

**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.** : AYGU18-05676R1  
**Product Name** : KEPITAL F40-03  
**Item No./Part No.** : KEPITAL F40-03  
**Client Reference Data** : F10-01,F10-02,F10-03H(M/V),F10-03H LOF(2),F10-01 T2,F10-52(H/D),F10-52H LOF(2),F15-33,F15-33 LOF(2),F20-01,F20-02,F20-03(M(T)),F20-03 LOF(2),F20-33,F20-33 LOF(2),F20-52(G),F20-52 LOF(2),F20-52G LOF(2),F25-03(M),F25-03 LOF(2),F25-03H(M),F25-03H LOF(2),F25-03HT,F25-03HT LOF(2),F25-63,F25-63 LOF(2),F30-01(M),F30-03(M),F30-03 LOF(2) F30-34(LOF(2)),F30-52(G/LOF(2)),F40-03(M/LOF(2)),F40-34, TX-11H, TX-11H LOF(2), TX-11HK, TX-11HK LOF(2), TX-21(LOF(2)), TX-31(LOF(2)), MX20BT01, MX25BT01, MX30BT01, MX25BT03, MX25LF 01, TX-81DT, AR-10, AR-20, F20-03M LOF, F25-03M LOF, F30-03M LOF  
**Received Date** : 2018. 07. 02  
**Test Period** : 2018. 07. 02 to 2018. 07. 16  
**Report Comments** : By the applicant's request, item No.s/part No.s & client reference information are stated/added on report.  
**Supercede/Referral** : The test report supercedes previous report number, "F690101/LF-CTSAYGU18-05676" issued by SGS Korea Co., Ltd.  
**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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Sample No. : AYGU18-05676R1.001  
Sample Description : KEPITAL F40-03  
Item No./Part No. : KEPITAL F40-03  
Materials : POM

## 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 62321-7-2:2017, determination of Hexavalent Chromium by Colorimetric Method using UV-Vis and/or with reference to IEC 62321-5:2013, determination of Chromium by ICP-OES	8	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.

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Sample No. : AYGU18-05676R1.001  
Sample Description : KEPITAL F40-03  
Item No./Part No. : KEPITAL F40-03  
Materials : POM

## Flame Retardants-PBBs/PBDEs

Test Items	Unit	Test Method	MDL	Results
Tribromodiphenyl ether	mg/kg	With reference to IEC 62321-6:2015 (Determination of PBBs and PBDEs by GC-MS)	5	N.D.
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.

## Phthalates

Test Items	Unit	Test Method	MDL	Results
Di-(2-ethylhexyl) phthalate (DEHP)	mg/kg	With reference to IEC 62321-8:2017, GC/MS	50	N.D.
Di-butyl phthalate (DBP)	mg/kg	With reference to IEC 62321-8:2017, GC/MS	50	N.D.
Benzyl butyl phthalate (BBP)	mg/kg	With reference to IEC 62321-8:2017, GC/MS	50	N.D.
Di-isobutyl phthalate (DIBP)	mg/kg	With reference to IEC 62321-8:2017, GC/MS	50	N.D.

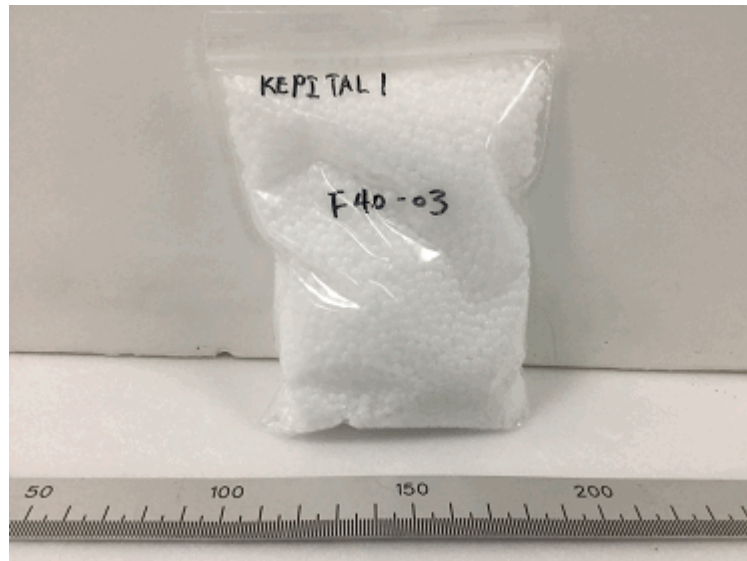
## Flame Retardants

Test Items	Unit	Test Method	MDL	Results
Hexabromocyclododecane (HBCDD, HBCD)	mg/kg	With reference to US EPA 3540C, GC/MS	5	N.D.

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- 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 result of Hexavalent Chromium (Cr(VI)) is "ND" as the result of Chromium (Cr) is "ND", and confirmation test of Hexavalent Chromium (Cr(VI)) is not required.  
 b. If the Chromium (Cr) content is greater than the MDL of Hexavalent Chromium (Cr(VI)), confirmation test of Hexavalent Chromium (Cr(VI)) is required.

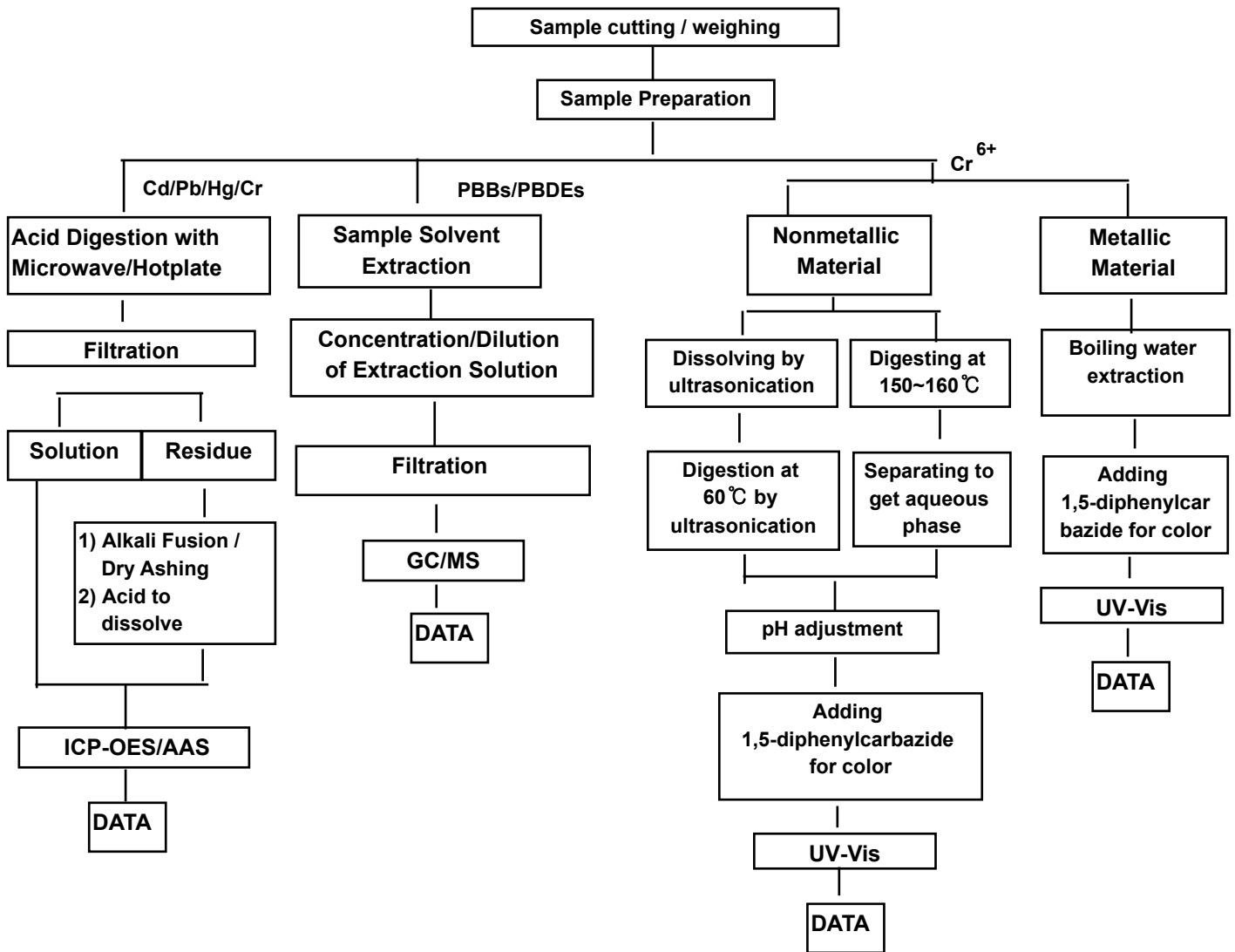
**Picture of Sample as Received:**



**AYGU18-05676R1.001**

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

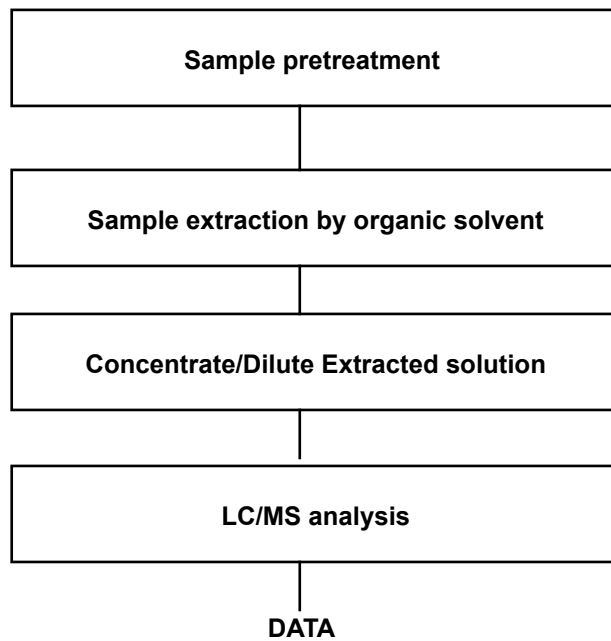


The samples were dissolved totally at the acid digestion step of the above flow chart for Cd,Pb,Hg  
Section Chief : Sharpless Park

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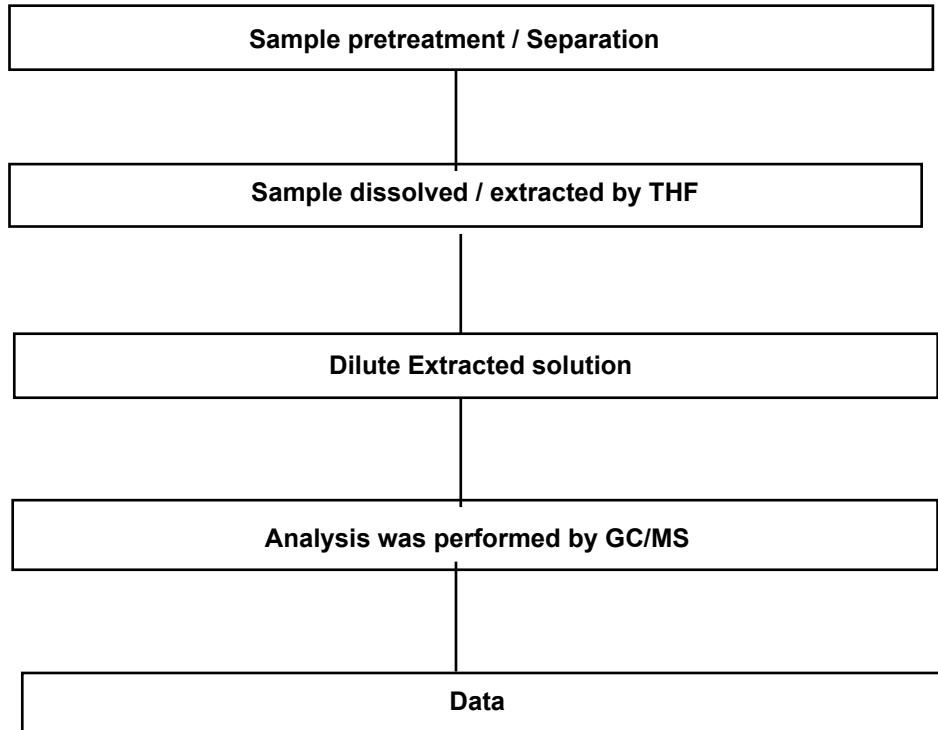
### Testing Flow Chart for HBCD



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### Flow Chart for Phthalate Test



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

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