



## MSOP/QSOP/SOIC/TSSOP ICP Analysis Note

The appended ICP Analysis reports demonstrate compliance with EC directives 2002/95/EC (Restriction of the use of certain hazardous substances "RoHS") and the 24<sup>th</sup> amendment to 76/769/EEC (Restrictions on the marketing and use of certain dangerous substances and preparations).

This analysis was performed to independently verify that the content of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB), and polybrominated diphenyl ethers (PDBE) present is within the permitted levels set.

**Note:** This report is a composite of the reports for the individual, homogenous parts of the product. The table below is a summary of the data in the following pages.

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K.Clithero  
Group Quality Manager

RoHS Substance	Result (ppm)
Lead	19
Mercury	Not detected
Cadmium	Not detected
Hexavalent Chromium	Not detected
Polybrominated Biphenyls (PBB)	Not detected
Polybrominated Diphenyl Ethers (PDBE)	Not detected

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# Test Report

No. : CE/2008/49068    Date : 2008/05/08    Page : 1 of 4

ZETEX SEMICONDUCTORS PLC  
ZETEX TECHNOLOGY PARK, CHADDERTON, OLDHAM. OL9 9LL. UNITED  
KINGDOM



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

Sample Description : WAFER  
Buyer/Order No. : 65637  
Sample Receiving Date : 2008/04/30  
Testing Period : 2008/04/30 TO 2008/05/08

=====  
Test Result(s) : Please refer to next page(s).



Chenyu Kung / Operation Manager  
Signed for and on behalf of  
SGS TAIWAN LTD.  
Chemical Laboratory – Taipei

# Test Report

No. : CE/2008/49068 Date : 2008/05/08 Page : 2 of 4

ZETEX SEMICONDUCTORS PLC  
 ZETEX TECHNOLOGY PARK, CHADDERTON, OLDHAM. OL9 9LL. UNITED  
 KINGDOM



## Test Result(s)

PART NAME NO.1 : WAFER

Test Item (s):	Unit	Method	MDL	Result
				No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321/2nd CDV (111/95/CDV). Determination of Cadmium by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321/2nd CDV (111/95/CDV). Determination of Lead by ICP-AES.	2	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321/2nd CDV (111/95/CDV). Determination of Mercury by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI) by alkaline extraction	mg/kg	With reference to IEC 62321/2nd CDV (111/95/CDV). Determination of Hexavalent Chromium for non-metallic samples by UV/Vis Spectrometry.	2	n.d.
Antimony (Sb)	mg/kg	With reference to US EPA Method 3050B for Antimony Content. Analysis was performed by ICP-AES.	2	n.d.
Halogen-Chlorine (Cl) (CAS No.: 007782-50-5)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC method for Chlorine content.	50	n.d.
Halogen-Bromine (Br) (CAS No.: 007726-95-6)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC method for Bromine content.	50	n.d.

# Test Report

No. : CE/2008/49068 Date : 2008/05/08 Page : 3 of 4

ZETEX SEMICONDUCTORS PLC  
 ZETEX TECHNOLOGY PARK, CHADDERTON, OLDHAM. OL9 9LL. UNITED  
 KINGDOM



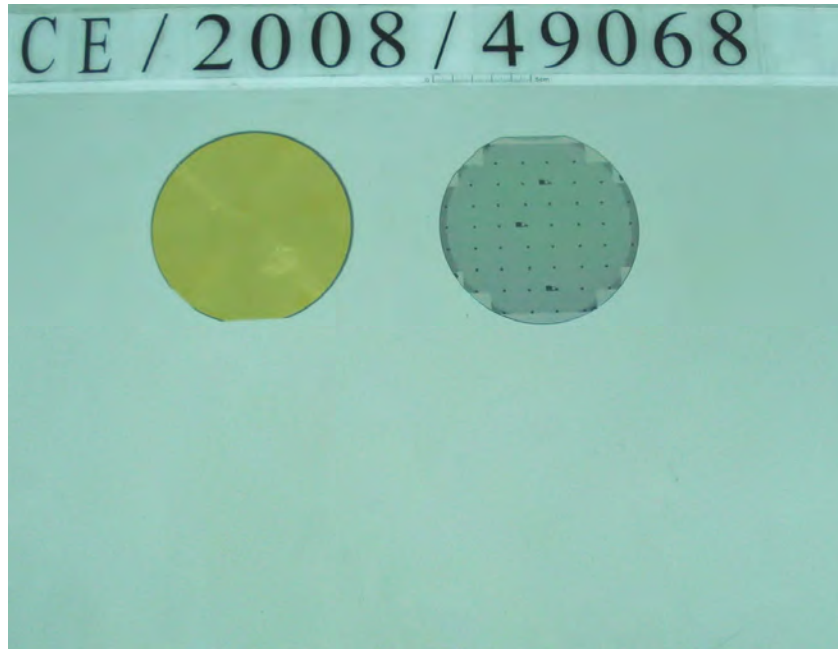
Test Item (s):	Unit	Method	MDL	Result
				No.1
<b>Sum of PBBs</b>	mg/kg	With reference to IEC 62321/2nd CDV (111/95/CDV). Determination of PBB and PBDE by GC/MS.	-	n.d.
Monobromobiphenyl			5	n.d.
Dibromobiphenyl			5	n.d.
Tribromobiphenyl			5	n.d.
Tetrabromobiphenyl			5	n.d.
Pentabromobiphenyl			5	n.d.
Hexabromobiphenyl			5	n.d.
Heptabromobiphenyl			5	n.d.
Octabromobiphenyl			5	n.d.
Nonabromobiphenyl			5	n.d.
Decabromobiphenyl			5	n.d.
<b>Sum of PBDEs (Mono to Nona) (Note 4)</b>			-	n.d.
Monobromodiphenyl ether			5	n.d.
Dibromodiphenyl ether			5	n.d.
Tribromodiphenyl ether			5	n.d.
Tetrabromodiphenyl ether			5	n.d.
Pentabromodiphenyl ether			5	n.d.
Hexabromodiphenyl ether			5	n.d.
Heptabromodiphenyl ether			5	n.d.
Octabromodiphenyl ether			5	n.d.
Nonabromodiphenyl ether			5	n.d.
Decabromodiphenyl ether			5	n.d.
<b>Sum of PBDEs (Mono to Deca)</b>			-	n.d.

- Note :
1. mg/kg = ppm
  2. n.d. = Not Detected
  3. MDL = Method Detection Limit
  4. According to 2005/717/EC DecaBDE is exempt.
  5. " - " = Not Regulated

## Test Report

No. : CE/2008/49068    Date : 2008/05/08    Page : 4 of 4

ZETEX SEMICONDUCTORS PLC  
ZETEX TECHNOLOGY PARK, CHADDERTON, OLDHAM. OL9 9LL. UNITED  
KINGDOM



\*\* End of Report \*\*

# Test Report

No. :KA/2008/10990A-01 Date: 2008/01/25 Page: 1 of 6

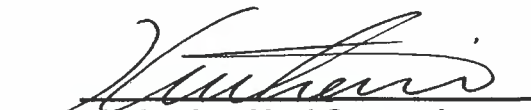


ASM HK  
4F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG

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

Sample Description : A194 ALLOY  
Lot No. : 080002  
Style/Item No. : BROWN FOR Cu ALLOY  
Color : COPPER  
Sample Receiving Date : 2008/01/15  
Testing Period : 2008/01/15 TO 2008/1/25

=====  
**Test Requested** : In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.  
**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-AES.  
: (2) Determination of Mercury by ICP-AES.  
: (3) Determination of Lead by ICP-AES.  
: (4) Determination of Hexavalent Chromium for metallic samples by Spot test / Colorimetric Method.  
: (5) Determination of PBB and PBDE by GC/MS.  
**Test Result(s)** : Please refer to next page(s).  
**Conclusion** : Based on the performed tests on submitted samples, the result **comply with** the RoHS Directive 2002/95/EC and its subsequent amendments.

  
**Katherine Ho / Supervisor**  
**Signed for and on behalf of**  
**SGS Taiwan Limited**

# Test Report

No. :KA/2008/10990A-01 Date: 2008/01/25 Page: 2 of 6



ASM HK  
4F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG

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

Test Item (s):	Method (Refer to)	Result	MDL	RoHS Limit
		No.1		
Cadmium (Cd)	(1)	n.d.	2	100
Mercury (Hg)	(2)	n.d.	2	1000
Lead (Pb)	(3)	14.5	2	1000
Hexavalent Chromium Cr(VI) by Spot test / boiling water extraction	(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
Monobromobiphenyl ether		n.d.	5	-
Dibromobiphenyl ether		n.d.	5	-
Tribromobiphenyl ether		n.d.	5	-
Tetrabromobiphenyl ether		n.d.	5	-
Pentabromobiphenyl ether		n.d.	5	-
Hexabromobiphenyl ether		n.d.	5	-
Heptabromobiphenyl ether		n.d.	5	-
Octabromobiphenyl ether		n.d.	5	-
Nonabromobiphenyl ether	n.d.	5	-	
Decabromobiphenyl ether	n.d.	5	-	
<b>Sum of PBDEs (Mono to Deca)</b>	n.d.	-	-	

**TEST PART DESCRIPTION:**

NO.1 : A194 ALLOY

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TW 6167176

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ASM HK  
4F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG

- Note :
1. mg/kg = ppm
  2. n.d. = Not Detected
  3. MDL = Method Detection Limit
  4. According to 2005/717/EC DecaBDE is exempt.
  5. Spot-test:
    - Negative = Absence of Cr(VI) coating / surface layer, Positive = Presence of Cr(VI) coating / surface
    - (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 Cr(VI) coating / surface layer,
    - Positive = Presence of Cr(VI) coating / surface layer 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 and result be regarded as not comply with RoHS requirement.
    - Negative indicates the absence of Hexavalent Chromium on the tested areas and result be regarded as comply with RoHS requirement.
  7. " - " = Not Regulated

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TW 6167215



# Test Report

No. :KA/2008/10990A-01

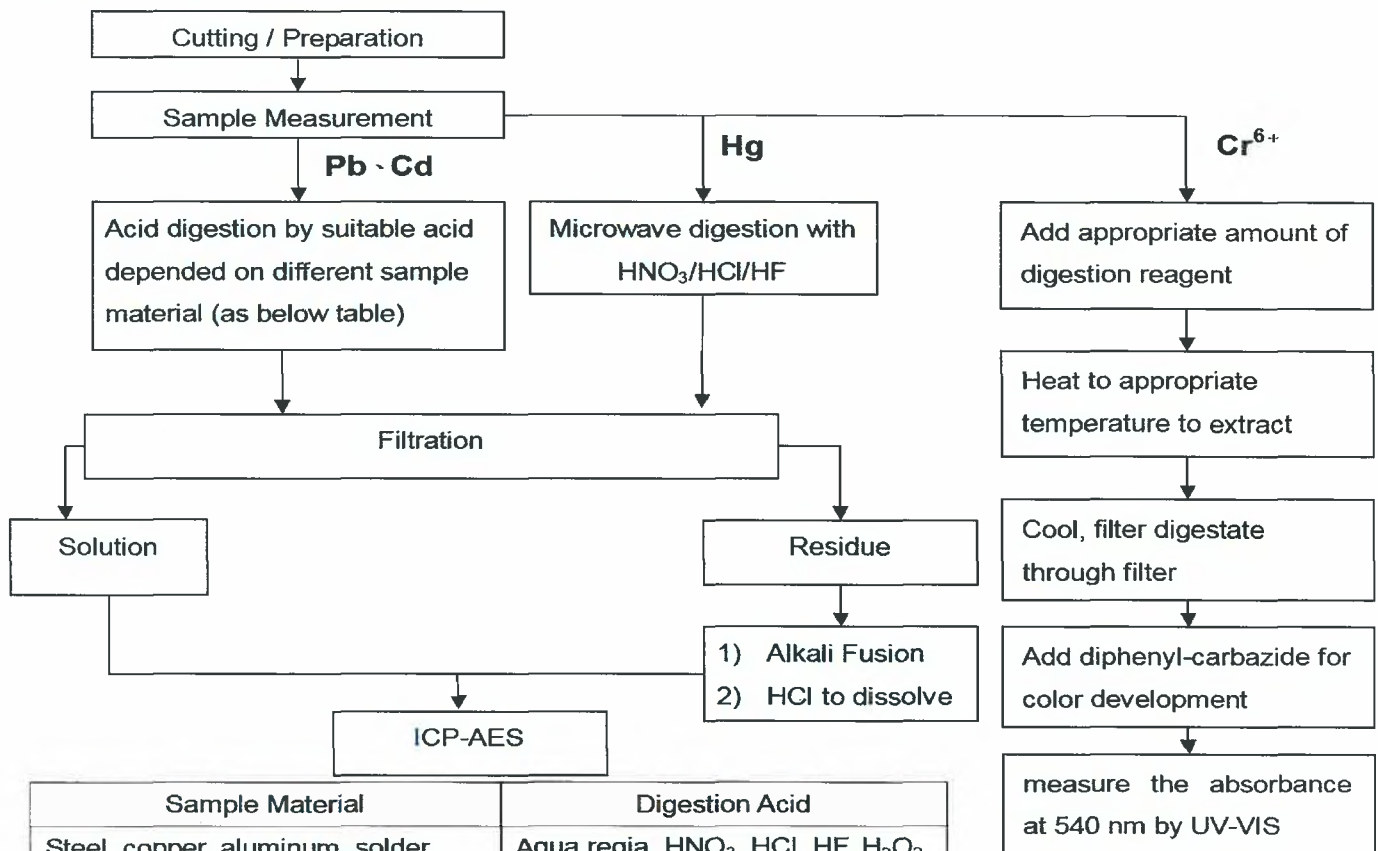
Date: 2008/01/25 Page: 4 of 6



ASM HK

4F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.  
(Cr<sup>6+</sup> test method excluded)
- 2) Name of the person who made measurement: Hungming Li
- 3) Name of the person in charge of measurement: George Huang



Sample Material	Digestion Acid
Steel, copper, aluminum, solder	Aqua regia, HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub>
Glass	HNO <sub>3</sub> /HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO <sub>3</sub>
Plastic	H <sub>2</sub> SO <sub>4</sub> , H <sub>2</sub> O <sub>2</sub> , HNO <sub>3</sub> , HCl
Others	Any acid to total digestion

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TW 6167214

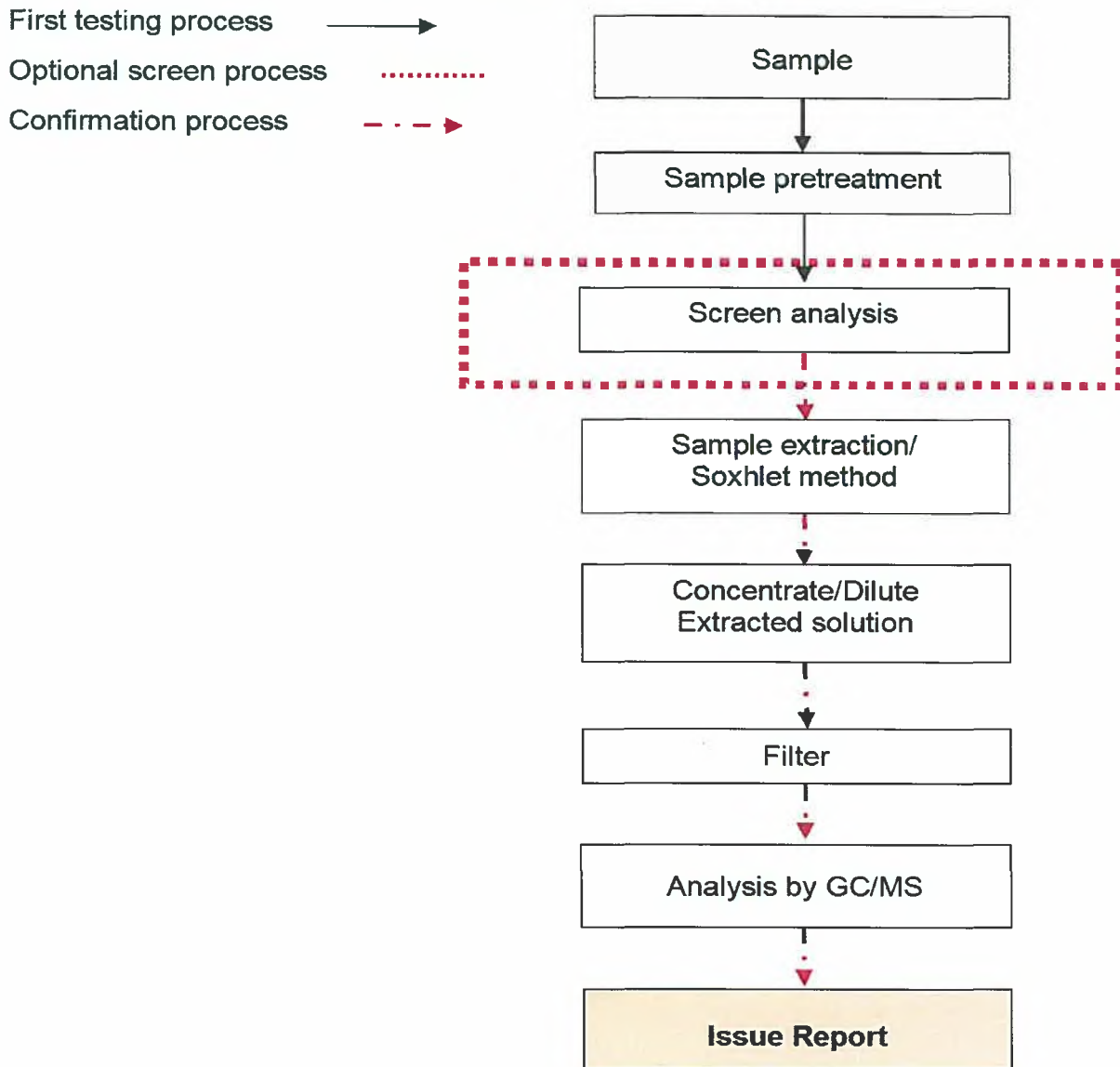
# Test Report

No. :KA/2008/10990A-01      Date: 2008/01/25      Page: 5 of 6



ASM HK  
4F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG

## PBB/PBDE analytical FLOW CHART



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TW 6167213

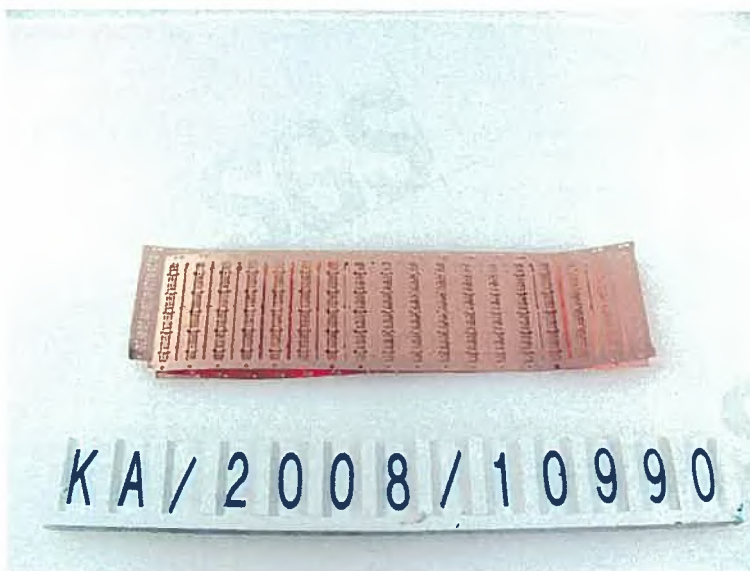
## Test Report

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ASM HK

4F, WATSON CENTRE, 16 KUNG YIP ST., KWAI CHUNG, HONG KONG



\*\* End of Report \*\*

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TW 6167212

## Test Report

No. SH8050865/CHEM

Date: Apr. 16, 2008

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HERAEUS ZHAOYUAN PRECIOUS METAL MATERIALS CO., LTD/ HERAEUS ZHAOYUAN (CHANGSHU) ELECTRONIC MATERIAL CO., LTD  
NO.238 LINGLONG ROAD, ZHAOYUAN SHANGDONG/ NO.248 HUANGHE ROAD CHANGSHU, JIANGSU

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

Sample Name : GOLD BONDING WIRE HD  
SGS Ref No. : 10960194  
Main Substance : GOLD

Sample Receiving Date : Apr.15, 2008  
Testing Period : Apr.15 – 16, 2008

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

Test Method : With reference to IEC 62321/2<sup>nd</sup> CDV (111/95/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  
(3) Determination of Mercury by ICP.  
(4) Determination of Hexavalent Chromium by Spot test / Colorimetric Method.  
(5) Determination of PBBs and PBDEs by GC/MS.

Test Results : Please refer to next pages

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

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

# Test Report

No. SH8050865/CHEM

Date: Apr. 16, 2008

Page 2 of 5

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

Test Item(s):	Method (refer to)	1	MDL	RoHS Limit
Cadmium(Cd)	(1)	ND	2	100
Lead (Pb)	(2)	ND	2	1000
Mercury (Hg)	(3)	ND	2	1000
Hexavalent Chromium (CrVI) by spot test / boiling-water extraction	(4)	Negative	See Note (5)	#
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	-	-	

Test Part Description:

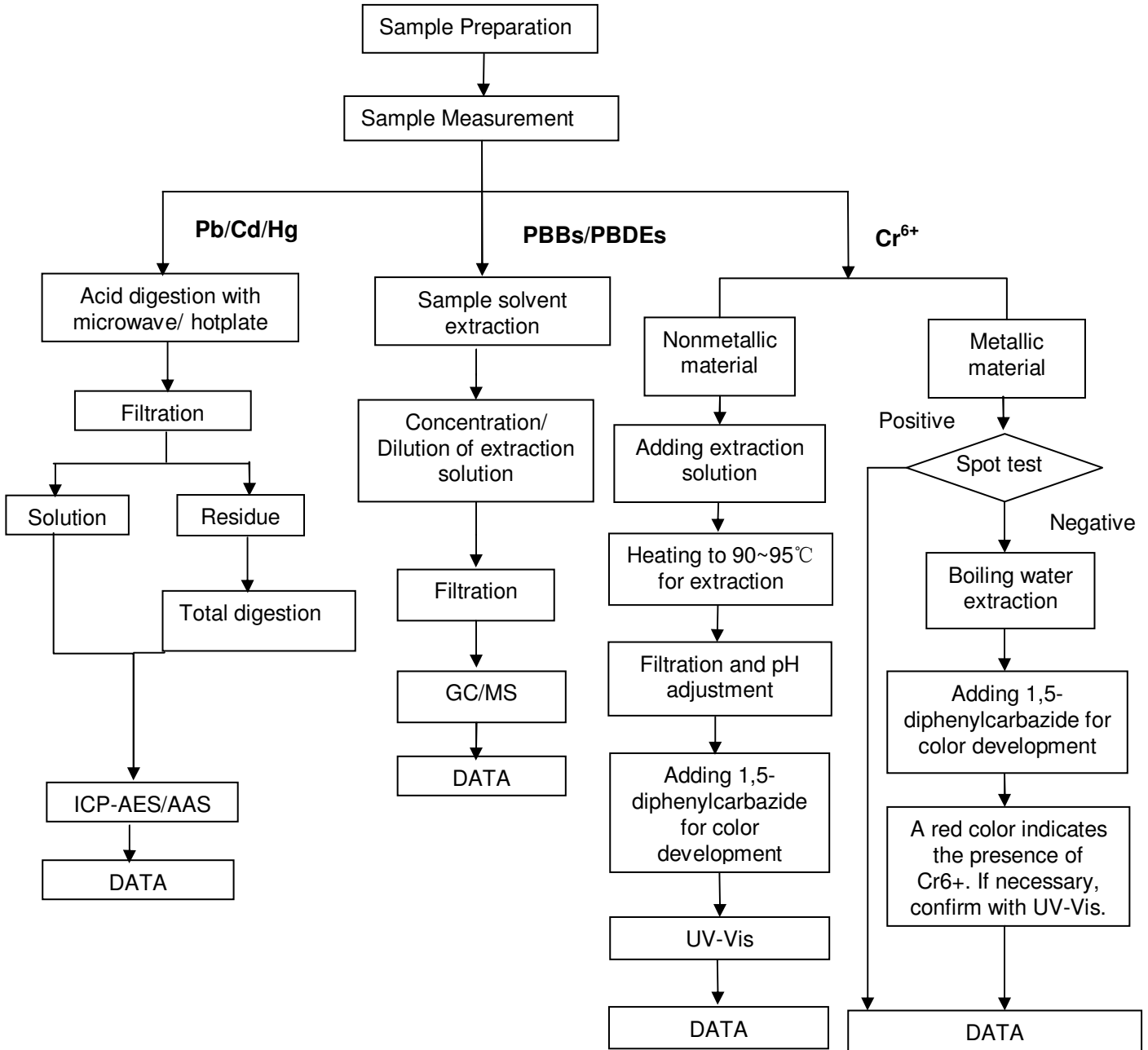
1. Golden metal thread

## 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) The maximum permissible limit is quoted from the document 2005/618/EC amending RoHS directive 2002/95/EC

**ATTACHMENTS**

- 1) Name of the person who made measurement: Cathy Cai/George Xu/Diane Wang
- 2) Name of the person in charge of measurement: Terry Wang/Tracy Yue
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> and PBBs/PBDEs test method excluded)



Sample photo:



SGS authenticate the photo on original report only

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



## Test Report

No. SH8071893/CHEM

Date: May. 26, 2008

Page 1 of 4

SHANGHAI KAIHONG ELECTRONIC CO., LTD  
NO.999 CHENCHUN ROAD, SONGJIANG DISTRICT, SHANGHAI, CHINA

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

Sample Name : DIE ATTACHED ADHESIVE  
SGS Ref No. : 11036937-4  
Part No. : 84-1 LIMSR4  
Material : SILVER, RESIN  
Supplier : ABLESTIK

Sample Receiving Date : May.22, 2008  
Testing Period : May.22 – 26, 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 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

## Test Report

No. SH8071893/CHEM

Date: May. 26, 2008

Page 2 of 4

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

Test Item(s):	Method (refer to)	1	MDL	RoHS Limit
Cadmium(Cd)	(1)	ND	2	100
Lead (Pb)	(2)	ND	2	1000
Mercury (Hg)	(3)	ND	2	1000
Hexavalent Chromium (CrVI)	(4)	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	-	-	

(Result shown is of the total weight of dried sample)

### Test Part Description:

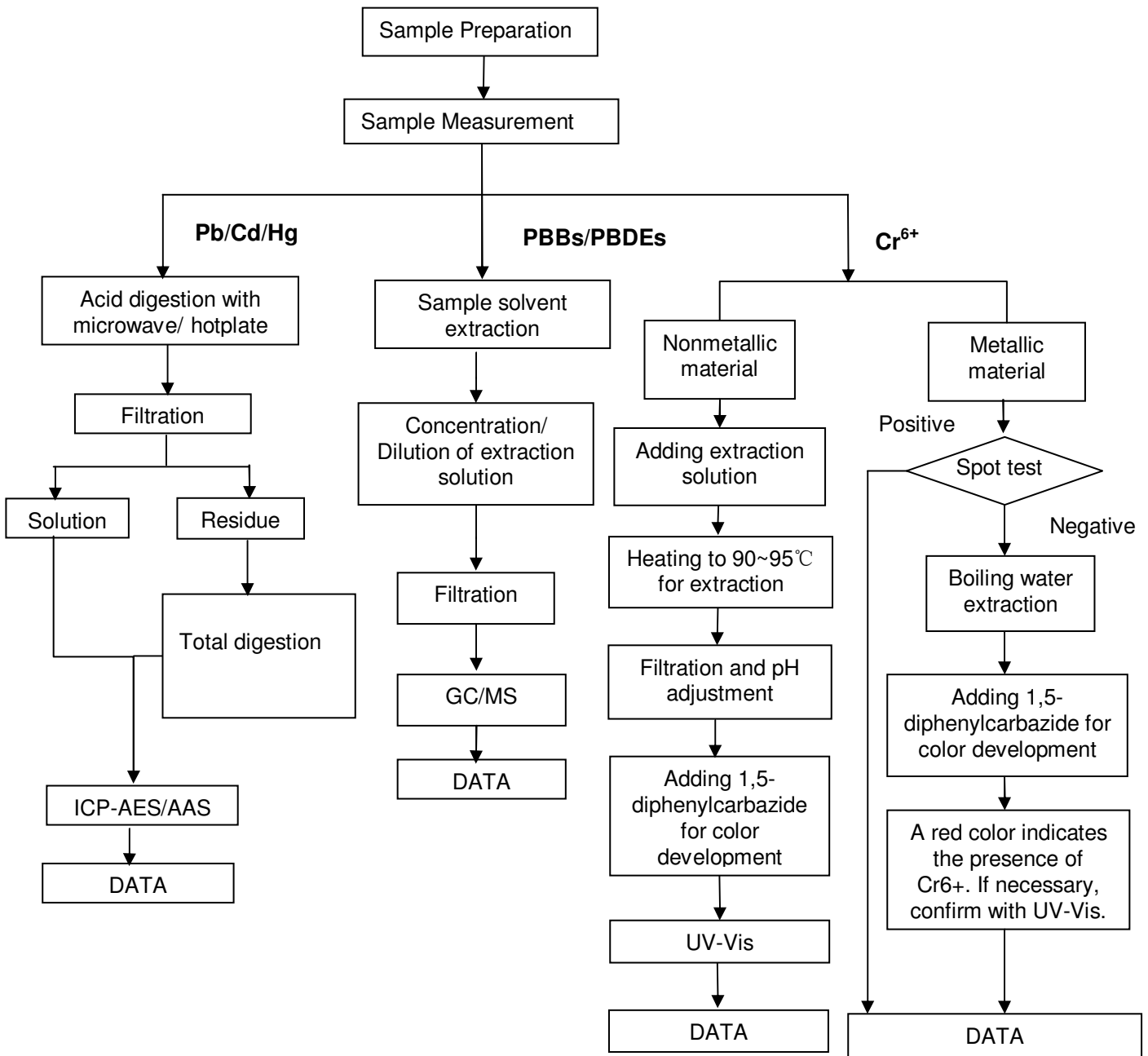
1. Grey mud

### Note:

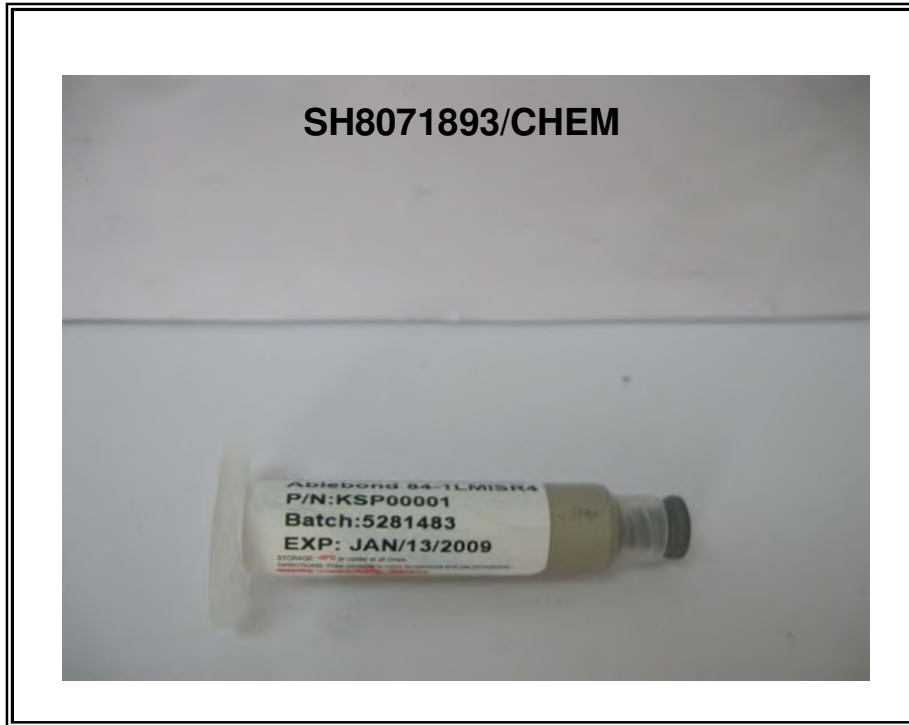
- (1) mg/kg = ppm
- (2) ND = Not Detected
- (3) MDL = Method Detection Limit
- (4) Sum of Mono to NonaBDE & according to 2005/717/EC DecaBDE is exempt.
- (5) "-" = Not Regulated
- (6) The maximum permissible limit is quoted from the document 2005/618/EC amending RoHS directive 2002/95/EC

**ATTACHMENTS**

- 1) Name of the person who made measurement: Cathy Cai/George Xu/Diane Wang
- 2) Name of the person in charge of measurement: Terry Wang/Tracy Yue
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> and PBBs/PBDEs test method excluded)



Sample photo:



SGS authenticate the photo on original report only

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



REPORT

OUR REF NO : ATS/GR/130/08/sk  
DATE : 03 March, 2008 Page 1 of 5  
COMPANY : Sumitomo Bakelite Singapore Pte Ltd  
1 Senoko South Road  
Singapore 758069  
DATE SAMPLE RECEIVED : 26 February, 2008  
DATE ANALYSED : 26 February, 2008  
DATE COMPLETED : 03 March, 2008  
SAMPLE DESCRIPTION : One sample of Chemical was received with references :-

Description : EME-6600 Type : A  
Lot No. : 7092296

TEST REQUESTED : 1. To determine the Cadmium Content in submitted sample in accordance with EEC Directive 2002/95/EC.  
2. To determine the Lead Content in submitted sample in accordance with EEC Directive 2002/95/EC.  
3. To determine the Mercury Content in submitted sample in accordance with EEC Directive 2002/95/EC.  
4. To determine the Hexavalent Chromium Content in submitted sample in accordance with EEC Directive 2002/95/EC.  
5. To determine the PBB in submitted sample in accordance with EEC Directive 2002/95/EC.  
6. To determine the PBDE in submitted sample in accordance with EEC Directive 2002/95/EC.

TEST METHOD : 1. The sample was pre-conditioned with reference to EPA3050B with completely digestion. The analysis was performed by ICP-AES with reference to EPA6010.  
2. The sample was pre-conditioned with reference to EPA3050B with completely digestion. The analysis was performed by ICP-AES with reference to EPA6010.  
3. The sample was pre-conditioned with reference to EPA3052B with completely digestion. The analysis was performed by Mercury Analyzer.  
4. The sample was pre-conditioned with reference to EPA3060A. The analysis was performed by UV-VIS with reference to EPA7196A.  
5. The sample was pre-conditioned with reference to EPA 3540C. The analysis was performed by GCMS.  
6. The sample was pre-conditioned with reference to EPA 3540C. The analysis was performed by GCMS.

...2/-



OUR REF NO : ATS/GR/130/08/sk  
 COMPANY : Sumitomo Bakelite Singapore Pte Ltd  
 (Continued)

03 March, 2008  
 Page 2 of 5

RESULTS : On analysis, the following results were obtained :-

Item	Tests	Results
1	Cadmium (Cd), ppm wt	Not Detected
2	Lead (Pb), ppm wt	3.4
3	Mercury (Hg), ppm wt	Not Detected
4	Hexavalent Chromium (Cr6+), ppm wt	Not Detected
5	Polybrominated Biphenyls (PBB)	
	- Monobromobiphenyls	Not Detected
	- Dibromobiphenyls	Not Detected
	- Tribromobiphenyls	Not Detected
	- Etrabromobiphenyls	Not Detected
	- Pentabromobiphenyls	Not Detected
	- Hexabromobiphenyls	Not Detected
	- Heptabromobiphenyls	Not Detected
	- Octabromobiphenyls	Not Detected
- Nonabromobiphenyls	Not Detected	
- Decabromobiphenyl	Not Detected	
6	Polybrominated Diphenyl Ethers (PBDE)	
	- Monobromodiphenyl ethers	Not Detected
	- Dibromodiphenyl ethers	Not Detected
	- Tribromodiphenyl ethers	Not Detected
	- Tetrabromodiphenyl ethers	Not Detected
	- Pentabromodiphenyl ethers	Not Detected
	- Hexabromodiphenyl ethers	Not Detected
	- Heptabromodiphenyl ethers	Not Detected
	- Octabromodiphenyl ethers	Not Detected
	- Nonabromodiphenyl ethers	Not Detected
- Decabromodiphenyl ethers	Not Detected	

- Notes : 1) ppm wt : mg/kg  
 2) Detection Limit : a) Cadmium : 2.0 ppm  
 b) Lead : 2.0 ppm  
 c) Mercury : 2.0 ppm  
 d) Hexavalent Chromium : 2.0 ppm  
 e) Polybrominated biphenyls : 5.0 ppm  
 f) Polybrominated diphenyl ethers : 5.0 ppm

3) Above tests were carried out by ALS chemists: Ting Tai Poh, Liang Ye and Geok Cheng Lee.

ALS TECHNICHEM (S) PTE LTD

YAO KAIWEN, B.SC, M.SC



OUR REF NO : ATS/GR/130/08/sk

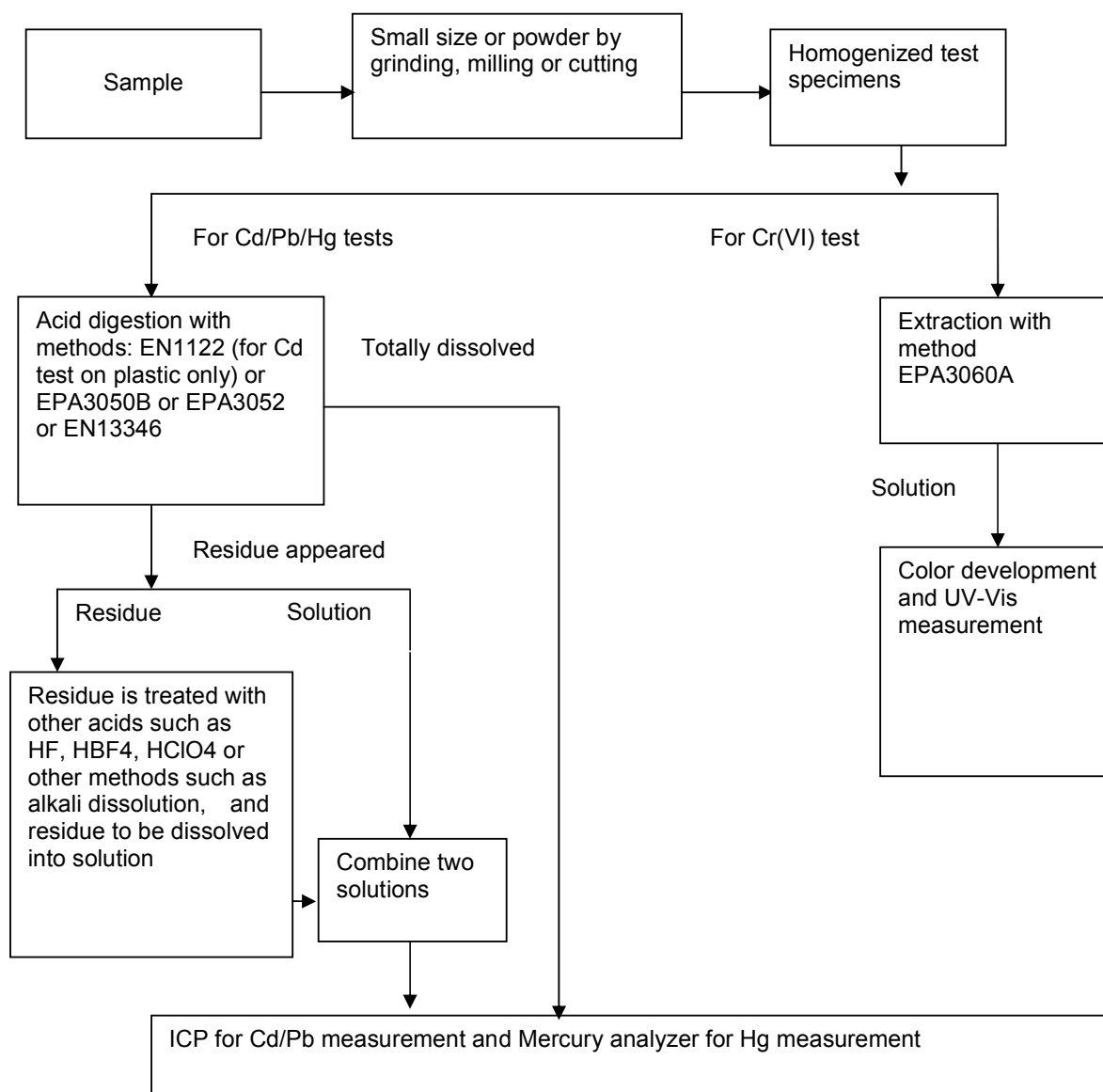
03 March, 2008

COMPANY : Sumitomo Bakelite Singapore Pte Ltd

Page 3 of 5

(Continued)

**Measurement Flowchart**





OUR REF NO : ATS/GR/130/08/sk

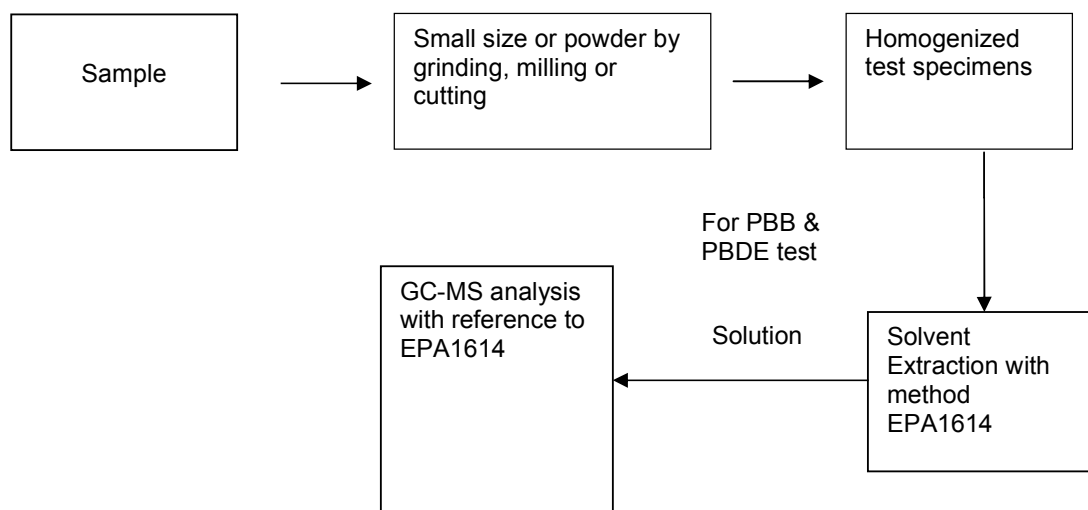
03 March, 2008

COMPANY : Sumitomo Bakelite Singapore Pte Ltd

Page 4 of 5

(Continued)

**Measurement Flowchart**





# ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

## ALS Technichem (S) Pte Ltd

14 Little Road #07-01, Singapore 536987

Tel: (65) 6283 9268 Fax: (65) 6283 9689 E-mail: alssg@alsglobal.com

Co. Reg No. 198403076R



OUR REF NO : ATS/GR/130/08/sk  
COMPANY : Sumitomo Bakelite Singapore Pte Ltd  
(Continued)

03 March, 2008  
Page 5 of 5

### PHOTO



## Test Report

No. SH8075804/CHEM

Date: May. 31, 2008

Page 1 of 4

SHANGHAI YUANHAO SURFACE FINISHING CO., LTD.  
NO.8, LANE18, SANZHUANG ROAD, SONGJIANG EXPORT PROCESSING ZONE, SHANGHAI

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

Sample Name : MATTE TIN  
SGS Ref No. : 11051414  
Main Substance : PURE TIN

Sample Receiving Date : May.28, 2008  
Testing Period : May.28 – 31, 2008

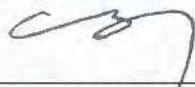
Test Requested : In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.

Test Method : With reference to IEC 62321/2<sup>nd</sup> CDV (111/95/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 and AAS.  
(3) Determination of Mercury by ICP.  
(4) Determination of Hexavalent Chromium by Spot test / Colorimetric Method.

Test Results : Please refer to next pages

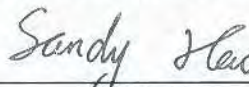
Conclusion : Based on the performed tests on submitted samples, the results comply with the  
RoHS Directive 2002/95/EC and its subsequent amendments.

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

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## Test Report

No. SH8075804/CHEM

Date: May. 31, 2008

Page 2 of 4

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

Test Item(s):	Method (refer to)	1	MDL	RoHS Limit
Cadmium(Cd)	(1)	ND	2	100
Lead (Pb)	(2)	ND	2	1000
Mercury (Hg)	(3)	ND	2	1000
Hexavalent Chromium (CrVI) by spot test / boiling-water extraction	(4)	Negative	See Note (4)	#

### Test Part Description:

1. Silvery-white metal part

### Note:

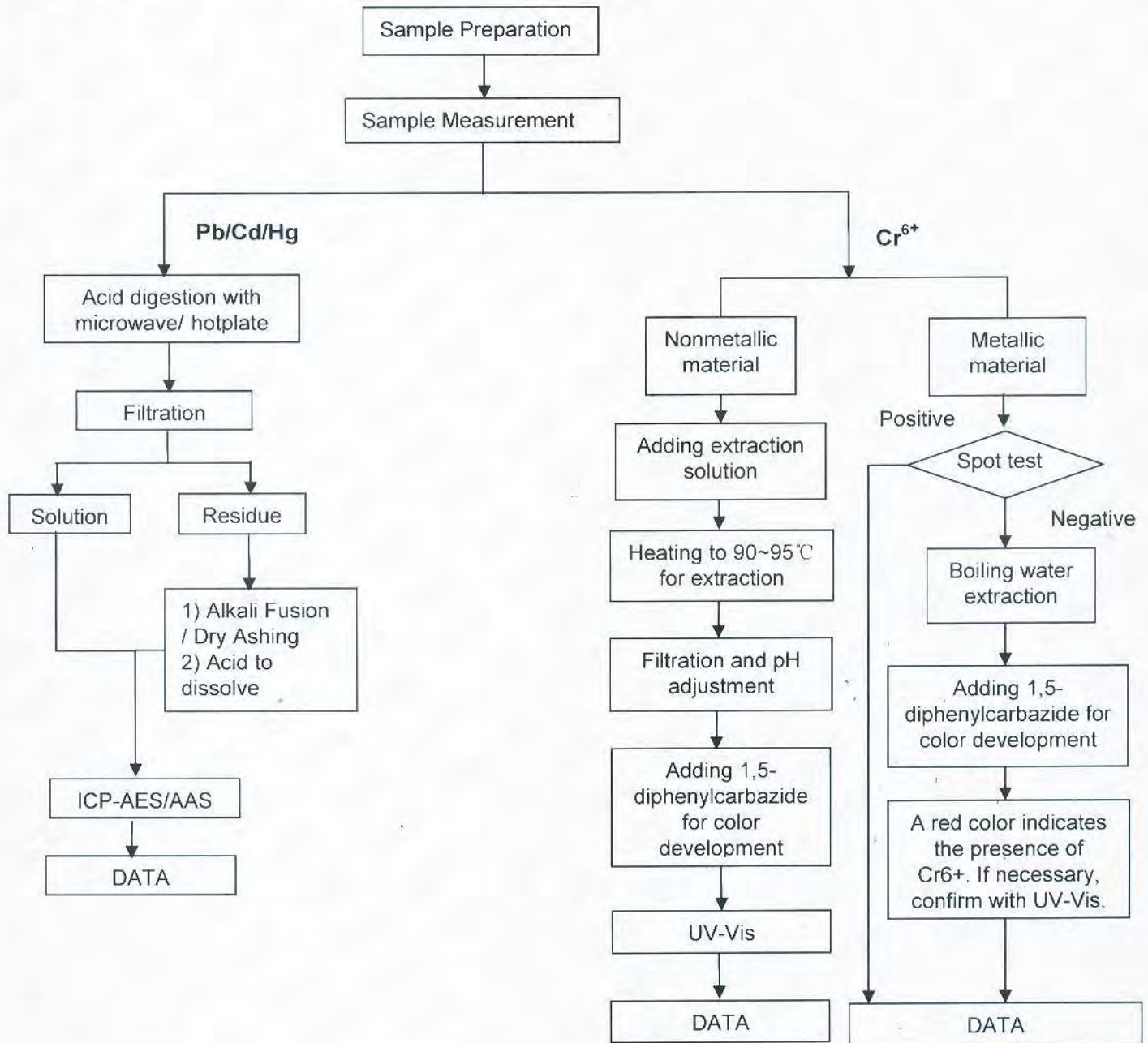
- (1) mg/kg = ppm
- (2) ND = Not Detected
- (3) MDL = Method Detection Limit
- (4) Spot-test:  
Negative = Absence of CrVI coating, Positive = Presence of CrVI coating;  
(The tested sample should be further verified by boiling-water-extraction method if the spot test result is Negative or cannot be 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 cm<sup>2</sup> sample surface area.
- (5) # = Positive indicates the presence of Hexavalent Chromium on the tested areas.  
Negative indicates the absence of CrVI on the tested areas.
- (6) The maximum permissible limit is quoted from the document 2005/618/EC amending RoHS directive 2002/95/EC

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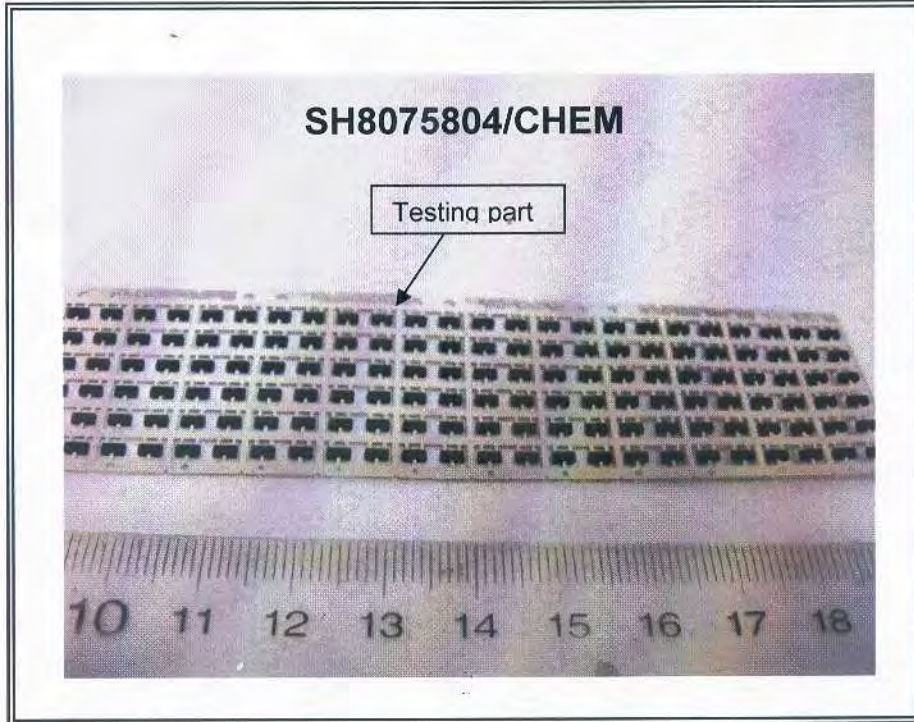
**ATTACHMENTS**

- 1) Name of the person who made measurement: Cathy Cai/George Xu
- 2) Name of the person in charge of measurement: Terry Wang



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