



# Test Report

No.: ETR24301050M01

Date: 20-Mar-2024

Page: 1 of 13

ELEKTRISOLA (MALAYSIA) SDN. BHD.

JALAN DAMAI SATU, JANDA BAIK, 28750 BENTONG, PAHANG, MALAYSIA

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

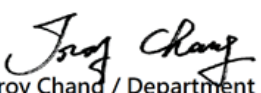
Sample Submitted By : ELEKTRISOLA (MALAYSIA) SDN. BHD.  
 Sample Name : ELEKTRISOLA THERMOBOND SELF-BONDING INSULATION VARNISH  
 Style/Item No. : AT-, BE-, CT-, ET-, FT-, GT-, HT-, KT-, LT-, OT-, QT-, RT-, ST-, TT-, VT-SERIES

=====  
 Sample Receiving Date : 06-Mar-2024  
 Testing Period : 06-Mar-2024 to 14-Mar-2024

**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.

  
 Troy Chang / Department Manager  
 Signed for and on behalf of  
 SGS TAIWAN LTD.  
 Chemical Laboratory - Taipei



PIN CODE: A535E74B

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## Test Part Description

No.1 : DK. BROWN LUMP

## 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)                  |   | 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.   | -     |
| <b>Sum of PBBs</b>         |   | mg/kg | -    | n.d.   | 1000  |
| Monobromodiphenyl ether    |   | 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. | -      |       |
| <b>Sum of PBDEs</b>        | mg/kg   | -     | n.d. | 1000   |       |

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| Test Item(s)   | Method  | Unit  | MDL  | Result | Limit |
|--|---|-------|------|--------|-------|
|  |   |       |      | No.1   |       |
| Butyl benzyl phthalate (BBP)   | With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.     | mg/kg | 50   | n.d.   | 1000  |
| Dibutyl phthalate (DBP)  | 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  |
| Diisobutyl phthalate (DIBP)  | 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.   | -     |
| 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 62321-9: 2021, analysis was performed by GC/MS.     | mg/kg | 20   | 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)  | With reference to BS EN 14582: 2016, analysis was performed by IC.        | mg/kg | 50   | n.d.   | -     |
| Bromine (Br) (CAS No.: 10097-32-2)   | With reference to BS EN 14582: 2016, analysis was performed by IC.        | mg/kg | 50   | n.d.   | -     |
| Iodine (I) (CAS No.: 14362-44-8)   | With reference to BS EN 14582: 2016, analysis was performed by IC.        | mg/kg | 50   | 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.   | -     |
| PFOA and its salts (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.   | -     |
| 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.   | -     |

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JALAN DAMAI SATU, JANDA BAIK, 28750 BENTONG, PAHANG, MALAYSIA

## 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. 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.
6. This is the additional test report of ETR24301050.

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**PFAS Remark :**

The quantitative technology of PFAS is to analyze the specific structure of PFAS substances. However, PFAS acid and its salts with the same carbon number group have the same specific structure that can be identified. The tested results of the analyzed specific structure cannot be distinguished to identify the contribution from PFAS acid or its salts. Therefore, the tested results display the sum of concentrations of PFAS acids and its salts with the same carbon number group. The concentration of PFAS substances in the below table have been included in the tested results, please refer to the table for relevant information: (The listed PFAS substances are examples only, it do not include all PFAS salts with the same carbon number group.)

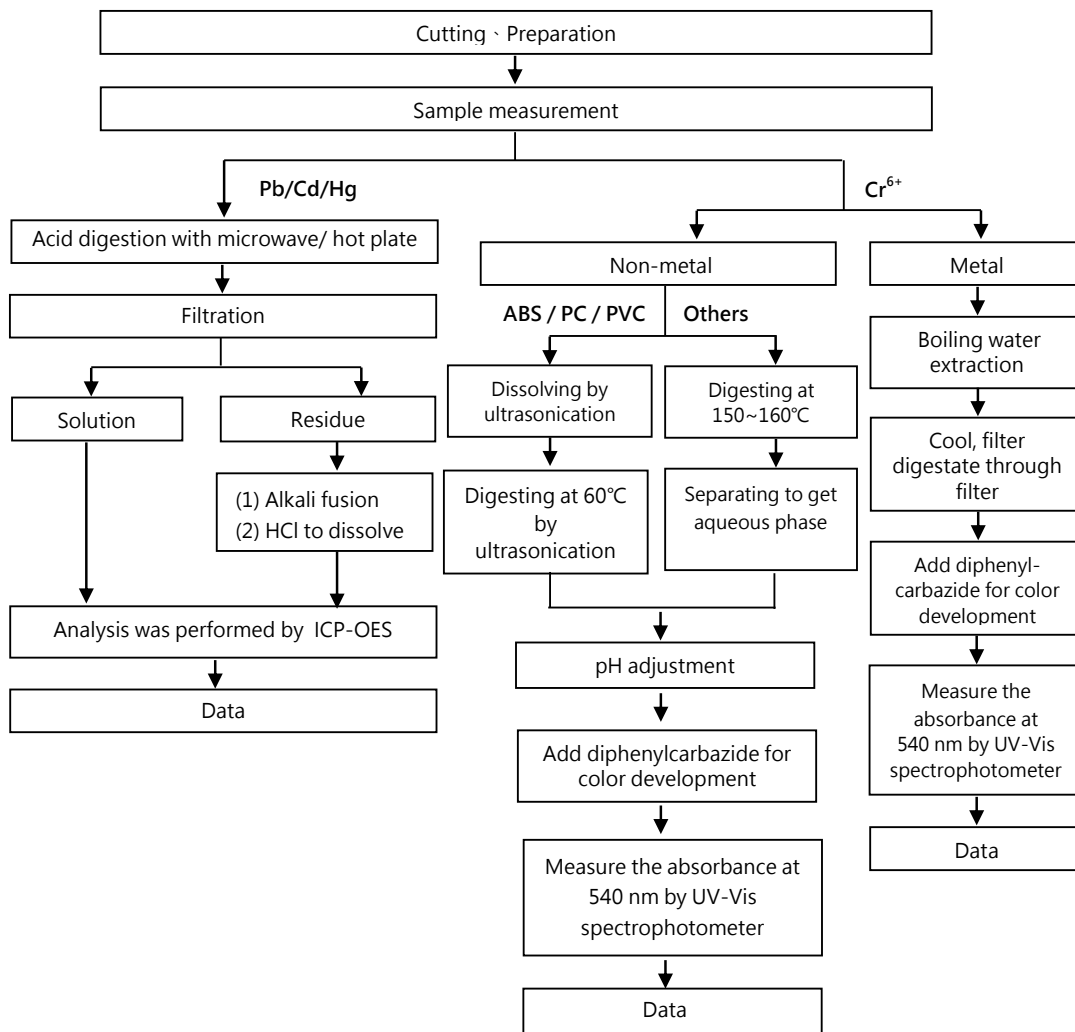
| Group Name                    | Substance Name   | CAS No.     |
|-------------------------------|--|-------------|
| PFOS, its salts & derivatives | Perfluorooctane sulfonates (PFOS)  | 1763-23-1   |
|                               | Potassium perfluorooctanesulfonate (PFOS-K)  | 2795-39-3   |
|                               | Perfluorooctanesulfonic acid, lithium salt (PFOS-Li)   | 29457-72-5  |
|                               | Perfluorooctanesulfonic acid, ammonium salt (PFOS-NH <sub>4</sub> )  | 29081-56-9  |
|                               | Perfluorooctane sulfonate diethanolamine salt (PFOS-NH(OH) <sub>2</sub> )  | 70225-14-8  |
|                               | Perfluorooctanesulfonic acid, tetraethylammonium salt (PFOS-N(C <sub>2</sub> H <sub>5</sub> ) <sub>4</sub> )       | 56773-42-3  |
|                               | N-decyl-N,N-dimethyldecyl-1-aminium 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctane-1-sulfonate (PFOS-DDA) | 251099-16-8 |
|                               | Perfluorooctane sulfonyl fluoride (POSF)   | 307-35-7    |
|                               | Perfluorooctanesulfonic acid, magnesium salt (PFOS-Mg)   | 91036-71-4  |
|                               | Perfluorooctanesulfonic acid, sodium salt (PFOS-Na)  | 4021-47-0   |
|                               | Piperidine 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctanesulfonate  | 71463-74-6  |
| PFOA, its salts & derivatives | Perfluorooctanoic acid (PFOA)  | 335-67-1    |
|                               | Sodium perfluorooctanoate (PFOA-Na)  | 335-95-5    |
|                               | Potassium perfluorooctanoate (PFOA-K)  | 2395-00-8   |
|                               | Silver perfluorooctanoate (PFOA-Ag)  | 335-93-3    |
|                               | Perfluorooctanoyl fluoride (PFOA-F)  | 335-66-0    |
|                               | Ammonium pentadecafluorooctanoate (APFO)   | 3825-26-1   |
|                               | Lithium perfluorooctanoate (PFOA-Li)   | 17125-58-5  |

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## Analytical flow chart of heavy metal

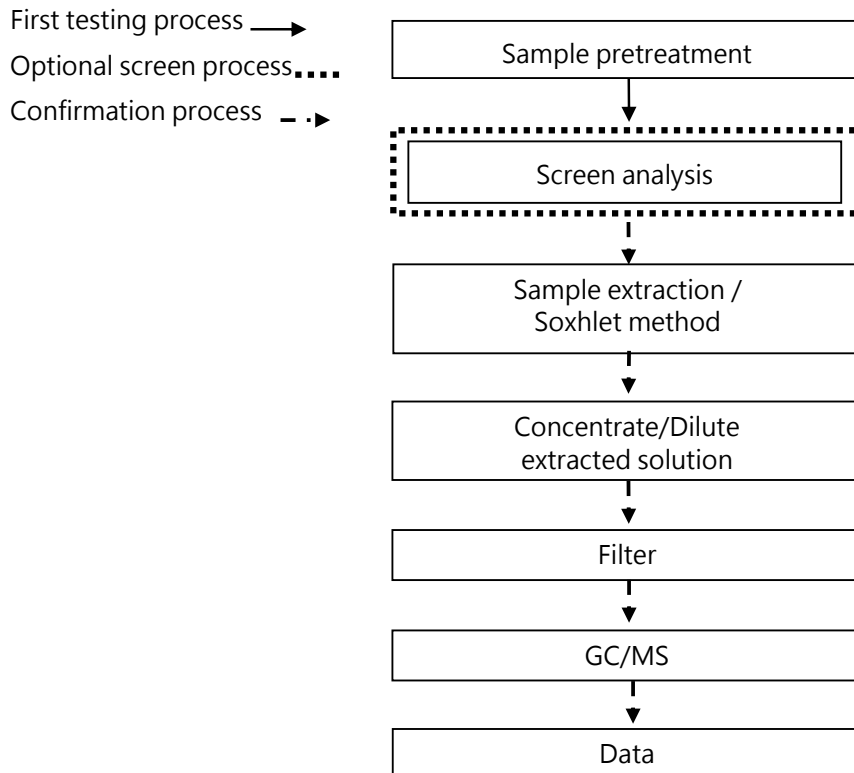
These samples were dissolved totally by pre-conditioning method according to below flow chart.

( Cr<sup>6+</sup> test method excluded )



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### Analytical flow chart – PBBs / PBDEs



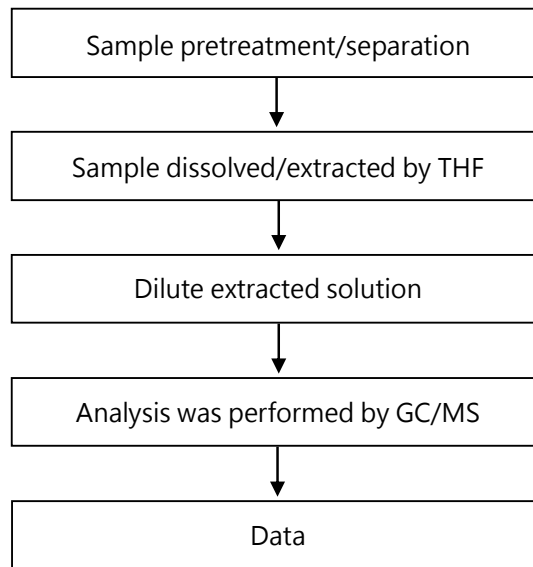
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### Analytical flow chart - Phthalate

【Test method: IEC 62321-8】



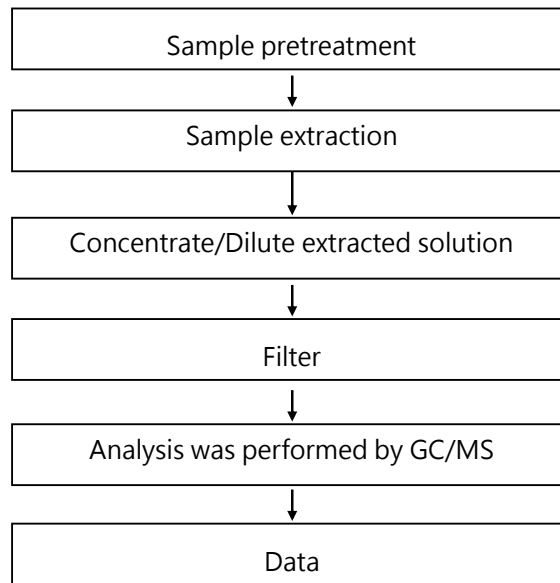
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### Analytical flow chart - HBCDD

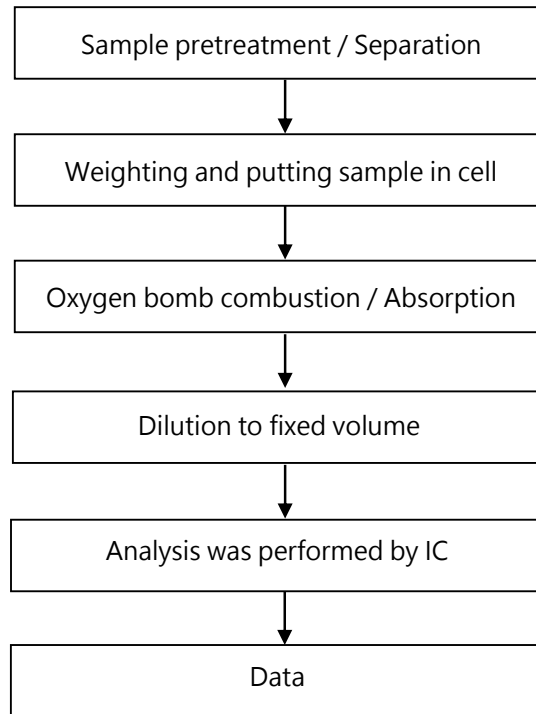


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### Analytical flow chart - Halogen

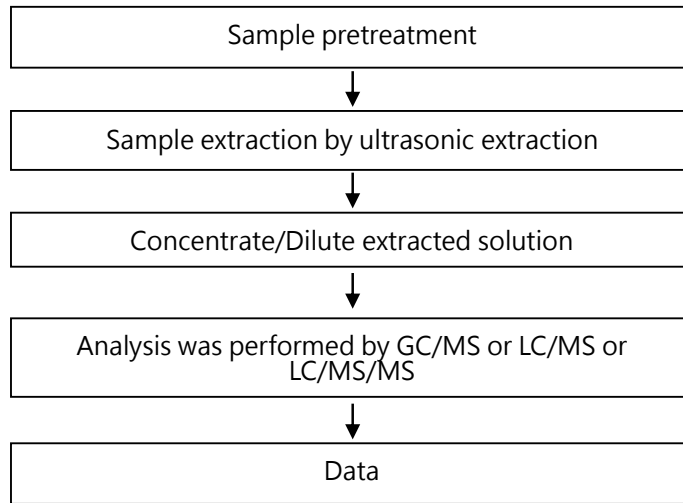


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### Analytical flow chart – PFAS (including PFOA/PFOS/its related compound, etc.)

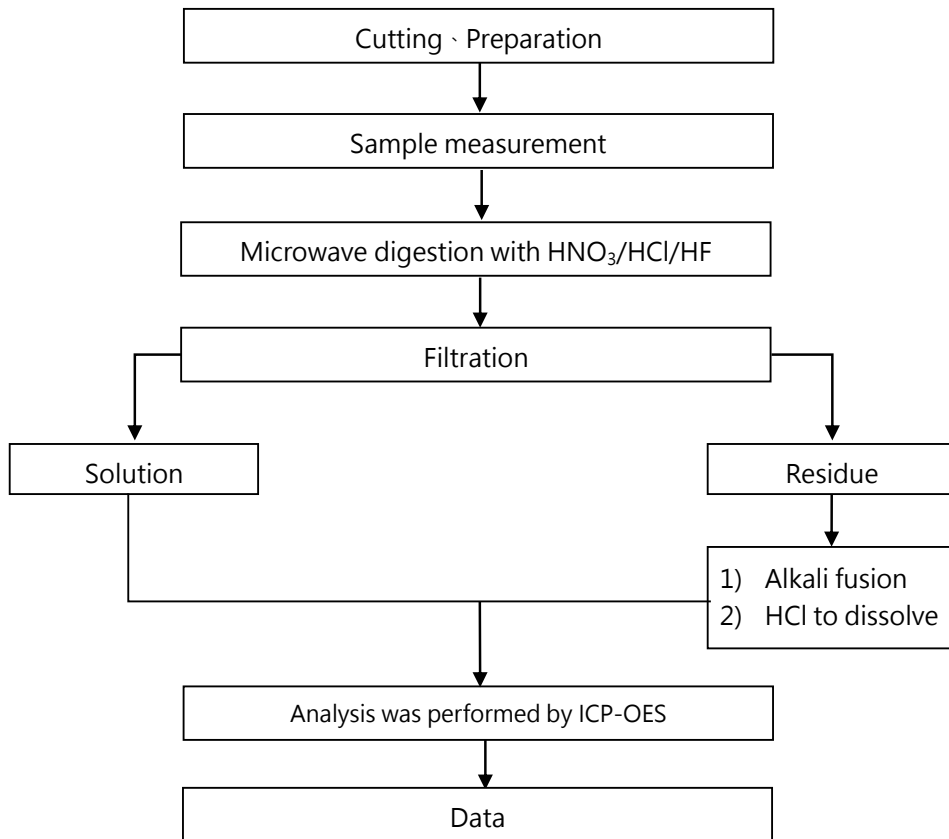


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### Analytical flow chart of elements (Heavy metal included)

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

【 Reference method : US EPA 3051A · US EPA 3052 】



\* US EPA 3051A method does not add HF.

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

### ETR24301050



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