



TEST REPORT

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REPORT No.:CTB25072304405C01

Applicant: Shenzhen Elecrow Limited
Address: Elecrow, 5th Floor, Fengze Building B, Nanchang Huafeng Industrial Park, Hangcheng Street
Hangkong Road, Baoan District, Shenzhen city, China




Manufacturer: Shenzhen Elecrow Limited
Address: Elecrow, 5th Floor, Fengze Building B, Nanchang Huafeng Industrial Park, Hangcheng Street
Hangkong Road, Baoan District, Shenzhen city, China

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

Sample name: ThinkNode M1
Brand: /
Model(s): M1 for Meshtastic、M1 for Meshcore、M5 for Meshtastic、M5 for Meshcore
Sample received date: Jul. 31, 2025
Testing period: Jul. 31, 2025 to Aug.06, 2025
Test Method: Please refer to next page(s).
Test Result: Please refer to next page(s).

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

Tested By: 	Check By: 	Approve By: 
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Date: Aug. 28, 2025

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
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma)$ $\leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma)$ $\leq OL$	10mg/kg	50mg/kg
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma)$ $\leq OL$	$BL \leq (50-3\sigma) < X < (150+3\sigma)$ $\leq OL$	10mg/kg	50mg/kg
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma)$ $\leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma)$ $\leq OL$	10mg/kg	50mg/kg
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$	10mg/kg	50mg/kg
Br	$BL \leq (300-3\sigma) < X$ (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

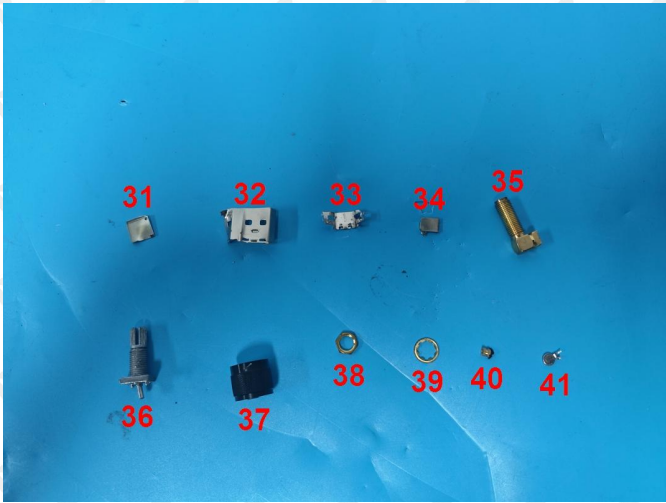
No.	Description	Photo
1	Black plastic	
2	Black plated metal	
3	Transparent glass	
4	Black foam	
5	Yellow plastic	
6	Black foam	
7	Black rubber	
8	White plastic	
9	White plastic handle	
10	Silver metal	
11	White plastic handle	
12	White plastic outer wire skin	
13	Black plastic inner wire skin	
14	White plastic inner wire skin	
15	Red plastic inner wire skin	
16	Green plastic inner wire skin	
17	White plastic	
18	Black plastic wire skin	
19	Red plastic wire skin	
20	Green plastic	
21	White plastic	
22	Brown ceramic	
23	Black PCB	
24	Solder point	
25	Black plastic	
26	IC	
27	Black plastic	
28	White plastic	
29	Black plastic	
30	Black plastic wire skin	

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31	Silver metal
32	Silver metal
33	Silver metal
34	Silver metal
35	Copper metal
36	Silver metal
37	Black plated metal
38	Copper metal
39	Copper metal
40	Copper metal
41	Silver metal



Note: test samples were specified by applicant.

Test Result(s):

No.	XRF screening Result					Chemical confirm Result (mg/kg)	Remark	Conclusion
	Pb	Cd	Hg	Cr	Br			
1	BL	BL	BL	BL	X	PBBs: N.D PBDEs: N.D	---	PASS
2	BL	BL	BL	BL	NA	---	---	PASS
3	BL	BL	BL	BL	BL	---	---	PASS
4	BL	BL	BL	BL	BL	---	---	PASS
5	BL	BL	BL	X	BL	Cr ⁶⁺ :N.D	---	PASS
6	BL	BL	BL	X	BL	Cr ⁶⁺ :N.D	---	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	X	NA	Cr ⁶⁺ :Negative	---	PASS
11	BL	BL	BL	BL	BL	---	---	PASS
12	BL	BL	BL	BL	BL	---	---	PASS
13	BL	BL	BL	BL	BL	---	---	PASS
14	BL	BL	BL	BL	BL	---	---	PASS
15	BL	BL	BL	X	BL	Cr ⁶⁺ :N.D	---	PASS

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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	X	PBBs: N.D PBDEs: N.D	---	PASS
21	BL	BL	BL	BL	BL	---	---	PASS
22	BL	BL	BL	BL	BL	---	---	PASS
23	BL	BL	BL	BL	X	PBBs: N.D PBDEs: N.D	---	PASS
24	BL	BL	BL	BL	NA	---	---	PASS
25	BL	BL	BL	BL	BL	---	---	PASS
26	BL	BL	BL	BL	BL	---	---	PASS
27	BL	BL	BL	BL	BL	---	---	PASS
28	BL	BL	BL	BL	BL	---	---	PASS
29	BL	BL	BL	BL	BL	---	---	PASS
30	BL	BL	BL	BL	BL	---	---	PASS
31	BL	BL	BL	X	NA	Cr ⁶⁺ :Negative	---	PASS
32	BL	BL	BL	BL	NA	---	---	PASS
33	BL	BL	BL	X	NA	Cr ⁶⁺ :Negative	---	PASS
34	BL	BL	BL	X	NA	Cr ⁶⁺ :Negative	---	PASS
35	OL	BL	BL	X	NA	Pb:18786# Cr ⁶⁺ :Negative	---	PASS
36	BL	BL	BL	BL	NA	---	---	PASS
37	BL	BL	BL	BL	NA	---	---	PASS
38	OL	BL	BL	X	NA	Pb:25859# Cr ⁶⁺ :Negative	---	PASS
39	BL	BL	BL	X	NA	Cr ⁶⁺ :Negative	---	PASS
40	OL	BL	BL	BL	NA	Pb:27768#	---	PASS
41	BL	BL	BL	X	NA	Cr ⁶⁺ :Negative	---	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)				Conclusion
1	N.D	N.D	N.D	N.D	
3+22	N.D	N.D	N.D	N.D	
4+6	235	N.D	N.D	N.D	
5	N.D	N.D	N.D	N.D	
7	N.D	N.D	N.D	N.D	
8+17+20+21	N.D	N.D	N.D	N.D	
9+11+12	N.D	N.D	N.D	N.D	
13+14+15+16	N.D	N.D	N.D	N.D	
18+19+30	N.D	N.D	N.D	N.D	
23+25+26+27 +28+29	N.D	N.D	N.D	N.D	

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 $0.1\mu\text{g}/\text{cm}^2$ 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 $0.13\mu\text{g}/\text{cm}^2$.
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 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 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.



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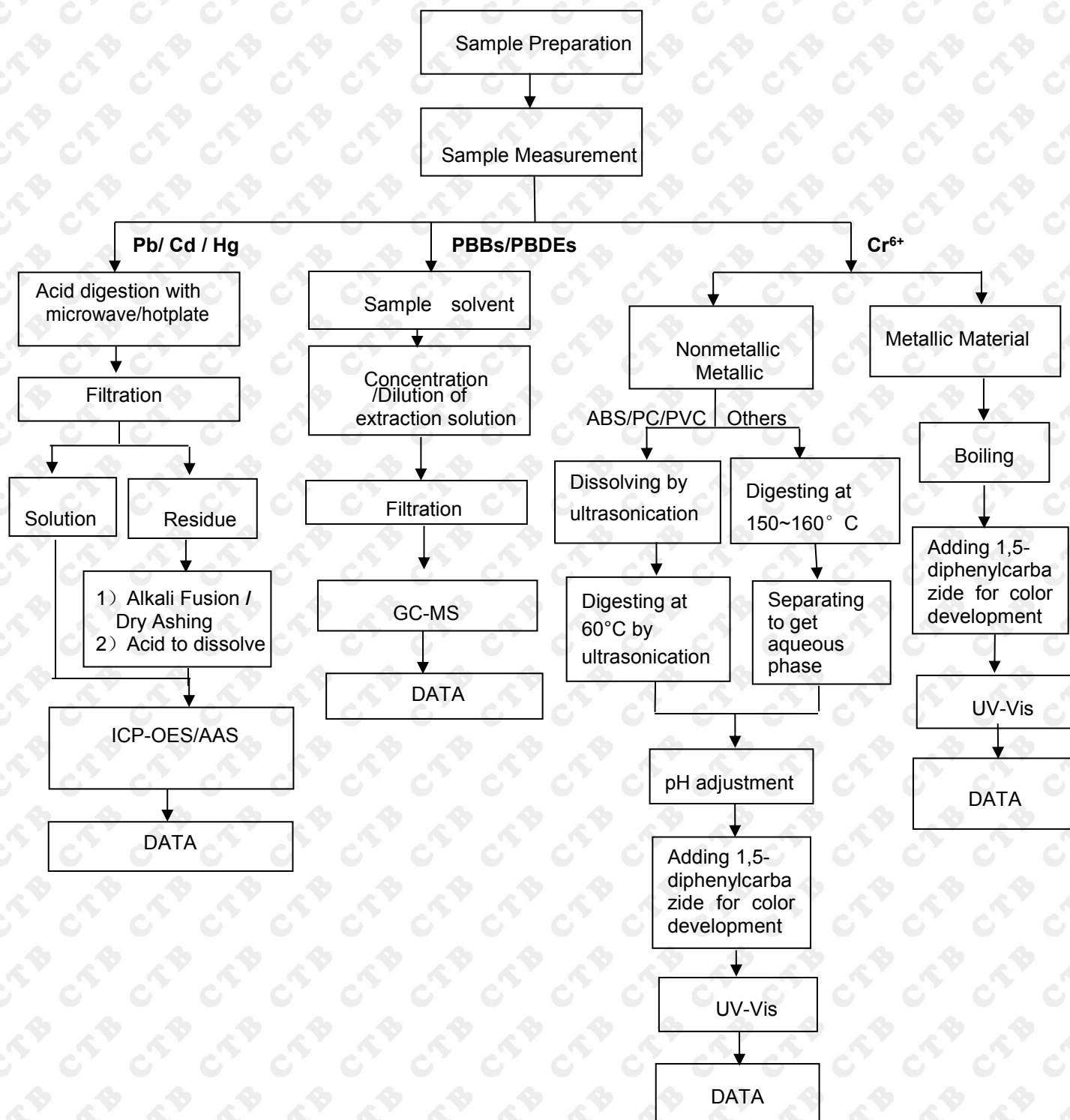
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4. As requested by the applicant, EU RoHS test was conducted only on components listed in this report. Other components were not tested.
5. (#) =As claimed by the declaration submitted from the applicant / supplier of applicant, the Lead content of the component comes from Copper alloy only. According to EU RoHS Directive (2011/65/EU), Lead in Copper alloy containing up to 4% (40,000 mg/kg) Lead by weight can be exempted.

Test flow chart

1. Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs



2. Phthalate test flow chart

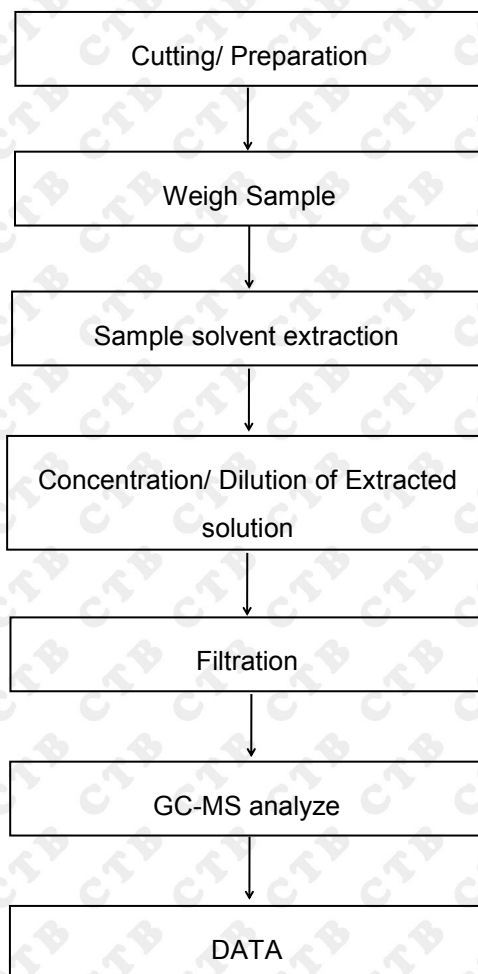


Photo documentation



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*** 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.