

Test Report

No. 2102257/EC

Date : Mar 09 2010

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HONG KONG RESISTORS MANUFACTORY
BLK A , 10/F ., CHEONG YICK IND BLDG.,
12 ON YIP STREET,
CHAI WAN
HONG KONG

This report supersedes all previous documents bearing the test report number 2102053/EC.

The following sample was submitted and identified on behalf of the client as :
CHIP RESISTOR

SGS Job No. : 1331616
Sample Receiving Date : FEB 10 2010
Testing Period : FEB 10 - 18 2010

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).

Conclusion : (1) Based on the performed tests on submitted sample, the results comply with the RoHS Directive 2002/95/EC and its subsequent amendments.

(2) When tested as specified, the submitted sample complies with the phthalate requirements under entries 51 and 52 of the Regulation (EC) No. 552/2009 amending Annex XVII of REACH Regulation (EC) No. 1907/2006 (previously restricted under Directive 2005/84/EC).

Signed for and on behalf of
SGS Hong Kong Ltd



Lee Fu Wa, Leo
Section Manager

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Test result:

ID for sample 1 : 4107443S006

Description for sample 1 : Black Solid w/ White Solid w/ White Printing w/ Silvery Metal

(1)

RoHS Directive 2002/95/EC

Test Item(s) :	Unit	Test Method	Results	<u>MDL</u>	<u>Limit</u>
Cadmium(Cd)	mg/kg	With reference to IEC 62321:2008 and performed by ICP-OES	n.d.	2	100
Lead (Pb)	mg/kg	With reference to IEC 62321:2008 and performed by ICP-OES	3.7x10 ³	2	1000
Mercury (Hg)	mg/kg	With reference to IEC 62321:2008 and performed by ICP-OES	n.d.	2	1000
Hexavalent Chromium (CrVI)	mg/kg	With reference to IEC 62321:2008 and performed by UV-VIS	n.d.	2	1000
Sum of PBBs	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	-	1000
Monobromobiphenyl	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	5	
Dibromobiphenyl	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	5	
Tribromobiphenyl	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	5	
Tetrabromobiphenyl	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	5	
Pentabromobiphenyl	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	5	
Hexabromobiphenyl	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	5	
Heptabromobiphenyl	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	5	
Octabromobiphenyl	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	5	
Nonabromobiphenyl	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	5	
Decabromobiphenyl	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	5	
Sum of PBDEs	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	-	1000
Monobromodiphenyl ether	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	5	
Dibromodiphenyl ether	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	5	
Tribromodiphenyl ether	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	5	
Tetrabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	5	
Pentabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	5	

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Hexabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	5
Heptabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	5
Octabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	5
Nonabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	5
Decabromodiphenyl ether ##	mg/kg	With reference to IEC 62321:2008 and performed by GC-MS	n.d.	5

Note :

- (1) mg/kg = ppm; 0.1wt% = 1000 ppm
- (2) n.d. = not detected
- (3) MDL = Method Detection Limit
- (4) ## = The exemption of DecaBDE in polymeric application according 2005/717/EC was overruled by the European Court of Justice by its decision of 01.04.2008. Subsequently DecaBDE will be included in the sum of PBDE after 01.07.2008
- (5) " - " = Not regulated

Remark:

According to the product specification [Chip Resistor] provided from supplier or manufacturer [Hong Kong Resistors Manufactory], it is possible the source of lead in the sample could be from the ceramic 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).

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Test result:

(2)

Phthalate

<u>Test item</u>	<u>Test Method</u>	<u>1</u>	<u>DL</u>	<u>Limit</u>
Dibutyl Phthalate (DBP)	With reference to ASTM Method Designation D3421- 75, and performed by GC-MS	n.d.	0.003%	-
Benzylbutyl Phthalate (BBP)	With reference to ASTM Method Designation D3421- 75, and performed by GC-MS	n.d.	0.003%	-
Bis-(2-ethylhexyl) Phthalate (DEHP)	With reference to ASTM Method Designation D3421- 75, and performed by GC-MS	n.d.	0.003%	-
Total (DBP + BBP + DEHP)		<0.01%	--	0.1%

<u>Test item</u>	<u>Test Method</u>	<u>1</u>	<u>DL</u>	<u>Limit</u>
Diisononyl Phthalate (DINP)	With reference to ASTM Method Designation D3421- 75, and performed by GC-MS	n.d.	0.01%	-
Di-n-octyl Phthalate (DNOP)	With reference to ASTM Method Designation D3421- 75, and performed by GC-MS	n.d.	0.003%	-
Diisodecyl Phthalate (DIDP)	With reference to ASTM Method Designation D3421- 75, and performed by GC-MS	n.d.	0.01%	-
Total (DINP + DNOP + DIDP)		<0.03%	--	0.1%

<u>Test item</u>	<u>Test Method</u>	<u>1</u>	<u>DL</u>	<u>Limit</u>
Di-n-hexyl phthalate (DNHP)	With reference to ASTM Method Designation D3421- 75, and performed by GC-MS	n.d.	0.005%	-

Note :

- (1) mg/kg = ppm; 0.1% = 1000 ppm
- (2) DL = Detection Limit
- (3) n.d. = Not Detected (Less than DL)
- (4) < = less than
- (5) % = percentage by weight
- (6) - = Not Regulated

Remark:

The test requirement of DNHP content is not applicable to entries 51 and 52 of the Regulation (EC) No. 552/2009 amending Annex XVII of REACH Regulation (EC) No. 1907/2006.

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Test result:

(3)

Halogen

<u>Test Item(s) :</u>	<u>CAS No.</u>	<u>Unit</u>	<u>Test Method</u>	<u>Results</u>	<u>MDL</u>
Fluorine (F)	007782-41-4	mg/kg	With reference to EN 14582: 2007 and performed by IC	n.d.	50
Chlorine (Cl)	007782-50-5	mg/kg	With reference to EN 14582: 2007 and performed by IC	n.d.	50
Bromine (Br)	007726-95-6	mg/kg	With reference to EN 14582: 2007 and performed by IC	n.d.	50
Iodine (I)	007553-56-2	mg/kg	With reference to EN 14582: 2007 and performed by IC	n.d.	50

Note :

- (1) mg/kg = ppm; 0.1wt% = 1000 ppm
- (2) n.d. = not detected
- (3) MDL = Method Detection Limit

(4)

PFOS (Perfluorooctane sulfonates)

<u>Test Item(s)</u>	<u>Unit</u>	<u>Test Method (Reference)</u>	<u>1</u>	<u>MDL</u>
Perfluorooctane sulphonates (PFOS)				
PFOS – Acid		With reference to SGS in-house method and performed by HPLC-MS	n.d.	10
PFOS – Metal Salt	mg/kg			
PFOS – Amide				

PFOA (Perfluorooctyl Acid)

<u>Test Item(s)</u>	<u>Unit</u>	<u>Test Method (Reference)</u>	<u>1</u>	<u>MDL</u>
Perfluorooctyl Acid (PFOA)	mg/kg	With reference to SGS in-house method and performed by HPLC-MS	n.d.	10

Note :

- (1) mg/kg = ppm
- (2) n.d. = Not Detected (< MDL)
- (3) MDL = Method Detection Limit

Reference information: Entry 53 of the Regulation (EC) No. 552/2009 amending Annex XVII of REACH Regulation (EC) No. 1907/2006 (Formerly Directive 2006/122/EC).

- (1) Shall not be placed on the market, or used, as a substance or in mixtures in concentrations equal to or higher than 0,005% by mass.
- (2) Shall 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 1µg/m² of the coated material.

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Sample photo :



SGS authenticate the photo on original report only

*** End of Report ***

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