

# Test Report

No. : CE/2007/B0927

Date : 2007/11/08

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DIELECTRIC LABORATORIES, INC.  
2777 ROUTE 20 EAST CAZENOVIA, NEW YORK 13035 U. S. A.



The following sample(s) was/were submitted and identified by/on behalf of the client as :

Sample Description : CERAMIC CAPACITORS-MS MATERIAL WITH Z TERMINATION  
Style/Item No. : C17MS4R7, C17MS470, C08MS180 WITH Z TERMINATION  
Color : GRAY WITH SILVER ENDS  
Sample Receiving Date : 2007/11/05  
Testing Period : 2007/11/05 TO 2007/11/08

=====  
**Test Requested** : In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.

**Test Method** : With reference to IEC 62321, Ed.1 111/54/CDV  
Procedures for the Determination of Levels of Regulated Substances in Electrotechnical Products.  

- (1) Determination of Cadmium by ICP-AES.
- (2) Determination of Lead by ICP-AES.
- (3) Determination of Mercury by ICP-AES.
- (4) Determination of Hexavalent Chromium for non-metallic samples by UV/Vis Spectrometry.
- (5) Determination of PBB and PBDE by GC/MS.

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



Chenyu Kung / Operation Manager  
Signed for and on behalf of  
SGS TAIWAN LTD.  
Chemical Laboratory – Taipei

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Test results by chemical method (Unit: mg/kg)

Test Item (s):	Method (Refer to)	Result	MDL
		No.1	
Cadmium (Cd)	(1)	n.d.	2
Lead (Pb)	(2)	59	2
Mercury (Hg)	(3)	n.d.	2
Hexavalent Chromium Cr(VI) by alkaline extraction	(4)	n.d.	2
<b>Sum of PBBs</b>	(5)	n.d.	-
Monobromobiphenyl		n.d.	5
Dibromobiphenyl		n.d.	5
Tribromobiphenyl		n.d.	5
Tetrabromobiphenyl		n.d.	5
Pentabromobiphenyl		n.d.	5
Hexabromobiphenyl		n.d.	5
Heptabromobiphenyl		n.d.	5
Octabromobiphenyl		n.d.	5
Nonabromobiphenyl		n.d.	5
Decabromobiphenyl		n.d.	5
<b>Sum of PBDEs (Mono to Nona) (Note 4)</b>		n.d.	-
Monobromobiphenyl ether		n.d.	5
Dibromobiphenyl ether		n.d.	5
Tribromobiphenyl ether		n.d.	5
Tetrabromobiphenyl ether		n.d.	5
Pentabromobiphenyl ether		n.d.	5
Hexabromobiphenyl ether		n.d.	5
Heptabromobiphenyl ether		n.d.	5
Octabromobiphenyl ether		n.d.	5
Nonabromobiphenyl ether		n.d.	5
Decabromobiphenyl ether	n.d.	5	
<b>Sum of PBDEs (Mono to Deca)</b>	n.d.	-	

## TEST PART DESCRIPTION:

NO.1 : CERAMIC CAPACITORS

- Note :
1. mg/kg = ppm
  2. n.d. = Not Detected
  3. MDL = Method Detection Limit
  4. According to 2005/717/EC DecaBDE is exempt.
  5. "-" = Not Regulated
  6. The sample(s) was/were analyzed on behalf of the applicant as mixing sample in one testing.  
The above result(s) was/were only given as the informality value.

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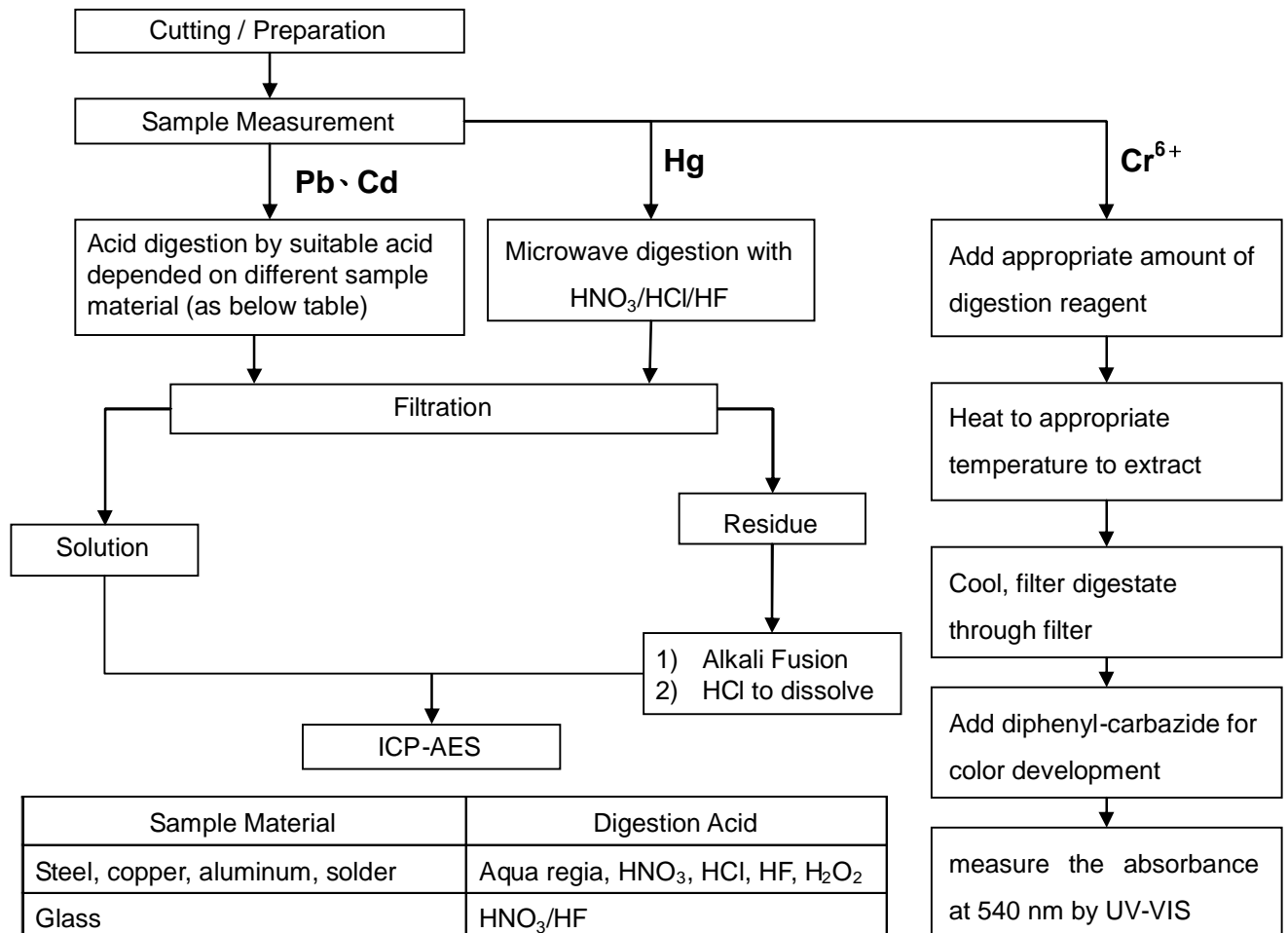
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1) These samples were dissolved totally by pre-conditioning method according to below flow chart.  
(Cr6+ test method excluded)

2) Name of the person who made measurement: Troy Chang

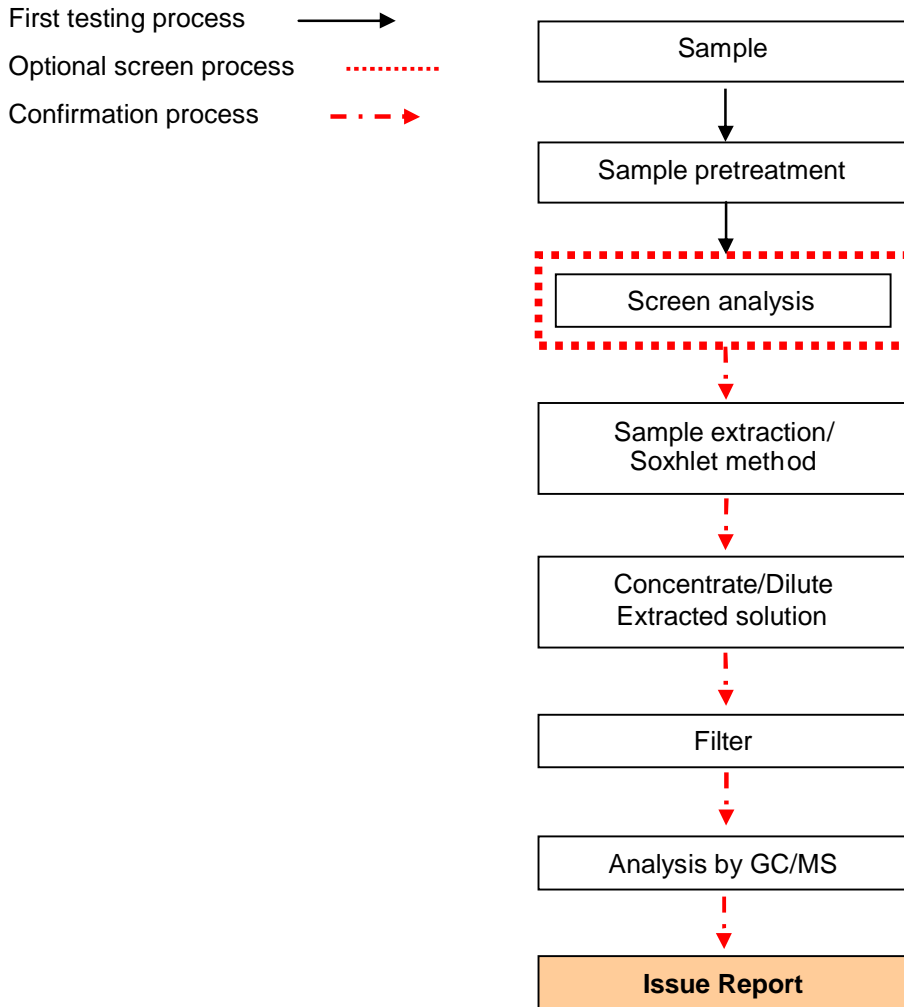
3) Name of the person in charge of measurement: Chenyu Kung



Sample Material	Digestion Acid
Steel, copper, aluminum, solder	Aqua regia, HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub>
Glass	HNO <sub>3</sub> /HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO <sub>3</sub>
Plastic	H <sub>2</sub> SO <sub>4</sub> , H <sub>2</sub> O <sub>2</sub> , HNO <sub>3</sub> , HCl
Others	Any acid to total digestion



## PBB/PBDE analytical FLOW CHART



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\*\* End of Report \*\*