



## Test Report

No.: GZ0703025648/CHEM

Date: MAR 09, 2007

Page 1 of 5

SEMTECH ELECTRONICS LTD.

12-18 BAIYE CHENG ROAD, SHANGTUN INDUSTRIAL ZONE, LAOBU, DONGGUAN, PRC.

The following sample(s) was/were submitted and identified on behalf of the applicant as DIP Glass Diodes

SGS Ref No. : GZ10275545EC-14.7  
Sample Receiving Date : MAR 02, 2007  
Testing Period : MAR 02, 2007 TO MAR 09, 2007

Test Requested : (A) In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.  
(B) To determine the Hexavalent Chromium content in the submitted sample.

Test Method : With reference to IEC 62321 Ed.1 111/54/CDV  
Procedures for the Determination of Levels of Regulated Substances in Electrotechnical Products  
(1) Determination of Cadmium by ICP.  
(2) Determination of Lead by ICP&AAS.  
(3) Determination of Mercury by ICP.  
(4) Determination of Hexavalent Chromium by Colorimetric Method.  
(5) Determination of PBBs and PBDEs by GC-MS.

As specified by client, with reference to EPA 3060A: 1996 & EPA 7196A: 1992.  
(6) Determination of Hexavalent Chromium by Colorimetric Method.

Test Results : Please refer to next page.

Conclusion : (A) Based on the performed tests on submitted sample(s), the results of **comply with the RoHS**  
Directive 2002/95/EC and its subsequent amendments.

Remark : As requested by client, the test of No.1 was conducted as whole / part sample, for the sample can't  
be disjointed.

Signed for and on behalf of  
SGS-CSTC Ltd.

Huang Fang, Sunny  
Sr. Engineer

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GZCM 1225381

Member of the SGS Group (SGS SA)

Test results by chemical method (Unit: mg/kg)

(A)

Test Item(s):	Method (refer to)	No.1	No.2	MDL	RoHS Limit
Cadmium(Cd)	(1)	N.D.	N.D.	2	100
Lead (Pb)	(2)	366638 <sup>[1]</sup>	8	2	1000
Mercury (Hg)	(3)	N.D.	N.D.	2	1000
Hexavalent Chromium (CrVI) by alkaline extraction	(4)	N.D.	---	2	1000
Hexavalent Chromium (CrVI) by Spot test	(4)	---	Negative	See Note 5	#
<b>Sum of PBBs</b>		<b>N.D.</b>	<b>---</b>	<b>-</b>	<b>1000</b>
Monobromobiphenyl		N.D.	---	5	
Dibromobiphenyl		N.D.	---	5	
Tribromobiphenyl		N.D.	---	5	
Tetrabromobiphenyl		N.D.	---	5	
Pentabromobiphenyl		N.D.	---	5	
Hexabromobiphenyl		N.D.	---	5	
Heptabromobiphenyl		N.D.	---	5	
Octabromobiphenyl		N.D.	---	5	
Nonabromobiphenyl		N.D.	---	5	
Decabromobiphenyl		N.D.	---	5	
<b>Sum of PBDEs (Mono to Nona)(Note 4)</b>	(5)	<b>N.D.</b>	<b>---</b>	<b>-</b>	<b>1000</b>
Monobromodiphenyl ether		N.D.	---	5	
Dibromodiphenyl ether		N.D.	---	5	
Tribromodiphenyl ether		N.D.	---	5	
Tetrabromodiphenyl ether		N.D.	---	5	
Pentabromodiphenyl ether		N.D.	---	5	
Hexabromodiphenyl ether		N.D.	---	5	
Heptabromodiphenyl ether		N.D.	---	5	
Octabromodiphenyl ether		N.D.	---	5	
Nonabromodiphenyl ether		N.D.	---	5	
Decabromodiphenyl ether		N.D.	---	5	
<b>Sum of PBDEs (Mono to Deca)</b>		<b>N.D.</b>	<b>---</b>	<b>-</b>	<b>-</b>

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Note : 1. mg/kg = ppm

2. N.D. = Not Detected (< MDL)

3. MDL = Method Detection Limit

4. Sum of Mono to NonaBDE & according to 2005/717/EC DecaBDE is exempt.

5. **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 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 cm<sup>2</sup> sample surface area.

6. # = Positive indicates the presence of CrVI on the tested areas and result be regarded as conflict with RoHS requirement.

Negative indicates the absence of CrVI on the tested areas and result be regarded as no conflict with RoHS requirement.

7. "-" = Not regulated

8. "---" = Not Conducted

9. Result of No.1(Pb) is only for reference.

Remark[1]: According to the declaration from client, the source of Lead in **No.1** could be from the glass material of that electronic component which is exempted by RoHS regulatory (Directive 2002/95/EC of the European parliament and of The council of 27 January 2003)

(B)

Test Item(s):	Method (refer to)	No.2	MDL
Hexavalent Chromium (CrVI) by alkaline extraction	(6)	N.D.	2

Note : 1. mg/kg = ppm

2. N.D. = Not Detected (< MDL)

3. MDL = Method Detection Limit

Test Part Description:

No.1 Red body (mixed)

No.2 Silvery metal pin

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