

Test Report

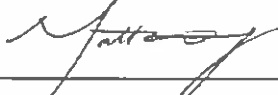
Applicant: Leading Technologies
 1153 Industrial Park Rd,
 Leechburg, PA 15656, USA

Number : TWNC01151336
Issue Date : Feb 20, 2023

Sample Description:
One (1) Group of Submitted Samples Said To Be :
Sample Description : B
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.

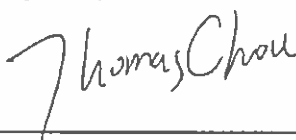
Authorized By:
On behalf of Intertek Testing Services
Taiwan Limited



Matt Wang
Director



Signed by:



Thomas Chou
Manager



Test Conducted :

Test Result Summary:

Test Item	Unit	Test Method	Result	
			Silvery/coppery metal	RL
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.	19	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
			Silvery/coppery 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:

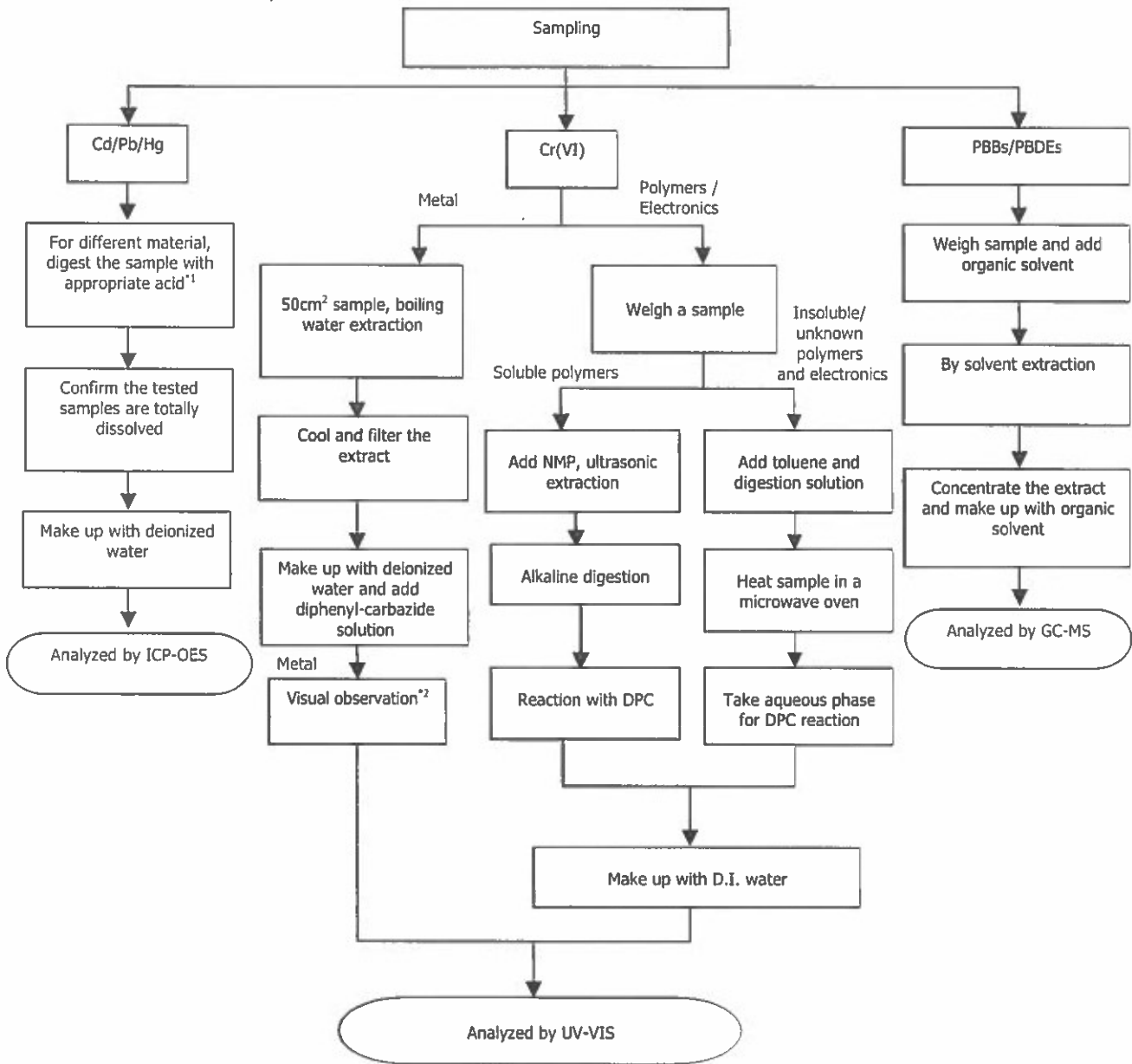
Test for Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Content

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

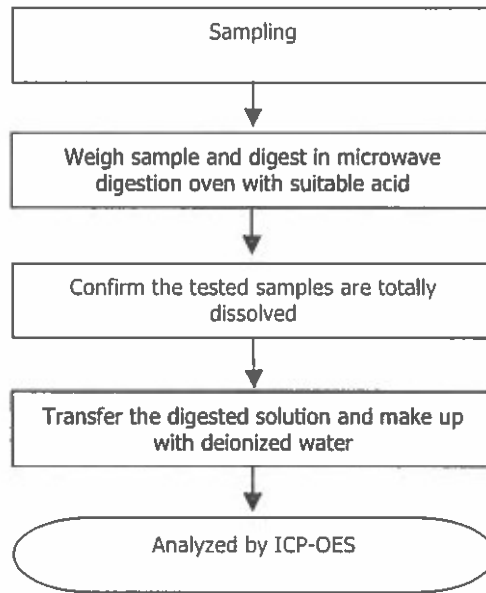
*2: If sample solution is significantly more intense than 0.13 µg/cm² equivalent comparison standard, Chromium VI would be determined as detected, the result of visual observation is positive.



Test Conducted :

Measurement Flowchart:

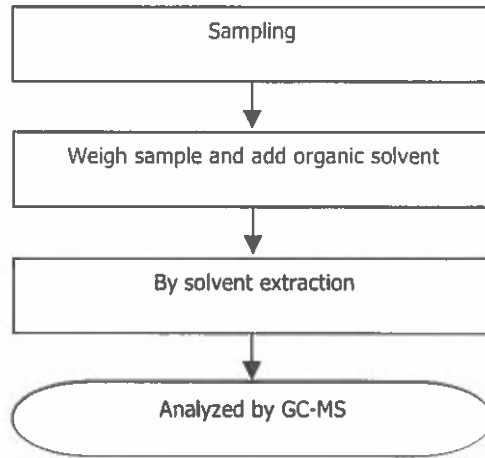
Test for Heavy Metal (Be,Sb) Content
Reference Method : USEPA 3052



Test Conducted :

Measurement Flowchart:

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

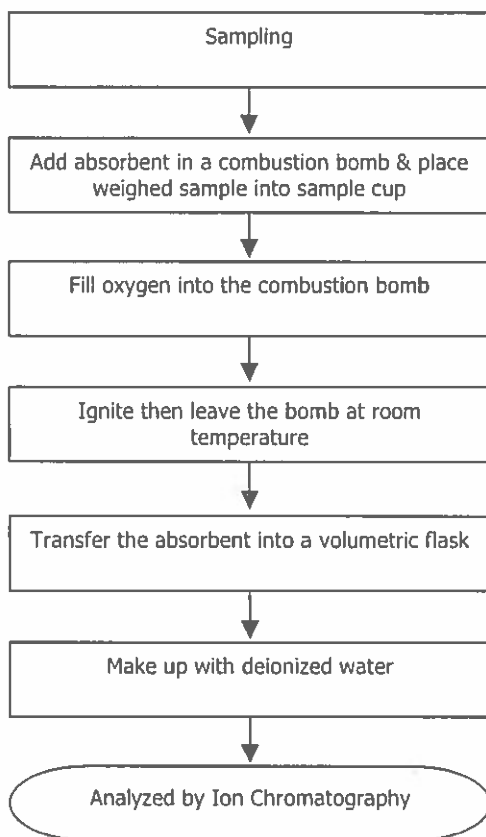


Test Conducted :

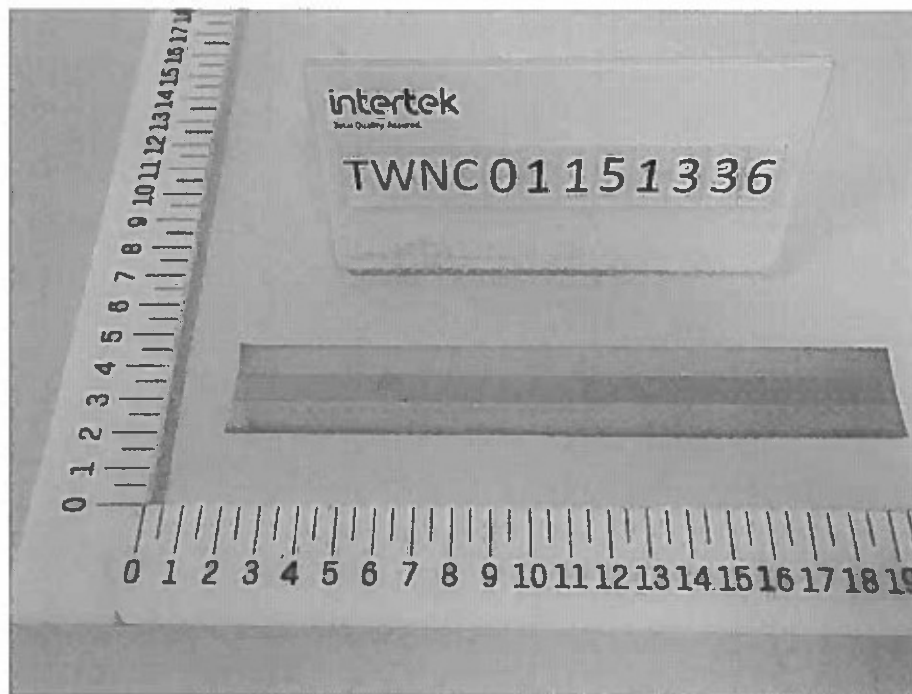
Measurement Flowchart:

Test for Halogen Content

Reference Standard : EN 14582:2016



Sample photo:



End of Report

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Reporting Statements of Conformity: Please note that the test results contain statement of conformity with the decision rules which are based on the specifications of customers, regulations and standards, and does not consider measurement uncertainty.

