

## Test Report

No.: CANEC23014615205

Date: Nov 29, 2023

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Client Name: SHENZHEN TITAN MICRO ELECTRONICS CO.,LTD.

Client Address: 10th Floor,Bldg A,Unis Inforport,High-Tech Industrial Park,Shenzhen,P.R.C

Sample Name: Integrated Circuit

Model No.: SOP-16-150

Client Ref. Information: SOP-8-150/ESOP-8-150/SOP-8-300/SOP-14-150/SOP-16-150/ESOP-16-300/SOP-18-300/SOP-20-300/SOP-24-300/SOP-28-300/SOP-32-300/SSOP-10-150/ESSOP-10-150/SSOP-16-150/QSOP-24-150/SSOP-24-206/SSOP-24-240/SSOP-28-150/SSOP-36-300/SSOP-48-300/TSSOP-16-150/TSSOP-20-150/SOT23/SOT89/TO-252/LQFP-32-07x07/LQFP-44-07x07/LQFP-48-07x07/LQFP-64-07x07/LQFP-52-14x14/LQFP-64-14x14/DIP-6-300/DIP-7-300/DIP-8-300/SDIP-24-300/QFN-24-4.0x4.0/QFN-40-5.0x5.0/QFN-32-5.0x5.0/DFN-6-2.0x2.0

Manufacturer: GUANGXI TITAN MICRO ELECTRONICS CO.,LTD

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

SGS Job No.: XMP23-001818

Sample Receiving Date: Nov 21, 2023

Testing Period: Nov 21, 2023 ~ Nov 29, 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       |
| EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium and Hexavalent chromium  | Pass       |

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

Jany Zhong

Jany Zhong  
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         | CAN23-0146152-0001.C001 | Black "body" with brown printing |
| SN2   | A2         | CAN23-0146152-0001.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

**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.

**EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- 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)                   | Limit | Unit(s)            | MDL  | A2 |
|--------------------------------|-------|--------------------|------|----|
| Cadmium(Cd)                    | 100   | mg/kg              | 2    | ND |
| Lead(Pb)                       | 1000  | mg/kg              | 2    | 8  |
| Mercury(Hg)                    | 1000  | mg/kg              | 2    | ND |
| Hexavalent Chromium (Cr(VI)) ▼ | -     | µg/cm <sup>2</sup> | 0.10 | 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) ▼ = a. The sample is positive for Cr(VI) if the Cr(VI)concentration is greater than 0.13 µg/cm<sup>2</sup>. The sample coating is considered to contain Cr(VI)  
b. The sample is negative for Cr(VI) if Cr(VI) is ND (concentration less than 0.10 µg/cm<sup>2</sup>). The coating is considered a non-Cr(VI) based coating  
c. The result between 0.10 µg/cm<sup>2</sup> and 0.13 µg/cm<sup>2</sup> 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.

Remark: Results & photo(s) of this report refer to test report CANEC23014615201.

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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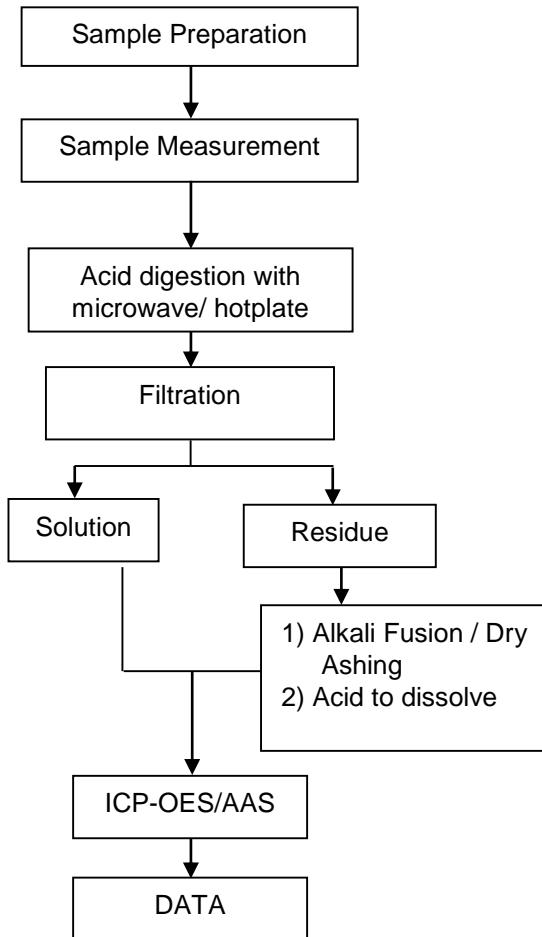
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#### Elements Testing Flow Chart

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



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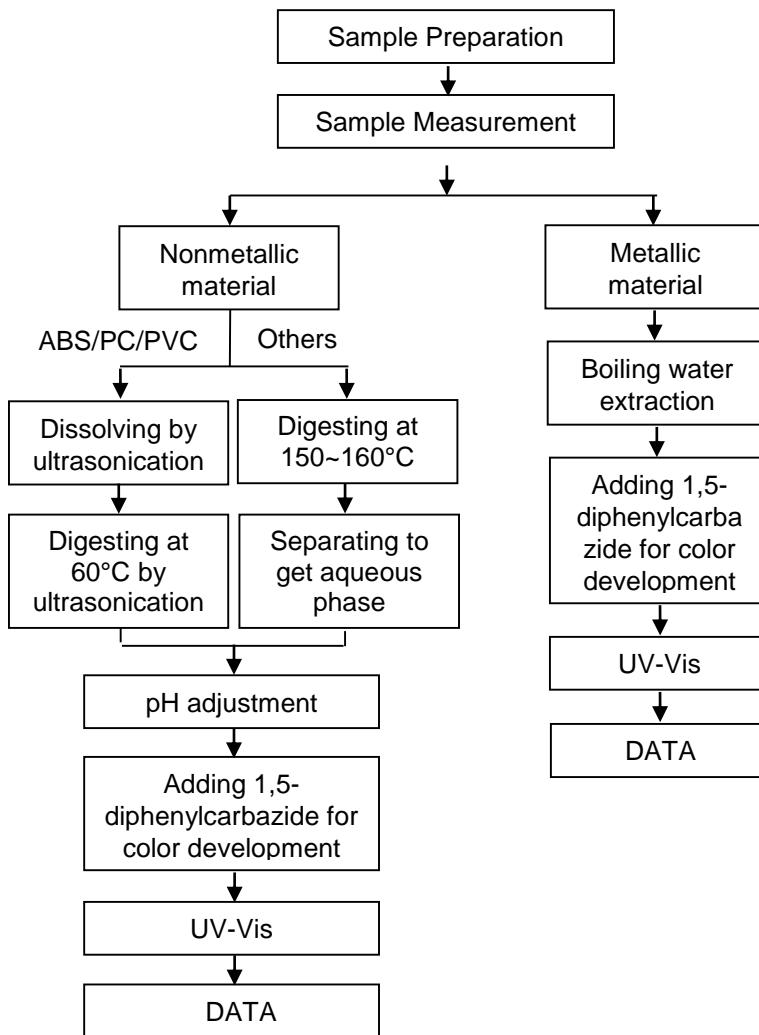
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## Hexavalent Chromium (Cr(VI)) Testing Flow Chart



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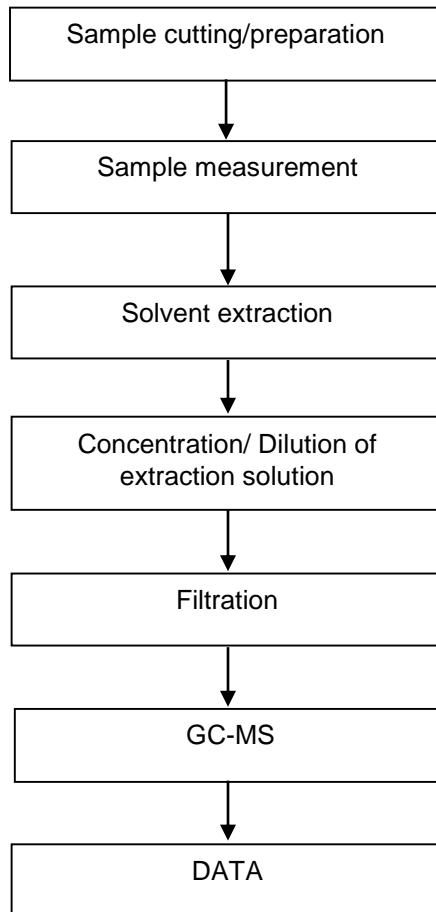
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#### PBBs/PBDEs Testing Flow Chart



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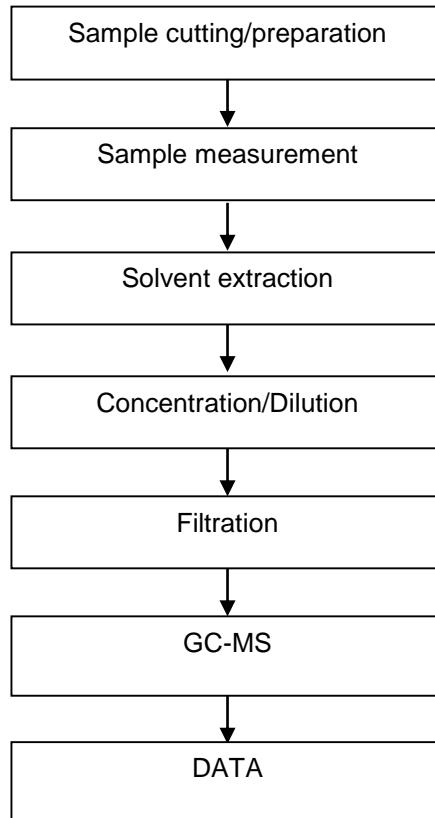
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#### Phthalates Testing Flow Chart



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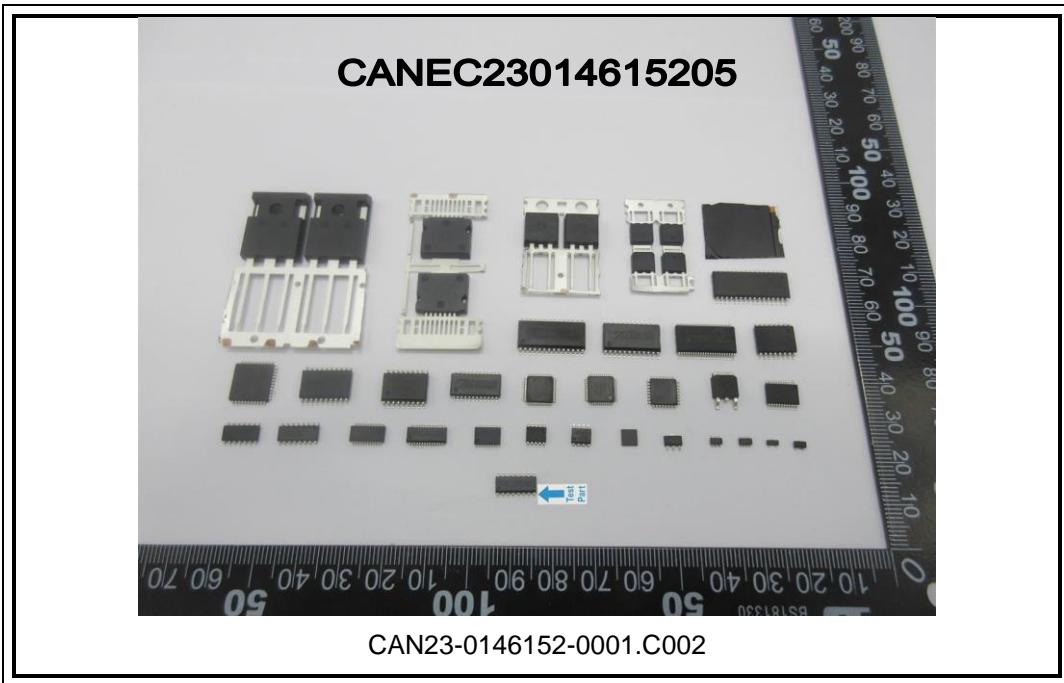
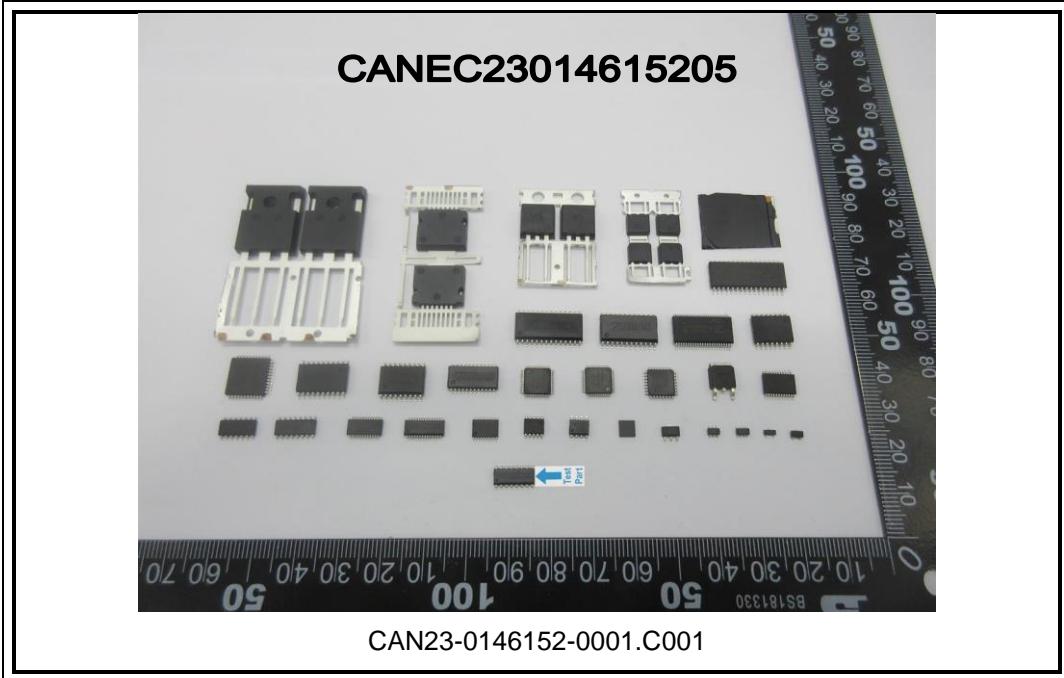
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### Sample Photo:



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