

Test Report

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HOSONIC ELECTRONIC CO., LTD.
23-1, LANE 84, CHUN YING ST. SHULIN CITY TAIPEI 23804 TAIWAN R. O. C.



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

Sample Description : SMD OSC/VCXO/PECL
Style/Item No. : SMD OSC/VCXO/PECL
Sample Receiving Date : 2011/07/11
Testing Period : 2011/07/11 TO 2011/07/15

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Test Result(s) : Please refer to next page(s).



Chenyu Kung / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory – Taipei

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HOSONIC ELECTRONIC CO., LTD.
23-1, LANE 84, CHUN YING ST. SHULIN CITY TAIPEI 23804 TAIWAN R. O. C.



Test Result(s)

PART NAME No.1 : MIXED ALL PARTS (3 SAMPLES)

| Test Item (s): | Unit | Method | MDL | Result |
|---|-------|--|-------|--------|
| | | | | No.1 |
| Cadmium (Cd) | mg/kg | With reference to IEC 62321: 2008 and performed by ICP-AES. | 2 | n.d. |
| Lead (Pb) | mg/kg | With reference to IEC 62321: 2008 and performed by ICP-AES. | 2 | n.d. |
| Mercury (Hg) | mg/kg | With reference to IEC 62321: 2008 and performed by ICP-AES. | 2 | n.d. |
| Hexavalent Chromium Cr(VI) by alkaline extraction | mg/kg | With reference to IEC 62321: 2008 and performed by UV-VIS. | 2 | n.d. |
| Antimony (Sb) | mg/kg | With reference to US EPA Method 3050B for Antimony Content. Analysis was performed by ICP-AES. | 2 | n.d. |
| Hexabromocyclododecane (HBCDD) (CAS No.: 25637-99-4) | mg/kg | With reference to US EPA 3540C method. Analysis was performed by GC/MS. | 5 | n.d. |
| Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide) | mg/kg | With reference to US EPA 3540C: 1996 method for PFOS Content. Analysis was performed by LC/MS. | 10 | n.d. |
| PFOA (CAS No.: 335-67-1) | mg/kg | With reference to US EPA 3540C: 1996 method for PFOA Content. Analysis was performed by LC/MS. | 10 | n.d. |
| Phthalates | | | | |
| BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7) | % | With reference to EN 14372. Analysis was performed by GC/MS. | 0.003 | n.d. |
| DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7) | % | With reference to EN 14372. Analysis was performed by GC/MS. | 0.003 | n.d. |
| DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0) | % | With reference to EN 14372. Analysis was performed by GC/MS. | 0.01 | n.d. |
| DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0) | % | With reference to EN 14372. Analysis was performed by GC/MS. | 0.01 | n.d. |
| DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0) | % | With reference to EN 14372. Analysis was performed by GC/MS. | 0.003 | n.d. |
| DBP (Dibutyl phthalate) (CAS No.: 84-74-2) | % | With reference to EN 14372. Analysis was performed by GC/MS. | 0.003 | n.d. |

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| Test Item (s): | Unit | Method | MDL | Result |
|---|-------|---|-----|--------|
| | | | | No.1 |
| Halogen | | | | |
| Halogen-Fluorine (F) (CAS No.: 14762-94-8) | mg/kg | With reference to BS EN 14582:2007. Analysis was performed by IC. | 50 | n.d. |
| Halogen-Chlorine (Cl) (CAS No.: 22537-15-1) | mg/kg | With reference to BS EN 14582:2007. Analysis was performed by IC. | 50 | n.d. |
| Halogen-Bromine (Br) (CAS No.: 10097-32-2) | mg/kg | With reference to BS EN 14582:2007. Analysis was performed by IC. | 50 | n.d. |
| Halogen-Iodine (I) (CAS No.: 14362-44-8) | mg/kg | With reference to BS EN 14582:2007. Analysis was performed by IC. | 50 | n.d. |
| Sum of PBBs | | | - | n.d. |
| Monobromobiphenyl | | | 5 | n.d. |
| Dibromobiphenyl | | | 5 | n.d. |
| Tribromobiphenyl | | | 5 | n.d. |
| Tetrabromobiphenyl | | | 5 | n.d. |
| Pentabromobiphenyl | | | 5 | n.d. |
| Hexabromobiphenyl | | | 5 | n.d. |
| Heptabromobiphenyl | | | 5 | n.d. |
| Octabromobiphenyl | | | 5 | n.d. |
| Nonabromobiphenyl | | | 5 | n.d. |
| Decabromobiphenyl | | | 5 | n.d. |
| Sum of PBDEs | | | - | n.d. |
| Monobromodiphenyl ether | mg/kg | With reference to IEC 62321: 2008 and performed by GC/MS. | 5 | n.d. |
| Dibromodiphenyl ether | | | 5 | n.d. |
| Tribromodiphenyl ether | | | 5 | n.d. |
| Tetrabromodiphenyl ether | | | 5 | n.d. |
| Pentabromodiphenyl ether | | | 5 | n.d. |
| Hexabromodiphenyl ether | | | 5 | n.d. |
| Heptabromodiphenyl ether | | | 5 | n.d. |
| Octabromodiphenyl ether | | | 5 | n.d. |
| Nonabromodiphenyl ether | | | 5 | n.d. |
| Decabromodiphenyl ether | | | 5 | n.d. |

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Note :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated
5. The sample(s) was/were analyzed on behalf of the applicant as mixing sample in one testing. The above result(s) was/were only given as the informality value.

PFOS Reference Information : Directive 2006/122/EC

(1) May not be placed on the market or used as a substance or constituent of preparations in a concentration equal to or higher than 0.005 % by mass.

(2) May not be placed on the market in semi-finished products or articles, or parts thereof, if the concentration of PFOS is equal to or higher than 0.1 % by mass calculated with reference to the mass of structurally or microstructurally distinct parts that contain PFOS or, for textiles or other coated materials, if the amount of PFOS is equal to or higher than $1\mu\text{g}/\text{m}^2$ of the coated material.

Test Report

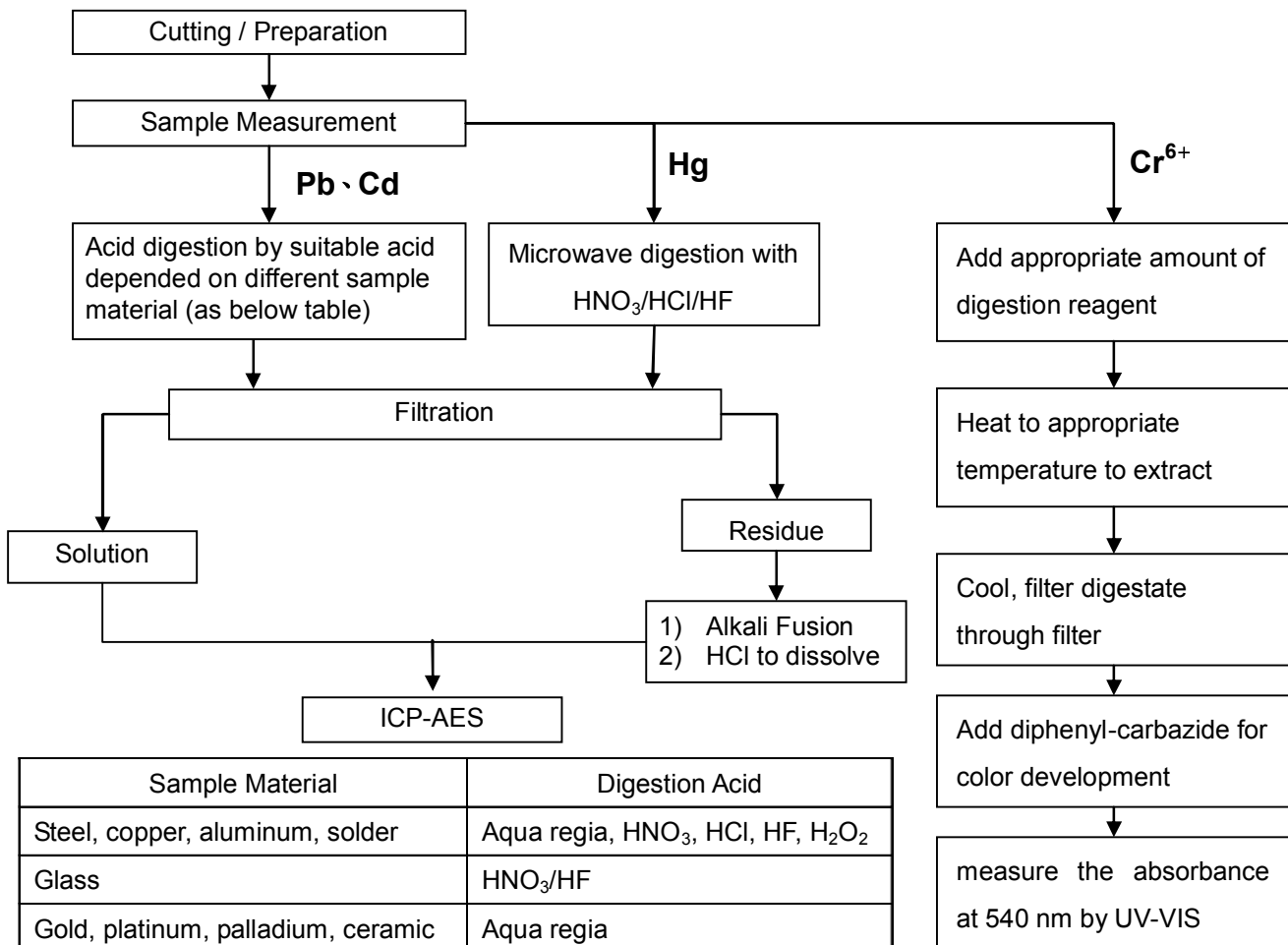
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HOSONIC ELECTRONIC CO., LTD.

23-1, LANE 84, CHUN YING ST. SHULIN CITY TAIPEI 23804 TAIWAN R. O. C.



- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ test method excluded)
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



| Sample Material | Digestion Acid |
|------------------------------------|---|
| Steel, copper, aluminum, solder | Aqua regia, HNO ₃ , HCl, HF, H ₂ O ₂ |
| Glass | HNO ₃ /HF |
| Gold, platinum, palladium, ceramic | Aqua regia |
| Silver | HNO ₃ |
| Plastic | H ₂ SO ₄ , H ₂ O ₂ , HNO ₃ , HCl |
| Others | Any acid to total digestion |

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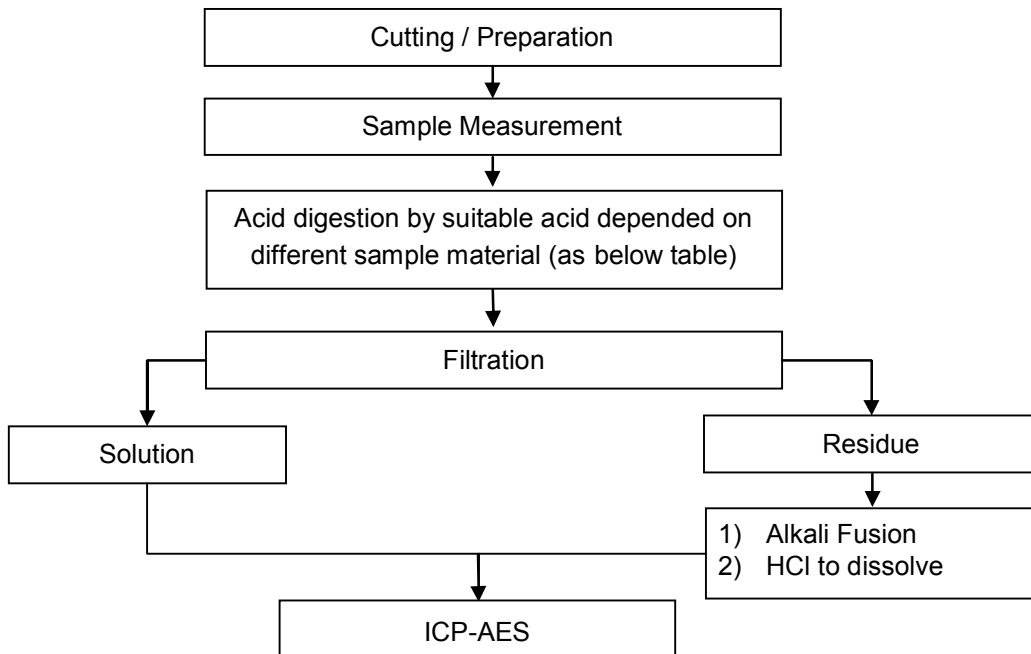
HOSONIC ELECTRONIC CO., LTD.

23-1, LANE 84, CHUN YING ST. SHULIN CITY TAIPEI 23804 TAIWAN R. O. C.



- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang

Flow Chart of digestion for the elements analysis performed by ICP-AES



| | |
|------------------------------------|---|
| Steel, copper, aluminum, solder | Aqua regia, HNO ₃ , HCl, HF, H ₂ O ₂ |
| Glass | HNO ₃ /HF |
| Gold, platinum, palladium, ceramic | Aqua regia |
| Silver | HNO ₃ |
| Plastic | H ₂ SO ₄ , H ₂ O ₂ , HNO ₃ , HCl |
| Others | Any acid to total digestion |

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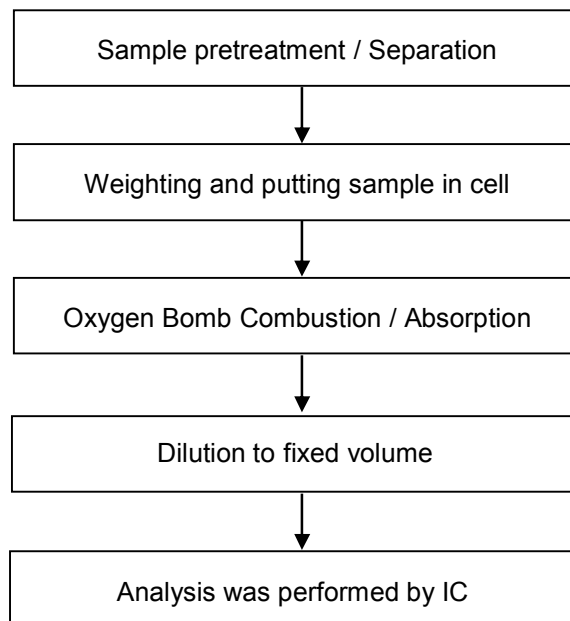
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23-1, LANE 84, CHUN YING ST. SHULIN CITY TAIPEI 23804 TAIWAN R. O. C.



Analytical flow chart of halogen content

- 1) Name of the person who made measurement: Rita Chen
- 2) Name of the person in charge of measurement: Troy Chang



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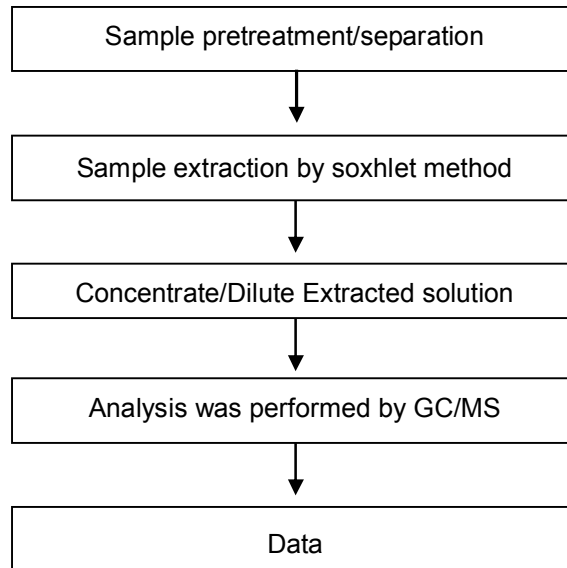
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Analytical flow chart of Soxhlet extraction (GC/MS) procedure

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang

【Test Items: Phthalate、Benzotriazole、HBCDD、NP、DBBT、Organic phosphorus compounds】



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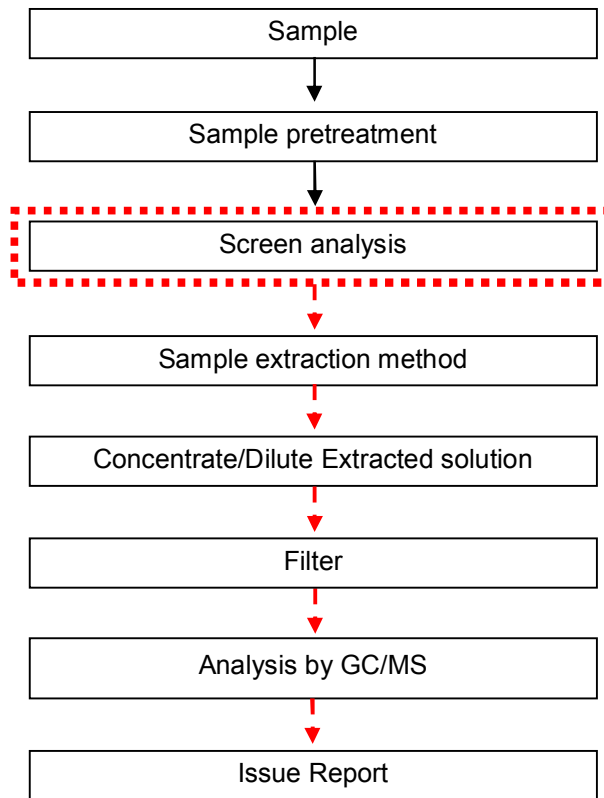


Analytical flow chart

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang

【 Test Items: PBB/PBDE, TBBP-A-bis 】

First testing process —> Optional screen process Confirmation process - ->



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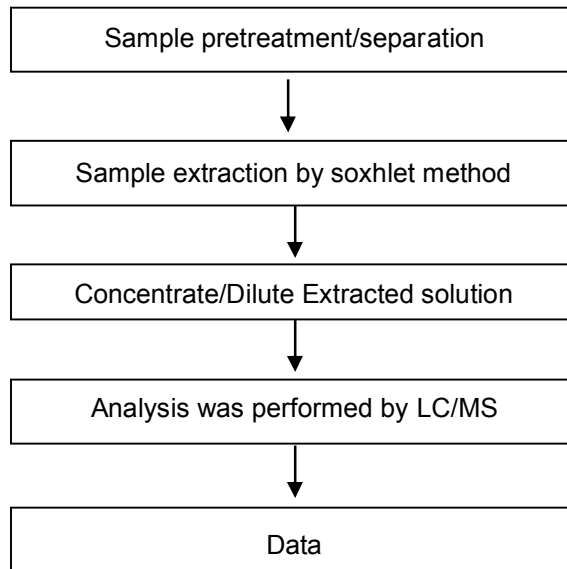
23-1, LANE 84, CHUN YING ST. SHULIN CITY TAIPEI 23804 TAIWAN R. O. C.



Analytical flow chart of Soxhlet extraction (LC/MS) procedure

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang

【 Test Items: PFOS/PFOA 、 Benzotriazole 】



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** End of Report **

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