

TEST REPORT

CheckCode:915099

Report

No.:C202411292384-5E-G2

Company Name: Shanghai Eastsoft Microelectronics Co.,Ltd.
Address: 3rd Floor, Building 12,Phoenix Park, No.1515 Gumei Road, Xuhui District,Shanghai.

The following sample information is provided by the client and responsible for its authenticity

Sample Name: TSSOP Chip
Model: TSSOP20
Reference Model: SOP20/MSOP20/SSOP20
Sample State: Normal

Date of Receipt: Dec. 6, 2024 Test Period: Dec. 6, 2024 – Dec. 13, 2024

Test Request:

- 1) As specified by client, to determine the 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), Dibutyl phthalate (DBP), Diisobutyl phthalate (DIBP) content in the submitted sample(s).

Judge Standard:

- 1) RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.
- 2) EN 61249-2-21:2003

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

Conclusion:

- 1) Based on the performed test on submitted sample, the result(s) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.
- 2) Based on the performed test on submitted sample, the result(s) comply with the limits as set by EN 61249-2-21:2003.

Edited by Guo Yinying Reviewed by Huang Yingkun Approved by Zheng Xiaoping



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Issue date:Jan.8,2025

The result(s) shown in this report refer(s) only to the sample(s) tested. This report is considered invalid without approved signature, special seal for inspection and testing and the seal on the perforation. This report cannot be reproduced except in full, without prior written approval of the company. Any disagreements of the test report should be fed back to us within 15 workdays upon receiving the report. Scan the QR code on the first page of the test report, or log on to the official website <http://www.grgtmall.com>, enter the report number and check code to check the authenticity of the report. If you have any questions, please contact the email grgtest@grgtest.com. GRGT assumes no responsibility for information leakage caused by improper management of the QR code and the check code by customers.

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Laboratory Add: No. 31, Nanxiang 2nd Road, Science City, Huangpu District, Guangzhou, P.R.China
Tel: 4006020999 Fax: +86-020-38698685 Website: <http://www.grgttest.com>

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Sample description:

Sample No.	Description
1	Black body with It-brown printing
2	Silvery metal pin

- Remark:
- 1) mg/kg = ppm
 - 2) MDL = Method Detection Limit
 - 3) "N.D." = Not Detected (Below Method Detection Limit)
 - 4) For metal sample
 - a. The sample is negative for Cr(VI) if Cr(VI) is N.D.(concentration less than $0.10 \mu\text{g}/\text{cm}^2$).The sample coating is considered a non- Cr(VI) based coating.
 - b. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than $0.13 \mu\text{g}/\text{cm}^2$.The sample coating is considered to contain Cr(VI).
 - c. The result between $0.10 \mu\text{g}/\text{cm}^2$ and $0.13 \mu\text{g}/\text{cm}^2$ is considered to be inconclusive. unavoidable coating variations may influence the determination.
 - 5) This report C202411292384-5E-G1 is the modification of the report C202411292384-5E-G1 and replace the report C202411292384-5E-G1.The previous reports C202411292384-5E and C202411292384-5E-G1 are all invalid.

Test result(s):

1) RoHS

Test method:

Test Item(s)	Test Method	Measuring Instrument	Limit
Lead (Pb)	IEC 62321-5:2013	ICP-OES/AAS	1000mg/kg
Cadmium (Cd)	IEC 62321-5:2013	ICP-OES	100mg/kg
Mercury (Hg)	IEC 62321-4:2013 +AMD1:2017	ICP-OES	1000mg/kg
Hexavalent Chromium [Cr (VI)]	IEC 62321-7-1:2015	UV-Vis	---
	IEC 62321-7-2:2017	UV-Vis	1000mg/kg

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Test Item(s)	Test Method	Measuring Instrument	Limit
Polybrominated biphenyls (PBBs)	IEC 62321-6:2015	GC-MS	1000mg/kg
Polybrominated diphenyl ethers (PBDEs)	IEC 62321-6:2015	GC-MS	1000mg/kg
Bis(2-ethylhexyl) phthalate (DEHP)	IEC 62321-8:2017	GC-MS	1000mg/kg
Butyl benzyl phthalate (BBP)	IEC 62321-8:2017	GC-MS	1000mg/kg
Dibutyl phthalate (DBP)	IEC 62321-8:2017	GC-MS	1000mg/kg
Diisobutyl phthalate (DIBP)	IEC 62321-8:2017	GC-MS	1000mg/kg

Test Item	Sample	Unit	MDL
	1		
Lead (Pb)	N.D.	mg/kg	2
Cadmium (Cd)	N.D.	mg/kg	2
Mercury (Hg)	N.D.	mg/kg	2
Hexavalent Chromium [Cr(VI)]	N.D.	mg/kg	8

Test Item	Sample	Unit	MDL
	2		
Lead (Pb)	N.D.	mg/kg	2
Cadmium (Cd)	N.D.	mg/kg	2
Mercury (Hg)	N.D.	mg/kg	2
Hexavalent Chromium [Cr(VI)]	N.D.	µg/cm ²	0.10

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Test Item	Sample	Unit	MDL
	1		
Sum of PBBs	N.D.	mg/kg	---
Monobromobiphenyl	N.D.	mg/kg	50
Dibromobiphenyl	N.D.	mg/kg	50
Tribromobiphenyl	N.D.	mg/kg	50
Tetrabromobiphenyl	N.D.	mg/kg	50
Pentabromobiphenyl	N.D.	mg/kg	50
Hexabromobiphenyl	N.D.	mg/kg	50
Heptabromobiphenyl	N.D.	mg/kg	50
Octabromobiphenyl	N.D.	mg/kg	50
Nonabromobiphenyl	N.D.	mg/kg	50
Decabromobiphenyl	N.D.	mg/kg	50
Sum of PBDEs	N.D.	mg/kg	---
Monobromodiphenyl ether	N.D.	mg/kg	50
Dibromodiphenyl ether	N.D.	mg/kg	50
Tribromodiphenyl ether	N.D.	mg/kg	50
Tetrabromodiphenyl ether	N.D.	mg/kg	50
Pentabromodiphenyl ether	N.D.	mg/kg	50
Hexabromodiphenyl ether	N.D.	mg/kg	50
Heptabromodiphenyl ether	N.D.	mg/kg	50
Octabromodiphenyl ether	N.D.	mg/kg	50
Nonabromodiphenyl ether	N.D.	mg/kg	50
Decabromodiphenyl ether	N.D.	mg/kg	50

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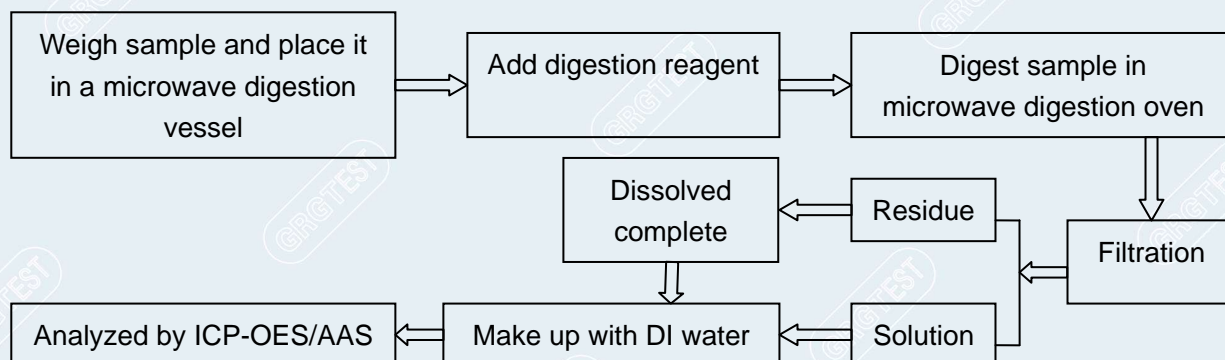
Test Item	Sample	Unit	MDL
	1		
Bis(2-ethylhexyl) phthalate (DEHP)	N.D.	mg/kg	50
Butyl benzyl phthalate (BBP)	N.D.	mg/kg	50
Dibutyl phthalate (DBP)	N.D.	mg/kg	50
Diisobutyl phthalate (DIBP)	N.D.	mg/kg	50

2) Halogen

Test Method: With reference to EN 14582: 2016, analysis was performed by Ion Chromatography.

Test Item	Sample	Unit	MDL	Limit	Conclusion
	1				
Fluorine (F)	N.D.	mg/kg	25	---	---
Chlorine (Cl)	N.D.	mg/kg	25	≤900	Comply
Bromine (Br)	N.D.	mg/kg	25	≤900	Comply
Iodine (I)	N.D.	mg/kg	25	---	---
Sum of Cl & Br	N.D.	mg/kg	---	≤1500	Comply

Test Process for Pb / Cd / Hg



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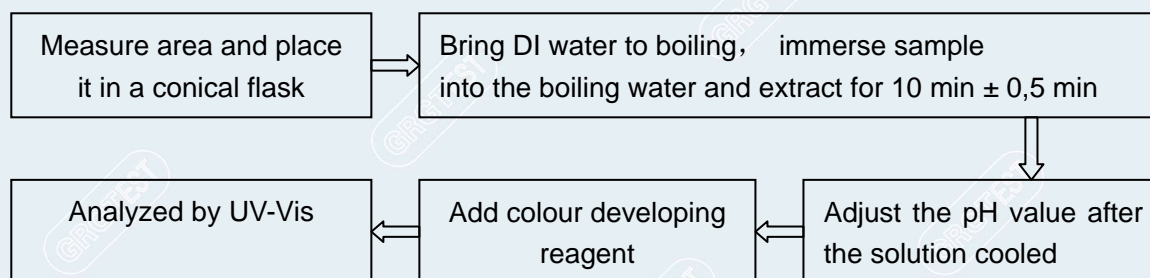
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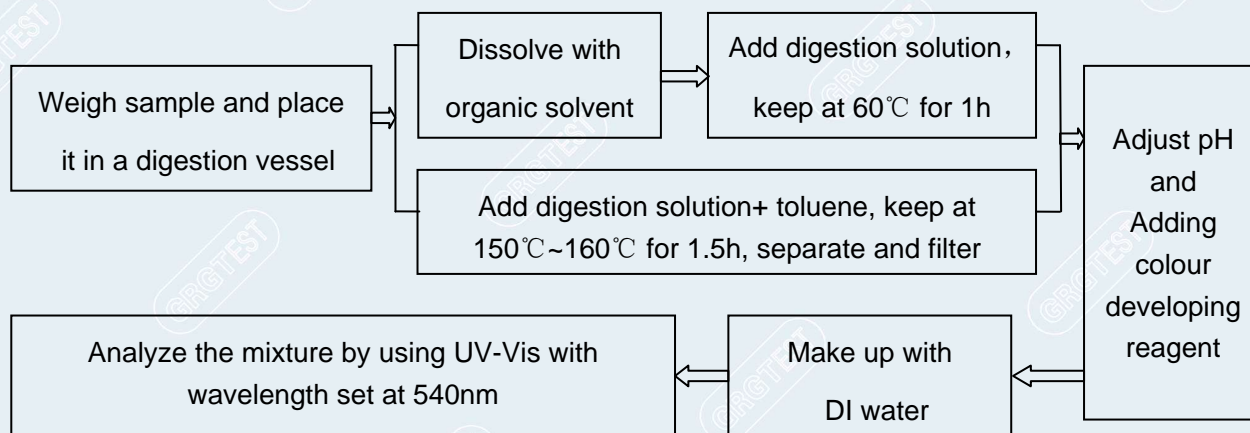
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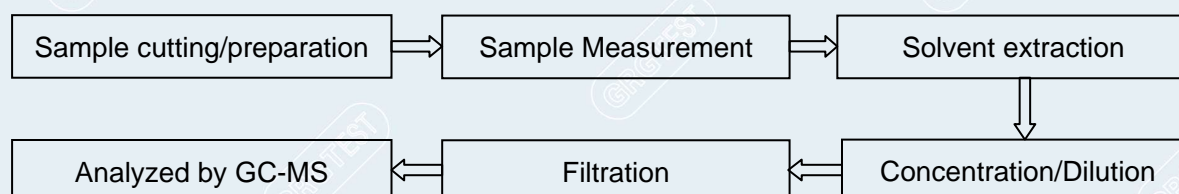
Test Process for Cr (VI) (metal / plating)



Test Process for Cr (VI) (Nonmetal)



Test Process for PBBs & PBDEs



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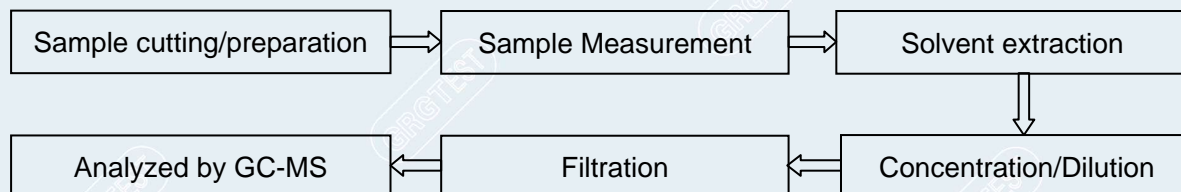
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Test Process for Phthalates



Halogen test process:

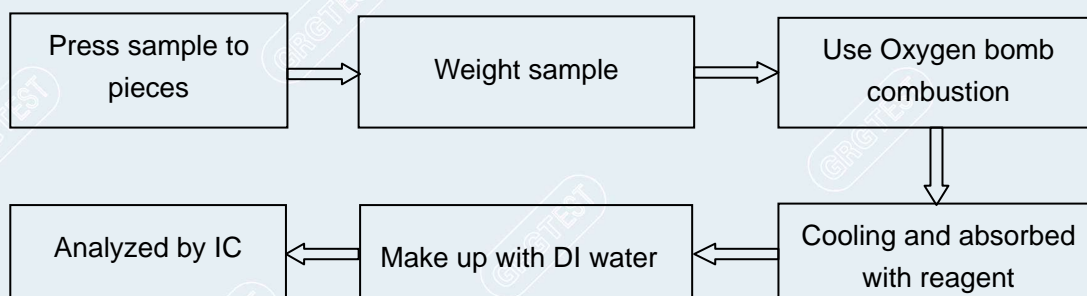
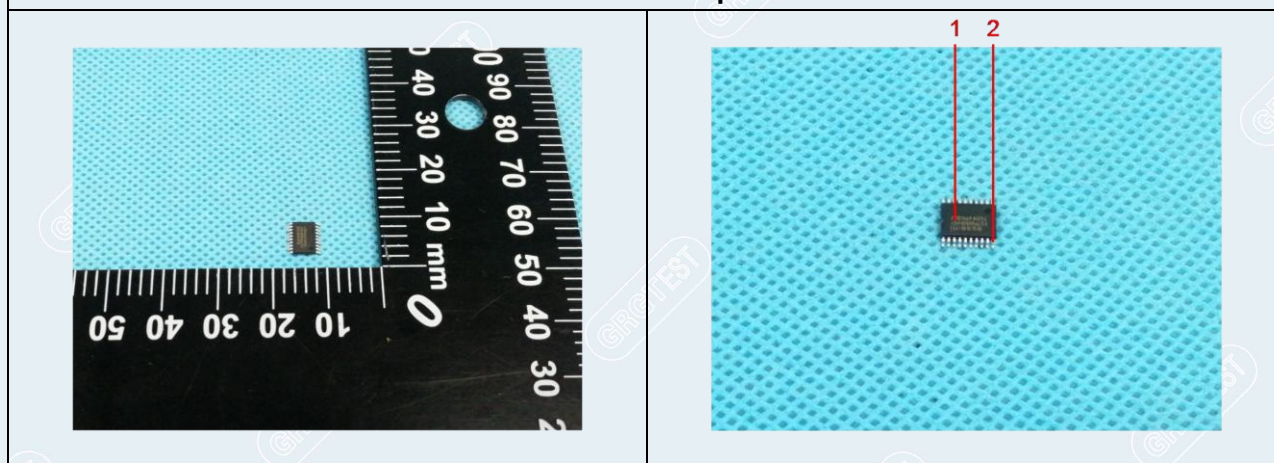


Photo of Sample



-----End of Report-----

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