

Test Report

No. CANEC1308055021

Date: 05 Jun 2013

Page 1 of 11

SHENGYI TECHNOLOGY CO., LTD.

5 W INDUSTRY RD.NORTH INDUSTRY DIST DONGGUAN SSL SCI & TECH INDUSTRY PARK,DONGGUAN
CITY GUANGDONG
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : The Halogen Free Coppe
Clad Laminate

SGS Job No. : CP13-027653 - GZ

Client Ref. Info. : S1150G; Prepreg: S1150GB

Date of Sample Received : 29 May 2013

Testing Period : 29 May 2013 - 04 Jun 2013


Test Requested : Selected test(s) as requested by client.

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

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

Conclusion : Based on the performed tests on submitted samples, the results of Lead,
Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB),
Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS
Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of
SGS-CSTC Ltd.



Merry Lv

Approved Signatory

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Test Report

No. CANEC1308055021

Date: 05 Jun 2013

Page 2 of 11

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	CAN13-080550.019	Yellow sheet

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive 2011/65/EU

Test Method : With reference to IEC 62321:2008

- (1) Determination of Cadmium by ICP-OES.
- (2) Determination of Lead by ICP-OES.
- (3) Determination of Mercury by ICP-OES.
- (4) Determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.
- (5) Determination of PBBs / PBDEs content by GC-MS.

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>019</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	3
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	2	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

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Test Report

No. CANEC1308055021

Date: 05 Jun 2013

Page 3 of 11

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>019</u>
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND

Notes :

(1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II

Halogen

Test Method : With reference to EN 14582: 2007, analysis was performed by Ion Chromatograph (IC).

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>019</u>
Fluorine (F)	mg/kg	50	2474
Chlorine (Cl)	mg/kg	50	363
Bromine (Br)	mg/kg	50	ND
Iodine (I)	mg/kg	50	ND

Phthalate

Test Method : With reference to EN14372: 2004. Analysis was performed by GC-MS.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>019</u>
Dibutyl Phthalate (DBP)	% (w/w)	0.003	ND
Benzylbutyl Phthalate (BBP)	% (w/w)	0.003	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	% (w/w)	0.003	ND
Diisononyl Phthalate (DINP)	% (w/w)	0.01	ND
Di-n-octyl Phthalate (DNOP)	% (w/w)	0.003	ND

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Test Report

No. CANEC1308055021

Date: 05 Jun 2013

Page 4 of 11

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>019</u>
Diisodecyl Phthalate (DIDP)	% (w/w)	0.01	ND
Di-n-hexyl Phthalate (DnHP)	% (w/w)	0.003	ND
Diisobutyl Phthalate (DIBP)	% (w/w)	0.003	ND
1,2-Benzenedicarboxylic acid, di- C7-11-branched and linear alkyl esters (DHNUP)	% (w/w)	0.01	ND
Bis(2-methoxyethyl) Phthalate (DMEP)	% (w/w)	0.003	ND
1,2-Benzenedicarboxylic acid, di- C6-8-branched alkyl esters, C7-rich (DIHP)	% (w/w)	0.01	ND
Diisopentylphthalate (DIPP)	% (w/w)	0.003	ND
n-pentyl Isopentyl phthalate (nPiPP)	% (w/w)	0.003	ND
1,2-Benzenedicarboxylic acid, dipentyl ester, branched and linear(C5-PHTH)	% (w/w)	0.010	ND

Notes :

(1)DBP,BBP,DEHP Reference information: Entry 51 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC):

i) 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.

ii) 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.

Please refer to Regulation (EC) No 552/2009 to get more detail information

DINP, DNOP, DIDP Reference information: Entry 52 of Regulation (EC) No 552/2009 amending Annex X of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC).

i) 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.

ii) 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.

Please refer to Regulation (EC) No 552/2009 to get more detail information

Hexabromocyclododecane (HBCDD)

Test Method : With reference to US EPA 3550C: 2007, analysis was performed by GC-MS.

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Test Report

No. CANEC1308055021

Date: 05 Jun 2013

Page 5 of 11

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>019</u>
Hexabromocyclododecane (HBCDD)	mg/kg	10	ND

PFOS (Perfluorooctane Sulfonates) and PFOA (Perfluorooctanoic Acid)

Test Method : With reference to US EPA Method 3550C: 2007, analysis was performed by HPLC-MS.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>019</u>
Perfluorooctane Sulfonates (PFOS) and related Acid, Metal Salt and Amide	mg/kg	10	ND
Perfluorooctanoic Acid (PFOA)	mg/kg	10	ND

Notes :

For reference: commission regulation (EU) No 757/2010 amending regulation (EC) No 850/2004:

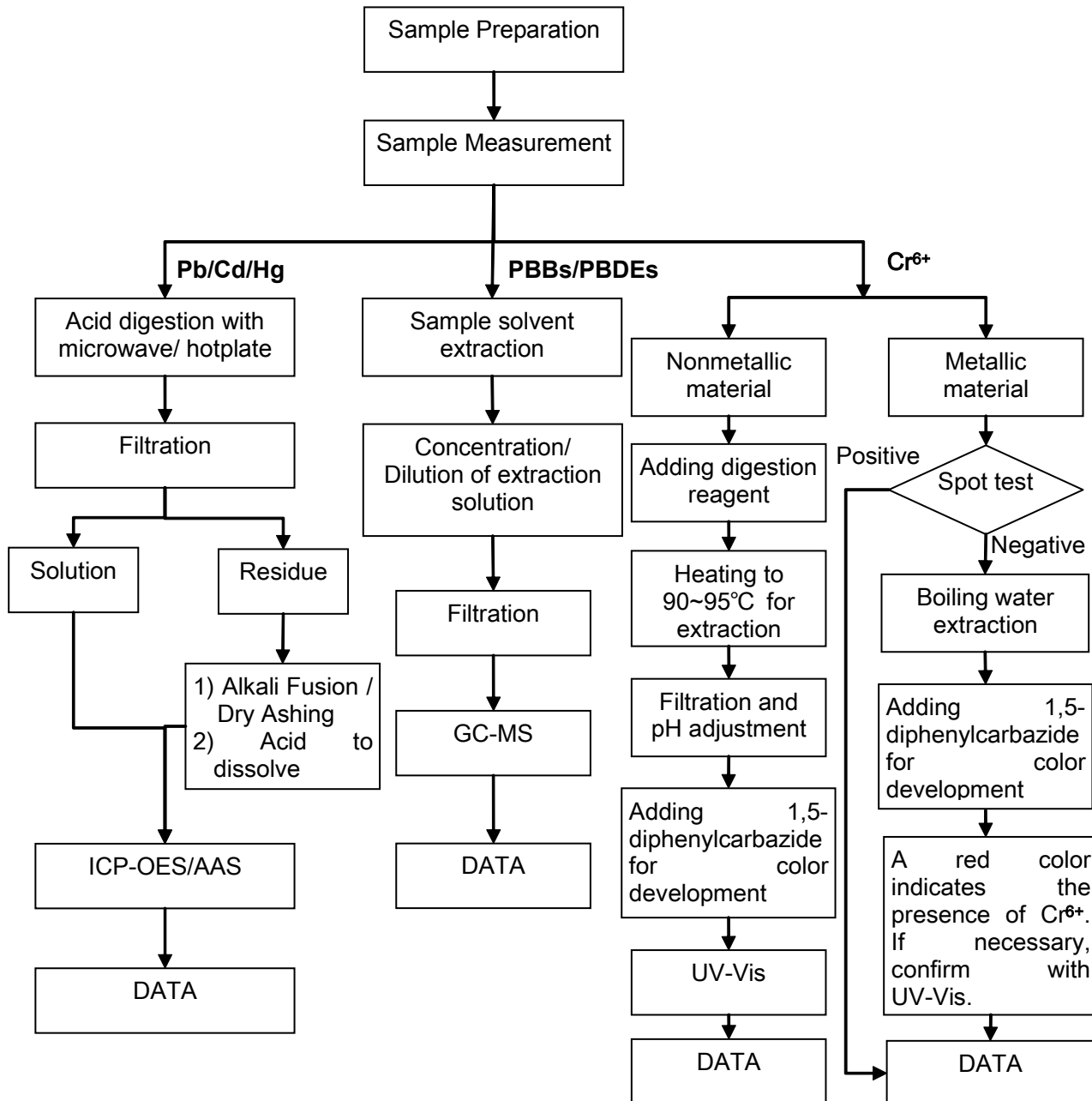
- (1) For the purposes of this entry, Article 4(1) (b) shall apply to concentrations of PFOS equal to or below 10 mg/kg (0,001 % by weight) when it occurs in substances or in preparations.
- (2) For the purposes of this entry, Article 4(1) (b) shall apply to concentrations of PFOS in semi-finished products or articles, or parts thereof, if the concentration of PFOS is lower than 0,1 % by weight calculated with reference to the mass of structurally or micro-structurally distinct parts that contain PFOS or, for textiles or other coated materials, if the amount of PFOS is lower than 1µg /m2 of the coated material.

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ATTACHMENTS

RoHS Testing Flow Chart

- 1) Name of the person who made testing: Michael Tso / Cutey Yu
- 2) Name of the person in charge of testing: Adams Yu / Yolanda Wei
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr⁶⁺ and PBBs/PBDEs test method excluded).

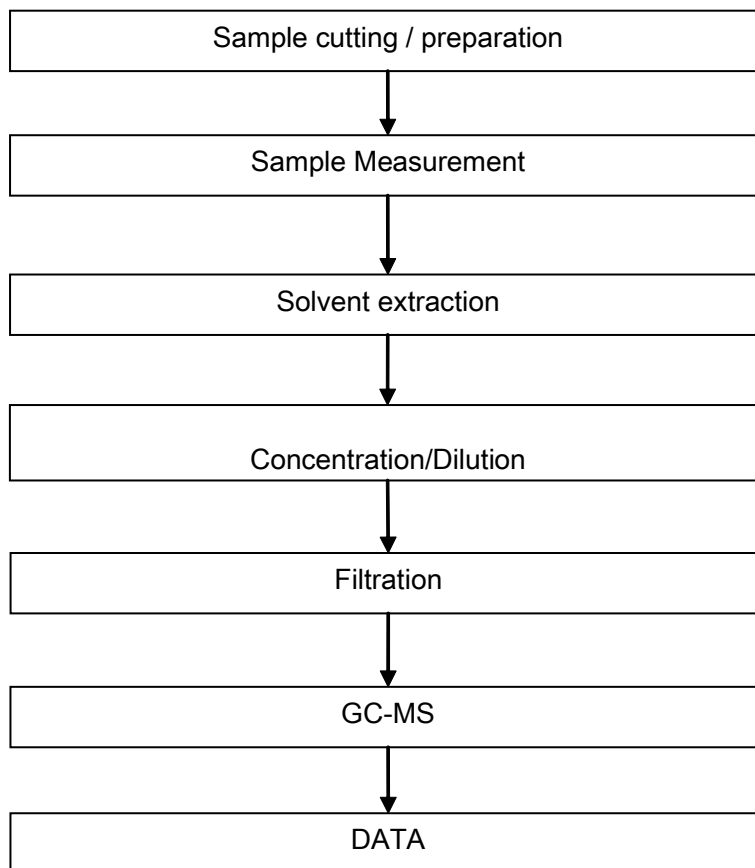


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ATTACHMENTS

Phthalates Testing Flow Chart

- 1) Name of the person who made testing: Liu Qiong
- 2) Name of the person in charge of testing: Yolanda Wei



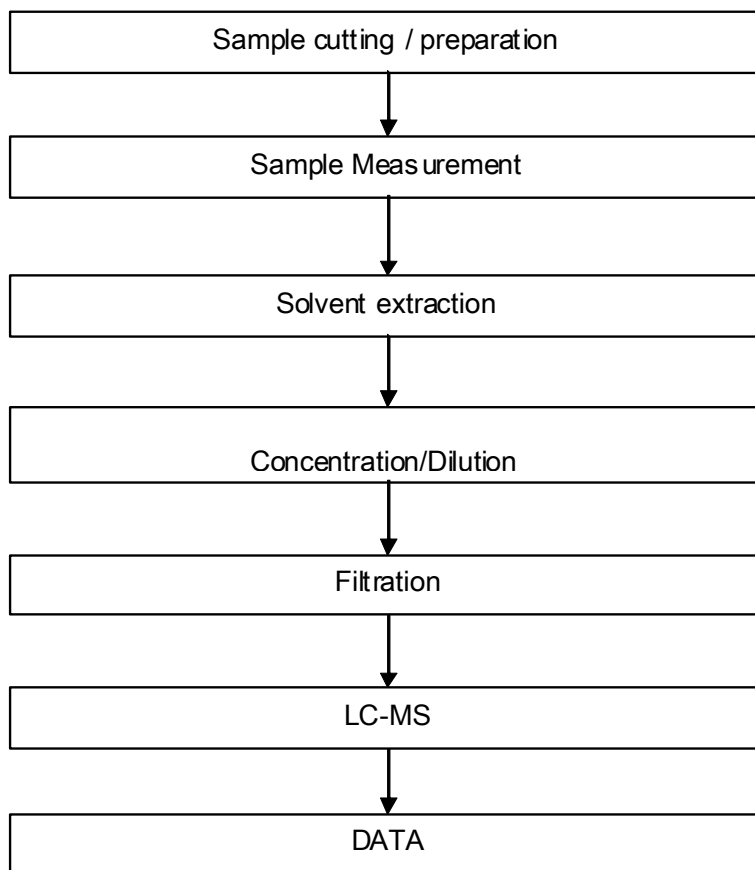
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PFOA / PFOS Testing Flow Chart

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

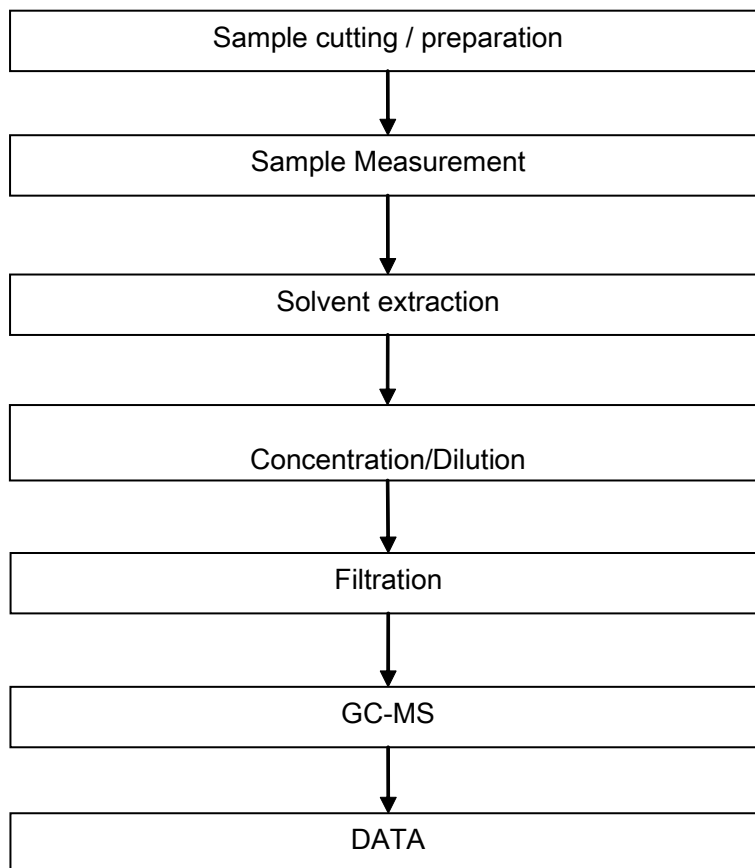


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ATTACHMENTS

HBCDD Testing Flow Chart

- 1) Name of the person who made testing: Cutey Yu
- 2) Name of the person in charge of testing: Yolanda Wei



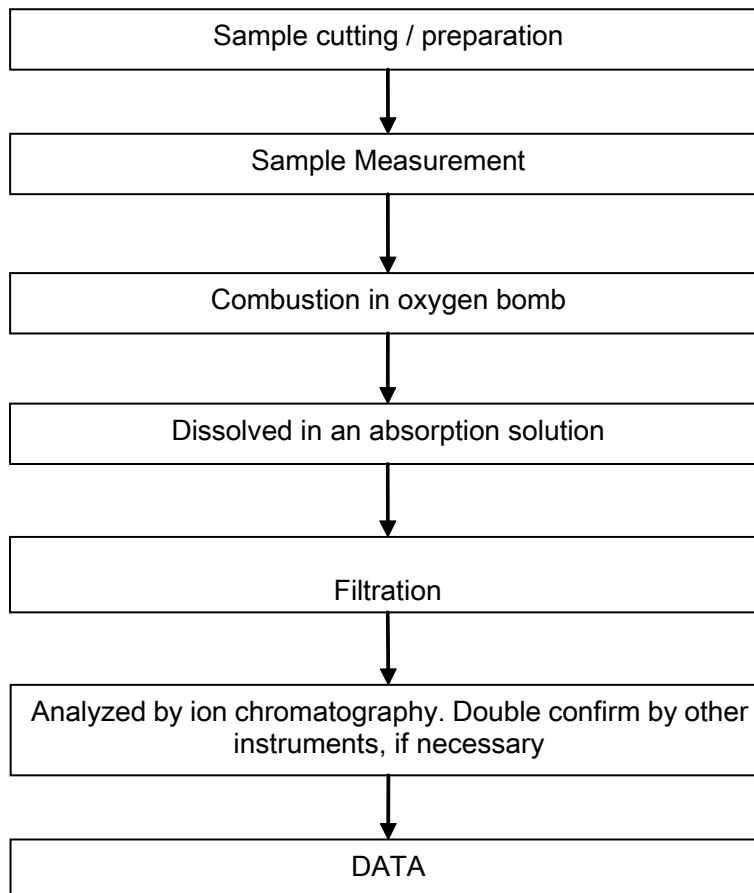
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Halogen Testing Flow Chart

- 1) Name of the person who made testing: Bella Wang
- 2) Name of the person in charge of testing: Adams Yu



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Test Report

No. CANEC1308055021

Date: 05 Jun 2013

Page 11 of 11

Sample photo:



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*** End of Report ***

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