



# Test Report No. F690101/LF-CTSAYHA15-07664

Issued Date : 2015. 07. 27

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## KUKIL METAL

668 Sunggok-dong, Danwon-gu  
Ansan-si, Gyeonggi-do  
Korea



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

**SGS File No.** : AYHA15-07664  
**Product Name** : BRASS  
**Item No./Part No.** : C3601  
**Received Date** : 2015. 07. 22  
**Test Period** : 2015. 07. 23 to 2015. 07. 27  
**Test Results** : For further details, please refer to following page(s)

SGS Korea Co., Ltd.

Jeff Jang / Chemical Lab Mgr

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SGS Korea Co., Ltd.

322, The O valley, 76, LS-ro, Dongan-gu, Anyang-si, Gyeonggi-do, Korea 431-080  
t +82 (0)31 4608 000 f +82 (0)31 4608 059 <http://www.sgsgroup.kr>



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Sample No. : AYHA15-07664.001  
Sample Description : BRASS  
Item No./Part No. : C3601  
Materials : N/A

## 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 | 3.99     |
| Lead (Pb)                                                   | mg/kg | With reference to IEC 62321-5:2013<br>(Determination of Lead by ICP-OES)                                                    | 5   | 19300    |
| 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) By boiling<br>water extraction* | **    | With reference to IEC 62321:2008 (Determination<br>of Hexavalent Chromium by spot test/Colorimetric<br>Method using UV-Vis) | -   | Negative |

## Flame Retardants-PBBs/PBDEs

| Test Items               | Unit  | Test Method                                                                    | MDL | Results |
|--------------------------|-------|--------------------------------------------------------------------------------|-----|---------|
| Monobromobiphenyl        | mg/kg | With reference to IEC 62321:2008 (Determination<br>of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Dibromobiphenyl          | mg/kg | With reference to IEC 62321:2008 (Determination<br>of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Tribromobiphenyl         | mg/kg | With reference to IEC 62321:2008 (Determination<br>of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Tetrabromobiphenyl       | mg/kg | With reference to IEC 62321:2008 (Determination<br>of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Pentabromobiphenyl       | mg/kg | With reference to IEC 62321:2008 (Determination<br>of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Hexabromobiphenyl        | mg/kg | With reference to IEC 62321:2008 (Determination<br>of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Heptabromobiphenyl       | mg/kg | With reference to IEC 62321:2008 (Determination<br>of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Octabromobiphenyl        | mg/kg | With reference to IEC 62321:2008 (Determination<br>of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Nonabromobiphenyl        | mg/kg | With reference to IEC 62321:2008 (Determination<br>of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Decabromobiphenyl        | mg/kg | With reference to IEC 62321:2008 (Determination<br>of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Monobromodiphenyl ether  | mg/kg | With reference to IEC 62321:2008 (Determination<br>of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Dibromodiphenyl ether    | mg/kg | With reference to IEC 62321:2008 (Determination<br>of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Tribromodiphenyl ether   | mg/kg | With reference to IEC 62321:2008 (Determination<br>of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Tetrabromodiphenyl ether | mg/kg | With reference to IEC 62321:2008 (Determination<br>of PBBs and PBDEs by GC-MS) | 5   | N.D.    |

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322, The O valley, 76, LS-ro, Dongan-gu, Anyang-si, Gyeonggi-do, Korea 431-080  
t +82 (0)31 4608 000 f +82 (0)31 4608 059 <http://www.sgsgroup.kr>



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Sample No. : AYHA15-07664.001  
Sample Description : BRASS  
Item No./Part No. : C3601  
Materials : N/A

## Flame Retardants-PBBs/PBDEs

| Test Items               | Unit  | Test Method                                                                 | MDL | Results |
|--------------------------|-------|-----------------------------------------------------------------------------|-----|---------|
| Pentabromodiphenyl ether | mg/kg | With reference to IEC 62321:2008 (Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Hexabromodiphenyl ether  | mg/kg | With reference to IEC 62321:2008 (Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Heptabromodiphenyl ether | mg/kg | With reference to IEC 62321:2008 (Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Octabromodiphenyl ether  | mg/kg | With reference to IEC 62321:2008 (Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Nonabromodiphenyl ether  | mg/kg | With reference to IEC 62321:2008 (Determination of PBBs and PBDEs by GC-MS) | 5   | N.D.    |
| Decabromodiphenyl ether  | mg/kg | With reference to IEC 62321:2008 (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) \* = Boiling-water-extraction:  
Negative = Absence of CrVI coating  
Positive = Presence of CrVI coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm2 sample surface area.

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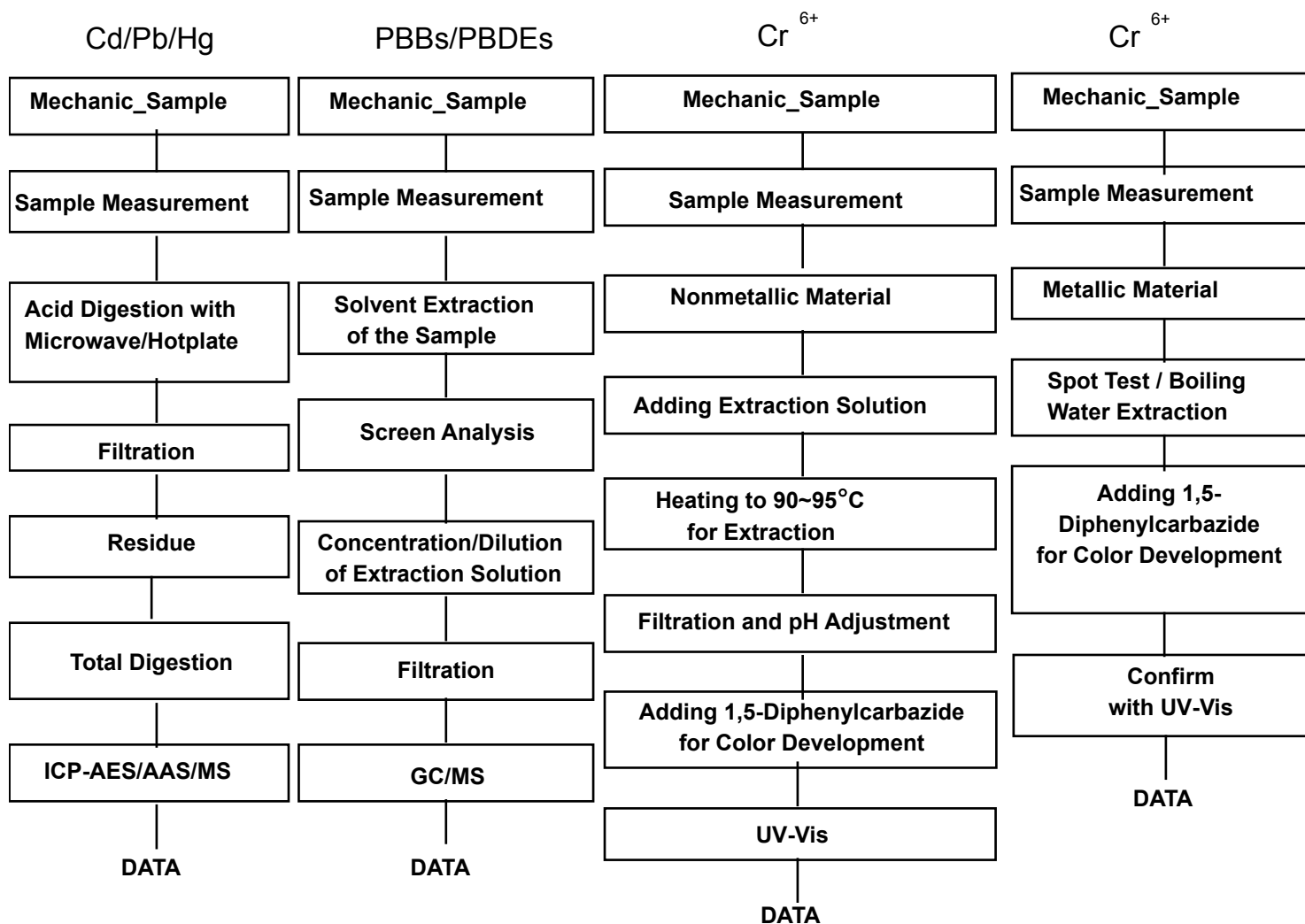
Picture of Sample as Received:



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

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