

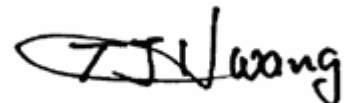
**KOREA ENGINEERING PLASTICS CO., LTD.**  
 84,Jangsaengpogorae-ro  
 Nam-gu,Ulsan  
 Korea



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

**SGS File No.** : AYGU16-09921  
**Product Name** : FR-20H BK  
**Item No./Part No.** : FR-20H BK  
**Client Reference Data** : F10-52H BK,F10-52D WK-S08,F10-52D BK003-TRY,F10-52D BK006-NNB,F20-03 S07,F20-03 S04122-CO,F20-03 S04198-JB,F20-03 S04265,F20-03 S75472,F20-51 BK(BBK),F20-51U BK,F20-52(LOF)(2) BBK,F20-52 S04265,F20-52G S04265-TRY,F20-52 BK-S04,F20-52G (LOF) TD-S06,F20-52G S04198-JB,F30-51 BK,F30-51U BK,F30-52G S04261,TC2005 BK,ET-20S,ET-20A (BK),ET-20R3 BK,ET-20R5 BK,ET-20R7 BK,LX-30,ED-10 BK,ED-12 BK,ET-20CT,ET-20CH,FR-20H BK  
**Received Date** : 2016. 12. 29  
**Test Period** : 2016. 12. 29 to 2017. 01. 03  
**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.**  
 / Gimhae Laboratory



**Thomas Hwang / Lab Manager**

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# Test Report No. F690101/LF-CTSAYGU16-09921

Issued Date : 2017. 01. 03

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Sample No. : AYGU16-09921.001  
Sample Description : FR-20H BK  
Item No./Part No. : FR-20H BK  
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)	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.

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**Sample No.** : AYGU16-09921.001  
**Sample Description** : FR-20H BK  
**Item No./Part No.** : FR-20H BK  
**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.

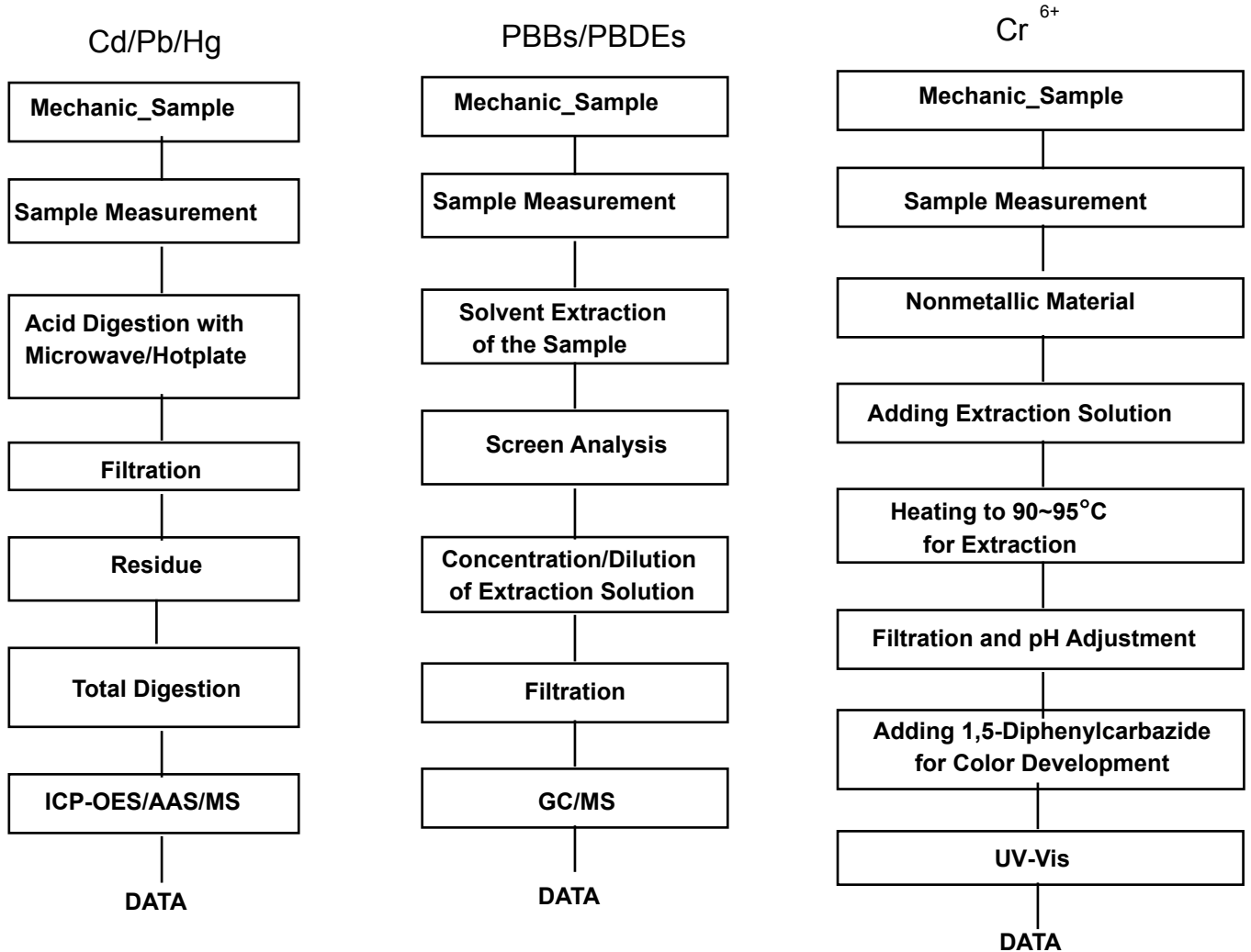
Picture of Sample as Received:



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

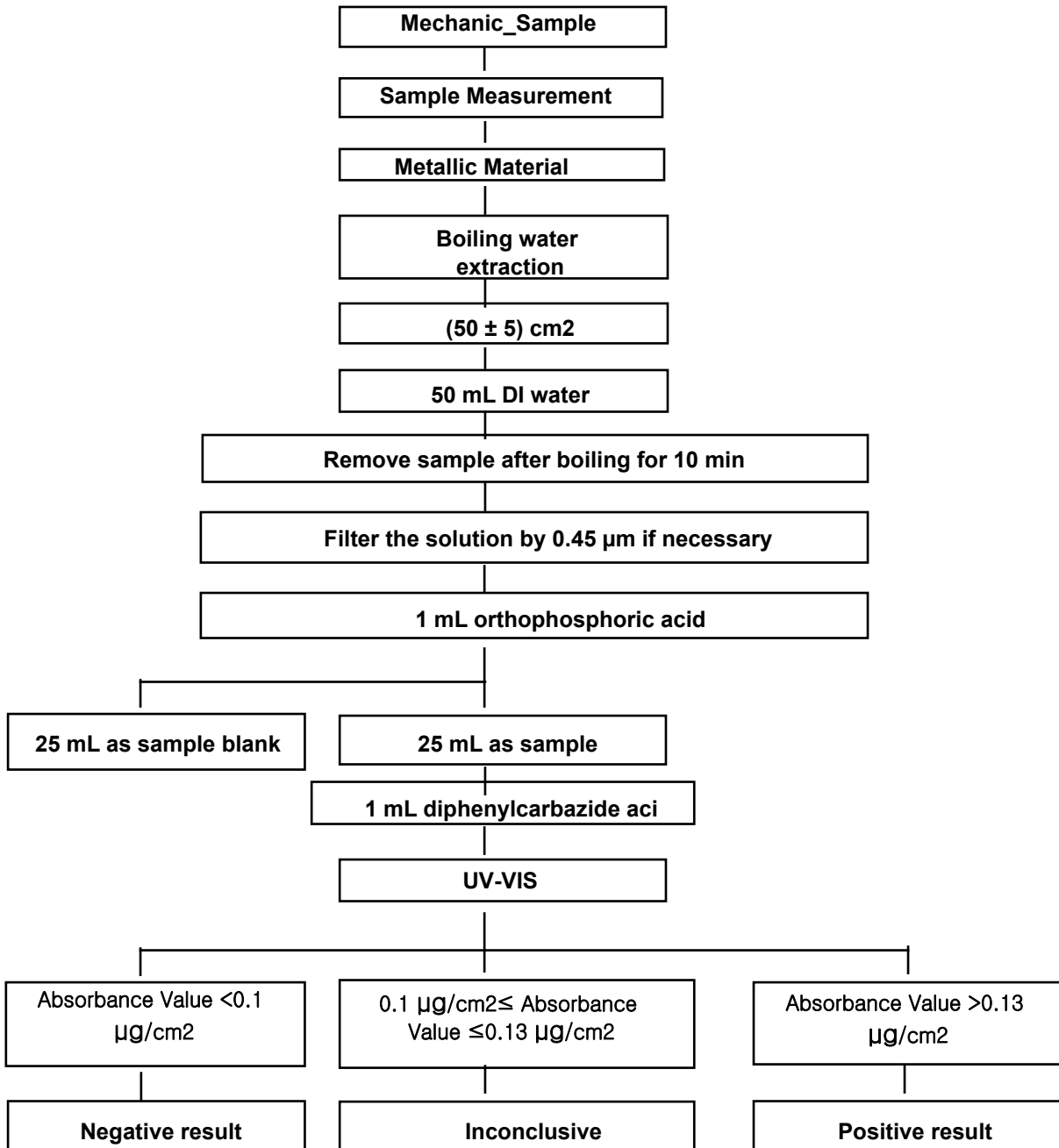


The samples were dissolved totally by pre-conditioning method according to above flow chart for Cd,Pb,Hg.  
Section Chief : Sharpless Park

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Cr<sup>6+</sup>



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

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