

Test Report

No.: CANEC23015268001_1

Date: Dec 11, 2023

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Client Name: MC-POWER SEMICONDUCTOR CO.,LTD

Client Address: 1 SHUANGXING AVENUE, HUANGJIA STREET, SOUTHWEST AIRPORT ECONOMIC DEVELOPMENT ZONE, SHUANGLIU DISTRICT, CHENGDU, CHINA (SICHUAN) PILOT FREE TRADE ZONE

Sample Name: Power elemen

Model No.: TO-220F

Client Ref. Information: TO-126 TO-263 TO-262 TO-251 TO-252 TO-220 TO-220FTO-220HF, TO-247 TO-247L TO-277 TO-3P TO-220C TO-247PLUS TO-263-7 TO-247-4-TO-264 GBU ABS MBS MBF DFN3*3 DFN5*6 DFN8*8 SOP8 ESOP SOT-223 TOLL

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

THIS REPORT IS TO SUPERSEDE TEST REPORT NO.CANEC23015268001, DATE: Dec 08, 2023.

SGS Job No.: CQP23-004840

Sample Receiving Date: Nov 29, 2023

Testing Period: Nov 29, 2023 ~ Dec 07, 2023

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
Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	See Results
Lead, Mercury, Cadmium and Hexavalent chromium	See Results
Halogen	See Results

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Zm Guan
Approved Signatory

scan to see the report



C18536A7



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Standards Technical Services Co., Ltd. Chemical Laboratory.

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Test Result(s):

Test Part Description:

SN ID	Sample No.	SGS Sample ID	Description
SN1	A1	CAN23-0152680-0001.C001	Black "body" with gray printing(mixed)
SN2	A2	CAN23-0152680-0001.C002	Silver-gray metal pin

Remarks:

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

Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), 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, IEC 62321-6:2015 and IEC 62321-8:2017, analysis was performed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Unit(s)	MDL	A1
Cadmium(Cd)	mg/kg	2	ND
Lead (Pb)	mg/kg	2	1851 [▲]
Mercury (Hg)	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	mg/kg	8	ND
Polybromobiphenyl (PBBs)	mg/kg	-	ND
Monobromobiphenyl (MonoBB)	mg/kg	5	ND
Dibromobiphenyl (DiBB)	mg/kg	5	ND
Tribromobiphenyl (TriBB)	mg/kg	5	ND
Tetrabromobiphenyl (TetraBB)	mg/kg	5	ND
Pentabromobiphenyl (PentaBB)	mg/kg	5	ND
Hexabromobiphenyl (HexaBB)	mg/kg	5	ND
Heptabromobiphenyl (HeptaBB)	mg/kg	5	ND
Octabromobiphenyl (OctaBB)	mg/kg	5	ND
Nonabromobiphenyl (NonaBB)	mg/kg	5	ND
Decabromobiphenyl (DecaBB)	mg/kg	5	ND
Polybromodiphenyl ether(PBDEs)	mg/kg	-	ND
Monobromodiphenylether (MonoBDE)	mg/kg	5	ND
Dibromodiphenylether (DiBDE)	mg/kg	5	ND
Tribromodiphenylether (TriBDE)	mg/kg	5	ND
Tetrabromodiphenylether (TetraBDE)	mg/kg	5	ND
Pentabromodiphenylether (PentaBDE)	mg/kg	5	ND
Hexabromodiphenylether (HexaBDE)	mg/kg	5	ND
Heptabromodiphenylether (HeptaBDE)	mg/kg	5	ND
Octabromodiphenylether (OctaBDE)	mg/kg	5	ND
Nonabromodiphenylether (NonaBDE)	mg/kg	5	ND
Decabromodiphenylether (DecaBDE)	mg/kg	5	ND
Dibutyl Phthalate(DBP)	mg/kg	50	ND
Benzyl Butyl Phthalate(BBP)	mg/kg	50	ND



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Test Item(s)	Unit(s)	MDL	A1
Bis-(2-ethylhexyl) Phthalate(DEHP)	mg/kg	50	ND
Diisobutyl Phthalate(DIBP)	mg/kg	50	ND

Lead, Mercury, Cadmium and Hexavalent chromium

Test Method: With reference to IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013 and IEC 62321-7-1:2015, analysis was performed by ICP-OES and UV-Vis .

Test Item(s)	Unit(s)	MDL	A2
Cadmium(Cd)	mg/kg	2	ND
Lead(Pb)	mg/kg	2	6
Mercury(Hg)	mg/kg	2	ND
Hexavalent Chromium (Cr(VI)) ▼	µg/cm ²	0.10	ND

Notes:

- (1) ▼ =
- The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 µg/cm². The sample coating is considered to contain Cr(VI)
 - The sample is negative for Cr(VI) if Cr(VI) is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-Cr(VI) based coating
 - The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive-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.

Halogen

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

Test Item(s)	Unit(s)	MDL	A1
Fluorine(F)	mg/kg	20	ND
Chlorine(Cl)	mg/kg	50	ND
Bromine(Br)	mg/kg	50	ND
Iodine(I)	mg/kg	50	ND

Remark: The sample(s) A1 was/were analyzed on behalf of the applicant as mixing sample in one testing. The above result(s) was/were only given as the informality value and only for reference.

Remark ▲: According to the declaration from the client, Lead (Pb) in specimen A1 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).

This report updates Remark of Test Item.

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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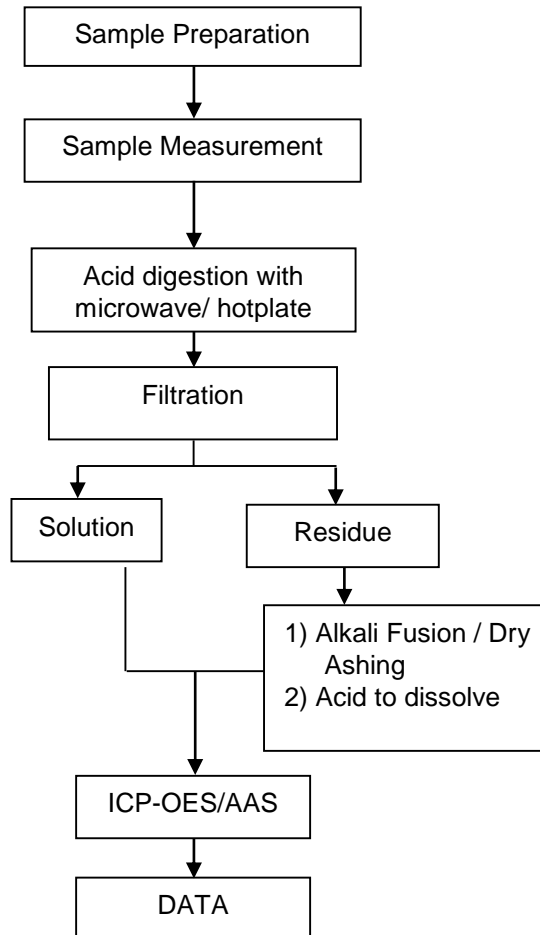
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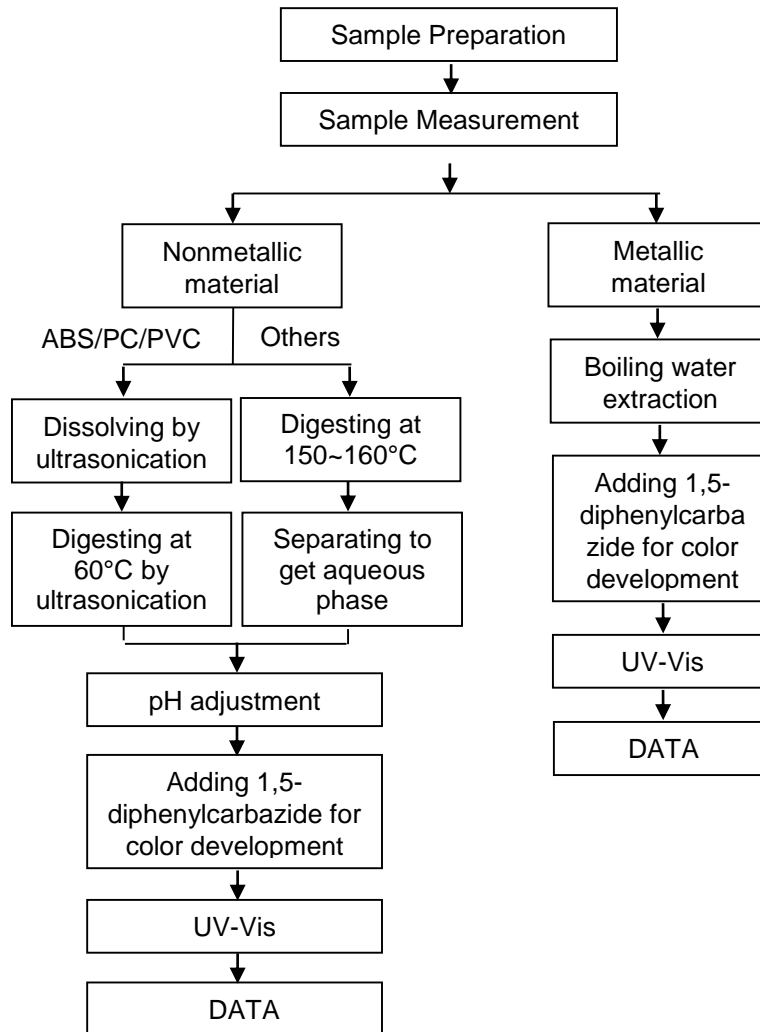
ATTACHMENTS

Elements Testing Flow Chart

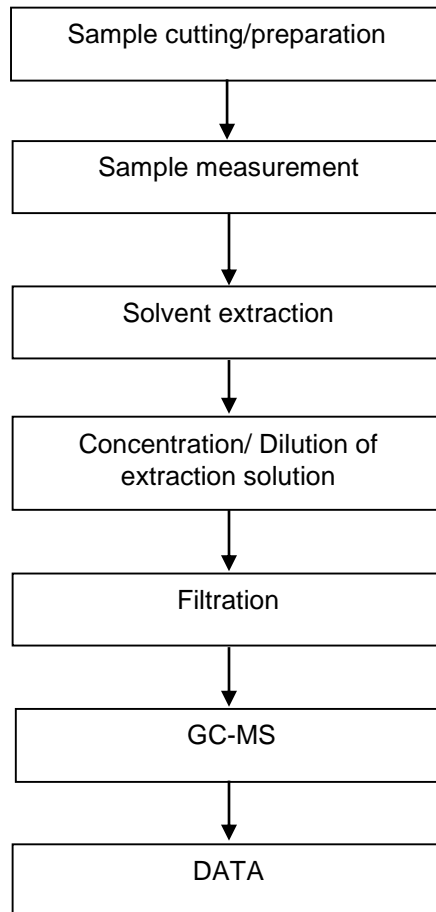
These samples were dissolved totally by pre-conditioning method according to below flow chart.



Hexavalent Chromium (Cr(VI)) Testing Flow Chart



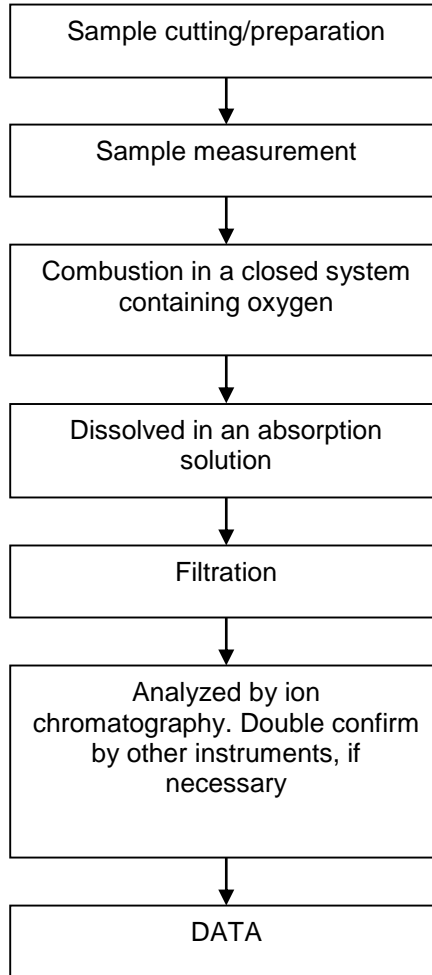
PBBs/PBDEs Testing Flow Chart



Phthalates Testing Flow Chart



Halogen Testing Flow Chart



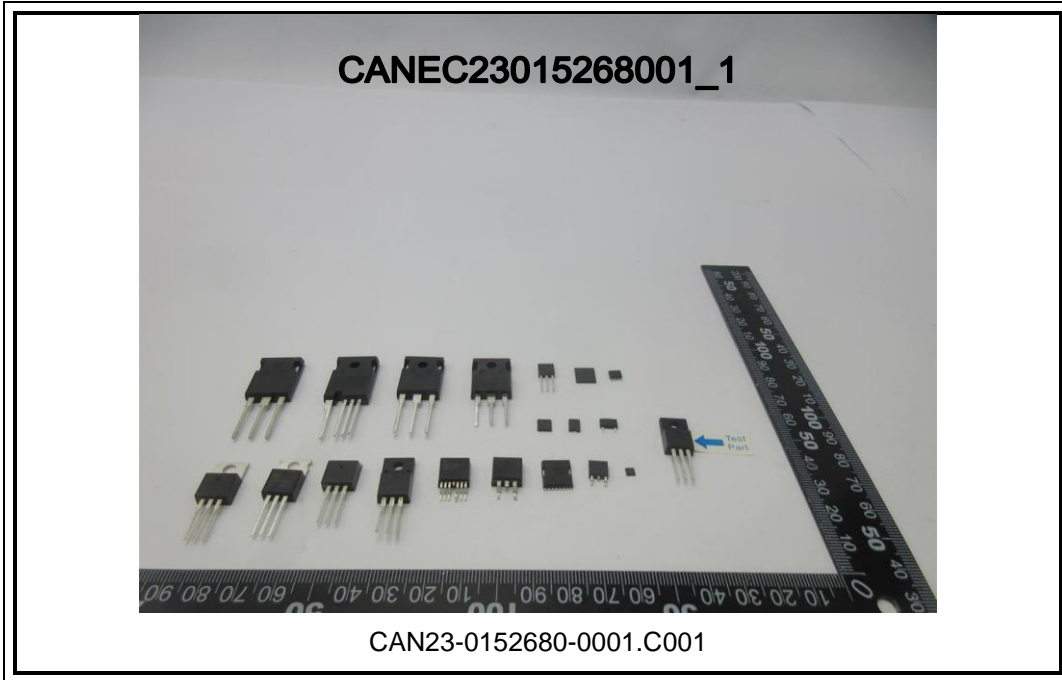
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Sample Photo:



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*** End of Report ***



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