



**Test Report** No. F690101/LF-CTSAYGU19-06071

Issued Date : 2019. 07. 10

Page 1 of 5

**HYUNDAI SPECIAL STEEL**

151 Daesong-ro, Nam-gu  
Pohang-si, Gyeongbuk  
Korea



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

**SGS File No.** : AYGU19-06071  
**Product Name** : 10B35  
**Item No./Part No.** : N/A  
**Received Date** : 2019. 07. 01  
**Test Period** : 2019. 07. 01 to 2019. 07. 10  
**Test Results** : For further details, please refer to following page(s)

**SGS Korea Co., Ltd.**  
**/ LTS Busan Laboratory**

**Thomas Hwang / Lab Manager**

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Issued Date : 2019. 07. 10

Page 2 of 5

Sample No. : AYGU19-06071.001  
Sample Description : 10B35  
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) * | µg/cm <sup>2</sup> | With reference to IEC 62321-7-1:2015 (Determination of CrVI by UV-Vis)  | 0.1 | 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.    |
|                         |       |   |     |         |

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**Sample No.** : AYGU19-06071.001  
**Sample Description** : 10B35  
**Item No./Part No.** : N/A  
**Materials** : N/A

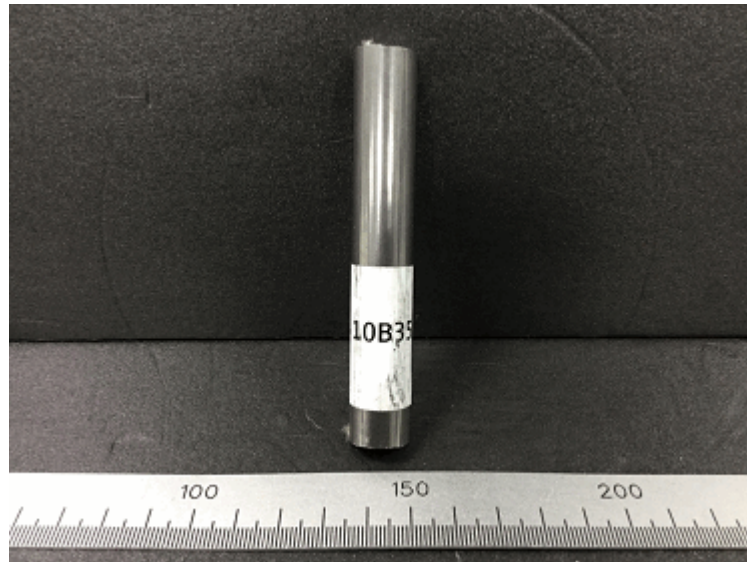
**Flame Retardants-PBBs/PBDEs**

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

- 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/cm<sup>2</sup>. 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/cm<sup>2</sup>). The coating is considered a non-CrVI based coating.  
 c. The result between 0.10 ug/cm<sup>2</sup> and 0.13 ug/cm<sup>2</sup> is considered to be inconclusive - unavoidable coating variations may influence the determination.

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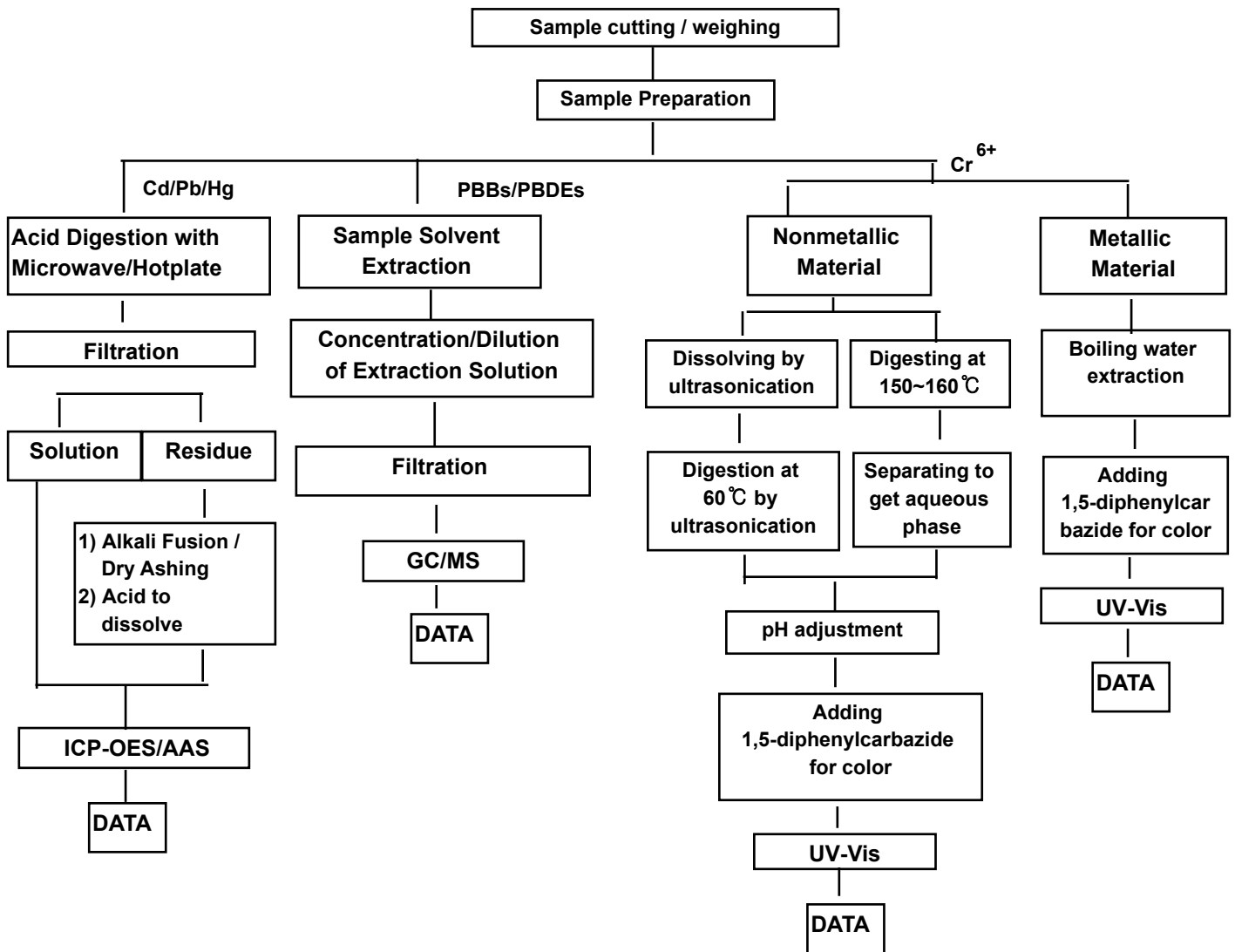
Picture of Sample as Received:



**AYGU19-06071.001**

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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 : Sharpless Park

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

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