# Test Report No. F690101/LF-CTSAYAA25-44944

Issued Date : 2025. 11. 07



**SURYONG INDUSTRY**
10, Bitjungang 12-ro
Gwangsan-gu, Gwangju
Korea

The following sample(s) was/were submitted and identified by/on behalf of the client as:-

| | | |
|---|---|---|
| **SGS File No.** | : | AYAA25-44944 |
| **Product Name** | : | Cable tie white |
| **Item No./Part No.** | : | N/A |
| **Received Date** | : | 2025. 10. 31 |
| **Test Period** | : | 2025. 10. 31 to 2025. 11. 07 |
| **Test Results** | : | For further details, please refer to following page(s) |

Monet Jeong

**Monet Jeong**

**Technical Manager / SGS Korea Co., Ltd**

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**Sample No.** : AYAA25-44944.001
**Sample Description** : Cable tie white
**Item No./Part No.** : N/A
**Materials** : PA66(polyimide)

## Heavy Metals

| Test Items | Unit | Test Method | MDL | Results |
|---|---|---|---|---|
| Cadmium (Cd) | mg/kg | With reference to IEC 62321-5 : 2013, by ICP-OES | 0.5 | N.D. |
| Lead (Pb) | mg/kg | With reference to IEC 62321-5 : 2013, by ICP-OES | 5 | N.D. |
| Mercury (Hg) | mg/kg | With reference to IEC 62321-4 : 2013+AMD1:2017CSV, by ICP-OES | 2 | N.D. |
| Hexavalent Chromium (Cr VI)+ | mg/kg | With reference to IEC 62321-7-2 : 2017, by UV-Vis and/or with reference to IEC 62321-5 : 2013, by ICP-OES | 8 | N.D. |

## Total Metals

| Test Items | Unit | Test Method | MDL | Results |
|---|---|---|---|---|
| Antimony (Sb) | mg/kg | With reference to EPA 3052: 1996 / EPA 6010D: 2018, ICP-OES | 10 | N.D. |

## Flame Retardants-PBBs/PBDEs

| Test Items | Unit | Test Method | MDL | Results |
|---|---|---|---|---|
| Monobromobiphenyl | mg/kg | With reference to IEC 62321-6 : 2015, by GC-MS | 5 | N.D. |
| Dibromobiphenyl | mg/kg | With reference to IEC 62321-6 : 2015, by GC-MS | 5 | N.D. |
| Tribromobiphenyl | mg/kg | With reference to IEC 62321-6 : 2015, by GC-MS | 5 | N.D. |
| Tetrabromobiphenyl | mg/kg | With reference to IEC 62321-6 : 2015, by GC-MS | 5 | N.D. |
| Pentabromobiphenyl | mg/kg | With reference to IEC 62321-6 : 2015, by GC-MS | 5 | N.D. |
| Hexabromobiphenyl | mg/kg | With reference to IEC 62321-6 : 2015, by GC-MS | 5 | N.D. |
| Heptabromobiphenyl | mg/kg | With reference to IEC 62321-6 : 2015, by GC-MS | 5 | N.D. |
| Octabromobiphenyl | mg/kg | With reference to IEC 62321-6 : 2015, by GC-MS | 5 | N.D. |
| Nonabromobiphenyl | mg/kg | With reference to IEC 62321-6 : 2015, by GC-MS | 5 | N.D. |
| Decabromobiphenyl | mg/kg | With reference to IEC 62321-6 : 2015, by GC-MS | 5 | N.D. |
| Monobromodiphenyl ether | mg/kg | With reference to IEC 62321-6 : 2015, by GC-MS | 5 | N.D. |
| Dibromodiphenyl ether | mg/kg | With reference to IEC 62321-6 : 2015, by GC-MS | 5 | N.D. |
| Tribromodiphenyl ether | mg/kg | With reference to IEC 62321-6 : 2015, by GC-MS | 5 | N.D. |
| Tetrabromodiphenyl ether | mg/kg | With reference to IEC 62321-6 : 2015, by GC-MS | 5 | N.D. |

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**Sample No.** : AYAA25-44944.001
**Sample Description** : Cable tie white
**Item No./Part No.** : N/A
**Materials** : PA66(polyimide)

## Flame Retardants-PBBs/PBDEs

| Test Items | Unit | Test Method | MDL | Results |
|---|---|---|---|---|
| Pentabromodiphenyl ether | mg/kg | With reference to IEC 62321-6 : 2015, by GC-MS | 5 | N.D. |
| Hexabromodiphenyl ether | mg/kg | With reference to IEC 62321-6 : 2015, by GC-MS | 5 | N.D. |
| Heptabromodiphenyl ether | mg/kg | With reference to IEC 62321-6 : 2015, by GC-MS | 5 | N.D. |
| Octabromodiphenyl ether | mg/kg | With reference to IEC 62321-6 : 2015, by GC-MS | 5 | N.D. |
| Nonabromodiphenyl ether | mg/kg | With reference to IEC 62321-6 : 2015, by GC-MS | 5 | N.D. |
| Decabromodiphenyl ether | mg/kg | With reference to IEC 62321-6 : 2015, by GC-MS | 5 | N.D. |

## Phthalates

| Test Items | Unit | Test Method | MDL | Results |
|---|---|---|---|---|
| Di-(2-ethylhexyl) phthalate (DEHP) | mg/kg | With reference to IEC 62321-8 : 2017, by GC-MS | 50 | N.D. |
| Di-butyl phthalate (DBP) | mg/kg | With reference to IEC 62321-8 : 2017, by GC-MS | 50 | N.D. |
| Benzyl butyl phthalate (BBP) | mg/kg | With reference to IEC 62321-8 : 2017, by GC-MS | 50 | N.D. |
| Di-isobutyl phthalate (DIBP) | mg/kg | With reference to IEC 62321-8 : 2017, by GC-MS | 50 | N.D. |
| Di-isodecyl phthalate (DIDP) | mg/kg | With reference to IEC 62321-8 : 2017, by GC-MS | 50 | N.D. |
| Di-isononyl phthalate (DINP) | mg/kg | With reference to IEC 62321-8 : 2017, by GC-MS | 50 | N.D. |
| Di-n-octyl phthalate (DNOP) | mg/kg | With reference to IEC 62321-8 : 2017, by GC-MS | 50 | N.D. |
| Di-n-hexyl phthalate (DNHP) | mg/kg | With reference to IEC 62321-8 : 2017, by GC-MS | 50 | N.D. |
| Di-isooctyl phthalate (DIOP) | mg/kg | With reference to IEC 62321-8 : 2017, by GC-MS | 50 | N.D. |

## Halogen Content

| Test Items | Unit | Test Method | MDL | Results |
|---|---|---|---|---|
| Chlorine(Cl) | mg/kg | With reference to BS EN 14582 : 2016, by IC | 30 | N.D. |
| Fluorine(F) | mg/kg | With reference to BS EN 14582 : 2016, by IC | 30 | N.D. |

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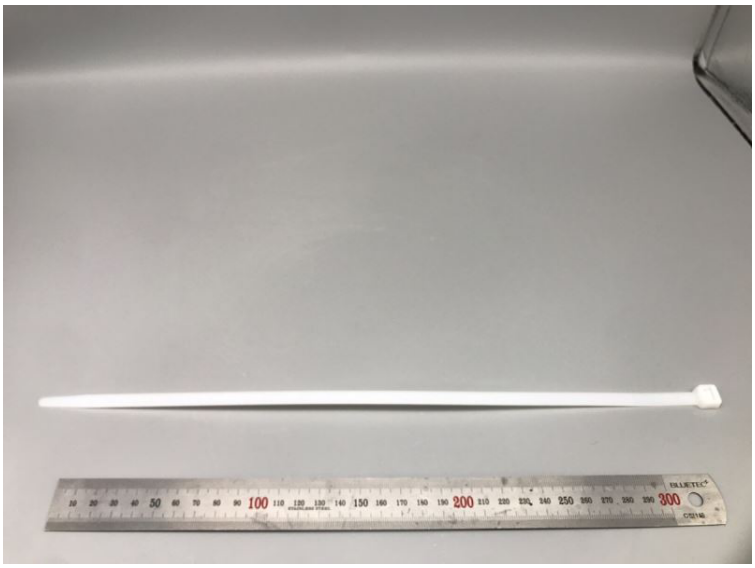


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NOTE:
(1) N.D. = Not detected. (<MDL)
(2) mg/kg = ppm, ug/kg = ppb, mg/L = ppm
(3) MDL = Method Detection Limit
(4) - = No regulation
(5) ** = Qualitative analysis (No Unit)
(6) Negative = Undetectable / Positive = Detectable
(7) + = a. The result of Hexavalent Chromium (Cr(VI)) is “ND” as the result of Chromium (Cr) is “ND”, and confirmation test of Hexavalent Chromium (Cr(VI)) is not required.
b. If the content of Total Chromium (Cr) is greater than the MDL of Hexavalent Chromium (Cr(VI)), it is the result of hexavalent Chromium by UV-VIS.
(8) ++= a. The sample is positive for Cr VI if the Cr VI concentration is greater than 0.13 ug/cm2. The sample coating is considered to contain Cr VI.
b. The sample is negative for Cr VI if Cr VI is ND(concentration less than 0.10 ug/cm2). The coating is considered a non-Cr VI based coating.
c. The result between 0.10 ug/cm2 and 0.13 ug/cm2 is considered to be inconclusive – unavoidable coating variations may influence the determination.

**Picture of Sample as Received:**



**AYAA25-44944.001**

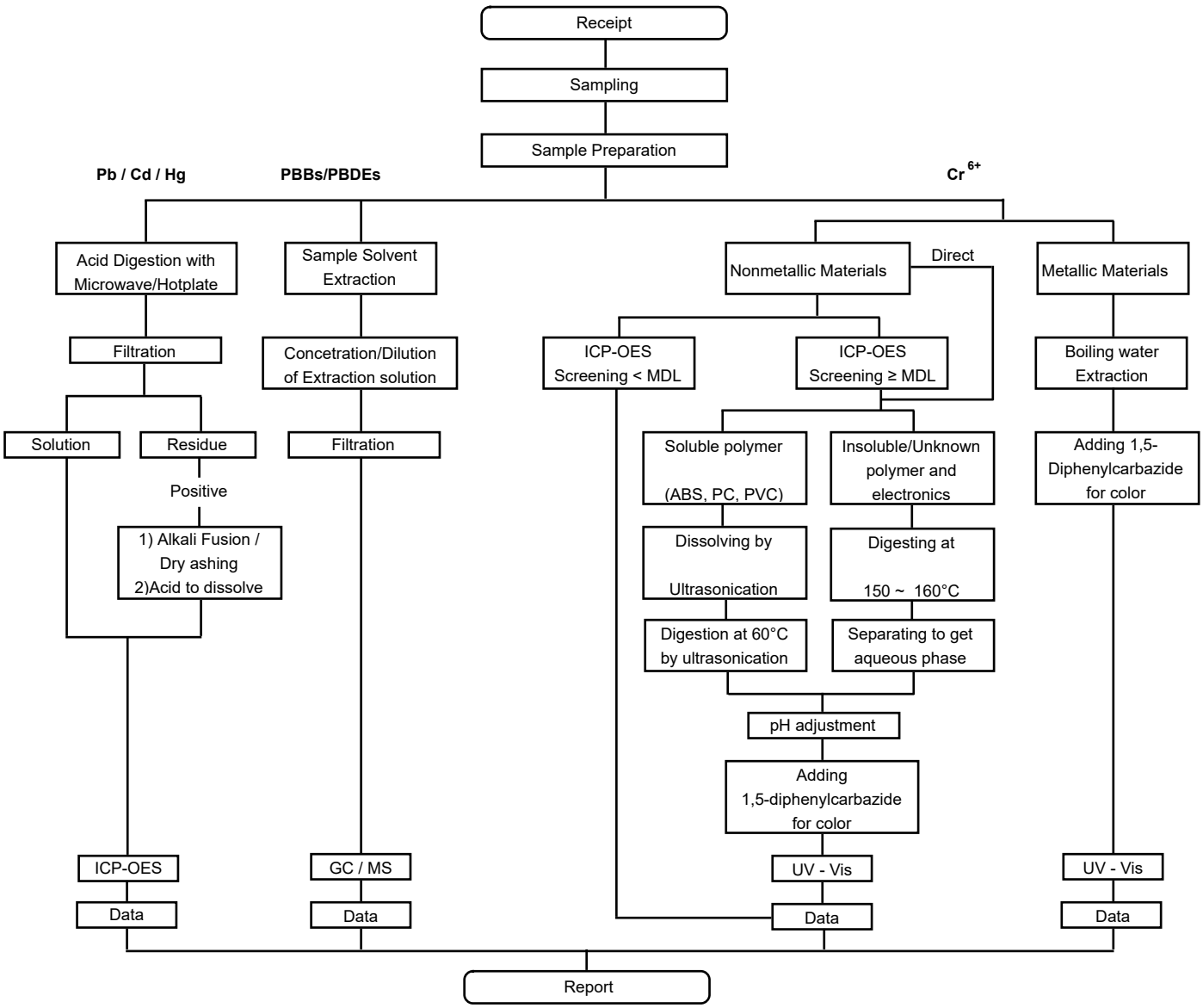
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## Flow Chart for RoHS Pb / Cd / Hg / $Cr^{6+}$ / PBBs&PBDEs Test




The samples were dissolved totally at the acid digestion step of the above flow chart for Cd, Pb, Hg.

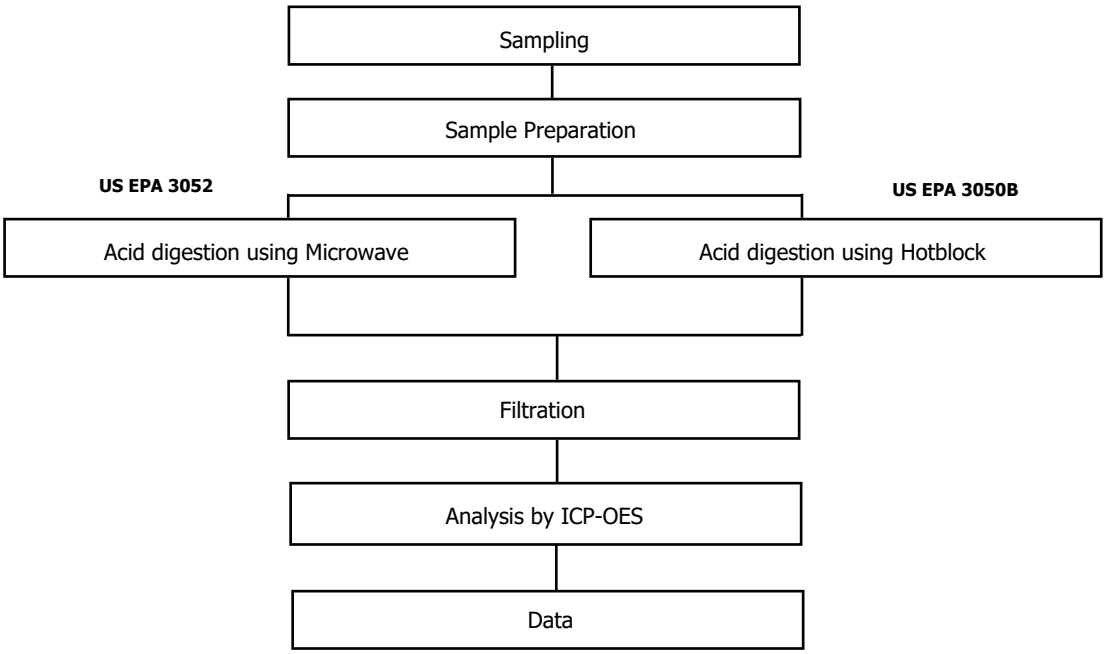
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## Flow Chart for Heavy metal




| | |
|---|---|
| Major Inorganic Heavy Metals | Antimony(Sb) , Beryllium(Be) , Phosphorus(P) , Arsenic(As) etc. |

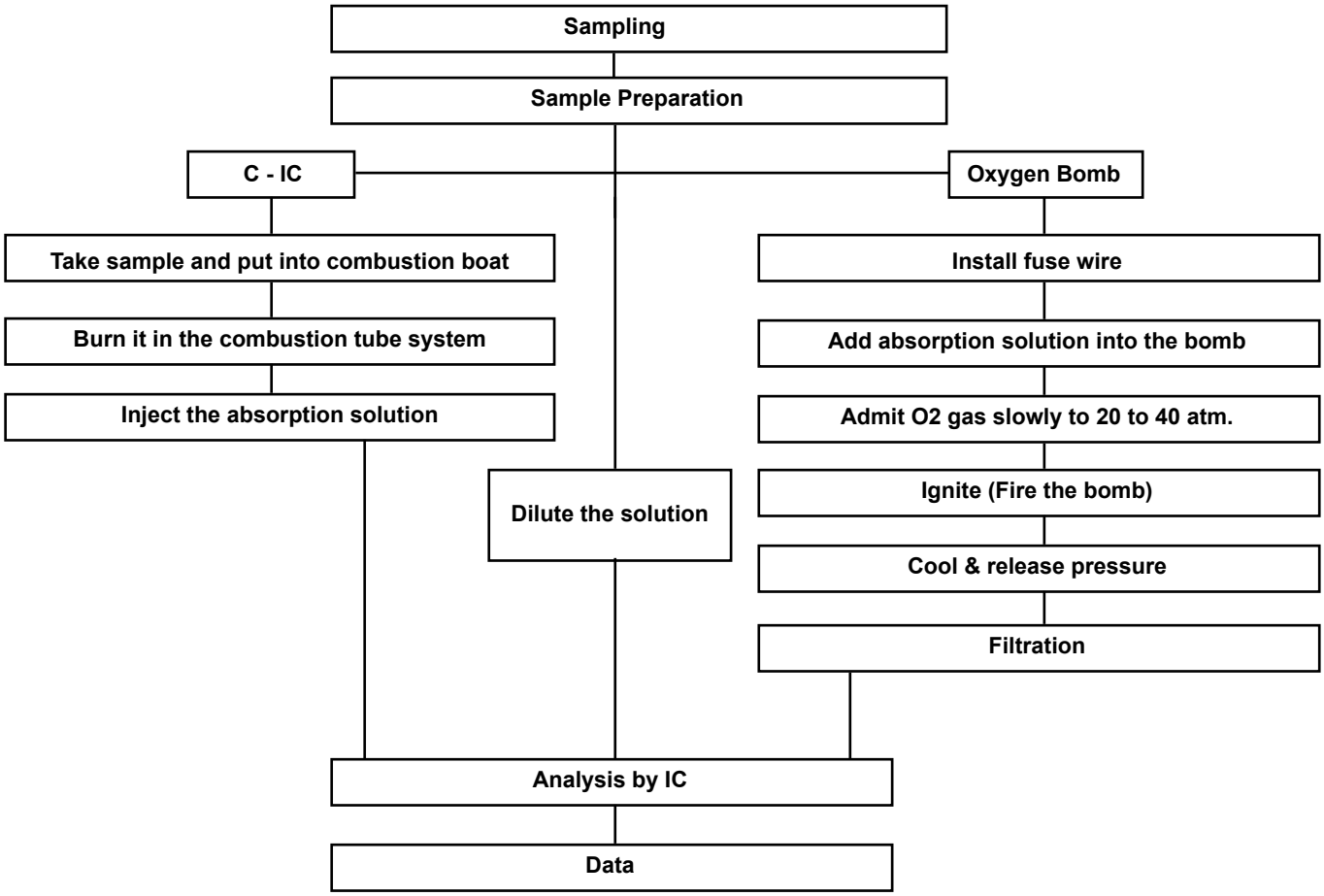
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## Flow Chart for Halogen Test



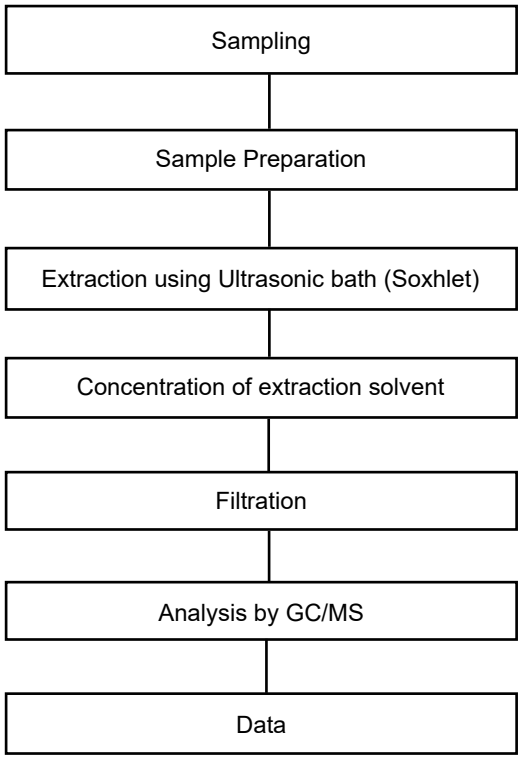

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## Flow Chart for IEC Phthalates




***** End of Report *****

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