

KOREA ZINC CO., LTD
139 Ijin-ro, Onsan-eup
Ulju-gun, Ulsan
Korea

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

SGS File No. : AYGU22-08433
Product Name : KZA5
Item No./Part No. : N/A
Received Date : 2022. 08. 22
Test Period : 2022. 08. 22 to 2022. 08. 25
Test Results : For further details, please refer to following page(s)

SGS Korea Co., Ltd.
/ Busan Laboratory



Taehee Kang / Technical Manager

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MQP-708-001-F12 (01)

Sample No. : AYGU22-08433.001
Sample Description : KZA5
Item No./Part No. : N/A
Materials : Zn 95%, Al 4%, Mg 0.04%, Cu 1%, Pb Max 0.0030%

Total Metals

Test Items	Unit	Test Method	MDL	Results
Cadmium (Cd)	mg/kg	With reference to EPA 3052 : 1996, EPA 6010D : 2018, by ICP-OES	0.5	N.D.
Lead (Pb)	mg/kg	With reference to EPA 3052 : 1996, EPA 6010D : 2018, by ICP-OES	5	15.5
Mercury (Hg)	mg/kg	With reference to EPA 3052 : 1996, EPA 6010D : 2018, by ICP-OES	2	N.D.
Antimony (Sb)	mg/kg	With reference to EPA 3052 : 1996, EPA 6010D : 2018, by ICP-OES	10	N.D.
Hexavalent Chromium (Cr VI)	mg/kg	With reference to EPA 3060A : 1996, With reference to EPA 7196A : 1992, by UV-Vis	1	N.D.

Flame Retardants-PBBs/PBDEs

Test Items	Unit	Test Method	MDL	Results
Monobromobiphenyl	mg/kg	With reference to EPA 3540C : 1996, by GC-MS	5	N.D.
Dibromobiphenyl	mg/kg	With reference to EPA 3540C : 1996, by GC-MS	5	N.D.
Tribromobiphenyl	mg/kg	With reference to EPA 3540C : 1996, by GC-MS	5	N.D.
Tetrabromobiphenyl	mg/kg	With reference to EPA 3540C : 1996, by GC-MS	5	N.D.
Pentabromobiphenyl	mg/kg	With reference to EPA 3540C : 1996, by GC-MS	5	N.D.
Hexabromobiphenyl	mg/kg	With reference to EPA 3540C : 1996, by GC-MS	5	N.D.
Heptabromobiphenyl	mg/kg	With reference to EPA 3540C : 1996, by GC-MS	5	N.D.
Octabromobiphenyl	mg/kg	With reference to EPA 3540C : 1996, by GC-MS	5	N.D.
Nonabromobiphenyl	mg/kg	With reference to EPA 3540C : 1996, by GC-MS	5	N.D.
Decabromobiphenyl	mg/kg	With reference to EPA 3540C : 1996, by GC-MS	5	N.D.
Monobromodiphenyl ether	mg/kg	With reference to EPA 3540C : 1996, by GC-MS	5	N.D.
Dibromodiphenyl ether	mg/kg	With reference to EPA 3540C : 1996, by GC-MS	5	N.D.
Tribromodiphenyl ether	mg/kg	With reference to EPA 3540C : 1996, by GC-MS	5	N.D.
Tetrabromodiphenyl ether	mg/kg	With reference to EPA 3540C : 1996, by GC-MS	5	N.D.
Pentabromodiphenyl ether	mg/kg	With reference to EPA 3540C : 1996, by GC-MS	5	N.D.
Hexabromodiphenyl ether	mg/kg	With reference to EPA 3540C : 1996, by GC-MS	5	N.D.

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Sample No. : AYGU22-08433.001
Sample Description : KZA5
Item No./Part No. : N/A
Materials : Zn 95%, Al 4%, Mg 0.04%, Cu 1%, Pb Max 0.0030%

Flame Retardants-PBBs/PBDEs

Test Items	Unit	Test Method	MDL	Results
Heptabromodiphenyl ether	mg/kg	With reference to EPA 3540C : 1996, by GC-MS	5	N.D.
Octabromodiphenyl ether	mg/kg	With reference to EPA 3540C : 1996, by GC-MS	5	N.D.
Nonabromodiphenyl ether	mg/kg	With reference to EPA 3540C : 1996, by GC-MS	5	N.D.
Decabromodiphenyl ether	mg/kg	With reference to EPA 3540C : 1996, 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, by GC-MS	50	N.D.
Di-butyl phthalate (DBP)	mg/kg	With reference to IEC 62321-8 : 2017, by GC-MS	50	N.D.
Benzyl butyl phthalate (BBP)	mg/kg	With reference to IEC 62321-8 : 2017, by GC-MS	50	N.D.
Di-isobutyl phthalate (DIBP)	mg/kg	With reference to IEC 62321-8 : 2017, by GC-MS	50	N.D.

Halogen Contents

Test Items	Unit	Test Method	MDL	Results
Bromine(Br)	mg/kg	With reference to EN 14582 : 2016, by IC	30	N.D.
Chlorine(Cl)	mg/kg	With reference to EN 14582 : 2016, by IC	30	N.D.

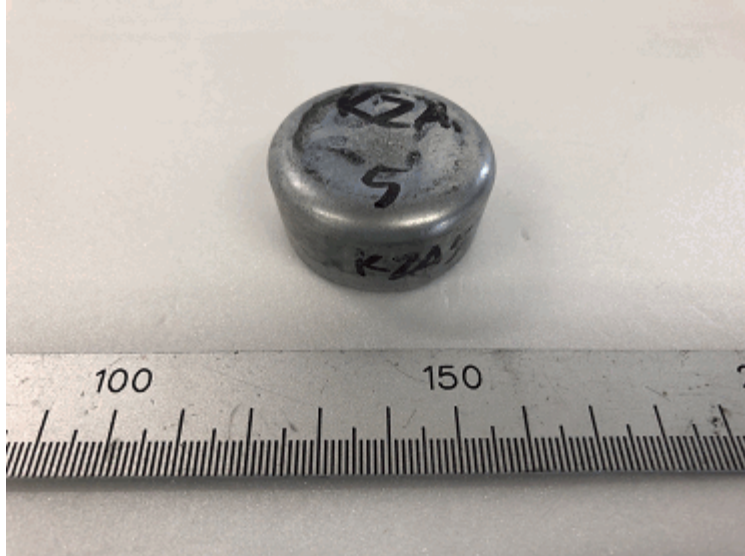
Flame Retardants

Test Items	Unit	Test Method	MDL	Results
Hexabromocyclododecane (HBCDD, HBCD)	mg/kg	With reference to EPA 3540C : 1996, 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) ** = Qualitative analysis (No Unit)
 - (7) Negative = Undetectable / Positive = Detectable

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Picture of Sample as Received:



AYGU22-08433.001

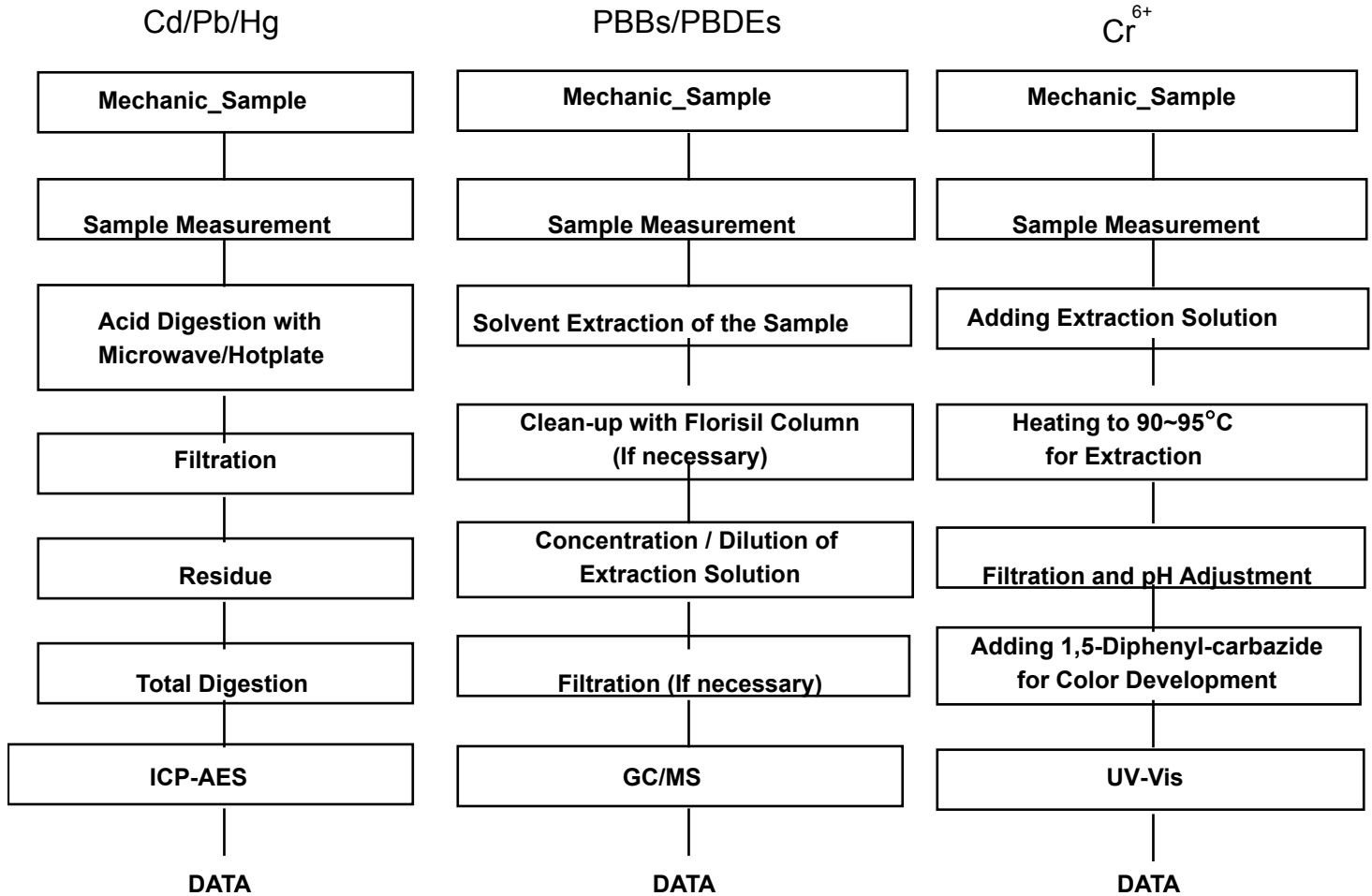
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Testing Flow Chart for RoHS: Cd/Pb/Hg/Cr⁶⁺ /PBBs&PBDEs Testing



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

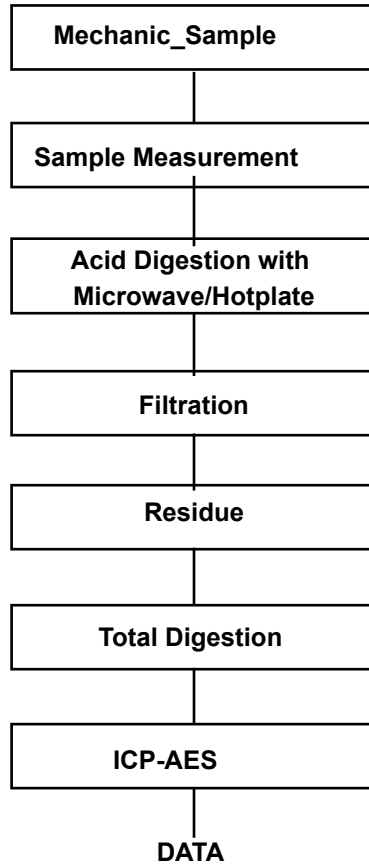
Section Chief : Taehee Kang

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Flow Chart for Inorganic Elements Testing

Inorganic Elements



Major Inorganic Heavy Metals	Antimony(Sb) , Beryllium(Be) , Phosphorus(P) , Arsenic(As) etc.
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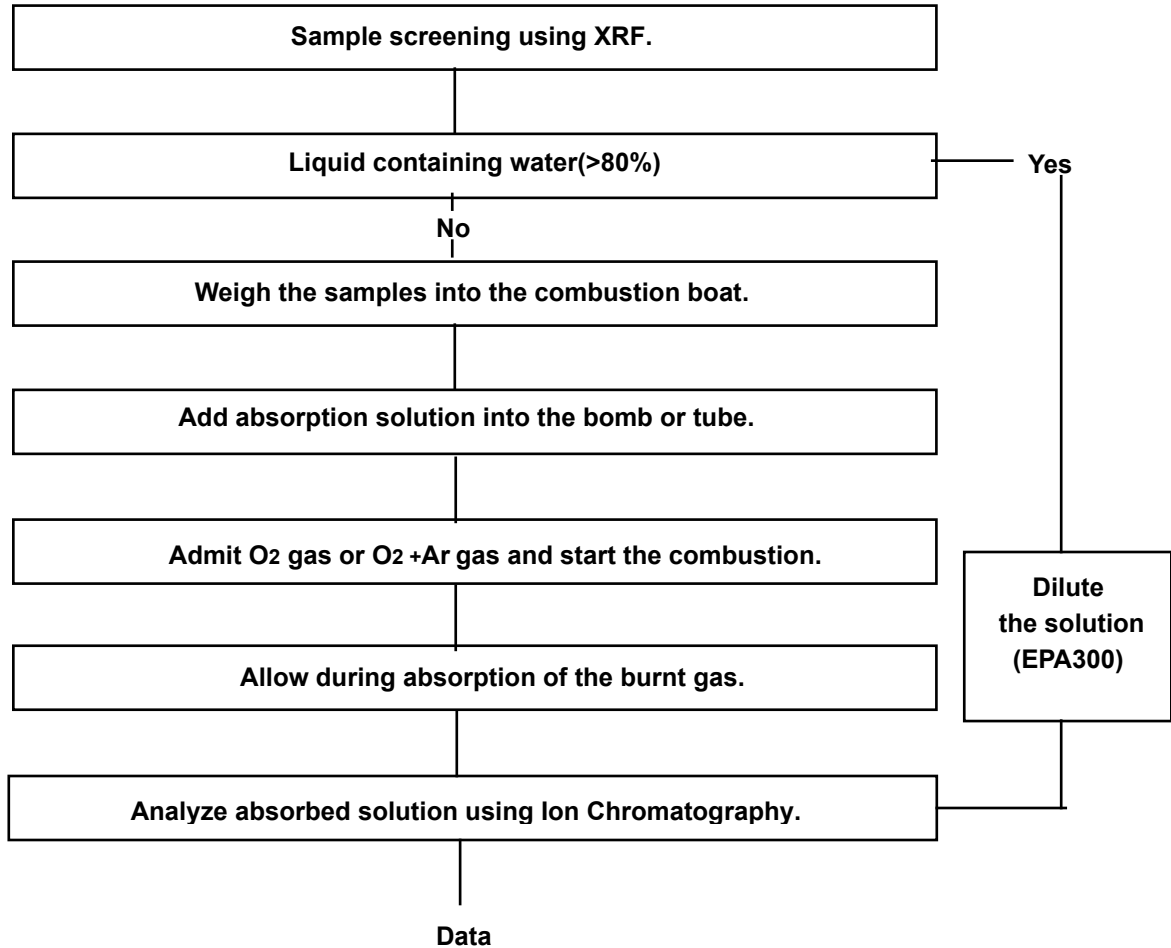
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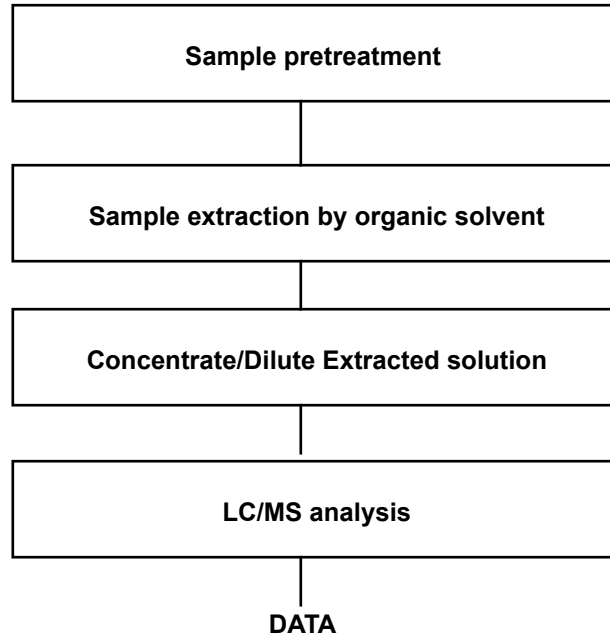
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Flow Chart for Halogen Test



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Testing Flow Chart for HBCD



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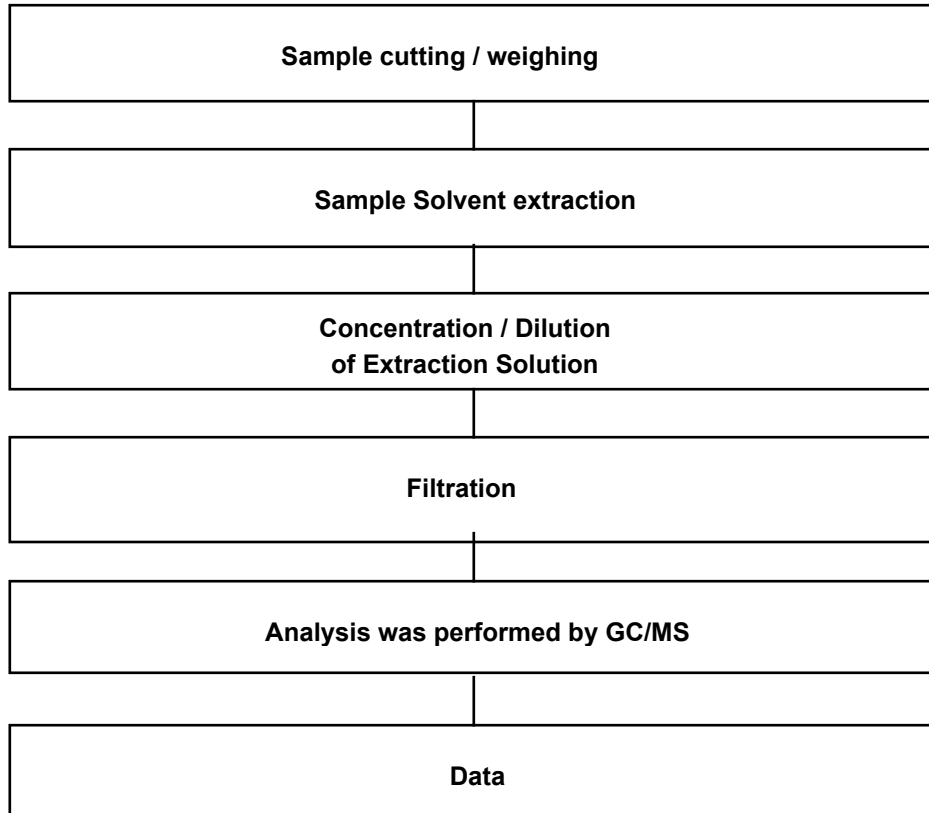
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Flow Chart for PhthalateTest



*** End of Report ***

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