



TEST REPORT

Report No : WTH24H04083040C

Applicant : Foshan Blue Rocket Electronics Co.,Ltd.

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

Sample Name : Diodes

Sample Model : DO-41

Test Requested : Determine the Pb, Cd, Hg, Cr(VI), PBBs, PBDEs, DBP, BBP,
DEHP, DIBP content in the sample with reference to EU RoHS
Directive 2011/65/EU and its amendment Directive EU
2015/863.

Test Conclusion : PASS

Date of Receipt sample : 2024-04-15

Testing period : 2024-04-15 ~ 2024-04-18

Date of Issue : 2024-04-19

Test Result : Refer to next page (s)

Prepared By:

Shenzhen Hongcai Testing Technology Co., Ltd.

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Signed for and on behalf of
Shenzhen Hongcai Testing Technology Co., Ltd.



Michael Huang
Shenzhen Hongcai Testing Technology Co., Ltd.
<http://www.hct-test.com>

Test Result(s):

EU RoHS-Pb, Cd, Hg, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP content

Test Method/Equipment: IEC 62321-5:2013,IEC 62321-4:2013+AMD1:2017,IEC 62321-7-2:2017,

IEC 62321-6:2015,IEC 62321-8:2017; ICP-OES,UV-VIS,GC-MS

| Test Item(s) | Unit | MDL | Result(s) | Limit |
|---------------------------------------|-------|-----|---------------------|-------|
| | | | 1-1 | |
| Lead(Pb) | mg/kg | 2 | 13018 ^{h1} | 1000 |
| Cadmium(Cd) | mg/kg | 2 | ND | 100 |
| Mercury(Hg) | mg/kg | 2 | ND | 1000 |
| Hexavalent Chromium(Cr(VI)) | mg/kg | 8 | ND | 1000 |
| Mono-bromobiphenyl | mg/kg | 5 | ND | — |
| Di-bromobiphenyl | mg/kg | 5 | ND | — |
| Tri-bromobiphenyl | mg/kg | 5 | ND | — |
| Tetra-bromobiphenyl | mg/kg | 5 | ND | — |
| Penta-bromobiphenyl | mg/kg | 5 | ND | — |
| Hexa-bromobiphenyl | mg/kg | 5 | ND | — |
| Hepta-bromobiphenyl | mg/kg | 5 | ND | — |
| Octa-bromobiphenyl | mg/kg | 5 | ND | — |
| Nona-bromobiphenyl | mg/kg | 5 | ND | — |
| Deca-bromobiphenyl | mg/kg | 5 | ND | — |
| Polybrominated Biphenyls(PBBs) | mg/kg | — | ND | 1000 |
| Mono-bromodiphenyl ether | mg/kg | 5 | ND | — |
| Di-bromodiphenyl ether | mg/kg | 5 | ND | — |
| Tri-bromodiphenyl ether | mg/kg | 5 | ND | — |
| Tetra-bromodiphenyl ether | mg/kg | 5 | ND | — |
| Penta-bromodiphenyl ether | mg/kg | 5 | ND | — |
| Hexa-bromodiphenyl ether | mg/kg | 5 | ND | — |
| Hepta-bromodiphenyl ether | mg/kg | 5 | ND | — |
| Octa-bromodiphenyl ether | mg/kg | 5 | ND | — |
| Nona-bromodiphenyl ether | mg/kg | 5 | ND | — |
| Deca-bromodiphenyl ether | mg/kg | 5 | ND | — |
| Polybrominated Diphenyl Ethers(PBDEs) | mg/kg | — | ND | 1000 |
| Dibutyl phthalate(DBP) | mg/kg | 30 | ND | 1000 |
| Butylbenzyl phthalate(BBP) | mg/kg | 30 | ND | 1000 |
| Di-(2-ethylhexyl) phthalate(DEHP) | mg/kg | 30 | ND | 1000 |
| Di-iso-butyl phthalate(DIBP) | mg/kg | 30 | ND | 1000 |



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Test Method/Equipment: IEC 62321-5:2013,IEC 62321-4:2013+AMD1:2017,IEC 62321-7-1:2015,
IEC 62321-6:2015,IEC 62321-8:2017; AAS,ICP-OES,UV-VIS,GC-MS

| Test Item(s) | Unit | MDL | Result(s) | Limit |
|---------------------------------------|--------------------|-----|-----------|-------|
| | | | 1-2 | |
| Lead(Pb) | mg/kg | 2 | ND | 1000 |
| Cadmium(Cd) | mg/kg | 2 | ND | 100 |
| Mercury(Hg) | mg/kg | 2 | ND | 1000 |
| Hexavalent Chromium(Cr(VI)) | µg/cm ² | 0.1 | ND | ◆ |
| Mono-bromobiphenyl | mg/kg | 5 | ND | — |
| Di-bromobiphenyl | mg/kg | 5 | ND | — |
| Tri-bromobiphenyl | mg/kg | 5 | ND | — |
| Tetra-bromobiphenyl | mg/kg | 5 | ND | — |
| Penta-bromobiphenyl | mg/kg | 5 | ND | — |
| Hexa-bromobiphenyl | mg/kg | 5 | ND | — |
| Hepta-bromobiphenyl | mg/kg | 5 | ND | — |
| Octa-bromobiphenyl | mg/kg | 5 | ND | — |
| Nona-bromobiphenyl | mg/kg | 5 | ND | — |
| Deca-bromobiphenyl | mg/kg | 5 | ND | — |
| Polybrominated Biphenyls(PBBs) | mg/kg | — | ND | 1000 |
| Mono-bromodiphenyl ether | mg/kg | 5 | ND | — |
| Di-bromodiphenyl ether | mg/kg | 5 | ND | — |
| Tri-bromodiphenyl ether | mg/kg | 5 | ND | — |
| Tetra-bromodiphenyl ether | mg/kg | 5 | ND | — |
| Penta-bromodiphenyl ether | mg/kg | 5 | ND | — |
| Hexa-bromodiphenyl ether | mg/kg | 5 | ND | — |
| Hepta-bromodiphenyl ether | mg/kg | 5 | ND | — |
| Octa-bromodiphenyl ether | mg/kg | 5 | ND | — |
| Nona-bromodiphenyl ether | mg/kg | 5 | ND | — |
| Deca-bromodiphenyl ether | mg/kg | 5 | ND | — |
| Polybrominated Diphenyl Ethers(PBDEs) | mg/kg | — | ND | 1000 |
| Dibutyl phthalate(DBP) | mg/kg | 30 | ND | 1000 |
| Butylbenzyl phthalate(BBP) | mg/kg | 30 | ND | 1000 |
| Di-(2-ethylhexyl) phthalate(DEHP) | mg/kg | 30 | ND | 1000 |
| Di-iso-butyl phthalate(DIBP) | mg/kg | 30 | ND | 1000 |



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Note:

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

$\mu\text{g}/\text{cm}^2$ =microgram per square centimeter

mg/kg (milligram per kilogram) = ppm (parts per million)

ND=Not Detected

MDL=Method Detection Limit

Results shown as ND are ignored in the sum calculation.

The detected Chromium (Cr) content is "ND", therefore, the Hexavalent Chromium (Cr (VI)) content is "ND", No need for validation test of the Hexavalent Chromium (Cr (VI)). If Chromium (Cr) content exceeds Hexavalent Chromium (Cr (VI)) method detection limit, Validation test of the Hexavalent Chromium (Cr (VI)) is required.

◆ = According to the test method IEC 62321-7-1:2015:①The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than $0.13\mu\text{g}/\text{cm}^2$. The sample coating is considered to contain Cr(VI); ②The sample is negative for Cr(VI) if Cr(VI) is ND (concentration less than $0.10\mu\text{g}/\text{cm}^2$). The coating is considered a non-Cr(VI) based coating; ③The result between $0.10\mu\text{g}/\text{cm}^2$ and $0.13\mu\text{g}/\text{cm}^2$ is considered to be inconclusive -unavoidable coating variations may influence the determination; The surface difference of samples from different individuals may affect the determination results of Cr(VI); 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.

^{h1}= According to the declaration from the client, Lead(Pb) in specimen(s) is(are) exempted by EU RoHS Directive 2011/65/EU and its amendment Directive EU 2015/863 base on:7(a):Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead).

Sample Description:

| No. | HCT Sample ID | Test Part Description | | Note |
|-----|-------------------------|-----------------------|-------------------------|------|
| 1-1 | WTH24H04083040C~3042C.1 | 1-1 | Gray printed black body | ● |
| 1-2 | | 1-2 | Silver metal pin | ● |

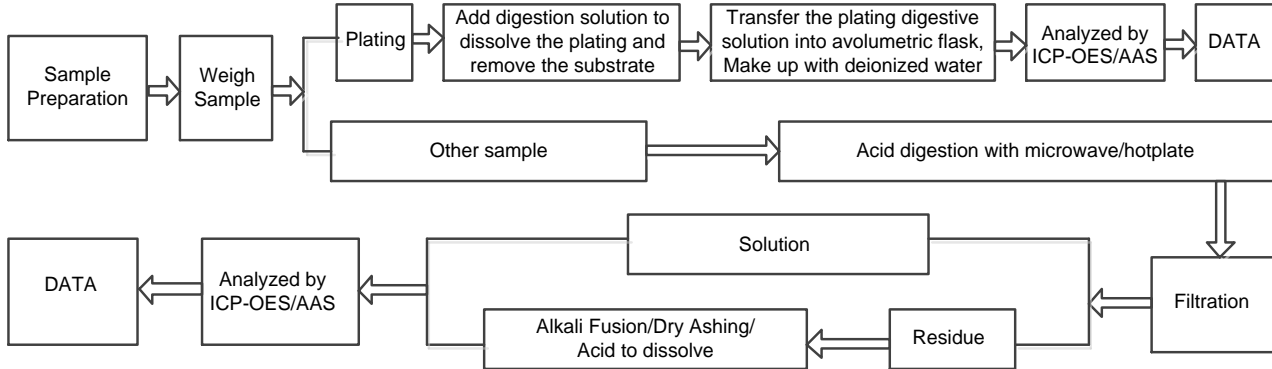
Note:

●=Actual tested sample

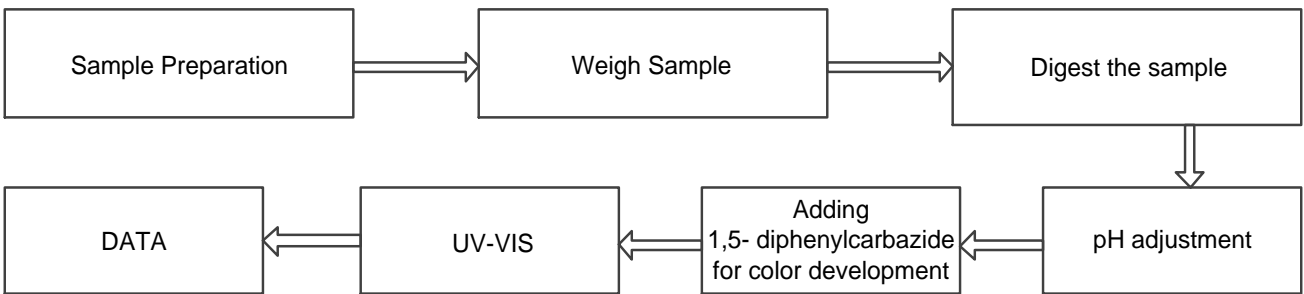
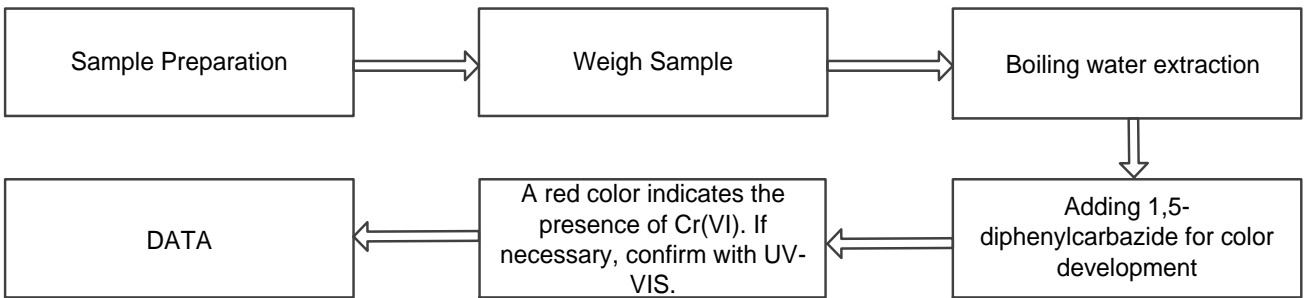


Test Flow Chart:

Lead(Pb), Cadmium(Cd), Mercury(Hg), Chromium(Cr)

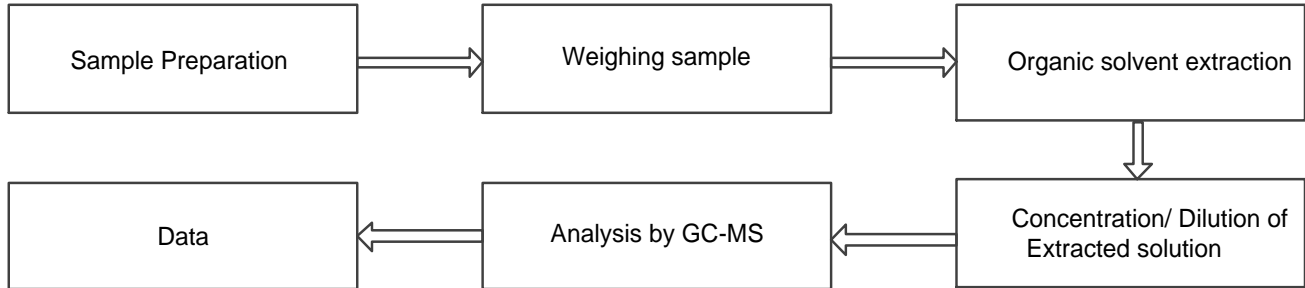


Hexavalent Chromium(Cr(VI))

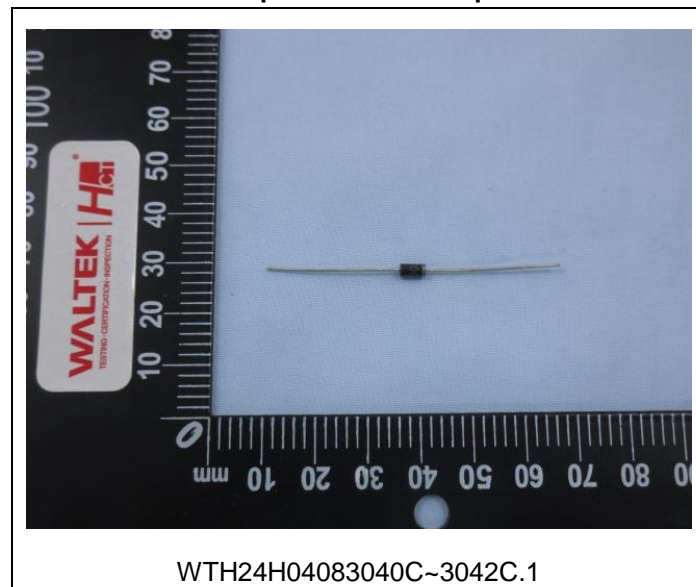


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Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs), Dibutyl phthalate(DBP), Butylbenzyl phthalate(BBP), Di-(2-ethylhexyl) phthalate(DEHP), Di-iso-butyl phthalate(DIBP)



The photo of the sample



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Statement:

1. This report is considered invalid without approved signature and special seal.
2. The Applicant name and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which HCT hasn't verified.
3. The result(s)(conclusion) shown in this report refer(s) only to the sample(s) tested.
4. Without written approval of HCT, this report can't be reproduced except in full.
5. The result(s) in no CMA logo report shall only be used for client's scientific research, teaching, internal quality control, product research and development, etc..and just for internal reference.
6. The "n" in CNAS logo report means that the test item(s) was (were) currently not applying for CNAS accreditation.
7. Decision rules used in this report:
 - (1)According to the Decision rules in the regulations/standards listed in the Test Requested;
 - (2)If there is no Decision rules specified in the regulations listed in the Test Requested, then according to CNAS-GL015 Guidelines on Decision Rules and Statements of Conformity, 6.2.1, Simple Acceptance ($w=0$) of The binary Decision rule:
PASS (Accepted) - The measured value is within the tolerance interval.
FAIL (Rejected) - The measured value is outside the tolerance interval.

===== End of Report =====

