

Test Report

No. : CE/2009/14909

Date : 2009/02/06

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HOIHO ELECTRONIC COMPONENTS CHINA LTD
NAN LANG INDUSTRIAL ZONE, NAN LANG TOWN, ZHONG SHAN CITY,
GUANGDONG PROVINCE, CHINA



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

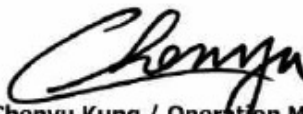
Sample Description : PCB
Style/Item No. : MULTI-LAYER, DOUBLE-SIDED PCB WITH FINISHING OF GOLD PLATING, BONDABLE GOLD, IMMERSION GOLD, OSP, LEAD FREE HAL (INCLUDED FR-4, CEM-3, HALOGEN-FREE LAMINATE, COPPER, NICKEL, GOLD, LEAD-FREE SOLDER, OSP, SOLDER MASK COATING WITH DIFFERENT COLOUR, LEGEND INK WITH DIFFERENT COLOUR, CARBON INK, PEELABLE MASK) $\leq 3.2\text{MM}$
SGS Ref. No. : GZ11578695EC
Sample Receiving Date : 2009/01/23
Testing Period : 2009/01/23 TO 2009/02/06

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

Test Method : With reference to IEC 62321: 2008
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 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)	n.d.	2
Mercury (Hg)	(3)	n.d.	2
Hexavalent Chromium Cr(VI) by alkaline extraction	(4)	n.d.	2
Sum of PBBs	(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
Sum of PBDEs		n.d.	-
Monobromodiphenyl ether		n.d.	5
Dibromodiphenyl ether		n.d.	5
Tribromodiphenyl ether		n.d.	5
Tetrabromodiphenyl ether		n.d.	5
Pentabromodiphenyl ether		n.d.	5
Hexabromodiphenyl ether		n.d.	5
Heptabromodiphenyl ether		n.d.	5
Octabromodiphenyl ether		n.d.	5
Nonabromodiphenyl ether	n.d.	5	
Decabromodiphenyl ether	n.d.	5	

TEST PART DESCRIPTION:

NO.1 : MIXED ALL PARTS

Note : 1. mg/kg = ppm; 0.1wt% = 1000ppm

2. n.d. = Not Detected

3. MDL = Method Detection Limit

4. "-" = Not Regulated

5. 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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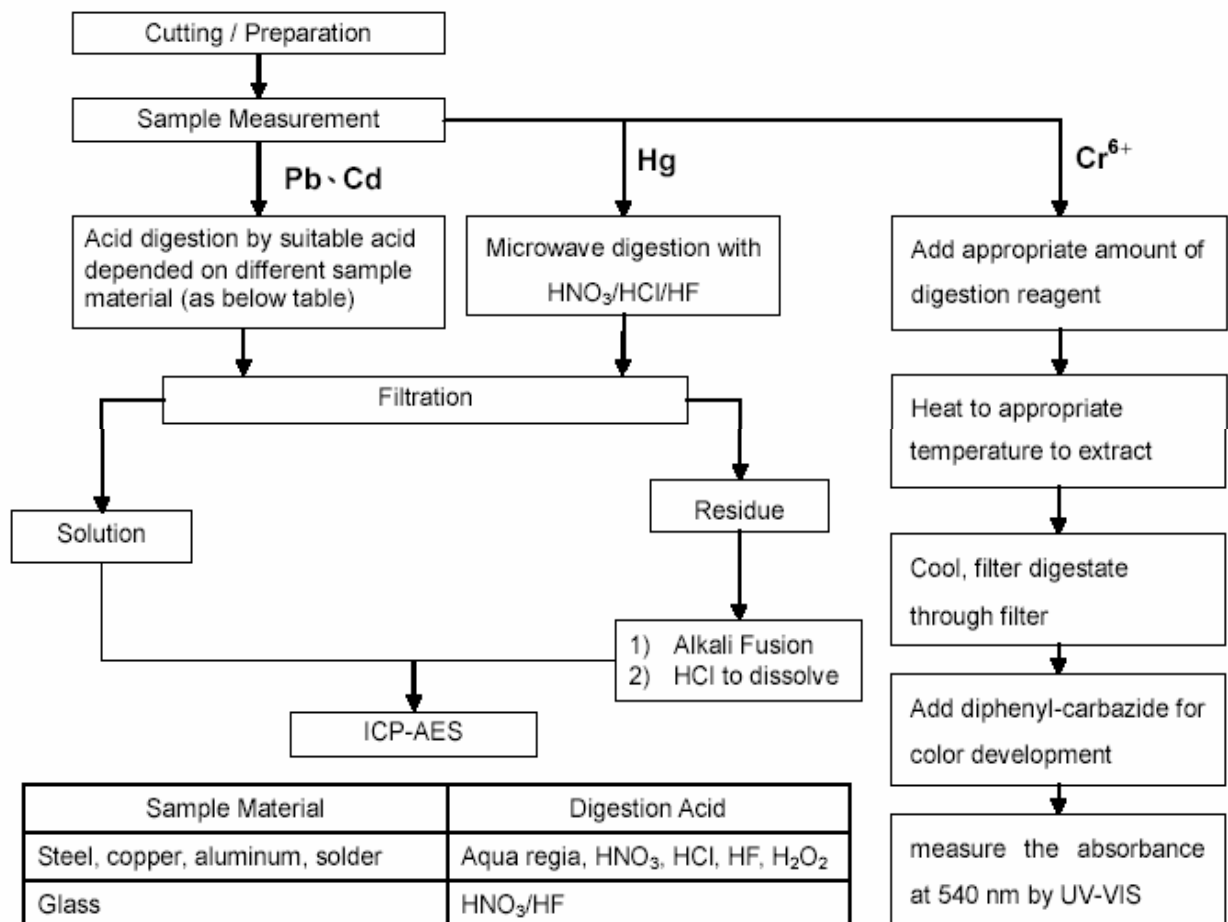
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- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



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

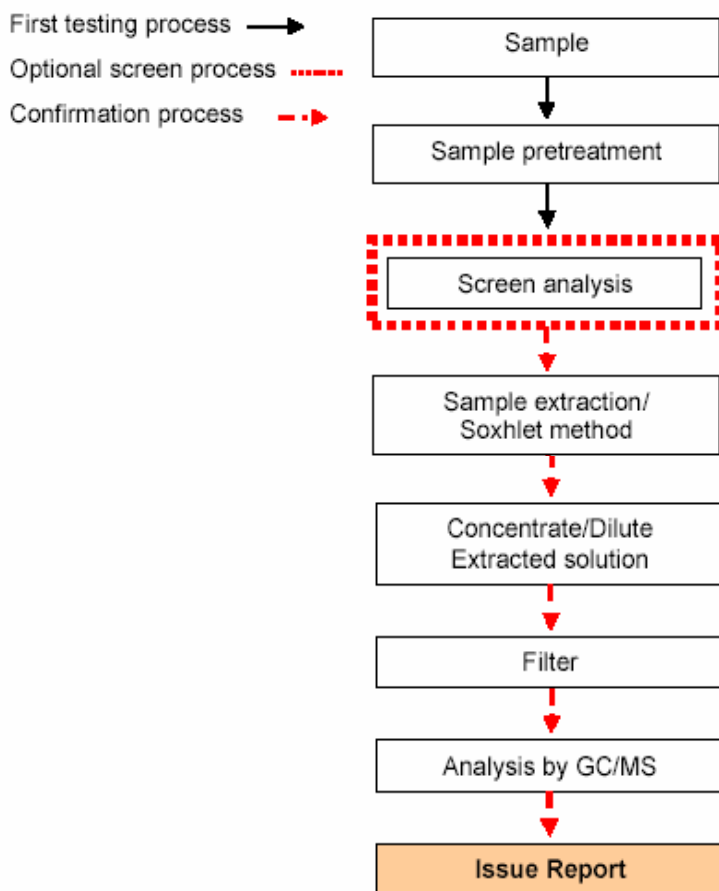
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PBB/PBDE analytical FLOW CHART

- 1) Name of the person who made measurement: Roman Wong
- 2) Name of the person in charge of measurement: Shinjyh Chen



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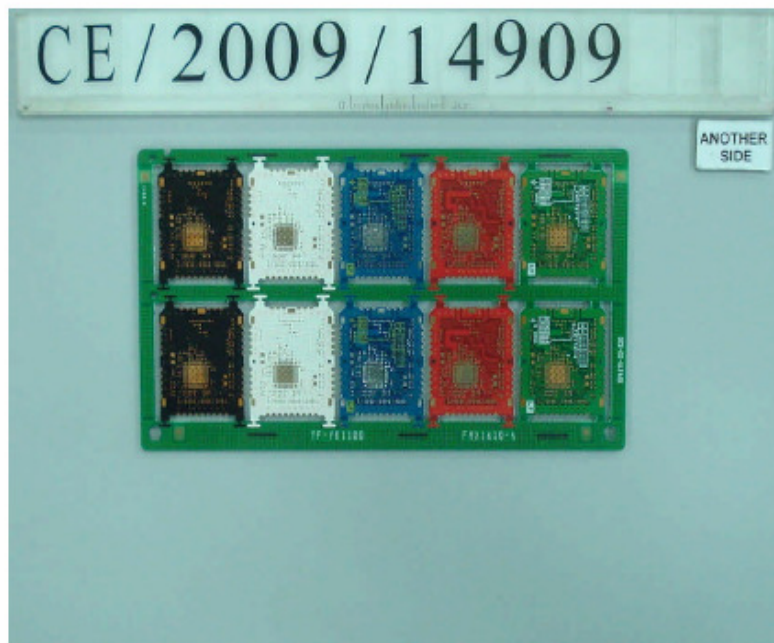
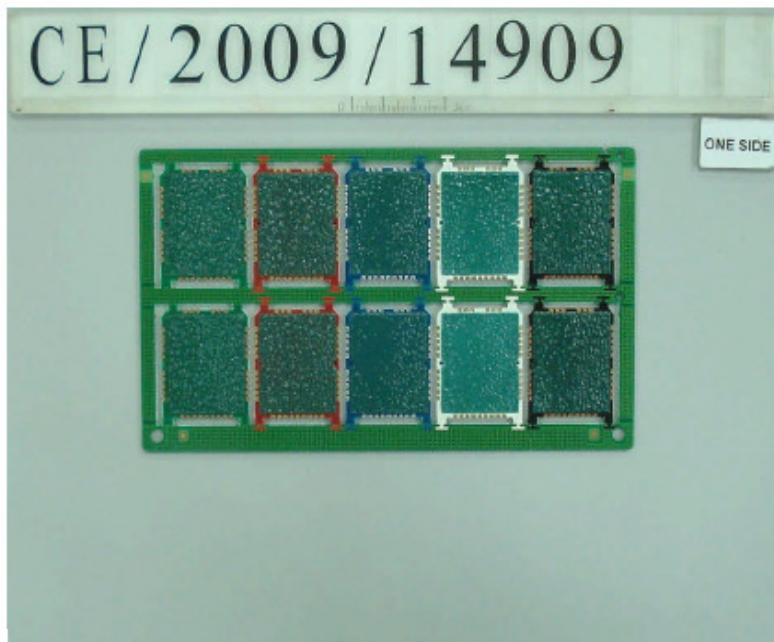
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**** End of Report ****

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