



# Test Report

No.: ETR22C01123

Date: 14-Dec-2022

Page: 1 of 6

SHOWA DENKO MATERIALS CO., LTD.  
1500 OGAWA, CHIKUSEI-SHI IBARAKI, 308-8521, JAPAN

**The following sample(s) was/were submitted and identified by the applicant as:**

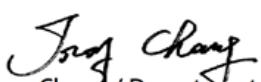
Sample Submitted By : SHOWA DENKO MATERIALS CO., LTD.  
 Sample Name : COPPER CLAD LAMINATES WITHOUT COPPER (PLASTIC PART OF MCL) / GLASS EPOXY PREPREG  
 Style/Item No. : MCL-E-679FGB(R) PLASTIC PART / MCL-E-679FG(R) PLASTIC PART / MCL-E-679FG(RM) PLASTIC PART / MCL-E-679FGB PLASTIC PART / MCL-E-679FG PLASTIC PART / GEA-679FG(R) / GEA-679FG


=====  
 Sample Receiving Date : 07-Dec-2022  
 Testing Period : 07-Dec-2022 to 14-Dec-2022

**Test Requested** : As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the submitted sample(s).

**Test Results** : Please refer to following pages.

**Conclusion** : Based on the performed tests on submitted sample(s), the test results of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs comply with the limits as set by RoHS Directive 2011/65/EU Annex II.

  
 Troy Chang / Department Manager  
 Signed for and on behalf of  
 SGS TAIWAN LTD.  
 Chemical Laboratory - Taipei




PIN CODE: D471F95F

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## Test Part Description

No.1 : BLACK SHEET

## Test Result(s)

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
Cadmium (Cd) (CAS No.: 7440-43-9)	With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.	mg/kg	2	n.d.	100
Lead (Pb) (CAS No.: 7439-92-1)	With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.	mg/kg	2	5.72	1000
Mercury (Hg) (CAS No.: 7439-97-6)	With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.	mg/kg	2	n.d.	1000
Hexavalent Chromium Cr(VI) (CAS No.: 18540-29-9)	With reference to IEC 62321-7-2: 2017, analysis was performed by UV-VIS.	mg/kg	8	n.d.	1000
Monobromobiphenyl	With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.	mg/kg	5	n.d.	-
Dibromobiphenyl		mg/kg	5	n.d.	-
Tribromobiphenyl		mg/kg	5	n.d.	-
Tetrabromobiphenyl		mg/kg	5	n.d.	-
Pentabromobiphenyl		mg/kg	5	n.d.	-
Hexabromobiphenyl		mg/kg	5	n.d.	-
Heptabromobiphenyl		mg/kg	5	n.d.	-
Octabromobiphenyl		mg/kg	5	n.d.	-
Nonabromobiphenyl		mg/kg	5	n.d.	-
Decabromobiphenyl		mg/kg	5	n.d.	-
<b>Sum of PBBs</b>		mg/kg	-	n.d.	1000
Monobromodiphenyl ether		mg/kg	5	n.d.	-
Dibromodiphenyl ether		mg/kg	5	n.d.	-
Tribromodiphenyl ether		mg/kg	5	n.d.	-
Tetrabromodiphenyl ether		mg/kg	5	n.d.	-
Pentabromodiphenyl ether		mg/kg	5	n.d.	-
Hexabromodiphenyl ether		mg/kg	5	n.d.	-
Heptabromodiphenyl ether		mg/kg	5	n.d.	-
Octabromodiphenyl ether		mg/kg	5	n.d.	-
Nonabromodiphenyl ether		mg/kg	5	n.d.	-
Decabromodiphenyl ether	mg/kg	5	n.d.	-	
<b>Sum of PBDEs</b>	mg/kg	-	n.d.	1000	

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## Note :

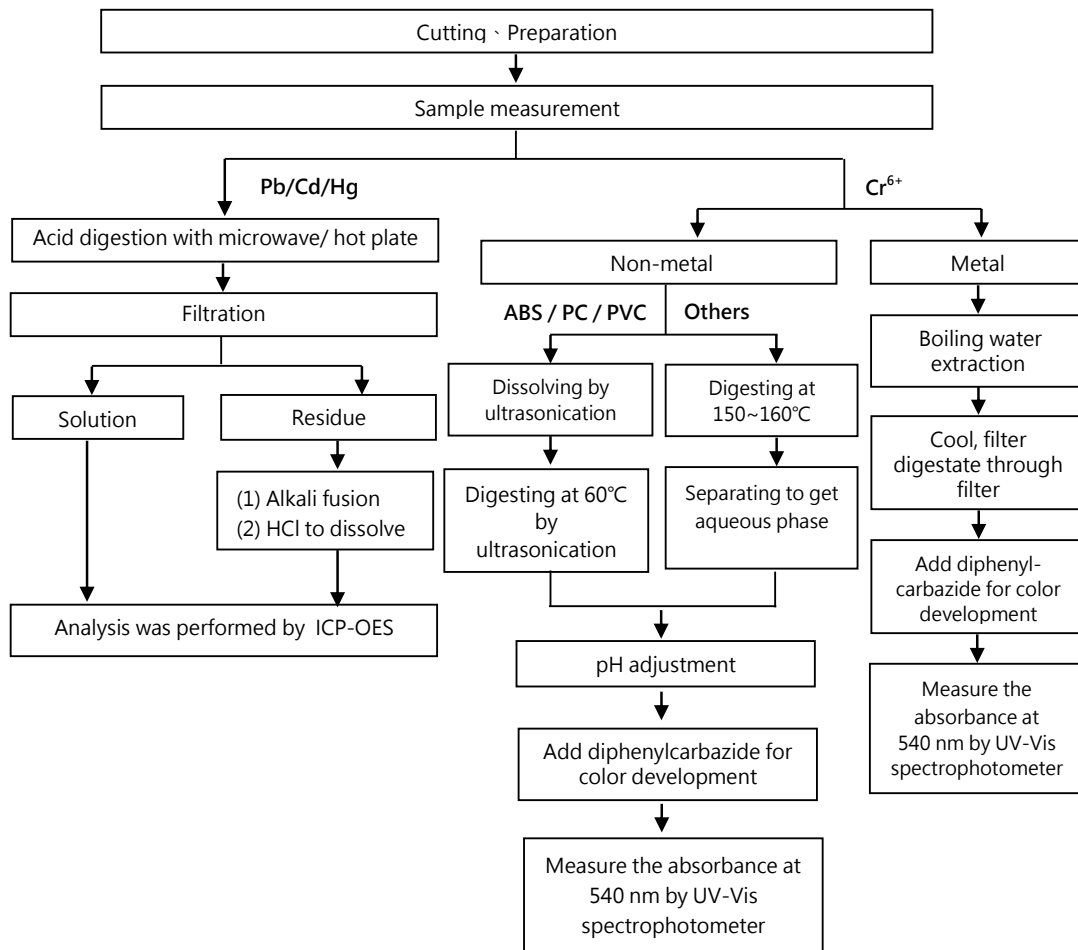
1. mg/kg = ppm ; 0.1wt% = 0.1% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected ( Less than MDL)
4. "-" = Not Regulated
5. Unless otherwise stated , the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019. According to this rule, the judgement of conformity is based on the comparing test results with limits.

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## Analytical flow chart of heavy metal

These samples were dissolved totally by pre-conditioning method according to below flow chart.

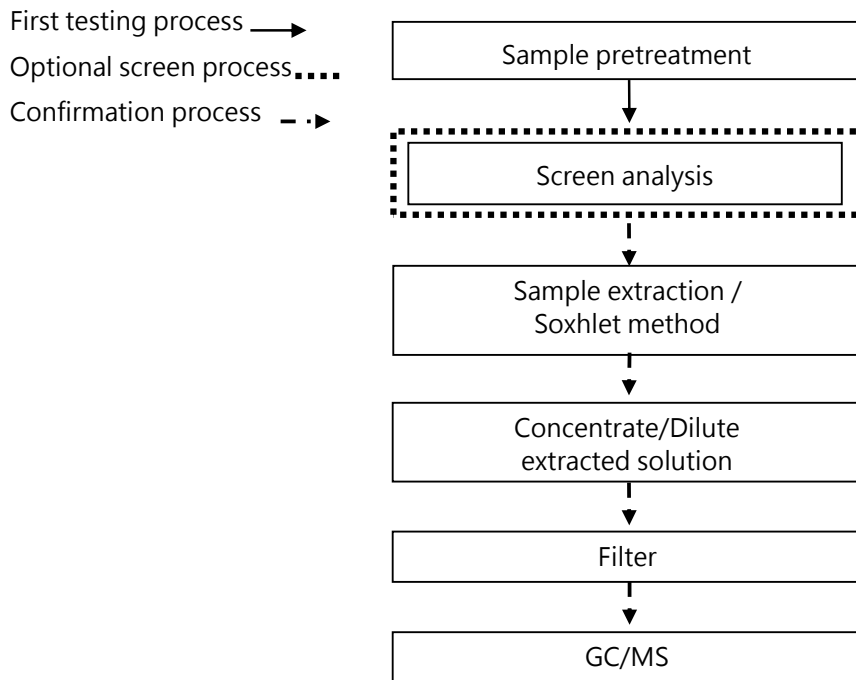
( Cr<sup>6+</sup> test method excluded )



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### Analytical flow chart – PBBs / PBDEs

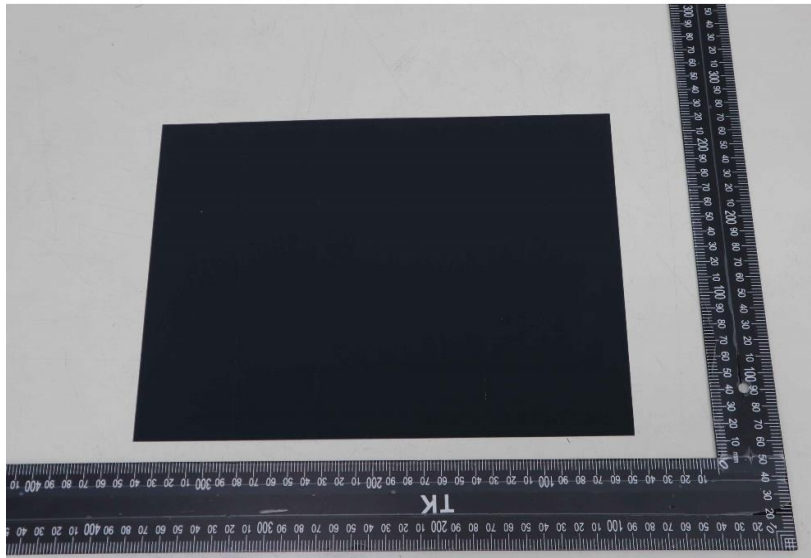


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\* The tested sample / part is marked by an arrow if it's shown on the photo. \*

### ETR22C01123



\*\* End of Report \*\*

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