



Test Report No. F690101/LF-CTSAYGA16-00538

Issued Date : 2016. 02. 04

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KOLON PLASTICS, INC.

64, Gongdan 3gil
Gimcheon-si, Gyeongbuk
Korea

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

SGS File No. : AYGA16-00538
Product Name : KOPA
Item No./Part No. : N/A
Client Reference Data : KN187, KN133HRF
Received Date : 2016. 02. 01
Test Period : 2016. 02. 01 to 2016. 02. 04
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. : AYGA16-00538.001
Sample Description : KOPA
Item No./Part No. : N/A
Materials : Nylon

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 62321:2008 (Determination of Hexavalent Chromium by spot test/Colorimetric Method using UV-Vis) | 1 | 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. |
| 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. |

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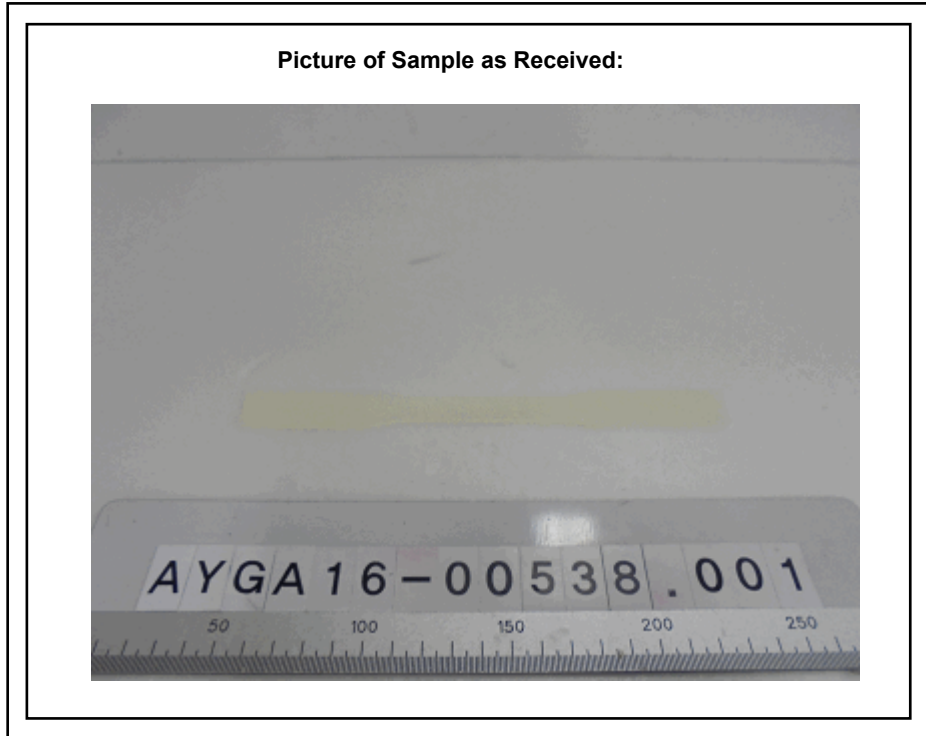
Sample No. : AYGA16-00538.001
Sample Description : KOPA
Item No./Part No. : N/A
Materials : Nylon

Flame Retardants-PBBs/PBDEs

| Test Items | Unit | Test Method | MDL | Results |
|--------------------------|-------|--|-----|---------|
| 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. |

- 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 sample is positive for CrVI if the CrVI concentration is greater than 0.13 ug/cm². The sample coating is considered to contain CrVI.
b. The sample is negative for CrVI if CrVI is n.d. (concentration less than 0.10 ug/cm²). The coating is considered a non-CrVI 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.

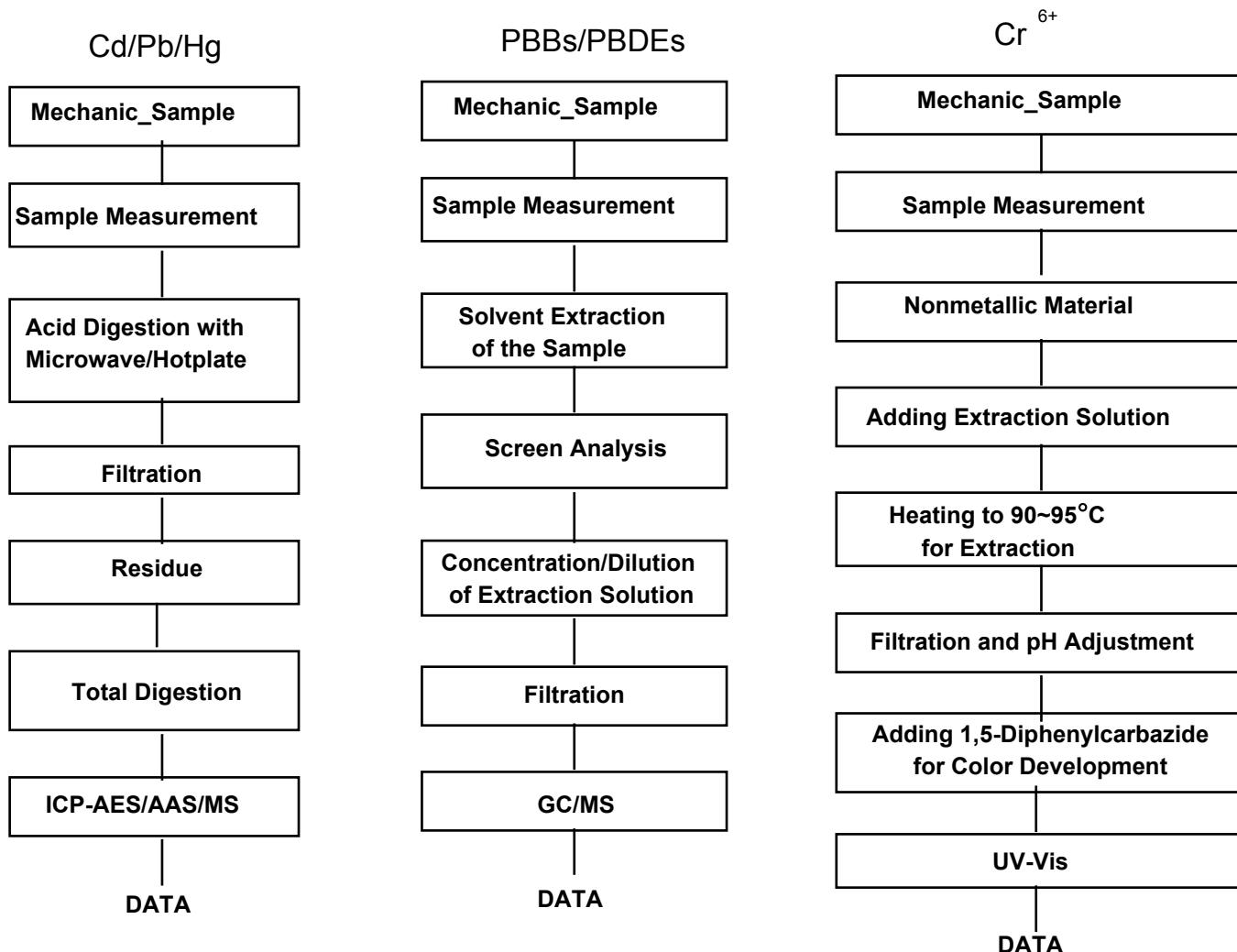
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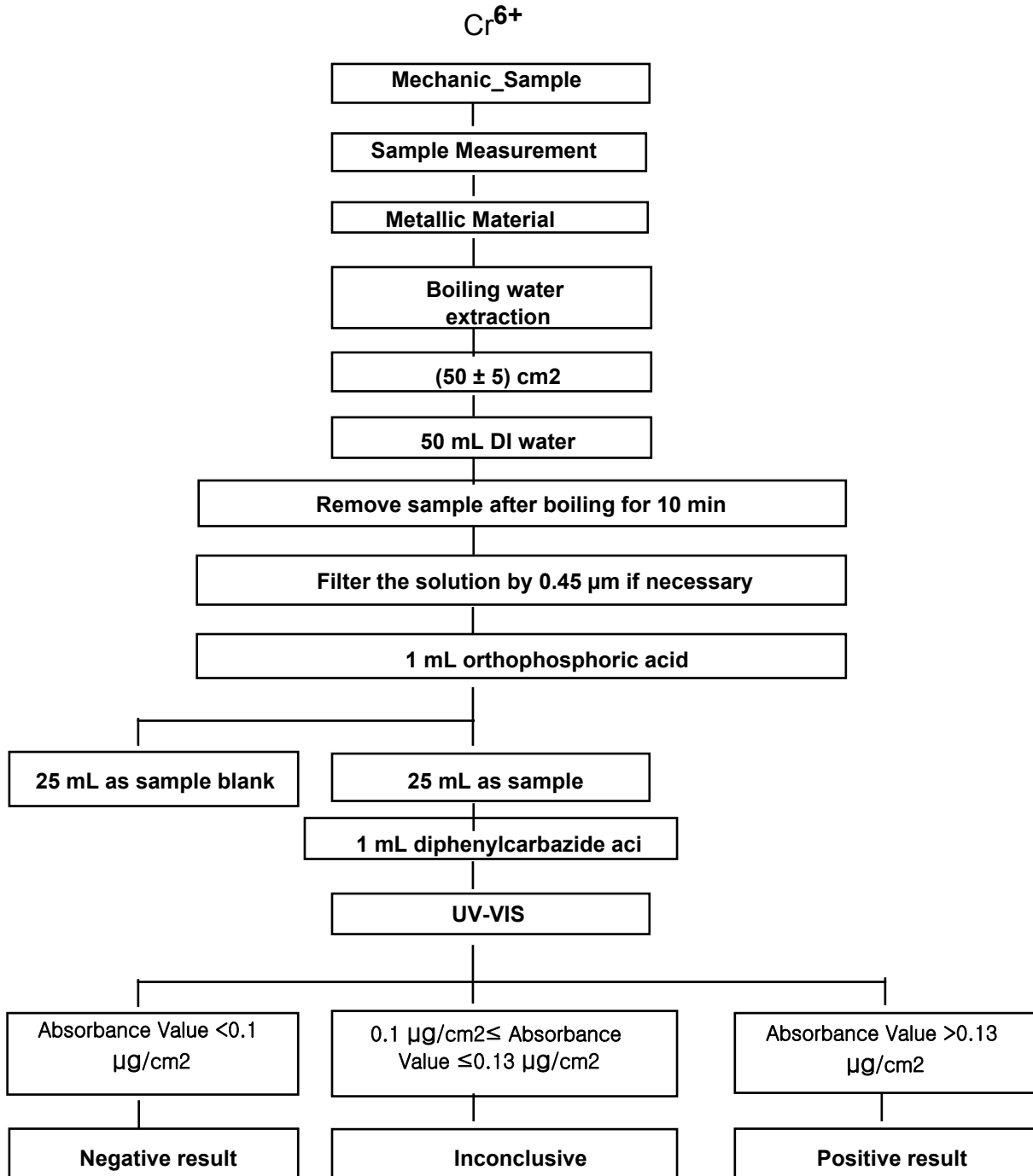


Testing Flow Chart for RoHS: Cd/Pb/Hg/Cr⁶⁺ /PBBs&PBDEs Testing



The samples were dissolved totally by pre-conditioning method according to above flow chart for Cd,Pb,Hg.
Section Chief : Gilsae Yi

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