

中科检测技术服务(广州)股份有限公司

CAS Testing Technical Services (GuangZhou) Co.,Ltd.

Report No. GXH23040478(E)

Date: 2023/04/25

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TEST REPORT

Applicant:

ChangSha RESI Electronics Technology Co., Ltd.

Address:

102, 202, 302 and 402, Block B, Building 15, Depu Wuhe Enterprise Park, No. 1 and 3,

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: 0

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

Checked by:

Approved by:

Official Seal:

Add: No. 368 Xingke Road, Tianhe District, Guangzhou, P. R. China. E-mail: atc@gic.ac.cn

Tel: 400-119-8299, 020-85231290

Website: http://www.cas-test.org



CAS Testing Technical Services (GuangZhou) Co.,Ltd.

Conclusion:

5	Report No. GXH23040478(E)	Date: 2023/04/25 Page No. : 2	Page No.: 2 of 7	
	Conclusion:	Per Chin.	Costille	
Co.	TESTED SAMPLES	TEST STANDARD	RESULT	
"goils"	TPAL0220 Series	Acque store		
Cr	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

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Sample Description:

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Sample Descr	iption:	Solling	160
Sample Numb	er Tested Material Description	Photo W	1000
001	Silvery surfaced metal sheet	002 003	E 0
· ones	Chillie 16 th 3	2	30 20
002	Black plastic shell	001	= - =
entil aces	inese iences	nagranjunjunjun	
\$6,003	Silvery surfaced metal pin	10 50 30 40 20	(6)
nia tenal	is codemy of cert	004	Ξ .
Acar. Stock	ingse Alto cciento		
004	Black/grey ceramic sheet	16	
and of Section	ces haden sees		
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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.

1	pectioniciers.	Ya.	CI IV	11110	170	DU 1/2
)	Sample No.	Total (Total	Total	Total	Total
San	Sample No.	Lead 0	Cadmium 0	Mercury	Chromium	Bromine
	1000	BL	BLight	BL	BL 0	NA
	002	BL	BL	BL	Broggi	IN (OST)
1	003	BL	BL BL	BL	BL	NAS
	004	BL MC	BL	BL 📉	BL	SCIEBL

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

Element	Polymer Materials	Metallic Materials	Composite Materials
Cd	BL≤(70-3σ) <x<(130+3σ)≤ ol<="" th=""><th>BL≤(70-3σ)<x<(130+3σ)≤ ol<="" th=""><th>LOD<x<(150+3σ)≤ ol<="" th=""></x<(150+3σ)≤></th></x<(130+3σ)≤></th></x<(130+3σ)≤>	BL≤(70-3σ) <x<(130+3σ)≤ ol<="" th=""><th>LOD<x<(150+3σ)≤ ol<="" th=""></x<(150+3σ)≤></th></x<(130+3σ)≤>	LOD <x<(150+3σ)≤ ol<="" th=""></x<(150+3σ)≤>
Pb	BL≤(700-3σ) <x<(1300+3σ)≤ ol<="" th=""><th>BL≤(700-3σ)<x<(1300+3σ)≤ ol<="" th=""><th>BL≤(500-3σ)<x<(1500+3σ)≤ ol<="" th=""></x<(1500+3σ)≤></th></x<(1300+3σ)≤></th></x<(1300+3σ)≤>	BL≤(700-3σ) <x<(1300+3σ)≤ ol<="" th=""><th>BL≤(500-3σ)<x<(1500+3σ)≤ ol<="" th=""></x<(1500+3σ)≤></th></x<(1300+3σ)≤>	BL≤(500-3σ) <x<(1500+3σ)≤ ol<="" th=""></x<(1500+3σ)≤>
Hg	BL≤(700-3σ) <x<(1300+3σ)≤ ol<="" th=""><th>BL≤(700-3σ)<x<(1300+3σ)≤ ol<="" th=""><th>BL≤(500-3σ)<x<(1500+3σ)≤ ol<="" th=""></x<(1500+3σ)≤></th></x<(1300+3σ)≤></th></x<(1300+3σ)≤>	BL≤(700-3σ) <x<(1300+3σ)≤ ol<="" th=""><th>BL≤(500-3σ)<x<(1500+3σ)≤ ol<="" th=""></x<(1500+3σ)≤></th></x<(1300+3σ)≤>	BL≤(500-3σ) <x<(1500+3σ)≤ ol<="" th=""></x<(1500+3σ)≤>
CO ^O Br	BL≤(300-3σ) <x< th=""><th>NA</th><th>BL≤(250-3σ)<x (05)<="" th=""></x></th></x<>	NA	BL≤(250-3σ) <x (05)<="" th=""></x>
Cr	BL <u>≤(</u> 700-3σ) <x< th=""><th>BL≤(700-3σ)<x< th=""><th>BL<u><(</u>500-3σ)<x< th=""></x<></th></x<></th></x<>	BL≤(700-3σ) <x< th=""><th>BL<u><(</u>500-3σ)<x< th=""></x<></th></x<>	BL <u><(</u> 500-3σ) <x< th=""></x<>

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

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



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2. Test for Flame retardants

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

· S	Test Item	Result (mg/kg)	Limit
105	, rest rem	002	(mg/kg)
ces 1	Monobromobiphenyl	ND ND	COSTILLO
ien	Dibromobiphenyl	ND ND	08/00
201	Tribromobiphenyl	ND SO	· Mcco
	Tetrabromobiphenyl	ND MININES	Colo.
pppa	Pentabromobiphenyl	ND CH	O CARDO
PBBs	Hexabromobiphenyl	SC ND YEAR	Sum of PBBs < 1000
. 0/2	Heptabromobiphenyl	of stilling Color	1000
W.	Octabromobiphenyl	ND OF THE	.000
× 0	Nonabromobiphenyl	no no chille	ccless
3	Decabromobiphenyl	ND C	120
· McGs	Sum of PBBs	ND ND	2, c
cclo.	Monobromodiphenyl Ether	My My Call	(0)
2	Dibromodiphenyl Ether	ND 10 ND	Tom
	Tribromodiphenyl Ether	ND.	1000
cs	Tetrabromodiphenyl Ether	ND Chi	el 45
DDDD	Pentabromodiphenyl Ether	ND	CDDDE
PBDEs	Hexabromodiphenyl Ether	MD.	Sum of PBDEs < 1000
96,	Heptabromodiphenyl Ether	OND	1000
N.	Octabromodiphenyl Ether	Shiji du 🖏	102
-0	Nonabromodiphenyl Ether	ND TEST	2000
ionce	Decabromodiphenyl Ether	ND COS	30,000
"SCIO	Sum of PBDEs	ND: CH	130

Note:

- 1. All Concentrations express in "mg/kg" (milligram per kilogram), 1mg/kg = 0.0001%;
- 2. The MDL (Method Detection Limit) for single compound of PBBs and PBDEs is 20 mg/kg;
- 3. 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 ******



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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	ese nd	ND (MD O	ND ND
150 004 CM	ND 13	ND	NDIGERMA	ND OSTITUS

Note:

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- 1. All Concentrations express in "mg/kg" (milligram per kilogram), 1 mg/kg = 0.0001%;
- Chinese Academy of Science 2. ND = Test result was below the method detection limit or limit of quantitation, i.e., the corresponding test item was not detected. se Academy of Sciences

SAMPLE PHOTO



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

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Statement

- 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.