

## Test Report

No.: SHAEC25019833617

Date: Aug 15, 2025

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Client Name: Suzhou Goodark Electronics Co.,Ltd

Client Address: No.200 Huajin Road,TongAn Economic Development Zone,Suzhou

Sample Name: ASMA GPP Halogen-Free automotive product

Model No.: ASMA GPP

Client Ref. Information: ASMA MSMA ASMB MSMC ASMC SMA SMB SMC GPP/TVS (Halogen-Free) automotive products

Main Substance: Cu,Sn,Epoxy Resin

The above sample(s) and information were provided by the client.

SGS Job No.: SUP25-002863

Sample Receiving Date: Aug 04, 2025

Testing Period: Aug 04, 2025 ~ Aug 15, 2025

Test Requested: Select test(s) as requested by the client.

Test Method(s): Please refer to next page(s).

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

Test Requirement	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU - Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	Pass
Halogen	See Results

Signed for and on behalf of  
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

*Carol Luo*

Carol Luo

Approved Signatory

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## Test Result(s):

## Test Part Description:

SN ID	Sample No.	SGS Sample ID	Description
SN1	A15	SHA25-0198336-0001.C015	Black body with silvery pin

## Remarks:

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) “-” = Not Regulated

**EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU - Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)**

**Test Method:** With reference to IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017 and IEC 62321-12:2023, analysis was performed by ICP-OES/AAS, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit(s)	MDL	A15
Lead (Pb)	1000	mg/kg	2	11476 <sup>▲</sup>
Mercury (Hg)	1000	mg/kg	2	ND
Cadmium (Cd)	100	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	8	ND
Polybrominated biphenyls (PBB)	1000	mg/kg	-	ND
Monobrominated biphenyl (MonoBB)	-	mg/kg	25	ND
Dibrominated biphenyl (DiBB)	-	mg/kg	25	ND
Tribrominated biphenyl (TriBB)	-	mg/kg	25	ND
Tetrabrominated biphenyl (TetraBB)	-	mg/kg	25	ND
Pentabrominated biphenyl (PentaBB)	-	mg/kg	25	ND
Hexabrominated biphenyl (HexaBB)	-	mg/kg	25	ND
Heptabrominated biphenyl (HeptaBB)	-	mg/kg	25	ND
Octabrominated biphenyl (OctaBB)	-	mg/kg	25	ND
Nonabrominated biphenyl (NonaBB)	-	mg/kg	25	ND
Decabrominated biphenyl (DecaBB)	-	mg/kg	25	ND
Polybrominated diphenyl ethers (PBDE)	1000	mg/kg	-	ND
Monobrominated diphenyl ether (MonoBDE)	-	mg/kg	25	ND
Dibrominated diphenyl ether (DiBDE)	-	mg/kg	25	ND
Tribrominated diphenyl ether (TriBDE)	-	mg/kg	25	ND
Tetrabrominated diphenyl ether (TetraBDE)	-	mg/kg	25	ND
Pentabrominated diphenyl ether (PentaBDE)	-	mg/kg	25	ND
Hexabrominated diphenyl ether (HexaBDE)	-	mg/kg	25	ND
Heptabrominated diphenyl ether (HeptaBDE)	-	mg/kg	25	ND



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Test Item(s)	Limit	Unit(s)	MDL	A15
Octabrominated diphenyl ether (OctaBDE)	-	mg/kg	25	ND
Nonabrominated diphenyl ether (NonaBDE)	-	mg/kg	25	ND
Decabrominated diphenyl ether (DecaBDE)	-	mg/kg	25	ND
Bis(2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Dibutyl Phthalate (DBP)	1000	mg/kg	50	ND
Diisobutyl Phthalate (DIBP)	1000	mg/kg	50	ND

### Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series.
- (3) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.

### Halogen

**Test Method:** With reference to EN 14582:2016, analysis was performed by IC.

Test Item(s)	Unit(s)	MDL	A15
Fluorine(F)	mg/kg	20	ND
Chlorine(Cl)	mg/kg	50	ND
Bromine(Br)	mg/kg	50	ND
Iodine(I)	mg/kg	50	ND

▲ According to the declaration from the client, Lead (Pb) in No.A15 is exempted by EU RoHS directive 2011/65/EU based on [ANNEX III 7(a)]: Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead).

More information about exemption can be found via the following link:

<https://rohs.sgsonline.com.cn/PDFLinks/en/RSTS-TP-037%20RoHS%20Exemption%20%28EN%29.pdf>

▲ According to the declaration from the client, Lead (Pb) in No.A15 is exempted by EU RoHS directive 2011/65/EU based on [ANNEX III 7(c)-I]: Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound.

More information about exemption can be found via the following link:

<https://rohs.sgsonline.com.cn/PDFLinks/en/RSTS-TP-037%20RoHS%20Exemption%20%28EN%29.pdf>

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019.



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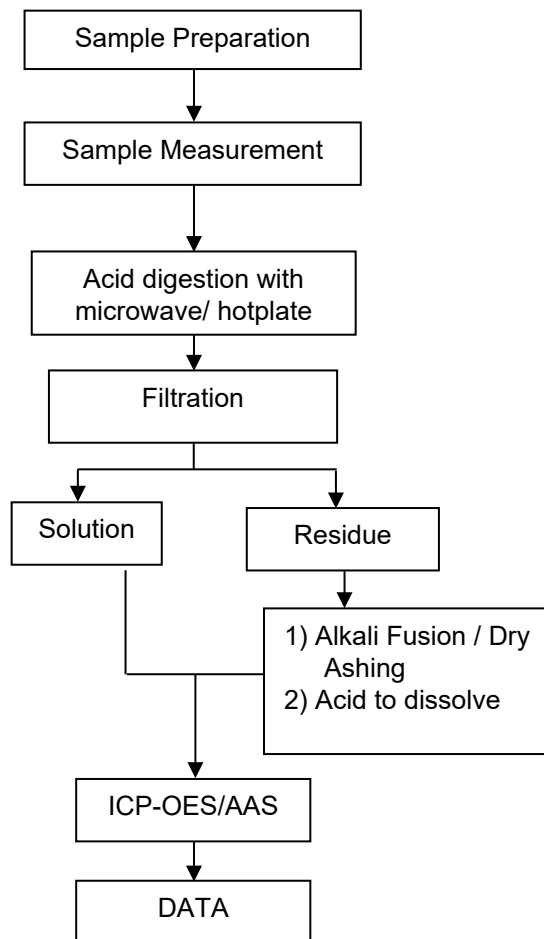
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### Elements Testing Flow Chart

These samples were dissolved totally by pre-conditioning method according to below flow chart.



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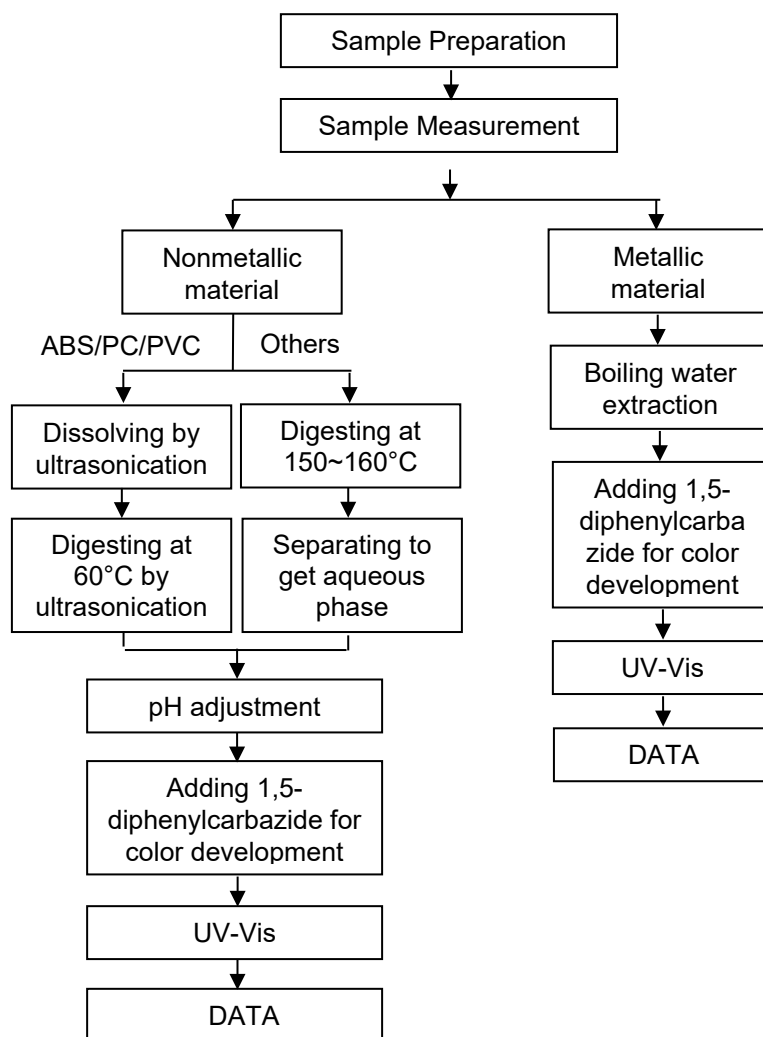
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### Hexavalent Chromium (Cr(VI)) Testing Flow Chart



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### PBB/PBDE/Phthalates Testing Flow Chart



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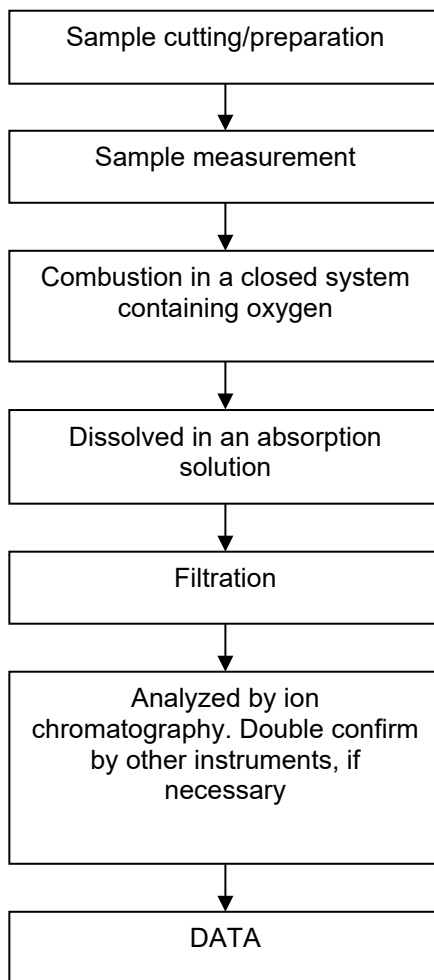
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#### Halogen Testing Flow Chart



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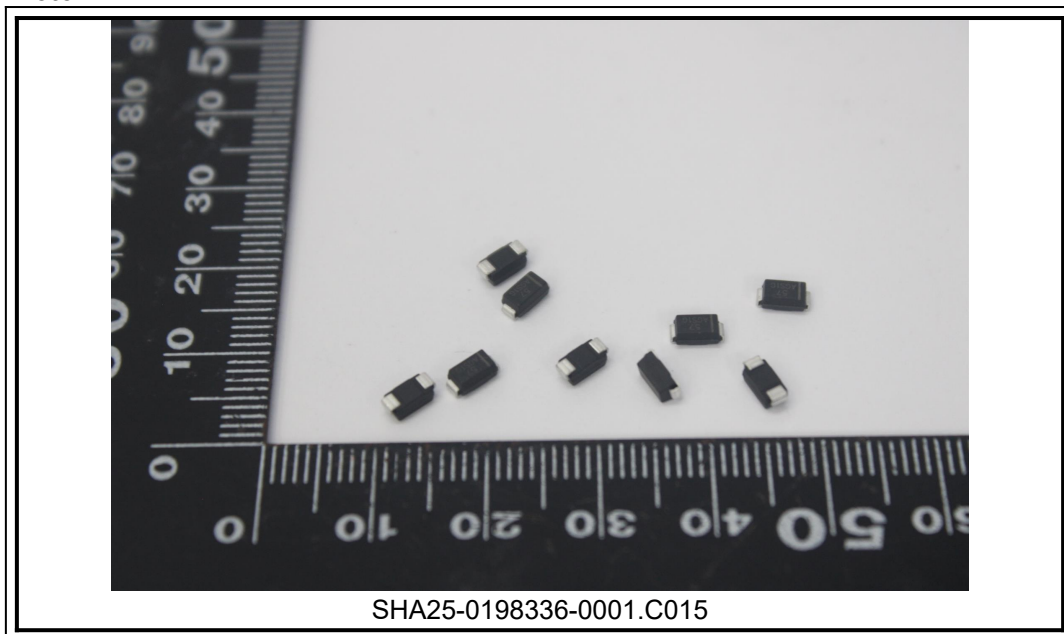
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