

Test Report

No. SH9166803/CHEM

Date: Aug. 31, 2009

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SHANGHAI SIM-BCD SEMICONDUCTOR MANUFACTURING CO., LTD
1600, ZIXING RD, SHANGHAI, CHINA

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

Sample Name : CHIP
SGS Ref No. : 12131435
Part No : CHIP
Main Substance : Si

Sample Receiving Date : Aug.26, 2009
Testing Period : Aug.26-31, 2009

Test Requested : (1)As per client's request, to determination DBP, BBP, DEHP, DINP, DNOP and DIDP content of the submitted samples.
(2) To determine the Halogen- Fluorine, Chlorine, Bromine, Iodine Content in the submitted sample.
(3) To determine the PFOS (Perfluorooctane Sulfonates) and PFOA (Perfluorooctanoic Acid) content of the submitted samples.
(4) To determine the Polynuclear Aromatic Hydrocarbons (PAHs) content of the submitted sample.
(5) To determine the TBBP-A Content in the submitted sample.

Test method : (1) With reference to EN 14372: 2004. Analysis was performed by Gas Chromatograph / Mass Spectrometer (GC/MS).
(2) With reference to EN 14582: 2007.
(2-1) Determination of Fluorine by Ion Chromatograph (IC) method.
(2-2) Determination of Chlorine by Ion Chromatograph (IC) method.
(2-3) Determination of Bromine by Ion Chromatograph (IC) method.
(2-4) Determination of Iodine by Ion Chromatograph (IC) method.
(3) With reference to EPA 3550C: 2007.
Analysis was performed by High Performance Liquid Chromatograph-Mass Spectrometer (HPLC-MS).
(4) With reference to ZEK 01.2-08 of German ZLS and its amendments, Analysis was performed by Gas Chromatograph / Mass Spectrometer (GC/MS).
(5) With reference to EPA 3550C: 2007. Analysis was performed by Gas Chromatograph / Mass Spectrometer (GC/MS).

Test Results : Please refer to next pages

Signed for and on behalf of
SGS-CSTC Chemical Laboratory



Sandy Hao
Lab Manager

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Test results by chemical method

(1) Phthalates Content (Unit: %)

Item	Method (refer to)	1	MDL
Dibutyl Phthalate (DBP) Content	(1)	ND	0.003
Benzylbutyl Phthalate (BBP) Content		ND	0.003
Bis-(2-ethylhexyl) Phthalate (DEHP) Content		ND	0.003
Diisononyl Phthalate (DINP) Content		ND	0.010
Di-n-octyl Phthalate (DNOP) Content		ND	0.003
Diisodecyl Phthalate (DIDP) Content		ND	0.010

(2) Halogen Content (Unit: mg/kg)

Test Item(s):	Method (refer to)	1	MDL
Fluorine(F)	(2-1)	ND	50
Chlorine(Cl)	(2-2)	ND	50
Bromine(Br)	(2-3)	ND	50
Iodine(I)	(2-4)	ND	50

(3) PFOS (Perfluorooctane Sulfonates) and PFOA (Perfluorooctanoic Acid) content (Unit: mg/kg)

Test Items	Test method (refer to)	1	MDL
Perfluorooctane Sulfonates (PFOS) PFOS – Acid PFOS – Metal Salt PFOS – Amide	(3)	ND	10
Perfluorooctyl Acid (PFOA)		ND	10

Reference Information: Directive 2006/122/EC

- (i) May not be placed on the market or used as a substance or constituent of preparations in a concentration equal to or higher than 0,005 % by mass.
- (ii) May not be placed on the market in semi-finished products or articles, or parts thereof, if the concentration of PFOS is equal to or higher than 0,1 % by mass calculated with reference to the mass of structurally or microstructurally distinct parts that contain PFOS or, for textiles or other coated materials, if the amount of PFOS is equal to or higher than 1 $\mu\text{g}/\text{m}^2$ of the coated material.

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(4)PAHs (Polynuclear Aromatic Hydrocarbons) content (Unit: mg/kg)

Test Item(s)	Method (refer to)	1	MDL
Naphthalene	(4)	ND	0.2
Acenaphthylene		ND	0.2
Acenaphthene		ND	0.2
Fluorene		ND	0.2
Phenanthrene		ND	0.2
Anthracene		ND	0.2
Fluoranthene		ND	0.2
Pyrene		ND	0.2
Benzo(a)anthracene		ND	0.2
Chrysene		ND	0.2
Benzo(b)fluoranthene		ND	0.2
Benzo(k)fluoranthene		ND	0.2
Benzo(a)pyrene		ND	0.2
Indeno(1,2,3-c,d)pyrene		ND	0.2
Dibenzo(a,h)anthracene		ND	0.2
Benzo(g,h,i)perylene		ND	0.2
Sum of 16 PAHs	ND	-	

ZEK 01.2-08: Restraining maximum values for products

Parameter	Category 1	Category 2	Category 3
	Material indented to be put in the mouth or material for toys with normal skin contact for children aged < 36 months	Materials those are not included in Category 1, with predictable contact with the skin longer than 30 s. (long-term skin contact)	Materials those are not included in Category 1 or 2, with predictable skin contact up to 30 s (short-term skin contact).
Benzo[a]pyrene (mg/kg)	<MDL (<0.2)**	1	20
Sum of 16 PAH(US EPA) (mg/kg)*	<MDL (<0.2)**	10	200

Remark: * = Only PAH substances >0.2 mg/kg are taken into account while calculating the sum of PAHs
 ** = In case that the maximum values exceed the limits of category 1, but are within the limits of category 2, one may confirm the suitability of the tested material which is indented to be put in the mouth by additional specific migration tests of PAH components based on DIN EN 1186ff and §64 LFGB 80.30-1. The conclusion of the migration test results must be made based on food law criteria.

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(5)TBBP-A Content (Unit: mg/kg)

Test Item(s):	Method (refer to)	1	MDL
TBBP-A	(5)	ND	10

Test Part Description:

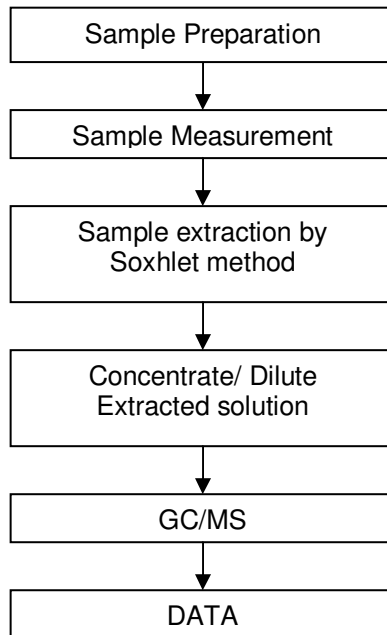
1. Silvery silicon sheet

Note:

- (1) mg/kg = ppm
- (2) ND = Not Detected
- (3) MDL = Method Detection Limit
- (4) “-” = Not Regulated
- (5) % = percentage by weight

ATTACHMENTS

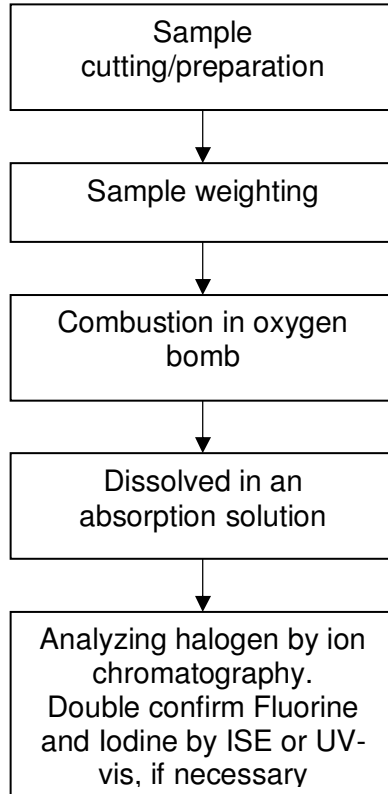
Phthalates Measurement Flowchart for sample



Tested by : Steven Zhou
 Checked by : Susan Liu

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Halogen Measurement Flowchart for sample

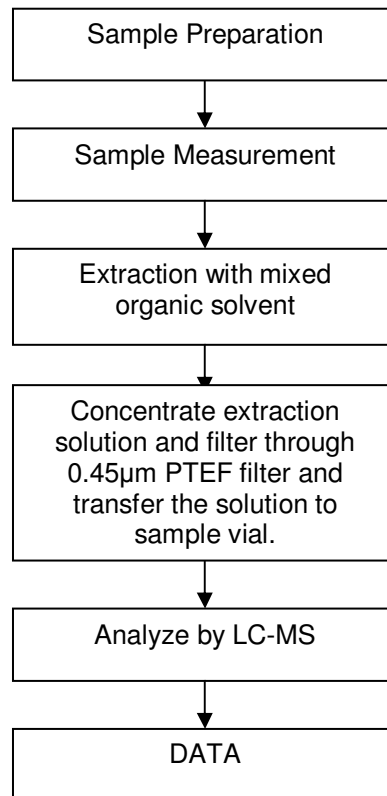


Tested by : Daisy Gong
Checked by : Alex Jiang

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PFOS/PFOA Measurement Flowchart for sample

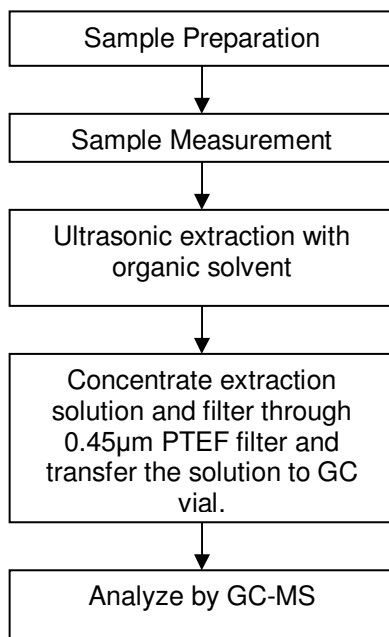


Tested by : Judy Li
 Checked by : Jenny Liu

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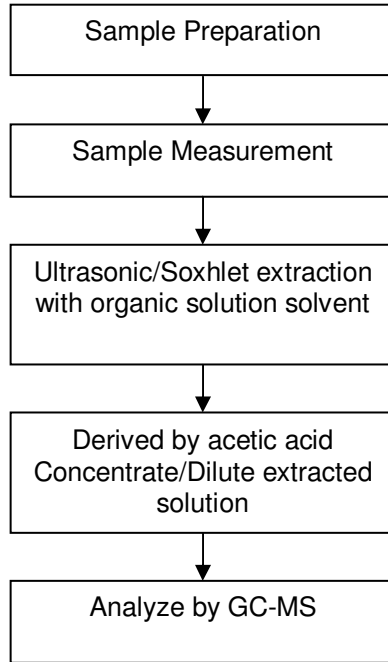
PAHs Measurement Flowchart for sample



Tested by : Jessy Huang
Checked by : Phoebe Shen

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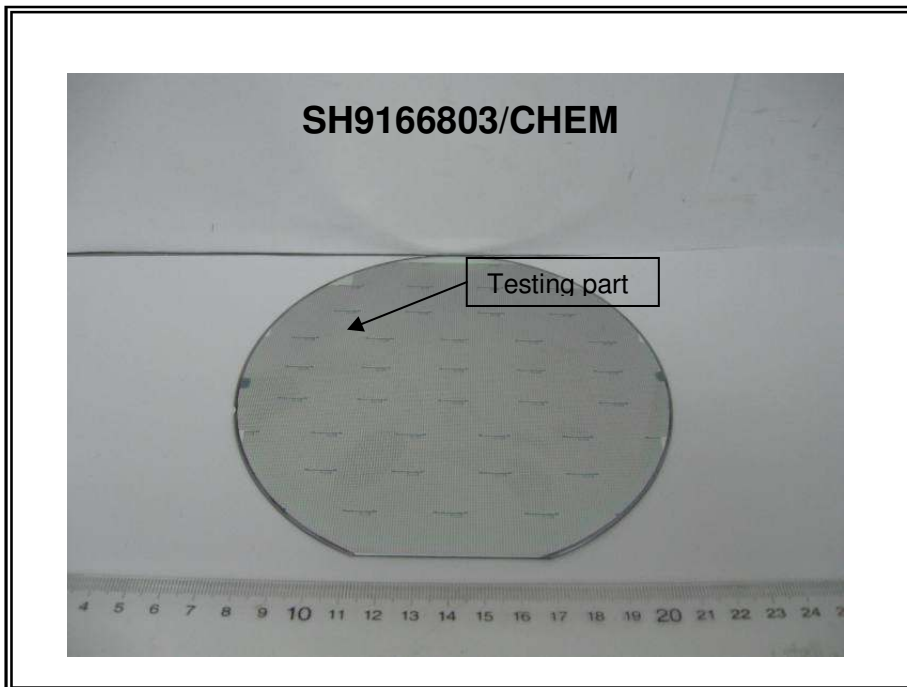
TBBP-A Measurement Flowchart for sample



Tested by : Kery Shao
 Checked by : Jenny Liu

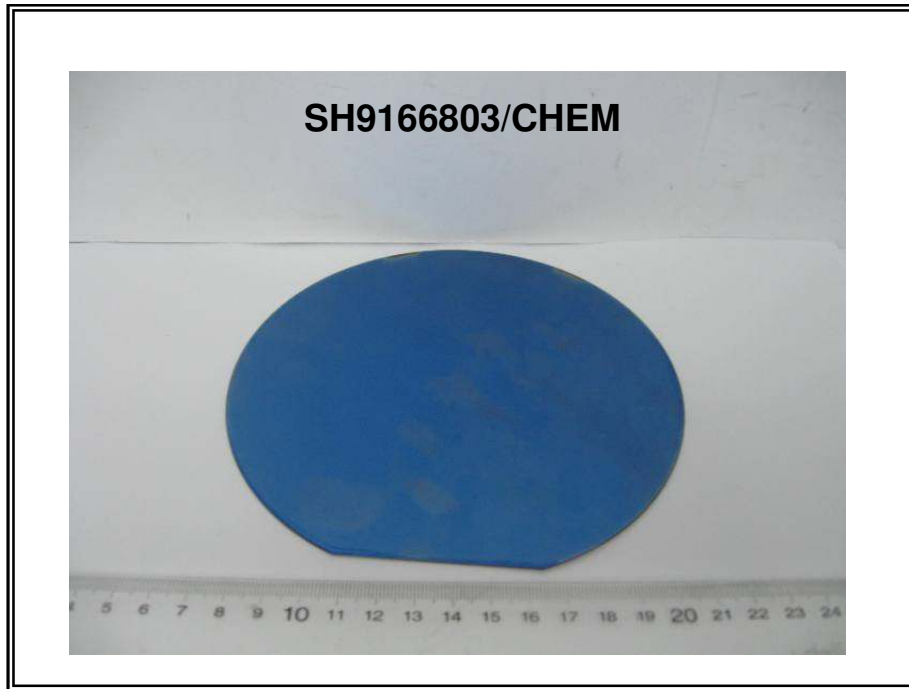
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Sample photo:



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SGS authenticate the photo on original report only

*** End of Report ***

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