

## Test Report

No. SHAEC1625969821

Date: 16 Dec 2016

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YAGEO Corporation(YAGEO/PHYCOMP/COMPOSTAR BRAND)

3F,NO.233-1 BAOQIAO RD.,XINDIAN DIST.,NEW TAIPEI CITY 23145, TAIWAN

The following sample(s) was/were submitted and identified on behalf of the clients as : THIN FILM CHIP RESISTOR

SGS Job No. : SP16-041965 - SUZ  
 Model No. : RT series  
 Date of Sample Received : 29 Nov 2016  
 Testing Period : 29 Nov 2016 - 16 Dec 2016  
 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).

Signed for and on behalf of  
 SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

Marry Ma

Marry Ma  
 Approved Signatory



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Test Results :

### Test Part Description :

| Specimen No. | SGS Sample ID    | Description  |
|--------------|------------------|--|
| SN1          | SHA16-259698.011 | Black/silver/white THIN FILM CHIP RESISTOR(mix all*) |

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 :
- (1) With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.
  - (2) With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.
  - (3) With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.
  - (4) With reference to IEC 62321:2008, determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.
  - (5) With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.
  - (6) With reference to IEC 62321-8 Ed.1.0 (111/321/CD), determination of phthalates by GC-MS.

| Test Item(s)                 | Limit | Unit  | MDL | 011 |
|------------------------------|-------|-------|-----|-----|
| Cadmium (Cd)                 | 100   | mg/kg | 2   | ND  |
| Lead (Pb)                    | 1000  | mg/kg | 2   | 90  |
| Mercury (Hg)                 | 1000  | mg/kg | 2   | ND  |
| Hexavalent Chromium (Cr(VI)) | 1000  | mg/kg | 2   | 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  |



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| Test Item(s)                      | Limit | Unit  | MDL | 011 |
|-----------------------------------|-------|-------|-----|-----|
| Monobromodiphenyl ether           | -     | mg/kg | 5   | ND  |
| Dibromodiphenyl ether             | -     | mg/kg | 5   | ND  |
| Tribromodiphenyl ether            | -     | mg/kg | 5   | ND  |
| Tetrabromodiphenyl ether          | -     | mg/kg | 5   | ND  |
| 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.
- (2) On 4 June 2015, Commission Directive (EU) 2015/863 was published in the Official Journal of the European Union (OJEU) to include the phthalates BBP, DBP, DEHP and DIBP into ANNEX II of the Rohs Recast Directive. The new law restricts each phthalate to no more than 0.1% in each homogeneous material of an electrical product.
- (3) 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.
- (4) The restriction of DEHP, BBP, DBP and DIBP shall not apply to cables or spare parts for the repair, the reuse, the updating of functionalities or upgrading of capacity of EEE placed on the market before 22 July 2019, and of medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, placed on the market before 22 July 2021.
- (5) The restriction of DEHP, BBP and DBP shall not apply to toys which are already subject to the restriction of DEHP, BBP and DBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.

### Halogen

Test Method : With reference to EN 14582: 2007, analysis was performed by Ion Chromatograph (IC).

| Test Item(s)  | Unit  | MDL | 011 |
|---------------|-------|-----|-----|
| Fluorine (F)  | mg/kg | 50  | ND  |
| Chlorine (Cl) | mg/kg | 50  | ND  |
| Bromine (Br)  | mg/kg | 50  | ND  |



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| <u>Test Item(s)</u> | <u>Unit</u> | <u>MDL</u> | <u>011</u> |
|---------------------|-------------|------------|------------|
| Iodine (I)          | mg/kg       | 50         | ND         |

### Element(s)

Test Method : With reference to US EPA 3052:1996, analysis was performed by ICP-OES.

| <u>Test Item(s)</u> | <u>Unit</u> | <u>MDL</u> | <u>011</u> |
|---------------------|-------------|------------|------------|
| Antimony (Sb)       | mg/kg       | 10         | ND         |

Remark:\*The sample(s) was/were analyzed on behalf of the applicant as mixing sample in one testing. The above result(s) was/were only given as the informality value and only for reference.



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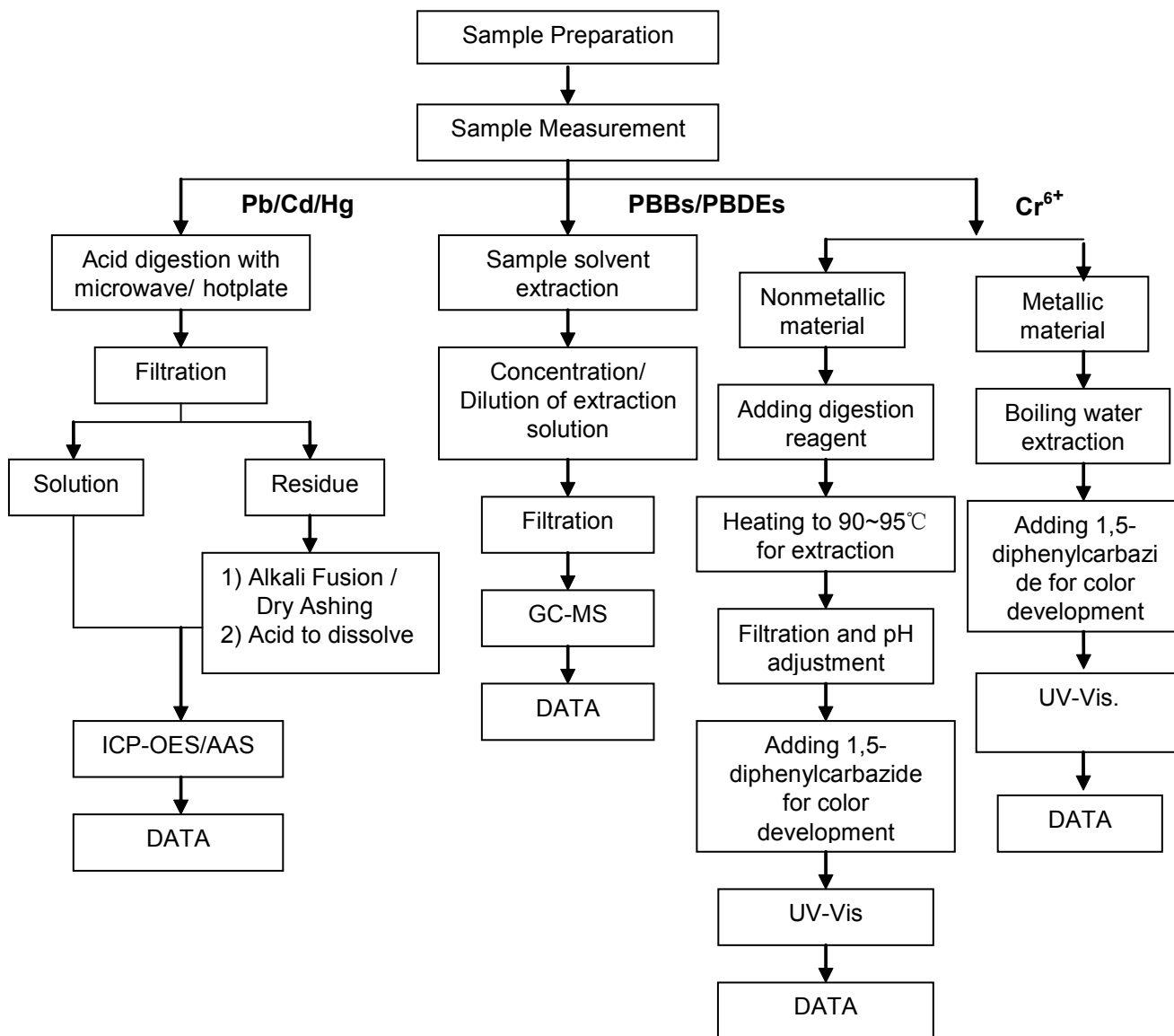
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## ATTACHMENTS

### RoHS Testing Flow Chart

- 1) Name of the person who made testing: Meria Jin/Gary Xu/Sean Li/Sielina song
- 2) Name of the person in charge of testing: Jan Shi/Jessy Huang/Luna Xu/Shara Wang
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> and PBBs/PBDEs test method excluded)



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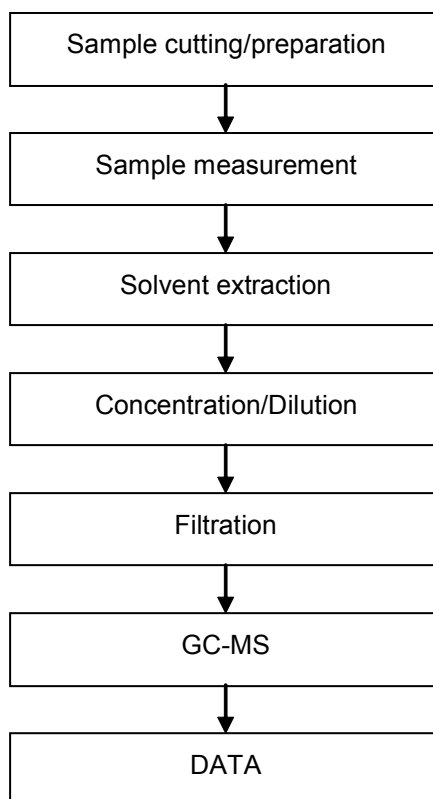
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### Phthalates Testing Flow Chart

- 1) Name of the person who made testing: Sherlock Gao
- 2) Name of the person in charge of testing: Jessy Huang



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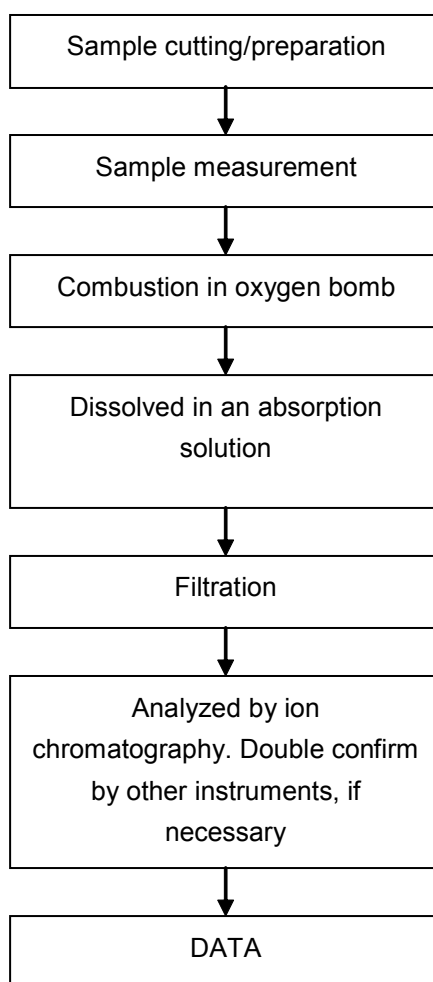
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### Halogen Testing (oxygen bomb) Flow Chart

- 1) Name of the person who made testing: Kevin Xu
- 2) Name of the person in charge of testing: Sisily Yin



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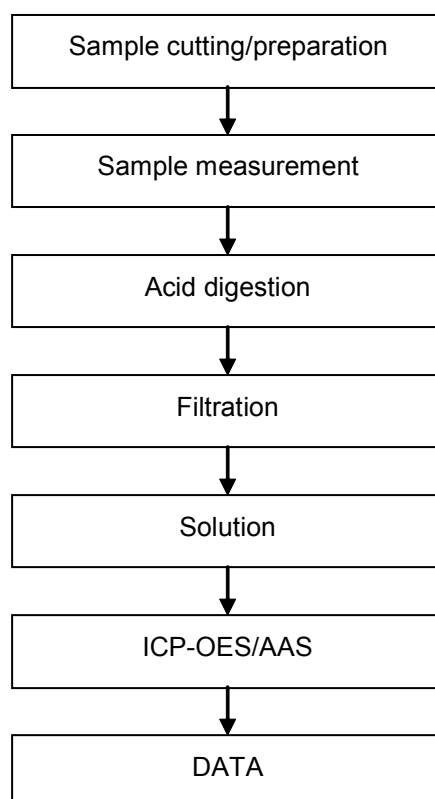
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### Elements Testing Flow Chart

- 1) Name of the person who made testing: Meria Jin/Sielina song
- 2) Name of the person in charge of testing: Luna Xu/Jan Shi



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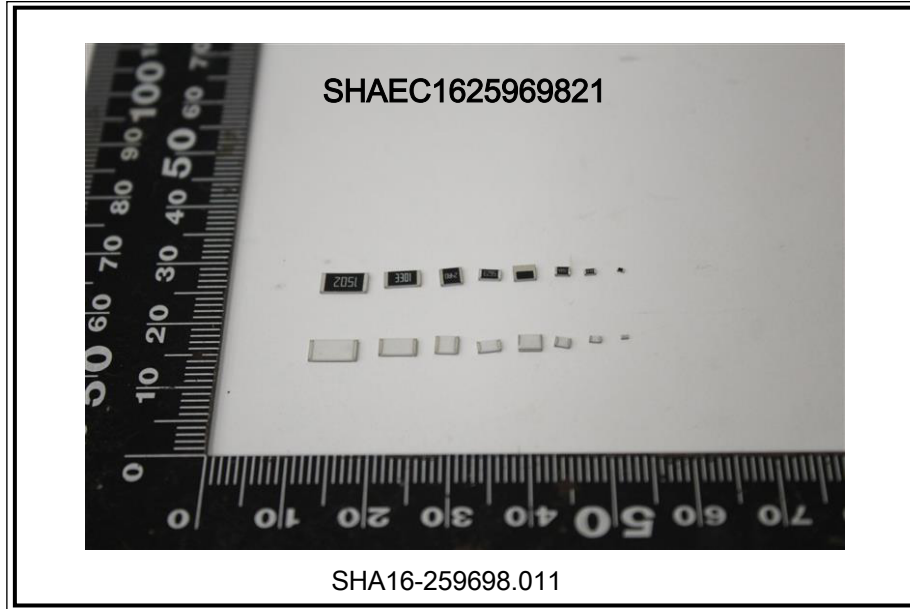
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