /  
**Sample received date:** Nov. 28, 2023  
**Testing period:** Nov. 28, 2023 to Dec. 05, 2023  
**Test Method:** Please refer to next page(s).  
**Test Result:** Please refer to next page(s).

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Result Summary :

Test Requested	Conclusion
European Directive 2011/65/EU and amendment (EU) 2015/863 on the restriction of the use of certain hazardous substances in electrical and electronic equipment	PASS

<b>Tested By:</b> 	<b>Check By:</b> 	<b>Approve By:</b>  
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Date: Jun. 05, 2024

**Test Method:**
**A. Screening test by XRF spectroscopy**

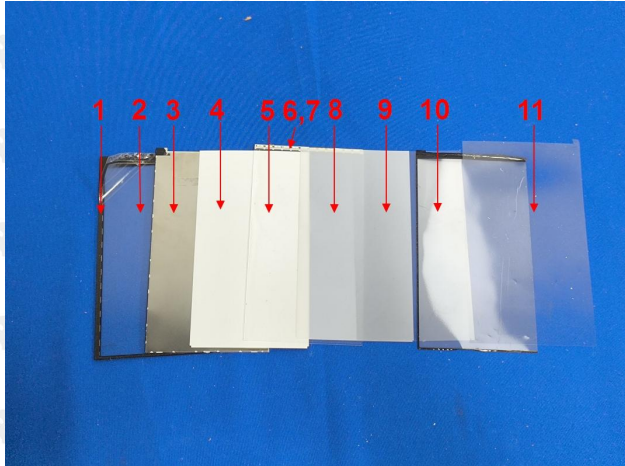
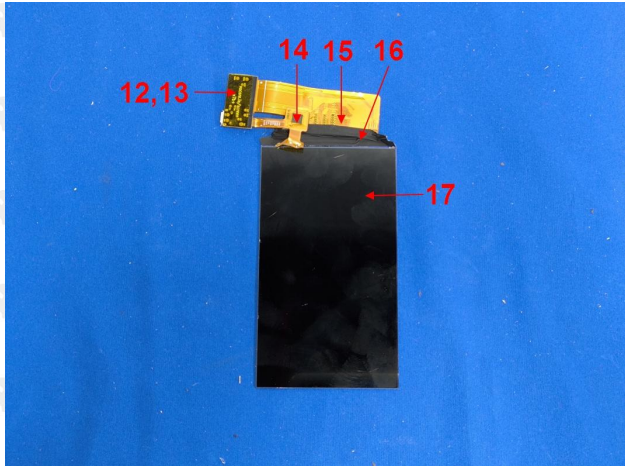
XRF screening limits for regulated elements according to IEC 62321-3-1:2013

Element	Screening limit / mg/kg		MDL	
	Polymers and metals	Composite material	Polymers	Other material
<b>Pb</b>	$BL \leq (700-3\sigma) < X < (1300+3\sigma)$ $\leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma)$ $\leq OL$	10mg/kg	50mg/kg
<b>Cd</b>	$BL \leq (70-3\sigma) < X < (130+3\sigma)$ $\leq OL$	$LOD \leq (50-3\sigma) < X < (150+3\sigma)$ $\leq OL$	10mg/kg	50mg/kg
<b>Hg</b>	$BL \leq (700-3\sigma) < X < (1300+3\sigma)$ $\leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma)$ $\leq OL$	10mg/kg	50mg/kg
<b>Cr</b>	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$	10mg/kg	50mg/kg
<b>Br</b>	$BL \leq (300-3\sigma) < X$ (non-metal only)	$BL \leq (250-3\sigma) < X$	10mg/kg	50mg/kg

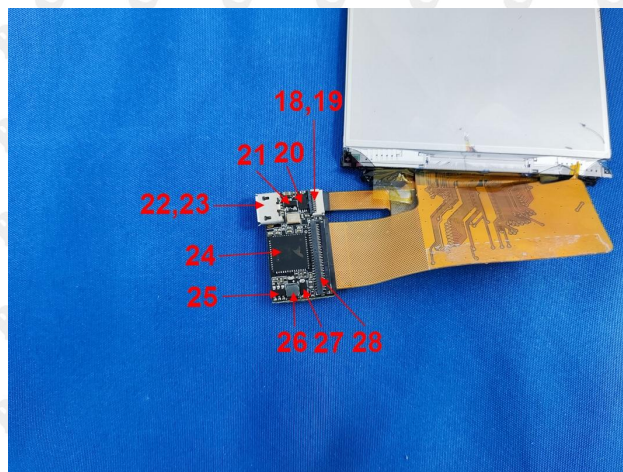
**B. Chemical Test**

Test Item(s)	Test Method	Analysis Equipment(s)	MDL	Limit
Lead (Pb)	IEC 62321-5:2013	ICP-OES	2 mg/kg	1000mg/kg
Cadmium (Cd)	IEC 62321-5:2013	ICP-OES	2 mg/kg	100mg/kg
Mercury (Hg)	IEC 62321-4:2013+AMD1:2017	ICP-OES	2 mg/kg	1000mg/kg
Hexavalent Chromium Cr(VI)	IEC 62321-7-1:2015	UV-VIS	--	1000mg/kg
	IEC 62321-7-2:2017		8 mg/kg	1000mg/kg
Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	GC-MS	50mg/kg	1000mg/kg
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS	50mg/kg	1000mg/kg
Phthalate	IEC 62321-8:2017	GC-MS	50mg/kg	1000mg/kg

**Tested material list**

No.	Description	Photo(s) of tested material
1	Black foam with adhesive	
2	Transparent plastic sheet	
3	Silver metal sheet	
4	White soft plastic sheet	
5	Transparent plastic sheet	
6	White plastic part	
7	Yellow FPC (back)	
8	White transparent soft plastic sheet	
9	Transparent soft plastic sheet	
10	Silver transparent soft plastic sheet	
11	Silver transparent soft plastic sheet	
12	Yellow tape	
13	Black PCB	
14	IC	
15	Yellow FPC	
16	Black plastic film	
17	Black glass display	

18	Black plastic part
19	White plastic part
20	IC
21	Black triode
22	Silver metal case (Mini trapezoid)
23	Black plastic (Mini trapezoid)
24	IC
25	IC
26	Magnet
27	Black diode
28	Black plastic part



Note: test samples were specified by applicant.

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## Test Result(s):

No.	XRF screening Result					Chemical confirm Result (mg/kg)	Remark	Conclusion
	Pb	Cd	Hg	Cr	Br			
1	BL	BL	BL	BL	BL	---	---	PASS
2	BL	BL	BL	BL	BL	---	---	PASS
3	BL	BL	BL	86993	NA	Cr <sup>6+</sup> : Negative	---	PASS
4	BL	BL	BL	BL	BL	---	---	PASS
5	BL	BL	BL	BL	BL	---	---	PASS
6	BL	BL	BL	BL	BL	---	---	PASS
7	BL	BL	BL	BL	BL	---	---	PASS
8	BL	BL	BL	BL	BL	---	---	PASS
9	BL	BL	BL	BL	BL	---	---	PASS
10	BL	BL	BL	BL	BL	---	---	PASS
11	BL	BL	BL	BL	BL	---	---	PASS
12	BL	BL	BL	BL	BL	---	---	PASS
13	BL	BL	BL	BL	7956	PBB&PBDE:N.D	---	PASS
14	BL	BL	BL	985	BL	Cr <sup>6+</sup> : Negative	---	PASS
15	BL	BL	BL	BL	BL	---	---	PASS
16	BL	BL	BL	BL	BL	---	---	PASS
17	BL	BL	BL	BL	BL	---	---	PASS
18	BL	BL	BL	BL	BL	---	---	PASS
19	BL	BL	BL	BL	BL	---	---	PASS
20	BL	BL	BL	BL	BL	---	---	PASS
21	BL	BL	BL	BL	BL	---	---	PASS
22	BL	BL	BL	BL	NA	---	---	PASS
23	BL	BL	BL	BL	BL	---	---	PASS
24	BL	BL	BL	BL	1710	PBB&PBDE:N.D	---	PASS
25	BL	BL	BL	BL	1710	PBB&PBDE:N.D	---	PASS
26	BL	BL	BL	BL	BL	---	---	PASS
27	BL	BL	BL	BL	1710	PBB&PBDE:N.D	---	PASS



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28	BL	BL	BL	BL	1710	PBB&PBDE:N.D	---	PASS
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Test Item(s)	Dibutyl Phthalate (DBP) ( mg/kg)	Benzylbutyl Phthalate (BBP) ( mg/kg)	Bis-(2-ethylhexyl) Phthalate (DEHP) ( mg/kg)	Diisobutyl phthalate (DIBP) ( mg/kg)	Conclusion
CAS No.	84-74-2	85-68-7	117-81-7	84-69-5	
Limit	1000	1000	1000	1000	
No.	Result (mg/kg)				
1	N.D	N.D	N.D	N.D	PASS
16	N.D	N.D	N.D	N.D	PASS
2+4+5	N.D	N.D	N.D	N.D	PASS
6+7+8	N.D	N.D	N.D	N.D	PASS
9+10+11	N.D	N.D	N.D	N.D	PASS
12+13	N.D	N.D	N.D	N.D	PASS
14+15	N.D	N.D	N.D	N.D	PASS
18+19	N.D	N.D	N.D	N.D	PASS
20+24+25	N.D	N.D	N.D	N.D	PASS
21+23+27+28	N.D	N.D	N.D	N.D	PASS



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## Remark:

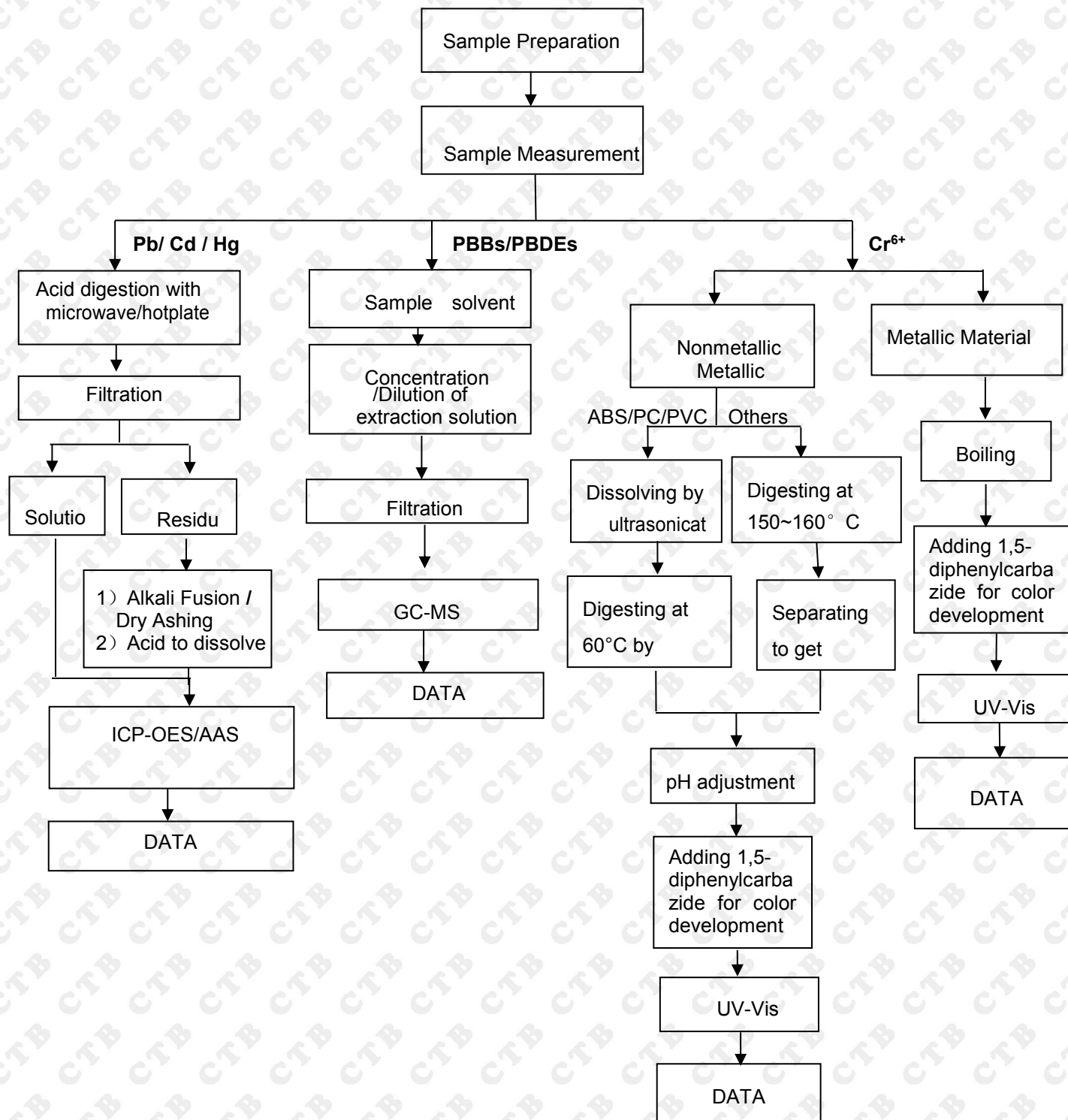
1. BL = below the limit
2. OL = over the limit
3. X = inconclusive, chemical confirm test is needed
4. NA = metal not applicable
5. mg/kg = milligram per kilogram = ppm
6. N.D = not detected
7. Negative = Absence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is less than  $0.1\mu\text{g}/\text{cm}^2$  with  $50\text{cm}^2$  sample surface area used.
8. Positive = Presence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is equal to or greater than  $0.13\mu\text{g}/\text{cm}^2$  with  $50\text{cm}^2$
9. sample surface area used. The limit for composite test should be divided by the mixed number.

## Note:

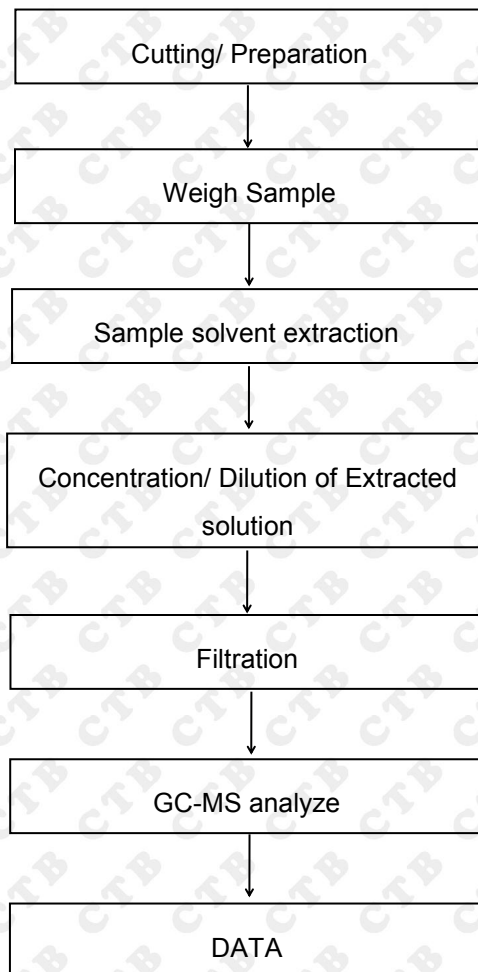
1. When perform screening tests, it is the result on total Br while test item on restricted substances is PBBs/PBDEs, it is the result on total Cr while test item on restricted substances is  $\text{Cr}^{6+}$ .
2. Pb, Cd, Hg, Cr and Br results are obtained by EDXRF for primary screening, and further chemical testing by ICP-OES (for Cd, Pb, Hg), UV-VIS (for  $\text{Cr}^{6+}$ ) and GC-MS (for PBBs, PBDEs) is needed to be performed, if the concentration falls into the inconclusive area according to IEC 62321-3-1:2013.
3. For the XRF screening test for RoHS elements, the reading may be different to the actual content in the sample be of non-uniformity composition.

## Test flow chart

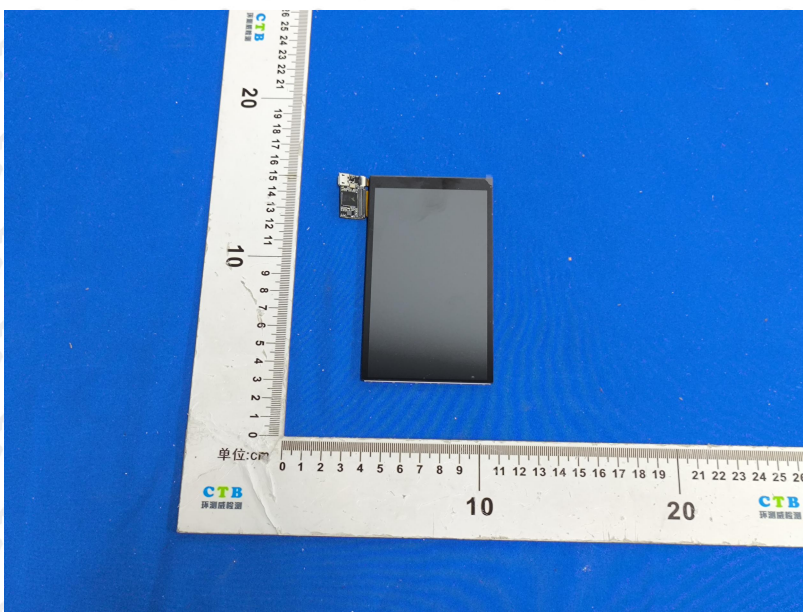
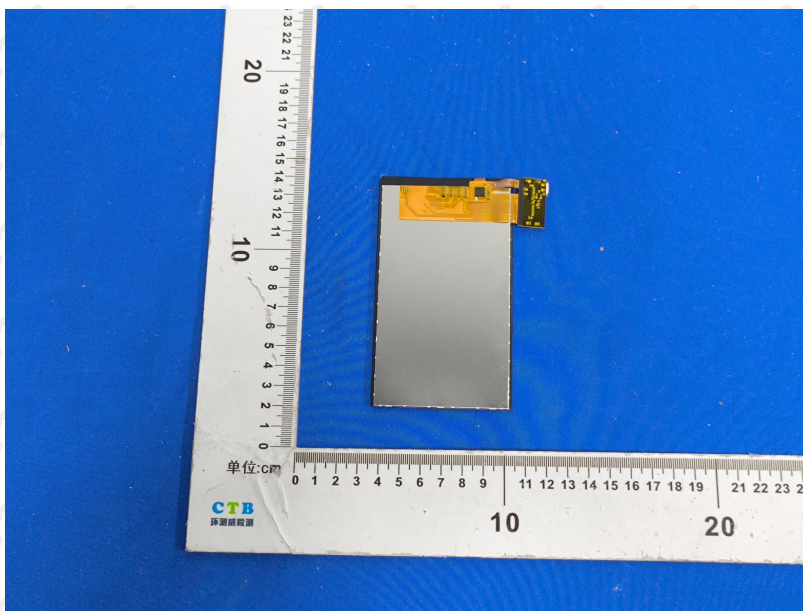
### 1. Pb/Cd/Hg/Cr<sup>6+</sup>/PBBs/PBDEs



## 2. Phthalate test flow chart



## Photo documentation



\*\*\* End of Report \*\*\*

Note: If there is any objection to the inspection results in this report, please submit a written report to the company within 15 days from the date of receiving the report. The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen CTB Testing Technology Co., Ltd. this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client. "★" indicates the testing items were fulfilled by subcontracted lab. "※" indicates the items are not in CNAS accreditation scope.