



中国认可  
国际互认  
检测  
TESTING  
CNAS L7673

# TEST REPORT

Applicant : ChangSha RESI Electronics Technology Co., Ltd.  
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Luositang Road ChangSha City, Hunan Province, P. R. China

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

Name of Sample : TPAL0220 Series Non-inductive Power Resistor  
Test Type : Commission  
Analysis No. : GXH23040478  
Sample Quantity : 3 PCS  
Batch No. /Brand/Model : /  
Sample Received : 2023/04/14  
Test Period : 2023/04/17-2023/04/24  
Test Method : Please refer to next page(s).  
Test Result : Please refer to next page(s).

Edited by: 郑沐娣

Approved by: 林山亭

Checked by: 林山亭

Official Seal: 检验检测专用章

Report No. GXH23040478(E)

Date : 2023/04/25

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**Conclusion:**

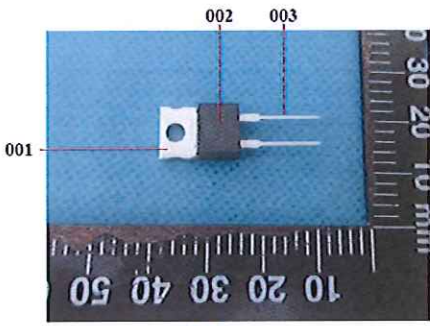
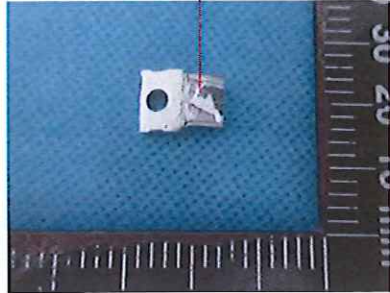
TESTED SAMPLES	TEST STANDARD	RESULT
TPAL0220 Series Non-inductive Power Resistor	RoHS Directive 2011/65/EU with amendment (EU) 2015/863	PASS

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 \*\*\*\*\*

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**Sample Description:**

Sample Number	Tested Material Description	Photo
001	Silvery surfaced metal sheet	
002	Black plastic shell	
003	Silvery surfaced metal pin	
004	Black/grey ceramic sheet	

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

**Test Results:**
**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 tested with Energy Dispersive X-ray Fluorescence Spectrometers.

Sample No.	Total Lead	Total Cadmium	Total Mercury	Total Chromium	Total Bromine
001	BL	BL	BL	BL	NA
002	BL	BL	BL	BL	IN
003	BL	BL	BL	BL	NA
004	BL	BL	BL	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: BL = Below Limit , OL = Over Limit , IN = Inconclusive , LOD = Limit of Detection , NA = Not

Applicable.

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

**2. Test for Flame retardants**

– Test Method: With reference to IEC 62321-6:2015, tested by GC-MS.

Test Item		Result (mg/kg)	Limit (mg/kg)
		002	
PBBS	Monobromobiphenyl	ND	Sum of PBBS < 1000
	Dibromobiphenyl	ND	
	Tribromobiphenyl	ND	
	Tetrabromobiphenyl	ND	
	Pentabromobiphenyl	ND	
	Hexabromobiphenyl	ND	
	Heptabromobiphenyl	ND	
	Octabromobiphenyl	ND	
	Nonabromobiphenyl	ND	
	Decabromobiphenyl	ND	
	Sum of PBBS	ND	
PBDEs	Monobromodiphenyl Ether	ND	Sum of PBDEs < 1000
	Dibromodiphenyl Ether	ND	
	Tribromodiphenyl Ether	ND	
	Tetrabromodiphenyl Ether	ND	
	Pentabromodiphenyl Ether	ND	
	Hexabromodiphenyl Ether	ND	
	Heptabromodiphenyl Ether	ND	
	Octabromodiphenyl Ether	ND	
	Nonabromodiphenyl Ether	ND	
	Decabromodiphenyl Ether	ND	
	Sum of PBDEs	ND	

**Note:**

- All Concentrations express in “mg/kg”(milligram per kilogram), 1mg/kg = 0.0001%;
- The MDL (Method Detection Limit ) for single compound of PBBS and PBDEs is 20 mg/kg;
- ND = Test result was below the method detection limit or limit of quantitation ,i.e., the corresponding test item was not detected.

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

**3.Test for Phthalates**

Test method: With reference to IEC 62321-8:2017, tested 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
002	ND	ND	ND	ND
004	ND	ND	ND	ND

Note:

1. All Concentrations express in “mg/kg”(milligram per kilogram), 1mg/kg = 0.0001%;
2. 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

1. This report is issued by The CAS Testing Technical Services (GuangZhou) Co.,Ltd. (hereinafter referred to as "Our Company").
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. The data result(s) just for scientific research,teaching,internal quality control etc.
12. 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.
13. 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.