



# Test Report No. F690101/LF-CTSAYAA18-50175

Issued Date : 2018. 09. 12

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**TSC CO., LTD.**

143-22 Saengsam-ro, Saenggeuk-myeon  
Eumseong-gun, Chungbuk  
Korea



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

**SGS File No.** : AYAA18-50175  
**Product Name** : PVC COMPOUND  
**Item No./Part No.** : N/A  
**Client Reference Data** : TW-A521 105, A521 105, A521 105(W), A-521-B, A-521PF(50), A-521PF(60), A-521-OF(S), A-521-PF(S), TW-A472  
**Received Date** : 2018. 09. 07  
**Test Period** : 2018. 09. 07 to 2018. 09. 12  
**Report Comments** : By the applicant's request, item No.s/part No.s & client reference information are stated/added on report.  
**Test Results** : For further details, please refer to following page(s)

SGS Korea Co., Ltd.

Jeff Jang / Chemical Lab Mgr

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Sample No. : AYAA18-50175.001  
Sample Description : PVC COMPOUND  
Item No./Part No. : N/A  
Materials : PVC COMPOUND

## Heavy Metals

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

## Flame Retardants-PBBs/PBDEs

| Test Items              | Unit  | Test Method                                                                      | MDL | Results |
|-------------------------|-------|----------------------------------------------------------------------------------|-----|---------|
| Monobromobiphenyl       | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Dibromobiphenyl         | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Tribromobiphenyl        | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Tetrabromobiphenyl      | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Pentabromobiphenyl      | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Hexabromobiphenyl       | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Heptabromobiphenyl      | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Octabromobiphenyl       | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Nonabromobiphenyl       | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Decabromobiphenyl       | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Monobromodiphenyl ether | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Dibromodiphenyl ether   | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |

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Sample No. : AYAA18-50175.001  
Sample Description : PVC COMPOUND  
Item No./Part No. : N/A  
Materials : PVC COMPOUND

## Flame Retardants-PBBs/PBDEs

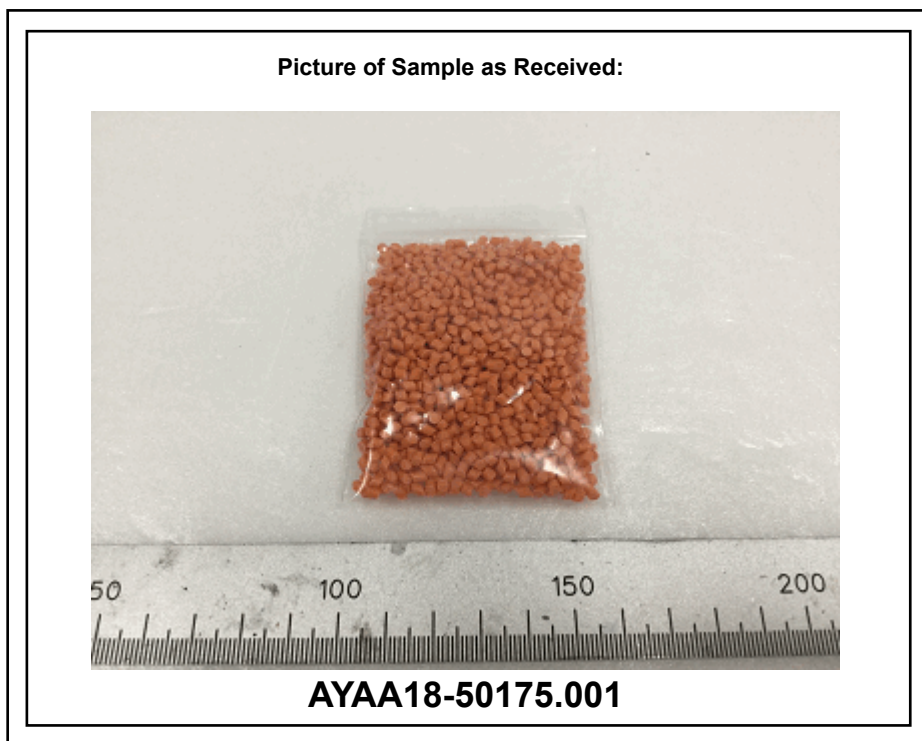
| Test Items               | Unit  | Test Method                                                                      | MDL | Results |
|--------------------------|-------|----------------------------------------------------------------------------------|-----|---------|
| Tribromodiphenyl ether   | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Tetrabromodiphenyl ether | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Pentabromodiphenyl ether | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Hexabromodiphenyl ether  | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Heptabromodiphenyl ether | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Octabromodiphenyl ether  | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Nonabromodiphenyl ether  | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Decabromodiphenyl ether  | mg/kg | With reference to IEC 62321-6:2015<br>(Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |

## Phthalates

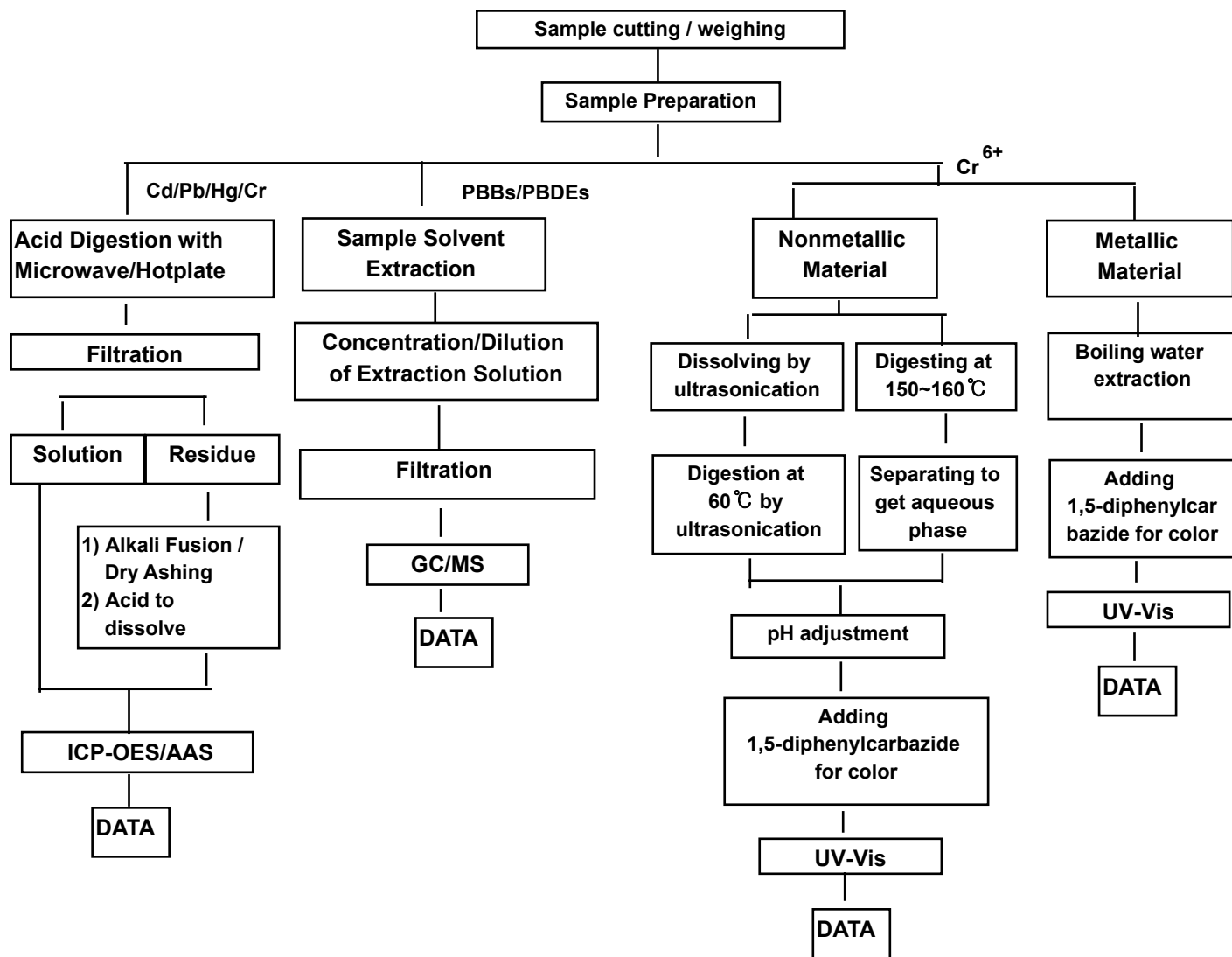
| Test Items                         | Unit  | Test Method                                  | MDL | Results |
|------------------------------------|-------|----------------------------------------------|-----|---------|
| Di-(2-ethylhexyl) phthalate (DEHP) | mg/kg | With reference to IEC 62321-8 ; 2017 , GC/MS | 50  | N.D.    |
| Di-butyl phthalate (DBP)           | mg/kg | With reference to IEC 62321-8 ; 2017 , GC/MS | 50  | N.D.    |
| Benzyl butyl phthalate (BBP)       | mg/kg | With reference to IEC 62321-8 ; 2017 , GC/MS | 50  | N.D.    |
| Di-isobutyl phthalate (DIBP)       | mg/kg | With reference to IEC 62321-8 ; 2017 , GC/MS | 50  | N.D.    |

- NOTE: (1) N.D. = Not detected.(<MDL)  
(2) mg/kg = ppm  
(3) MDL = Method Detection Limit  
(4) - = No regulation  
(5) Negative = Undetectable / Positive = Detectable  
(6) \*\* = Qualitative analysis (No Unit)  
(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 Chromium (Cr) content is greater than the MDL of Hexavalent Chromium (Cr(VI)),  
confirmation test of Hexavalent Chromium (Cr(VI)) is required.

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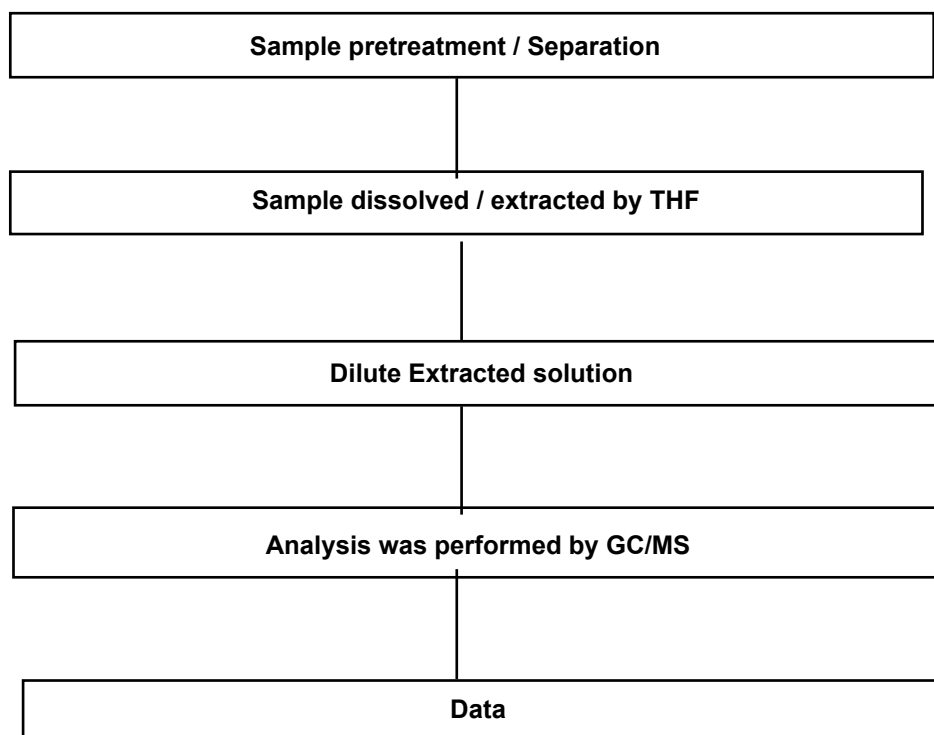
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**Testing Flow Chart for RoHS:Cd/Pb/Hg/Cr<sup>6+</sup> /PBBs&PBDEs Testing**


The samples were dissolved totally at the acid digestion step of the above flow chart for Cd,Pb,Hg  
 Section Chief : Minkyu Park



### Flow Chart for Phthalate Test



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

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