



Test Report No. F690101/LF-CTSAYGU24-00137

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. : AYGU24-00137  
Product Name : S45CL  
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

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MQP-708/001-F12 (01)

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Sample No. : AYGU24-00137.001  
Sample Description : S45CL  
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	1690
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.

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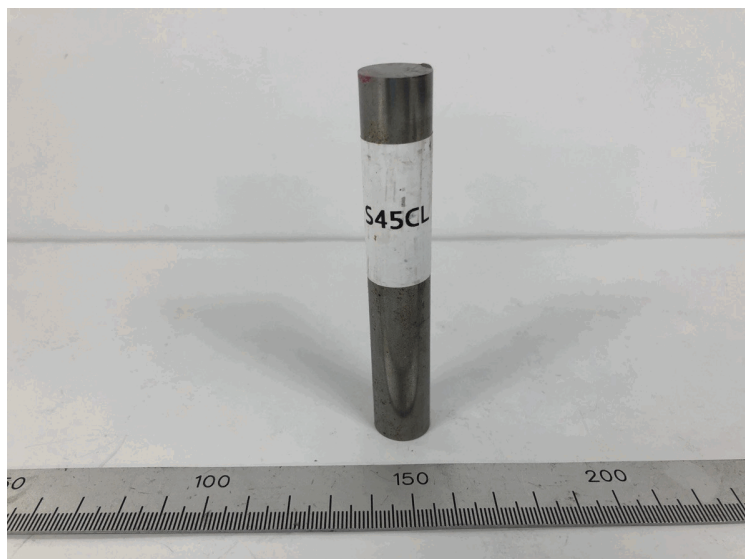
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- NOTE:
- (1) N.D. = Not detected.(<MDL)
  - (2) mg/kg = ppm
  - (3) µg/kg = ppb
  - (4) MDL = Method Detection Limit
  - (5) - = No regulation
  - (6) Negative = Undetectable / Positive = Detectable
  - (7) \*\* = Qualitative analysis (No Unit)
 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

Picture of Sample as Received:



AYGU24-00137.001

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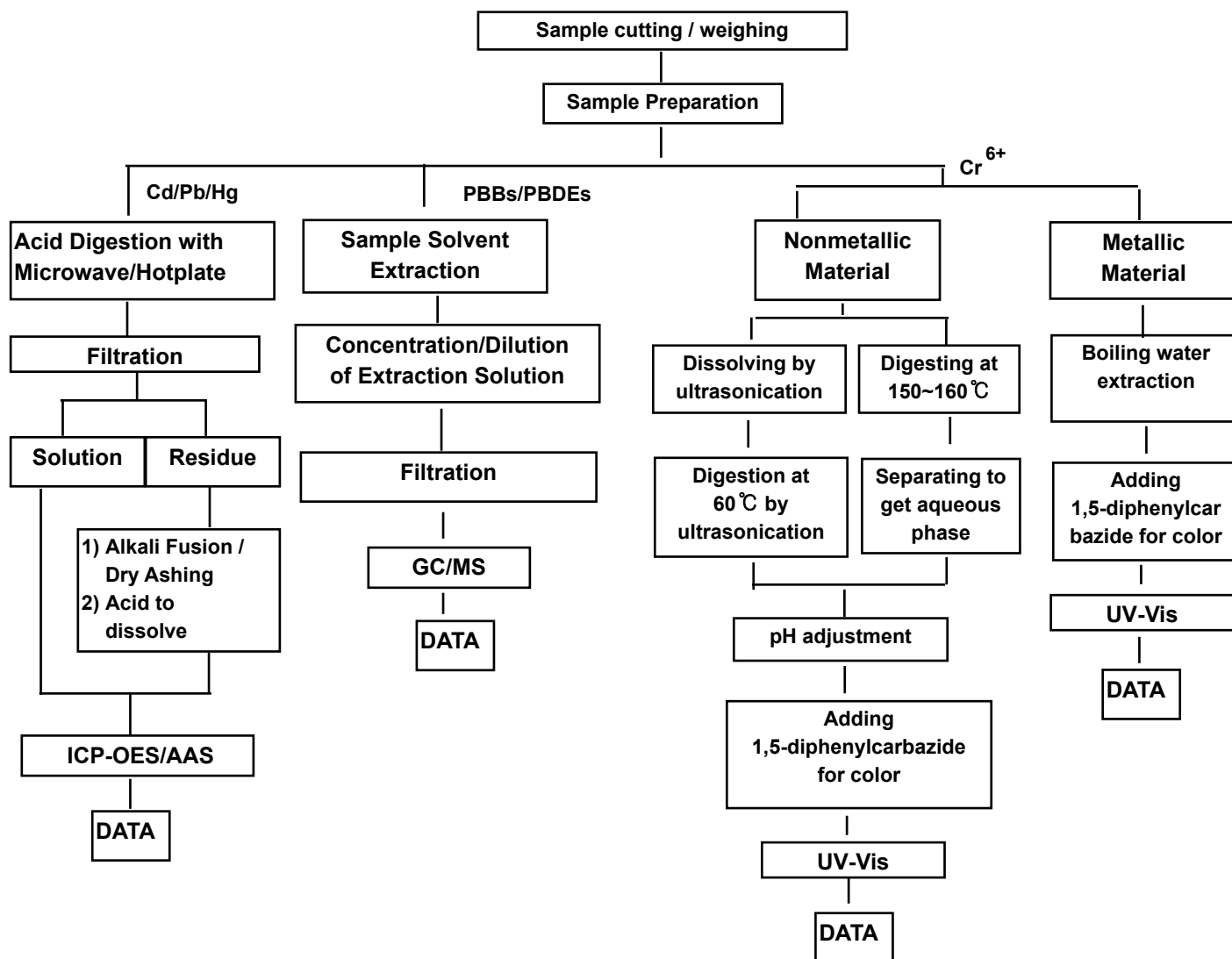
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### Testing Flow Chart for RoHS:Cd/Pb/Hg/Cr<sup>6+</sup> /PBBs&PBDEs Testing



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

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