

Test Report No. CANEC0905830701 Date: 03 Dec 2009 Page 1 of 6

HIGHLAND ELECTRONICS CO.,LTD. 6/F, A-BUILDING, GAUNGHUI INDUSTRIAL ZONE, HUANGTIAN, BAO'AN, SHENZHEN **CHINA**

The following sample(s) was/were submitted and identified on behalf of the clients as : Through-hole LED lamp

SGS Job No. 12276655 - SZ

SGS Internal Reference No. :

30 Nov 2009 Date of Sample Received

Testing Period 30 Nov 2009 - 03 Dec 2009

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).

Based on the performed tests on submitted sample(s), the results comply Conclusion

with the RoHS Directive 2002/95/EC and its subsequent amendments.

Signed for and on behalf of SGS-CSTC Ltd.

Manson Yang Sr. Engineer

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Test Results:

ID for specimen 1 : CAN09-058307.001

Description for specimen 1 : Transparent palstic (semi-product)

RoHS Directive 2002/95/EC

Test Item(s)	Unit	Test Method (Reference)	Result	MDL	Limit
Cadmium (Cd)	mg/kg	IEC 62321:2008, ICP-OES	N.D.	2	100
Lead (Pb)	mg/kg	IEC 62321:2008, ICP-OES	N.D.	2	1000
Mercury (Hg)	mg/kg	IEC 62321:2008, ICP-OES	N.D.	2	1000
Hexavalent Chromium (CrVI) by	mg/kg	IEC 62321:2008, UV-Vis	N.D.	2	1000
alkaline extraction					
Sum of PBBs	mg/kg	-	N.D.	-	1000
Monobromobiphenyl	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Dibromobiphenyl	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Tribromobiphenyl	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Tetrabromobiphenyl	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Pentabromobiphenyl	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Hexabromobiphenyl	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Heptabromobiphenyl	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Octabromobiphenyl	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Nonabromobiphenyl	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Decabromobiphenyl	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Sum of PBDEs	mg/kg	-	N.D.	-	1000
Monobromodiphenyl ether	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Dibromodiphenyl ether	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Tribromodiphenyl ether	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Tetrabromodiphenyl ether	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Pentabromodiphenyl ether	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Hexabromodiphenyl ether	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Heptabromodiphenyl ether	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Octabromodiphenyl ether	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Nonabromodiphenyl ether	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	
Decabromodiphenyl ether	mg/kg	IEC 62321:2008, GC-MS	N.D.	5	

Note:

- 1. mg/kg = ppm
- 2. N.D. = Not Detected (< MDL)
- 3. MDL = Method Detection Limit
- 4. "-" = Not regulated

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: CAN09-058307.002 ID for specimen 2

Description for specimen 2 : Silvery metal (semi-product)

RoHS Directive 2002/95/EC

Test Item(s)	Unit	Test Method (Reference)	Result	MDL	Limit
Cadmium (Cd)	mg/kg	IEC 62321:2008, ICP-OES	N.D.	2	100
Lead (Pb)	mg/kg	IEC 62321:2008, ICP-OES	N.D.	2	1000
Mercury (Hg)	mg/kg	IEC 62321:2008, ICP-OES	N.D.	2	1000
Hexavalent Chromium (CrVI) by	-	IEC 62321:2008, UV-Vis	Negative	\Diamond	#
boiling water extraction					

Note:

- 1. mg/kg = ppm
- 2. N.D. = Not Detected (< MDL)
- 3. MDL = Method Detection Limit
- 4. ♦ = 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 is negative or 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 cm² sample surface area.

Storage conditions and production date of the tested sample are unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

5. # = Positive indicates the presence of CrVI on the tested areas.

Negative indicates the absence of CrVI on the tested areas.

6. "-" = Not regulated

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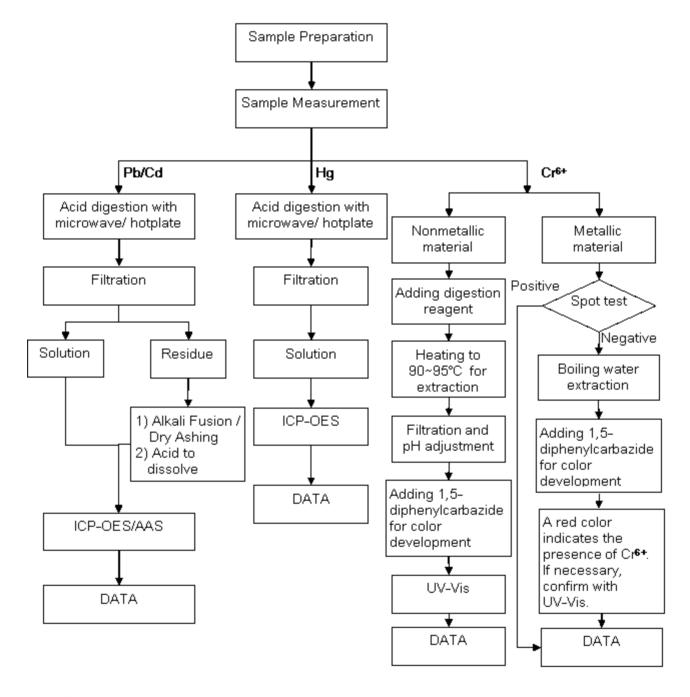
Date: 03 Dec 2009

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ATTACHMENTS

Testing Flow Chart

- 1) Name of the person who made measurement: Bella Wang
- 2) Name of the person in charge of measurement: Adams Yu
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr6+ test method excluded) .



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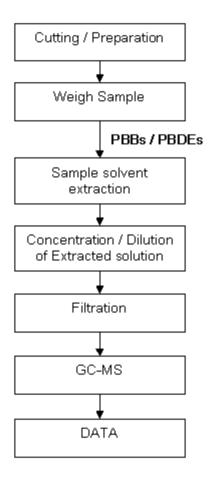
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Testing Flow Chart

- 1) Name of the person who made measurement: Tina Zhao
- 2) Name of the person in charge of measurement: Ryan Yang



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Sample photo:





SGS authenticate the photo on original report only *** End of Report ***

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