

# Test Report

No.: CANEC23008179402

Date: Aug 22, 2023

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Client Name: FOSHAN BLUE ROCKET ELECTRONICS CO.,LTD.

Client Address: NO.45 GUXIN ROAD, CHANCHENG DISTRICT, FOSHAN, GUANGDONG, P.R.C CHINA

Sample Name: QFN3x3 Semiconductor Device

Model No.: QFN3x3

Client Ref. Information: QFN4x4

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

SGS Job No.: GZP23-010529

Sample Receiving Date: Aug 15, 2023

Testing Period: Aug 15, 2023 ~ Aug 21, 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  |
|--|-------------|
| EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- 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) | Pass        |
| Halogen  | See Results |

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

*Coral Qiu*

Coral Qiu  
Approved Signatory

scan to see the report



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**Test Result(s):**

Test Part Description:

| SN ID | Sample No. | SGS Sample ID           | Description                   |
|-------|------------|-------------------------|-------------------------------|
| SN1   | A1         | CAN23-0081794-0001.C001 | "QFN3x3 Semiconductor Device" |
| SN2   | A2         | CAN23-0081794-0001.C002 | "QFN3x3 Semiconductor Device" |

**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 (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)                       | Limit | Unit(s) | MDL | A1 |
|------------------------------------|-------|---------|-----|----|
| Cadmium(Cd)                        | 100   | mg/kg   | 2   | ND |
| Lead (Pb)                          | 1000  | mg/kg   | 2   | ND |
| Mercury (Hg)                       | 1000  | mg/kg   | 2   | ND |
| Hexavalent Chromium (Cr(VI))       | 1000  | mg/kg   | 8   | ND |
| Polybromobiphenyl (PBBs)           | 1000  | 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)     | 1000  | 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)             | 1000  | mg/kg   | 50  | ND |



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| Test Item(s)                       | Limit | Unit(s) | MDL | A1 |
|------------------------------------|-------|---------|-----|----|
| Benzyl Butyl Phthalate(BBP)        | 1000  | mg/kg   | 50  | ND |
| Bis-(2-ethylhexyl) Phthalate(DEHP) | 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 | A2 |
|--------------|---------|-----|----|
| 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: Results & photo(s) of this report refer to test report CANEC23008179401. 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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No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663  
中国·广东·广州高新技术产业开发区科学城科珠路198号 邮编: 510663

t (86-20) 82155555 www.sgsgroup.com.cn  
t (86-20) 82155555 sgs.china@sgs.com

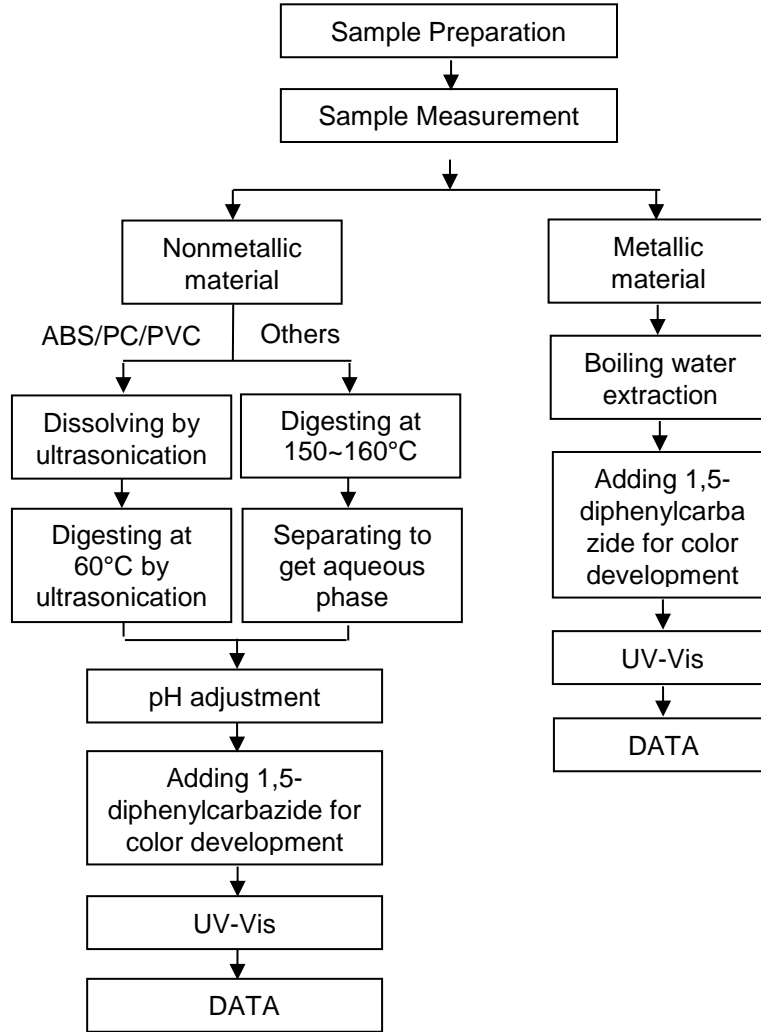
### Elements Testing Flow Chart

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



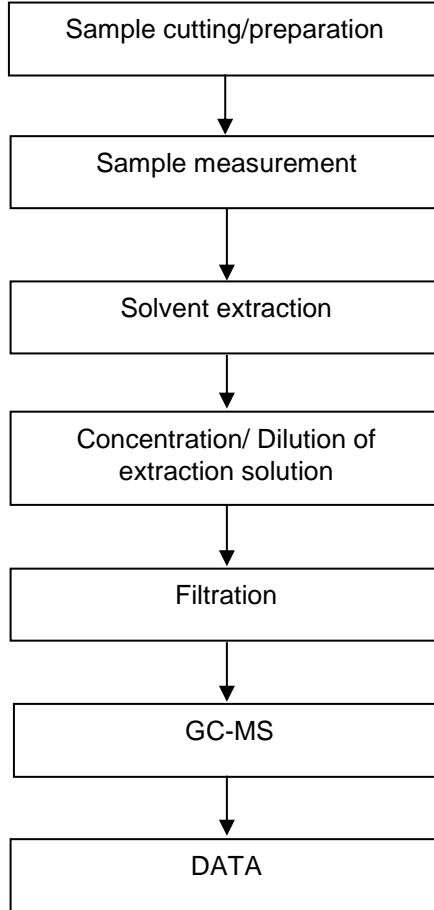
ATTACHMENTS

Hexavalent Chromium (Cr(VI)) Testing Flow Chart



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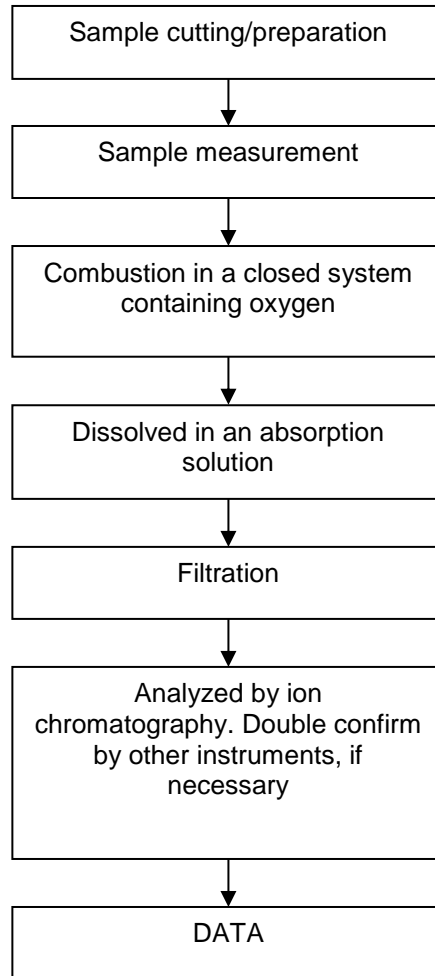
**PBBs/PBDEs Testing Flow Chart**



### Phthalates Testing Flow Chart



### Halogen Testing Flow Chart





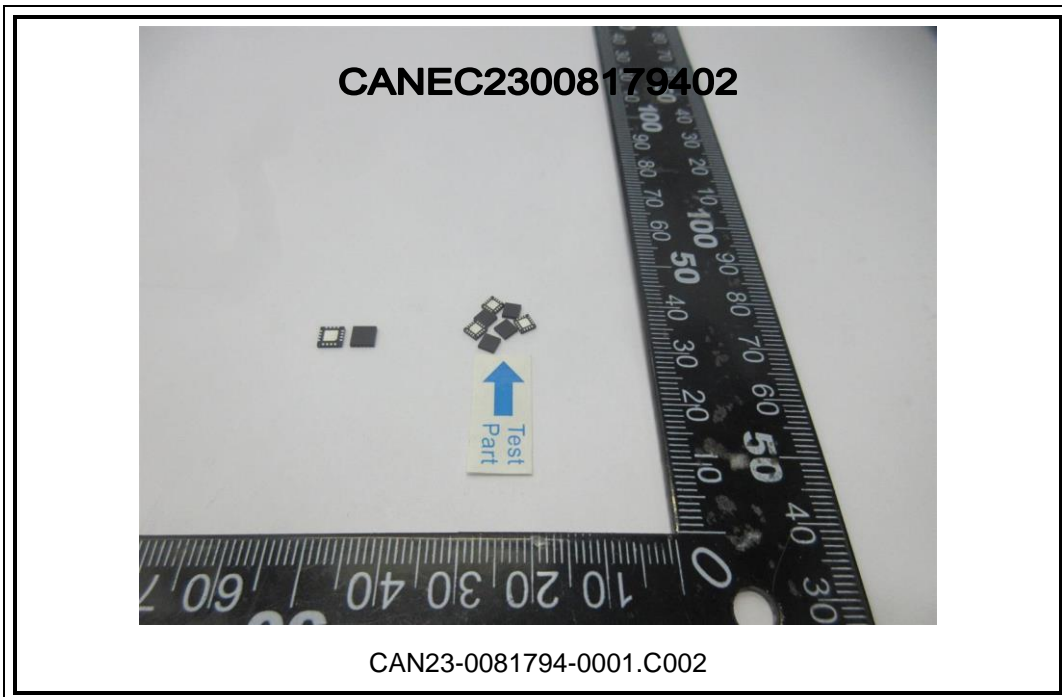
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### Sample Photo:



SGS authenticate the photo on original report only  
\*\*\* End of Report \*\*\*



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中国·广东·广州高新技术产业开发区科学城科珠路198号 邮编: 510663

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