



# Test Report

No.: EKR23500394M03

Date: 12-May-2023

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SUMITOMO BAKELITE SINGAPORE PTE CO., LTD.  
NO. 1 SENOKO SOUTH ROAD, SINGAPORE 758069

The following sample(s) was/were submitted and identified by the applicant as:

Sample Submitted By : SUMITOMO BAKELITE SINGAPORE PTE CO., LTD.  
Sample Name : EPOXY MOLDING COMPOUND  
Style/Item No. : EME-G770H TYPE CD

Sample Receiving Date : 08-May-2023  
Testing Period : 08-May-2023 to 12-May-2023

Test Requested : (1) As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample(s).  
(2) Please refer to next pages for the other item(s).

Test Results : Please refer to following pages.

Conclusion : (1) Based on the performed tests on submitted sample(s), the test results of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Ray Chang

Ray Chang, Ph.D./Department Manager  
Signed for and on behalf of  
SGS TAIWAN LTD.  
Chemical Laboratory-Kaohsiung



PIN CODE: 8AA9F2F7

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## Test Part Description

No.1 : BLACK EPOXY MOLDING COMPOUND

## Test Result(s)

| Test Item(s)               | Method                                                                              | Unit  | MDL | Result | Limit |
|----------------------------|-------------------------------------------------------------------------------------|-------|-----|--------|-------|
|                            |                                                                                     |       |     | No.1   |       |
| Cadmium (Cd)               | With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.             | mg/kg | 2   | n.d.   | 100   |
| Lead (Pb)                  | With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.             | mg/kg | 2   | n.d.   | 1000  |
| Mercury (Hg)               | With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES. | mg/kg | 2   | n.d.   | 1000  |
| Hexavalent Chromium Cr(VI) | With reference to IEC 62321-7-2: 2017, analysis was performed by UV-VIS.            | mg/kg | 8   | n.d.   | 1000  |
| Monobromobiphenyl          | With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.               | mg/kg | 5   | n.d.   | -     |
| Dibromobiphenyl            |                                                                                     | mg/kg | 5   | n.d.   | -     |
| Tribromobiphenyl           |                                                                                     | mg/kg | 5   | n.d.   | -     |
| Tetrabromobiphenyl         |                                                                                     | mg/kg | 5   | n.d.   | -     |
| Pentabromobiphenyl         |                                                                                     | mg/kg | 5   | n.d.   | -     |
| Hexabromobiphenyl          |                                                                                     | mg/kg | 5   | n.d.   | -     |
| Heptabromobiphenyl         |                                                                                     | mg/kg | 5   | n.d.   | -     |
| Octabromobiphenyl          |                                                                                     | mg/kg | 5   | n.d.   | -     |
| Nonabromobiphenyl          |                                                                                     | mg/kg | 5   | n.d.   | -     |
| Decabromobiphenyl          |                                                                                     | mg/kg | 5   | n.d.   | -     |
| Sum of PBBs                |                                                                                     | mg/kg | -   | n.d.   | 1000  |
| Monobromodiphenyl ether    | With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.               | mg/kg | 5   | n.d.   | -     |
| Dibromodiphenyl ether      |                                                                                     | mg/kg | 5   | n.d.   | -     |
| Tribromodiphenyl ether     |                                                                                     | mg/kg | 5   | n.d.   | -     |
| Tetrabromodiphenyl ether   |                                                                                     | mg/kg | 5   | n.d.   | -     |
| Pentabromodiphenyl ether   |                                                                                     | mg/kg | 5   | n.d.   | -     |
| Hexabromodiphenyl ether    |                                                                                     | mg/kg | 5   | n.d.   | -     |
| Heptabromodiphenyl ether   |                                                                                     | mg/kg | 5   | n.d.   | -     |
| Octabromodiphenyl ether    |                                                                                     | mg/kg | 5   | n.d.   | -     |
| Nonabromodiphenyl ether    |                                                                                     | mg/kg | 5   | n.d.   | -     |
| Decabromodiphenyl ether    |                                                                                     | mg/kg | 5   | n.d.   | -     |
| Sum of PBDEs               |                                                                                     | mg/kg | -   | n.d.   | 1000  |

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NO. 1 SENOKO SOUTH ROAD, SINGAPORE 758069

| Test Item(s)                                                                                                                                                                                          | Method                                                                    | Unit  | MDL  | Result | Limit |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------|------|--------|-------|
|                                                                                                                                                                                                       |                                                                           |       |      | No.1   |       |
| Antimony (Sb) (CAS No.: 7440-36-0)                                                                                                                                                                    | With reference to US EPA 3052: 1996, analysis was performed by ICP-OES.   | mg/kg | 2    | n.d.   | -     |
| Beryllium (Be) (CAS No.: 7440-41-7)                                                                                                                                                                   | With reference to US EPA 3052: 1996, analysis was performed by ICP-OES.   | mg/kg | 2    | n.d.   | -     |
| Arsenic (As) (CAS No.: 7440-38-2)                                                                                                                                                                     | With reference to US EPA 3052: 1996, analysis was performed by ICP-OES.   | mg/kg | 2    | n.d.   | -     |
| Fluorine (F) (CAS No.: 14762-94-8)                                                                                                                                                                    | With reference to BS EN 14582: 2016, analysis was performed by IC.        | mg/kg | 50   | n.d.   | -     |
| Chlorine (Cl) (CAS No.: 22537-15-1)                                                                                                                                                                   |                                                                           | mg/kg | 50   | n.d.   | -     |
| Bromine (Br) (CAS No.: 10097-32-2)                                                                                                                                                                    |                                                                           | mg/kg | 50   | n.d.   | -     |
| Iodine (I) (CAS No.: 14362-44-8)                                                                                                                                                                      |                                                                           | mg/kg | 50   | n.d.   | -     |
| Perfluorooctanoic acid (PFOA) and its salt (CAS No.: 335-67-1 and its salts)                                                                                                                          | With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS. | mg/kg | 0.01 | n.d.   | -     |
| PFOS and its salts (CAS No.: 1763-23-1 and its salts)                                                                                                                                                 | With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS. | mg/kg | 0.01 | n.d.   | -     |
| Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ -HBCDD, $\beta$ -HBCDD, $\gamma$ -HBCDD) (CAS No.: 25637-99-4, 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8)) | With reference to IEC 62321: 2008, analysis was performed by GC/MS.       | mg/kg | 5    | n.d.   | -     |
| <b>Phthalates</b>                                                                                                                                                                                     |                                                                           |       |      |        |       |
| Dibutyl phthalate (DBP)                                                                                                                                                                               | With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.     | mg/kg | 50   | n.d.   | 1000  |
| Butyl benzyl phthalate (BBP)                                                                                                                                                                          | With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.     | mg/kg | 50   | n.d.   | 1000  |
| Diisobutyl phthalate (DIBP)                                                                                                                                                                           | With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.     | mg/kg | 50   | n.d.   | 1000  |
| Di-(2-ethylhexyl) phthalate (DEHP)                                                                                                                                                                    | With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.     | mg/kg | 50   | n.d.   | 1000  |
| Diisodecyl phthalate (DIDP) (CAS No.: 26761-40-0, 68515-49-1)                                                                                                                                         | With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.     | mg/kg | 50   | n.d.   | -     |
| Diisononyl phthalate (DINP) (CAS No.: 28553-12-0, 68515-48-0)                                                                                                                                         | With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.     | mg/kg | 50   | n.d.   | -     |
| Di-n-octyl phthalate (DNOP) (CAS No.: 117-84-0)                                                                                                                                                       | With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.     | mg/kg | 50   | n.d.   | -     |

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## Note :

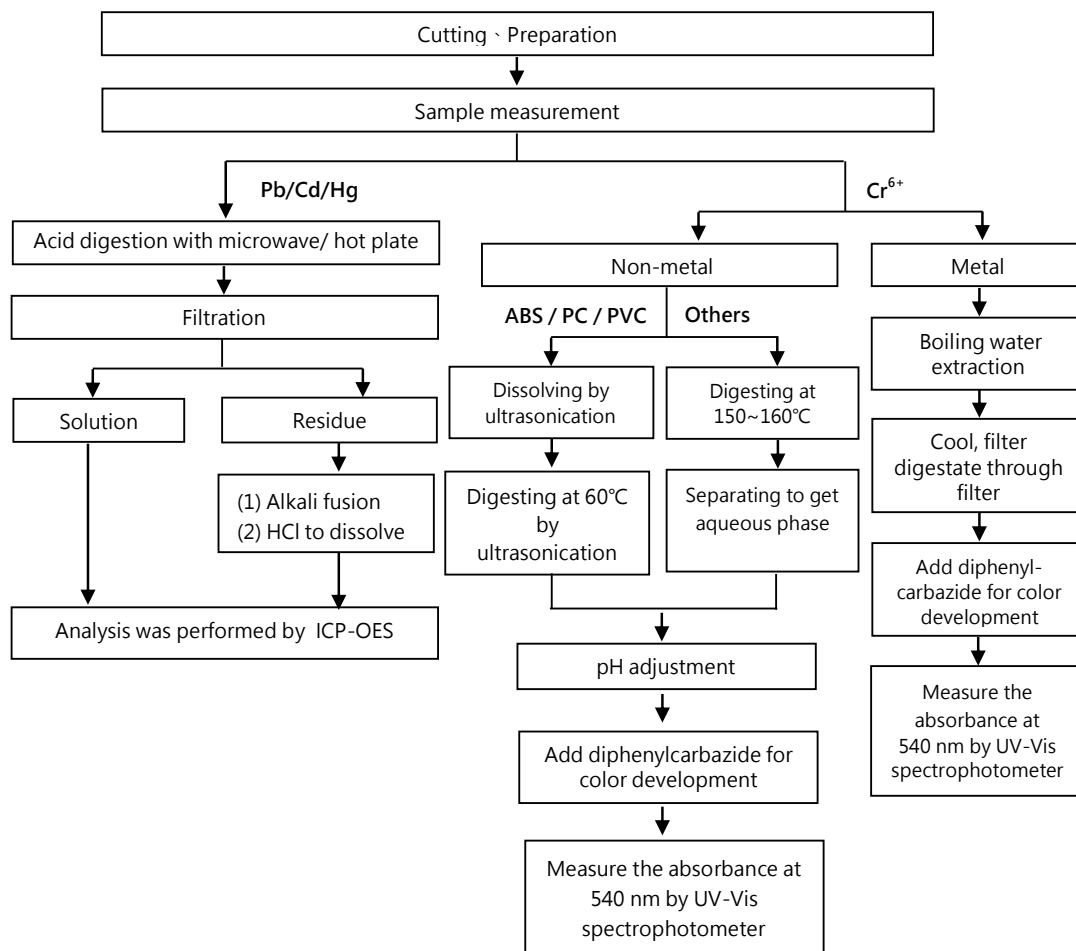
1. mg/kg = ppm ; 0.1wt% = 0.1% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected ( Less than MDL)
4. "-" = Not Regulated
5. PFOS and its salts including :  
CAS No.: 1763-23-1, 2795-39-3, 29457-72-5, 29081-56-9, 70225-14-8, 56773-42-3, 251099-16-8, 307-35-7, 91036-71-4, 4021-47-0 and others.
6. PFOA and its salts including :  
CAS No.: 335-67-1, 335-95-5, 2395-00-8, 335-93-3, 335-66-0, 3825-26-1 and others.
7. Unless otherwise stated , the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019. According to this rule, the judgement of conformity is based on the comparing test results with limits.
8. This is the additional test report of EKR23500394.

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## Analytical flow chart of heavy metal

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

(  $\text{Cr}^{6+}$  test method excluded )



# Test Report

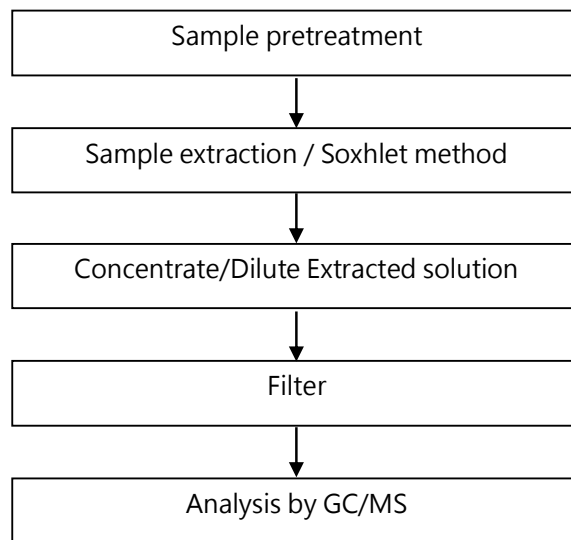
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## PBB/PBDE analytical FLOW CHART



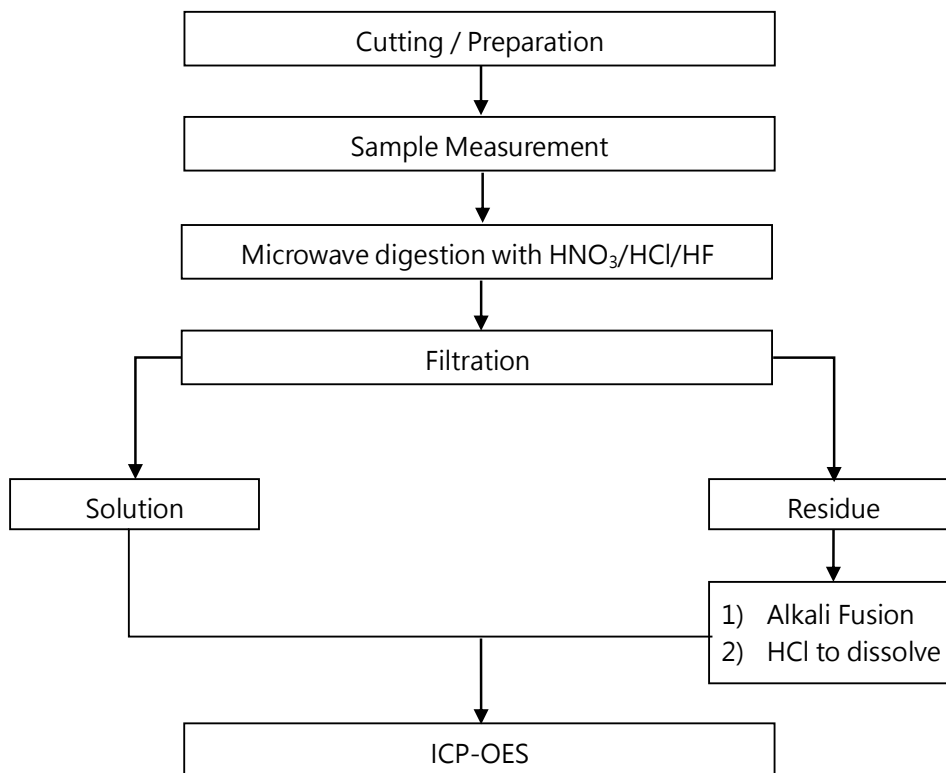
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## Analytical flow chart of Heavy Metal

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

【Reference method : US EPA 3051 、US EPA 3052】



\* US EPA 3051 method does not add HF.

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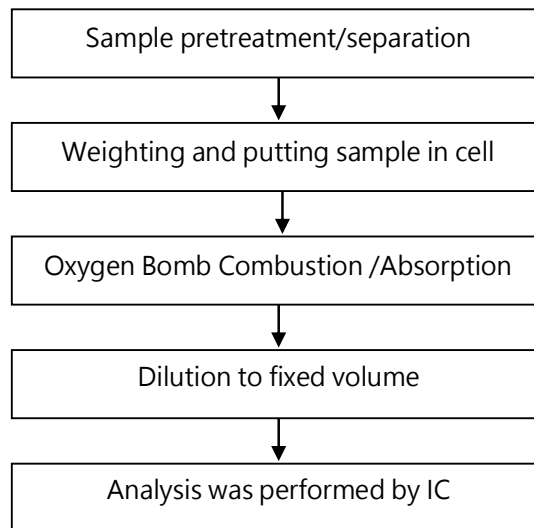
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## Analytical flow chart of Halogen



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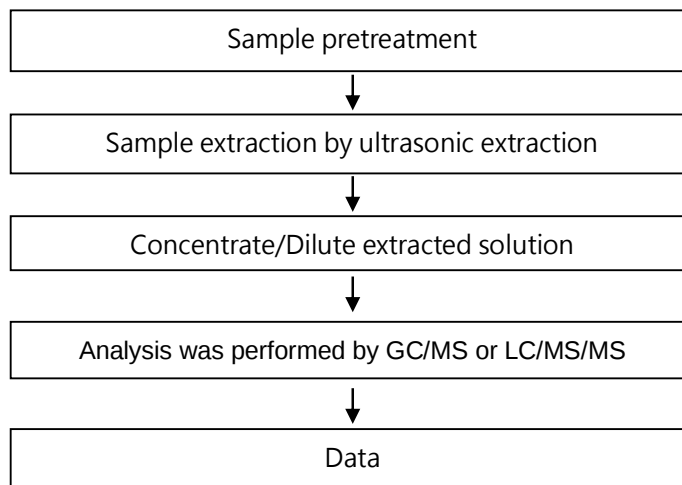
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## Analytical flow chart – PFAS (including PFOA/PFOS/its related compound, etc.)



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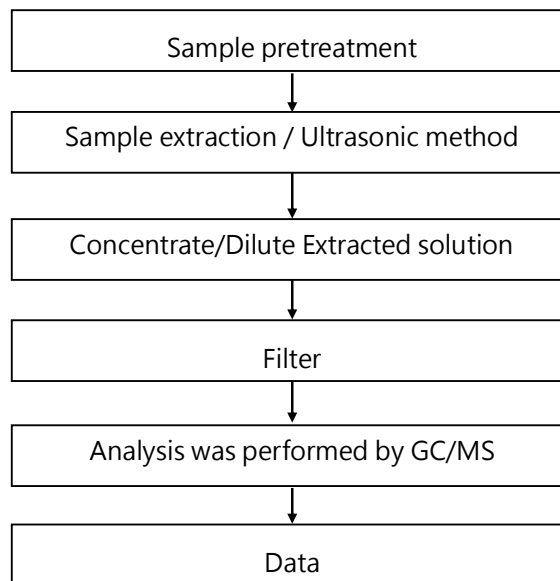
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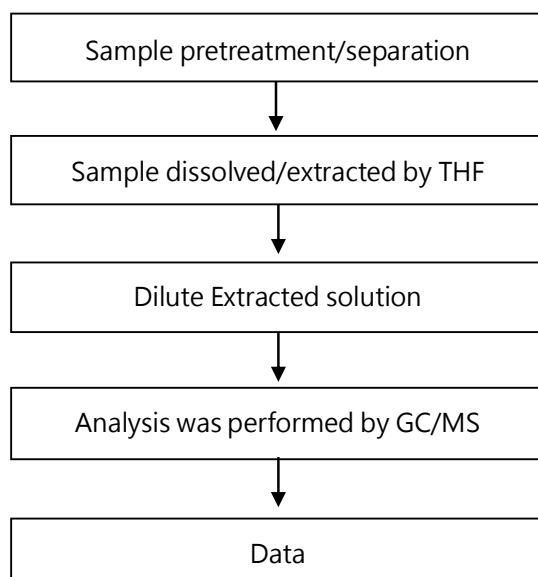
## Analytical flow chart - HBCDD



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## Analytical flow chart of phthalate content

【 Test method: IEC 62321-8 】



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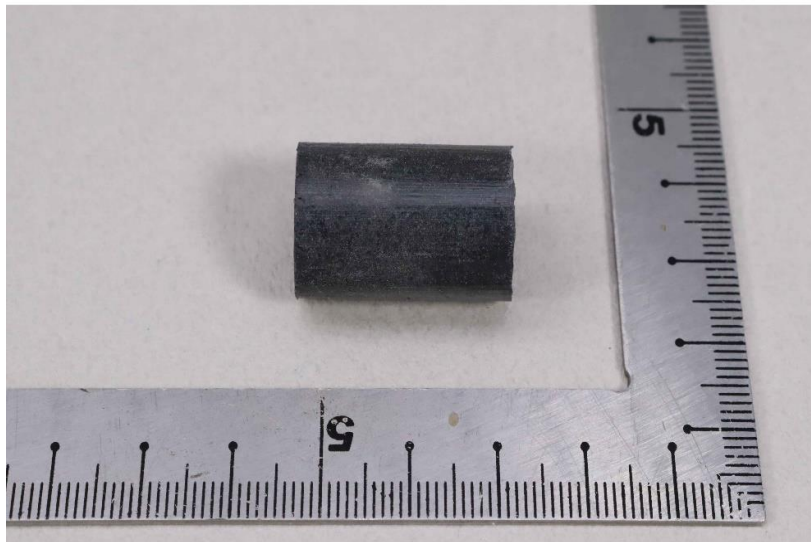
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\* The tested sample / part is marked by an arrow if it's shown on the photo. \*

### EKR23500394



\*\* End of Report \*\*

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