



Test Report

Report No. A219035641010102

Page 1 of 23

Applicant SHANDONG XINNUO ELECTRONIC SCIENCE AND TECHNOLOGY CO., LTD /
SHANDONG DIYI ELECTRONIC SCIENCE AND TECHNOLOGY CO., LTD
Address NO.7 CHUANGYE ROAD, ECONOMIC DEVELOPMENT ZONE, YANZHOU DISTRICT,
JINING CITY, SHANDONG PROVINCE, P.R.CHINA / THE NORTH OF YANYAN ROAD,
YANZHOU DISTRICT, JINING CITY, SHANDONG PROVINCE, P.R.CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Final Product Name Diode/Triode/Bridge
Final Product Part No. R-1/A-405/DO-41/DO-15/DO-201AD/R-6/D3K/KBP/GBU/GBJ/DBS/DBM/
DBF/MBF/MBS/MBM/ABS/ABF/SMA/SMAF/SMB/SMBF/SMC/HBS/JC/
SOD-123FL/TO-277B/GBL/KBL/KBJ/KBU/KBPC/GBPC/WOB/DFN/LBF/
LBS/SOT-23/SOT-89/SOT-223/SOT-323/SOD-123/SOD-323/SOD-523/MELF/
DO-35/LL-34/LL-41/ITO-220/TO-220/TO-262/TO-263/TO-251/TO-252/TO-3P/
TO-126/TO-247/TO-92
Sample Received Date Dec. 31, 2019
Testing Period Dec. 31, 2019 to Jan. 9, 2020

Test Conducted:

As requested by the applicant. For details refer to next page(s)

Tested by Yu Liu

Reviewed by Tori Xia



Approved by Hill Zheng
Hill Zheng
Technical Manager

Date Jan. 13, 2020

No. R187218081

Centre Testing International Group Co.,Ltd.

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

Report No. A219035641010102

Page 2 of 23

Executive Summary:

TEST REQUEST

CONCLUSION

| | |
|--|----------------------|
| 1) RoHS Directive 2011/65/EU with amendment (EU) 2015/863 | |
| - Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP) | PASS |
| 2) As specified by client, to test Beryllium(Be), Antimony(Sb), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I), Bisphenol A (BPA), Phthalates, Polycyclic Aromatic Hydrocarbons (PAHs), Perfluorooctanoic Acid (PFOA), Red phosphorus in the submitted sample(s). | See page 8-12 |
| 3) Regulation (EU) 2019/1021 on persistent organic pollutants (POPs) | |
| - Polybrominated Diphenyl Ethers (PBDEs) | See page 17 |
| - Perfluorooctane Sulfonates (PFOS) | PASS |
| - Hexabromocyclododecane (HBCDD) | PASS |
| - Short Chain Chlorinated Paraffins (SCCPs) | PASS |
| - Endosulfan | PASS |
| - Mirex | PASS |
| - Pentachlorobenzene | PASS |
| - Hexachlorobenzene | PASS |
| - Hexabromobiphenyl | PASS |
| - Polychlorinated Biphenyls(PCBs) | PASS |
| - Polychlorinated Naphthalenes (PCNs) | PASS |
| - Hexachlorobutadiene | PASS |

***** For further details, please refer to the following page(s) *****

Test Report

Report No. A219035641010102

Page 3 of 23

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

| Sample No. | Sample Name(s) | Reference Report No. -Sample No. |
|------------|---------------------------------------|----------------------------------|
| 001 | Chip (GPP & Triac) | A219035641010101-001 |
| 002 | Chip (SKY & MOS) | A219035641010101-002 |
| 003 | Solder | A219035641010101-003 |
| 004 | Epoxy Molding Compound (Halogen-free) | / |
| 005 | Al Wire | A219035641010101-005 |
| 006 | Lead Frame | A219035641010101-006 |
| 007 | Tin Plating | A219035641010101-007 |

Remark:

The samples with the reference information in the table above are non-tested in this report. According to the client's statement, the material of the samples in the column "Reference Report No. -Sample No. " in the table above are the same as the "Sample No.", so the test results and the photos of the "Sample No." are presented in reference to that one.

Test Report

Report No. A219035641010102

Page 4 of 23

Test Method

| Tested Item(s) | Test Method | Measured Equipment(s) |
|---|---|----------------------------------|
| Lead(Pb) | IEC 62321-5:2013 | ICP-OES |
| Cadmium(Cd) | IEC 62321-5:2013 | ICP-OES |
| Mercury(Hg) | IEC 62321-4:2013+AMD1:2017 CSV | ICP-OES |
| Hexavalent Chromium(Cr(VI)) | IEC 62321-7-1:2015 | UV-Vis |
| | IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013 | UV-Vis/ICP-OES |
| Polybrominated Biphenyls(PBBs) | IEC 62321-6:2015 | GC-MS |
| Polybrominated Diphenyl Ethers (PBDEs) | IEC 62321-6:2015 | GC-MS |
| Phthalates (DBP, BBP, DEHP, DIBP) | IEC 62321-8:2017 | GC-MS |
| Beryllium(Be) | Refer to US EPA 3050B:1996 & US EPA 6010D:2018 | ICP-OES |
| | Refer to US EPA 3052:1996 & US EPA 6010D:2018 | |
| Antimony(Sb) | Refer to US EPA 3052:1996 & US EPA 6010D:2018 | ICP-OES |
| Fluorine (F) | Refer to EN 14582:2016 | IC |
| Chlorine (Cl) | Refer to EN 14582:2016 | IC |
| Bromine (Br) | Refer to EN 14582:2016 | IC |
| Iodine (I) | Refer to EN 14582:2016 | IC |
| Bisphenol A (BPA) | Refer to US EPA 3550C:2007 & US EPA 8321B:2007 | LC-MS-MS |
| Phthalates | Refer to EN 14372:2004(E) | GC-MS |
| Polycyclic Aromatic Hydrocarbons (PAHs) | AfPS GS 2014:01 PAK | GC-MS |
| Perfluorooctanoic Acid (PFOA) | Refer to DIN CEN/TS 15968:2010 | LC-MS-MS |
| Red phosphorus | Refer to GB/T 6040-2002, GB/T 9722-2006, GB/T 17359-2012, EPA 6010D-2014 | FTIR, SEM/EDS, PY-GC-MS, ICP-OES |

Test Report

Report No. A219035641010102

Page 5 of 23

Test Result(s) 1

| Tested Item(s) | Result | | | MDL | Limit |
|------------------------------|------------------------------|------|--------------------------------|----------------------------------|------------|
| | 001 | 002 | 003 | | |
| Lead (Pb) | 41667 mg/kg ^{#1} | N.D. | 947783 mg/kg ^{##2} | 2 mg/kg | 1000 mg/kg |
| Cadmium (Cd) | N.D. | N.D. | N.D. | 2 mg/kg | 100 mg/kg |
| Mercury (Hg) | N.D. | N.D. | N.D. | 2 mg/kg | 1000 mg/kg |
| Hexavalent Chromium (Cr(VI)) | N.D. | N.D. | N.D. | 8 mg/kg | 1000 mg/kg |
| | -- | -- | -- | 0.10 µg/cm ² (LOQ) | 1000 mg/kg |

| Tested Item(s) | Result | | | MDL | Limit |
|------------------------------|--------|--------|--------|----------------------------------|------------|
| | 004 | 005 | 006 | | |
| Lead (Pb) | N.D. | N.D. | N.D. | 2 mg/kg | 1000 mg/kg |
| Cadmium (Cd) | N.D. | N.D. | N.D. | 2 mg/kg | 100 mg/kg |
| Mercury (Hg) | N.D. | N.D. | N.D. | 2 mg/kg | 1000 mg/kg |
| Hexavalent Chromium (Cr(VI)) | N.D. | -- | -- | 8 mg/kg | 1000 mg/kg |
| | -- | N.D. ▼ | N.D. ▼ | 0.10 µg/cm ² (LOQ) | 1000 mg/kg |

| Tested Item(s) | Result | MDL | Limit |
|------------------------------|----------|----------------------------------|------------|
| | 007 | | |
| Lead (Pb) | 12 mg/kg | 2 mg/kg | 1000 mg/kg |
| Cadmium (Cd) | N.D. | 2 mg/kg | 100 mg/kg |
| Mercury (Hg) | N.D. | 2 mg/kg | 1000 mg/kg |
| Hexavalent Chromium (Cr(VI)) | -- | 8 mg/kg | 1000 mg/kg |
| | N.D. ▼ | 0.10 µg/cm ² (LOQ) | 1000 mg/kg |

Test Report

Report No. A219035641010102

Page 6 of 23

| Tested Item(s) | Result | | | MDL | Limit |
|---------------------------------------|--------|------|------|---------|------------|
| | 001 | 002 | 003 | | |
| Polybrominated Biphenyls(PBBs) | | | | | |
| Monobromobiphenyl | N.D. | N.D. | N.D. | 5 mg/kg | 1000 mg/kg |
| Dibromobiphenyl | N.D. | N.D. | N.D. | 5 mg/kg | |
| Tribromobiphenyl | N.D. | N.D. | N.D. | 5 mg/kg | |
| Tetrabromobiphenyl | N.D. | N.D. | N.D. | 5 mg/kg | |
| Pentabromobiphenyl | N.D. | N.D. | N.D. | 5 mg/kg | |
| Hexabromobiphenyl | N.D. | N.D. | N.D. | 5 mg/kg | |
| Heptabromobiphenyl | N.D. | N.D. | N.D. | 5 mg/kg | |
| Octabromobiphenyl | N.D. | N.D. | N.D. | 5 mg/kg | |
| Nonabromobiphenyl | N.D. | N.D. | N.D. | 5 mg/kg | |
| Decabromobiphenyl | N.D. | N.D. | N.D. | 5 mg/kg | |

| Tested Item(s) | Result | MDL | Limit |
|---------------------------------------|--------|---------|------------|
| | 004 | | |
| Polybrominated Biphenyls(PBBs) | | | |
| Monobromobiphenyl | N.D. | 5 mg/kg | 1000 mg/kg |
| Dibromobiphenyl | N.D. | 5 mg/kg | |
| Tribromobiphenyl | N.D. | 5 mg/kg | |
| Tetrabromobiphenyl | N.D. | 5 mg/kg | |
| Pentabromobiphenyl | N.D. | 5 mg/kg | |
| Hexabromobiphenyl | N.D. | 5 mg/kg | |
| Heptabromobiphenyl | N.D. | 5 mg/kg | |
| Octabromobiphenyl | N.D. | 5 mg/kg | |
| Nonabromobiphenyl | N.D. | 5 mg/kg | |
| Decabromobiphenyl | N.D. | 5 mg/kg | |

Test Report

Report No. A219035641010102

Page 7 of 23

| Tested Item(s) | Result | | | MDL | Limit |
|---|--------|------|------|---------|------------|
| | 001 | 002 | 003 | | |
| Polybrominated Diphenyl Ethers (PBDEs) | | | | | |
| Monobromodiphenyl ether | N.D. | N.D. | N.D. | 5 mg/kg | 1000 mg/kg |
| Dibromodiphenyl ether | N.D. | N.D. | N.D. | 5 mg/kg | |
| Tribromodiphenyl ether | N.D. | N.D. | N.D. | 5 mg/kg | |
| Tetrabromodiphenyl ether | N.D. | N.D. | N.D. | 5 mg/kg | |
| Pentabromodiphenyl ether | N.D. | N.D. | N.D. | 5 mg/kg | |
| Hexabromodiphenyl ether | N.D. | N.D. | N.D. | 5 mg/kg | |
| Heptabromodiphenyl ether | N.D. | N.D. | N.D. | 5 mg/kg | |
| Octabromodiphenyl ether | N.D. | N.D. | N.D. | 5 mg/kg | |
| Nonabromodiphenyl ether | N.D. | N.D. | N.D. | 5 mg/kg | |
| Decabromodiphenyl ether | N.D. | N.D. | N.D. | 5 mg/kg | |

| Tested Item(s) | Result | MDL | Limit |
|---|--------|---------|------------|
| | 004 | | |
| Polybrominated Diphenyl Ethers (PBDEs) | | | |
| Monobromodiphenyl ether | N.D. | 5 mg/kg | 1000 mg/kg |
| Dibromodiphenyl ether | N.D. | 5 mg/kg | |
| Tribromodiphenyl ether | N.D. | 5 mg/kg | |
| Tetrabromodiphenyl ether | N.D. | 5 mg/kg | |
| Pentabromodiphenyl ether | N.D. | 5 mg/kg | |
| Hexabromodiphenyl ether | N.D. | 5 mg/kg | |
| Heptabromodiphenyl ether | N.D. | 5 mg/kg | |
| Octabromodiphenyl ether | N.D. | 5 mg/kg | |
| Nonabromodiphenyl ether | N.D. | 5 mg/kg | |
| Decabromodiphenyl ether | N.D. | 5 mg/kg | |

Test Report

Report No. A219035641010102

Page 8 of 23

| Tested Item(s) | Result | | | MDL | Limit |
|---|--------|------|------|----------|------------|
| | 001 | 002 | 003 | | |
| Phthalates (DBP, BBP, DEHP, DIBP) | | | | | |
| Dibutyl phthalate (DBP) CAS#:84-74-2 | N.D. | N.D. | N.D. | 50 mg/kg | 1000 mg/kg |
| Butyl benzyl phthalate (BBP) CAS#:85-68-7 | N.D. | N.D. | N.D. | 50 mg/kg | 1000 mg/kg |
| Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7 | N.D. | N.D. | N.D. | 50 mg/kg | 1000 mg/kg |
| Diisobutyl phthalate (DIBP) CAS#:84-69-5 | N.D. | N.D. | N.D. | 50 mg/kg | 1000 mg/kg |

| Tested Item(s) | Result | | MDL | Limit |
|---|--------|--|----------|------------|
| | 004 | | | |
| Phthalates (DBP, BBP, DEHP, DIBP) | | | | |
| Dibutyl phthalate (DBP) CAS#:84-74-2 | N.D. | | 50 mg/kg | 1000 mg/kg |
| Butyl benzyl phthalate (BBP) CAS#:85-68-7 | N.D. | | 50 mg/kg | 1000 mg/kg |
| Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7 | N.D. | | 50 mg/kg | 1000 mg/kg |
| Diisobutyl phthalate (DIBP) CAS#:84-69-5 | N.D. | | 50 mg/kg | 1000 mg/kg |

Test Result(s) 2

| Tested Item(s) | Result | | | MDL |
|----------------|--------|------|------|---------|
| | 001 | 002 | 003 | |
| Beryllium (Be) | N.D. | N.D. | N.D. | 2 mg/kg |

| Tested Item(s) | Result | | | MDL |
|----------------|--------|------|------|---------|
| | 005 | 006 | 007 | |
| Beryllium (Be) | N.D. | N.D. | N.D. | 2 mg/kg |

| Tested Item(s) | Result | | MDL |
|----------------|--------|--|---------|
| | 004 | | |
| Antimony (Sb) | N.D. | | 5 mg/kg |

Test Report

Report No. A219035641010102

Page 9 of 23

| Tested Item(s) | Result | MDL |
|----------------|----------|----------|
| | 004 | |
| Fluorine (F) | N.D. | 10 mg/kg |
| Chlorine (Cl) | 88 mg/kg | 10 mg/kg |
| Bromine (Br) | N.D. | 10 mg/kg |
| Iodine (I) | N.D. | 10 mg/kg |

| Tested Item(s) | Result | MDL |
|-------------------|--------|-----------|
| | 004 | |
| Bisphenol A (BPA) | N.D. | 1.0 mg/kg |

| Tested Item(s) | Result | MDL |
|---|--------|----------|
| | 004 | |
| Phthalates | | |
| Di-n-octyl phthalate (DNOP) CAS#:117-84-0 | N.D. | 30 mg/kg |
| Di-isononyl phthalate (DINP) CAS#:28553-12-0,68515-48-0 | N.D. | 50 mg/kg |
| Di-iso-decyl phthalate (DIDP) CAS#:26761-40-0,68515-49-1 | N.D. | 50 mg/kg |
| Dimethyl phthalate (DMP) CAS#:131-11-3 | N.D. | 30 mg/kg |
| Diethyl phthalate (DEP) CAS#:84-66-2 | N.D. | 30 mg/kg |
| Dipentyl phthalate (DPP) CAS#:131-18-0 | N.D. | 30 mg/kg |
| Dicyclohexyl phthalate (DCHP) CAS#:84-61-7 | N.D. | 30 mg/kg |
| Dinonyl phthalate (DNP) CAS#:84-76-4 | N.D. | 30 mg/kg |
| Di-n-hexyl phthalate (DNHP) CAS#:84-75-3 | N.D. | 30 mg/kg |
| Bis(2-methoxyethyl) phthalate (DMEP) CAS#:117-82-8 | N.D. | 30 mg/kg |
| Diisopentylphthalate (DIPP) CAS#:605-50-5 | N.D. | 30 mg/kg |
| Diphenyl phthalate (DPhP) CAS#:84-62-8 | N.D. | 30 mg/kg |
| N-Pentyl-isopentyl phthalate (NIPP) CAS#:776297-69-9 | N.D. | 30 mg/kg |

Test Report

Report No. A219035641010102

Page 10 of 23

| Tested Item(s) | Result | MDL |
|--|--------|----------|
| ^① 1,2-Benzenedicarboxylic acid, di-(C7-11)-branched and linear alkyl esters (DHNUP) CAS#:68515-42-4 | N.D. | 50 mg/kg |
| ^① 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP) CAS#:71888-89-6 | N.D. | 50 mg/kg |
| ^① 1,2-Benzenedicarboxylic acid, dipentylester, branched and linear (BADP) CAS#:84777-06-0 | N.D. | 50 mg/kg |

| Tested Item(s) | Result | MDL |
|--|--------|-----------|
| | 004 | |
| Polycyclic Aromatic Hydrocarbons (PAHs) | | |
| Naphthalene | N.D. | 0.2 mg/kg |
| Acenaphthylene | N.D. | 0.2 mg/kg |
| Acenaphthene | N.D. | 0.2 mg/kg |
| Fluorene | N.D. | 0.2 mg/kg |
| Phenanthrene | N.D. | 0.2 mg/kg |
| Anthracene | N.D. | 0.2 mg/kg |
| Fluoranthene | N.D. | 0.2 mg/kg |
| Pyrene | N.D. | 0.2 mg/kg |
| Benzo(a)anthracene | N.D. | 0.2 mg/kg |
| Chrysene | N.D. | 0.2 mg/kg |
| Benzo(b)fluoranthene | N.D. | 0.2 mg/kg |
| Benzo(k)fluoranthene | N.D. | 0.2 mg/kg |
| Benzo(a)pyrene | N.D. | 0.2 mg/kg |
| Indenol(1,2,3-cd)pyrene | N.D. | 0.2 mg/kg |
| Dibenzo(a,h)anthracene | N.D. | 0.2 mg/kg |
| Benzo(g,h,i)perylene | N.D. | 0.2 mg/kg |
| Benzo(j)fluoranthene | N.D. | 0.2 mg/kg |
| Benzo(e)pyrene | N.D. | 0.2 mg/kg |
| Sum (Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene) | N.D. | / |
| Sum 18 PAHs | N.D. | / |

Test Report

Report No. A219035641010102

Page 11 of 23

Limits for PAHs content (mg/kg) for material of (grip) surfaces, which are to be categorized on account of the results of the risk analysis.

| Parameters | Category 1 | Category 2 | | Category 3 | |
|--|--|--|----------------|--|----------------|
| | Materials intended to be put in the mouth or materials of toys with foreseeable long-term skin contact(longer than 30 seconds) | Materials not covered by category 1, with foreseeable skin contact for longer than 30 seconds (long-term skin contact) or repeated short-term skin contact* ² | | Materials not covered by category 1 or 2 with foreseeable skin contact up to 30seconds (short term skin contact) | |
| | | Toys covered by Directive 2009/48/EC | Other products | Toys covered by Directive 2009/48/EC | Other products |
| Benzo[a]pyrene | <0.2 | <0.2 | <0.5 | <0.5 | <1 |
| Benzo[e]pyrene | <0.2 | <0.2 | <0.5 | <0.5 | <1 |
| Benzo[a]anthracene | <0.2 | <0.2 | <0.5 | <0.5 | <1 |
| Benzo[b]fluoranthene | <0.2 | <0.2 | <0.5 | <0.5 | <1 |
| Benzo[j]fluoranthene | <0.2 | <0.2 | <0.5 | <0.5 | <1 |
| Benzo[k]fluoranthene | <0.2 | <0.2 | <0.5 | <0.5 | <1 |
| Chrysene | <0.2 | <0.2 | <0.5 | <0.5 | <1 |
| Dibenzo[a,h]anthracene | <0.2 | <0.2 | <0.5 | <0.5 | <1 |
| Benzo[g,h,i]perylene | <0.2 | <0.2 | <0.5 | <0.5 | <1 |
| Indenol[1,2,3-cd]pyrene | <0.2 | <0.2 | <0.5 | <0.5 | <1 |
| Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene | <1 Sum | <5 Sum | <10 Sum | <20 Sum | <50 Sum |
| Naphthalene | <1 | <2 | | <10 | |
| Sum 18 PAHs | <1 | <5 | <10 | <20 | <50 |

*² Formulation “of repeated short-term skin contact” REACH Annex XVII No. 50 supplement (REGULATION (EU) No.1272/2013)

Test Report

Report No. A219035641010102

Page 12 of 23

| Tested Item(s) | Result | MDL |
|-------------------------------|--------|------------|
| | 004 | |
| Perfluorooctanoic Acid (PFOA) | N.D. | 0.01 mg/kg |

| Tested Item(s) | Result | MDL |
|----------------|--------|-----------|
| | 001 | |
| Red phosphorus | N.D. | 500 mg/kg |

| Tested Item(s) | Result | MDL |
|----------------|--------|-----------|
| | 002 | |
| Red phosphorus | N.D. | 500 mg/kg |

| Tested Item(s) | Result | MDL |
|----------------|--------|-----------|
| | 004 | |
| Red phosphorus | N.D. | 500 mg/kg |

| Tested Item(s) | Result | MDL |
|----------------|--------|-----------|
| | 006 | |
| Red phosphorus | N.D. | 500 mg/kg |

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury, Antimony, Beryllium.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL or LOQ)

-mg/kg = ppm = parts per million

-1000 mg/kg = 0.1%

-LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10 $\mu\text{g}/\text{cm}^2$

-▼The sample is negative for Cr(VI) – The Cr(VI) concentration is below 0.10 $\mu\text{g}/\text{cm}^2$. The coating is considered a non-Cr(VI) based coating.

-①: In view of the substances are established as UVCB substances (substances of unknown or variable composition, complex reaction products or biological materials) consisting of different and variable constituents, the test results are calculated based on the main constituents of the representative compounds for substances.

-#The test result is for reference only.

-*The sample(s) was tested as a whole, because it's impossible to disassemble or separate it by current equipment and technology. The result(s) shown on this report may be different from the content of any homogeneous material.

-*¹The sample was tested after drying for 2 hours under 105°C.

-#¹According to the client's statement, the material of the sample(s) fall into exemption items 7(c)-I according to EU Directive 2011/65/EU: 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.

-#²According to the client's statement, the material of the sample(s) fall into exemption items 7(a) according to EU Directive 2011/65/EU: Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead).

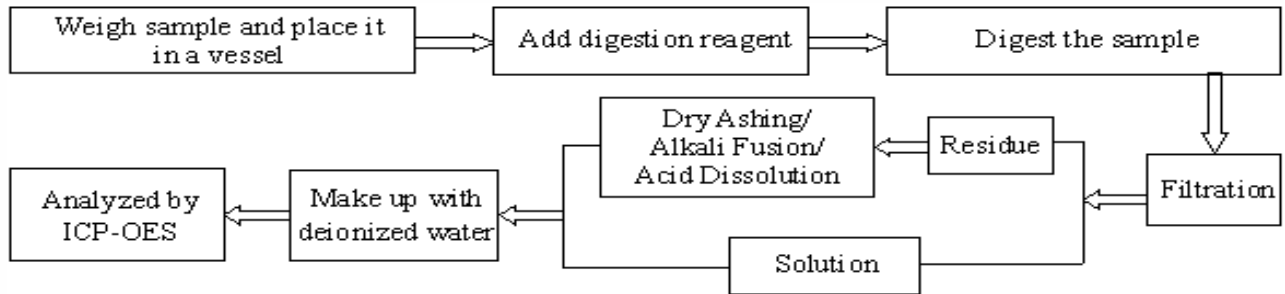
Test Report

Report No. A219035641010102

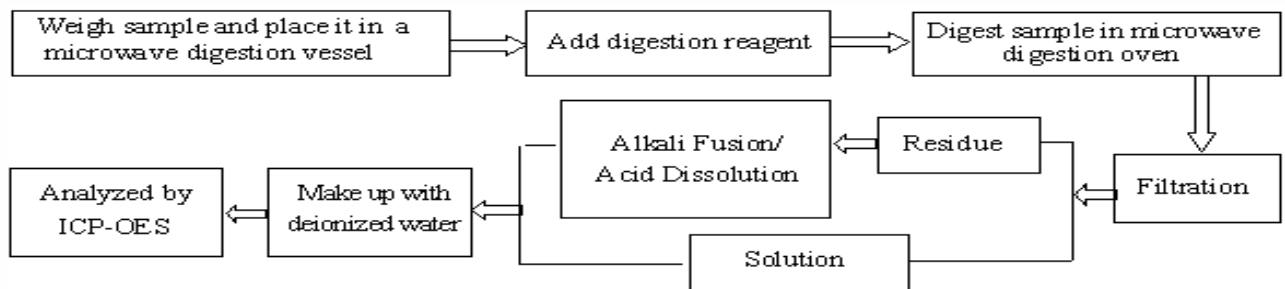
Page 13 of 23

Test Process

1. Lead(Pb), Cadmium(Cd), Chromium(Cr)

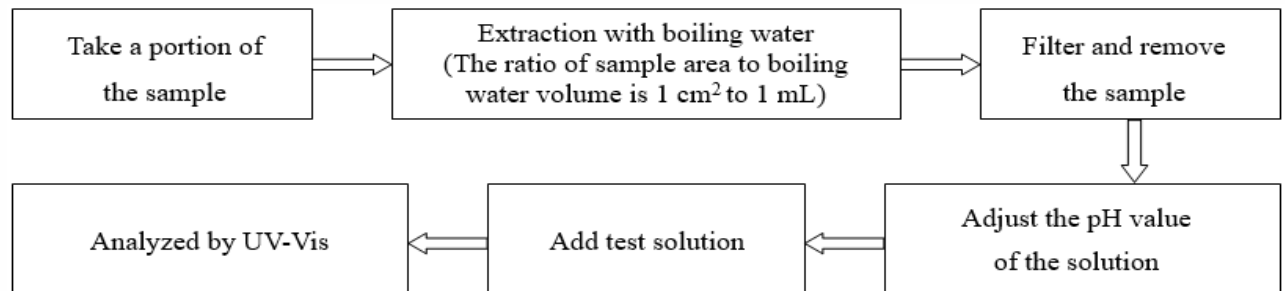


2. Mercury(Hg)

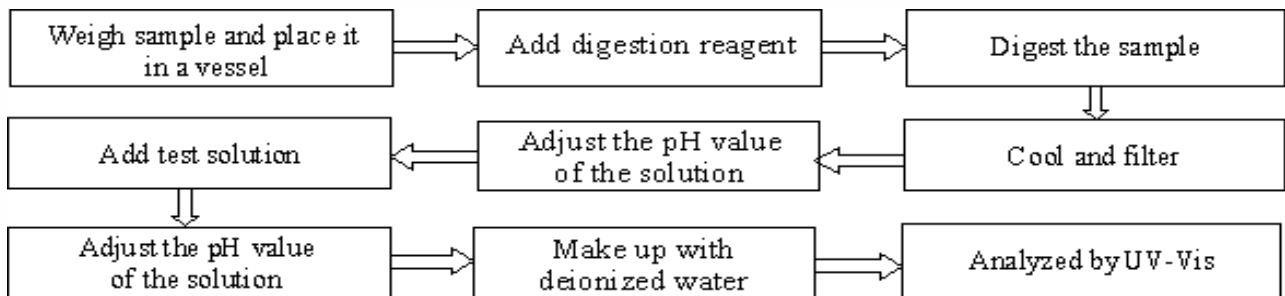


3. Hexavalent Chromium(Cr(VI))

(1) IEC 62321-7-1:2015



(2) IEC 62321-7-2:2017

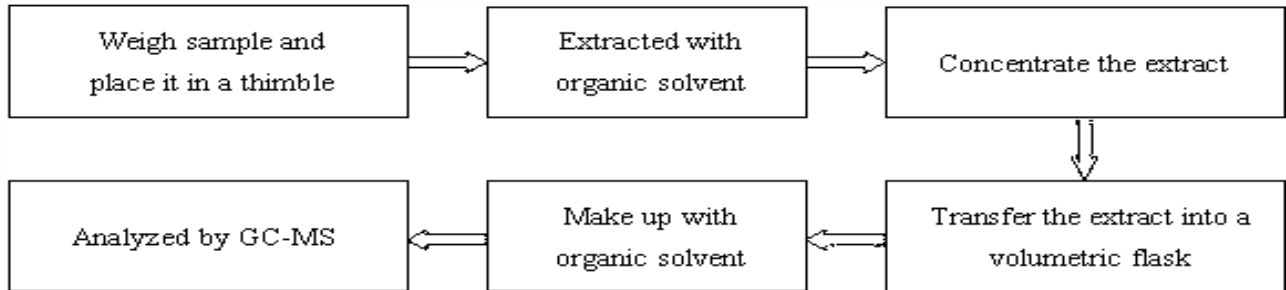


Test Report

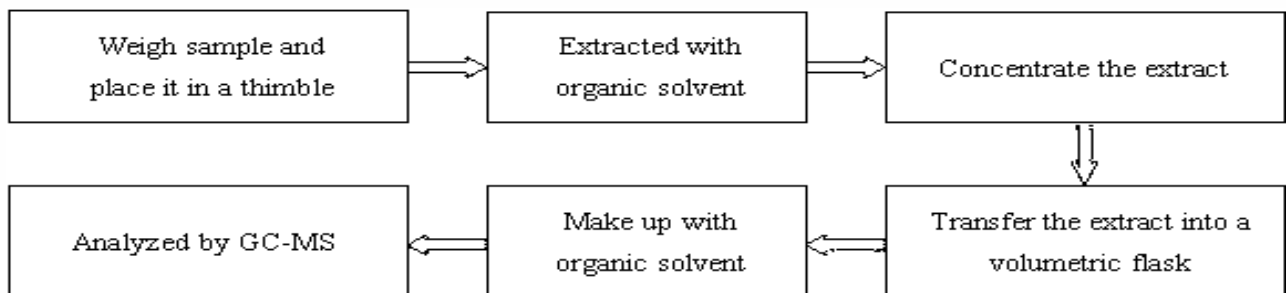
Report No. A219035641010102

Page 14 of 23

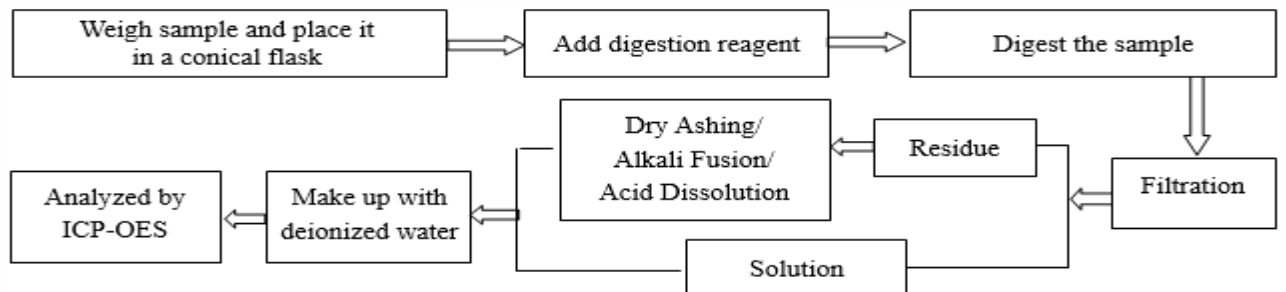
4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)



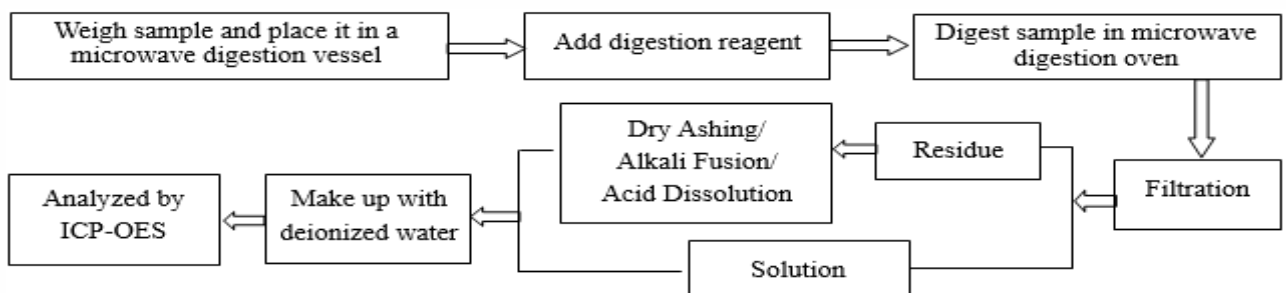
5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Beryllium(Be)



7. Beryllium(Be), Antimony(Sb)

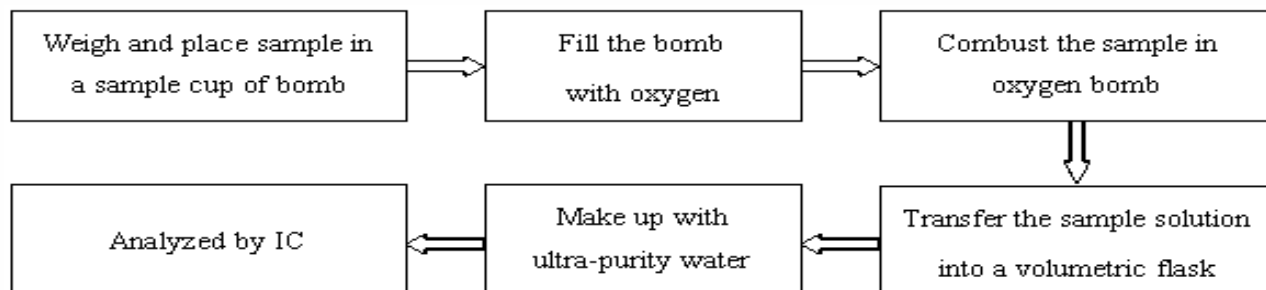


Test Report

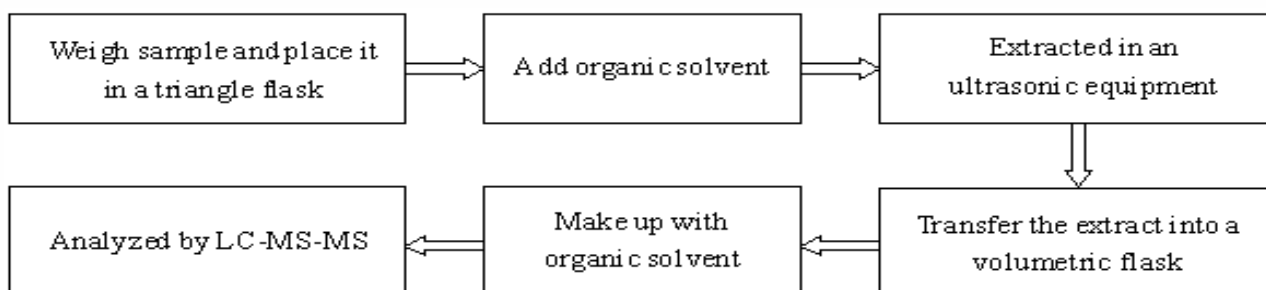
Report No. A219035641010102

Page 15 of 23

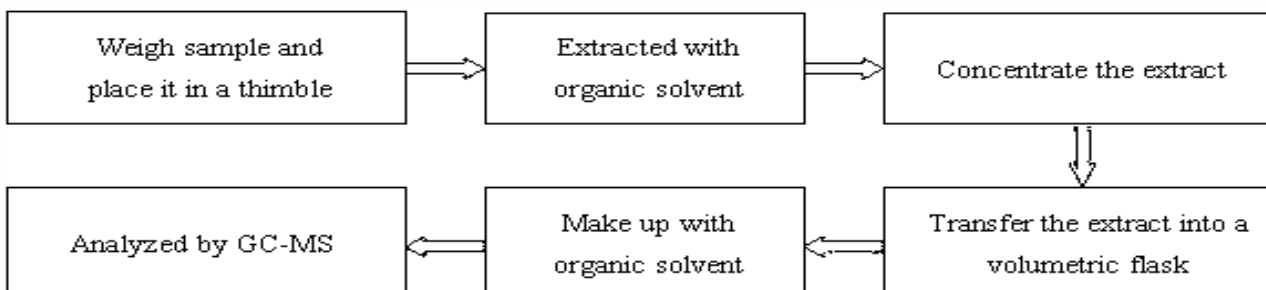
8. Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I)



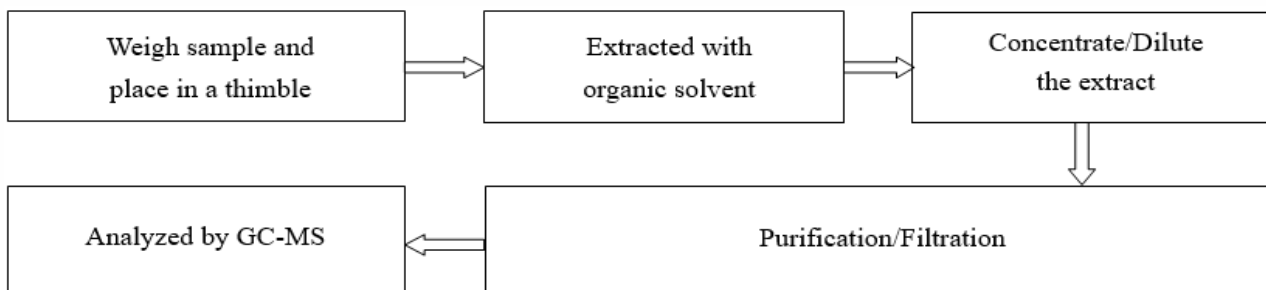
9. Bisphenol A (BPA)



10. Phthalates



11. Polycyclic Aromatic Hydrocarbons (PAHs)

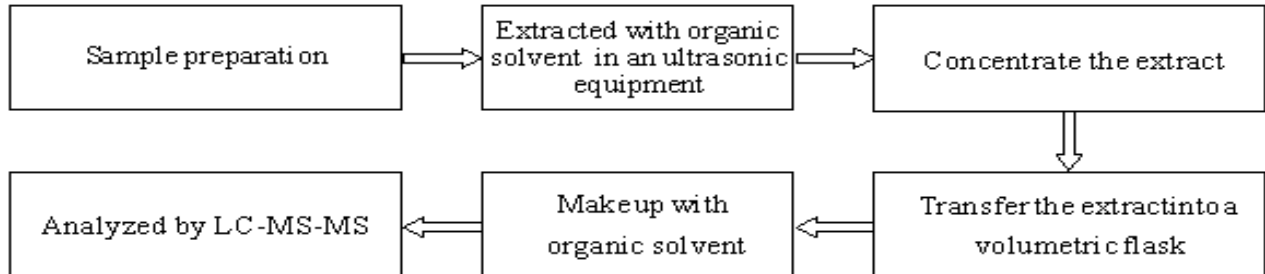


Test Report

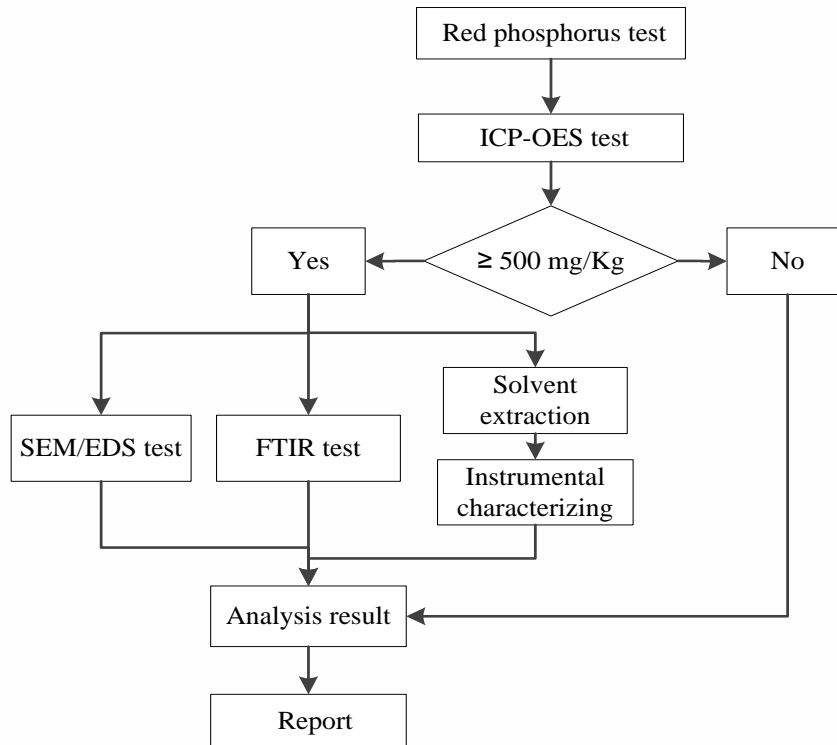
Report No. A219035641010102

Page 16 of 23

12. Perfluorooctanoic Acid (PFOA)



13. Red phosphorus



Test Report

Report No. A219035641010102

Page 17 of 23

Test Result(s) 3

Regulation (EU) 2019/1021 on persistent organic pollutants (POPs)

▼ Polybrominated Diphenyl Ethers (PBDEs)

Method(s) IEC 62321-6:2015 Ed 1.0 was/were used, and the item(s) was/were analyzed by GC-MS.

| <u>Tested Item(s)</u> | <u>Result (mg/kg)</u> | <u>MDL</u> |
|--------------------------|-----------------------|------------|
| | 004 | (mg/kg) |
| Tetrabromodiphenyl ether | N.D. | 5 |
| Pentabromodiphenyl ether | N.D. | 5 |
| Hexabromodiphenyl ether | N.D. | 5 |
| Heptabromodiphenyl ether | N.D. | 5 |

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ Perfluorooctane Sulfonates (PFOS)

Refer to method(s) US EPA 3550C:2007 & US EPA 8321B:2007, and the item(s) was/were analyzed by LC-MS-MS.

| <u>Tested Item(s)</u> | <u>Result (mg/kg)</u> | <u>MDL</u> | <u>Limit</u> |
|-----------------------------------|-----------------------|------------|--------------|
| | 004 | (mg/kg) | (mg/kg) |
| Perfluorooctane Sulfonates (PFOS) | N.D. | 0.01 | 1000 |

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million
- 1000 mg/kg = 0.1%

Test Report

Report No. A219035641010102

Page 18 of 23

▼ Hexabromocyclododecane (HBCDD)

Refer to method(s) US EPA 3540C:1996 & US EPA 8270E:2017, and the item(s) was/were analyzed by GC-MS.

| <u>Tested Item(s)</u> | <u>Result (mg/kg)</u> | <u>MDL (mg/kg)</u> | <u>Limit (mg/kg)</u> |
|--------------------------------|-----------------------|--------------------|----------------------|
| | 004 | | |
| Hexabromocyclododecane (HBCDD) | N.D. | 5 | 100 |

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ Short Chain Chlorinated Paraffins (SCCPs)

Refer to method(s) US EPA 3540C:1996 & US EPA 8270E:2017, and the item(s) was/were analyzed by GC-MS(NCI).

| <u>Tested Item(s)</u> | <u>Result (mg/kg)</u> | <u>MDL (mg/kg)</u> | <u>Limit (mg/kg)</u> |
|---|-----------------------|--------------------|----------------------|
| | 004 | | |
| Short Chain Chlorinated Paraffins (SCCPs) | N.D. | 100 | 1500 |

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

Test Report

Report No. A219035641010102

Page 19 of 23

▼ Endosulfan

Refer to method(s) US EPA 3550C:2007 & US EPA 8270E:2017, and the item(s) was/were analyzed by GC-MS.

| <u>Tested Item(s)</u> | <u>Result (mg/kg)</u> | <u>MDL (mg/kg)</u> | <u>Limit (mg/kg)</u> |
|-----------------------|-----------------------|--------------------|----------------------|
| | 004 | | |
| Endosulfan | N.D. | 50 | N.D. |

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ Mirex

Refer to method(s) US EPA 3550C:2007 & US EPA 8270E:2017, and the item(s) was/were analyzed by GC-MS.

| <u>Tested Item(s)</u> | <u>Result (mg/kg)</u> | <u>MDL (mg/kg)</u> | <u>Limit (mg/kg)</u> |
|-----------------------|-----------------------|--------------------|----------------------|
| | 004 | | |
| Mirex | N.D. | 5 | N.D. |

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ Pentachlorobenzene

Refer to method(s) US EPA 3550C:2007 & US EPA 8270E:2017, and the item(s) was/were analyzed by GC-MS.

| <u>Tested Item(s)</u> | <u>Result (mg/kg)</u> | <u>MDL (mg/kg)</u> | <u>Limit (mg/kg)</u> |
|-----------------------|-----------------------|--------------------|----------------------|
| | 004 | | |
| Pentachlorobenzene | N.D. | 50 | N.D. |

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

Test Report

Report No. A219035641010102

Page 20 of 23

▼ Hexachlorobenzene

Refer to method(s) US EPA 3550C:2007 & US EPA 8270E:2017, and the item(s) was/were analyzed by GC-MS.

| <u>Tested Item(s)</u> | <u>Result (mg/kg)</u> | <u>MDL (mg/kg)</u> | <u>Limit (mg/kg)</u> |
|-----------------------|-----------------------|--------------------|----------------------|
| | 004 | | |
| Hexachlorobenzene | N.D. | 50 | N.D. |

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ Hexabromobiphenyl

Method(s) IEC 62321-6:2015 Ed 1.0 was/were used, and the item(s) was/were analyzed by GC-MS.

| <u>Tested Item(s)</u> | <u>Result (mg/kg)</u> | <u>MDL (mg/kg)</u> | <u>Limit (mg/kg)</u> |
|-----------------------|-----------------------|--------------------|----------------------|
| | 004 | | |
| Hexabromobiphenyl | N.D. | 5 | N.D. |

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ Polychlorinated Biphenyls(PCBs)

Refer to method(s) US EPA 3540C:1996 & US EPA 8270E:2017, and the item(s) was/were analyzed by GC-MS.

| <u>Tested Item(s)</u> | <u>Result (mg/kg)</u> | <u>MDL (mg/kg)</u> | <u>Limit (mg/kg)</u> |
|----------------------------------|-----------------------|--------------------|----------------------|
| | 004 | | |
| Polychlorinated Biphenyls (PCBs) | N.D. | 5 | N.D. |

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

Test Report

Report No. A219035641010102

Page 21 of 23

▼ Polychlorinated Naphthalenes (PCNs)

Refer to method(s) US EPA 3540C:1996 & US EPA 8270E:2017, and the item(s) was/were analyzed by GC-MS.

| <u>Tested Item(s)</u> | <u>Result (mg/kg)</u> | <u>MDL (mg/kg)</u> | <u>Limit (mg/kg)</u> |
|-------------------------------------|-----------------------|--------------------|----------------------|
| | 004 | | |
| Polychlorinated Naphthalenes (PCNs) | N.D. | 5 | N.D. |

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ Hexachlorobutadiene

Refer to method(s) US EPA 3550C:2007 & US EPA 8270E:2017, and the item(s) was/were analyzed by GC-MS.

| <u>Tested Item(s)</u> | <u>Result (mg/kg)</u> | <u>MDL (mg/kg)</u> | <u>Limit (mg/kg)</u> |
|-----------------------|-----------------------|--------------------|----------------------|
| | 004 | | |
| Hexachlorobutadiene | N.D. | 50 | N.D. |

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

Sample/Part Description

- 001 Chip(Tested as a whole)*
- 002 Chip(Tested as a whole)*
- 003 Dark gray paste(Dry weight)*¹
- 004 Dark grey solid
- 005 Silver-white metal
- 006 Cupreous metal
- 007 Silvery metal

Test Report

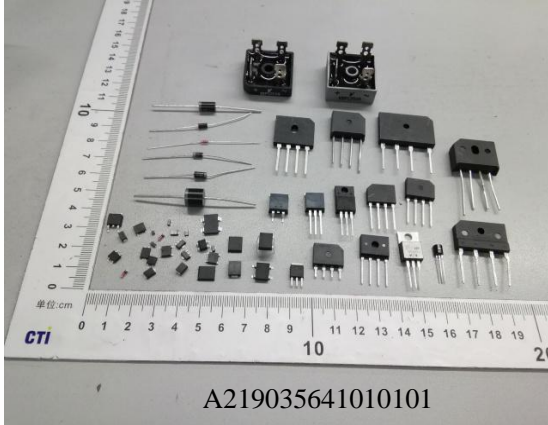
Report No. A219035641010102

Page 22 of 23

Photo(s) of the sample(s)

Final Product

001

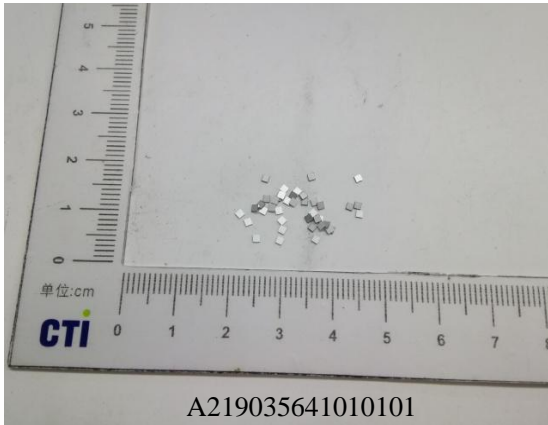


A219035641010101

A219035641010101

002

003

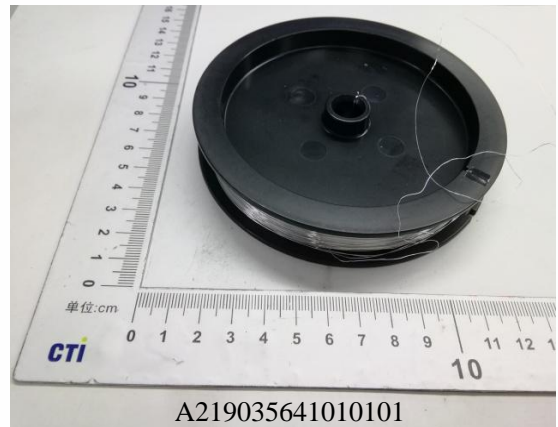
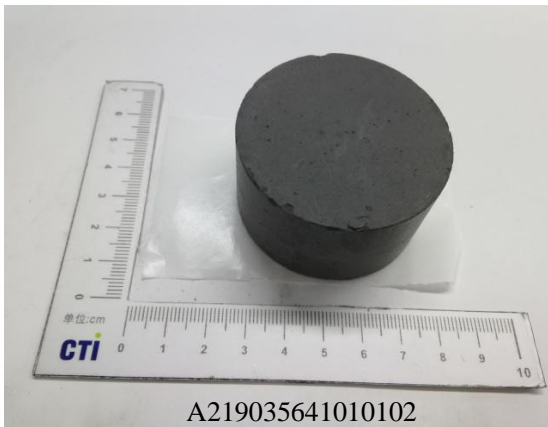


A219035641010101

A219035641010101

004

005



A219035641010102

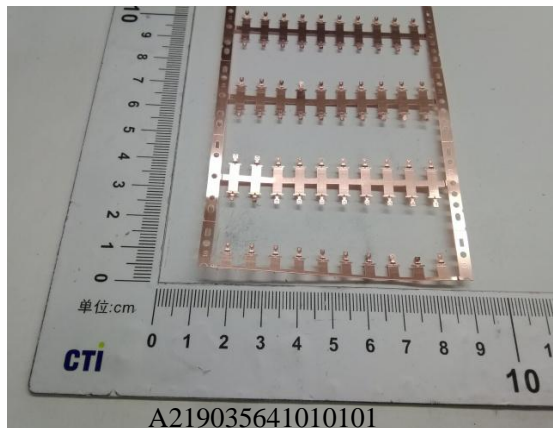
A219035641010101

Test Report

Report No. A219035641010102

Page 23 of 23

006



007



*** End of Report ***

Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Without written approval of CTI, this report can't be reproduced except in full;
5. In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.