



Test Report

Report No: ZCT20240417RH016

Date: Apr. 17, 2024

Page 1 of 14

Applicant : Shenzhen Jinyanuo Electronics Co., LTD
Address : 1604, Block B, Smart Home, No. 76, Baohe Avenue, Baolong Community,
Baolong Street, Longgang District, Shenzhen, China

The following sample(s) was /were submitted and identified on behalf of the clients as :

Sample Name : Night vision
Trade Mark : N/A
Sample Model : NVG07S, NVG07,NVG10
Sample Received Date : April 08, 2024
Testing Period : April 08, 2024 to April 17, 2024
Test Requested : Selected test (s) in the selected parts as requested by client with the RoHS 2 Directive 2011/65/EU Annex II (EU) 2015/863 as last amended by Directive (EU) 2017/2102.
Test Method : 1. As specified by client, to screen Lead(Pb), Cadmium(Cd), Mercury(Hg), Chromium(Cr) and Bromine(Br) in the submitted sample(s) by XRF.
2. As specified by client, when screening results exceed the XRF screening limit in IEC 62321-3-1: 2013, further use of wet chemical methods are required to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs), Bis(2-ethylhexyl) phthalate (DEHP) ,Butyl benzyl phthalate (BBP), Dibutylphthalate (DBP) ,and Diisobutyl phthalate (DIBP)in the submitted sample(s).
Test Result : Please refer to next page(s).
Conclusion : **PASS** (Based on test results)



Signed for and on behalf of
Jack Luo/Approved Signatory



Test Report

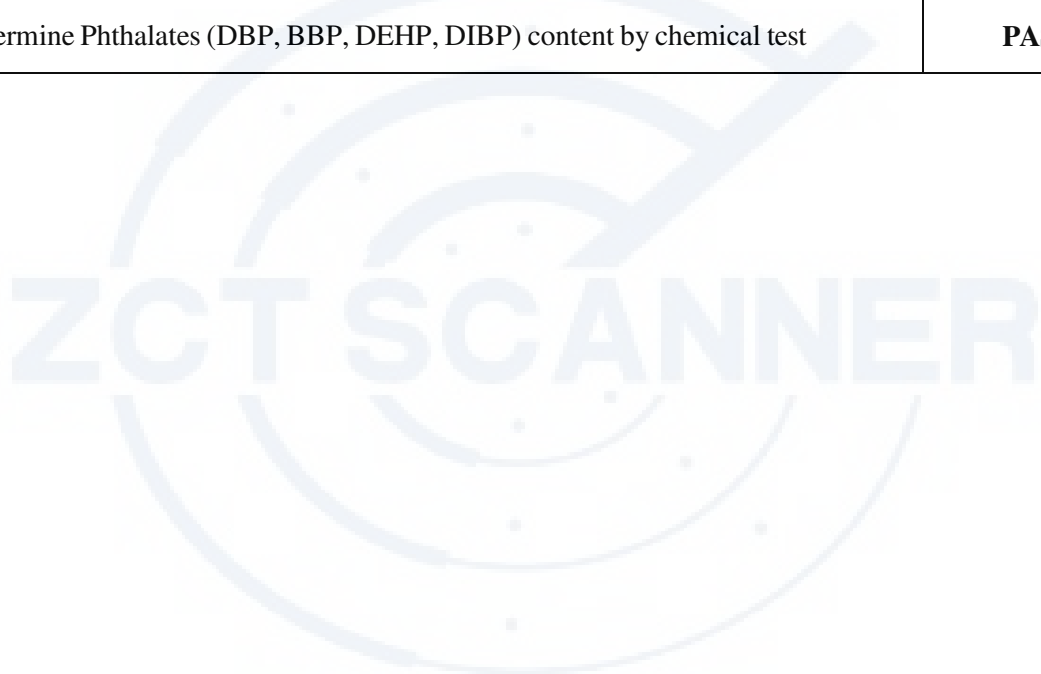
Report No: ZCT20240417RH016

Date: Apr. 17, 2024

Page 2 of 14

Summary of Test Results:

TEST REQUEST	CONCLUSION
RoHS Directive 2011/65/EU and its subsequent amendments Directive (EU) 2015/863	--
(1)To determine Lead (Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)),Polybrominated Biphenyls (PBBs) and Polybrominated DiphenylEthers (PBDEs)content by screening test and chemical test	PASS
(2) To determine Phthalates (DBP, BBP, DEHP, DIBP) content by chemical test	PASS





Test Report

Report No: ZCT20240417RH016

Date: Apr. 17, 2024

Page 3 of 14

Sample Description:

No.	Name
1	Black Plastic Case
2	Transparent Plastic Film
3	White Transparent Plastic
4	Black Plastic Key
5	Screw
6	Silver Metal
7	Spring
8	Silver Sheet
9	Transparent Plastic
10	Black Plastic
11	Red Leather
12	Black Leather
13	White Connector
14	Terminal
15	Silver Metal
16	White Plastic
17	PCB
18	Switch
19	Crystal Oscillator



Test Report

Report No: ZCT20240417RH016

Date: Apr. 17, 2024

Page 4 of 14

No.	Name
20	IC
21	White Plastic
22	Inserting Pin
23	LED
24	Diode
25	Switch
26	IC
27	Switch
28	PCB
29	Inductance
30	Resistance
31	Capacitance
32	IC
33	LED
34	Soldering Tin



Test Report

Report No: ZCT20240417RH016

Date: Apr. 17, 2024

Page 5 of 14

1. XRF Test Result:

No.	XRF Result(mg/kg)					Chemical Test (mg/kg)	Conclusion
	Pb	Cd	Hg	Cr	Br		
1	BL	BL	BL	BL	BL	--	Pass
2	BL	BL	BL	BL	BL	--	Pass
3	BL	BL	BL	BL	BL	--	Pass
4	BL	BL	BL	BL	BL	--	Pass
5	BL	BL	BL	BL	--	--	Pass
6	BL	BL	BL	BL	--	--	Pass
7	BL	BL	BL	BL	--	--	Pass
8	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	BL	--	Pass
14	BL	BL	BL	BL	--	--	Pass
15	BL	BL	BL	BL	--	--	Pass
16	BL	BL	BL	BL	BL	--	Pass
17	BL	BL	BL	BL	BL	--	Pass



Test Report

Report No: ZCT20240417RH016

Date: Apr. 17, 2024

Page 6 of 14

No.	XRF Result(mg/kg)					Chemical Test (mg/kg)	Conclusion
	Pb	Cd	Hg	Cr	Br		
18	BL	BL	BL	BL	--	--	Pass
19	BL	BL	BL	BL	--	--	Pass
20	BL	BL	BL	BL	--	--	Pass
21	BL	BL	BL	BL	BL	--	Pass
22	BL	BL	BL	BL	--	--	Pass
23	BL	BL	BL	BL	BL	--	Pass
24	BL	BL	BL	BL	--	--	Pass
25	BL	BL	BL	BL	--	--	Pass
26	BL	BL	BL	BL	--	--	Pass
27	BL	BL	BL	BL	--	--	Pass
28	BL	BL	BL	BL	BL	--	Pass
29	BL	BL	BL	BL	--	--	Pass
30	BL	BL	BL	BL	--	--	Pass
31	BL	BL	BL	BL	--	--	Pass
32	BL	BL	BL	BL	--	--	Pass
33	BL	BL	BL	BL	BL	--	Pass
34	BL	BL	BL	BL	--	--	Pass

Test Report

Report No: ZCT20240417RH016

Date: Apr. 17, 2024

Page 7 of 14

Remark:

1. It is the result on total Br while test item on restricted substances in PBBs/PBDEs. It is the result on total Cr while test item on restricted substances is Cr(VI).

2. Screening test by XRF spectroscopy

XRF screening limits in mg/kg for regulated elements according to IEC 62321 -3-1: 2013 Annex A.

Element	Polymer Material	Metallic Material	Composite Material
Pb	$BL \leq 700 - 3\sigma \leq X < 1300 + 3\sigma \leq OL$	$BL \leq 700 - 3\sigma \leq X < 1300 + 3\sigma \leq OL$	$BL \leq 500 - 3\sigma \leq X < 1500 + 3\sigma \leq OL$
Cd	$BL \leq 70 - 3\sigma \leq X < 130 + 3\sigma \leq OL$	$BL \leq 70 - 3\sigma \leq X < 130 + 3\sigma \leq OL$	$LOD < X < 150 + 3\sigma \leq OL$
Hg	$BL \leq 700 - 3\sigma \leq X < 1300 + 3\sigma \leq OL$	$BL \leq 700 - 3\sigma \leq X < 1300 + 3\sigma \leq OL$	$BL \leq 500 - 3\sigma \leq X < 1500 + 3\sigma \leq OL$
Cr	$BL \leq 700 - 3\sigma < X$	$BL \leq 700 - 3\sigma < X$	$BL \leq 500 - 3\sigma < X$
Br	$BL \leq 300 - 3\sigma < X$	--	$BL \leq 250 - 3\sigma < X$

XRF detection limits in mg/kg for regulated elements in various material

Element	Polymer Material	Metallic Material	Composite Material
Pb	10	50	50
Cd	10	50	50
Hg	10	50	50
Cr	10	50	50
Br	10	50	50

Note:

-BL = Under the XRF screening limit

-OL = Future chemical test will be conducted while result is above the screening limit

-X = The symbol "X" marks the region where further investigation is necessary

-3σ = The reproducibility of analytical instruments

-LOD = Detection limit



Test Report

Report No: ZCT20240417RH016

Date: Apr. 17, 2024

Page 8 of 14

2. Wet Chemical Test

Test Item(s)	Test Method/ Test Equipment	Unit	Limit	MDL
Cadmium(Cd)	IEC 62321-5:2013, ICP-OES	mg/kg	100	2
Lead(Pb)	IEC 62321-5:2013, ICP-OES	mg/kg	1000	2
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017, ICP-OES	mg/kg	1000	2
Hexavalent Chromium(CrVI) (Metal)	IEC 62321-7-1:2015, UV-Vis	µg/cm ²	0.13	0.1
Hexavalent Chromium(CrVI) (Nonmetal)	IEC 62321-7-2:2017, UV-Vis	mg/kg	1000	8
PBBs (Next form)	IEC 62321-6:2015, GC-MS	mg/kg	1000	5
PBDEs (Next form)	IEC 62321-6:2015, GC-MS	mg/kg	1000	5
Dibutyl Phthalate(DBP)	IEC 62321-8:2017, GC-MS	mg/kg	1000	30
Butyl benzyl phthalate (BBP)	IEC 62321-8:2017, GC-MS	mg/kg	1000	30
Di-(2-ethylhexyl) Phthalate(DEHP)	IEC 62321-8:2017, GC-MS	mg/kg	1000	30
Diisobutyl phthalate (DIBP)	IEC 62321-8:2017, GC-MS	mg/kg	1000	30

PBBs		PBDEs	
Monobromobiphenyl	Hexabromobiphenyl	Monobromodiphenyl ether	Hexabromodiphenyl ether
Dibromobiphenyl	Heptabromobiphenyl	Dibromodiphenyl ether	Heptabromodiphenyl ether
Tribromobiphenyl	Octabromobiphenyl	Tribromodiphenyl ether	Octabromodiphenyl ether
Tetrabromobiphenyl	Nonabromobiphenyl	Tetrabromodiphenyl ether	Nonabromodiphenyl ether
Pentabromobiphenyl	Decabromobiphenyl	Pentabromodiphenyl ether	Decabromodiphenyl ether



Test Report

Report No: ZCT20240417RH016

Date: Apr. 17, 2024

Page 9 of 14

Note:

1. mg/kg= ppm=0.0001%
2. N.D.= Not Detected(<MDL)
3. MDL = Method Detection Limit
4. -- = No Testing
5. When Cr (VI) in a sample is detected below the 0.10 $\mu\text{g}/\text{cm}^2$ LOQ (limit of quantification), the sample is considered to be negative for Cr (VI). Since Cr (VI) may not be uniformly distributed in the coating even within the same sample batch, a "grey zone" between 0.10 $\mu\text{g}/\text{cm}^2$ and 0.13 $\mu\text{g}/\text{cm}^2$ has been established as "inconclusive" to reduce inconsistent results due to unavoidable coating variations. In this case, additional testing may be necessary to confirm the presence of Cr (VI). When Cr (VI) is detected above 0.13 $\mu\text{g}/\text{cm}^2$, the sample is considered to be positive for the presence of Cr (VI) in the coating layer. Unavoidable coating variations may influence the determination Information on storage conditions and production date of the tested sample is unavailable and thus Cr (VI) results represent status of the sample at the time of testing.

ZCT SCANNER



Test Report

Report No: ZCT20240417RH016

Date: Apr. 17, 2024

Page 10 of 14

3. Phthalate Test Result:

Test Item(s)	No.1	No.2	No.3	No.4	No.9
Dibutyl Phthalate (DBP)	N.D.	N.D.	N.D.	N.D.	N.D.
Butyl benzyl phthalate (BBP)	N.D.	N.D.	N.D.	N.D.	N.D.
Di-(2-ethylhexyl) Phthalate(DEHP)	N.D.	N.D.	N.D.	N.D.	N.D.
Diisobutyl phthalate (DIBP)	N.D.	N.D.	N.D.	N.D.	N.D.
Test Item(s)	No.10	No.11	No.12	No.13	No.16
Dibutyl Phthalate (DBP)	N.D.	N.D.	N.D.	N.D.	N.D.
Butyl benzyl phthalate (BBP)	N.D.	N.D.	N.D.	N.D.	N.D.
Di-(2-ethylhexyl) Phthalate(DEHP)	N.D.	N.D.	N.D.	N.D.	N.D.
Diisobutyl phthalate (DIBP)	N.D.	N.D.	N.D.	N.D.	N.D.
Test Item(s)	No.17	No.21	No.23	No.28	No.33
Dibutyl Phthalate (DBP)	N.D.	N.D.	N.D.	N.D.	N.D.
Butyl benzyl phthalate (BBP)	N.D.	N.D.	N.D.	N.D.	N.D.
Di-(2-ethylhexyl) Phthalate(DEHP)	N.D.	N.D.	N.D.	N.D.	N.D.
Diisobutyl phthalate (DIBP)	N.D.	N.D.	N.D.	N.D.	N.D.

Note: 1. mg/kg= ppm=0.0001%

2. N.D.= Not Detected(<MDL)

Test Report

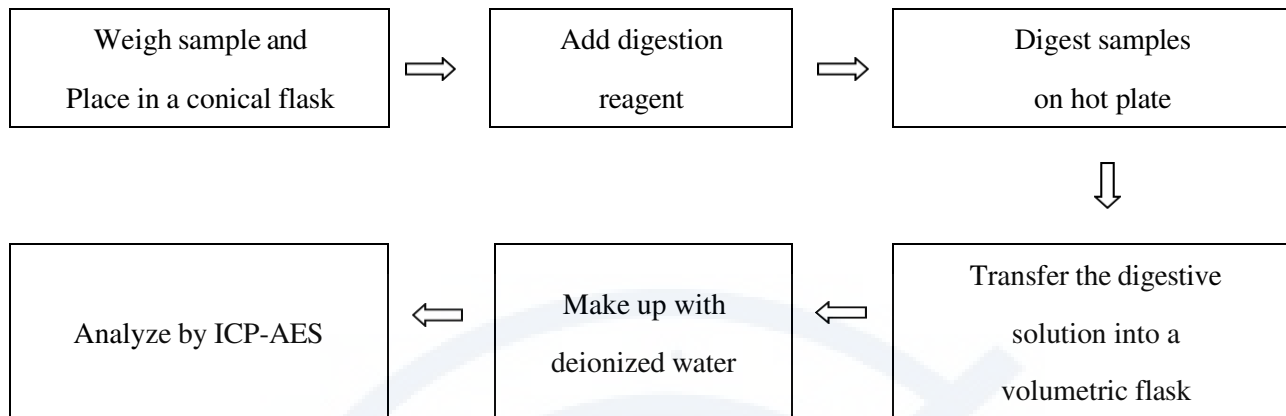
Report No: ZCT20240417RH016

Date: Apr. 17, 2024

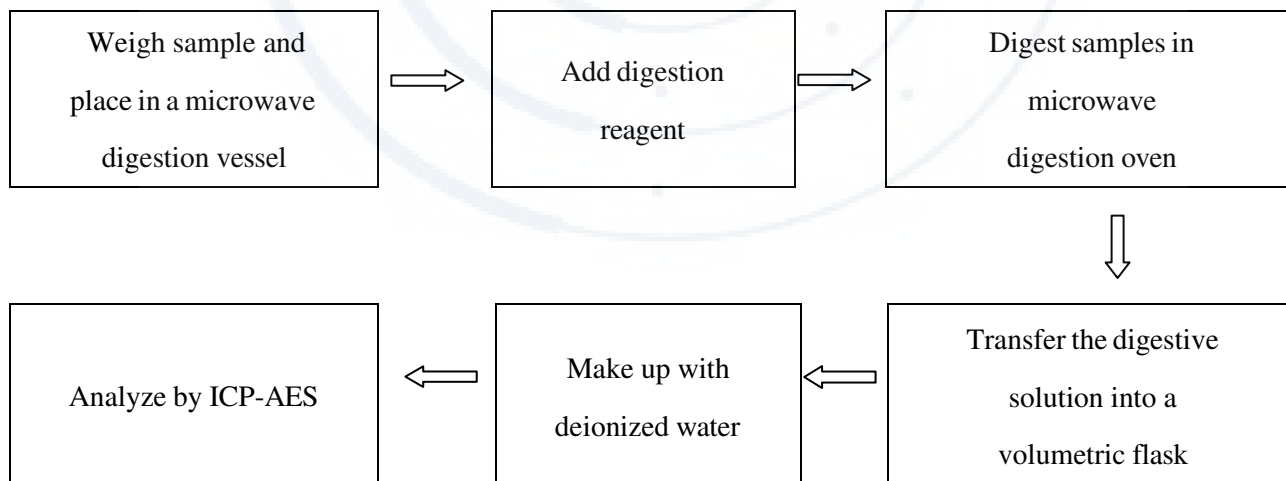
Page 11 of 14

Test Process:

1. Test for Cd/Pb Content



2. Test for Hg Content



Test Report

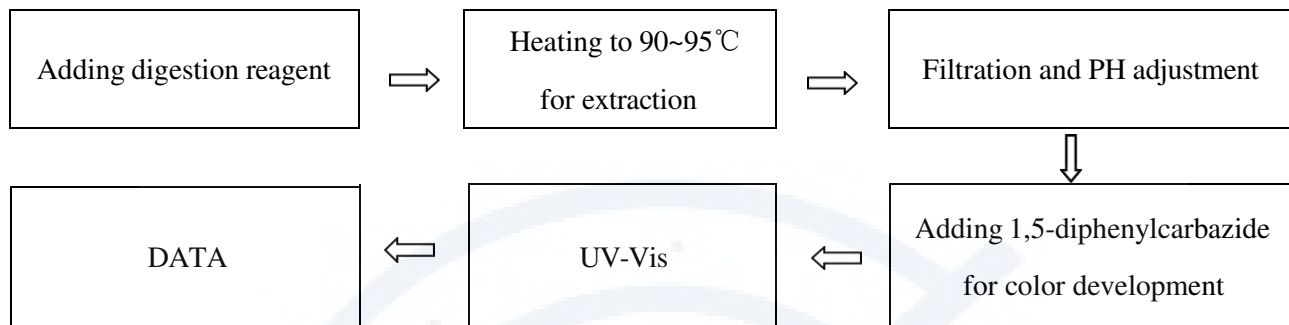
Report No: ZCT20240417RH016

Date: Apr. 17, 2024

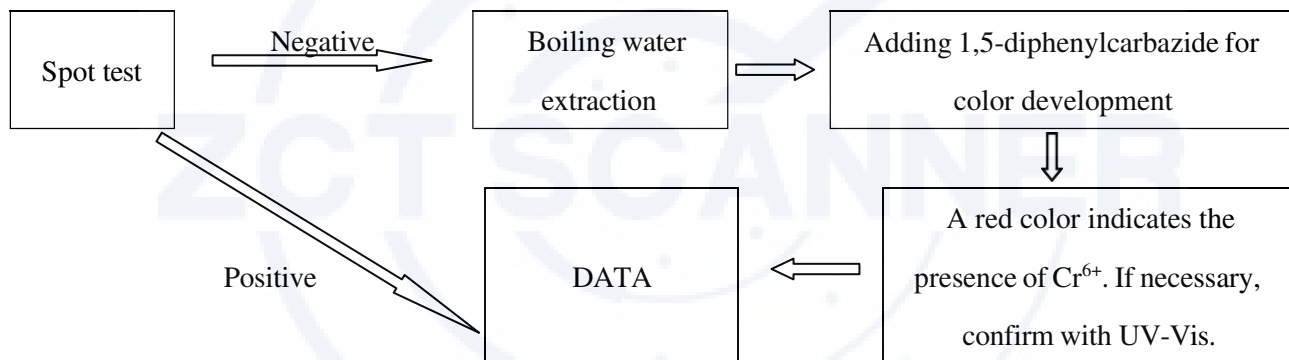
Page 12 of 14

3. Test for Chromium (VI) Content

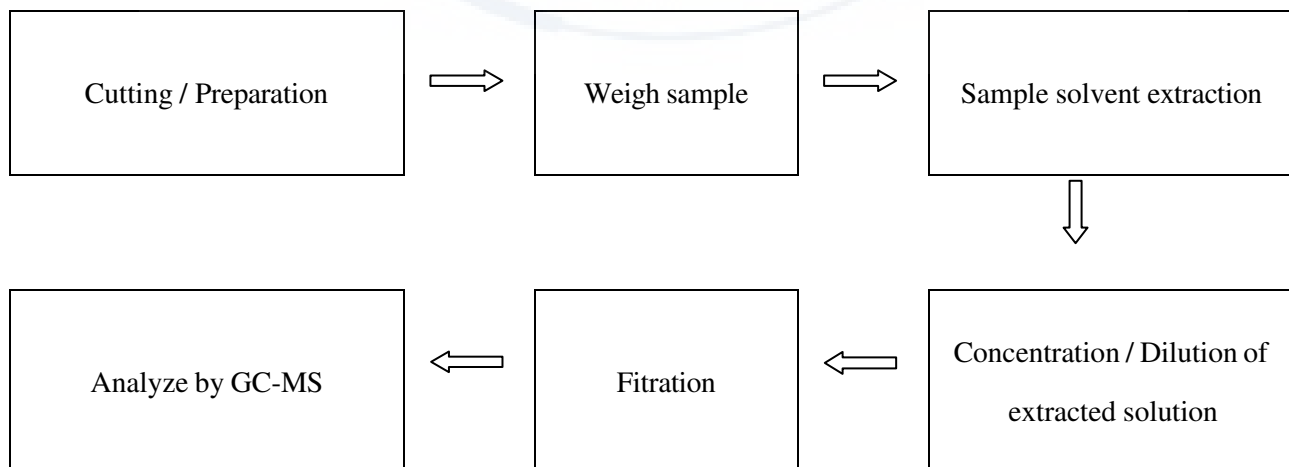
Nonmetal material



Metal material



4. Test for DBP, BBP, DEHP, DIBP, PBB, PBDE Content



Test Report

Report No: ZCT20240417RH016

Date: Apr. 17, 2024

Page 13 of 14

Sample Photo:



Test Report

Report No: ZCT20240417RH016

Date: Apr. 17, 2024

Page 14 of 14



*** End of Report ***