Test Report

Report No.: PTC23062904201C-EN01 **Issue Date:** Jul. 06, 2023

Applicant: Applied Composite Material Co. Ltd.

Address: No.1 Chunhui Road, Qiaonan, Xiaoshan Economic and Technological Development Zone, Xiaoshan District, Hangzhou, Zhejiang

The following merchandise was (were) submitted and identified by client as:

Sample Name:	Copper Cladding Aluminum Composite
Manufacturer:	Applied Composite Material Co. Ltd.
Address:	No.1 Chunhui Road, Qiaonan, Xiaoshan Economic and Technological Development Zone, Xiaoshan District, Hangzhou, Zhejiang
Sample Received Date:	Jul. 01, 2023
Completed Date:	Jul. 06, 2023

Test Requested: As specified by client, with reference to RoHS Directive 2011/65/EU and its subsequent amendments regulation EU No.2015/863.(Lead (Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr^{6+}), PBBs and PBDEs, Phthalates (DBP, BBP,DEHP,DIBP))

Conclusion(s): According to the test results of below test parameters, the submitted sample complied with the requirements for RoHS Directive 2011/65/EU and its subsequent amendments regulation EU No.2015/863.

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

Prepared by: Anne Checked by:Crystal Approved by: Miya

Precise Testing & Certification (Guangdong) Co., Ltd. (PTC)

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Test Result(s):

1.1) RoHS Directive 2011/65/EU -(Lead (Pb)/Cadmium(Cd)/Mercury(Hg)/Hexavalent Chromium(Cr^{6+}) /PBBs/PBDEs)

Test Method: IEC62321-3-1: 2013, analyzed by EDXRF.

No.	Materials Description	EDXRF Result(s) (mg/kg)					Chemical Result (mg/kg)	Conclusion
		Pb	Cd	Hg	Cr	Br		
1	Copper metal(surface layer)	BL	BL	BL	BL	--	--	PASS
2	Silvery metal (inside layer)	BL	BL	BL	BL	--	--	PASS

Note:
1. mg/kg = milligram per kilogram (ppm).
2. N.D. = Not Detected
3. The result are obtained by EDXRF for primary screening, if the result exceeds the below limit (BL), and further chemical testing.
4. For EDXRF screening, the result(s) of Cr VI was (were) reported as total chromium and the result(s) of PBBs and PBDEs was (were) reported as total bromine.

Screening limits in mg/kg for regulated elements in various matrices

Elements	Polymer	Metal	Composite Materials
Pb	BL≤(700-3σ)<X<(1300+3σ)≤ OL	BL≤(700-3σ)<X<(1300+3σ)≤ OL	BL≤(500-3σ)<X<(1500+3σ)≤ OL
Cd	BL≤(70-3σ)<X<(130+3σ)≤ OL	BL≤(70-3σ)<X<(130+3σ)≤ OL	LOD<X<(150+3σ)≤OL
Hg	BL≤(700-3σ)<X<(1300+3σ)≤ OL	BL≤(700-3σ)<X<(1300+3σ)≤ OL	BL≤(500-3σ)<X<(1500+3σ)≤ OL
Cr	BL≤(700-3σ)<X	BL≤(700-3σ)<X	BL≤(500-3σ)<X
Br	BL≤(300-3σ)<X	--	BL≤(250-3σ)<X

BL = Below Limit, OL = Over Limit, IN = Inconclusive, LOD = Limit of Detection

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Chemical Testing - Detection Limit & 2011/65/EU Limit:

Name of Chemicals	Detection Limit (mg/kg)	2011/65/EU Limit (mg/kg)
Lead (Pb)	5	1000
Cadmium (Cd)	5	100
Mercury (Hg)	5	1000
Chromium VI (Cr VI)	Non-metal: 10 Metal: Negative	Non-metal: 1000 Metal: Negative
Polybromobiphenyls (PBBs) -Bromobiphenyl (MonoBB) -Dibromobiphenyl (DiBB) -Tribromobiphenyl (TriBB) -Tetrabromobiphenyl (TetraBB) -Pentabromobiphenyl (PentaBB) -Hexabromobiphenyl (HexaBB) -Heptabromobiphenyl (HeptaBB) -Octabromobiphenyl (OctaBB) -Nonabromobiphenyl (NonaBB) -Decabromobiphenyl (DecaBB)	Each 5	Sum: 1 000
Polybromodiphenyl ethers (PBDEs) -Bromodiphenyl ether (MonoBDE) -Dibromodiphenyl ether (DiBDE) -Tribromodiphenyl ether (TriBDE) -Tetrabromodiphenyl ether (TetraBDE) -Pentabromodiphenyl ether (PentaBDE) -Hexabromodiphenyl ether (HexaBDE) -Heptabromodiphenyl ether (HeptaBDE) -Octabromodiphenyl ether (OctaBDE) -Nonabromodiphenyl ether (NonaBDE) -Decabromodiphenyl ether (DecaBDE)	Each 5	Sum: 1 000

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Test Result(s):

1.2) RoHS Directive 2011/65/EU and its subsequent amendments regulation EU No.2015/863 - (Phthalates DIBP,DBP, BBP, DEHP)

Method: IEC 62321-8: 2017, analyzed by Gas Chromatograph-Mass Spectrometry (GC-MS).

Substances	DBP	BBP	DEHP	DIBP	Conclusion
CAS No.	84-74-2	85-68-7	117-81-7	84-69-5	
Limit(s) (mg/kg)	1000	1000	1000	1000	
RL (mg/kg)	50	50	50	50	
Material No.	Result (mg/kg)				
1	N.A.	N.A.	N.A.	N.A.	N.A.
2	N.A.	N.A.	N.A.	N.A.	N.A.

Note: 1. mg/kg = milligram per kilogram (ppm).
2. N.A. = Not Applicable.
3. RL=Reporting Limit.

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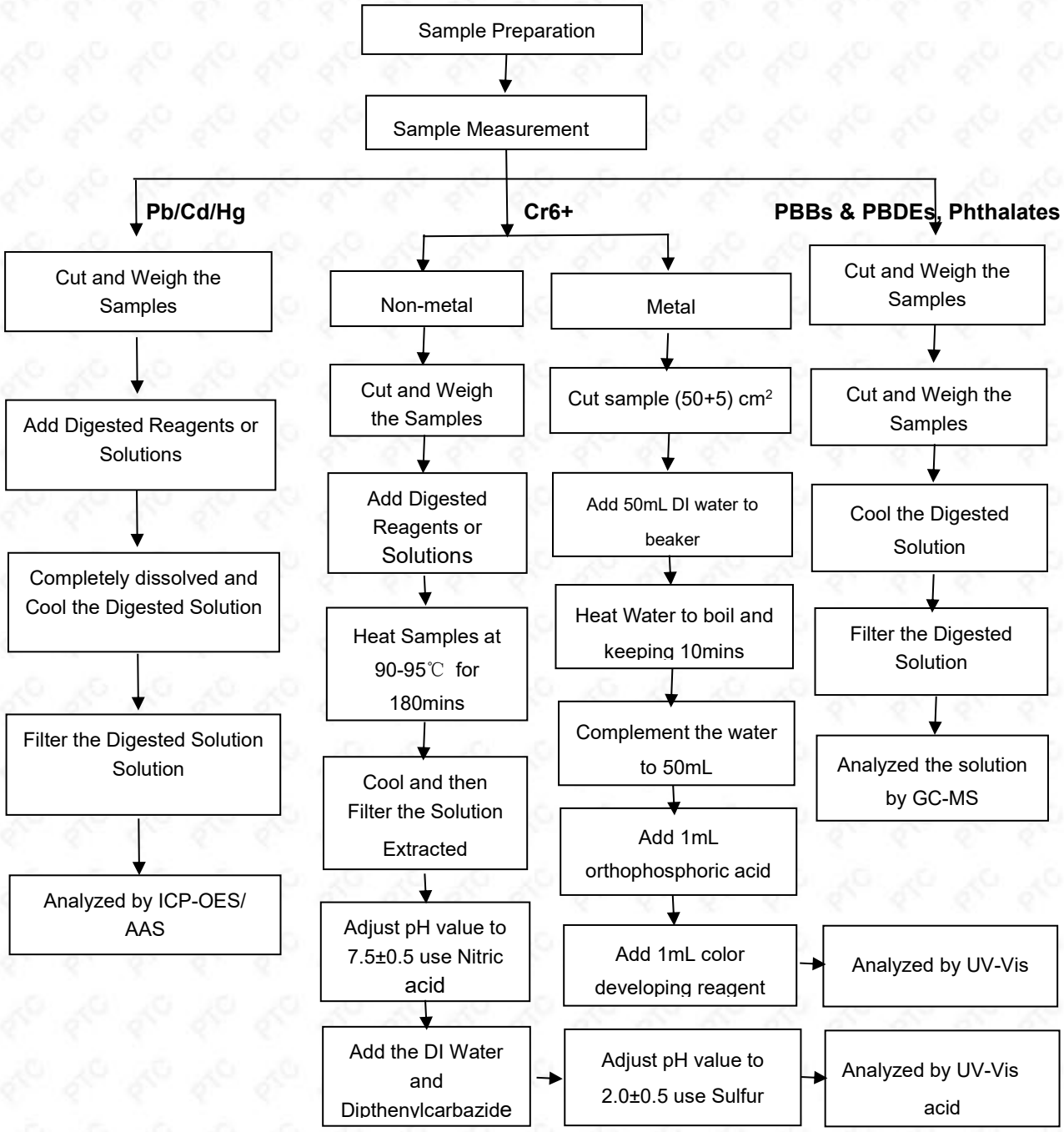
Pb/Cd/Hg/Cr6+/PBBs/PBDEs , PhthalatesTesting Flow Chart



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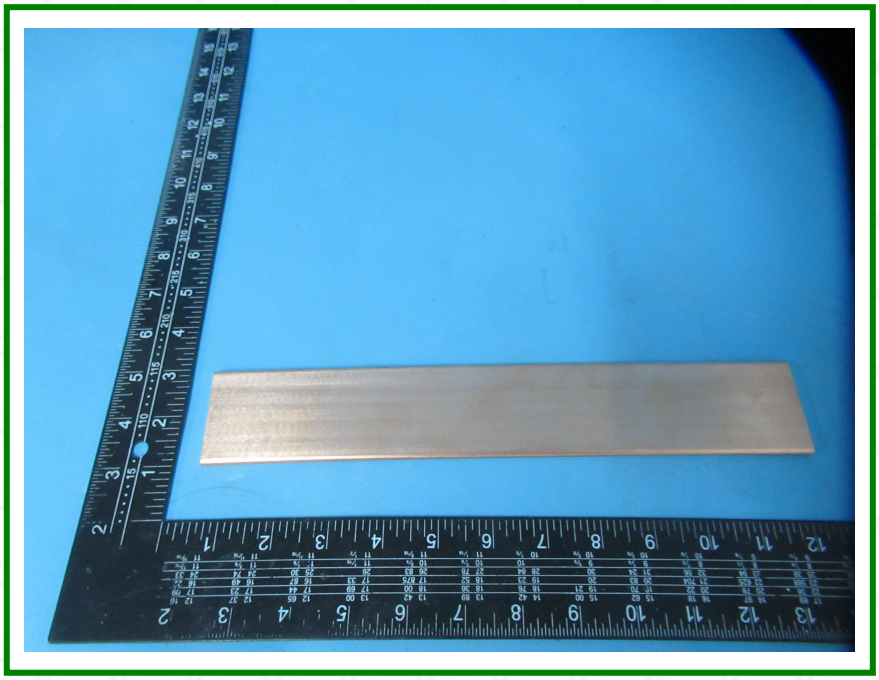
Photo(s) of Sample:



End of Report

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