



**Test Report
(SVHC)**

No. GZ1105062599/CHEM

Date: MAY 24, 2011

Page 1 of 7

SHEN ZHEN HAOPIN MICROELECTRONIC., LTD
ROOM 1906, ZHONGSHEN BUILDING, NO.7003, BEIHUAN ROAD, FUTIAN DISTRICT, SHENZHEN

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

SGS Job No. : SZ13132781

Tested sample information : TO-220

Client Reference Information : TO-92, TO-126, TO-202, TO-3P, TO-252, TO-251, SOT-82, SOT-23, SOT-223, TO-126F, TO-92MOD, TO-263, TO-220F, DPAK, IPAK, D2PAK, TO-220AB, DO-35, DO-41, DO-201, SMA, SMB, SMC, TRANSISTOR DIODE

Date of Sample Received : Sample No.1: APR 21, 2011
Sample No.2: MAY 18, 2011

Testing Period : Sample No.1: APR 21, 2011 TO APR 27, 2011
Sample No.2: MAY 18, 2011 TO MAY 24, 2011

Test Requested : As requested by client, SVHC screening is performed according to:
For Sample No.1: Thirty eight (38) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before June 18, 2010 regarding Regulation (EC) No 1907/2006 concerning the REACH.

For Sample No.2: Eight (8) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on Dec 15, 2010 regarding Regulation (EC) No 1907/2006 concerning the REACH.

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

Summary :

According to the specified scope and analytical techniques, concentrations of tested Thirty eight (38) SVHC are \leq 0.1% (w/w) in the submitted sample No.1.	PASS
According to the specified scope and analytical techniques, concentrations of tested Eight (8) SVHC are \leq 0.1% (w/w) in the submitted sample No.2.	PASS

Signed for and on behalf of
SGS-CSTC Ltd.

David Zhou
Approved Signatory

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Remark :

- (1) The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:
http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp
These lists are under evaluation by ECHA and may subject to change in the future.
- (2) In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).
- (3) Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.
- (4) If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample :

Sample Description :

Specimen No.	Description
No.1	"TRIACS(SCRS)"
No.2	"TRIACS(SCRS)"

Test Method :

SGS In-House method-GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, GC-MS and UV-VIS.

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Test Result: (Substances in the Candidate List of SVHC)

Substance Name	CAS No.	EC No.	Concentration(%)	RL(%)
			No.1	
2,4-Dinitrotoluene	121-14-2	204-450-0	N.D.	0.050
4,4'-Diaminodiphenylmethane(MDA)	101-77-9	202-974-4	N.D.	0.050
5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	201-329-4	N.D.	0.050
Acrylamide	79-06-01	201-173-7	N.D.	0.050
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	287-476-5	N.D.	0.050
Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	-	N.D.	0.005
Ammonium dichromate*	7789-09-5	232-143-1	N.D.	0.005
Anthracene	120-12-7	204-371-1	N.D.	0.050
Anthracene oil*	90640-80-5	292-602-7	N.D.	0.050
Anthracene oil, anthracene paste*	90640-81-6	292-603-2	N.D.	0.050
Anthracene oil, anthracene paste, anthracene fraction*	91995-15-2	295-275-9	N.D.	0.050
Anthracene oil, anthracene paste, distn. Lights*	91995-17-4	295-278-5	N.D.	0.050
Anthracene oil, anthracene-low*	90640-82-7	292-604-8	N.D.	0.050
Benzyl butyl phthalate (BBP)	85-68-7	201-622-7	N.D.	0.050
Bis(2-ethylhexyl)phthalate (DEHP)	117-81-7	204-211-0	N.D.	0.050
Bis(tributyltin)oxide (TBTO)	56-35-9	200-268-0	N.D.	0.050
Boric acid*	10043-35-3 11113-50-1	233-139-2 234-343-4	N.D.	0.005
Cobalt dichloride*	7646-79-9	231-589-4	N.D.	0.005
Diarsenic pentaoxide*	1303-28-2	215-116-9	N.D.	0.005

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Substance Name	CAS No.	EC No.	Concentration(%)	RL(%)
			No.1	
Diarsenic trioxide*	1327-53-3	215-481-4	N.D.	0.005
Dibutyl phthalate (DBP)	84-74-2	201-557-4	N.D.	0.050
Diisobutyl phthalate	84-69-5	201-553-2	N.D.	0.050
Disodium tetraborate, anhydrous*	1303-96-4 1330-43-4 12179-04-3	215-540-4	N.D.	0.005
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α -HBCDD, β -HBCDD, γ -HBCDD) Δ	25637-99-4 and 3194- 55-6	247-148-4 and 221-695-9	N.D.	0.050
Lead chromate*	7758-97-6	231-846-0	N.D.	0.005
Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	235-759-9	N.D.	0.005
Lead hydrogen arsenate*	7784-40-9	232-064-2	N.D.	0.005
Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	215-693-7	N.D.	0.005
Pitch, coal tar, high temp.*	65996-93-2	266-028-2	N.D.	0.050
Potassium chromate*	7789-00-6	232-140-5	N.D.	0.005
Potassium dichromate*	7778-50-9	231-906-6	N.D.	0.005
Sodium chromate*	7775-11-3	231-889-5	N.D.	0.005
Sodium dichromate*	7789-12-0 and 10588-01-9	234-190-3	N.D.	0.005
Tetraboron disodium heptaoxide, hydrate*	12267-73-1	235-541-3	N.D.	0.005
Trichloroethylene	79-01-6	201-167-4	N.D.	0.050
Triethyl arsenate*	15606-95-8	427-700-2	N.D.	0.005
Tris(2-chloroethyl)phosphate	115-96-8	204-118-5	N.D.	0.050
Zirconia Aluminosilicate Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	-	N.D.	0.005

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Test Result: (Substances in the Candidate List of SVHC)

Substance Name	CAS No.	EC No.	Concentration(%)	RL(%)
			No.2	
2-Ethoxyethanol	110-80-5	203-804-1	N.D.	0.050
2-Methoxyethanol	109-86-4	203-713-7	N.D.	0.050
Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5 - 13530-68-2	231-801-5 - 236-881-5	N.D.	0.005
Chromium trioxide*	1333-82-0	215-607-8	N.D.	0.005
Cobalt(II) carbonate*	513-79-1	208-169-4	N.D.	0.005
Cobalt(II) diacetate*	71-48-7	200-755-8	N.D.	0.005
Cobalt(II) dinitrate*	10141-05-6	233-402-1	N.D.	0.005
Cobalt(II) sulphate*	10124-43-3	233-334-2	N.D.	0.005

Notes:

- RL = Reporting Limit. All RL are based on homogenous material.
N.D. = Not detected (lower than RL), N.D. is denoted on the target compound.
- ^Δ CAS No. of diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD): 134237-50-6, 134237-51-7, 134237-52-8.
- * The test result is based on the calculation of selected element(s) / marker(s) and to the worst-case scenario. For detail information, please refer to the SGS REACH website:
www.reach.sgs.com/substance-of-very-high-concern-analysis-information-page.htm

Calculated concentration of boric acid, disodium tetraborate, anhydrous and tetraboron disodium heptaoxide, hydrate are based on the water extractive boron and sodium by ICP-OES.

RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, sodium, chromium, chromium (VI), silicon, aluminum, zirconium, boron and potassium respectively), except molybdenum
RL=0.0005%

- Results & photo(s) of No.1 in this report refer to test report GZ1104048148/CHEM.

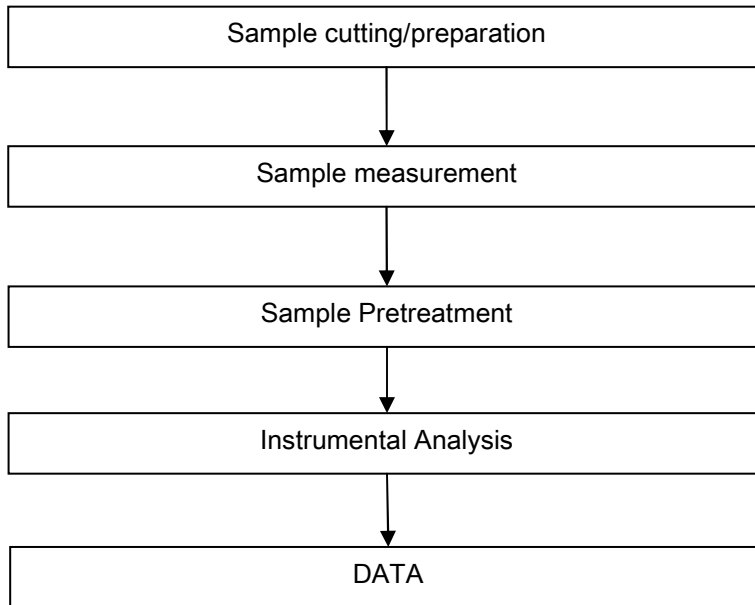
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ATTACHMENTS

SVHC Testing Flow Chart

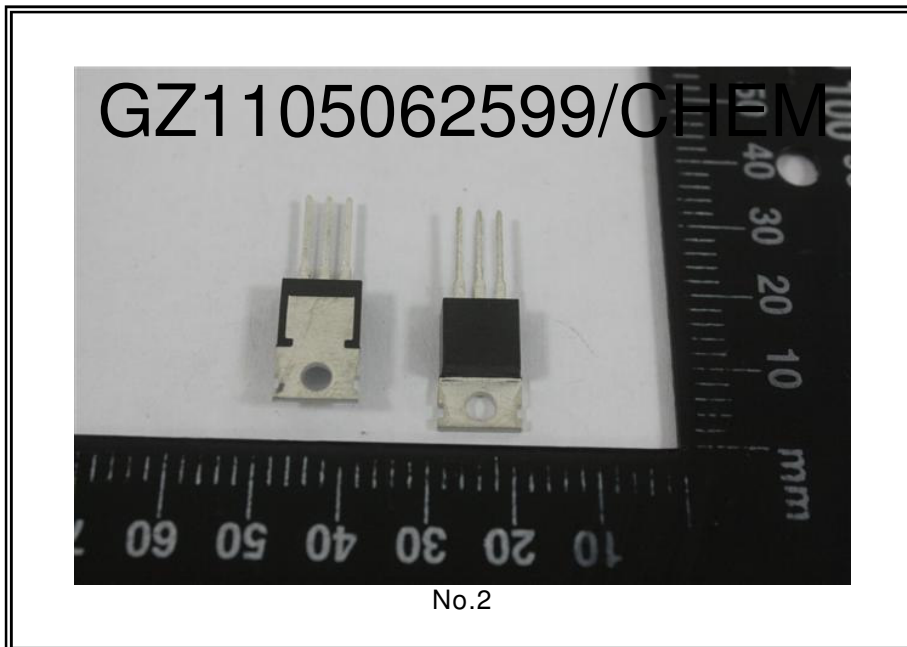
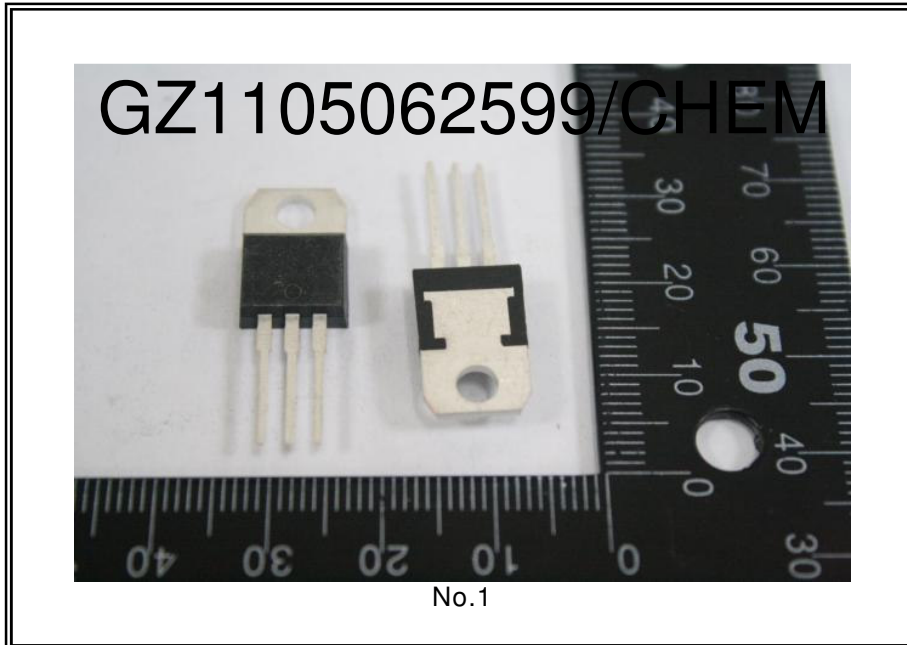
- 1) Name of the person who made testing: Bella Wang / Tina Zhao
- 2) Name of the person in charge of testing: Adams Yu / Ryan Yang



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Sample photo:



SGS authenticate the photo on original report only
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