

**Test Report** No. F690101/LF-CTSAYGU24-00161

Issued Date : 2024. 01. 10

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**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.** : AYGU24-00161  
**Product Name** : SWCH45KS  
**Item No./Part No.** : N/A  
**Received Date** : 2024. 01. 02  
**Test Period** : 2024. 01. 02 to 2024. 01. 10  
**Test Results** : For further details, please refer to following page(s)

**SGS Korea Co., Ltd.**  
**/ Busan Branch**

**Taehee Kang / Technical Manager**

The test results of this test report are only limited to samples and sample names provided by the client and do not guarantee the quality of all products of the client. This test report shall not be used for public relation, advertisement, lawsuit and shall not be used by excerpts from it. This test report can be checked through the <http://rohs.kr.sgs.com/checkreport/main> This test report is not related to KS Q ISO/IEC 17025 and Korea Laboratory Accreditation Scheme.

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MQP-708/001-F12 (01)

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Sample No. : AYGU24-00161.001  
Sample Description : SWCH45KS  
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, by ICP-OES	0.5	N.D.
Lead (Pb)	mg/kg	With reference to IEC 62321-5 : 2013, by ICP-OES	5	N.D.
Mercury (Hg)	mg/kg	With reference to IEC 62321-4 : 2013+A1 : 2017, by ICP-OES	2	N.D.
Hexavalent Chromium (Cr VI) *	µg/cm <sup>2</sup>	With reference to IEC 62321-7-1 : 2015, 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, by GC-MS	5	N.D.
Dibromobiphenyl	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Tribromobiphenyl	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Tetrabromobiphenyl	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Pentabromobiphenyl	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Hexabromobiphenyl	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Heptabromobiphenyl	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Octabromobiphenyl	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Nonabromobiphenyl	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Decabromobiphenyl	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Monobromodiphenyl ether	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Dibromodiphenyl ether	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Tribromodiphenyl ether	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Tetrabromodiphenyl ether	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Pentabromodiphenyl ether	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Hexabromodiphenyl ether	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Heptabromodiphenyl ether	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Octabromodiphenyl ether	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Nonabromodiphenyl ether	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Decabromodiphenyl ether	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.

Flame Retardants

Test Items	Unit	Test Method	MDL	Results

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Sample No. : AYGU24-00161.001  
Sample Description : SWCH45KS  
Item No./Part No. : N/A  
Materials : N/A

## Flame Retardants

Test Items	Unit	Test Method	MDL	Results
Hexabromocyclododecane (HBCDD, HBCD)	mg/kg	With reference to EPA 3540C : 1996, EPA 3550C : 2007 by GC-MS	5	N.D.

- NOTE: (1) N.D. = Not detected.(<MDL)  
(2) mg/kg = ppm  
(3) µg/kg = ppb  
(4) MDL = Method Detection Limit  
(5) - = No regulation  
(6) Negative = Undetectable / Positive = Detectable  
(7) \*\* = Qualitative analysis (No Unit)  
(8) \* = 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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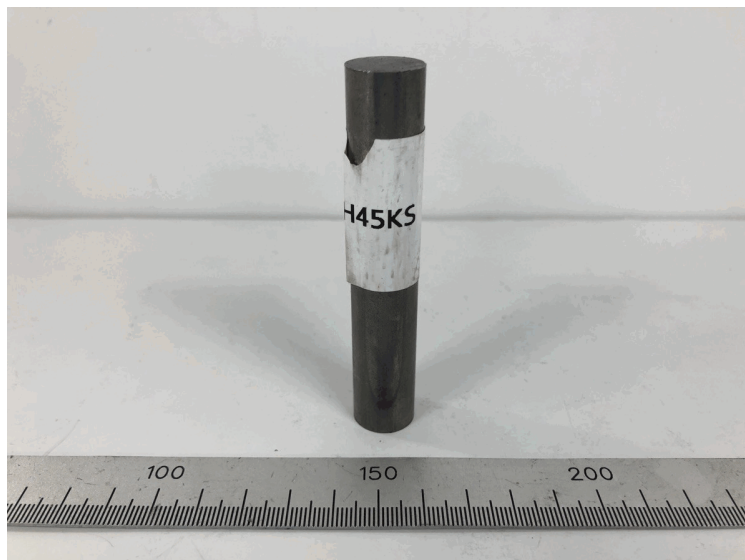
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Picture of Sample as Received:


**AYGU24-00161.001**

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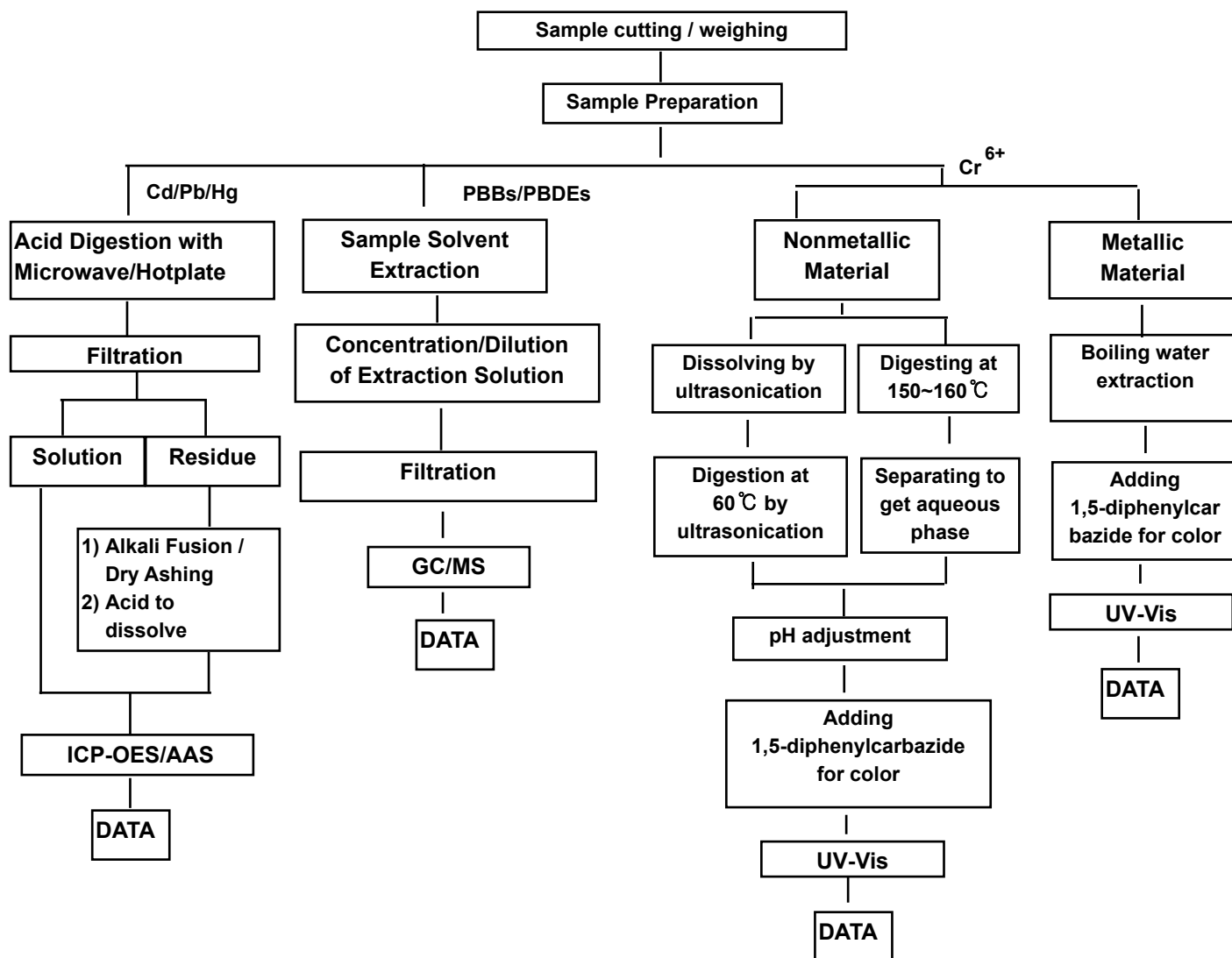
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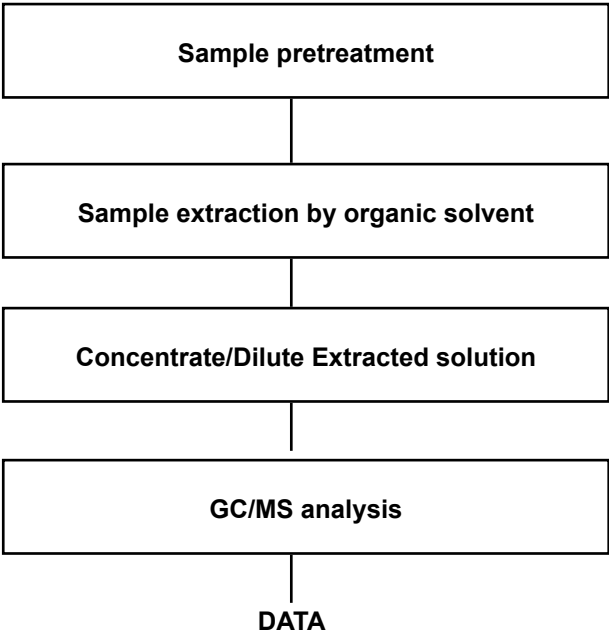
### Testing Flow Chart for RoHS:Cd/Pb/Hg/Cr<sup>6+</sup> /PBBs&PBDEs Testing



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



Testing Flow Chart for HBCD



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

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