Test Report Report No.: 190823021GZU-021 Date: Sep 19, 2019

Applicant: AILUN ELECTRONIC TECHNOLOPY (H.K) LIMITED

Room 01, 21/F Prosper Commercial Building 9 Yin Chong Street, Kowloom, H.K

Sample Description:
The following submitted sample(s) said to be:

Item Name	:	**MLCC-X5R**
Model No.	:	NA
Date of Sample Received	:	Aug 26, 2019
Testing Period	:	Aug 26, 2019 to Sep 03, 2019

Tests conducted:
As requested by the applicant, refer to following page(s) for details.

Conclusion:

Tested Sample	Standard	Result
Tested components of submitted sample	Restriction of the use of certain hazardous substance in electrical and electronic equipment (RoHS Directive 2011/65/EU and (EU) 2015/863)	Pass

Authorized by:
For Intertek Testing Services Shenzhen Ltd. Guangzhou Branch:

Martin He
Senior Project Engineer

Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China
Tel: (86-20) 8213 9688 Fax: (86-20) 32057538 Website: www.intertek.com

Test Report Report No.: 190823021GZU-021 Date: Sep 19, 2019

Tests conducted:

RoHS Chemical Test

(A)Test Result Summary:

Testing Item	Result
	(1)
Cadmium (Cd) Content (mg/kg)	ND
Lead (Pb) Content (mg/kg)	ND
Mercury (Hg) Content (mg/kg)	ND
Chromium (VI)(Cr^{6+}) Content (mg/kg)	ND
Chromium (VI)(Cr^{6+}) Result (By Boiling Water Extraction on Metal)(μg/cm^2)	--
Polybrominated Biphenyls (PBBs)(mg/kg)	
Monobromobiphenyl (MonoBB)	ND
Dibromobiphenyl (DiBB)	ND
Tribromobiphenyl (TriBB)	ND
Tetrabromobiphenyl (TetraBB)	ND
Pentabromobiphenyl (PentaBB)	ND
Hexabromobiphenyl (HexaBB)	ND
Heptabromobiphenyl (HeptaBB)	ND
Octabromobiphenyl (OctaBB)	ND
Nonabromobiphenyl (NonaBB)	ND
Decabromobiphenyl (DecaBB)	ND
Polybrominated Diphenyl Ethers (PBDEs) (mg/kg)	
Monobromodiphenyl Ether (MonoBDE)	ND
Dibromodiphenyl Ether (DiBDE)	ND
Tribromodiphenyl Ether (TriBDE)	ND
Tetrabromodiphenyl Ether (TetraBDE)	ND
Pentabromodiphenyl Ether (PentaBDE)	ND
Hexabromodiphenyl Ether (HexaBDE)	ND
Heptabromodiphenyl Ether (HeptaBDE)	ND
Octabromodiphenyl Ether (OctaBDE)	ND
Nonabromodiphenyl Ether (NonaBDE)	ND
Decabromodiphenyl Ether (DecaBDE)	ND
Phthalates(mg/kg)	
Bis(2-ethylhexyl)phthalate(DEHP)	ND
Butyl benzyl phthalate(BBP)	ND
Dibutyl phthalate(DBP)	ND
Diisobutyl phthalate(DIBP)	ND

Tested samples:
(1) Brown ceramic with metal

Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China
Tel: (86-20) 8213 9688 Fax: (86-20) 32057538 Website: www.intertek.com

ND = Not detected
mg/kg= milligram per kilogram

(B) RoHS Requirement:

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr^{6+})	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)
Phthalates(DEHP, BBP, DBP, DIBP)	0.1% (1000 mg/kg)

The above limits were quoted from 2011/65/EU and (EU) 2015/863 for homogeneous material.

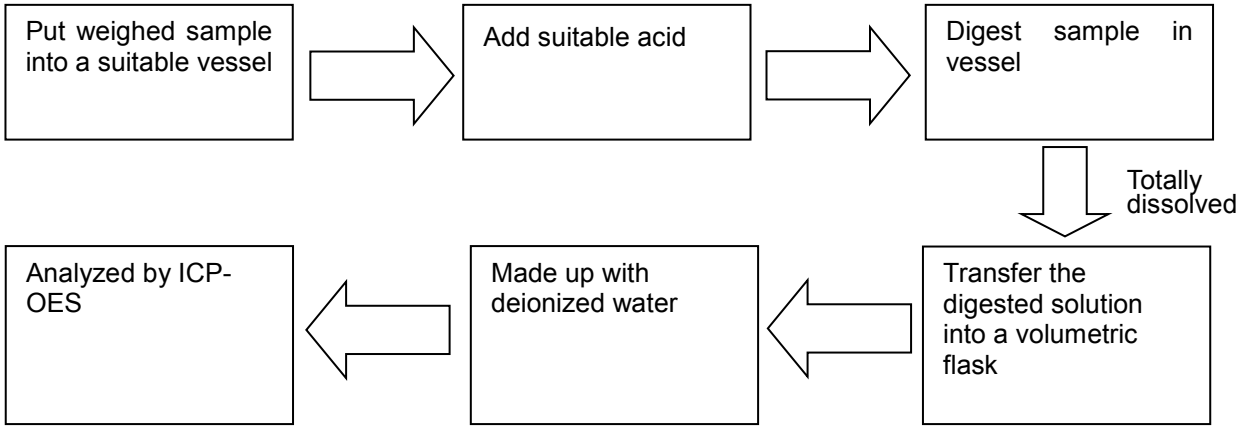
(C) Test Method:

Testing Item	Testing Method	Reporting Limit
Cadmium (Cd) Content	With reference to IEC 62321-5 Edition 1.0:2013, by acid digestion and determined by ICP - OES	2 mg/kg
Lead (Pb) Content	With reference to IEC 62321-5 Edition 1.0:2013, by acid digestion and determined by ICP - OES	2 mg/kg
Mercury (Hg) Content	With reference to IEC 62321-4 Edition 1.1: 2017, by acid digestion and determined by ICP - OES	2 mg/kg
Chromium (VI)(Cr^{6+}) Content	With reference to IEC 62321-7-2 Edition 1.0:2017, Hexavalent chromium – Determination of hexavalent chromium (Cr(VI) in polymers and electronics by the colorimetric method	10 mg/kg
Chromium (VI)(Cr^{6+}) Content	With reference to IEC 62321-7-1 edition 1.0:2015, by boiling water extraction and determined by UV-VIS spectrophotometer	0.10 $\mu g/cm^2$
Polybrominated Biphenyls (PBBs)& Polybrominated Diphenyl Ethers (PBDEs)	With reference to IEC 62321-6 Edition 1.0:2015, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary	5 mg/kg
Phthalates(DEHP, BBP, DBP, DIBP) Content	With reference to IEC 62321-8 Edition 1.0:2017,by solvent extraction and determined by GC/MS	100mg/kg

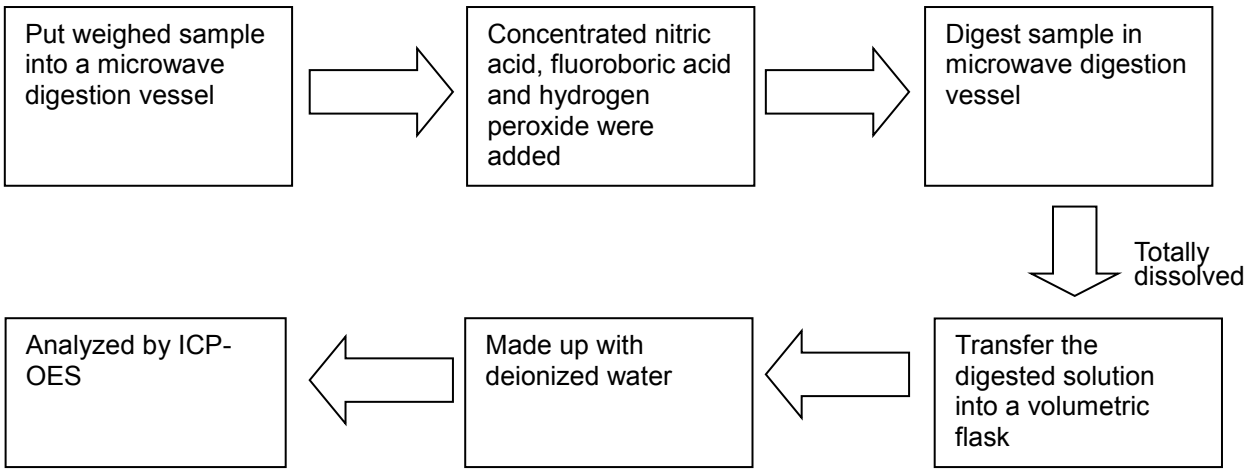
Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China
Tel: (86-20) 8213 9688 Fax: (86-20) 32057538 Website: www.intertek.com

(D)Measurement Flowchart:

1. Test for Cd/Pb Contents

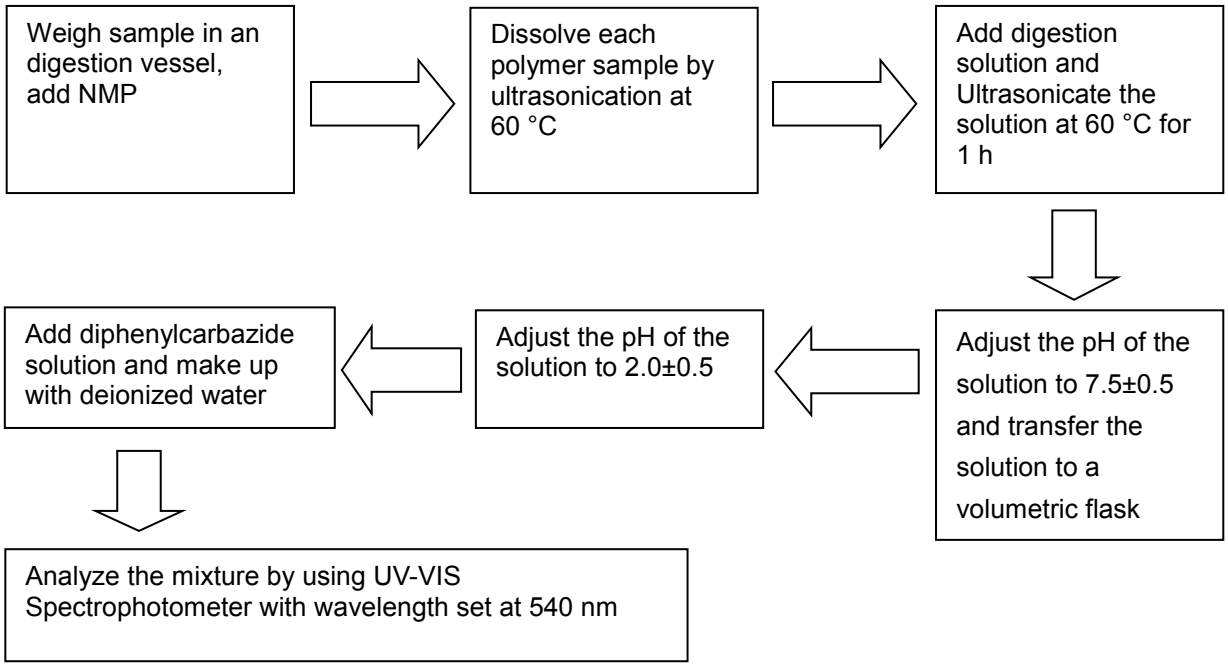


2. Test for Hg Content

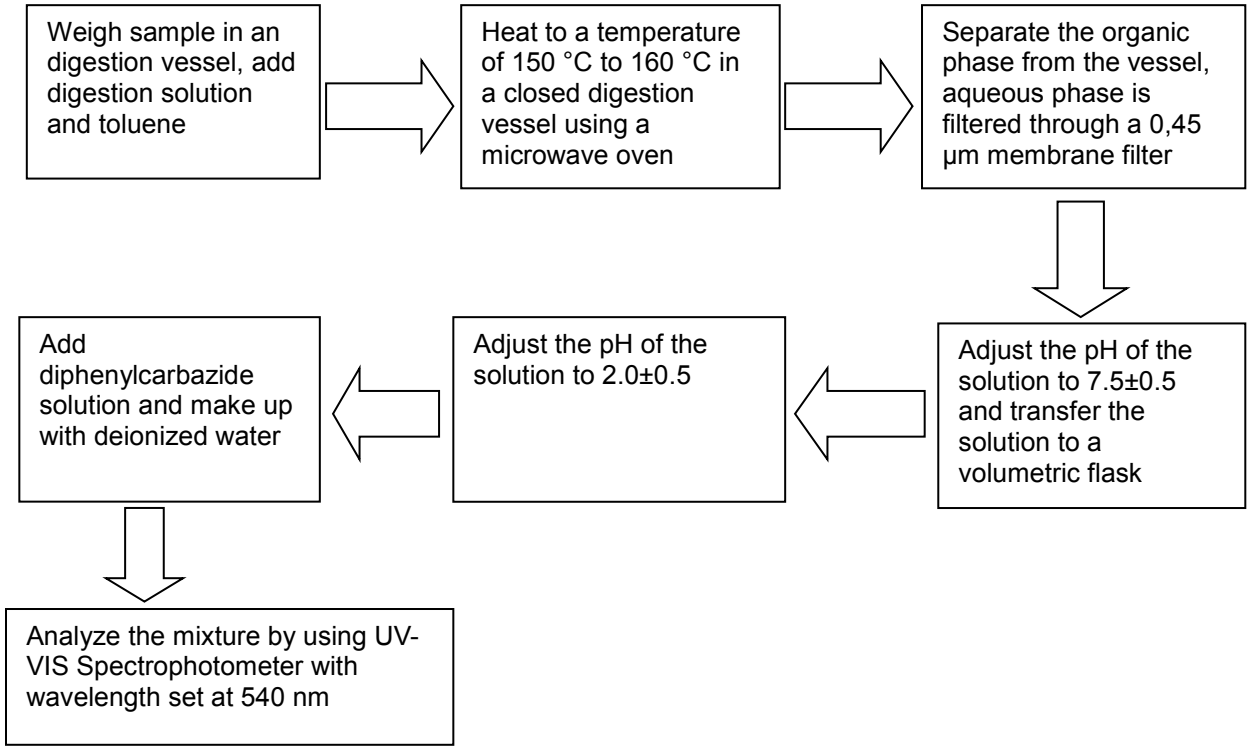


Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China
Tel: (86-20) 8213 9688 Fax: (86-20) 32057538 Website: www.intertek.com

3. Test for Chromium (VI) (Cr^{6+}) Content
Soluble polymers:

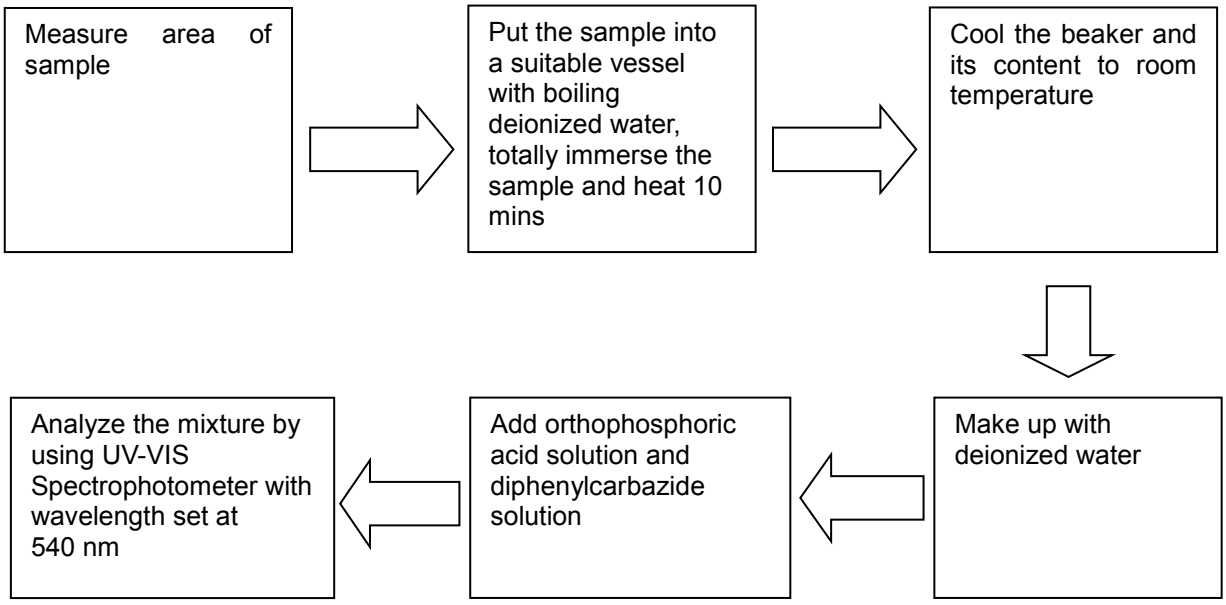


Insoluble/unknown polymers and electronics without Sb:



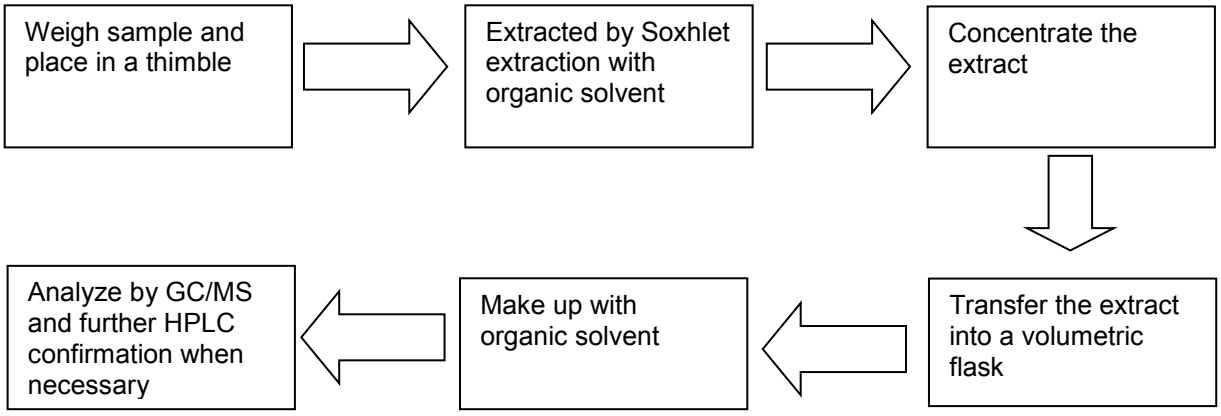
Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China
Tel: (86-20) 8213 9688 Fax: (86-20) 32057538 Website: www.intertek.com

4. Test for Chromium (VI) (Cr^{6+}) Content (Boiling Water Extraction)

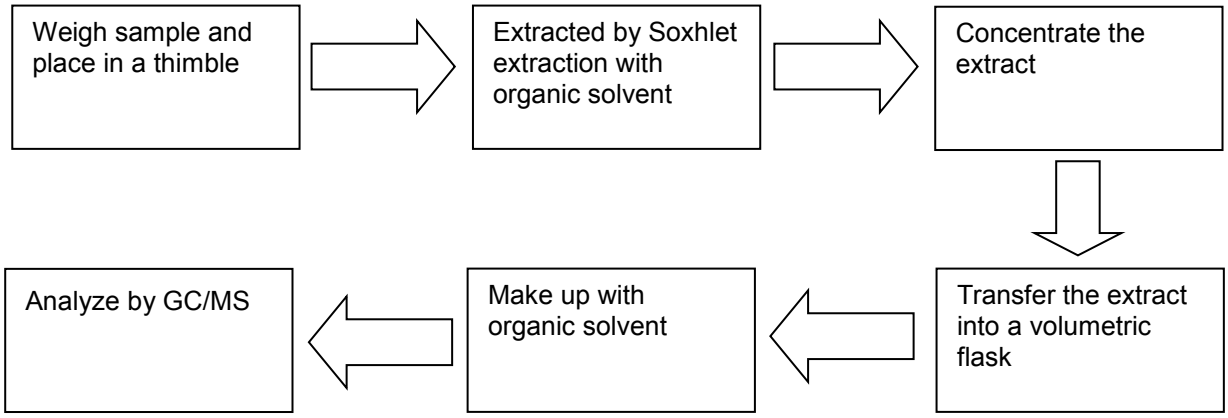


Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China
Tel: (86-20) 8213 9688 Fax: (86-20) 32057538 Website: www.intertek.com

5. Test for PBBs/PBDEs Contents



6. Test for Phthalate Contents



Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China
Tel: (86-20) 8213 9688 Fax: (86-20) 32057538 Website: www.intertek.com

Sample photo

****

End of report

Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China
Tel: (86-20) 8213 9688 Fax: (86-20) 32057538 Website: www.intertek.com

