

**Test Report** No. SHAEC2022263901 Date: 11 Nov 2020 Page 1 of 8

UNIROYAL ELECTRONICS INDUSTRY (KUNSHAN) CO.,LTD.

88 LONGTENG ROAD, ECONOMIC & TECHNICAL DEVELOPMENT ZONE, KUNSHAN CITY, JIANGSU PROVINCE, CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as: Metal Oxide Film Fixed

Resistors

SGS Job No.: SP20-035362 - SH

Buyer: UNIROYAL ELECTRONICS GLOBAL CO.,LTD.

Manufacturer: UNIROYAL ELECTRONICS INDUSTRY (KUNSHAN) CO.,LTD.

AEON TECHNOLOGY CORPORATION CO.,LTD.

ROYAL ELECTRONIC FACTORY (THAILAND) CO.,LTD.

ROYAL TECHNOLOGY (THAILAND) CO.,LTD.

UNUS TECHNOLOGY CORPORATION

Date of Sample Received: 06 Nov 2020

Testing Period : 06 Nov 2020 - 11 Nov 2020

Test Requested: Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Conclusion: Based on the performed tests on submitted sample(s), the results of Cadmium,

Lead, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs),

Polybrominated diphenyl ethers (PBDEs) and Phthalates such as

Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

Dany Shen

Approved Signatory





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Test Results:

### **Test Part Description:**

Specimen No. SGS Sample ID Description

SN1 SHA20-222639.001 Colorful resistor body

#### Remarks:

(1) 1 mg/kg = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected ( < MDL)

(4) "-" = Not Regulated

## RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method: With reference to IEC 62321-4:2013+AMD1:2017, IEC62321-5:2013, IEC62321-7-2:2017, IEC 62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES, AAS, UV-Vis and GC-MS.

| Test Item(s)                 | <u>Limit</u> | <u>Unit</u> | <u>MDL</u> | <u>001</u> |
|------------------------------|--------------|-------------|------------|------------|
| Cadmium (Cd)                 | 100          | mg/kg       | 2          | ND         |
| Lead (Pb)                    | 1000         | mg/kg       | 2          | ND         |
| Mercury (Hg)                 | 1000         | mg/kg       | 2          | ND         |
| Hexavalent Chromium (Cr(VI)) | 1000         | mg/kg       | 8          | ND         |
| Sum of PBBs                  | 1000         | mg/kg       | -          | ND         |
| Monobromobiphenyl            | -            | mg/kg       | 5          | ND         |
| Dibromobiphenyl              | -            | mg/kg       | 5          | ND         |
| Tribromobiphenyl             | -            | mg/kg       | 5          | ND         |
| Tetrabromobiphenyl           | -            | mg/kg       | 5          | ND         |
| Pentabromobiphenyl           | -            | mg/kg       | 5          | ND         |
| Hexabromobiphenyl            | -            | mg/kg       | 5          | ND         |
| Heptabromobiphenyl           | -            | mg/kg       | 5          | ND         |
| Octabromobiphenyl            | -            | mg/kg       | 5          | ND         |
| Nonabromobiphenyl            | -            | mg/kg       | 5          | ND         |
| Decabromobiphenyl            | -            | mg/kg       | 5          | ND         |
| Sum of PBDEs                 | 1000         | mg/kg       | -          | ND         |
| Monobromodiphenyl ether      | -            | mg/kg       | 5          | ND         |
| Dibromodiphenyl ether        | -            | mg/kg       | 5          | ND         |
| Tribromodiphenyl ether       | -            | mg/kg       | 5          | ND         |
| Tetrabromodiphenyl ether     | -            | mg/kg       | 5          | ND         |



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|-----------------------------------|---------------------|-------------|-------------------|------------|-------------|
| Test Item(s)                      | <u>Limit</u>        | <u>Unit</u> | <u>MDL</u>        | <u>001</u> |             |
| Pentabromodiphenyl ether          | -                   | mg/kg       | 5                 | ND         |             |
| Hexabromodiphenyl ether           | -                   | mg/kg       | 5                 | ND         |             |
| Heptabromodiphenyl ether          | -                   | mg/kg       | 5                 | ND         |             |
| Octabromodiphenyl ether           | -                   | mg/kg       | 5                 | ND         |             |
| Nonabromodiphenyl ether           | -                   | mg/kg       | 5                 | ND         |             |
| Decabromodiphenyl ether           | -                   | mg/kg       | 5                 | ND         |             |
| Di-butyl Phthalate (DBP)          | 1000                | mg/kg       | 50                | ND         |             |
| Benzyl Butyl Phthalate (BBP)      | 1000                | mg/kg       | 50                | ND         |             |
| Di-2-Ethyl Hexyl Phthalate (DEHP) | 1000                | mg/kg       | 50                | ND         |             |
| Diisobutyl Phthalates (DIBP)      | 1000                | mg/kg       | 50                | ND         |             |

#### Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863. IEC 62321 series is equivalent to EN 62321 series https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101::::FSP\_ORG\_ID,FSP\_LANG\_ID: 1258637,25
- (2) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.
- (3) The restriction of DEHP, BBP, DBP and DIBP shall not apply to toys which are already subject to the restriction of DEHP, BBP, DBP and DIBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.



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No. SHAEC2022263901

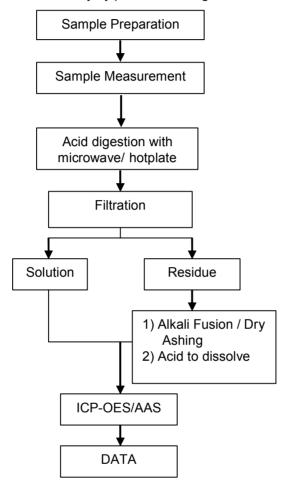
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## **Elements (IEC62321) Testing Flow Chart**

1) These samples were dissolved totally by pre-conditioning method according to below flow chart.





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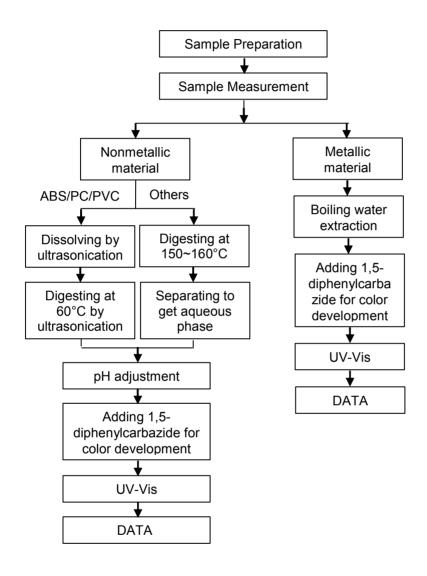
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## Hexavalent Chromium (Cr(VI)) Testing Flow Chart





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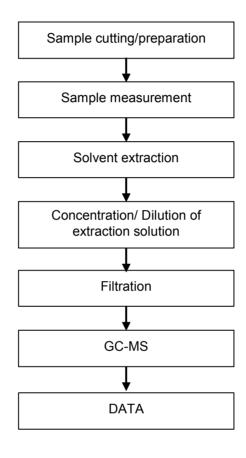
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## PBBs/PBDEs Testing Flow Chart





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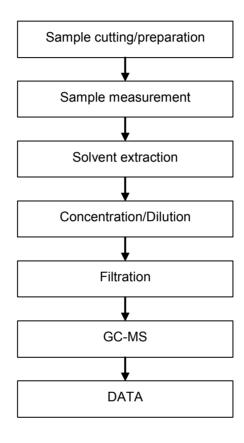
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## **Phthalates Testing Flow Chart**





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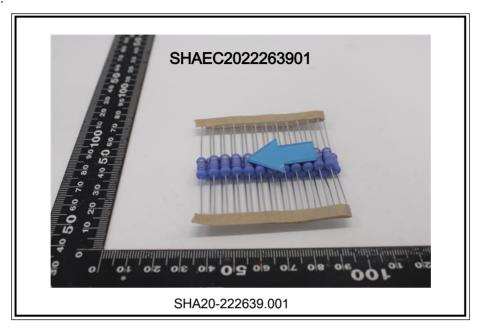
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Sample photo:



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