



Test Report

No.: CQTC1100530/CHEM

Date: March 4, 2011

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SICHUAN DAYAN MICROELECTRONICS CO., LTD.
1#, YULONG ROAD, SUINING CITY, SICHUAN, P.R.C

The following sample(s) was/were submitted and identified on behalf of the applicant as: TO-220F

SGS Job No. : 12987230
SGS Internal Reference No. : 2.1
Sample information : 1.Lead Frame(Cu) 2.Soft Solder 3.Wire(Al/Cu) 4.Compound(TH-100)
5.Plating(Pure Sn)
Date of Sample Received : February 28, 2011
Testing Period : February 28, 2011 to March 3, 2011
Test Requested : Selected tests as requested by client.
Test Method (Reference) : Please refer to next pages.
Test Results : Please refer to next pages.
Conclusion : Specimen 2: Based on the performed tests on submitted samples, the results **comply with** the RoHS Directive 2002/95/EC and its subsequent amendments.

Signed for and on behalf of
SGS-CSTC Ltd.

Rain Qiao
Approved Signatory

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Test Results:

Description for specimen 1 : Black body with brown printing (mixed)

A: RoHS Directive 2002/95/EC

Test Item(s)	Unit	Test Method (Reference)	Result	MDL	Limit
Cadmium (Cd)	mg/kg	IEC 62321: 2008, ICP-OES	N.D.	2	100
Lead (Pb)	mg/kg	IEC 62321: 2008, ICP-OES	3598	2	1000
Mercury (Hg)	mg/kg	IEC 62321: 2008, ICP-OES	N.D.	2	1000
Hexavalent Chromium (CrVI) by alkaline extraction	mg/kg	IEC 62321: 2008, UV-Vis	N.D.	2	1000
Sum of PBBs	mg/kg	-	N.D.	-	1000
Monobromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Dibromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Tribromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Tetrabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Pentabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Hexabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Heptabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Octabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Nonabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Decabromobiphenyl	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Sum of PBDEs	mg/kg	-	N.D.	-	1000
Monobromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Dibromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Tribromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Tetrabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Pentabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Hexabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Heptabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Octabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Nonabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	
Decabromodiphenyl ether	mg/kg	IEC 62321: 2008, GC-MS	N.D.	5	

Note:

1. mg/kg = ppm
2. N.D. = Not Detected (< MDL)
3. MDL = Method Detection Limit
4. "-" = Not regulated

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B: HBCDD (Hexabromocyclododecane)

Test Item(s)	Unit	Test Method (Reference)	Result	MDL
Hexabromocyclododecane (HBCDD)	mg/kg	EPA 3550C: 2007, GC-MS	N.D.	10

Note:

1. mg/kg = ppm
2. N.D. = Not Detected (< MDL)
3. MDL = Method Detection Limit

C: Phthalate(s)

Test Item(s)	Unit	Test Method (Reference)	Result	MDL
Dibutyl Phthalate (DBP)	%(w/w)	EN14372: 2004, GC-MS	N.D.	0.003
Benzylbutyl Phthalate (BBP)	%(w/w)	EN14372: 2004, GC-MS	N.D.	0.003
Di-(2-ethylhexyl) Phthalate (DEHP)	%(w/w)	EN14372: 2004, GC-MS	N.D.	0.003

Note :

1. mg/kg = ppm, 0.1% = 1000ppm
2. N.D. = Not detected (< MDL)
3. MDL= Method Detection Limit
4. This test was subcontracted to SGS Guangzhou chemical lab(GZ1103019400/CHEM)

For reference:

Entry 51/52 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC):

For DBP, BBP, DEHP

- (1) Shall not be used as substances or in mixtures, in concentrations greater than 0,1% by weight of the plasticised material, in toys and childcare articles.
- (2) Toys and childcare articles containing these phthalates in a concentration greater than 0,1% by weight of the plasticised material shall not be placed on the market.

For DINP, DNOP, DIDP

- (1) Shall not be used as substances or in mixtures, in concentrations greater than 0,1% by weight of the plasticised material, in toys and childcare articles which can be placed in the mouth by children.
- (2) Such toys and childcare articles containing these phthalates in a concentration greater than 0,1% by weight of the plasticised material shall not be placed on the market.

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Description for specimen 2 : Silvery metal pin
RoHS Directive 2002/95/EC

Test Item(s)	Unit	Test Method (Reference)	Result	MDL	Limit
Cadmium (Cd)	mg/kg	IEC 62321: 2008, ICP-OES	N.D.	2	100
Lead (Pb)	mg/kg	IEC 62321: 2008, ICP-OES	N.D.	2	1000
Mercury (Hg)	mg/kg	IEC 62321: 2008, ICP-OES	N.D.	2	1000
Hexavalent Chromium (CrVI) by boiling water extraction	-	IEC 62321: 2008, UV-Vis	Negative	◇	#

Note:

1. mg/kg = ppm
2. N.D. = Not Detected (< MDL)
3. MDL = Method Detection Limit
4. ◇ = Spot test:
 - Negative = Absence of CrVI coating, Positive = Presence of CrVI coating;
 - (The tested sample should be further verified by boiling water extraction method if the spot test result is negative or cannot be confirmed.)
- Boiling water extraction:
 - Negative = Absence of CrVI coating
 - Positive = Presence of CrVI coating; the detected concentration in boiling water extraction solution is equal or greater than 0.02 mg/kg with 50 cm² sample surface area.
 - Storage conditions and production date of the tested sample are unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.
5. # = Positive indicates the presence of CrVI on the tested area.
 Negative indicates the absence of CrVI on the tested area.
6. "-" = Not regulated

Remark: Specimen 1 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 and only for reference.

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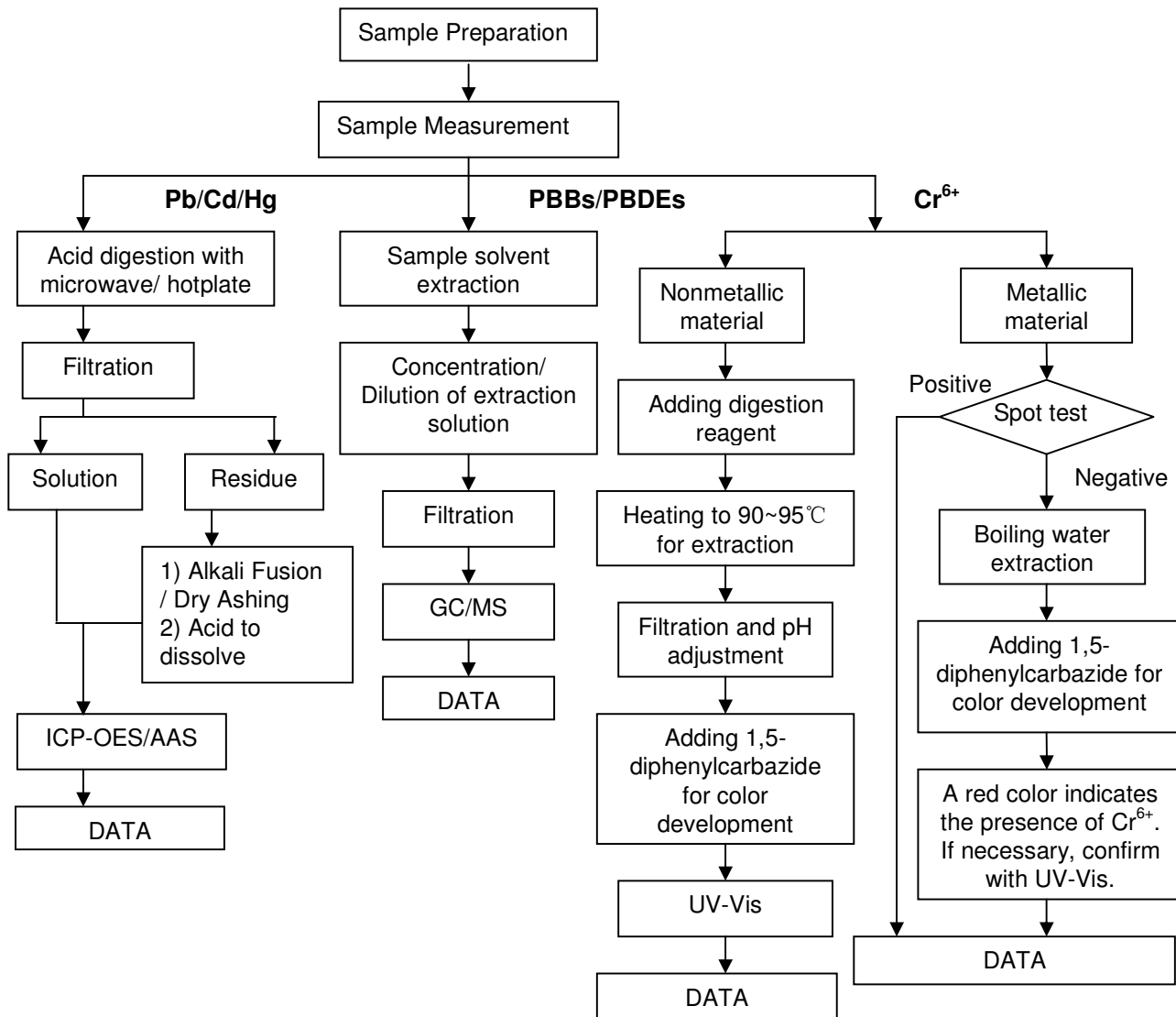
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ATTACHMENTS

RoHS Testing Flow Chart

- 1) Name of the person who made testing: Tess Lv/Roger Yang/Leo Wang
- 2) Name of the person in charge of testing: Rain Qiao
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr6+ and PBBs/PBDEs test method excluded)



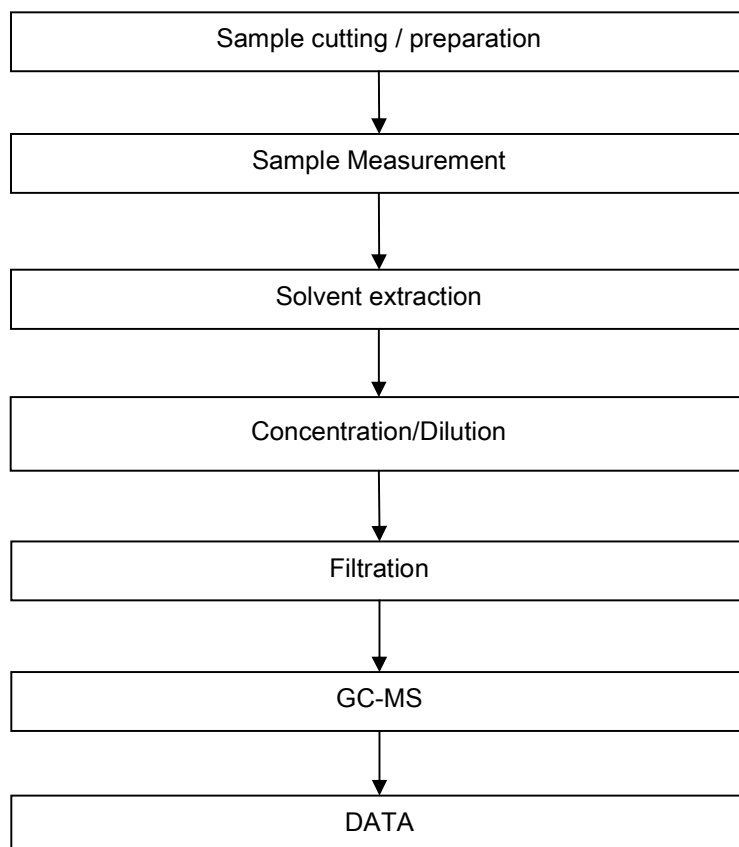
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HBCDD Testing Flow Chart

- 1) Name of the person who made testing: Leo Wang
- 2) Name of the person in charge of testing: Rain Qiao



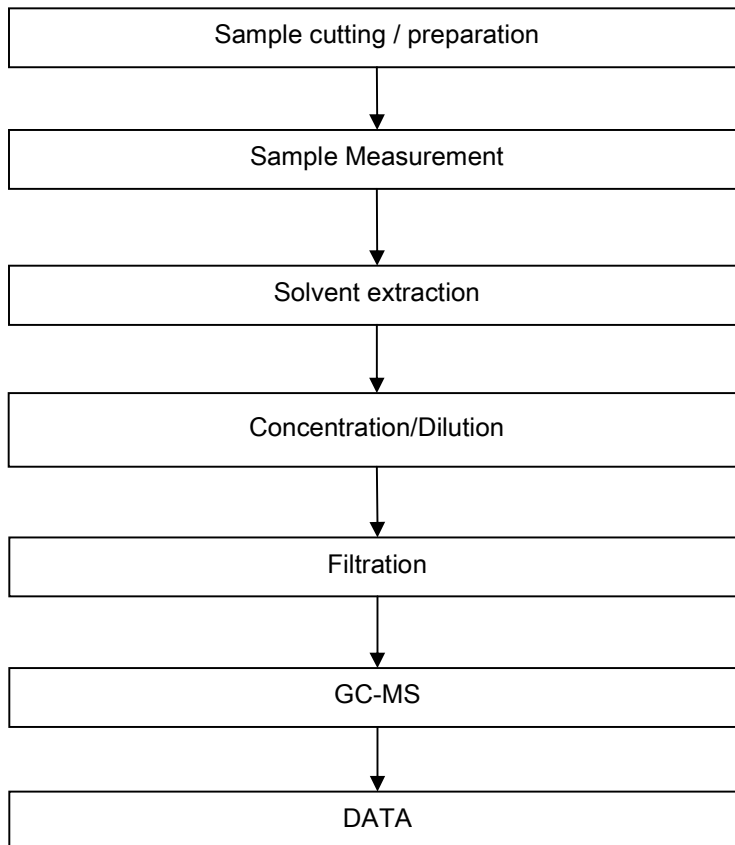
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Phthalates Testing Flow Chart

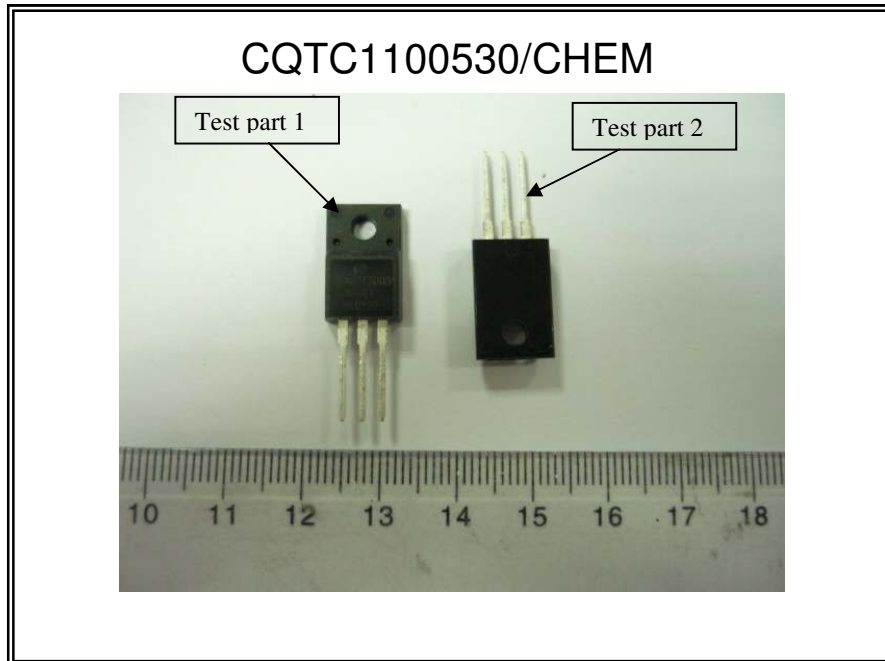
- 1) Name of the person who made testing: Tina Zhao
- 2) Name of the person in charge of testing: Ryan Yang



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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***

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