

Report No. :GXH21070835(E)

Date : 2021/07/30

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中国认可
国际互认
检测
TESTING
CNAS L7673

TEST REPORT

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The following merchandise was (were) submitted and identified by the client as:

Name of Sample : PTFR thin film precision chip resistor
Test Type : Commission
Analysis No. : GXH21070835
Sample Quantity : 1
Batch No. /Brand/Model : /
Sample Received : 2021/07/21
Test Period : 2021/07/22-2021/07/30
Test Method : Please refer to next page(s).
Test Result : Please refer to next page(s).

Edited by: 

Approved by: 

Checked by: 

Official Seal: 

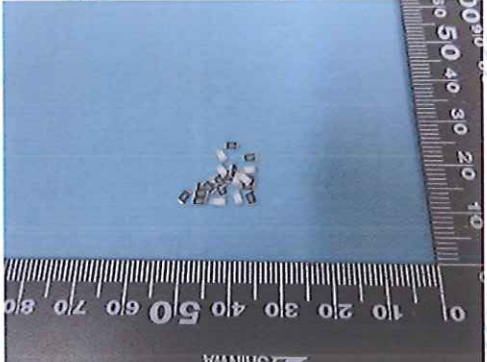
Conclusion:

| TESTED SAMPLES | TEST ITEM | RESULT |
|--|--|--------|
| PTFR thin film precision chip resistor | RoHS Directive 2011/65/EU with amendment (EU) 2015/863 | PASS |

PASS means that the results shown on the report comply with the limits set by RoHS Directive 2011/65/EU with amendment (EU) 2015/863

******* TO BE CONTINUE *******

Sample Description:

| Sample Number | Tested Material Description | Photo |
|---------------|--------------------------------------|--|
| 001 | Black/white body with white printing |  |

***** TO BE CONTINUE *****

Test Results:
1.1 Screening test for the specified hazardous substances of RoHS for the selected materials of the submitted sample:

- Heavy Metal (Cadmium, Chromium, Mercury, Lead) Content Test
- Bromine Content Test

According to IEC 62321-3-1:2013, and Quantification analyzed with Energy Dispersive X-ray Fluorescence Spectrometers.

| Sample No. | Total Lead | Total Cadmium | Total Chromium | Total Mercury | Total Bromine |
|------------|------------|---------------|----------------|---------------|---------------|
| 001 | OL | BL | IN | BL | BL |

XRF Screening Limits in mg/kg for Regulated Elements in Various Matrices:

| Element | Polymer Materials | Metallic Materials | Composite Materials |
|---------|--|--|--|
| Cd | $BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$ | $BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$ | $LOD < X < (150+3\sigma) \leq OL$ |
| Pb | $BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$ | $BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$ | $BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$ |
| Hg | $BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$ | $BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$ | $BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$ |
| Br | $BL \leq (300-3\sigma) < X$ | NA | $BL \leq (250-3\sigma) < X$ |
| Cr | $BL \leq (700-3\sigma) < X$ | $BL \leq (700-3\sigma) < X$ | $BL \leq (500-3\sigma) < X$ |

Note:

1. BL = Below Limit , OL = Over Limit , IN = Inconclusive , LOD = Limit of Detection , NA = Not Applicable.

***** TO BE CONTINUE *****

2.1 Test for Heavy Metals

– Lead, Cadmium, Mercury and Hexavalent Chromium Tests according to IEC 62321-4:2013+A1:2017 & IEC 62321-5:2013 & IEC 62321-7-1:2015 & IEC 62321-7-2:2017. Analysis was conducted by ICP-OES, UV-VIS.

| Element | Total Cadmium (mg/kg) | Total Lead (mg/kg) | Total Mercury (mg/kg) | Hexavalent Chromium | Hexavalent Chromium (mg/kg) |
|------------------------|-----------------------|--------------------|-----------------------|---------------------|-----------------------------|
| Method Detection Limit | 10 | 10 | 10 | - | 10 |
| Limit | 100 | 1000 | 1000 | - | 1000 |
| 001 | / | 1433* | / | / | ND |

Note:

- All Concentrations express in “mg/kg”(milligram per kilogram), 1 mg/kg = 0.0001%;
- ND = Test result was below the method detection limit or limit of quantitation ,i.e., the corresponding test item was not detected.
- Boiling-water-extraction:
 - Negative = Absence of Cr(VI) coating / surface layer: the detected concentration in boiling-water-extraction solution is less than 0.10µg with 1cm² sample surface area;
 - Positive = Presence of Cr(VI) coating / surface layer: the detected concentration in boiling-water-extraction solution is greater than 0.13µg with 1cm² sample surface area;
 - Inconclusive = the detected concentration in boiling-water-extraction solution is greater than 0.10µg and less than 0.13µg with 1cm² sample surface area;
- Positive = The result be regarded as not comply with RoHS requirement;
- Negative = The result be regarded as comply with RoHS requirement;
- * = Lead (Pb) in Sample No(s):001 is exempted by the EU RoHS Directive 2011/65/EU. The corresponding exemption provisions (please refer to the original version) ANNEX III 7(c)-I: 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.

***** TO BE CONTINUE *****

3.1 Test for Phthalates

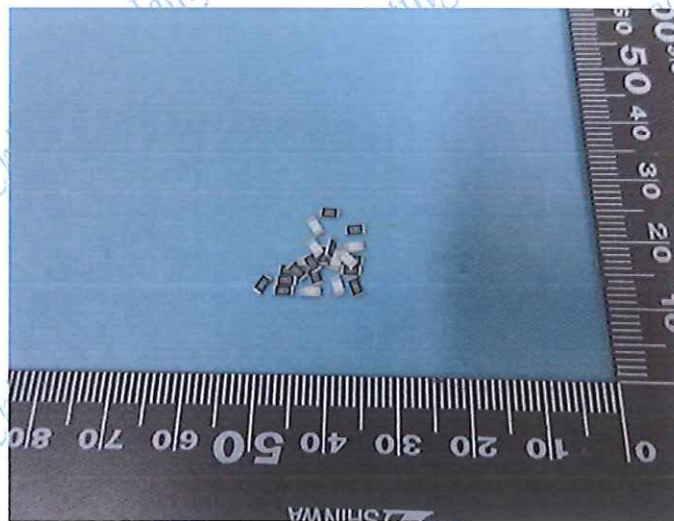
Test method: With reference to IEC 62321-8:2017, Analyzed by GC-MS & PY-GC-MS.

| Test Item | Bis(2-ethylhexyl) phthalate (DEHP) (mg/kg) | Butyl benzyl phthalate (BBP) (mg/kg) | Dibutyl phthalate (DBP) (mg/kg) | Diisobutyl phthalate (DIBP) (mg/kg) |
|------------------------|--|--------------------------------------|---------------------------------|-------------------------------------|
| Method Detection Limit | 100 | 100 | 100 | 100 |
| Limit | 1000 | 1000 | 1000 | 1000 |
| 001 | ND | ND | ND | ND |

Note:

- All Concentrations express in "mg/kg"(milligram per kilogram), 1mg/kg = 0.0001%;
- ND = Test result was below the method detection limit or limit of quantitation ,i.e., the corresponding test item was not detected.

SAMPLE PHOTO



***** END OF REPORT *****

Statement

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2. This report is invalid if not affixed with authorized stamp of test and paging seal.
3. This report is invalid without signature of verifier and approver.
4. This report is invalid if being supplemented, deleted or altered.
5. Without written permission of our Company, this report can not be reproduced in part (except in whole).
6. The result(s) shown in this report refer only to the sample(s) tested.
7. Objections to this report must be submitted to our Company within 15 days. Otherwise, it will automatically deem to have accepted this report.
8. The Client shall be responsible for the accuracy, authenticity and completeness of the samples and information submitted for inspection, and the disputes arising therefrom shall be borne by the Client.
9. As any reports is issued as a result of this application for testing services, our Company will strictly keep confidentiality to the Clients. Except where disclosure is required on the basis of laws, regulations, judgments, and rulings (including in accordance with summons, court, or government proceedings).
10. The result(s) or conclusion(s) shown in this report about the description of the characteristics, composition, properties or quality are based on the specific time, methods and applicable criteria. Using different methods and criteria or under different environmental conditions for testing may come to different conclusions.
11. Since our Company's causes lead to modify the contents of this report, our Company shall reissue this report and bear the modification cost. The Client shall return the original report. Since the Client's causes lead to modify the contents of this report, the Client need to submit an application form for the change of report to our Company. The Client shall bear the modification cost and return the original report if our Company approves to reissue this report.
12. The English version of this statement is translated from the Chinese one. If there is any disagreement between them, the Chinese version will be the final explanation.