



Test Report No. F690101/LF-CTSAYAA18-00983

Issued Date : 2018. 01. 08

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CHEMPROS CO., LTD.

4Na 303 #1294-2, Shiwah Industrial Complex
Jungwang-dong Shiheung-si, Gyeonggi-do
Korea



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

SGS File No. : AYAA18-00983
Product Name : CP OS-100C
Item No./Part No. : N/A
Buyer(s) : SAMSUNG
Received Date : 2018. 01. 03
Test Period : 2018. 01. 03 to 2018. 01. 08
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. : AYAA18-00983.001
Sample Description : CP OS-100C
Item No./Part No. : N/A
Materials : N/A

Heavy Metals

| Test Items | Unit | Test Method | MDL | Results |
|------------------------------|-------|---|-----|---------|
| Cadmium (Cd) | mg/kg | With reference to IEC 62321-5:2013 (Determination of Cadmium by ICP-OES) | 0.5 | N.D. |
| Lead (Pb) | mg/kg | With reference to IEC 62321-5:2013 (Determination of Lead by ICP-OES) | 5 | N.D. |
| Mercury (Hg) | mg/kg | With reference to IEC 62321-4:2013 (Determination of Mercury by ICP-OES) | 2 | N.D. |
| Hexavalent Chromium (Cr VI)* | mg/kg | With reference to IEC 62321-7-2:2017, determination of Hexavalent Chromium by Colorimetric Method using UV-Vis and/or with reference to IEC 62321-5:2013, determination of 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 (Determination of PBBs and PBDEs by GC-MS) | 5 | N.D. |
| Dibromobiphenyl | mg/kg | With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS) | 5 | N.D. |
| Tribromobiphenyl | mg/kg | With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS) | 5 | N.D. |
| Tetrabromobiphenyl | mg/kg | With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS) | 5 | N.D. |
| Pentabromobiphenyl | mg/kg | With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS) | 5 | N.D. |
| Hexabromobiphenyl | mg/kg | With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS) | 5 | N.D. |
| Heptabromobiphenyl | mg/kg | With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS) | 5 | N.D. |
| Octabromobiphenyl | mg/kg | With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS) | 5 | N.D. |
| Nonabromobiphenyl | mg/kg | With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS) | 5 | N.D. |
| Decabromobiphenyl | mg/kg | With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS) | 5 | N.D. |
| Monobromodiphenyl ether | mg/kg | With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS) | 5 | N.D. |
| Dibromodiphenyl ether | mg/kg | With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS) | 5 | N.D. |

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Sample No. : AYAA18-00983.001
Sample Description : CP OS-100C
Item No./Part No. : N/A
Materials : N/A

Flame Retardants-PBBs/PBDEs

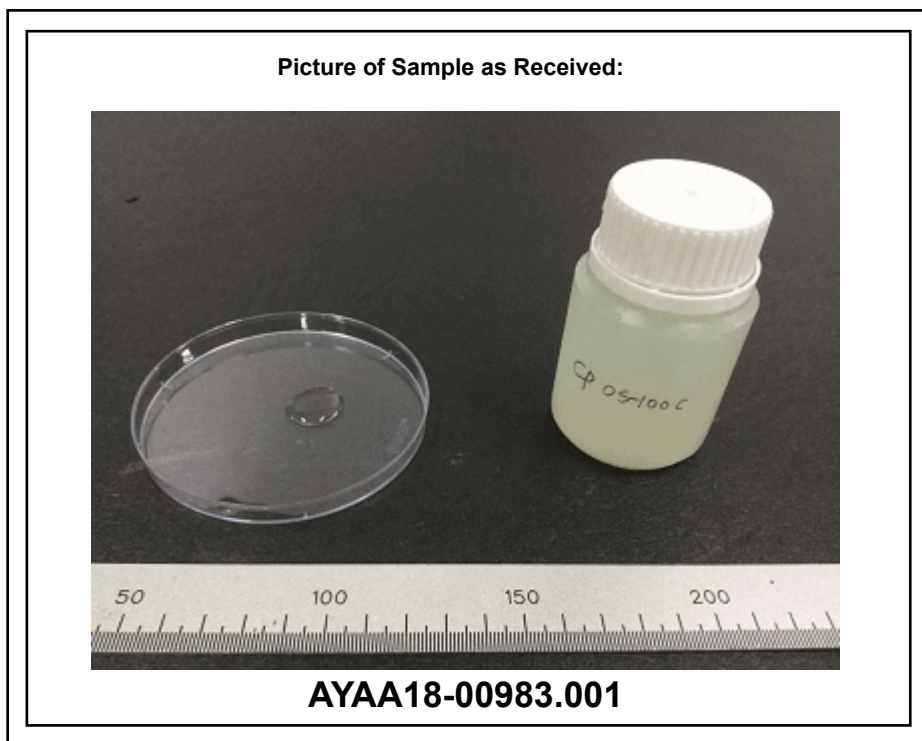
| Test Items | Unit | Test Method | MDL | Results |
|--------------------------|-------|--|-----|---------|
| Tribromodiphenyl ether | mg/kg | With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS) | 5 | N.D. |
| Tetrabromodiphenyl ether | mg/kg | With reference to IEC 62321-6:2015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

Halogen Contents

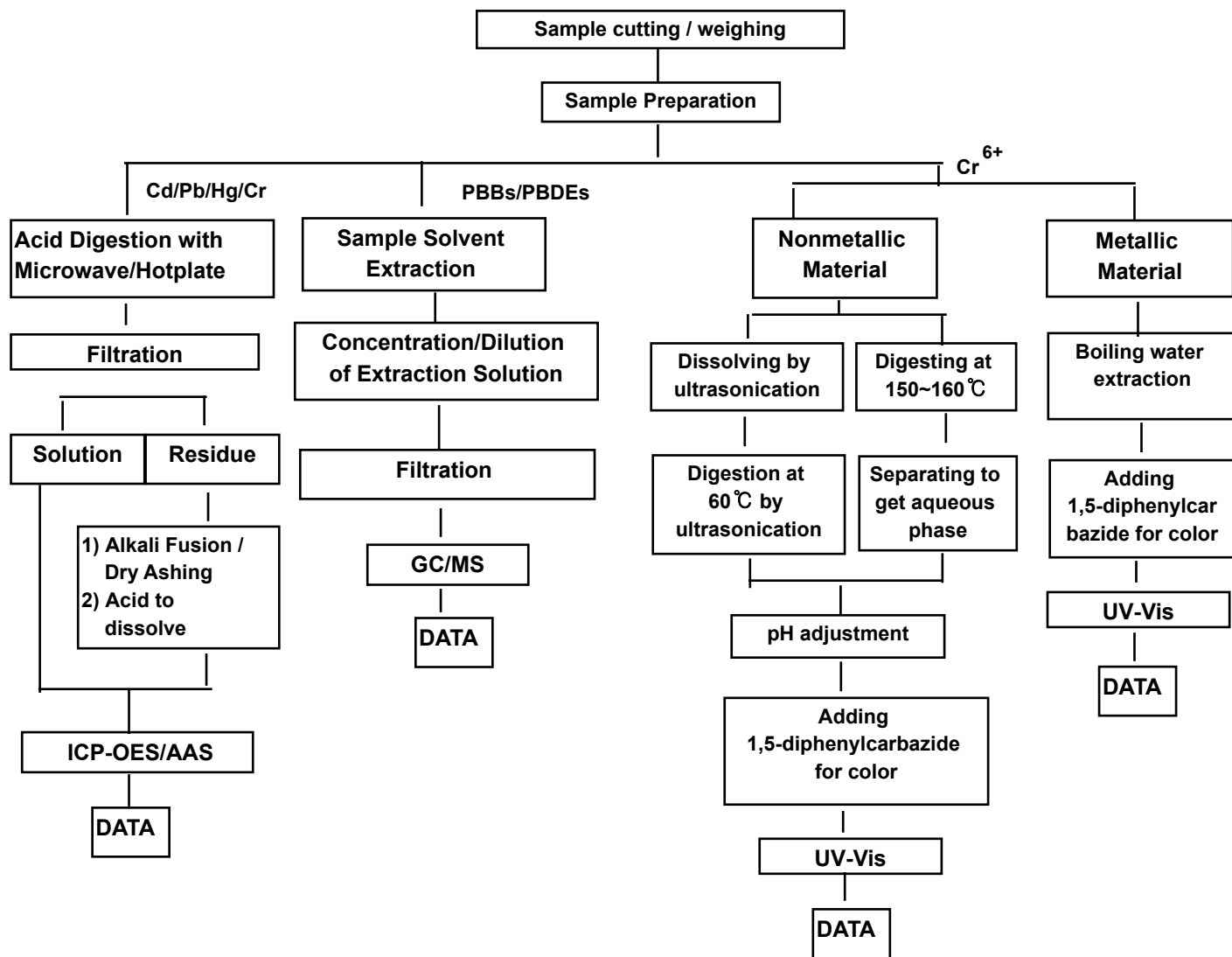
| Test Items | Unit | Test Method | MDL | Results |
|----------------|------|-----------------|-----|---------|
| Bromide (Br-) | mg/L | US EPA300.0, IC | 30 | N.D. |
| Chloride (Cl-) | mg/L | US EPA300.0, IC | 30 | 41 |
| Fluoride (F-) | mg/L | US EPA300.0, IC | 30 | N.D. |
| Iodide (I-) | mg/L | US EPA300.0, IC | 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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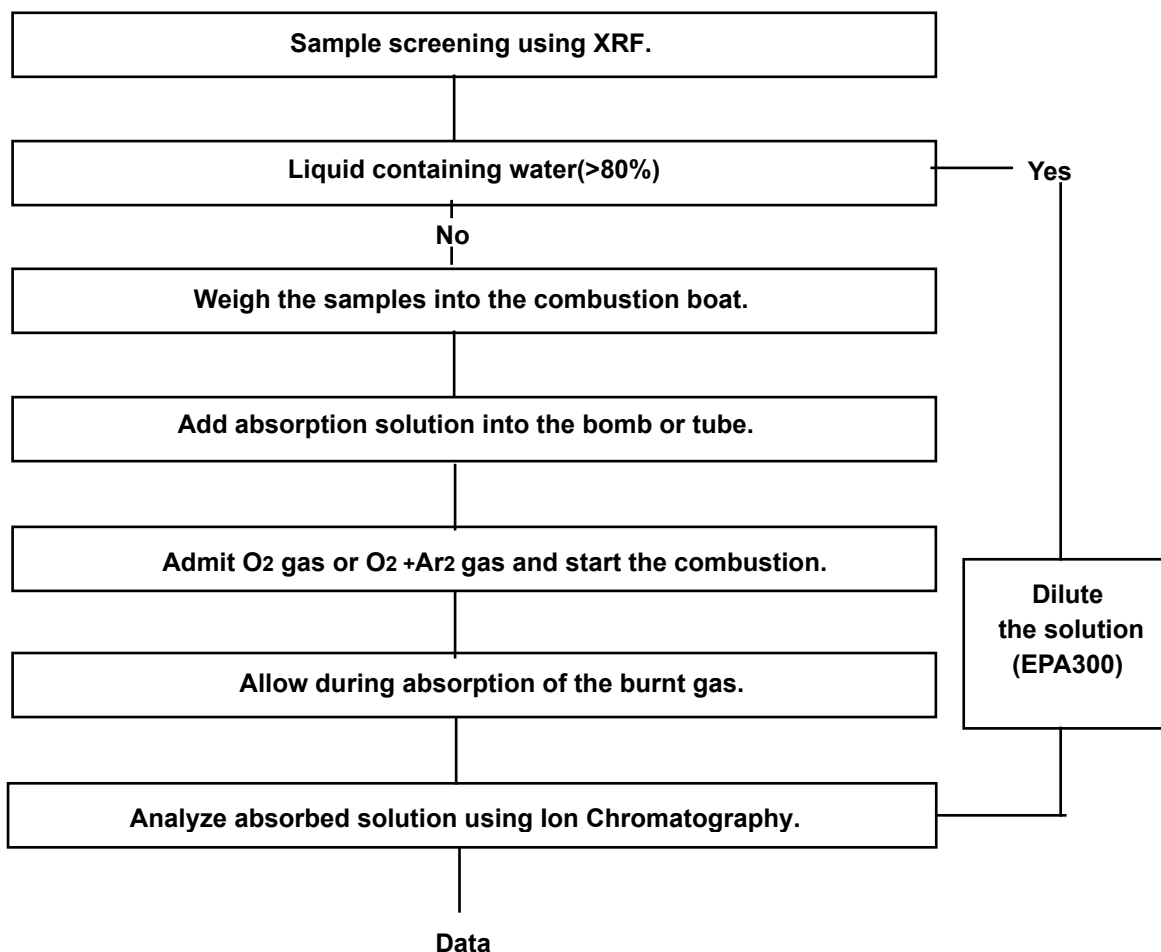
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Testing Flow Chart for RoHS:Cd/Pb/Hg/Cr⁶⁺ /PBBs&PBDEs Testing


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 Halogen Test



*** End of Report ***