

Test Report

Applicant: Leading Technologies
1153 Industrial Park Rd,
Leechburg, PA 15656, USA

Number : TWNC01151337

Issue Date : Feb 20, 2023

Sample Description:

One (1) Group of Submitted Samples Said To Be :

Sample Description : C

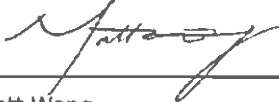
Date Sample Received : Feb 08, 2023

Date Test Started : Feb 08, 2023

Test Conducted :

As requested by the applicant, for details please refer to attached pages.

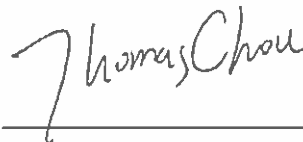
Authorized By:
On behalf of Intertek Testing Services
Taiwan Limited



Matt Wang
Director



Signed by:



Thomas Chou
Manager



Test Conducted :

Test Result Summary:

| Test Item | Unit | Test Method | Result | RL |
|--|---------------------|--|----------------------|------|
| | | | Golden/silvery metal | |
| Heavy Metal | | | | |
| Cadmium (Cd) Content | ppm | With reference to IEC 62321-5: 2013, by microwave or acid digestion and determined by ICP-OES. | ND | 2 |
| Lead (Pb) Content | ppm | With reference to IEC 62321-5: 2013, by microwave or acid digestion and determined by ICP-OES. | ND | 2 |
| Mercury (Hg) Content | ppm | With reference to IEC 62321-4:2013+AMD1:2017, by microwave or acid digestion and determined by ICP-OES. | ND | 2 |
| Beryllium (Be) Content | ppm | With reference to USEPA 3052, by microwave digestion and determined by ICP-OES. | ND | 2 |
| Antimony (Sb) Content | ppm | With reference to USEPA 3052, by microwave digestion and determined by ICP-OES. | ND | 2 |
| Chromium VI (Cr(VI)) Content @ | µg/ cm ² | With reference to IEC 62321-7-1: 2015, by boiling water extraction and determined by UV-Vis Spectrophotometer or visual observation. | Negative | 0.10 |
| Polybrominated Biphenyls (PBBs) | | | | |
| Monobrominated Biphenyls (MonoBB) | ppm | With reference to IEC 62321-6: 2015, by solvent extraction and determined by GC-MS and further HPLC-DAD confirmation when necessary. | ND | 5 |
| Dibrominated Biphenyls (DiBB) | ppm | | ND | 5 |
| Tribrominated Biphenyls (TriBB) | ppm | | ND | 5 |
| Tetrabrominated Biphenyls (TetraBB) | ppm | | ND | 5 |
| Pentabrominated Biphenyls (PentaBB) | ppm | | ND | 5 |
| Hexabrominated Biphenyls (HexaBB) | ppm | | ND | 5 |
| Heptabrominated Biphenyls (HeptaBB) | ppm | | ND | 5 |
| Octabrominated Biphenyls (OctaBB) | ppm | | ND | 5 |
| Nonabrominated Biphenyls (NonaBB) | ppm | | ND | 5 |
| Decabrominated Biphenyl (DecaBB) | ppm | | ND | 5 |



Test Conducted :

| Test Item | Unit | Test Method | Result | RL |
|---|------|--|----------------------|----|
| | | | Golden/silvery metal | |
| Polybrominated Diphenyl Ethers (PBDEs) | | | | |
| Monobrominated Diphenyl Ethers (MonoBDE) | ppm | With reference to IEC 62321-6: 2015, by solvent extraction and determined by GC-MS and further HPLC-DAD confirmation when necessary. | ND | 5 |
| Dibrominated Diphenyl Ethers (DiBDE) | ppm | | ND | 5 |
| Tribrominated Diphenyl Ethers (TriBDE) | ppm | | ND | 5 |
| Tetrabrominated Diphenyl Ethers (TetraBDE) | ppm | | ND | 5 |
| Pentabrominated Diphenyl Ethers (PentaBDE) | ppm | | ND | 5 |
| Hexabrominated Diphenyl Ethers (HexaBDE) | ppm | | ND | 5 |
| Heptabrominated Diphenyl Ethers (HeptaBDE) | ppm | | ND | 5 |
| Octabrominated Diphenyl Ethers (OctaBDE) | ppm | | ND | 5 |
| Nonabrominated Diphenyl Ethers (NonaBDE) | ppm | | ND | 5 |
| Decabrominated Diphenyl Ether (DecaBDE) | ppm | | ND | 5 |
| Phthalates | | | | |
| Di(2-ethylhexyl) Phthalate (DEHP) | ppm | With reference to IEC 62321-8:2017, by solvent extraction and determined by GC-MS. | ND | 50 |
| Dibutyl Phthalate (DBP) | ppm | | ND | 50 |
| Benzyl Butyl Phthalate (BBP) | ppm | | ND | 50 |
| Diisobutyl Phthalate (DIBP) | ppm | | ND | 50 |
| Halogen Content | | | | |
| Fluorine (F) | ppm | With reference to EN 14582:2016 by combustion bomb with oxygen and determined by Ion Chromatography. | ND | 50 |
| Chlorine (Cl) | ppm | | ND | 50 |
| Bromine (Br) | ppm | | ND | 50 |
| Iodine (I) | ppm | | ND | 50 |

Remarks: ppm = Parts per million based on weight of tested sample = mg/kg

ND = Not detected

RL = Reporting limit, quantitation limit of analyte in sample



Test Conducted :

@ The explanation of Chromium VI (Cr(VI)) analysis results

| Colorimetric result | Qualitative Result | Explanation |
|---|--------------------|---|
| < 0.10 µg/cm ² | Negative | The result of sample is negative for Cr(VI). The sample coating is considered a non-Cr(VI) based coating. |
| ≥ 0.10 µg/cm ² and ≤ 0.13 µg/cm ² | Inconclusive | The result of sample is considered to be inconclusive. If addition samples are available, recommend to add trials and get the average result for the final determination. |
| > 0.13 µg/cm ² | Positive | The result of sample is positive for Cr(VI). The sample coating is considered to contain Cr(VI). A result expresses as Positive, while not an actual value, which indicates a visual observation was used. |

Responsibility of Chemist: Cloud Hsu/ Vita Fu

Date Sample Received : Feb 08, 2023
 Test Period : Feb 08, 2023 to Feb 14, 2023

RoHS Limit

| Restricted Substances | Limits |
|--|----------------|
| Cadmium (Cd) content | 0.01% (100ppm) |
| Lead (Pb) content | 0.1% (1000ppm) |
| Mercury (Hg) content | 0.1% (1000ppm) |
| Chromium VI (Cr(VI)) content | 0.1% (1000ppm) |
| Polybrominated Biphenyls (PBBs) | 0.1% (1000ppm) |
| Polybrominated Diphenyl Ethers (PBDEs) | 0.1% (1000ppm) |
| Di(2-ethylhexyl) Phthalate (DEHP) | 0.1% (1000ppm) |
| Dibutyl Phthalate (DBP) | 0.1% (1000ppm) |
| Benzyl Butyl Phthalate (BBP) | 0.1% (1000ppm) |
| Diisobutyl Phthalate (DIBP) | 0.1% (1000ppm) |

The limits were quoted from Annex II of 2011/65/EU and Amendment (EU) 2015/863 for homogeneous material.



Test Conducted :

Measurement Flowchart:

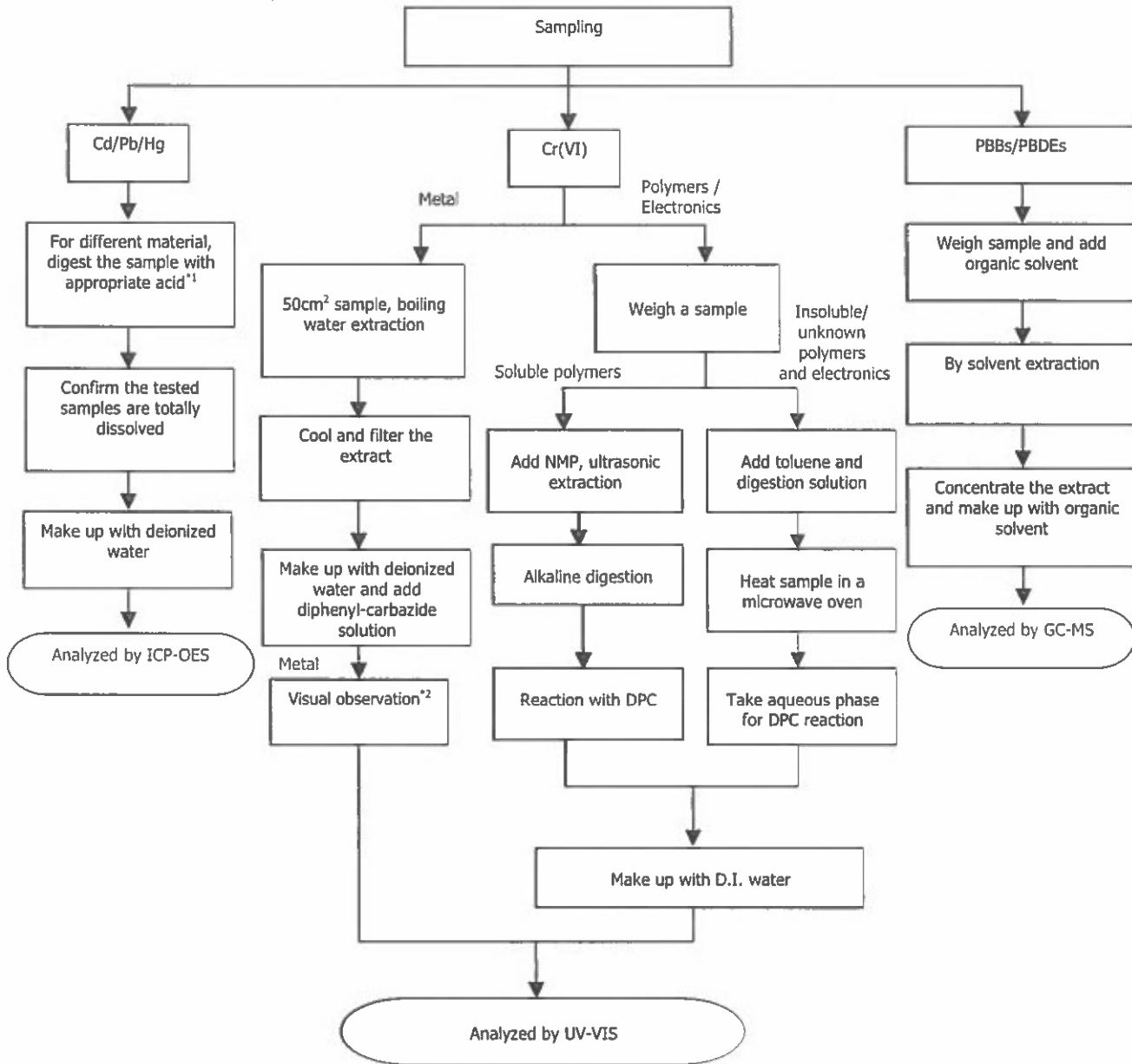
Test for Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Content

Reference Standard : Cd/Pb: IEC 62321-5:2013; Hg: IEC 62321-4:2013+AMD1:2017;

Chromium (VI): IEC 62321-7-1:2015 (boiling water extraction);

Chromium (VI): IEC 62321-7-2:2017 (solvent and alkaline extraction);

PBBs/PBDEs: IEC 62321-6:2015



Test Conducted :

Remarks:

*1: List of Appropriate Acid :

| Material | Acid Added for Digestion |
|-------------|--|
| Polymers | HNO ₃ , HCl, HF, H ₂ O ₂ , H ₃ BO ₃ |
| Metals | HNO ₃ , HCl, HF |
| Electronics | HNO ₃ , HCl, H ₂ O ₂ , HBF ₄ |

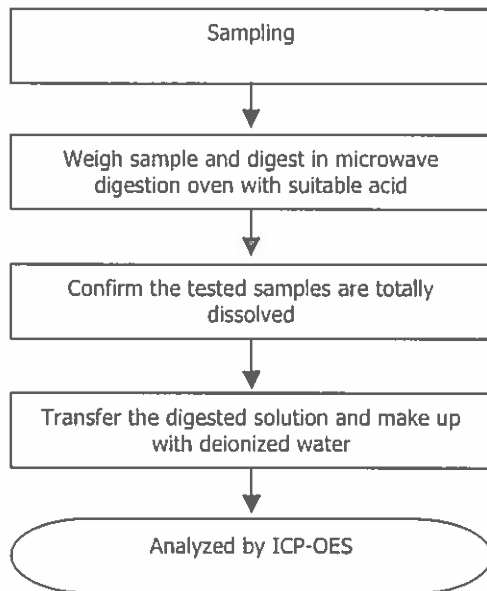
*2: If sample solution is significantly more intense than 0.13 µg/cm² equivalent comparison standard, Chromium VI would be determined as detected, the result of visual observation is positive.



Test Conducted :

Measurement Flowchart:

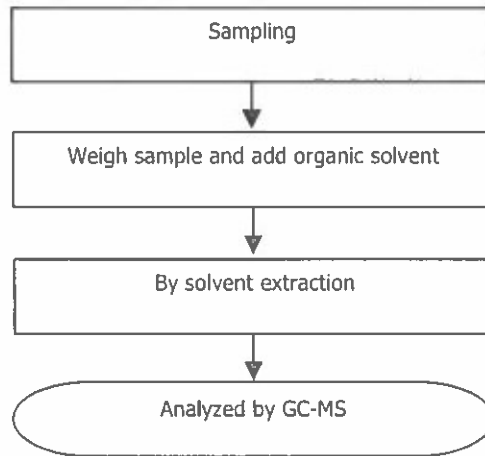
Test for Heavy Metal (Be,Sb) Content
Reference Method : USEPA 3052



Test Conducted :

Measurement Flowchart:

Test for Phthalates Content
Reference Method : IEC 62321-8:2017

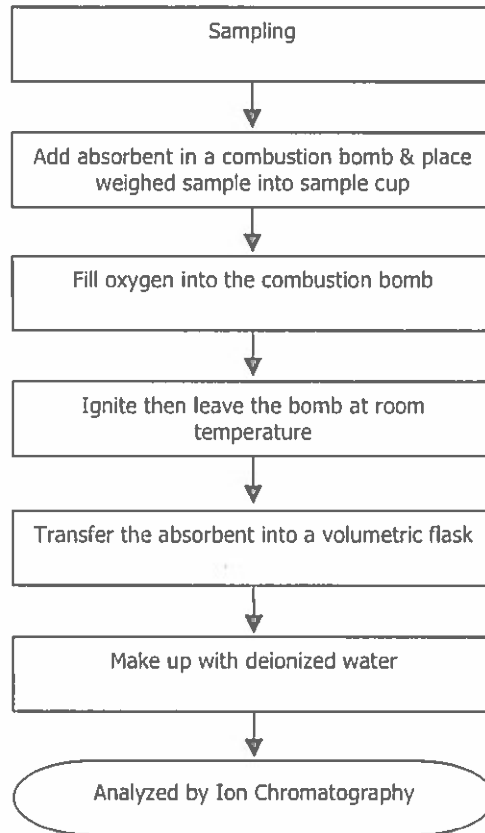


Test Conducted :

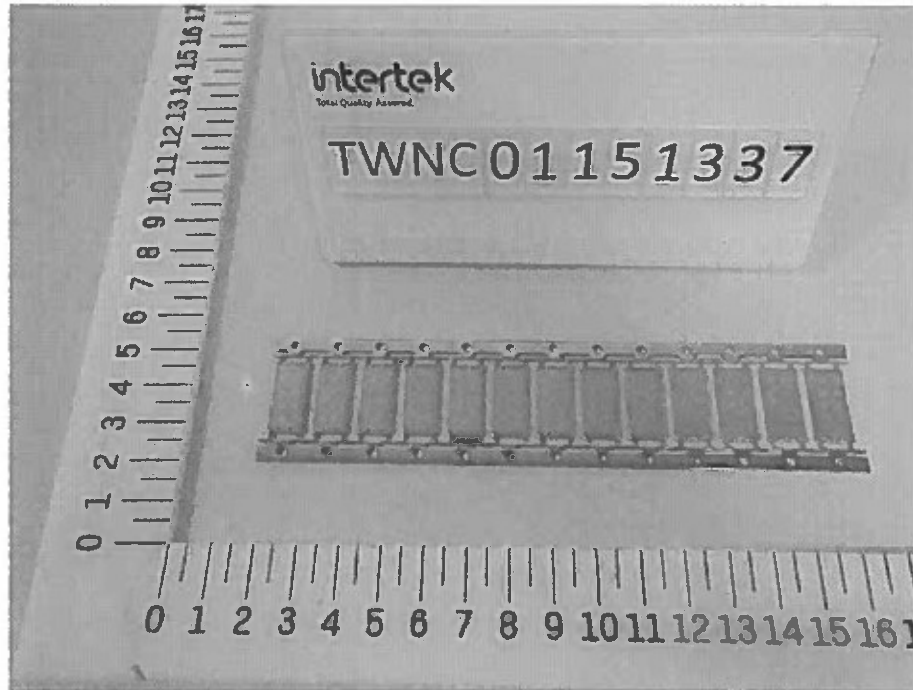
Measurement Flowchart:

Test for Halogen Content

Reference Standard : EN 14582:2016



Sample photo:



End of Report

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