

Test Report

Report No. A2180040171101001R1

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Applicant TAK CHEONG ELECTRONICS SHANWEI CO., LTD

Address TAK CHEONG INDUSTRIAL ZONE, BUBIAN, SHANWEI, GUANGDONG, PRC.

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

Sample Name Axial-lead Glass-diodes
Part No. DO-34
Client Reference Information SOD68, DO-35 /SOD27, DO-41/SOD66

Item No. 1811
Sample Received Date Apr. 2, 2018
Testing Period Apr. 2, 2018 to Apr. 10, 2018

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).

Tested By

Villy Li

Reviewed By

Danna Yan

Approved By

Hill Zheng

Date

Apr. 26, 2018

Hill Zheng
Technical Manager

No. R169569508

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Test Method

| Test 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 62321-7-2:2017 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 |

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Test Result(s)

| Tested Item(s) | Result | MDL |
|---|-------------|---------|
| Lead(Pb) | 91848 mg/kg | 2 mg/kg |
| Cadmium(Cd) | N.D. | 2 mg/kg |
| Mercury(Hg) | N.D. | 2 mg/kg |
| Hexavalent Chromium(Cr(VI)) | N.D. | 8 mg/kg |
| Tested Item(s) | Result | MDL |
| Polybrominated Biphenyls(PBBs) | | |
| Monobromobiphenyl | N.D. | 5 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 |
| Tested Item(s) | Result | MDL |
| Polybrominated Diphenyl Ethers (PBDEs) | | |
| Monobromodiphenyl ether | N.D. | 5 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 |

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Test Result(s)

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

Tested Sample/Part Description Orange-yellow body with black printing and metal pin with silvery plating(Mix all)

Remark: -The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.
-As specified by client, the test was conducted by mixing all materials together. The result(s) shown on this report may be different from the content of any homogeneous material.

-MDL = Method Detection Limit

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

-mg/kg = ppm = parts per million

- According to EU Directive 2011/65/EU

7(c)-I:Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezo electronic devices, or in a glass or ceramic matrix compound.

Note: This testing report displaces the original report of No. A2180040171101001 and the original one No. A2180040171101001 was invalid since the date of this testing report released.

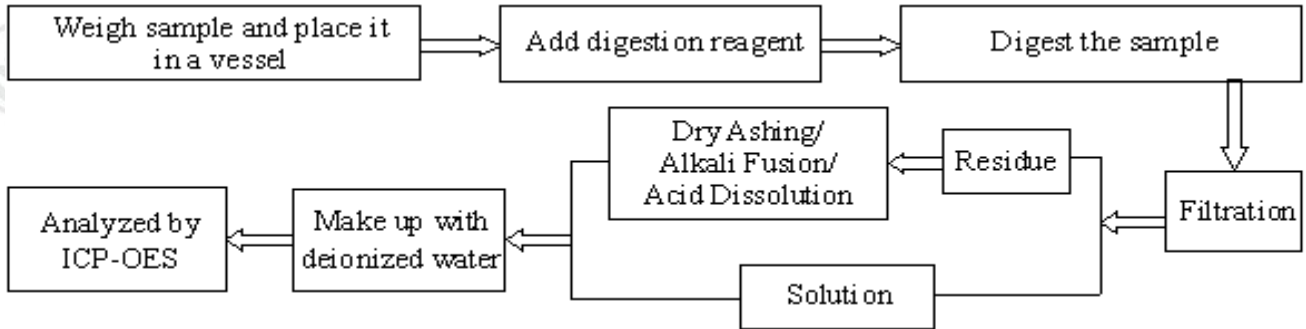
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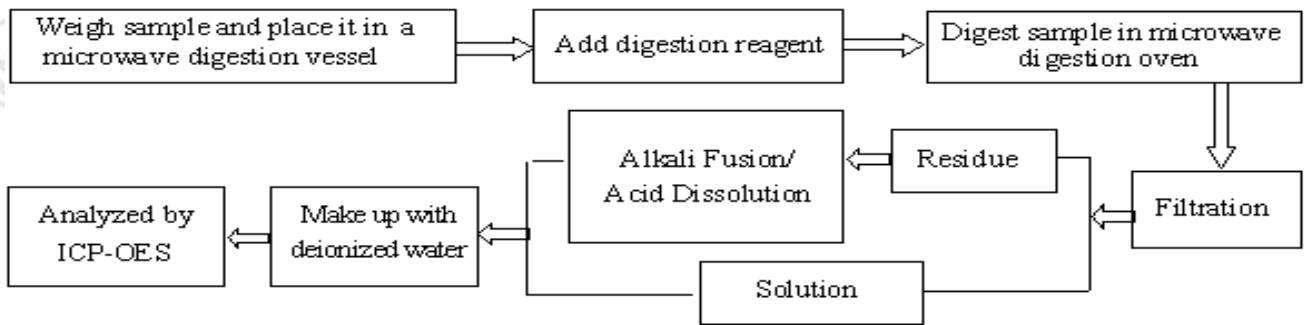
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Test Process

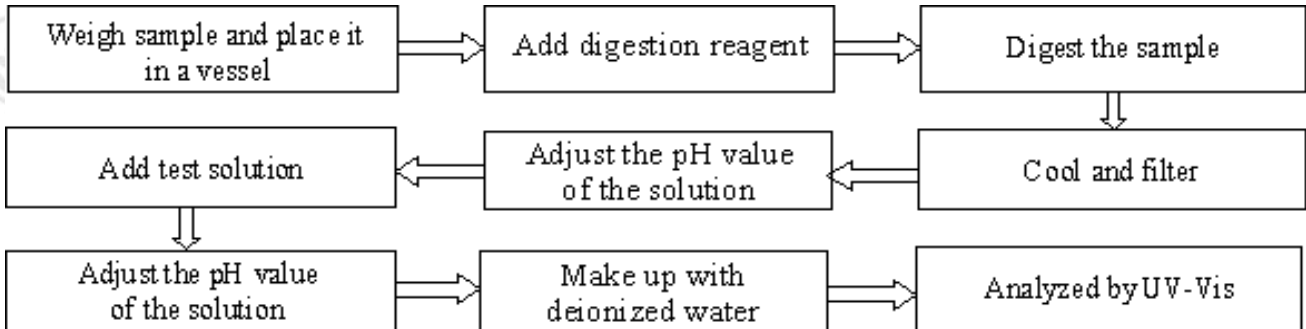
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



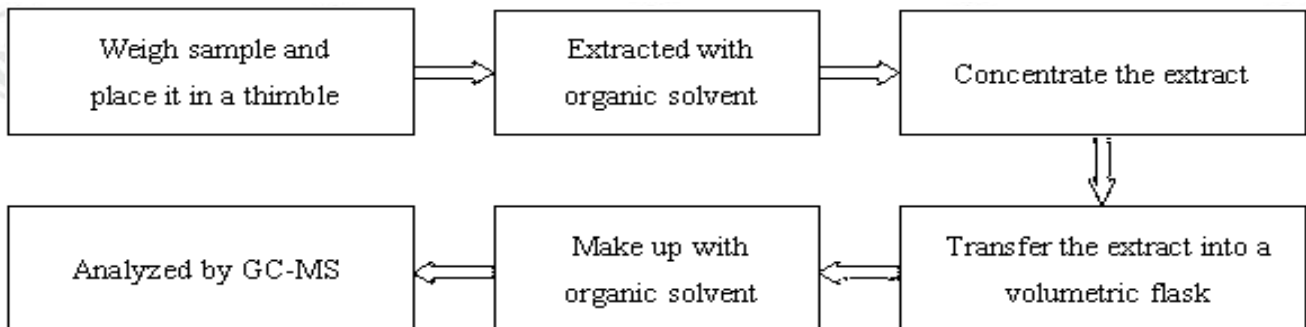
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



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

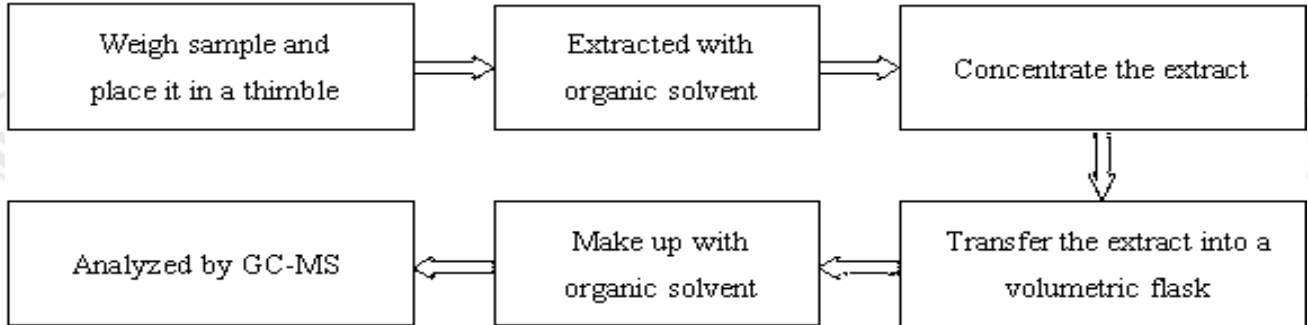


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5. Phthalates (DBP, BBP, DEHP, DIBP)

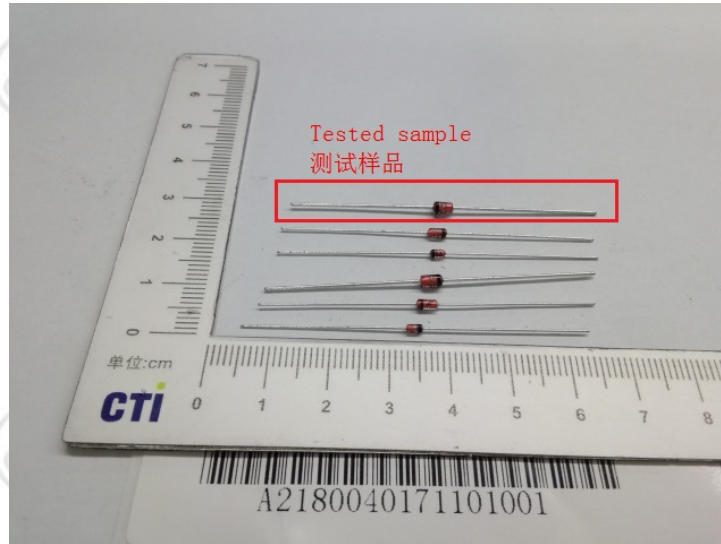


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Photo(s) of the sample(s)



*** End of report ***

Statement:

1. This report is considered invalidated without approval 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.