



## Test Report

No.: GZ0703025647/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 SMD Glass Diodes

SGS Ref No. : GZ10275545EC-14.2  
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.

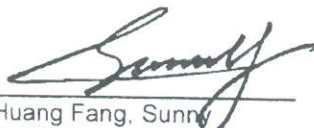
As specified by client, with reference to EPA 3060A: 1996 & EPA 7196A: 1992.  
(6) Determination of Hexavalent Chromium by Colorimetric Method.

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

This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at [www.sgs.com](http://www.sgs.com). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders will be prosecuted to the fullest extent of the law.

SGS-CSTC Standards Technical Services Co., Ltd.  
Guangzhou Branch

198 Keshu Road, SEMTECH Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663  
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663

t (86-20) 82155555  
t (86-20) 82155555

f (86-20) 82075125  
f (86-20) 82075125

[www.cn.sgs.com](http://www.cn.sgs.com)  
e [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

**GZCM1222185**

Member of the SGS Group (SGS SA)



## Test Report

No.: GZ0703025647/CHEM

Date: MAR 09, 2007

Page 2 of 5

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)	206938 <sup>(1)</sup>	6	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>	(5)	N.D.	---	-	1000
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>		N.D.	---	-	1000
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>		N.D.	---	-	-

This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at [www.sgs.com](http://www.sgs.com). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS-CTI Standards Technical Services Co., Ltd.  
Guangzhou Branch Chemical Laboratory

198 Kaifu Road, SULETECH Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663  
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663

t (86-20) 82155555

f (86-20) 82075125

www.cn.sgs.com

t (86-20) 82155555

f (86-20) 82075125

e [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

GZCM1222184

Member of the SGS Group (SGS SA)



## Test Report

No.: GZ0703025647/CHEM

Date: MAR 09, 2007

Page 3 of 5

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

This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at [www.sgs.com](http://www.sgs.com). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law.

**GZCM1222183**

SGS-CTC Standards Technical Services Co., Ltd.  
Guangzhou Branch Chemical Laboratory

198 Kezhu Road S.C. ENTECH Park Guangzhou Economic & Technology Development District, Guangzhou, China 510663  
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663

t (86-20) 82155555

f (86-20) 82075125

[www.cn.sgs.com](http://www.cn.sgs.com)

t (86-20) 82155555

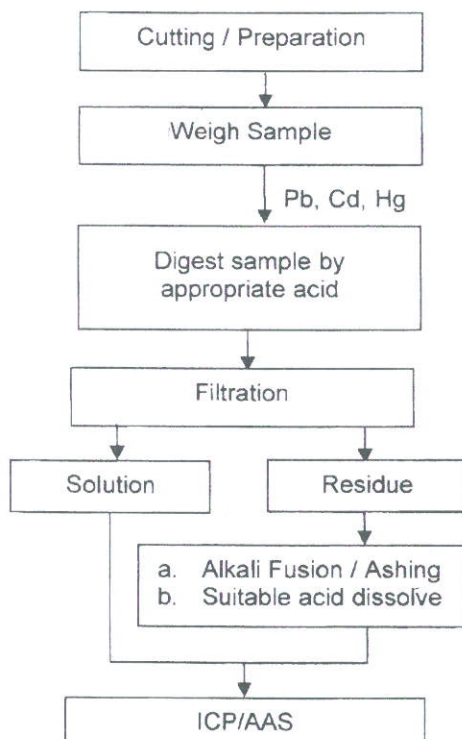
f (86-20) 82075125

e [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

Member of the SGS Group (SGS SA)

### ATTACHMENTS

Flow chart of test:



Operator : David Shen  
Leader : Emily Feng

This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at [www.sgs.com](http://www.sgs.com). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This test report cannot be reproduced, except in full, without prior written permission of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders will be prosecuted to the fullest extent of the law.

**GZCM1222182**

SGS-Standard Technical Services Co., Ltd.  
Guangzhou Branch

196 Kezhu Road, GUJENTECH Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663

中国·广州·经济技术开发区科学城科珠路196号 邮编: 510663

t (86-20) 82155555

t (86-20) 82155555

f (86-20) 82075125

f (86-20) 82075125

[www.cn.sgs.com](http://www.cn.sgs.com)

e [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

