

Test Report

No. : CE/2016/82771

Date : 2016/08/19

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SHINGTECH ELECTRONICS CO., LTD.

NO. 303, SEC. 2, NANSHAN RD., LUZHU DISTRICT, TAOYUAN CITY 338, TAIWAN (R. O. C.)



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

Sample Submitted By : SHINGTECH ELECTRONICS CO., LTD.
Sample Description : 無鉛噴錫
Style/Item No. : ROHS-無鉛噴錫
Sample Receiving Date : 2016/08/12
Testing Period : 2016/08/12 TO 2016/08/19

=====
Test Requested : As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample.

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

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



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

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Test Result(s)

PART NAME No.1 : GREEN PCB

Test Item(s)	Unit	Method	MDL	Result
				No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg		2	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321-4 (2013) and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321 (2008) and performed by UV-VIS.	2	n.d.
Sum of PBBs	mg/kg	With reference to IEC 62321-6 (2015) and performed by GC/MS.	-	n.d.
Monobromobiphenyl	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.
Sum of PBDEs	mg/kg		-	n.d.
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.	

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Test Item(s)	Unit	Method	MDL	Result
				No.1
DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	mg/kg	With reference to IEC 62321-8/CD (2013). Analysis was performed by GC/MS.	50	n.d.
DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)	mg/kg		50	n.d.
DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	mg/kg		50	n.d.
BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7)	mg/kg		50	n.d.

Note :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated

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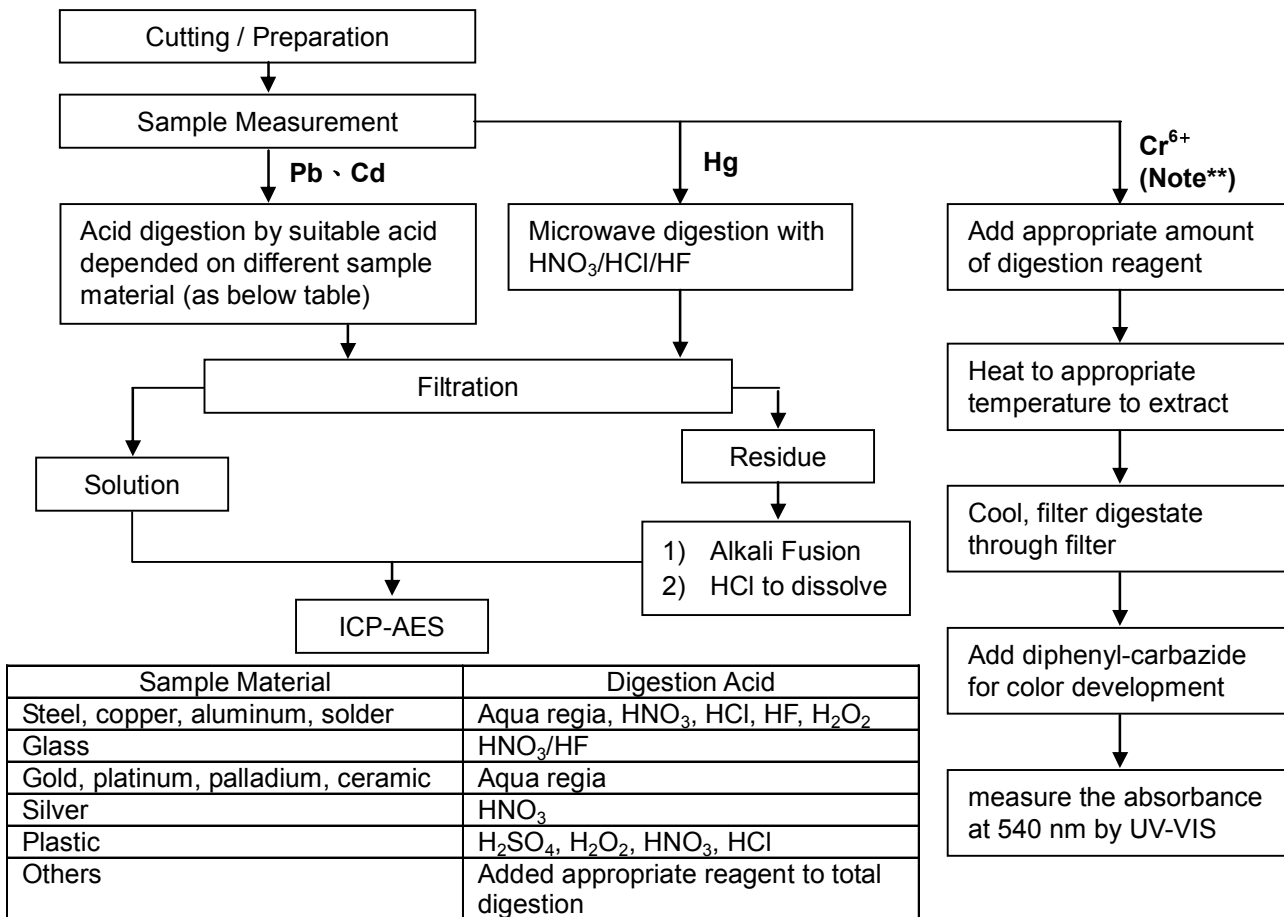


Analytical flow chart of Heavy Metal (IEC 62321)

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

(Cr⁶⁺ test method excluded)

- Technician: JR Wang
- Supervisor: Troy Chang



Note** (For IEC 62321)

- (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95°C.
- (2) For metallic material, add pure water and heat to boiling.

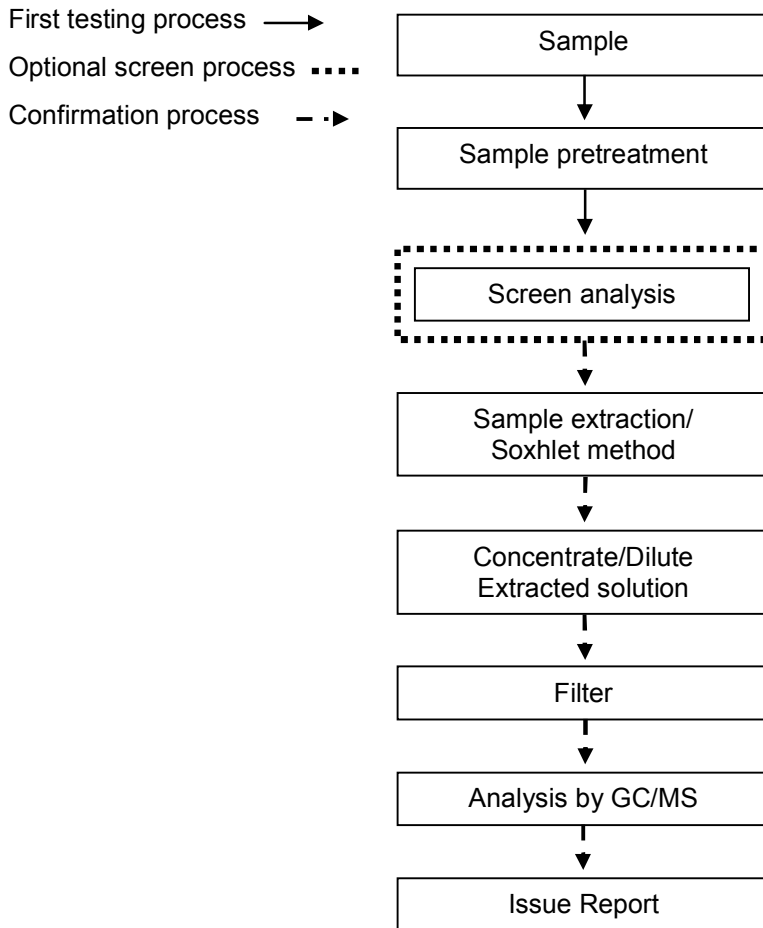
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Analytical flow chart - PBB/PBDE

- Technician : Yaling Tu
- Supervisor: Troy Chang



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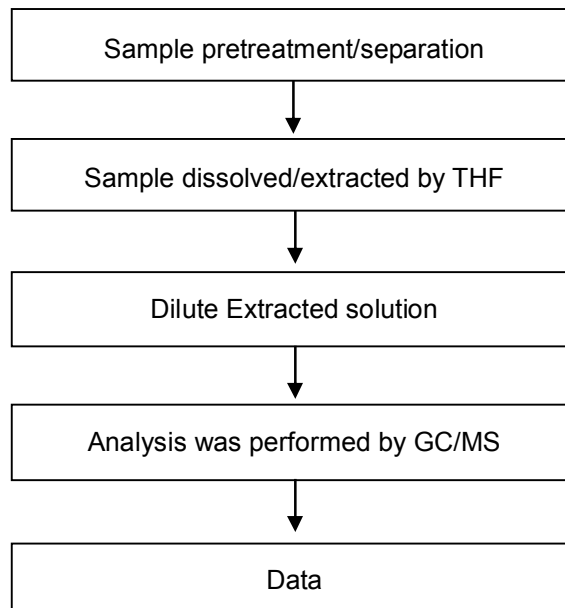
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Analytical flow chart - Phthalate

- Technician: Andy Shu
- Supervisor: Troy Chang

【Test method: IEC 62321-8】



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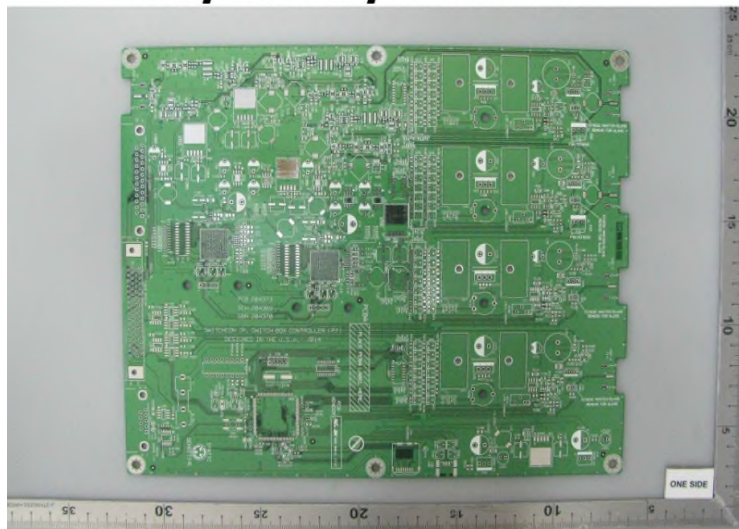
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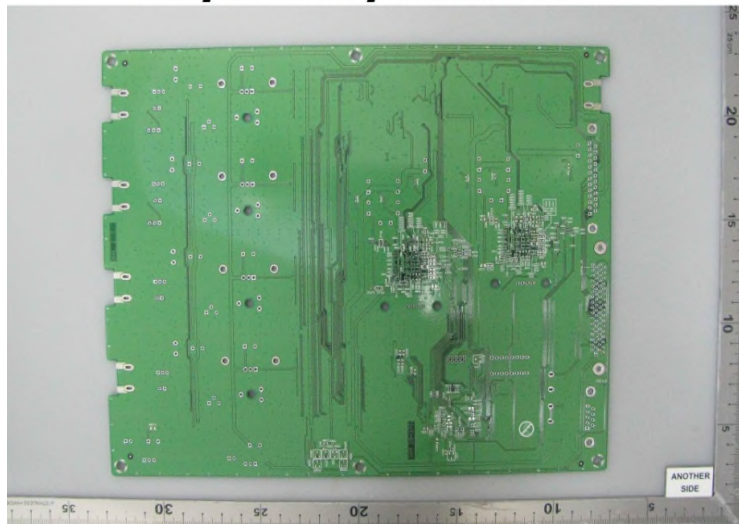


* The tested sample / part is marked by an arrow if it's shown on the photo. *

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** End of Report **

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