

## Test Report

No. SH8038195/CHEM

Date: Mar. 28, 2008

Page 1 of 10

CHANGZHOU HUAWEI ELECTRONIC CO., LTD  
SHIQIAO, ZOUQU TOWN, WUJIN DISTRICT, CHANGZHOU CITY

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

Sample Name : ALUMINUM ELECTROLYTIC CAPACITOR  
SGS Ref No. : 10906693-3  
Main Substance : 1. ANODE FOIL, 2. CATHODE FOIL, 3 SEPARATOR, 4.ELECTROLYTE, 5.RUBBER,  
6. AL CASE, 7. LEAD WIRE 8. PLASTICS TUBE, 9 INK

Sample Receiving Date : Mar.22, 2008, Mar.25, 2008  
Testing Period : Mar.22 – 28, 2008

Test Requested : In accordance with the RoHS Directive 2002/95/EC, and its amendment directives

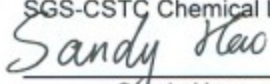
Test Method : (1) With reference to IEC 62321/2<sup>nd</sup> CDV (111/95/CDV) for Cadmium content.  
Analysis was performed by ICP.  
(2) With reference to IEC 62321/2<sup>nd</sup> CDV (111/95/CDV) for Lead content.  
Analysis was performed by ICP and AAS.  
(3) With reference to IEC 62321/2<sup>nd</sup> CDV (111/95/CDV) for Mercury content.  
Analysis was performed by ICP.  
(4) With reference to IEC 62321/2<sup>nd</sup> CDV (111/95/CDV) for Hexavalent  
Chromium by spot test / Colorimetric Method.  
(5) With reference to IEC 62321/2<sup>nd</sup> CDV (111/95/CDV) for PBBs / PBDEs content.  
Analysis was performed by GC/MS.

Test Results : Please refer to next pages

Signed for and on behalf of  
SGS-CSTC Chemical Laboratory

  
Ella Zhang  
Section Manager

Signed for and on behalf of  
SGS-CSTC Chemical Laboratory

  
Sandy Hao  
Lab Manager

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.

## Test Report

No. SH8038195/CHEM

Date: Mar. 28, 2008

Page 2 of 10

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

Test Item(s):	Method (refer to)	1	2	3	MDL	RoHS Limit
Cadmium(Cd)	(1)	ND	ND	ND	2	100
Lead (Pb)	(2)	ND	ND	ND	2	1000
Mercury (Hg)	(3)	ND	ND	ND	2	1000
Hexavalent Chromium (CrVI)	(4)	ND	ND	ND	2	1000
Sum of PBBs	(5)	---	---	ND	-	1000
Monobromobiphenyl		---	---	ND	5	-
Dibromobiphenyl		---	---	ND	5	-
Tribromobiphenyl		---	---	ND	5	-
Tetrabromobiphenyl		---	---	ND	5	-
Pentabromobiphenyl		---	---	ND	5	-
Hexabromobiphenyl		---	---	ND	5	-
Heptabromobiphenyl		---	---	ND	5	-
Octabromobiphenyl		---	---	ND	5	-
Nonabromobiphenyl		---	---	ND	5	-
Decabromobiphenyl		---	---	ND	5	-
Sum of PBDEs (Note 4)		---	---	ND	-	1000
Monobromodiphenyl ether		---	---	ND	5	-
Dibromodiphenyl ether		---	---	ND	5	-
Tribromodiphenyl ether		---	---	ND	5	-
Tetrabromodiphenyl ether		---	---	ND	5	-
Pentabromodiphenyl ether		---	---	ND	5	-
Hexabromodiphenyl ether		---	---	ND	5	-
Heptabromodiphenyl ether		---	---	ND	5	-
Octabromodiphenyl ether		---	---	ND	5	-
Nonabromodiphenyl ether		---	---	ND	5	-
Decabromodiphenyl ether		---	---	ND	5	-
Sum of PBDEs (Mono to Deca)		---	---	ND	-	-

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.



## Test Report

No. SH8038195/CHEM

Date: Mar. 28, 2008

Page 3 of 10

Test Item(s):	Method (refer to)	4	5	6	MDL	RoHS Limit
Cadmium(Cd)	(1)	ND	ND	ND	2	100
Lead (Pb)	(2)	ND	13	6	2	1000
Mercury (Hg)	(3)	ND	ND	ND	2	1000
Hexavalent Chromium (CrVI)	(4)	ND	ND	---	2	1000
Hexavalent Chromium (CrVI) by Spot test / boiling water extraction	(4)	---	---	Negative	See Note (5)	#
Sum of PBBs	(5)	ND	ND	---	-	1000
Monobromobiphenyl		ND	ND	---	5	-
Dibromobiphenyl		ND	ND	---	5	-
Tribromobiphenyl		ND	ND	---	5	-
Tetrabromobiphenyl		ND	ND	---	5	-
Pentabromobiphenyl		ND	ND	---	5	-
Hexabromobiphenyl		ND	ND	---	5	-
Heptabromobiphenyl		ND	ND	---	5	-
Octabromobiphenyl		ND	ND	---	5	-
Nonabromobiphenyl		ND	ND	---	5	-
Decabromobiphenyl		ND	ND	---	5	-
Sum of PBDEs (Note 4)		ND	ND	---	-	1000
Monobromodiphenyl ether		ND	ND	---	5	-
Dibromodiphenyl ether		ND	ND	---	5	-
Tribromodiphenyl ether		ND	ND	---	5	-
Tetrabromodiphenyl ether		ND	ND	---	5	-
Pentabromodiphenyl ether		ND	ND	---	5	-
Hexabromodiphenyl ether		ND	ND	---	5	-
Heptabromodiphenyl ether		ND	ND	---	5	-
Octabromodiphenyl ether		ND	ND	---	5	-
Nonabromodiphenyl ether		ND	ND	---	5	-
Decabromodiphenyl ether		ND	ND	---	5	-
Sum of PBDEs (Mono to Deca)		ND	ND	---	-	-

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.

## Test Report

No. SH8038195/CHEM

Date: Mar. 28, 2008

Page 4 of 10

Test Item(s):	Method (refer to)	7	8	9	MDL	RoHS Limit
Cadmium(Cd)	(1)	ND	ND	ND	2	100
Lead (Pb)	(2)	ND	ND	ND	2	1000
Mercury (Hg)	(3)	ND	ND	ND	2	1000
Hexavalent Chromium (CrVI)	(4)	---	ND	ND	2	1000
Hexavalent Chromium (CrVI) by Spot test / boiling water extraction	(4)	Negative	---	---	See Note (5)	#
Sum of PBBs	(5)	---	ND	ND	-	1000
Monobromobiphenyl		---	ND	ND	5	-
Dibromobiphenyl		---	ND	ND	5	-
Tribromobiphenyl		---	ND	ND	5	-
Tetrabromobiphenyl		---	ND	ND	5	-
Pentabromobiphenyl		---	ND	ND	5	-
Hexabromobiphenyl		---	ND	ND	5	-
Heptabromobiphenyl		---	ND	ND	5	-
Octabromobiphenyl		---	ND	ND	5	-
Nonabromobiphenyl		---	ND	ND	5	-
Decabromobiphenyl		---	ND	ND	5	-
Sum of PBDEs (Note 4)		---	ND	ND	-	1000
Monobromodiphenyl ether		---	ND	ND	5	-
Dibromodiphenyl ether		---	ND	ND	5	-
Tribromodiphenyl ether		---	ND	ND	5	-
Tetrabromodiphenyl ether		---	ND	ND	5	-
Pentabromodiphenyl ether		---	ND	ND	5	-
Hexabromodiphenyl ether		---	ND	ND	5	-
Heptabromodiphenyl ether		---	ND	ND	5	-
Octabromodiphenyl ether		---	ND	ND	5	-
Nonabromodiphenyl ether		---	ND	ND	5	-
Decabromodiphenyl ether		---	ND	ND	5	-
Sum of PBDEs (Mono to Deca)		---	ND	ND	-	-

### Test Part Description:

1. Grey metal anode foil
2. Silvery metal cathode foil
3. Beige-yellow separator
4. Electrolyte
5. Black plastic pellet
6. Silver metal shell
7. Silvery metal pin
8. Black plastic tube
9. White ink

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.



## Test Report

No. SH8038195/CHEM

Date: Mar. 28, 2008

Page 5 of 10

### Note:

- (1) mg/kg = ppm
- (2) ND = Not Detected
- (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 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 cm<sup>2</sup> sample surface area.
- (6) # = Positive indicates the presence of Hexavalent Chromium on the tested areas  
 Negative indicates the absence of CrVI on the tested areas.
- (7) "-" = Not Regulated
- (8) "—" = Not Conducted
- (9) The maximum permissible limit is quoted from the document 2005/618/EC amending RoHS directive 2002/95/EC
- (10) Ⓢ Hexavalent Chromium was absent on the surface of the metal sample. Analysis was performed by IEC 62321/2<sup>nd</sup> CDV (111/95/CDV) spot-test/boiling-water-extraction.

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.

## Test Report

No. SH8038195/CHEM

Date: Mar. 28, 2008

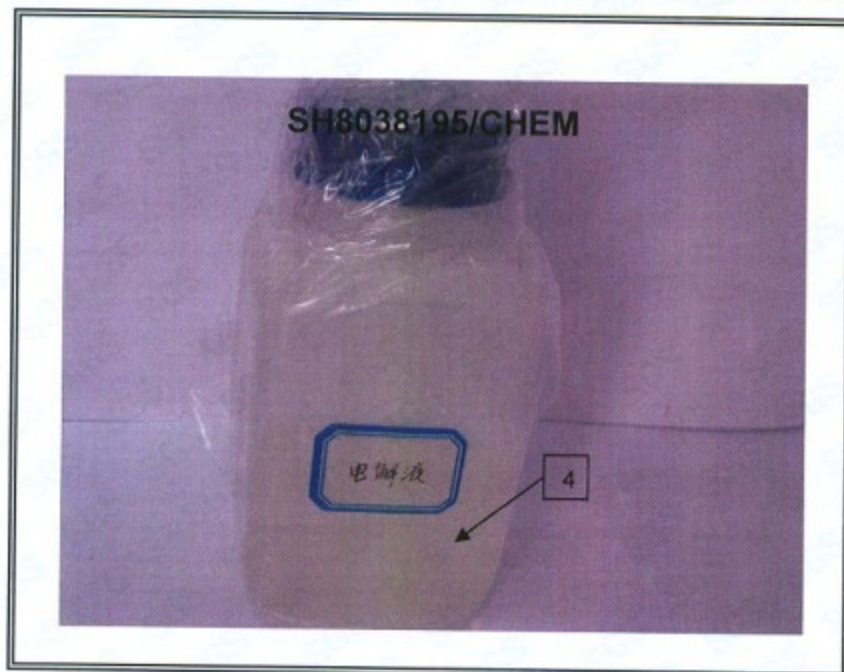
Page 6 of 10

Sample photo:

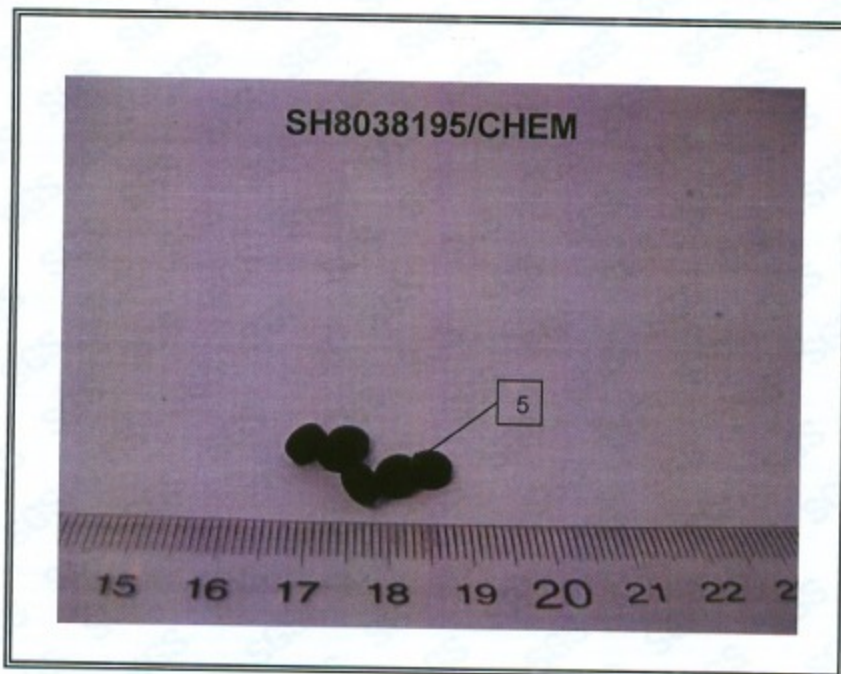


This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at [www.sgs.com](http://www.sgs.com). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. Unless otherwise 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.



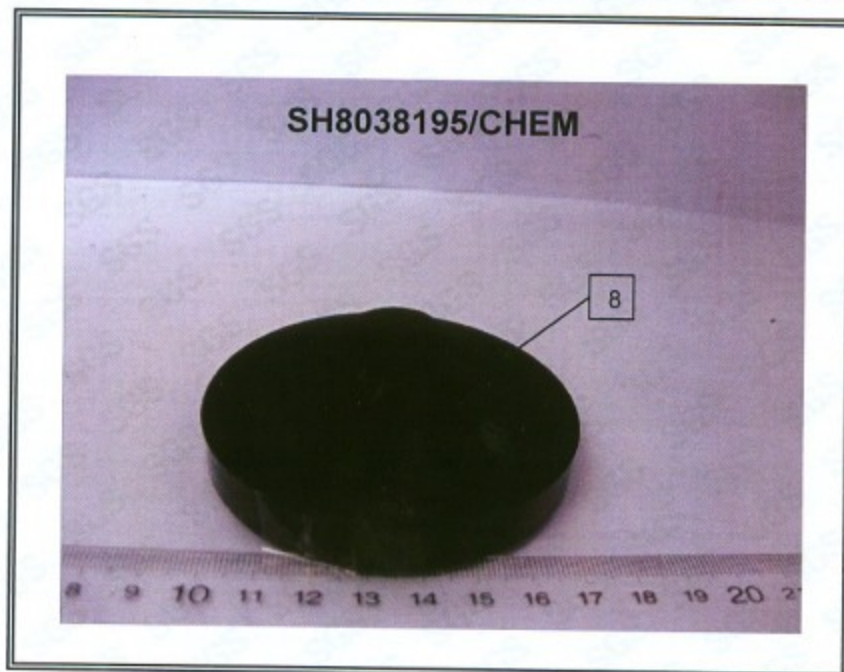
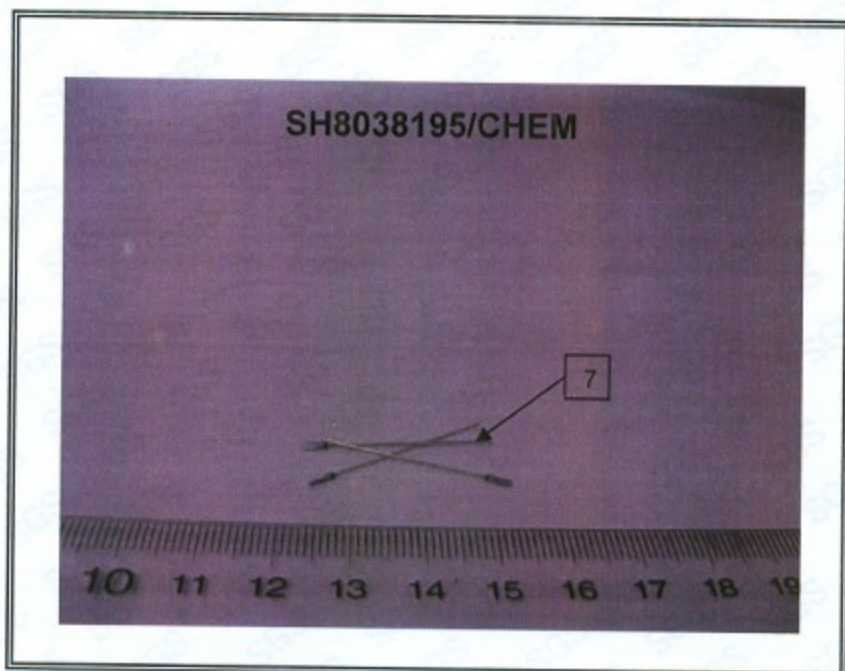


This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at [www.sgs.com](http://www.sgs.com). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. Unless otherwise 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.

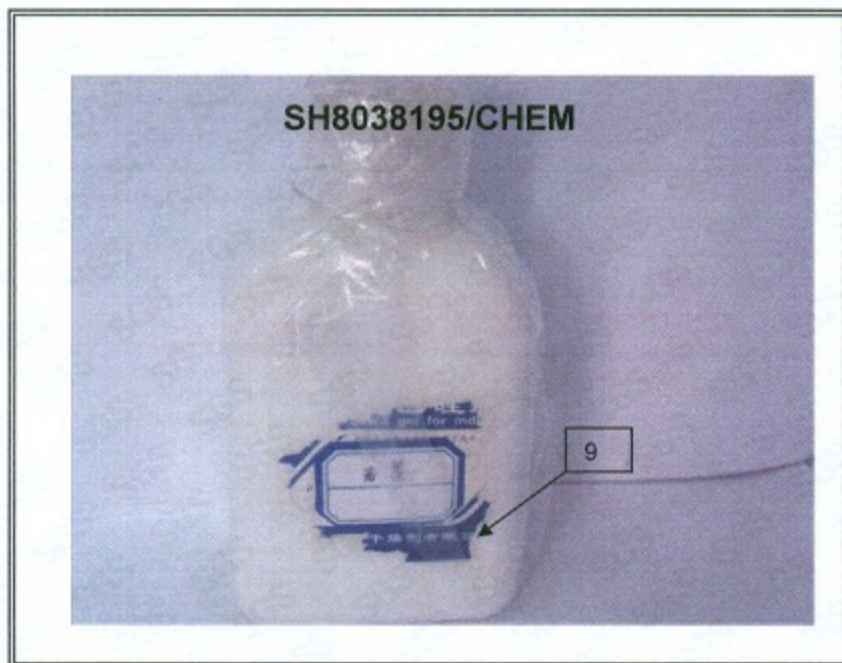


This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf or available on request and accessible at [www.sgs.com](http://www.sgs.com). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. Unless otherwise 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.





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 authenticate the photo on original report only

\*\*\* End of Report \*\*\*

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.