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**Test Report** No. SHAEC1325611201 Date: 06 Jan 2014 Page 1 of 10

GOLDENMAX INTERNATIONAL TECHNOLOGY LTD./SHANGHAI GLOBAL ELECTRONIC LTD./INTERNATIONAL LAMINATE MATERIAL LTD./GOLDMAX INTERNATIONAL TECHNOLOGY (ZHUHAI) LTD

33#, BAOSHENG ROAD. SONGJIANG AREA, SHANGHAI P.R CHINA

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

SGS Job No.: SP13-037739 - SH

Date of Sample Received: 30 Dec 2013

Testing Period: 30 Dec 2013 - 06 Jan 2014

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: Based on the performed tests on submitted samples, the results of Lead,

Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS

Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of SGS-CSTC Ltd.

JJ Fan

Approved Signatory



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#### **Test Report** No. SHAEC1325611201 Date: 06 Jan 2014 Page 2 of 10

Test Results:

#### **Test Part Description:**

Specimen No. SGS Sample ID Description
SN1 SHA13-256112.001 Yellow solid sheet

#### Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected ( < MDL)

(4) "-" = Not Regulated

#### RoHS Directive 2011/65/EU

Test Method: (1) With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.

(2) With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.

(3) With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.

(4) With reference to IEC 62321:2008, determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.

(5) With reference to IEC 62321:2008, determination of PBBs and PBDEs by GC-MS.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	11
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	2	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND



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Test Report	No. SHAEC13256112	01	Date: (	06 Jan 2014	Page 3 of 10
Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>	
Dibromodiphenyl ether	-	mg/kg	5	ND	
Tribromodiphenyl ether	-	mg/kg	5	ND	
Tetrabromodiphenyl ether	-	mg/kg	5	ND	
Pentabromodiphenyl ether	-	mg/kg	5	ND	
Hexabromodiphenyl ether	-	mg/kg	5	ND	
Heptabromodiphenyl ether	-	mg/kg	5	ND	
Octabromodiphenyl ether	-	mg/kg	5	ND	
Nonabromodiphenyl ether	-	mg/kg	5	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	

#### Notes:

(1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II

#### **Phthalates**

Test Method: With reference to EN14372: 2004, analysis was performed by GC-MS.

Test Item(s)	CAS NO.	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Dibutyl Phthalate (DBP)	84-74-2	%	0.003	ND
Benzylbutyl Phthalate (BBP)	85-68-7	%	0.003	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	117-81-7	%	0.003	ND
Diisononyl Phthalate (DINP)	28553-12-0/ 68515-48-0	%	0.010	ND
Di-n-octyl Phthalate (DNOP)	117-84-0	%	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0/ 68515-49-1	%	0.010	ND
Di-n-hexyl Phthalate (DnHP)	84-75-3	%	0.003	ND
Diisobutyl Phthalate (DIBP)	84-69-5	%	0.003	ND

#### Notes:

- (1) DBP,BBP,DEHP Reference information: Entry 51 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC):
  - i) Shall not be used as substances or in mixtures, in concentrations greater than 0.1 % by weight of the plasticised material, in toys and childcare articles.
  - ii) Toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by



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weight of the plasticised material shall not be placed on the market.

Please refer to Regulation (EC) No 552/2009 to get more detail information

DINP, DNOP, DIDP Reference information: Entry 52 of Regulation (EC) No 552/2009 amending

Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC).

- i) Shall not be used as substances or in mixtures, in concentrations greater than 0.1 % by weight of the plasticised material, in toys and childcare articles which can be placed in the mouth by children.
- ii) Such toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.

Please refer to Regulation (EC) No 552/2009 to get more detail information

#### **Asbestos**

Test Method: With reference to NIOSH 9002:1994, Analysis was performed by Polarized light microscope (PLM).

Test Item(s)	CAS NO.	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Actinolite	77536-66-4	%	0.1	Negative
Amosite	12172-73-5	%	0.1	Negative
Anthophyllite	77536-67-5	%	0.1	Negative
Chrysotile	12001-29-5/ 132207-32-0	%	0.1	Negative
Crocidolite	12001-28-4	%	0.1	Negative
Tremolite	77536-68-6	%	0.1	Negative

#### Notes:

(1) Negative = the absence of asbestos, Positive = the presence of asbestos.

#### Hexabromocyclododecane (HBCDD)

Test Method: Determination of HBCDD by GC-MS based on IEC 62321:2008.

<u>Test Item(s)</u>
Hexabromocyclododecane (HBCDD)

<u>Unit</u>
MDL
001

mg/kg
10

ND

#### Notes:

(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC:



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Date: 06 Jan 2014

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Hexabromocyclododecane (HBCDD) is considered as a priority for risk evaluation and substance restriction.

#### PFOS (Perfluorooctane Sulfonates) and PFOA (Perfluorooctanoic Acid)

Test Method: With reference to US EPA 3550C: 2007, analysis was performed by HPLC-MS.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Perfluorooctane Sulfonates (PFOS) and related	1000	mg/kg	10	ND
Acid,Metal Salt and Amide				
Perfluorooctanoic Acid (PFOA)	-	mg/kg	10	ND

#### Notes:

Max. limit specified by commission regulation (EU) No. 757/2010 amending regulation (EC) No 850/2004.



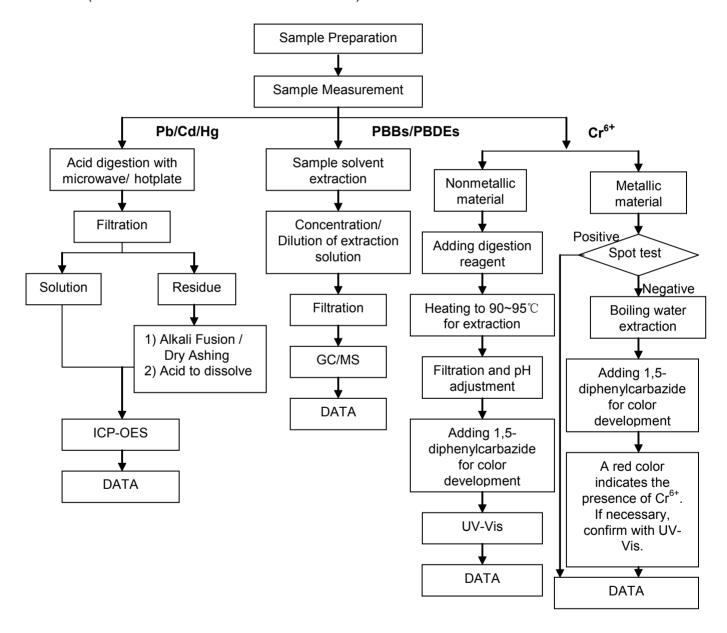


**Test Report** No. SHAEC1325611201 Date: 06 Jan 2014 Page 6 of 10

#### **ATTACHMENTS**

#### **RoHS Testing Flow Chart**

- 1) Name of the person who made testing: Jan Shi/Star Wang/Shara Wang/Gary Xu
- 2) Name of the person in charge of testing: Jeff Zhang/George Xu/ Jessy Huang
- 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)





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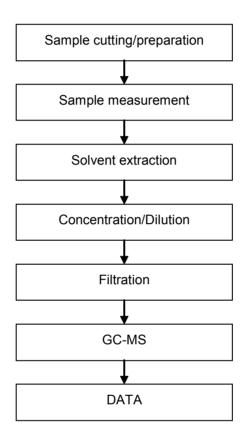
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Date: 06 Jan 2014

#### **Phthalates Testing Flow Chart**

1) Name of the person who made testing: Elyn Yao

2) Name of the person in charge of testing: Myra Ma







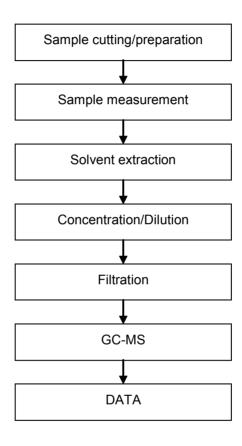
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Date: 06 Jan 2014

#### **HBCDD Testing Flow Chart**

- 1) Name of the person who made testing: Gary Xu
- 2) Name of the person in charge of testing: Jessy Huang







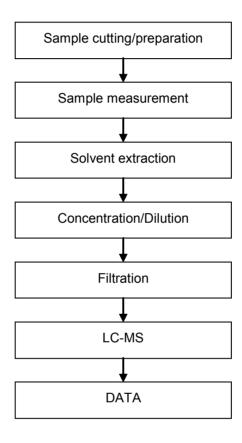
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Date: 06 Jan 2014

#### **PFOS/PFOA Testing Flow Chart**

- 1) Name of the person who made testing: Mary Yang
- 2) Name of the person in charge of testing: Judy Li







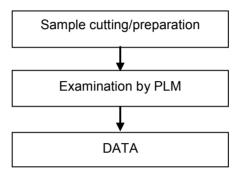
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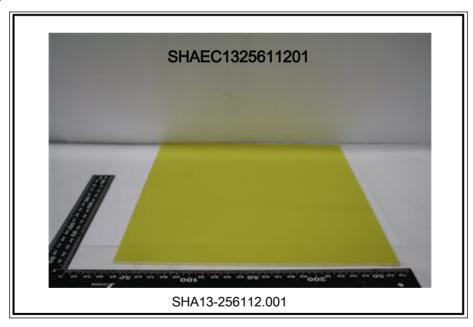
Date: 06 Jan 2014

#### **Asbestos Testing Flow Chart**

- 1) Name of the person who made testing: Anne Huang
- 2) Name of the person in charge of testing: Zirco Yu



#### Sample photo:



SGS authenticate the photo on original report only

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





**Report No.** RLSZF001546210005

Page 1 of 6

Applicant HEYUAN CHENGZHAN TECHNOLOGY CO.,LTD

Address NO.6 LONGLING ROAD LONGLING INDUSTRY PARK YUANCHENG

DISTRICT GUANGZHOU CITY, GUANGDONG PROVINCE

The following sample(s) and sample information was/were submitted and identified by/on the

behalf of the client

Sample Name THERMER CURABLE SOLDER RESIST INK

Part No. CH-601、CH-602、CH-603、CH-604、CH-615、CH-601G3

Sample Received Date Jan. 8, 2013

Testing Period Jan. 8, 2013 to Jan. 11, 2013

**Test Requested** As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg),

Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs),

Polybrominated Diphenyl Ethers(PBDEs),

Hexabromocyclododecane(HBCDD), Phthalates in the submitted sample(s).

**Test Method** Please refer to the following page(s).

**Test Result(s)** Please refer to the following page(s).

Tested by Reviewed by
Approved by
Danny Liu

Jan. 11, 2013

E-mail:info@cti-cert.com

Technical Manager No. 38795907

Centre Testing International (Shenzhen) Co., Ltd. Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China





**Report No.** RLSZF001546210005

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#### **Test Method**

Test Item(s)	Test Method	Measured Equipment(s)	MDL
Lead(Pb)	IEC 62321:2008 Ed.1 Sec.10	ICP-OES	2 mg/kg
Cadmium(Cd)	IEC 62321:2008 Ed.1 Sec.10	ICP-OES	2 mg/kg
Mercury(Hg)	IEC 62321:2008 Ed.1 Sec.7	ICP-OES	2 mg/kg
Hexavalent Chromium(Cr(VI))	IEC 62321:2008 Ed.1 Annex C	UV-Vis	2 mg/kg
Polybrominated Biphenyls(PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS	5 mg/kg
Polybrominated Diphenyl Ethers(PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS	5 mg/kg
Hexabromocyclododecane(HBCDD)	Refer to US EPA 3540C:1996	GC-MS	5 mg/kg
Phthalates	Refer to EN 14372:2004	GC-MS	50 mg/kg

Test Result(s)

Tested Item(s)	Result
Lead(Pb)	N.D.
Cadmium (Cd)	N.D.
Mercury(Hg)	N.D.
Hexavalent Chromium(Cr(VI))	N.D.

Tested Item(s)	Result
Polybrominated Biphenyls(PBBs)	
Monobromobiphenyl	N.D.
Dibromobiphenyl	N.D.
Tribromobiphenyl	N.D.
Tetrabromobiphenyl	N.D.
Pentabromobiphenyl	N.D.
Hexabromobiphenyl	N.D.
Heptabromobiphenyl	N.D.
Octabromobiphenyl	N.D.
Nonabromobiphenyl	N.D.
Decabromobiphenyl	N.D.























**Report No.** RLSZF001546210005

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110 010 1100	8
Tested Item(s)	Result
Polybrominated Diphenyl Ethers(PBDEs)	
Monobromodiphenyl ether	N.D.
Dibromodiphenyl ether	N.D.
Tribromodiphenyl ether	N.D.
Tetrabromodiphenyl ether	N.D.
Pentabromodiphenyl ether	N.D.
Hexabromodiphenyl ether	N.D.
Heptabromodiphenyl ether	N.D.
Octabromodiphenyl ether	N.D.
Nonabromodiphenyl ether	N.D.
Decabromodiphenyl ether	N.D.

Tested Item(s)	Result
Hexabromocyclododecane (HBCDD)	N.D.

Tested Item(s) Phthalates	CAS No.	EC No.	Result
Dibutyl phthalate(DBP)	84-74-2	201-557-4	N.D.
Benzylbutyl phthalate(BBP)	85-68-7	201-622-7	N.D.
Di-2-ethylhexyl phthalate(DEHP)	117-81-7	204-211-0	N.D.

Tested Sample/Part Description Gray liquid

Note: The sample had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit -N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million



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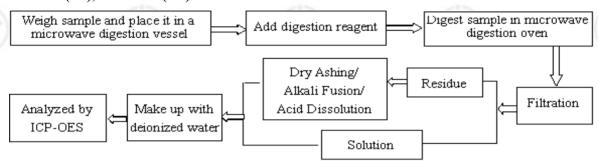


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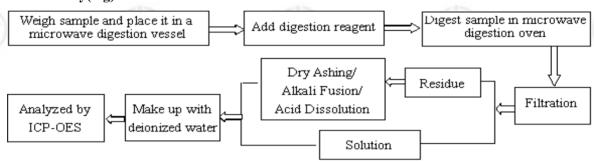
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#### **Test Process**

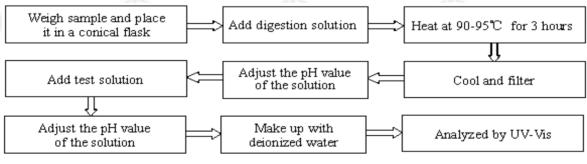
#### 1. Lead(Pb), Cadmium(Cd)



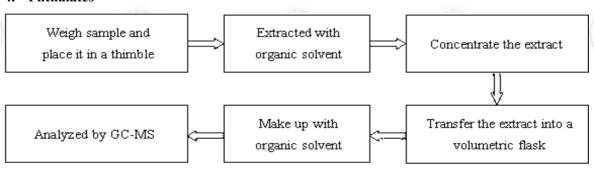
#### 2. Mercury(Hg)



#### 3. Hexavalent Chromium(Cr(VI))



#### 4. Phthalates



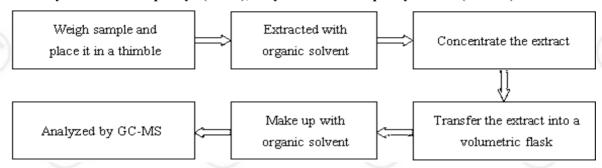




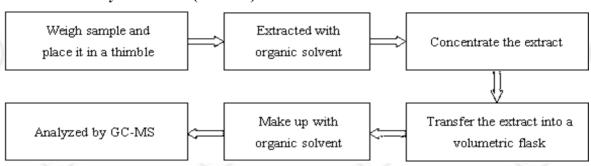
**Report No.** RLSZF001546210005

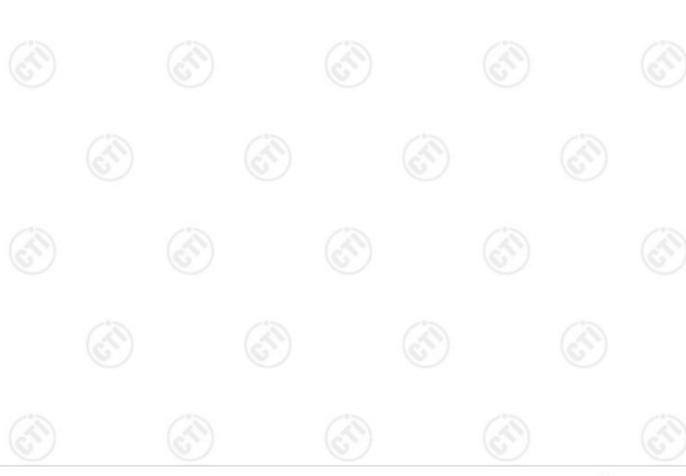
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#### 5. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs)



#### 6. Hexabromocyclododecane(HBCDD)







**Report No.** RLSZF001546210005

Page 6 of 6

## Photo(s) of the sample(s)



\*\*\* End of report \*\*\*

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## **Test Report**

號碼(No.): CE/2014/30645A 日期(Date): 2014/03/17 頁數(Page): 1 of 53

湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by/on behalf of the applicant as):

送樣廠商(Sample Submitted By)

湯銘科技股份有限公司 (TERMINUS TECHNOLOGY INC.)

樣品名稱(Sample Description)

USB 2.0 HUB & UVC

樣品型號(Style/Item No.)

: FE1.1 & FE1.1s & FE2.1 & FE4.1 & FE4.3 & FE1.1s & FE1.1s(B)/QFN & FE1.1s(BC) & FE1.1s(BCN)/QFN & LX2041 & FE1.1(Cu) & FE2.1(Cu) &

FE7.1 & FE8.1

收件日期(Sample Receiving Date)

2014/03/05

測試期間(Testing Period)

: 2014/03/05 TO 2014/03/12 AND 2014/03/10 TO 2014/0317

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測試結果(Test Results) : 請見下一頁 (Please refer to next pages).

結論(Conclusion) :

根據客户所提供的樣品,其多環芳香煙的測試結果符合德國ZLS的ZEK 01.4-08及其相關修訂文件中的第1類PAHs要求 (Base upon the performed tests by submitted samples, the test results of PAHs comply with the PAHs requirement according to (Category 1) of ZEK 01.4-08 of German ZLS and its amendments.)

\* 此份報告爲加測及合併CE/2014/30645之報告 \*

(This report is added testing and combined with CE/2014/30645)



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## **Test Report**

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湯銘科技股份有限公司 TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

#### 測試結果(Test Results)

測試部位(PART NAME)No.1 : 整體混測 (MIXED ALL PARTS)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
鎬 / Cadmium (Cd)	mg/kg	參考IEC 62321-5: 2013方法,以感應耦合電漿原子發射光譜儀檢測./With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
鉛 / Lead (Pb)	mg/kg	參考IEC 62321-5: 2013方法,以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
汞 / Mercury (Hg)	mg/kg	參考IEC 62321-4: 2013方法,以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	参考IEC 62321: 2008方法,以UV-VIS檢測./ With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
鈹 / Beryllium (Be)	mg/kg	参考US EPA 3050B方法,以感應耦合電漿原子發射光譜儀檢測. / With reference to US EPA Method 3050B. Analysis was performed by ICP-AES.	2	n.d.
氧化鈹 / Beryllium oxide (BeO)***	mg/kg	参考US EPA 3050B方法,以感應耦合電漿原子發射光譜儀檢測. / With reference to US EPA Method 3050B. Analysis was performed by ICP-AES.***	-	n.d.
种 / Arsenic (As) (※2)	mg/kg	參考SGS内部方法RSTS-EE-SVHC-007, 以感應耦合電漿原子發射光譜儀檢測. / SGS In-House method-RSTS-EE-SVHC-007. Analyzed by ICP- AES.	2	n.d.



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湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
五氧化二砷 / Diarsenic pentaoxide*** (CAS No.: 1303-28-2)	mg/kg	參考SGS内部方法RSTS-EE-SVHC-007, 以感應耦合電漿原子發射光譜儀檢測. / SGS In-House method-RSTS-EE-SVHC-007. Analyzed by ICP-AES.***	-	n.d.
三氧化二砷 / Diarsenic trioxide*** (CAS No.: 1327-53-3)	mg/kg	参考SGS内部方法RSTS-EE-SVHC-007, 以感應耦合電漿原子發射光譜儀檢測. / SGS In-House method-RSTS-EE-SVHC-007. Analyzed by ICP-AES.***	-	n.d.
硼 / Boron (B) ( <b>※</b> 2)	mg/kg	参考SGS内部方法RSTS-EE-SVHC-007, 以感應耦合電漿原子發射光譜儀檢測. / SGS In-House method-RSTS-EE-SVHC-007. Analyzed by ICP-AES.	2	n.d.
硼酸 / Boric acid*** (CAS No.: 10043-35-3; 11113-50-1)	mg/kg	参考SGS内部方法RSTS-EE-SVHC-007, 以感應耦合電漿原子發射光譜儀檢測. / SGS In-House method-RSTS-EE-SVHC-007. Analyzed by ICP-AES.***	-	n.d.
無水四硼酸二鈉 / Disodium tetraborate, anhydrous*** (CAS No.: 1303-96-4, 1330- 43-4, 12179-04-3)	mg/kg	參考SGS内部方法RSTS-EE-SVHC-007, 以感應耦合電漿原子發射光譜儀檢測. / SGS In-House method-RSTS-EE-SVHC-007. Analyzed by ICP-AES.***	-	n.d.
水合硼酸鈉 / Tetraboron disodium heptaoxide, hydrate (CAS No.: 12267-73- 1) (*2)	mg/kg	參考SGS内部方法RSTS-EE-SVHC-007, 以感應耦合電漿原子發射光譜儀檢測. / SGS In-House method-RSTS-EE-SVHC-007. Analyzed by ICP-AES.	-	n.d.
二氯化鈷 / Cobalt dichloride (CAS No.: 7646-79-9)	mg/kg	参考SGS内部方法RSTS-EE-SVHC-007, 以感應耦合電漿原子發射光譜儀檢測. / SGS In-House method-RSTS-EE-SVHC-007. Analyzed by ICP-AES.	50	n.d.
多氯聯苯 / Polychlorinated Biphenyls (PCBs) (CAS No.: 1336-36-3)	mg/kg	参考US EPA 3540C方法,以氣相層析/質譜儀檢測. / With reference to US EPA 3540C method. Analysis was performed by GC/MS.	0.5	n.d.



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湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

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5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
多氣奈 / Polychlorinated Naphthalene (PCNs)	mg/kg	参考US EPA 3540C方法,以氣相層析/質譜儀檢測. / With reference to US EPA 3540C method. Analysis was performed by GC/MS.	5	n.d.
多氯三聯苯 / Polychlorinated Terphenyls (PCTs)	mg/kg	参考US EPA 3540C方法,以氣相層析/質譜儀檢測. / With reference to US EPA 3540C method. Analysis was performed by GC/MS.	0.5	n.d.
短鏈氯化石蠟 / Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (CAS No.: 85535-84-8)	mg/kg	参考US EPA 3540C方法,以氣相層析/質譜儀檢測. / With reference to US EPA 3540C method. Analysis was performed by GC/MS.	100	n.d.
全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	参考US EPA 3550C: 2007方法,以液相層析/質 譜儀檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.
全氟辛酸 / PFOA (CAS No.: 335-67-1)	mg/kg	参考US EPA 3550C: 2007方法,以液相層析/質 譜儀檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.
六氟化硫 / Sulfur Hexafluoride (SF6) (CAS No.: 2551-62-4)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
磷酸三(二甲苯)酯 / Trixylyl phosphate (CAS No.: 25155-23-1)	mg/kg	参考US EPA 3550C方法,以氣相層析/質譜儀檢測. / With reference to US EPA 3550C method. Analysis was performed by GC/MS.	50	n.d.
磷酸三(1-氯-2-丙基)酯 / Tris(1-chloro- 2-propyl) phosphate (TCPP) (CAS No.: 13674-84-5)	mg/kg	参考US EPA 3550C方法,以氣相層析/質譜儀檢測. / With reference to US EPA 3550C method. Analysis was performed by GC/MS.	50	n.d.
磷酸三(1,3-二氯異丙基)酯 / Tris(1,3-dichloro-2-propyl)phosphate (TDCPP) (CAS No.: 13674-87-8)	mg/kg	参考US EPA 3550C方法,以氣相層析/質譜儀檢測. / With reference to US EPA 3550C method. Analysis was performed by GC/MS.	10	n.d.



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湯銘科技股份有限公司

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5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
鄰苯二甲酸二戊酯 / DPP (Di-pentyl phthalate) (CAS No.: 131-18-0)	%	参考EN 14372,以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
甲醛 / Formaldehyde (CAS No.: 50-00-0)	mg/kg	参考ISO 17226-1(2008)方法,以高效液相層析 儀/二極體陣列偵測器檢測. / With reference to ISO 17226-1(2008). Analysis was performed by HPLC/DAD.	3	n.d.
聚氯乙烯 / PVC	**	以紅外光譜分析及焰色法檢測. / Analysis was performed by FTIR and FLAME Test.	-	Negative
2- (3', 5'-二叔丁基-2'-羟基苯基)苯並三 氮唑 / 2- (3,5-di-tert-butyl-2- hydroxyphenyl)-2H-benzotriazole (CAS No.: 3846-71-7)	mg/kg	参考US EPA 3540C方法,以氣相層析/質譜儀檢測之. / With reference to US EPA 3540C method. Analysis was performed by GC/MS.	5	n.d.
溴甲烷 / Bromomethane (CAS No.: 74-83-9)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢 測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
富馬酸二甲酯 / Dimethyl Fumarate (CAS No.: 624-49-7)	mg/kg	参考US EPA 3550C方法,以氣相層析/質譜儀檢 測. / With reference to US EPA 3550C method. Analysis was performed by GC/MS.	0.1	n.d.
磷酸三 (2-氯乙基)酯 / Tris (2- chloroethyl) phosphate (TCEP) (CAS No.: 115-96-8)	mg/kg	參考US EPA 3550C方法, 以氣相層析/質譜儀檢 測. / With reference to US EPA 3550C method. Analysis was performed by GC/MS.	10	n.d.
對特辛基苯酚 / 辛基酚 / 4-(1,1,3,3-tetramethylbutyl) phenol, (4-tert-Octylphenol) (CAS No.: 140-66-9)	mg/kg	参考US EPA 3550C方法,以液相層析/質譜儀檢測./ With reference to US EPA 3550C method. Analysis was performed by LC/MS.	10	n.d.
双(2-甲氧基乙基)醚 / Bis(2- methoxyethyl) ether (CAS No.: 111-96-6)	mg/kg	参考US EPA 3550C方法,以氣相層析/質譜儀檢測. / With reference to US EPA 3550C method. Analysis was performed by GC/MS.	10	n.d.
N,N-二甲基乙醯胺 / N,N- dimethylacetamide (DMAC) (CAS No.: 127- 19-5)	mg/kg	参考US EPA 3550C方法,以氣相層析/質譜儀檢測. / With reference to US EPA 3550C method. Analysis was performed by GC/MS.	10	n.d.



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湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

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5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
六溴環十二烷及所有主要被辨别出的異構物 / Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ -HBCDD, $\beta$ -HBCDD, $\gamma$ -HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	mg/kg	参考IEC 62321: 2008方法,以氣相層析/質譜儀檢測. / With reference to IEC 62321: 2008 method. Analysis was performed by GC/MS.	5	n.d.
鄰苯二甲酸二 (2-乙基己基)酯 / DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	%	参考EN 14372, 以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	%	參考EN 14372, 以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
鄰苯二甲酸甲苯基丁酯 / BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)	%	参考EN 14372, 以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
鄰苯二甲酸二異丁酯 / DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)	%	参考EN 14372, 以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
鄰苯二甲酸二異壬酯 / DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0; 68515-48-0)	%	参考EN 14372, 以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.
鄰苯二甲酸二異癸酯 / DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0; 68515-49-1)	%	参考EN 14372, 以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.
鄰苯二甲酸二正辛酯 / DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)	%	参考EN 14372, 以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
鄰苯二甲酸二己酯 / DNHP (Di-n-hexyl phthalate) (CAS No.: 84-75-3)	%	參考EN 14372, 以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.



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湯銘科技股份有限公司

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
鄰苯二甲酸二 (C6-8支鏈與直鏈)烷基酯,富 C7 / DIHP (1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich) (CAS No.: 71888-89-6)	%	参考EN 14372, 以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.
鄰苯二甲酸二 (C7-11支鏈與直鏈)烷基酯 / DHNUP (1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters) (CAS No.: 68515-42-4)	%	参考EN 14372, 以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.
鄰苯二甲酸二 (2-甲氧基乙基)酯 / DMEP (Bis (2-methoxyethyl) phthalate) (CAS No.: 117-82-8)	%	参考EN 14372, 以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
鄰苯二甲酸二異戊酯 / DIPP (DiisopentylPhthalate) (CAS No.: 605- 50-5)	%	参考EN 14372, 以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
支鏈和直鏈1,2-苯二羧二戊酯 / 1,2- Benzenedicarboxylic acid, dipentylester, branched and linear (CAS No.: 84777-06-0)	%	参考EN 14372, 以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
鄰苯二甲酸正戊基異戊基酯 / N-pentyl- isopentylphthalate	%	参考EN 14372, 以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
乙二醇二甲醚 / Ethylene glycol dimethyl ether (EGDME) (CAS No.: 110-71-4)	mg/kg	参考US EPA 3550C方法,以氣相層析/質譜儀檢測. / With reference to US EPA 3550C method. Analysis was performed by GC/MS.	10	n.d.
過氣酸鹽 / Perchlorate (CAS No.: 14797- 73-0)	mg/kg	以離子層析儀檢測. / Analysis was performed by IC.	0.006	n.d.



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湯銘科技股份有限公司

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5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
多溴聯苯總和 / Sum of PBBs	mg/kg		-	n.d.
一溴聯苯 / Monobromobiphenyl	mg/kg		5	n.d.
二溴聯苯 / Dibromobiphenyl	mg/kg		5	n.d.
三溴聯苯 / Tribromobiphenyl	mg/kg		5	n.d.
四溴聯苯 / Tetrabromobiphenyl	mg/kg		5	n.d.
五溴聯苯 / Pentabromobiphenyl	mg/kg		5	n.d.
六溴聯苯 / Hexabromobiphenyl	mg/kg		5	n.d.
七溴聯苯 / Heptabromobiphenyl	mg/kg		5	n.d.
八溴聯苯 / Octabromobiphenyl	mg/kg		5	n.d.
九溴聯苯 / Nonabromobiphenyl	mg/kg	6 h	5	n.d.
十溴聯苯 / Decabromobiphenyl	mg/kg	參考IEC 62321: 2008方法, 以氣相層析/質譜儀	5	n.d.
多溴聯苯醚總和 / Sum of PBDEs	mg/kg	檢測. / With reference to IEC 62321: 2008	-	n.d.
一溴聯苯醚 / Monobromodiphenyl ether	mg/kg	and performed by GC/MS.	5	n.d.
二溴聯苯醚 / Dibromodiphenyl ether	mg/kg		5	n.d.
三溴聯苯醚 / Tribromodiphenyl ether	mg/kg		5	n.d.
四溴聯苯醚 / Tetrabromodiphenyl ether	mg/kg		5	n.d.
五溴聯苯醚 / Pentabromodiphenyl ether	mg/kg		5	n.d.
六溴聯苯醚 / Hexabromodiphenyl ether	mg/kg		5	n.d.
七溴聯苯醚 / Heptabromodiphenyl ether	mg/kg		5	n.d.
八溴聯苯醚 / Octabromodiphenyl ether	mg/kg		5	n.d.
九溴聯苯醚 / Nonabromodiphenyl ether	mg/kg		5	n.d.
十溴聯苯醚 / Decabromodiphenyl ether	mg/kg		5	n.d.
鹵素 / Halogen				
鹵素 (氟) / Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg		50	n.d.
函素 (氣) / Halogen-Chlorine (C1) (CAS No.: 22537-15-1)	mg/kg	参考BS EN 14582:2007, 以離子層析儀分析./	50	n.d.
鹵素 (溴) / Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
鹵素 (碘) / Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg		50	n.d.



## **Test Report**

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湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
偶氮 (AZO)				
1): 4-氨基二苯 / 4-AMINODIPHENYL (CAS No.: 92-67-1)	mg/kg	参考LFGB 82.02-2方法,以氣相層析/質譜儀檢 測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
2): 聯苯胺 / BENZIDINE (CAS No.: 92-87- 5)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜儀檢 測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
3): 4- 氣鄰甲苯胺 / 4-CHLORO-O-TOLUIDINE (CAS No.: 95-69-2)	mg/kg	参考LFGB 82.02-2方法,以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
4): 2-萘胺 / 2-NAPHTHYLAMINE (CAS No.: 91-59-8)	mg/kg	参考LFGB 82.02-2方法,以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
5): 鄰氨基二甲基偶氮 / O- AMINOAZOTOLUENE (CAS No.: 97-56-3)	mg/kg	参考LFGB 82.02-2方法,以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
6): 對硝基鄰甲苯胺 / 2-AMINO-4- NITROTOLUENE (CAS No.: 99-55-8)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜儀檢 測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
7): 對氯苯胺 / P-CHLOROANILINE (CAS No.: 106-47-8)	mg/kg	参考LFGB 82.02-2方法,以氣相層析/質譜儀檢 測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
8): 4-甲氧基-間苯二胺 / 2,4- DIAMINOANISOLE (CAS No.: 615-05-4)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜儀檢 測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
9): 4,4'-二氨基二苯甲烷 / 4,4'- DIAMINODIPHENYLMETHANE (CAS No.: 101- 77-9)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
10): 3,3'-二氯聯苯胺 / 3,3'- DICHLOROBENZIDINE (CAS No.: 91-94-1)	mg/kg	参考LFGB 82.02-2方法,以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.



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湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
11): 3,3'-二甲氧基聯苯胺 / 3,3'- DIMETHOXYBENZIDINE (CAS No.: 119-90-4)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜儀檢 測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
12): 3,3'-二甲基聯苯胺 / 3,3'- DIMETHYLBENZIDINE (CAS No.: 119-93-7)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
13): 3,3'-二甲基-4,4'-二氨基二苯甲烷 / 3,3'-DIMETHYL-4,4'- DIAMINODIPHENYLMETHANE (CAS No.: 838-88-0)	mg/kg	参考LFGB 82.02-2方法,以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
14): 2-甲氧基-5-甲基聯苯 / P-CRESIDINE (2-METHOXY-5-METHYLANILINE) (CAS No.: 120-71-8)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜儀檢 測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
15): 4,4'-亞甲基雙(氣苯胺)/ 4,4'- METHYLENE-BIS- (2-CHLOROANILINE) (CAS No.: 101-14-4)	mg/kg	参考LFGB 82.02-2方法,以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
16): 4,4'-氧化雙苯胺 / 4,4'- OXYDIANILINE (CAS No.: 101-80-4)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
17): 4,4'-硫代雙苯胺 / 4,4'- THIODIANILINE (CAS No.: 139-65-1)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
18): 鄰甲苯胺 / O-TOLUIDINE (CAS No.: 95-53-4)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
19): 2,4-二氨基甲苯 / 2,4- TOLUYLENEDIAMINE (CAS No.: 95-80-7)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
20): 2,4,5-三甲基苯胺 / 2,4,5- TRIMETHYLANILINE (CAS No.: 137-17-7)	mg/kg	参考LFGB 82.02-2方法,以氣相層析/質譜儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.



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湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
21): 鄰位甲氧基苯胺 / O-ANISIDINE (CAS No.: 90-04-0)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜儀檢測./ With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
22): 對氨基偶氮苯 / 4-AMINOAZOBENZENE (CAS No.: 60-09-3)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜儀檢測./ With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
23): 2,4-二甲基苯胺 / 2,4-XYLIDINE (CAS No.: 95-68-1)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜儀檢測./ With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
24): 2,6-二甲基苯胺 / 2,6-XYLIDINE (CAS No.: 87-62-7)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜儀檢測./ With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.
氫氯碳化物 / HFCs (Hydrofluorocarbon)				
氫氟碳化物 (HFC)-23 (CHF3) (CAS No.: 75-46-7)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物 (HFC)-32 (CH2F2) (CAS No.: 75-10-5)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物 (HFC)-41 (CH3F) (CAS No.: 593-53-3)	mg/kg		1	n.d.
氫氟碳化物 (HFC)-43-10mee (C5H2F10)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物 (HFC)-125 (C2HF5)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.



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湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
氫氟碳化物 (HFC)-134 (C2H2F4)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./With reference to US EPA 5021	1	n.d.
氫氟碳化物 (HFC)-134a (CH2FCF3) (CAS No.: 811-97-2)	mg/kg	method. Analysis was performed by GC/MS. 参考US EPA 5021方法,以氣相層析/質譜儀檢 測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物 (HFC)-143 (CH3F3)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物 (HFC)-143a (CH3F3)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物 (HFC)-152a (C2H4F2) (CAS No.: 75-37-6)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物 (HFC)-227ea (C3HF7) (CAS No.: 431-89-0)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物 (HFC)-236fa (C3H2F6)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物 (HFC)-236ea (C3H2F6) (CAS No.: 431-63-0)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物 (HFC)-245ca (C3H3F5)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氫氟碳化物 (HFC)-245fa (C3H3F5)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.



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湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
氫氟碳化物 (HFC)-365mfc (C4H5F5)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
全氟碳化物 / PFCs (Perfluorocarbon)		method imaryoro was performed by so, mor		
四氟甲烷 / F14 (CAS No.: 75-73-0)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
六氟乙烷 / Fluorocarbon 116 (CAS No.: 76-16-4)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
八氟丙烷 / Freon 218 (CAS No.: 76-19-7)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
十氟丁烷 / Decafluorobutane (CAS No.: 355-25-9)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
八氟環丁烷 / Freon C318 (CAS No.: 115- 25-3)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
全氟-1-丁烯 / Perfluor-1-butene (CAS No.: 357-26-6)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
全氟異丁烯 / perfluorisobutene (CAS No.: 382-21-8)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,4-二氫八氟丁烷 / 1,4- dihydrooctafluorobutane (CAS No.: 377- 36-6)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.



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## **Test Report**

湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
2-全氟甲基丁烷 / nonafluor-2-	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢	1	n.d.
(trifluoromethyl)butane (CAS No.: 594-		測. / With reference to US EPA 5021		
91-2)		method. Analysis was performed by GC/MS.		
全氟戊烷 / perfluoro-n-pentane (CAS	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢	1	n.d.
No.: 678-26-2)		測. / With reference to US EPA 5021		
		method. Analysis was performed by GC/MS.		
2-全氟甲基戊烷 / 2-	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢	1	n.d.
perfluoromethylpentane (CAS No.: 355-		測. / With reference to US EPA 5021		
04-4)		method. Analysis was performed by GC/MS.		
全氟己烷 / perfluorohexane (CAS No.:	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢	1	n.d.
355-42-0)		測. / With reference to US EPA 5021		
		method. Analysis was performed by GC/MS.		
氟氯碳化物 / CFCs				
(Chlorofluorocarbons)				
Group I				
氟氯碳化物 (Chlorofluorocarbon)-11 (CAS	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢	1	n.d.
No.: 75-69-4)		測. / With reference to US EPA 5021		
		method. Analysis was performed by GC/MS.		
氟氯碳化物 (Chlorofluorocarbon)-12 (CAS	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢	1	n.d.
No.: 75-71-8)		測. / With reference to US EPA 5021		
		method. Analysis was performed by GC/MS.		
氟氯碳化物 (Chlorofluorocarbon)-113	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢	1	n.d.
(CAS No.: 76-13-1)		測. / With reference to US EPA 5021		
		method. Analysis was performed by GC/MS.		
氟氯碳化物 (Chlorofluorocarbon)-114	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢	1	n.d.
(CAS No.: 76-14-2)		測. / With reference to US EPA 5021		
		method. Analysis was performed by GC/MS.		
氟氯碳化物 (Chlorofluorocarbon)-115	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢	1	n.d.
(CAS No.: 76-15-3)		測. / With reference to US EPA 5021		
		method. Analysis was performed by GC/MS.		



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湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
Group III				
氟氯碳化物 (Chlorofluorocarbon)-13 (CAS No.: 75-72-9)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯碳化物 (Chlorofluorocarbon)-111 (CAS No.: 354-56-3)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢 測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯碳化物 (Chlorofluorocarbon)-112 (CAS No.: 76-12-0)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢 測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯碳化物 (Chlorofluorocarbon)-211 (CAS No.: 422-78-6)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢 測./With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯碳化物 (Chlorofluorocarbon)-212 (CAS No.: 3182-26-1)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯碳化物 (Chlorofluorocarbon)-213 (CAS No.: 2354-06-5)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢 測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯碳化物 (Chlorofluorocarbon)-214 (CAS No.: 29255-31-0)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯碳化物 (Chlorofluorocarbon)-215 (CAS No.: 4259-43-2)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯碳化物 (Chlorofluorocarbon)-216 (CAS No.: 661-97-2)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢 測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯碳化物 (Chlorofluorocarbon)-217 (CAS No.: 422-86-6)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.



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## **Test Report**

湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
氟氯氫碳化物 / HCFCs				
(Hydrochlorofluorocarbons)		6 4	1	
氟氯氫碳化物 (HCFC)-21 (CAS No.: 75-43-	mg/kg		1	n.d.
4)		測. / With reference to US EPA 5021		
555世ルル (HCDO) 99 (CAC N 75 45	/1	method. Analysis was performed by GC/MS.	1	1
氟氯氫碳化物 (HCFC)-22 (CAS No.: 75-45- 6)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021	1	n.d.
		method. Analysis was performed by GC/MS.		
氟氯氫碳化物 (HCFC)-31 (CAS No.: 593-	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢	1	n.d.
が、京し空に次では4岁(Here) 51(CAS No.: 555 70-4)	mg/ ng	測. / With reference to US EPA 5021	1	n.u.
		method. Analysis was performed by GC/MS.		
氟氯氫碳化物 (HCFC)-121 (CAS No.: 354-	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢	1	n.d.
14-3)	8,8	測. / With reference to US EPA 5021		
,		method. Analysis was performed by GC/MS.		
氟氯氫碳化物 (HCFC)-122 (CAS No.: 354-	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢	1	n.d.
21-2)		測. / With reference to US EPA 5021		
		method. Analysis was performed by GC/MS.		
氟氯氫碳化物 (HCFC)-123 (CAS No.: 306-	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢	1	n.d.
83-2)		測. / With reference to US EPA 5021		
		method. Analysis was performed by GC/MS.		
氟氯氫碳化物 (HCFC)-124 (CAS No.: 2837-	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢	1	n.d.
89-0)		測. / With reference to US EPA 5021		
		method. Analysis was performed by GC/MS.		
氟氯氫碳化物 (HCFC)-131 (CAS No.: 359-	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢	1	n.d.
28-4)		測. / With reference to US EPA 5021		
		method. Analysis was performed by GC/MS.		
氟氯氫碳化物 (HCFC)-132b (CAS No.:	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢	1	n.d.
1649-08-7)		測. / With reference to US EPA 5021		
		method. Analysis was performed by GC/MS.		



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**Test Report** 

湯銘科技股份有限公司 TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
氟氯氫碳化物 (HCFC)-133a (CAS No.: 75- 88-7)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物 (HCFC)-141b (CAS No.: 1717-00-6)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物 (HCFC)-142b (CAS No.: 75- 68-3)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物 (HCFC)-221 (CAS No.: 422- 26-4)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氟氫碳化物 (HCFC)-222 (CAS No.: 422- 49-1)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氟氫碳化物 (HCFC)-223 (CAS No.: 422- 52-6)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氟氫碳化物 (HCFC)-224 (CAS No.: 422- 54-8)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氟氫碳化物 (HCFC)-225ca (CAS No.: 422-56-0)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物 (HCFC)-225cb (CAS No.: 507-55-1)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氟氫碳化物 (HCFC)-226 (CAS No.: 431- 87-8)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.



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## **Test Report**

湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
氟氯氫碳化物 (HCFC)-231 (CAS No.: 421-94-3)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物 (HCFC)-232 (CAS No.: 460- 89-9)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物 (HCFC)-233 (CAS No.: 7125-84-0)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物 (HCFC)-234 (CAS No.: 425-94-5)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物 (HCFC)-235 (CAS No.: 460- 92-4)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物 (HCFC)-241 (CAS No.: 666- 27-3)	mg/kg	参考US EPA 5021方法, 以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物 (HCFC)-242 (CAS No.: 460-63-9)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物 (HCFC)-243 (CAS No.: 460- 69-5)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氟氫碳化物 (HCFC)-244	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物 (HCFC)-251 (CAS No.: 421-41-0)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.

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## **Test Report**

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湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
氟氯氫碳化物 (HCFC)-252 (CAS No.: 819- 00-1)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物 (HCFC)-253 (CAS No.: 460- 35-5)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物 (HCFC)-261 (CAS No.: 420- 97-3)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物 (HCFC)-262 (CAS No.: 421- 02-03)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氟氯氫碳化物 (HCFC)-271 (CAS No.: 430- 55-7)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
海龍 (Halons)				
海龍 (Halon)-1211 (CAS No.: 353-59-3)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢	1	n.d.
海龍 (Halon)-1301 (CAS No.: 75-63-8)	mg/kg	測. / With reference to US EPA 5021	1	n.d.
海龍 (Halon)-2402 (CAS No.: 124-73-2)	mg/kg	method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物 / HBFCs (Hydrobromofluorocarbons)				
不完全鹵化氟溴化物 (HBFC)-21B2 (CHFBr2) (CAS No.: 1868-53-7)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氣溴化物 (HBFC)-22B1 (CHF2Br) (CAS No.: 1511-62-2)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物 (HBFC)-31B1 (CH2FBr) (CAS No.: 373-52-4)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.



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湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
不完全鹵化氟溴化物 (HBFC)-121B4 (C2HFBr 4)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氣溴化物 (HBFC)-122B3 (C2HF2Br3)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物 (HBFC)-123B2 (C2HF3Br2)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物 (HBFC)-124B1 (C2HF4Br)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物 (HBFC)-131B3 (C2H2FBr3)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物 (HBFC)-132B2 (C2H2F2Br2)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物 (HBFC)-133B1 (C2H2F3Br)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物 (HBFC)-141B2 (C2H3FBr2)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物 (HBFC)-142B1 (C2H3F2Br)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物 (HBFC)-151B1 (C2H4FBr)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.



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湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
不完全鹵化氣溴化物 (HBFC)-221B6 (C3HFBr6)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物 (HBFC)-222B5 (C3HF2Br5)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物 (HBFC)-223B4 (C3HF3Br4)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氣溴化物 (HBFC)-224B3 (C3HF4Br3)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物 (HBFC)-225B2 (C3HF5Br2)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氣溴化物 (HBFC)-226B1 (C3HF6Br)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物 (HBFC)-231B5 (C3H2FBr5)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氣溴化物 (HBFC)-232B4 (C3H2F2Br4)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氣溴化物 (HBFC)-233B3 (C3H2F3Br3)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物 (HBFC)-234B2 (C3H2F4Br2)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.



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湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
不完全鹵化氟溴化物 (HBFC)-235B1 (C3H2F5Br)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氣溴化物 (HBFC)-241B4 (C3H3FBr4)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氣溴化物 (HBFC)-242B3 (C3H3F2Br3)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氣溴化物 (HBFC)-243B2 (C3H3F3Br2)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氣溴化物 (HBFC)-244B1 (C3H3F4Br)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物 (HBFC)-251B3 (C3H4FBr3)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物 (HBFC)-252B2 (C3H4F2Br2)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氣溴化物 (HBFC)-253B1 (C3H4F3Br)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氟溴化物 (HBFC)-261B2 (C3H5FBr2)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
不完全鹵化氣溴化物 (HBFC)-262B1 (C3H5F2Br)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.



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湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
不完全鹵化氟溴化物 (HBFC)-271B1 (C3H6FBr)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氯化碳氫化物 / CHCs (Chlorinate hydrocarbon)				
1,1,1,2-四氯乙烷 / 1,1,1,2- Tetrachloroethane (CAS No.: 630-20-6)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,1,1-三氟乙烷 / 1,1,1-Trichloroethane (CAS No.: 71-55-6)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,1,2,2-四氯乙烷 / 1,1,2,2- Tetrachloroethane (CAS No.: 79-34-5)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢 測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,1,2-三氟乙烷 / 1,1,2-Trichloroethane (CAS No.: 79-00-5)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,1-二氯乙烷 / 1,1-Dichloroethane (CAS No.: 75-34-3)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,1-二氯乙烯 / 1,1-Dichloroethene (CAS No.: 75-35-4)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,1-二氯丙烯 / 1,1-Dichloropropene (CAS No.: 563-58-6)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,2,3-三氯丙烷 / 1,2,3-Trichloropropane (CAS No.: 96-18-4)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.



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湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
1,2-二氯乙烷 / 1,2-Dichloroethane (CAS No.: 107-06-2)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,2-二氯丙烷 / 1,2-Dichloropropane (CAS No.: 78-87-5)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
1,3-二氯丙烷 / 1,3-Dichloropropane (CAS No.: 142-28-9)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
2,2-二氯丙烷 / 2,2-Dichloropropane (CAS No.: 594-20-7)	mg/kg	參考US EPA 5021方法, 以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
四氯甲烷(四氯化碳)/ Carbon tetrachloride (CAS No.: 56-23-5)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氯乙烷 / Chloroethane (CAS No.: 75-00-3)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氯仿 / Chloroform (CAS No.: 67-66-3)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
氣甲烷 / Chloromethane (CAS No.: 74-87-3)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
順-1,2-二氯乙烯 / cis-1,2- Dichloroethene (CAS No.: 156-59-2)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢 測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
順-1,3-二氯丙烯 / cis-1,3- Dichloropropene (CAS No.: 10061-01-5)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.



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TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
六氯丁二烯 / Hexachlorobutadiene (CAS No.: 87-68-3)	mg/kg	參考US EPA 5021方法,以氣相層析/質譜儀檢測./With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
二氯甲烷 / Dichloromethane (CAS No.: 75-09-2)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
四氯乙烯 / Tetrachloroethene (CAS No.: 127-18-4)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢 測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
反-1,2-二氯乙烯 / trans-1,2- Dichloroethene (CAS No.: 156-60-5)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢 測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
反-1,3-二氯丙烯 / trans-1,3- Dichloropropene (CAS No.: 10061-02-6)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢 測. / With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
三氯乙烯 / Trichloroethylene (CAS No.: 79-01-6)	mg/kg	参考US EPA 5021方法,以氣相層析/質譜儀檢 測./ With reference to US EPA 5021 method. Analysis was performed by GC/MS.	1	n.d.
石棉 / Asbestos				
陽起石棉 / Actinolite (CAS No.: 77536-66-4)	%		-	Negative
鐵石棉(褐石棉) / Amosite (CAS No.: 12172-73-5)	%	参考EPA 600/R-93/116 / 立體顯微鏡 (SM), 分散染色式偏光顯微鏡 (DS-PLM)及X光繞射光譜分	-	Negative
斜方角閃石棉 / Anthophyllite (CAS No.: 77536-67-5)	%	析法 (XRD) / With reference to EPA 600/R- 93/116 method. Analysis was performed by	-	Negative
溫石棉(白石棉) / Chrysotile (CAS No.: 12001-29-5)	%	Stereo Microscope (SM), Dispersion Staining Polarized Light Microscope (DS-	-	Negative
青石棉 / Crocidolite (CAS No.: 12001-28-4)	%	PLM) and X-ray Diffraction Spectrometer (XRD).	-	Negative
透閃石棉 / Tremolite (CAS No.: 77536-68-6)	%		_	Negative



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湯銘科技股份有限公司

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
多環芳香煙 / Polynuclear Aromatic Hydrocarbons (PAHs)				
苊 / Acenaphthene (CAS No.: 83-32-9)	mg/kg		0.2	n.d.
苊烯 / Acenaphthylene (CAS No.: 208-96-8)	mg/kg		0.2	n.d.
蒽 / Anthracene (CAS No.: 120-12-7)	mg/kg		0.2	n.d.
苯駢蒽 / Benzo[a]anthracene (CAS No.: 56-55-3)	mg/kg		0.2	n.d.
苯駢(a)芘 / Benzo[a]pyrene (CAS No.: 50-32-8)	mg/kg		0.2	n.d.
苯(b)苯駢芴 / Benzo[b]fluoranthene (CAS No.: 205-99-2)	mg/kg		0.2	n.d.
苯駢菲 / Benzo[g,h,i]perylene (CAS No.: 191- 24-2)	mg/kg		0.2	n.d.
苯(k)苯駢芴 / Benzo[k]fluoranthene (CAS No.: 207-08-9)	mg/kg		0.2	n.d.
Chrysene (CAS No.: 218-01-9)	mg/kg	参考ZLS standard ZEK 01.4-08方法,以氣相層	0.2	n.d.
二苯駢蒽 / Dibenzo[a,h]anthracene (CAS No.: 53-70-3)	mg/kg	析/質譜儀檢測. / With reference to ZLS standard ZEK 01.4-08 method. Analysis was	0.2	n.d.
苯駢芴 / Fluoranthene (CAS No.: 206-44-0)	mg/kg	performed by GC/MS.	0.2	n.d.
芴 / Fluorene (CAS No.: 86-73-7)	mg/kg		0.2	n.d.
茚酮芘 / Indeno[1,2,3-c,d] pyrene (CAS No.: 193-39-5)	mg/kg		0.2	n.d.
萘 / Naphthalene (CAS No.: 91-20-3)	mg/kg		0.2	n.d.
菲 / Phenanthrene (CAS No.: 85-01-8)	mg/kg		0.2	n.d.
芘 / Pyrene (CAS No.: 129-00-0)	mg/kg		0.2	n.d.
苯(j)苯駢芴 / Benzo[j]fluoranthene (CAS No.: 205-82-3)	mg/kg		0.2	n.d.
苯駢(e)芘 / Benzo[e]pyrene (CAS No.: 192-97- 2)	mg/kg		0.2	n.d.
多環芳香烴18項總和 / Sum of 18 PAHs	mg/kg		-	n.d.



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湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
有機錫 / Organic-tin compounds				
三丁基錫 / Tributyl Tin (TBT)	mg/kg	参考ISO 17353方法,以氣相層析儀/火焰光度偵測器檢測./ With reference to ISO 17353. Analyzed by GC/FPD.	0.03	n.d.
三苯基錫 / Triphenyl Tin (TphT)	mg/kg		0.03	n.d.
二丁基錫 / Dibutyl Tin (DBT)	mg/kg		0.03	n.d.
二辛基錫 / Dioctyl Tin (DOT)	mg/kg		0.03	n.d.

#### 備註(Note):

- 1. mg/kg = ppm ; 0.1wt% = 1000ppm
- 2. n.d. = Not Detected (未檢出)
- 3. MDL = Method Detection Limit (方法偵測極限值)
- 4. "-" = Not Regulated (無規格值)
- 5. \*\*= Qualitative analysis (No Unit) 定性分析(無單位)
- 6. Negative = Undetectable 陰性(未偵測到); Positive = Detectable 陽性(已偵測到)
- 7. 石棉定性分析試驗範圍: <0.1%~100%,石棉鑑定的判定基準是以檢出含有石棉纖維為『Positive』,未檢出石棉纖維為『Negative』。/ Testing range of asbestos qualitative analysis is from less than 0.1% to 100%. The judgment criterion: asbestos fibers being found is shown as "Positive"; asbestos fibers not being found is shown as "Negative".



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TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

8. \*\*\*: 該物質是由砷,硼或鈹各别之測試結果計算得知. 其MDL是針對砷,硼或鈹之評估. (The substance was calculated by the test results of Arsenic, Boron or Beryllium respectively. The MDL was evaluated for Arsenic, Boron or Beryllium respectively.)

 $AX = A \times F$ 

AX	A	F
五氧化二砷 / Diarsenic pentaoxide	Zeb / A	1.5339
三氧化二砷 / Diarsenic trioxide	砷 / Arsenic	1.3203
硼酸 / Boric acid		5.7195
無水四硼酸二鈉 / Disodium tetraborate,		4 6521
anhydrous		4.6531
水合硼酸鈉(五水四硼酸二鈉) / Disodium		6.7361
tetraborate, pentahydrate		0.7301
水合硼酸鈉(十水四硼酸二鈉) / Disodium	1	8.8191
tetraborate, decahydrate		0.0191
氧化鈹 / Beryllium oxide (BeO)	鋮 / Beryllium	2.7753

- 9. (\*2): 水合硼酸鈉: 依照歐洲化學總署解釋以無水四硼酸二鈉數據作為代表(歐洲化學總署回信編號 Ref no.: INC 000000032519) / Tetraboron disodium heptaoxide, hydrate: Only anhydrous form of disodium tetraborate is relevant and considered according to ECHA explanation (Ref no.: INC 000000032519).
- 10. 鈹青銅是一種主要成份爲鈹及銅的合金,當偵測不到總鈹含量時,亦表示不含鈹青銅. (Since beryllium copper is a metal alloy of copper and beryllium and the test result is n.d. for beryllium, we can have conclusion that the beryllium copper is n.d..)
- 11. (※2): 被萃取出的溶出硼/砷是以感應耦合電漿原子發射光譜儀檢測得之. / The extracted soluble Boron / Arsenic are detected by ICP-AES.
- 12. 樣品的測試是基於申請人要求混合測試,報告中的混合測試結果不代表其中個别單一材質的含量. (The samples was/were analyzed on behalf of the applicant as mixing sample in one testing. The above results was/were only given as the informality value.)

#### PFOS参考資訊(Reference Information): 持久性有機污染物 POPs - (EU) 757/2010

PFOS濃度在物質或製備中不得超過0.001%(10ppm),在半成品、成品或零部件中不得超過0.1%(1000ppm),在紡織品或塗層材料中不得超過1 $\mu$ g/m²。

(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above  $1\mu g/m^2$ .)



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湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

參考資料(Reference information):

依據ZEK 01.4-08之要求: 產品中最大值為

(Requirement of ZEK 01.4-08: Restraining maximum values for products)

項目 (Parameter)	第1類 (Category 1)	第2類 (Category 2)	第3類 (Category 3)
	意圖放入嘴内的材料或與	可預見與皮膚接觸逾30秒	可預見與皮膚接觸短於30
	36個月以下的幼兒皮膚有	(長期與皮膚接觸), 以及	秒(短期與皮膚接觸),以
	所接觸的玩具.	不屬於第1類的材料.	及不屬於第1類或第2類的
	(Material indented to	(Materials not falling	材料. (Materials not
	be put in the mouth or	under category 1 with	falling under category
	toys for children aged	foreseeable contact to	1 or 2 with
	< 36 months with	skin for longer than	foreseeable contact to
	intended skin	30 seconds (long-term	skin for less than 30
	contact.)	skin contact).)	seconds (short-term
			skin contact).)
苯駢(a)芘	(1771 / (0 0) to t		0.0
Benzo(a)pyrene (mg/kg)	<mdl (<0.2)**<="" td=""><td>1</td><td>20</td></mdl>	1	20
18項PAH總濃度			
(Sum of 18 PAH)	<mdl (<0.2)**<="" td=""><td>10</td><td>200</td></mdl>	10	200
(mg/kg)*			

#### 注意(Remark):

- \* = PAH濃度大於0.2mg/kg時,則須計算PAH總濃度值 (Only PAH substances >0.2 mg/kg are taken into account while calculating the sum of PAHs)
- \*\* = 最大濃度值超出等級一的限制,但在等級二的濃度限制值内時,可能需要確認測試材質是否適用於與食品或與口腔黏膜接觸,並依照EN 1186 ff. and § 64 LFBG 80.30-1方法,針對特定PAH的遷移測試進行測試。遷移測試的結論需依照食品規範評估。

(If the limits of category 1 are surpassed but the limits of category 2 still met, the confirmation of suitability of contact with foodstuff or the oral mucosa can be verified by an additional specific migration test of the PAH components according to EN 1186 ff. and § 64 LFBG 80.30-1. The results of the migration test shall be evaluated according to law criteria for foodstuff.)



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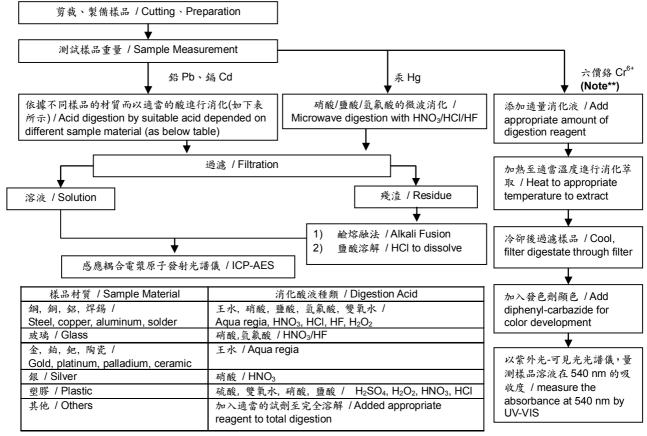
湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

- 1) 根據以下的流程圖之條件,樣品已完全溶解。( 六價鉻測試方法除外 ) / These samples were dissolved totally by pre-conditioning method according to below flow chart. ( Cr<sup>6+</sup> test method excluded )
- 2) 测試人員:楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人: 張啓興 / Name of the person in charge of measurement: Troy Chang



#### Note\*\* (For IEC 62321)

- (1) 針對非金屬材料加入鹼性消化液,加熱至 90~95℃萃取. / For non-metallic material, add alkaline digestion reagent and heat to 90~95℃.
- (2) 針對金屬材料加入純水,加熱至沸騰萃取. / For metallic material, add pure water and heat to boiling.



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湯銘科技股份有限公司

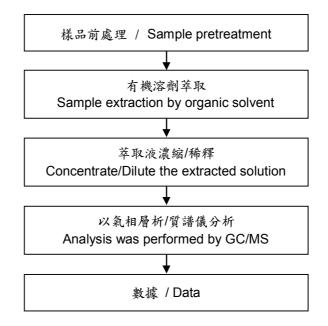
TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

#### 多氯聯苯分析流程圖 / PCBs analytical flow chart

- 測試人員:曾勃鈞 / Name of the person who made measurement: Barry Tseng
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang



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# **Test Report**

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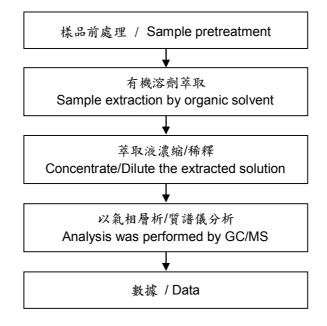
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#### 多氯奈分析流程圖 / PCNs analytical flow chart

- 測試人員:曾勃鈞 / Name of the person who made measurement: Barry Tseng
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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湯銘科技股份有限公司

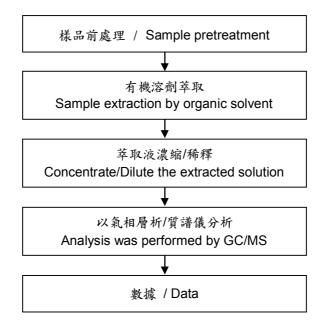
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#### 多氯三聯苯分析流程圖 / PCTs analytical flow chart

- 測試人員:曾勃鈞 / Name of the person who made measurement: Barry Tseng
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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湯銘科技股份有限公司

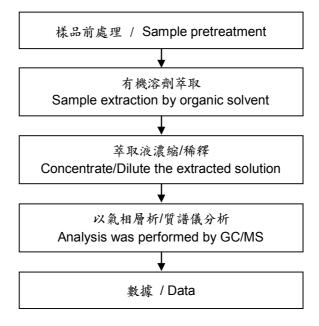
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#### 氯化石蠟分析流程圖 / Chlorinated Paraffins analytical flow chart

- 測試人員:曾勃鈞 / Name of the person who made measurement: Barry Tseng
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang



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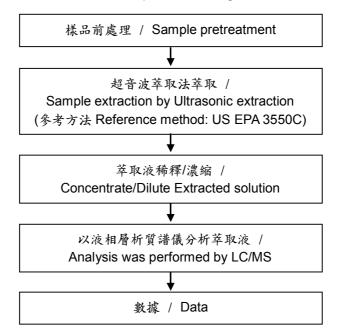
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#### 全氟辛酸/全氟辛烷磺酸分析流程圖 / PFOA/PFOS analytical flow chart

- 測試人員:翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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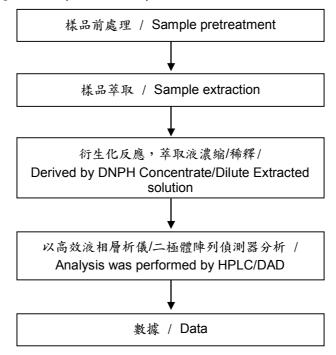
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#### 甲醛分析流程圖 / Formaldehyde analytical flow chart

- 測試人員:涂雅苓 / Name of the person who made measurement: Yaling Tu
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang

#### 【測試方法(Test Method): US EPA 8315A、ISO 17226-1】





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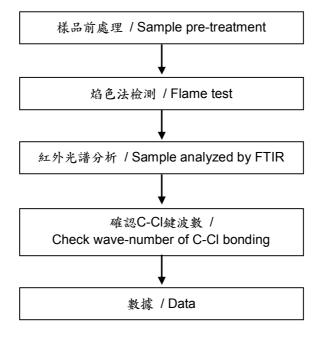
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#### 聚氯乙烯物質判定分析流程圖 /

#### Analysis flow chart for determination of PVC in material

- 測試人員:陳君涵 / Name of the person who made measurement: Ginny Chen
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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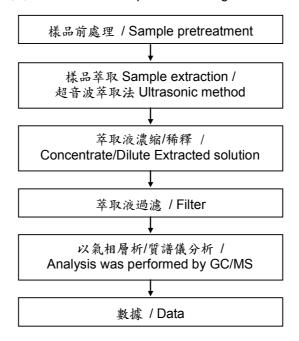
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#### 富馬酸二甲酯分析流程圖 / Dimethyl Fumarate analytical flow chart

- 測試人員: 翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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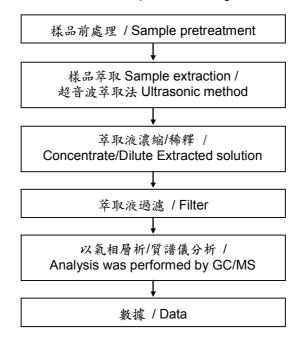
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#### 六溴環十二烷分析流程圖 / HBCDD analytical flow chart

- 測試人員: 翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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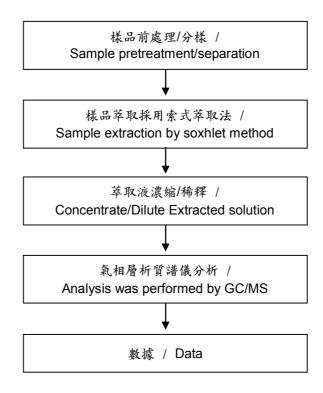
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#### 可塑劑分析流程圖 / Analytical flow chart of phthalate content

- 測試人員: 翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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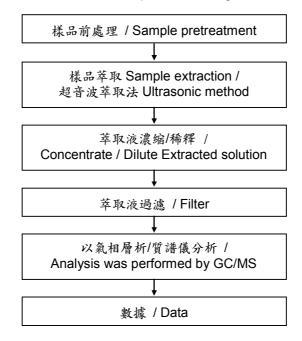
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#### 乙二醇醚及其酯類分析流程圖 / Ethylene glycol ether analytical flow chart

- 測試人員: 翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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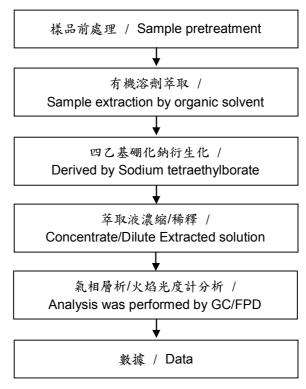
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#### 有機錫分析流程圖 / Analytical flow chart of Organic-Tin content

- 測試人員:陳君涵 / Name of the person who made measurement: Ginny Chen
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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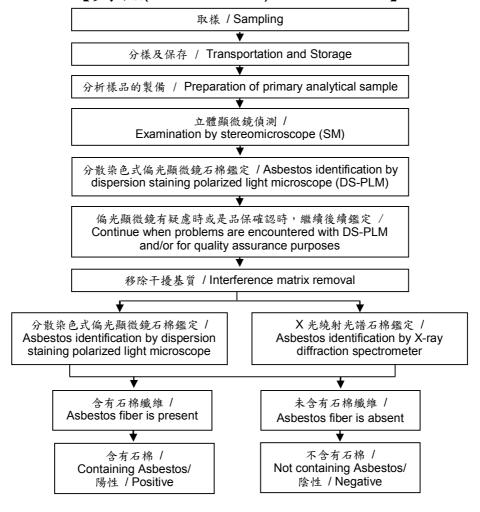
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#### 石棉鑑定分析流程圖 / Analysis flow chart for determination of Asbestos

- 測試人員:高鍵忠 / Name of the person who made measurement: Victor Kao
- 測試負責人: 魏明芬 / Name of the person in charge of measurement: Wendy Wei

#### 【参考方法(Reference method): EPA 600/R-93/116】





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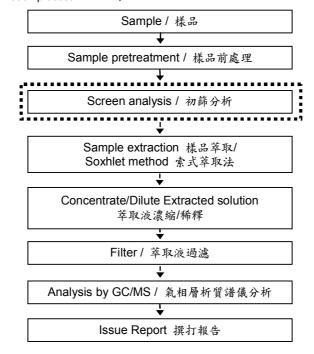
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#### 多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 測試人員:翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang

確認程序 / Confirmation process — - - - →



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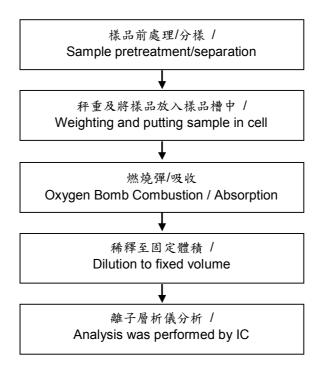
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#### 鹵素分析流程圖 / Analytical flow chart of halogen content

- 測試人員: 陳恩臻 / Name of the person who made measurement: Rita Chen
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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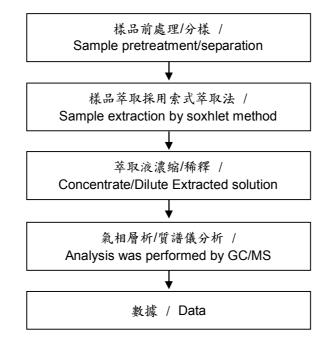
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#### 苯並三唑類化合物分析流程圖 / Benzotriazole analytical flow chart

- 測試人員: 翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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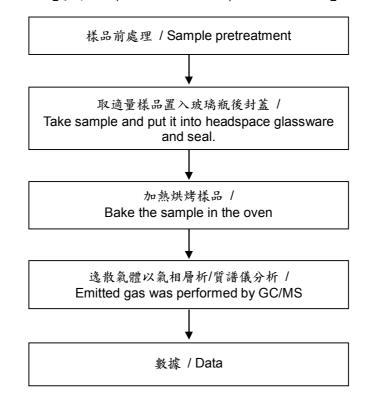
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#### 揮發性有機化合物分析流程圖 / Analytical flow chart of volatile organic compounds (VOCs)

- 測試人員:吳椿景 / Name of the person who made measurement: Chun Wu
- 測試負責人:陳新智 / Name of the person in charge of measurement : Shinjyh Chen

【 参考方法(Reference method): US EPA 5021】





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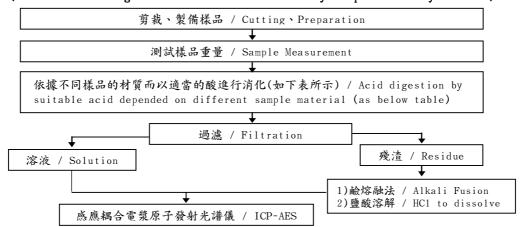
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- 1) 根據以下的流程圖之條件,樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.
- 2) 測試人員:楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang

#### 元素以 ICP-AES 分析的消化流程圖

(Flow Chart of digestion for the elements analysis performed by ICP-AES)



鋼,銅,鋁,焊錫 / Steel, copper, aluminum, solder	王水,硝酸,鹽酸,氫氟酸,雙氧水 /
	Aqua regia, HNO3, HC1, HF, H2O2
玻璃 / Glass	硝酸,氫氟酸 / HNO3/HF
金,鉑,鲍,陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO3
塑膠 / Plastic	硫酸,雙氧水,硝酸,鹽酸 / H2SO4, H2O2, HNO3, HC1
其他 / Others	加入適當的試劑至完全溶解 / Added appropriate
	reagent to total digestion

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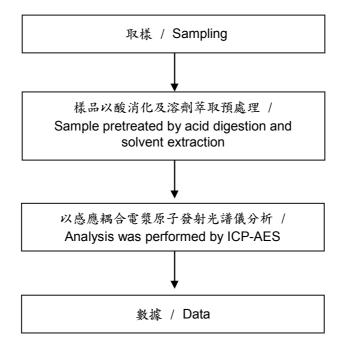
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#### 二氯化鈷分析流程圖 / Analytical flow chart of Cobalt dichloride

- 測試人員:楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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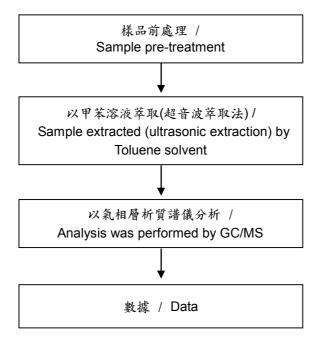
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#### 多環芳香烴分析流程圖 / PAHs (Polynuclear Aromatic Hydrocarbons) analytical flow chart

- 測試人員: 翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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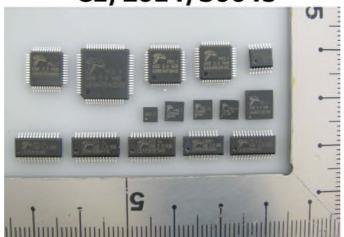
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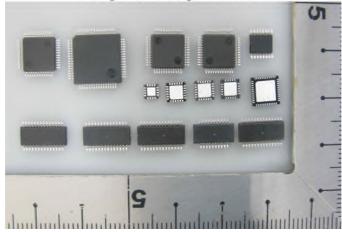
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(The tested sample / part is marked by an arrow if it's shown on the photo.)

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# **Test Report**

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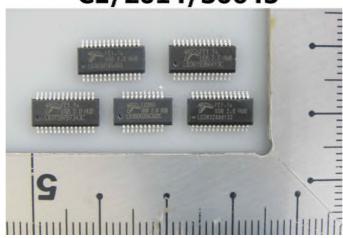
湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

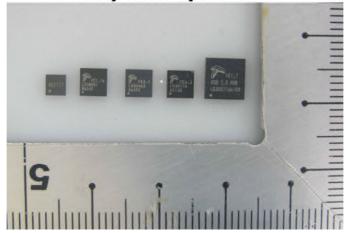
台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

CE/2014/30645



CE/2014/30645





## **Test Report**

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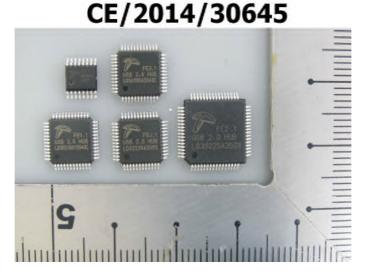
湯銘科技股份有限公司

TERMINUS TECHNOLOGY INC.

台北市松山區民生東路三段130巷9號5樓

5F, NO. 9, LN. 130, SEC. 3, MINSHENG E. RD., SONGSHAN DIST., TAIPEI CITY 105, TAIWAN (R.O.C.)

CE /2014/2064E



\*\* 報告結尾 (End of Report) \*\*

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Ugr vgo dgt '47.'4236'''

#### Tg<' EGTVIHIE CVG'QH'RCTV'EQO RQUIVIQP'"

Vq"Y j qo "Kl"O c { "Eqpegtp<"

 $\label{thm:continuous} Vj g'hqmqy kpi ''Cpcmqi 'F gxkegu''r ctv''u+''cpf 'ksu''j qo qi gpgqwu''uwd/eqo r qpgpvu.''vq''yj g'Eqo r cp{<math>\emptyset u''$  mpqy ngf i g''cpf ''chxgt''i qqf 'hckjj ''kps wkt {.''ctg''egt \kh\gf ''''}

- •Á P qv'\q'eqpvc\p''rgcf.'o gtewt{."ecf o kwo."j gzcxcrgpv'ej tqo kwo."r qn{dtqo kpcvgf 'dkr j gp{nı" %õRDDö+."qt"r qn{dtqo kpcvgf "f kr j gp{n'gvj gtu" %õRDF Gö+."kpenwf kpi "f gecdtqo qf kr j gp{n'gvj gt" %õf gec/DF Gö+."cdqxg"vj g'kpf kecvgf 'rgxgnı'ugv'hqtvj 'kp'vj g''ewttgpv'TqJ U'F ktgevkxg''4233 l87 lGW' cpf 'vj gtghqtg''eqo r ncpv'y kyj 'vj g''uckf 'F ktgevkxg"
- •Á P qv'\q'eqpvkp'r gthrwqtqqevcpg'uwrhqpcvgu'\%RHQU\"o+'cpf 'r gthrwqtqqevcpqke''cekf '\%RHQC\"o+'' cdqxg'\'j g'\kpf kecvgf 'ngxgnu'ugv'\hqty '\kp'\'j g'ewttgpv'F ktgevkxg''422813441GE''cpf '\ku'\'y gtghqtg'' eqo r nkcpv'y kj '\'j g'uckf 'F ktgevkxg''
- •Á P qv'\q'eqpvc\p'f ko gyj {n'hwo ctcvg'\"oFO Hö+"'cdqxg'\j g'\pf kecvgf 'ngxgnu'ugv'hqtyj '\p'\j g'ewttgpv' F ktgev\kxg''422; 1473 IGE 'cpf '\ku'\j gtghqtg''eqo r n\cpv'y kj '\j g'\uckf 'F ktgev\kxg''
- •Á P qv'\q"eqpvc\p"\p"c"eqpegpvc\qp"cdqxg"206' "\y by +"cp{"qh'\y g"uwduvcpegu"\wpf gt"eqpukf gtc\qqp" hqt"\tgcvo gpv'cu"ecpf lf cvgu"\hqt"uwduvcpegu"qh'xgt{"j ki j "eqpegtp"\UXJ E+."f gh\wpgf "kp"Ct\\eng"79" qh'\y g"TGCEJ "F ktge\\xg<"</p>

No.	Substance Name	EC Number	CAS Number
1	4,4'- Diaminodiphenylmethane (MDA)	202-974-4	101-77-9
2	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	201-329-4	81-15-2
3	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	287-476-5	85535-84-8
4	Anthracene	204-371-1	120-12-7
5	Benzyl butyl phthalate (BBP)	201-622-7	85-68-7
6	Bis (2-ethylhexyl)phthalate (DEHP)	204-211-0	117-81-7
7	Bis(tributyltin)oxide (TBTO)	200-268-0	56-35-9
8	Diarsenic pentaoxide	215-116-9	1303-28-2
9	Diarsenic trioxide	215-481-4	1327-53-3
10	Dibutyl phthalate (DBP)	201-557-4	84-74-2

Rci g'3'qh'; " TGCEJ "UXJ E'EqE'Lwpg'38.'4236



11	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified: Alpha-hexabromocyclododecane Beta-hexabromocyclododecane Gamma-hexabromocyclododecane	247-148-4 and 221-695-9	25637-99-4, 3194-55-6 (134237-50-6) (134237-51-7) (134237-52-8)
12	Lead hydrogen arsenate	232-064-2	7784-40-9
13	Sodium dichromate	234-190-3	7789-12-0, 10588-01-9
14	Triethyl arsenate	427-700-2	15606-95-8
15	2,4-Dinitrotoluene	204-450-0	121-14-2
16	Acrylamide	201-173-7	79-06-1
17	Anthracene oil	292-602-7	90640-80-5
18	Anthracene oil, anthracene paste	292-603-2	90640-81-6
19	Anthracene oil, anthracene paste, anthracene fraction	295-275-9	91995-15-2
20	Anthracene oil, anthracene paste, distn. lights	295-278-5	91995-17-4
21	Anthracene oil, anthracene-low	292-604-8	90640-82-7
22	Diisobutyl phthalate	201-553-2	84-69-5
23	Lead chromate	231-846-0	7758-97-6
24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	235-759-9	12656-85-8
25	Lead sulfochromate yellow (C.I. Pigment Yellow 34)	215-693-7	1344-37-2
26	Pitch, coal tar, high temp.	266-028-2	65996-93-2
27	Tris(2-chloroethyl)phosphate	204-118-5	115-96-8
28	Ammonium dichromate	232-143-1	7789-09-5
29	Boric acid	233-139-2, 234-343-4	10043-35-3, 11113-50-1
30	Disodium tetraborate, anhydrous	215-540-4	1303-96-4, 1330-43-4, 12179-04-3
31	Potassium chromate	232-140-5	7789-00-6
32	Potassium dichromate	231-906-6	7778-50-9
33	Sodium chromate	231-889-5	7775-11-3
34	Tetraboron disodium heptaoxide, hydrate	235-541-3	12267-73-1
35	Trichloroethylene	201-167-4	79-01-6
36	2-Ethoxyethanol	203-804-1	110-80-5
37	2-Methoxyethanol	203-713-7	109-86-4
38	Acids generated from chromium trioxide and their oligomers. Names of the acids and their oligomers: Chromic acid, Dichromic acid, Oligomers of chromic acid and dichromic acid.	231-801-5, 236-881-5	7738-94-5, 13530-68-2

Rci g'4"qh'; " TGCEJ "UXJ E'EqE'Lwpg'38."4236



39	Chromium trioxide	215-607-8	1333-82-0
40	Cobalt(II) carbonate	208-169-4	513-79-1
41	Cobalt(II) diacetate	200-755-8	71-48-7
42	Cobalt(II) dinitrate	233-402-1	10141-05-6
43	Cobalt(II) sulphate	233-334-2	10124-43-3
44	1,2,3-Trichloropropane	202-486-1	96-18-4
45	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	276-158-1	71888-89-6
46	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	271-084-6	68515-42-4
47	1-Methyl-2-pyrrolidone	212-828-1	872-50-4
48	2-Ethoxyethyl acetate	203-839-2	111-15-9
49	Cobalt dichloride	231-589-4	7646-79-9
50	Hydrazine	206-114-9	302-01-2, 7803-57-8
51	Strontium chromate	232-142-6	7789-06-2
52	1,2-dichloroethane	203-458-1	107-06-2
53	2,2'-dichloro-4,4'-methylenedianiline	202-918-9	101-14-4
54	2-Methoxyaniline; o-Anisidine	201-963-1	90-04-0
55	4-(1,1,3,3-tetramethylbutyl)phenol	205-426-2	140-66-9
56	Aluminosilicate Refractory Ceramic Fibres are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.1 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, and fulfil the three following conditions: a) oxides of aluminium and silicon are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm) c) alkaline oxide and alkali earth oxide (Na2O+K2O+CaO+MgO+BaO) content less or equal to 18% by weight	-	
57	Arsenic acid	231-901-9	7778-39-4
58	Bis(2-methoxyethyl) ether	203-924-4	111-96-6
58 59	Bis(2-methoxyethyl) ether Bis(2-methoxyethyl) phthalate	203-924-4 204-212-6	111-96-6 117-82-8

Rci g'5"qh"; " TGCEJ "UXJ E'EqE"Lwpg'38."4236



62	Formaldehyde, oligomeric reaction products with aniline	500-036-1	25214-70-4
63	Lead diazide, Lead azide	236-542-1	13424-46-9
64	Lead dipicrate	229-335-2	6477-64-1
65	Lead styphnate	239-290-0	15245-44-0
66	N,N-dimethylacetamide	204-826-4	127-19-5
67	Pentazinc chromate octahydroxide	256-418-0	49663-84-5
68	Phenolphthalein	201-004-7	77-09-8
69	Potassium hydroxyoctaoxodizincatedichromate	234-329-8	11103-86-9
70	Trilead diarsenate	222-979-5	3687-31-8
71	Zirconia Aluminosilicate Refractory Ceramic Fibres are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.1 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, and fulfil the three following conditions: a) oxides of aluminium, silicon and zirconium are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm). c) alkaline oxide and alkali earth oxide (Na2O+K2O+CaO+MgO+BaO) content less or equal to 18% by weight	-Á	-
72	[4-[[4-anilino-1-naphthyl][4- (dimethylamino)phenyl]methylene]cyclohexa-2,5- dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959- 2)]	219-943-6	2580-56-5
73	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	208-953-6	548-62-9
74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	203-977-3	112-49-2
75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	203-794-9	110-71-4
76	1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC)	219-514-3	2451-62-9

Rci g'6'qh'; " TGCEJ "UXJ E'EqE'Lwpg'38.'4236



77       ti,3,5-tris((2S and 2R)-2,3-epoxyproyl)-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (β-TGIC)       423-400-0       59653-74-6         78       4,4'-bis(dimethylamino)-4"-(methylamino)trityl alcohol (with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]       209-218-2       561-41-1         79       4,4'-bis(dimethylamino)benzophenone (Michler's ketone)       202-027-5       90-94-8         80       Diboron trioxide       215-125-8       1303-86-2         81       Formamide       200-842-0       75-12-7         82       Lead(II) bis(methanesulfonate)       401-750-5       17570-76-2         83       N,N,N'-tetramethyl-4,4'-methylenedianiline (Michler's base)       202-959-2       101-61-1         84       o,a-Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with ≥ 0.1% of Michler's ketone (EC No. 202-959-2)]       229-851-8       6786-83-0         85       [Phthalato(2-)]dioxotrilead       273-688-5       69011-06-9         86       1,2-Benzenedicarboxylic acid, dipentylester, branched and linear       284-032-2       8477-06-0         87       1,2-Diethoxyethane       211-076-1       629-14-1         88       1-bromopropane (n-propyl bromide)       203-445-0       106-94-5         89       3-ethyl-2-methyl-2-(3-methylibutyl)-1,3-oxazolidine       421-150-7 </th <th></th> <th></th> <th></th> <th></th>				
alcohol [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]  79	77	1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (β-TGIC)	423-400-0	59653-74-6
Note	78	alcohol [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-	209-218-2	561-41-1
Formamide   200-842-0   75-12-7	79		202-027-5	90-94-8
82         Lead(II) bis(methanesulfonate)         401-750-5         17570-76-2           83         N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)         202-959-2         101-61-1           84         Q,a-Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with ≥ 0.1% of Michler's ketone (EC No. 202-959-2)]         229-851-8         6786-83-0           85         [Phthalato(2-)]dioxotrilead         273-688-5         69011-06-9           86         1,2-Benzenedicarboxylic acid, dipentylester, branched and linear         284-032-2         84777-06-0           87         1,2-Diethoxyethane         211-076-1         629-14-1           88         1-bromopropane (n-propyl bromide)         203-445-0         106-94-5           89         3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine         421-150-7         143860-04-2           90         4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]         -         -           91         4,4'-methylenedi-o-toluidine         212-658-8         838-88-0           92         4,4'-oxydianiline and its salts         202-977-0         101-80-4           93         4-methyl-m-phenylenediamine (toluene-2,4-diamine)         202-453-1         95-80-7           95         4-Nonylphenol, branched a	80	Diboron trioxide	215-125-8	1303-86-2
83       N,N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)       202-959-2       101-61-1         84       q,a-Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with ≥ 0.1% of Michler's ketone (EC No. 202-959-2)]       229-851-8       6786-83-0         85       [Phthalato(2-)]dioxotrilead       273-688-5       69011-06-9         86       1,2-Benzenedicarboxylic acid, dipentylester, branched and linear       284-032-2       84777-06-0         87       1,2-Diethoxyethane       211-076-1       629-14-1         88       1-bromopropane (n-propyl bromide)       203-445-0       106-94-5         89       3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine       421-150-7       143860-04-2         90       4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]       -       -         91       4,4'-methylenedi-o-toluidine       212-658-8       838-88-0         92       4,4'-oxydianiline and its salts       202-977-0       101-80-4         93       4-methyl-m-phenylenediamine (toluene-2,4-diamine)       202-453-1       95-80-7         95       4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isome	81	Formamide	200-842-0	75-12-7
84       a,a-Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]       229-851-8       6786-83-0         85       [Phthalato(2-)]dioxotrilead       273-688-5       69011-06-9         86       1,2-Benzenedicarboxylic acid, dipentylester, branched and linear       284-032-2       84777-06-0         87       1,2-Diethoxyethane       211-076-1       629-14-1         88       1-bromopropane (n-propyl bromide)       203-445-0       106-94-5         89       3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine       421-150-7       143860-04-2         90       4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]       -       -         91       4,4'-methylenedi-o-toluidine       212-658-8       838-88-0         92       4,4'-oxydianiline and its salts       202-977-0       101-80-4         93       4-Aminoazobenzene       200-453-6       60-09-3         94       4-methyl-m-phenylenediamine (toluene-2,4-diamine)       202-453-1       95-80-7         95       4-Nonylphenol, branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]       204-419-1	82	Lead(II) bis(methanesulfonate)	401-750-5	17570-76-2
(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with ≥ 0.1% of Michler's ketone (EC No. 202-959-2)]       202-027-5) or Michler's base (EC No. 202-959-2)]         85       [Phthalato(2-)]dioxotrilead       273-688-5       69011-06-9         86       1,2-Benzenedicarboxylic acid, dipentylester, branched and linear       284-032-2       84777-06-0         87       1,2-Diethoxyethane       211-076-1       629-14-1         88       1-bromopropane (n-propyl bromide)       203-445-0       106-94-5         89       3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine       421-150-7       143860-04-2         90       4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]       -       -         91       4,4'-methylenedi-o-toluidine       212-658-8       838-88-0         92       4,4'-oxydianiline and its salts       202-977-0       101-80-4         93       4-methyl-m-phenylenediamine (toluene-2,4-diamine)       202-453-6       60-09-3         94       4-methyl-m-phenylenediamine (toluene-2,4-diamine)       202-453-1       95-80-7         95       4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]       204-419-1 </td <td>83</td> <td></td> <td>202-959-2</td> <td>101-61-1</td>	83		202-959-2	101-61-1
86       1,2-Benzenedicarboxylic acid, dipentylester, branched and linear       284-032-2       84777-06-0         87       1,2-Diethoxyethane       211-076-1       629-14-1         88       1-bromopropane (n-propyl bromide)       203-445-0       106-94-5         89       3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine       421-150-7       143860-04-2         90       4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]       -       -         91       4,4'-methylenedi-o-toluidine       212-658-8       838-88-0         92       4,4'-oxydianiline and its salts       202-977-0       101-80-4         93       4-Aminoazobenzene       200-453-6       60-09-3         94       4-methyl-m-phenylenediamine (toluene-2,4-diamine)       202-453-1       95-80-7         95       4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]       -       -         96       6-methoxy-m-toluidine (p-cresidine)       204-419-1       120-71-8         97       Acetic acid, lead salt, basic       257-175-3       51404-69-4	84	(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with $\geq 0.1\%$ of Michler's ketone (EC No.	229-851-8	6786-83-0
and linear       211-076-1       629-14-1         87       1,2-Diethoxyethane       211-076-1       629-14-1         88       1-bromopropane (n-propyl bromide)       203-445-0       106-94-5         89       3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine       421-150-7       143860-04-2         90       4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]       -       -         91       4,4'-methylenedi-o-toluidine       212-658-8       838-88-0         92       4,4'-oxydianiline and its salts       202-977-0       101-80-4         93       4-Aminoazobenzene       200-453-6       60-09-3         94       4-methyl-m-phenylenediamine (toluene-2,4-diamine)       202-453-1       95-80-7         95       4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]       -       -         96       6-methoxy-m-toluidine (p-cresidine)       204-419-1       120-71-8         97       Acetic acid, lead salt, basic       257-175-3       51404-69-4	85	[Phthalato(2-)]dioxotrilead	273-688-5	69011-06-9
1-bromopropane (n-propyl bromide) 203-445-0 106-94-5 3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine 421-150-7 143860-04-2  4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]  4,4'-methylenedi-o-toluidine 212-658-8 838-88-0  4,4'-oxydianiline and its salts 202-977-0 101-80-4  4-Aminoazobenzene 200-453-6 60-09-3  4-methyl-m-phenylenediamine (toluene-2,4-diamine) 202-453-1 95-80-7  4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]  96 6-methoxy-m-toluidine (p-cresidine) 204-419-1 120-71-8  97 Acetic acid, lead salt, basic 257-175-3 51404-69-4	86		284-032-2	84777-06-0
3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine 421-150-7  4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]  4,4'-methylenedi-o-toluidine 212-658-8 838-88-0  4,4'-oxydianiline and its salts 202-977-0 101-80-4  4-Aminoazobenzene 200-453-6 60-09-3  4-Methyl-m-phenylenediamine (toluene-2,4-diamine) 202-453-1  95-80-7  4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]  6-methoxy-m-toluidine (p-cresidine)  204-419-1 204-19-1 205-175-3 206-10-10-10-10-10-10-10-10-10-10-10-10-10-	87	1,2-Diethoxyethane	211-076-1	629-14-1
4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]  91 4,4'-methylenedi-o-toluidine 212-658-8 838-88-0  92 4,4'-oxydianiline and its salts 202-977-0 101-80-4  93 4-Aminoazobenzene 200-453-6 60-09-3  94 4-methyl-m-phenylenediamine (toluene-2,4-diamine) 202-453-1 95-80-7  95 4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]  96 6-methoxy-m-toluidine (p-cresidine) 204-419-1 120-71-8  97 Acetic acid, lead salt, basic 257-175-3 51404-69-4	88	1-bromopropane (n-propyl bromide)	203-445-0	106-94-5
[covering well-defined substances and UVCB substances, polymers and homologues]  91     4,4'-methylenedi-o-toluidine	89	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	421-150-7	143860-04-2
92 4,4'-oxydianiline and its salts  93 4-Aminoazobenzene  94 4-methyl-m-phenylenediamine (toluene-2,4-diamine)  95 4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]  96 6-methoxy-m-toluidine (p-cresidine)  97 Acetic acid, lead salt, basic  202-977-0  101-80-4	90	[covering well-defined substances and UVCB	-	-
93 4-Aminoazobenzene 200-453-6 60-09-3 94 4-methyl-m-phenylenediamine (toluene-2,4-diamine) 202-453-1 95-80-7  95 4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]  96 6-methoxy-m-toluidine (p-cresidine) 204-419-1 120-71-8  97 Acetic acid, lead salt, basic 257-175-3 51404-69-4	91	4,4'-methylenedi-o-toluidine	212-658-8	838-88-0
94 4-methyl-m-phenylenediamine (toluene-2,4-diamine) 202-453-1 95-80-7  95 4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]  96 6-methoxy-m-toluidine (p-cresidine) 204-419-1 120-71-8  97 Acetic acid, lead salt, basic 257-175-3 51404-69-4	92	4,4'-oxydianiline and its salts	202-977-0	101-80-4
95 4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]  96 6-methoxy-m-toluidine (p-cresidine)  97 Acetic acid, lead salt, basic  204-419-1  204-69-4	93	4-Aminoazobenzene	200-453-6	60-09-3
a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]  96 6-methoxy-m-toluidine (p-cresidine)  204-419-1  120-71-8  97 Acetic acid, lead salt, basic  257-175-3  51404-69-4	94	4-methyl-m-phenylenediamine (toluene-2,4-diamine)	202-453-1	95-80-7
97 Acetic acid, lead salt, basic 257-175-3 51404-69-4	95	a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a	-	-
	96	6-methoxy-m-toluidine (p-cresidine)		120-71-8
98 Biphenyl-4-ylamine 202-177-1 92-67-1	97	Acetic acid, lead salt, basic		51404-69-4
	98	Biphenyl-4-ylamine	202-177-1	92-67-1

Rci g'7"qh'; " TGCEJ "UXJ E'EqE"Lwpg'38."4236



99	Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)	214-604-9	1163-19-5
100	Cyclohexane-1,2-dicarboxylic anhydride [1], cis-cyclohexane-1,2-dicarboxylic anhydride [2], trans-cyclohexane-1,2-dicarboxylic anhydride [3] [The individual cis- [2] and trans- [3] isomer substances and all possible combinations of the cis- and trans-isomers [1] are covered by this entry]	201-604-9, 236-086-3, 238-009-9	85-42-7, 13149-00-3, 14166-21-3
101	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	204-650-8	123-77-3
102	Dibutyltin dichloride (DBTC)	211-670-0	683-18-1
103	Diethyl sulphate	200-589-6	64-67-5
104	Diisopentylphthalate	210-088-4	605-50-5
105	Dimethyl sulphate	201-058-1	77-78-1
106	Dinoseb (6-sec-butyl-2,4-dinitrophenol)	201-861-7	88-85-7
107	Dioxobis(stearato)trilead	235-702-8	12578-12-0
108	Fatty acids, C16-18, lead salts	292-966-7	91031-62-8
109	Furan	203-727-3	110-00-9
110	Henicosafluoroundecanoic acid	218-165-4	2058-94-8
111	Heptacosafluorotetradecanoic acid	206-803-4	376-06-7
112	Hexahydromethylphthalic anhydride [1], Hexahydro-4-methylphthalic anhydride [2], Hexahydro-1-methylphthalic anhydride [3], Hexahydro-3-methylphthalic anhydride [4] [The individual isomers [2], [3] and [4] (including their cis- and trans- stereo isomeric forms) and all possible combinations of the isomers [1] are covered by this entry]	247-094-1, 243-072-0, 256-356-4, 260-566-1	25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9
113	Lead bis(tetrafluoroborate)	237-486-0	13814-96-5
114	Lead cyanamidate	244-073-9	20837-86-9
115	Lead dinitrate	233-245-9	10099-74-8
116	Lead monoxide (lead oxide)	215-267-0	1317-36-8
117	Lead oxide sulfate	234-853-7	12036-76-9
118	Lead titanium trioxide	235-038-9	12060-00-3
119	Lead titanium zirconium oxide	235-727-4	12626-81-2
120	Methoxyacetic acid	210-894-6	625-45-6
121	Methyloxirane (Propylene oxide)	200-879-2	75-56-9
122	N,N-dimethylformamide	200-679-5	68-12-2

Rci g'8"qh'; " TGCEJ "UXJ E"EqE"Lwpg'38."4236



123	N-methylacetamide	201-182-6	79-16-3
124	N-pentyl-isopentylphthalate	-	776297-69-9
125	o-aminoazotoluene	202-591-2	97-56-3
126	Orange lead (lead tetroxide)	215-235-6	1314-41-6
127	o-Toluidine	202-429-0	95-53-4
128	Pentacosafluorotridecanoic acid	276-745-2	72629-94-8
129	Pentalead tetraoxide sulphate	235-067-7	12065-90-6
130	Pyrochlore, antimony lead yellow	232-382-1	8012-00-8
131	Silicic acid $(H_2Si_2O_5)$ , barium salt (1:1), lead-doped [with lead (Pb) content above the applicable generic concentration limit for 'toxicity for reproduction' Repr. 1A (CLP) or category 1 (DSD); the substance is a member of the group entry of lead compounds, with index number 082-001-00-6 in Regulation (EC) No 1272/2008]	272-271-5	68784-75-8
132	Silicic acid, lead salt	234-363-3	11120-22-2
133	Sulfurous acid, lead salt, dibasic	263-467-1	62229-08-7
134	Tetraethyllead	201-075-4	78-00-2
135	Tetralead trioxide sulphate	235-380-9	12202-17-4
136	Tricosafluorododecanoic acid	206-203-2	307-55-1
137	Trilead bis(carbonate)dihydroxide	215-290-6	1319-46-6
138	Trilead dioxide phosphonate	235-252-2	12141-20-7
139	Cadmium	231-152-8	7440-43-9
140	Cadmium oxide	215-146-2	1306-19-0
141	Dipentyl phthalate (DPP)	205-017-9	131-18-0
142	4-Nonylphenol, branched and linear, ethoxylated [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering UVCB- and well-defined substances, polymers and homologues, which include any of the individual isomers and/or combinations thereof]	-	-
143	Ammonium pentadecafluorooctanoate (APFO)	223-320-4	3825-26-1
144	Pentadecafluorooctanoic acid (PFOA)	206-397-9	335-67-1
145	Cadmium sulphide	215-147-8	1306-23-6
146	Dihexyl phthalate	201-559-5	84-75-3

Rci g'9"qh'; " TGCEJ "UXJ E"EqE"Lwpg'38."4236



147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	209-358-4	573-58-0
148	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo] -5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)		
		217-710-3	1937-37-7
149	Imidazolidine-2-thione (2-imidazoline-2-thiol)	202-506-9	96-45-7
150	Lead di(acetate)	206-104-4	301-04-2
151	Trixylyl phosphate	246-677-8	25155-23-1
152	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	271-093-5	68515-50-4
153	Cadmium chloride	233-296-7	10108-64-2
154	Sodium perborate; perboric acid, sodium salt	239-172-9 234-390-0	
155	Sodium peroxometaborate	231-556-4	7632-04-4

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Rci g": "qh"; " TGCEJ "UXJ E"EqE"Lwpg"38."4236



### <u>CF: 842CT\ .''CFI 93; DTO\ .'CFC6: 83/5[ T\ .'CFO 435GCTU\ /TGGN</u>

''
CF KRct v'P wo dgt ''

Vj ku''egtvkhecvkqp"f qgu''pqv'o qf kh{ ''qt ''cnxgt 'vj g''vgto u''qh''cp { ''eqpvtcev'qt ''r wtej cug''ci tggo gpv'vj cv''gzknuu'' dgwy ggp''Cpcmi ''F gxkegu. ''Kpe0'cpf ''vj g''r wtej cugt ''qh''uckf ''r ctvu0"'Hwt vj gt. ''Kegtvkh{ ''vj cv''Kco ''cwvj qtkl gf '' vq''o cng''vj g'tgrtgugpvcvkqpu''r tqxkf gf ''kp''vj ku''eqo r nkcpeg''egtvkhkecvkqp''qp''dgj cnh'qh'o { ''eqo r cp{0'

Uki pcw	tg"	۲'	"	"	Fcvg"	< <u>"Ugr vgo dgt"47."4236"</u>
"		"	"	"	"	" "
P co g"		۲'	Octkq"Dglqe"		Rqukkqp"	< YY 'Ohi 'GJ U'Ugevkqp'Ocpci gt"
"		"	"			
Cfftgu	u"	۲_	I cvgy c{'Dwukpguu'Rctm'Lcx	xcngtc.'I	gpgtcn'Vtkc	u.'Ecxkg'6329.'Rj krkrrkpgu''
"						
Ee<""	Uwuc	p'E	Eer wrk'			
"	Fktg	evqt	t ''qh'Gpxktqpo gpvcn'J gcnyj ''cj	of "Uchgy	"	
"	C	, 1				
"						
"						

Rci g"; "qh"; " TGCEJ "UXJ E"EqE"Lvpg"38."4236





**Report No.** RHS01G000801002

Page 1 of 4

SURPASS PRINTED CIRCUIT BOARD **Applicant** 

CHIGANG INDUSTRIAL ZONE HANGANG ROAD NUMBER 669 PU TIAN FU Address

JIAN CHINA

The following sample(s) and sample information was/were submitted and identified by/on the

behalf of the client

Sample Name HASL PCB Part No. SS-DS-MCA

Material FR4

Sample Received Date Jan. 9, 2014

**Testing Period** Jan. 9, 2014 to Jan. 14, 2014

As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), **Test Requested** 

> Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs) in the submitted sample(s).

#### **Test Method**

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321:2008 Ed.1 Sec.10	ICP-OES
Cadmium(Cd)	IEC 62321:2008 Ed.1 Sec.10	ICP-OES
Mercury(Hg)	IEC 62321:2008 Ed.1 Sec.7	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321:2008 Ed.1 Annex C	UV-Vis
Polybrominated Biphenyls(PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
Polybrominated Diphenyl Ethers(PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS

Test Result(s)

Please refer to the following page(s).

Date

Jan. 14, 2014

Danny Liu

Technical Manager

No. 1012204057

national (Shenzhen) Co., Ltd. Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China



# **Test Report**

### **Report No.** RHS01G000801002

Page 2 of 4

### Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium (Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	2 mg/kg

Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		(6)
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg

Tested Item(s)	Result	MDL			
Polybrominated Diphenyl Ethers(PBDEs)					
Monobromodiphenyl ether	N.D.	5 mg/kg			
Dibromodiphenyl ether	N.D.	5 mg/kg			
Tribromodiphenyl ether	N.D.	5 mg/kg			
Tetrabromodiphenyl ether	N.D.	5 mg/kg			
Pentabromodiphenyl ether	N.D.	5 mg/kg			
Hexabromodiphenyl ether	N.D.	5 mg/kg			
Heptabromodiphenyl ether	N.D.	5 mg/kg			
Octabromodiphenyl ether	N.D.	5 mg/kg			
Nonabromodiphenyl ether	N.D.	5 mg/kg			
Decabromodiphenyl ether	N.D.	5 mg/kg			

**Tested Sample/Part Description** PCB(Tested as a whole)

Note:

-The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-The sample(s) was tested as a whole, because it's impossible to disassemble or separate it by current equipment and technology. The result(s) shown on this report may be different from the content of any homogeneous material.

-MDL = Method Detection Limit

-N.D. = Not Detected (< MDL)

-mg/kg = ppm = parts per million





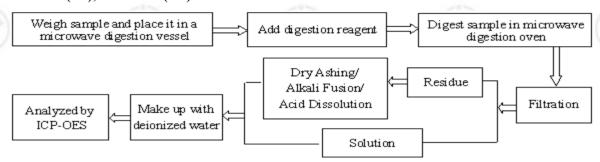
# **Test Report**

Report No. RHS01G000801002

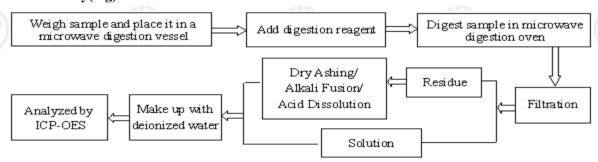
Page 3 of 4

#### **Test Process**

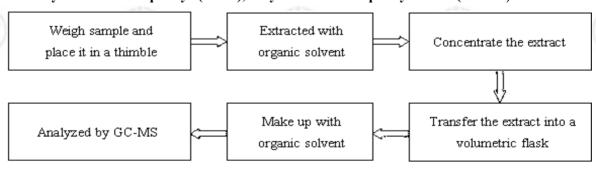
### 1. Lead(Pb), Cadmium(Cd)



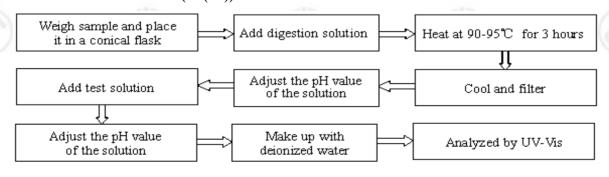
### 2. Mercury(Hg)



### 3. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs)



### 4. Hexavalent Chromium(Cr(VI))





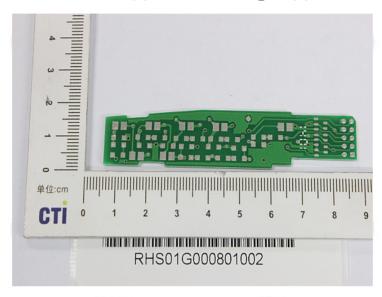


# **Test Report**

**Report No.** RHS01G000801002

Page 4 of 4

Photo(s) of the sample(s)



\*\*\* End of report \*\*\*

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.





## 測試報告

## **Test Report**

號碼(No.): KA/2014/11318 日期(Date): 2014/01/29 頁數(Page): 1 of 12

天二科技股份有限公司

EVER OHMS TECHNOLOGY CO., LTD.

高雄市前鎮區高雄加工出口區南四路3號

NO.3, SOUTH 4TH ROAD, K.E.P.Z. KAOHSIUNG CITY, 80681 TAIWAN R.O.C.

#### 以下測試樣品係由客户送樣,且由客户聲稱並經客户確認如下

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

樣品名稱(Sample Description)

樣品型號(Style/Item No.)

收件日期(Sample Receiving Date)

測試期間(Testing Period)

送樣廠商(Sample Submitted By)

: LEAD FREE THICK FILM CHIP RESISTORS & CHIP ARRAYS

: CR SERIES/CRA SERIES/QR SERIES/QRA SERIES/ST SERIES/STA SERIES

2014/01/23

: 2014/01/23 TO 2014/01/29

: 天二科技股份有限公司 (EVER OHMS TECHNOLOGY CO., LTD.)

\_\_\_\_\_\_\_

測試結果(Test Results)

: 請見下一頁 (Please refer to next pages).

Ray Chang / Asst. Manager Signed for and on behalf or SGS Taiwan Limited

Chemical Laboratory-Kaohsiun

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#### 測試結果(Test Results)

測試部位(PART NAME) NO.1

銀色/黑色/白色 LEAD FREE THICK FILM CHIP RESISTORS & CHIP ARRAYS (SILVER/BLACK/WHITE LEAD FREE THICK FILM CHIP RESISTORS & CHIP ARRAYS)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) NO.1
鎬 / Cadmium (Cd)	mg/kg	参考IEC 62321-5: 2013方法,以感應耦合電 漿原子發射光譜儀檢測. / With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
鉛 / Lead (Pb)	mg/kg	参考IEC 62321-5: 2013方法,以感應耦合電 漿原子發射光譜儀檢測. / With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	176
表 / Mercury (Hg)	mg/kg	參考IEC 62321-4: 2013方法,以感應耦合電 漿原子發射光譜儀檢測. / With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.
六價貉 / Hexavalent Chromium Cr(VI) by alkaline extraction	mg/kg	参考IEC 62321: 2008方法,用UV-VIS檢測. / With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
多溴聯苯總和 / Sum of PBBs			-	n.d.
一溴聯苯 / Monobromobiphenyl			5	n.d.
二溴聯苯 / Dibromobiphenyl			5	n.d.
三溴聯苯 / Tribromobiphenyl			5	n.d.
四溴聯苯 / Tetrabromobiphenyl		參考IEC 62321: 2008方法,以氣相層析儀/	5	n.d.
五溴聯苯 / Pentabromobiphenyl	mg/kg	質譜儀檢測. / With reference to IEC	5	n.d.
六溴聯苯 / Hexabromobiphenyl		62321: 2008 and performed by GC/MS.	5	n.d.
七溴聯苯 / Heptabromobiphenyl			5	n.d.
八溴聯苯 / Octabromobiphenyl			5	n.d.
九溴聯苯 / Nonabromobiphenyl			5	n.d.
十溴聯苯 / Decabromobiphenyl			5	n.d.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) NO.1
多溴聯苯醚總和 / Sum of PBDEs			-	n.d.
一溴聯苯醚 / Monobromodiphenyl ether			5	n.d.
二溴聯苯醚 / Dibromodiphenyl ether			5	n.d.
三溴聯苯醚 / Tribromodiphenyl ether			5	n.d.
四溴聯苯醚 / Tetrabromodiphenyl ether		參考IEC 62321: 2008方法, 以氣相層析儀/	5	n.d.
五溴聯苯醚 / Pentabromodiphenyl ether	mg/kg	質譜儀檢測. / With reference to IEC	5	n.d.
六溴聯苯醚 / Hexabromodiphenyl ether		62321: 2008 and performed by GC/MS.	5	n.d.
七溴聯苯醚 / Heptabromodiphenyl ether			5	n.d.
八溴聯苯醚 / Octabromodiphenyl ether			5	n.d.
九溴聯苯醚 / Nonabromodiphenyl ether			5	n.d.
十溴聯苯醚 / Decabromodiphenyl ether			5	n.d.
绨 / Antimony (Sb)	mg/kg	參考US EPA 3052方法, 用感應藕合電漿原子發射光譜儀檢測錦含量. / With reference to US EPA Method 3052 for Antimony Content. Analysis was performed by ICP-AES.	2	n.d.
紅磷 / Red phosphorus	**	本測試以熱裂解儀分析. / Analysis was performed by Pyrolyzer-GC/MS.	-	Negative
全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS - Acid, Metal Salt, Amide)	mg/kg	参考US EPA 3550C: 2007方法,以液相層析/質譜儀檢測./ With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.
全氟辛酸(銨) / PFOA (CAS No.: 335-67-1)	mg/kg	参考US EPA 3550C: 2007方法,以液相層析/質譜儀檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) NO.1
鹵素 / Halogen				
鹵素 (氣) / Halogen-Fluorine (F) (CAS No.: 14762-94-8)			50	n.d.
鹵素 (氣) / Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)		参考BS EN 14582:2007,以離子層析儀分析.	50	n.d.
鹵素(溴)/ Halogen-Bromine (Br) (CAS No.: 10097-32-2)		/ With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
鹵素(碘)/ Halogen-Iodine (I) (CAS No.: 14362-44-8)			50	n.d.
可塑劑定量分析 / Phthalates				
鄰苯二甲酸甲苯基丁酯 / BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)			0.003	n.d.
鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate)	_		0.003	n.d.
(CAS No.: 84-74-2) 鄰苯二甲酸二 (2-乙基己基)酯 / DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	-		0.003	n.d.
鄰苯二甲酸二異癸酯 / DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0, 68515-49-1)	%	本測試參考EN 14372, 以氣相層析儀/質譜儀 檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.
鄰苯二甲酸二異壬酯 / DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0, 68515-48-0)			0.01	n.d.
鄰苯二甲酸二正辛酯 / DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)			0.003	n.d.
鄰苯二甲酸二異丁酯 / DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)			0.003	n.d.

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## 測試報告

## **Test Report**

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#### 備註(Note):

- 1. mg/kg = ppm ; 0.1wt% = 1000ppm
- 2. n.d. = Not Detected (未檢出)
- 3. MDL = Method Detection Limit (方法偵測極限値)
- 4. "-" = Not Regulated (無規格值)
- 5. \*\*= Qualitative analysis (No Unit) 定性分析(無單位)
- 6. 紅磷定性分析(PRed Phosphorus): Negative = Undetectable 陰性(未偵測到); Positive = Detectable 陽性(已偵測到)
- 7. 紅磷定性分析測試由SGS其他實驗室執行 (The Red Phosphorus test was subcontracted to other SGS Laboratory. )

### PFOS参考資訊(Reference Information): 持久性有機污染物 POPs - (EU) 757/2010

PFOS濃度在物質或製備中不得超過0.001%(10ppm),在半成品、成品或零部件中不得超過0.1%(1000ppm),在紡織品或塗層材料 中不得超過1µg/m<sup>2</sup>。(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above  $1\mu g/m^2$ .)

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## 測試報告

## **Test Report**

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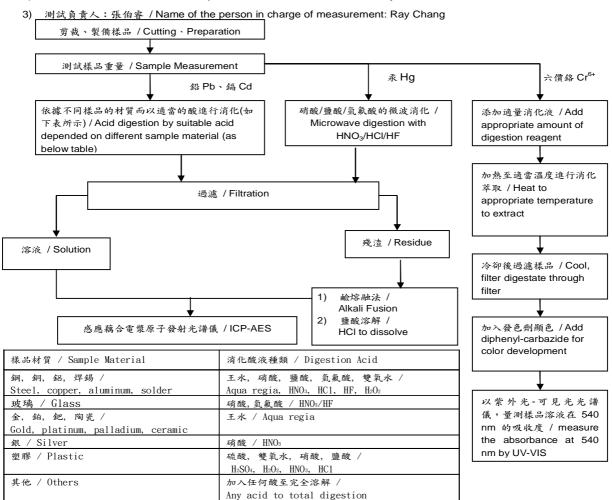
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- 1) 根據以下的流程圖之條件,樣品已完全溶解。( 六價鉻測試方法除外 ) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (  $\operatorname{Cr}^{6+}$  test method excluded )
- 2) 測試人員:劉俊宏 / Name of the person who made measurement: Jony Liu



Note\*\*: (1) 針對非金屬材料加入鹼性消化液,加熱至 90~95℃萃取. / For non-metallic material, add alkaline digestion reagent and heat to 90~95℃.

(2) 針對金屬材料加入純水,加熱至沸騰萃取. / For metallic material, add pure water and heat to boiling.

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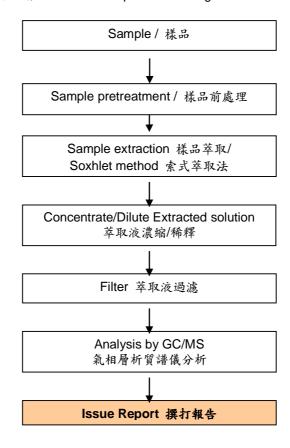
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### 多溴聯苯/多溴聯苯醚 分析流程圖 / PBB/PBDE analytical FLOW CHART

1)測試人員:陳威錚 / Name of the person who made measurement: Dorothy Chen 2)測試負責人: 張伯睿 / Name of the person in charge of measurement: Ray Chang



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## 測試報告

## **Test Report**

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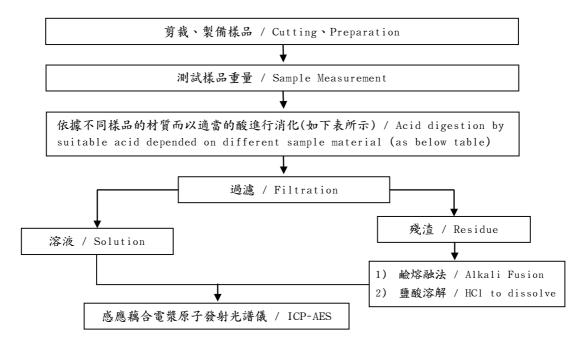
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- 1) 根據以下的流程圖之條件,樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.
- 2) 測試人員:劉俊宏 / Name of the person who made measurement: Jony Liu
- 3) 測試負責人:張伯睿 / Name of the person in charge of measurement: Ray Chang

#### 元素以 ICP-AES 分析的消化流程圖

(Flow Chart of digestion for the elements analysis performed by ICP-AES)



鋼,銅,鋁,焊錫 / Steel, copper, aluminum, solder	王水,硝酸,鹽酸,氫氟酸,雙氧水 /
	Aqua regia, HNO3, HC1, HF, H2O2
玻璃 / Glass	硝酸,氫氟酸 / HNO <sub>3</sub> /HF
金,鉑,鲃,陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO₃
塑膠 / Plastic	硫酸,雙氧水,硝酸,鹽酸 / H2SO4, H2O2, HNO3, HC1
其他 / Others	加入任何酸至完全溶解 / Any acid to total digestion

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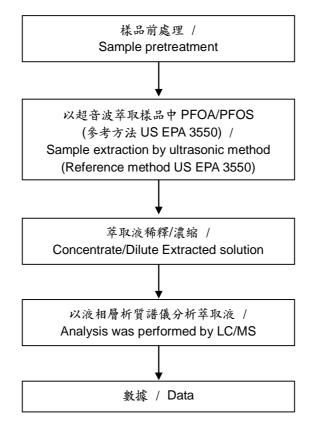
天二科技股份有限公司 EVER OHMS TECHNOLOGY CO., LTD. 高雄市前鎮區高雄加工出口區南四路3號

NO.3, SOUTH 4TH ROAD, K.E.P.Z. KAOHSIUNG CITY, 80681 TAIWAN R.O.C.

## 全氟辛酸(銨)/ 全氟辛烷磺酸分析流程圖 / Analytical flow chart of PFOA/PFOS content

1)測試人員: 黄璟瓔 / Name of the person who made measurement: Ginny Huang

2)測試負責人:張伯睿 / Name of the person in charge of measurement: Ray Chang



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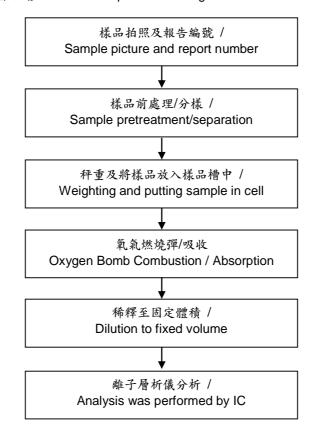
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### 鹵素分析流程圖 / Analytical flow chart of halogen content

- 1) 測試人員:洪秀真/ Name of the person who made measurement: Jean Hung
- 2) 測試負責人: 張伯睿/ Name of the person in charge of measurement: Ray Chang



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號碼(No.): KA/2014/11318 日期(Date): 2014/01/29 頁數(Page): 11 of 12

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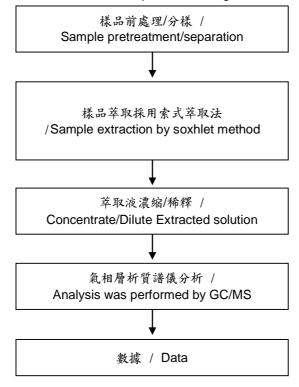
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NO.3, SOUTH 4TH ROAD, K.E.P.Z. KAOHSIUNG CITY, 80681 TAIWAN R.O.C.

### 可塑劑分析流程圖 / Analytical flow chart of phthalate content

1)測試人員:陳威錚 / Name of the person who made measurement: Dorothy Chen

2)測試負責人:張伯睿 / Name of the person in charge of measurement: Ray Chang



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## 測試報告

## **Test Report**

號碼(No.): KA/2014/11318 日期(Date): 2014/01/29 頁數(Page): 12 of 12

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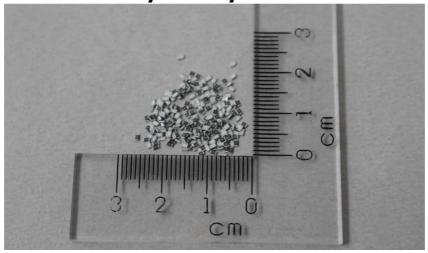
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\* 照片中如有箭頭標示,則表示爲實際檢測之樣品/部位. \*

(The tested sample / part is marked by an arrow if it's shown on the photo.)

## KA/2014/11318



\*\* 報告結尾(End of Report) \*\*

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No. CANEC1316149504

日期: 2013年10月25日

第1页,共7页

天扬精密陶瓷股份有限公司 中国东莞市塘厦镇石鼓管理区布尾大道**147**号

以下测试之样品是由申请者所提供及确认:贴片电容

SGS工作编号: CP13-053920 - SZ

型号: NPO

样品接收日期: 2013年10月21日

测试周期: 2013年10月21日 - 2013年10月25日

测试要求: 根据客户要求测试

测试方法: 请参见下一页测试结果: 请参见下一页

结论: 基于所送样品进行的测试,镉、铅、汞、六价铬、多溴联苯(PBB)、多溴二苯

醚(PBDE)的测试结果符合欧盟RoHS指令2002/95/EC的重订指令2011/65/EU附

录Ⅱ的限值要求。

通标标准技术服务有限公司 授权签名



Alkene\_Liang梁康宁

批准签署人

备注:本报告是编号为CANEC1316149503报告的中文版本。

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**测试报告** No. CANEC1316149504 日期: 2013年10月25日 第2页,共7页

测试结果:

#### 测试样品描述:

样品编号 SGS样品ID 描述

1 CAN13-161495.002 带银色边角的灰色颗粒

备注:

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = 方法检测限

(3) ND = 未检出 ( < MDL )

(4) "-" = 未规定

### RoHS指令2011/65/EU

测试方法: (1)参考IEC 62321-5:2013,用ICP-OES测定镉的含量

(2)参考IEC 62321-5:2013,用ICP-OES测定铅的含量(3)参考IEC 62321-4:2013,用ICP-OES测定汞的含量

(4)参考IEC 62321:2008,用紫外-可见分光光度计比色法测定六价铬的含量

(5)参考IEC 62321:2008,用GC-MS测定PBBs(多溴联苯)和PBDEs(多溴二苯醚)的含量

测试项目	<u>限值</u>	<u>单位</u>	<u>MDL</u>	<u>002</u>
镉 (Cd)	100	mg/kg	2	ND
铅 (Pb)	1,000	mg/kg	2	ND
汞 (Hg)	1,000	mg/kg	2	ND
六价铬(Cr(VI))	1,000	mg/kg	2	ND
多溴联苯之和(PBBs)	1,000	mg/kg	-	ND
一溴联苯	-	mg/kg	5	ND
二溴联苯	-	mg/kg	5	ND
三溴联苯	-	mg/kg	5	ND
四溴联苯	-	mg/kg	5	ND
五溴联苯	-	mg/kg	5	ND
六溴联苯	-	mg/kg	5	ND
七溴联苯	-	mg/kg	5	ND
八溴联苯	-	mg/kg	5	ND
九溴联苯	-	mg/kg	5	ND
十溴联苯	-	mg/kg	5	ND
多溴二苯醚之和(PBDEs)	1,000	mg/kg	-	ND
一溴二苯醚	-	mg/kg	5	ND
二溴二苯醚	-	mg/kg	5	ND

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测试报告	No. CANEC1316149504	日期: 2013年10月25日	第3页,共7页

测试项目	<u>限值</u>	单位	<u>MDL</u>	<u>002</u>
三溴二苯醚	-	mg/kg	5	ND
四溴二苯醚	-	mg/kg	5	ND
五溴二苯醚	-	mg/kg	5	ND
六溴二苯醚	-	mg/kg	5	ND
七溴二苯醚	-	mg/kg	5	ND
八溴二苯醚	-	mg/kg	5	ND
九溴二苯醚	-	mg/kg	5	ND
十溴二苯醚	-	mg/kg	5	ND

### 备注:

(1) 最大允许极限值引用自指令2011/65/EU 附录II.

### 卤素

测试方法: 参照EN 14582:2007方法测定, 采用IC进行分析.

<u>测试项目</u>	<u>单位</u>	<u>MDL</u>	<u>002</u>
氟 (F)	mg/kg	50	ND
氯 (CI)	mg/kg	50	ND
溴 (Br)	mg/kg	50	ND
碘 (I)	mg/kg	50	ND

### 全氟辛烷磺酰基化合物(PFOS)和全氟辛酸(PFOA)

测试方法: 参照US EPA 3550C: 2007 方法测定, 采用HPLC-MS进行分析.

测试项目	<u>单位</u>	<u>MDL</u>	<u>002</u>
全氟辛烷磺酰基化合物 (PFOS)- 酸,金属盐和酰胺	mg/kg	10	ND
全氟辛酸 (PFOA)	mg/kg	10	ND

#### 备注:

参考: (EC) No 850/2004 补充指令 (EU) No 757/2010 的要求:

- (1)第4章(1)(b)款适用于PFOS浓度等于或低于10mg/kg(0.001%重量比)的物质或配制品。
- (2)第4章(1)(b)款适用于PFOS浓度低于0.1%(重量比)的半成品,成品或者它们的部件,以含有PFOS的结构或特殊部件的局部结构计算,对于纺织品和其它涂层的材料,PFOS的量低于1µg/m2。

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日期: 2013年10月25日

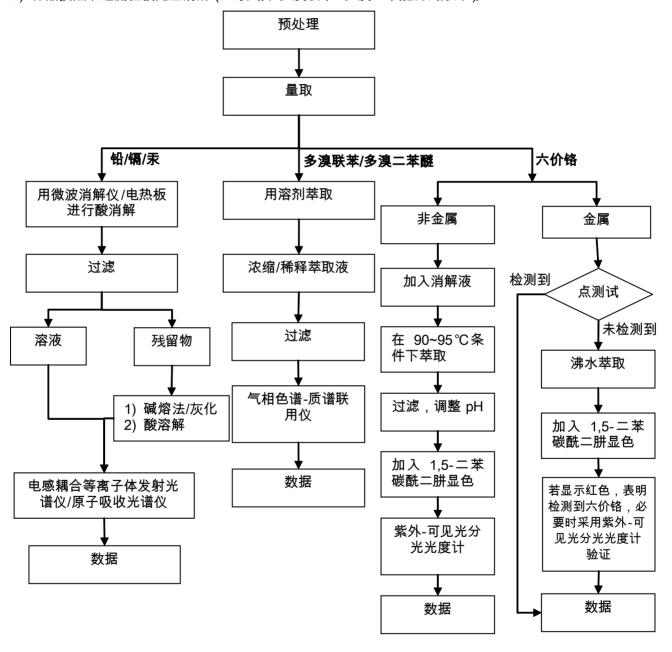
第4页,共7页

### 附件

### RoHS 测试流程图

1) 分析人员:曹阳 / 余晓璐 2) 项目负责人:余奕东 / 魏红

3) 样品按照下述流程被完全消解(六价铬和多溴联苯/多溴二苯醚测试除外)。



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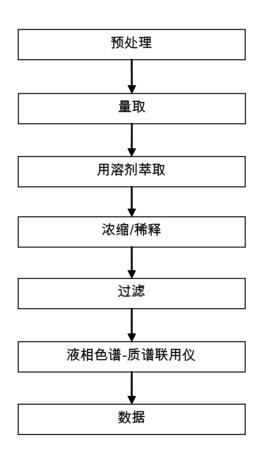
No. CANEC1316149504

日期: 2013年10月25日 第5页,共7页

附件

### PFOA / PFOS 测试流程图

1) 分析人员:赵瑞娜2) 项目负责人:魏红



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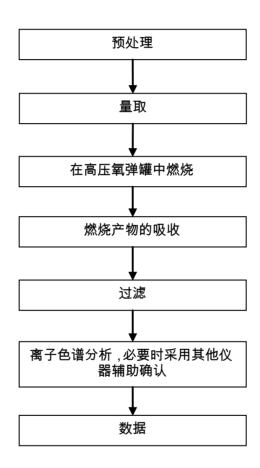
No. CANEC1316149504

日期: 2013年10月25日 第6页,共7页

附件

### Halogen 测试流程图

1) 分析人员:汪丹 2) 项目负责人:余奕东



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日期: 2013年10月25日

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## 測試報告

# **Test Report**

號碼(No.): KA/2013/C1660A-01 日期(Date): 2014/01/07 頁數(Page): 1 of 18

華宏新技股份有限公司

WAH HONG INDUSTRIAL CORP.

高雄市燕巢區鳳雄里鳳旗路330號

330, FENG CHI RD., FENG HSUING TSUN, YEN CHAO DIST, KAOHSIUNG CITY, TAIWAN, R. O. C.

以下測試樣品係由客户送樣,且由客户聲稱並經客户確認如下 (The following samples was/were submitted and identified by/on behalf of the client as):

樣品名稱(Sample Description)

樣品型號(Style/Item No.)

收件日期(Sample Receiving Date)

測試期間(Testing Period)

送樣廠商(Sample Submitted By)

: DAP MOLDING COMPOUND

: WH-9100(SERIES)

: 2013/12/26

: 2013/12/26 TO 2014/01/02

: 華宏新技股份有限公司 (WAH HONG INDUSTRIAL CORP.)

\_\_\_\_\_\_\_

測試結果(Test Results)

: 請見下一頁 (Please refer to next pages).

Ray Chang / Asst. Manager Signed for and on behalf **SGS Taiwan Limited** 

Chemical Laboratory-Kaohsiur

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高雄市燕巢區鳳雄里鳳旗路330號

330, FENG CHI RD., FENG HSUING TSUN, YEN CHAO DIST, KAOHSIUNG CITY, TAIWAN, R. O. C.

### <u>測試結果(Test Results)</u>

測試部位(PART NAME) NO.1

黑色 DAP MOLDING COMPOUND (BLACK DAP MOLDING COMPOUND)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) NO.1
鎬 / Cadmium (Cd)	mg/kg	參考IEC 62321-5: 2013方法,以感應耦合電漿原子發射光譜儀檢測./With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
汞 / Mercury (Hg)	mg/kg	參考IEC 62321-4: 2013方法,以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.
六價鉻 / Hexavalent Chromium Cr(VI) by alkaline extraction	mg/kg	参考IEC 62321: 2008方法,用UV-VIS檢測./ With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
多溴聯苯總和 / Sum of PBBs			-	n.d.
- 溴聯苯 / Monobromobiphenyl			5	n.d.
二溴聯苯 / Dibromobiphenyl	]		5	n.d.
三溴聯苯 / Tribromobiphenyl			5	n.d.
四溴聯苯 / Tetrabromobiphenyl		参考IEC 62321: 2008方法,以氣相層析儀/質	5	n.d.
五溴聯苯 / Pentabromobiphenyl	mg/kg	譜儀檢測. / With reference to IEC 62321:	5	n.d.
六溴聯苯 / Hexabromobiphenyl		2008 and performed by GC/MS.	5	n.d.
七溴聯苯 / Heptabromobiphenyl	_		5	n.d.
八溴聯苯 / Octabromobiphenyl	_		5	n.d.
九溴聯苯 / Nonabromobiphenyl	_		5	n.d.
十溴聯苯 / Decabromobiphenyl			5	n.d.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) NO.1
多溴聯苯醚總和 / Sum of PBDEs         一溴聯苯醚 / Monobromodiphenyl ether         二溴聯苯醚 / Dibromodiphenyl ether         三溴聯苯醚 / Tetrabromodiphenyl ether         五溴聯苯醚 / Pentabromodiphenyl ether         六溴聯苯醚 / Hexabromodiphenyl ether         七溴聯苯醚 / Heptabromodiphenyl ether         八溴聯苯醚 / Octabromodiphenyl ether         九溴聯苯醚 / Nonabromodiphenyl ether	mg/kg	參考IEC 62321: 2008方法,以氣相層析儀/質 譜儀檢測. / With reference to IEC 62321: 2008 and performed by GC/MS.	5 5 5 5 5 5 5 5 5	n.d. n.d. n.d. n.d. n.d. n.d. n.d. n.d.
十溴聯苯醚 / Decabromodiphenyl ether 六溴環十二烷及所有主要被辨别出的異構物 / Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ -HBCDD, $\beta$ -HBCDD, $\gamma$ -HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	mg/kg	參考IEC 62321: 2008方法,以氣相層析/質譜 儀檢測. / With reference to IEC 62321: 2008 method. Analysis was performed by GC/MS.	5 5	n.d.
富馬酸二甲酯 / Dimethyl Fumarate (CAS No.: 624-49-7)	mg/kg	參考US EPA 3550C方法,以氣相層析質譜儀(GC/MS)檢測. / With reference to US EPA 3550C method. Analysis was performed by GC/MS.	0.1	n.d.
全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS - Acid, Metal Salt, Amide)	mg/kg	参考US EPA 3550C: 2007方法,以液相層析/質譜儀檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.
全氟辛酸(銨) / PFOA (CAS No.: 335-67-1)	mg/kg	參考US EPA 3550C: 2007方法,以液相層析/質譜儀檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) NO.1
鹵素(溴)/ Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	參考BS EN 14582:2007, 以離子層析儀分析./ With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
鹵素(氣) / Halogen-Chlorine (C1) (CAS No.: 22537-15-1)	mg/kg	參考BS EN 14582:2007, 以離子層析儀分析. / With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
可塑劑定量分析 / Phthalates				
鄰苯二甲酸甲苯基丁酯 / BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)	%	本測試參考EN 14372, 以氣相層析儀/質譜儀檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	%	本測試參考EN 14372, 以氣相層析儀/質譜儀檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
鄰苯二甲酸二 (2-乙基己基)酯 / DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117- 81-7)	%	本測試參考EN 14372, 以氣相層析儀/質譜儀檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
鄰苯二甲酸二異癸酯 / DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0, 68515-49-1)	%	本測試參考EN 14372, 以氣相層析儀/質譜儀檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.
鄰苯二甲酸二異壬酯 / DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0, 68515-48-0)	%	本測試參考EN 14372, 以氣相層析儀/質譜儀檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.

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鄰苯二甲酸二正辛酯 / DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)	%	本測試參考EN 14372, 以氣相層析儀/質譜儀檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
多苯環芳香族化合物 / Polynuclear Aromatic Hydrocarbons (PAHs)				
菲 / Phenanthrene (CAS No.: 85-01-8)	mg/kg	參考ZLS standard ZEK 01.4-08方法,以氣相層析質譜儀檢測. / With reference to ZLS standard ZEK 01.4-08 method. Analysis was performed by GC/MS.	0.2	n.d.
芘 / Pyrene (CAS No.: 129-00-0)	mg/kg	參考ZLS standard ZEK 01.4-08方法,以氣相層析質譜儀檢測. / With reference to ZLS standard ZEK 01.4-08 method. Analysis was performed by GC/MS.	0.2	n.d.
萘 / Naphthalene (CAS No.: 91-20-3)	mg/kg	參考ZLS standard ZEK 01.4-08方法,以氣相層析質譜儀檢測. / With reference to ZLS standard ZEK 01.4-08 method. Analysis was performed by GC/MS.	0.2	n.d.
茚酮芘 / Indeno[1,2,3-c,d] pyrene (CAS No.: 193-39-5)	mg/kg	参考ZLS standard ZEK 01.4-08方法,以氣相層析質譜儀檢測. / With reference to ZLS standard ZEK 01.4-08 method. Analysis was performed by GC/MS.	0.2	n.d.
芴 / Fluorene (CAS No.: 86-73-7)	mg/kg	参考ZLS standard ZEK 01.4-08方法,以氣相層析質譜儀檢測. / With reference to ZLS standard ZEK 01.4-08 method. Analysis was performed by GC/MS.	0.2	n.d.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) NO.1
苯騈芴 / Fluoranthene (CAS No.: 206-44-0)	mg/kg	參考ZLS standard ZEK 01.4-08方法,以氣相層析質譜儀檢測. / With reference to ZLS standard ZEK 01.4-08 method. Analysis was performed by GC/MS.	0.2	n.d.
二苯騈蒽 / Dibenzo[a,h]anthracene (CAS No.: 53-70-3)	mg/kg	參考ZLS standard ZEK 01.4-08方法,以氣相層析質譜儀檢測. / With reference to ZLS standard ZEK 01.4-08 method. Analysis was performed by GC/MS.	0.2	n.d.
Chrysene (CAS No.: 218-01-9)	mg/kg	參考ZLS standard ZEK 01.4-08方法,以氣相層析質譜儀檢測. / With reference to ZLS standard ZEK 01.4-08 method. Analysis was performed by GC/MS.	0.2	n.d.
苯(k)苯駢芴 / Benzo[k]fluoranthene (CAS No.: 207-08-9)	mg/kg	参考ZLS standard ZEK 01.4-08方法,以氣相層析質譜儀檢測. / With reference to ZLS standard ZEK 01.4-08 method. Analysis was performed by GC/MS.	0.2	n.d.
苯駢菲 / Benzo[g,h,i]perylene (CAS No.: 191-24-2)	mg/kg	参考ZLS standard ZEK 01.4-08方法,以氣相層析質譜儀檢測. / With reference to ZLS standard ZEK 01.4-08 method. Analysis was performed by GC/MS.	0.2	n.d.
苯(b)苯駢芴 / Benzo[b]fluoranthene (CAS No.: 205-99-2)	mg/kg	参考ZLS standard ZEK 01.4-08方法,以氣相層析質譜儀檢測. / With reference to ZLS standard ZEK 01.4-08 method. Analysis was performed by GC/MS.	0.2	n.d.
苯騈(a)芘 / Benzo[a]pyrene (CAS No.: 50-32-8)	mg/kg	參考ZLS standard ZEK 01.4-08方法,以氣相 層析質譜儀檢測. / With reference to ZLS standard ZEK 01.4-08 method. Analysis was performed by GC/MS.	0.2	n.d.

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苯騈蒽 / Benzo[a]anthracene (CAS No.: 56-55-3)	mg/kg	參考ZLS standard ZEK 01.4-08方法,以氣相層析質譜儀檢測. / With reference to ZLS standard ZEK 01.4-08 method. Analysis was performed by GC/MS.	0.2	n.d.
蒽 / Anthracene (CAS No.: 120-12-7)	mg/kg	参考ZLS standard ZEK 01.4-08方法,以氣相層析質譜儀檢測. / With reference to ZLS standard ZEK 01.4-08 method. Analysis was performed by GC/MS.	0.2	n.d.
苊烯 / Acenaphthylene (CAS No.: 208-96-8)	mg/kg	參考ZLS standard ZEK 01.4-08方法,以氣相層析質譜儀檢測. / With reference to ZLS standard ZEK 01.4-08 method. Analysis was performed by GC/MS.	0.2	n.d.
克 / Acenaphthene (CAS No.: 83-32-9)	mg/kg	參考ZLS standard ZEK 01.4-08方法,以氣相層析質譜儀檢測. / With reference to ZLS standard ZEK 01.4-08 method. Analysis was performed by GC/MS.	0.2	n.d.
苯駢(e)芘 / Benzo[e]pyrene (CAS No.: 192-97-2)	mg/kg	參考ZLS standard ZEK 01.4-08方法,以氣相層析質譜儀檢測. / With reference to ZLS standard ZEK 01.4-08 method. Analysis was performed by GC/MS.	0.2	n.d.
苯(j)苯骈芴 / Benzo[j]fluoranthene (CAS No.: 205-82-3)	mg/kg	参考ZLS standard ZEK 01.4-08方法,以氣相層析質譜儀檢測. / With reference to ZLS standard ZEK 01.4-08 method. Analysis was performed by GC/MS.	0.2	n.d.
多苯環芳香族化合物18項總和 / Sum of 18 PAHs	mg/kg	-	-	n.d.

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#### 備註(Note):

- 1. mg/kg = ppm ; 0.1wt% = 1000ppm
- 2. n.d. = Not Detected (未檢出)
- 3. MDL = Method Detection Limit (方法偵測極限值)
- 4. "-" = Not Regulated (無規格值)
- 5. \*\*= Qualitative analysis (No Unit) 定性分析(無單位)
- 6. 聚氯乙烯(PVC):Negative = Undetectable 陰性(未偵測到); Positive = Detectable 陽性(已偵測到)
- 7. 聚氯乙烯測試由SGS其他實驗室執行 (The PVC test was subcontracted to other SGS Laboratory.)
- 8. 此爲2014/01/02所發行KA/2013/C1660之加發報告,原始資料請參考KA/2013/C1660. (This is the additional test report of KA/2013/C1660 which was issued on 2014/01/02. Please refer to KA/2013/C1660 for original information.)

#### PFOS参考資訊(Reference Information): 持久性有機污染物 POPs - (EU) 757/2010

PFOS濃度在物質或製備中不得超過0.001%(10ppm),在半成品、成品或零部件中不得超過0.1%(1000ppm),在紡織品或塗層材料中不得 超過1µg/m<sup>2</sup>。(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above 1µg/m².)

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## 測試報告

### **Test Report**

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#### 

依據ZEK 01.4-08之要求: 產品中最大值為

(Requirement of ZEK 01.4-08: Restraining maximum values for products)

項目 (Parameter)	第1類 (Category 1)	第2類 (Category 2)	第3類 (Category 3)
	意圖放入嘴内的材料或與	可預見與皮膚接觸逾30秒	可預見與皮膚接觸短於30
	36個月以下的幼兒皮膚有	(長期與皮膚接觸), 以及	秒(短期與皮膚接觸),以
	所接觸的玩具.	不屬於第1類的材料.	及不屬於第1類或第2類的
	(Material indented to	(Materials not falling	材料. (Materials not
	be put in the mouth or	under category 1 with	falling under category
	toys for children aged	foreseeable contact to	1 or 2 with
	< 36 months with	skin for longer than	foreseeable contact to
	intended skin	30 seconds (long-term	skin for less than 30
	contact.)	skin contact).)	seconds (short-term
			skin contact).)
苯駢(a)芘 Benzo[a]pyrene (mg/kg)	<mdl (<0.2)**<="" td=""><td>1</td><td>20</td></mdl>	1	20
18項PAH總濃度 (Sum of 18 PAH) (mg/kg)*	<mdl (<0.2)**<="" td=""><td>10</td><td>200</td></mdl>	10	200

#### 注意(Remark):

\* = PAH濃度大於0.2mg/kg時,則須計算PAH總濃度值

(Only PAH substances >0.2 mg/kg are taken into account while calculating the sum of PAHs)

\*\* = 最大濃度值超出等級一的限制,但在等級二的濃度限制值内時,

可能需要確認測試材質是否適用於與食品或與口腔黏膜接觸,

並依照EN 1186 ff. and § 64 LFBG 80.30-1方法,針對特定PAH的遷移

測試進行測試。遷移測試的結論需依照食品規範評估。

(If the limits of category 1 are surpassed but the limits of category 2 still met, the confirmation of suitability of contact with foodstuff or the oral mucosa can be verified by an additional specific migration test of the PAH components according to EN 1186 ff. and § 64 LFBG 80.30-1. The results of the migration test shall be evaluated according to law criteria for foodstuff.)

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### 測試報告

## **Test Report**

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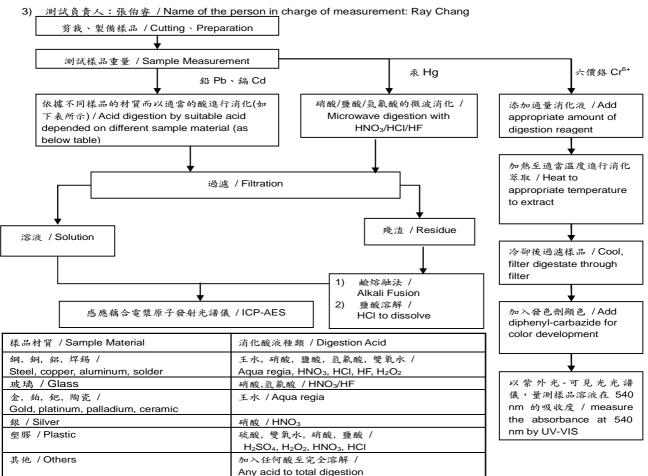
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- 1) 根據以下的流程圖之條件,樣品已完全溶解。( 六價鉻測試方法除外 ) / These samples were dissolved totally by pre-conditioning method according to below flow chart. ( Cr<sup>6+</sup> test method excluded )
- 測試人員:劉俊宏 / Name of the person who made measurement: Jony Liu



Note\*\*: (1) 針對非金屬材料加入鹼性消化液,加熱至 90~95℃萃取. / For non-metallic material, add alkaline digestion reagent and heat to 90~95°C.

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(2) 針對金屬材料加入純水,加熱至沸騰萃取. / For metallic material, add pure water and heat to boiling.

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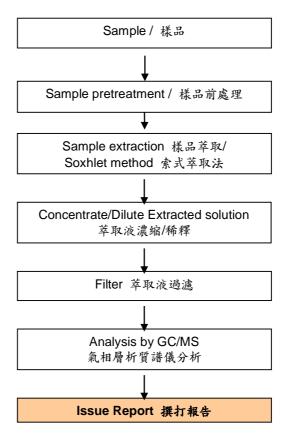
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#### 多溴聯苯/多溴聯苯醚 分析流程圖 / PBB/PBDE analytical FLOW CHART

1)測試人員:陳威錚 / Name of the person who made measurement: Dorothy Chen 2)測試負責人:張伯睿 / Name of the person in charge of measurement: Ray Chang



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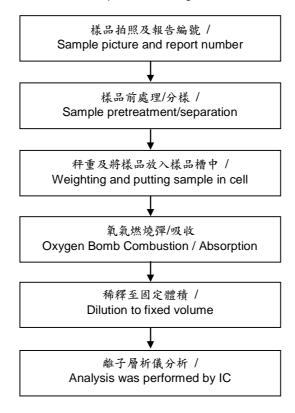
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#### 鹵素分析流程圖 / Analytical flow chart of halogen content

- 1) 測試人員:洪秀真/ Name of the person who made measurement: Jean Hung
- 2) 測試負責人:張伯睿/ Name of the person in charge of measurement: Ray Chang



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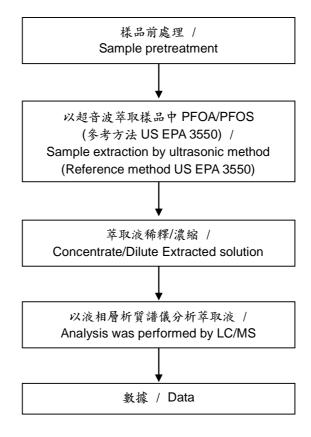
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#### 全氟辛酸(銨)/ 全氟辛烷磺酸分析流程圖 / Analytical flow chart of PFOA/PFOS content

1)測試人員:黄璟瓔 / Name of the person who made measurement: Ginny Huang

2)測試負責人:張伯睿 / Name of the person in charge of measurement: Ray Chang



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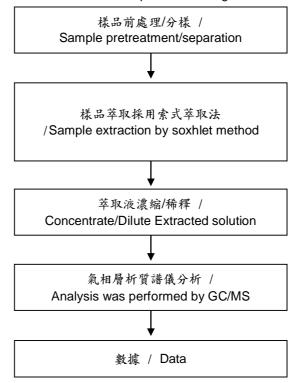
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#### 可塑劑分析流程圖 / Analytical flow chart of phthalate content

1)測試人員:陳威錚 / Name of the person who made measurement: Dorothy Chen

2)測試負責人:張伯睿 / Name of the person in charge of measurement: Ray Chang



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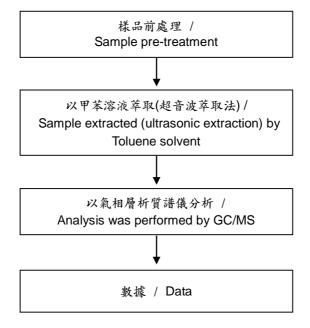
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#### 多苯環芳香族化合物分析流程圖 / PAHs (Poly Aromatic Hydrocarbons) analytical flow chart

1)測試人員: 陳威錚 / Name of the person who made measurement: Dorothy Chen

2)測試負責人:張伯睿 / Name of the person in charge of measurement: Ray Chang



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號碼(No.): KA/2013/C1660A-01 日期(Date): 2014/01/07 頁數(Page): 16 of 18

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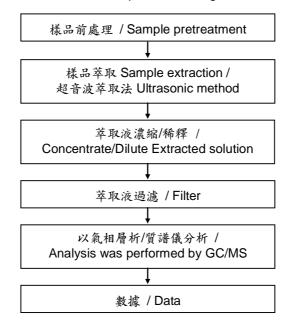
WAH HONG INDUSTRIAL CORP.

高雄市燕巢區鳳雄里鳳旗路330號

330, FENG CHI RD., FENG HSUING TSUN, YEN CHAO DIST, KAOHSIUNG CITY, TAIWAN, R. O. C.

#### 六溴環十二烷分析流程圖 / HBCDD analytical flow chart

- 測試人員:陳威錚/ Name of the person who made measurement: Dorothy Chen
- 測試負責人:張伯睿/ Name of the person in charge of measurement: Ray Chang



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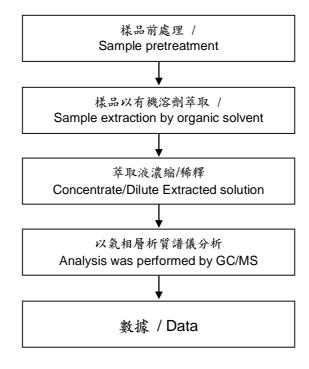
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330, FENG CHI RD., FENG HSUING TSUN, YEN CHAO DIST, KAOHSIUNG CITY, TAIWAN, R. O. C.

#### 富馬酸二甲酯分析流程圖 / **Analytical flow chart of Dimethyl Fumarate content**

- 1) 測試人員: 陳威錚 / Name of the person who made measurement: Dorothy Chen
- 2) 測試負責人:張伯睿 / Name of the person in charge of measurement: Ray Chang



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\* 照片中如有箭頭標示,則表示爲實際檢測之樣品/部位. \*

(The tested sample / part is marked by an arrow if it's shown on the photo.)

KA/2013/C1660



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**Test Report** No. CANEC1320251601 Date: 02 Jan 2014 Page 1 of 10

SHING SHUN MAGNET WIRE (HUIZHOU) CO.,LTD

BUILDING A7,NO.19,JINZHONG ROAD,HUINAN HI-TECH INDUSTRIAL PARK, HUIAO HIGHWAY, HUIZHOU, GUANGDONG,CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as: QPN-N

SGS Job No.: CP13-066278 - SZ

Model No.: Used for UEW/UEW-NY/UEW-T/QPN B、F、H、C (130/155/180/200)

Date of Sample Received: 25 Dec 2013

Testing Period: 25 Dec 2013 - 02 Jan 2014

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: Based on the performed tests on submitted samples, the results of Lead,

Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS

Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of SGS-CSTC Ltd.

Merry Lv

Approved Signatory





No. CANEC1320251601

Date: 02 Jan 2014

Page 2 of 10

Test Results:

#### **Test Part Description:**

Specimen No. SGS Sample ID Description

SN1 CAN13-202516.002 Copper-coloured surfaced metal wire

#### Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected ( < MDL)

(4) "-" = Not Regulated

#### RoHS Directive 2011/65/EU

Test Method: (1)With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.

(2) With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.

(3) With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.

(4) With reference to IEC 62321:2008, determination of Hexavalent Chromium by Colorimetric

Method using UV-Vis.

(5) With reference to IEC 62321:2008, determination of PBBs and PBDEs by GC-MS.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	2	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND





No. CANEC13202516	601	Date: 0	2 Jan 2014	Page 3 of 10
<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>	
-	mg/kg	5	ND	
-	mg/kg	5	ND	
-	mg/kg	5	ND	
-	mg/kg	5	ND	
-	mg/kg	5	ND	
-	mg/kg	5	ND	
-	mg/kg	5	ND	
-	mg/kg	5	ND	
-	mg/kg	5	ND	
	<u>Limit</u>	- mg/kg	Limit         Unit         MDL           -         mg/kg         5           -         mg/kg         5	Limit         Unit         MDL         002           -         mg/kg         5         ND           -         mg/kg         5         ND

#### Notes:

(1) The maximum permissible limit is quoted from directive 2011/65/EU, Annex II

#### **Elementary Analysis**

Test Method: With reference to US EPA Method 3050B:1996, analysis was performed by ICP-OES.

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Antimony (Sb)	mg/kg	10	ND

#### <u>Halogen</u>

Test Method: With reference to EN 14582: 2007, analysis was performed by Ion Chromatograph (IC).

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Fluorine (F)	mg/kg	50	ND
Chlorine (CI)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND
lodine (I)	mg/kg	50	ND

#### Hexabromocyclododecane (HBCDD)

Test Method: Determination of HBCDD by GC-MS based on IEC 62321:2008.





**Test Report** No. CANEC1320251601 Date: 02 Jan 2014 Page 4 of 10

Test Item(s) Unit MDL 002
Hexabromocyclododecane (HBCDD) mg/kg 10 ND

#### Notes:

(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC: Hexabromocyclododecane (HBCDD) is considered as a priority for risk evaluation and substance restriction.

#### **Phthalate**

Test Method: Determination of phthalates by GC-MS based on EN 14372:2004.

Test Item(s)	CAS NO.	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Dibutyl Phthalate (DBP)	84-74-2	%(W/W)	0.003	ND
Benzylbutyl Phthalate (BBP)	85-68-7	%(W/W)	0.003	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	117-81-7	%(W/W)	0.003	ND

#### Notes:

(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC: Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP) and Dibutyl phthalate (DBP) are considered as a priority for risk evaluation and substance restriction.





No. CANEC1320251601

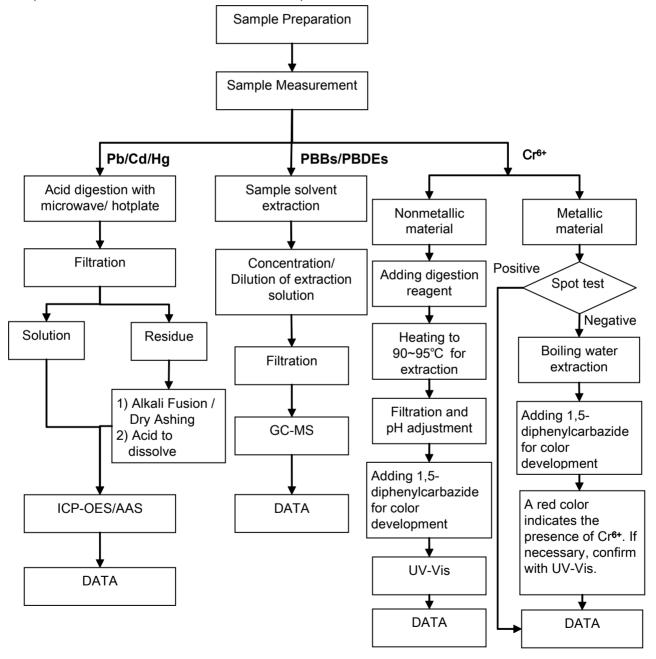
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Date: 02 Jan 2014

#### **ATTACHMENTS**

#### **RoHS Testing Flow Chart**

- 1) Name of the person who made testing: Michael Tso / Cutey Yu
- 2) Name of the person in charge of testing: Adams Yu / Yolanda Wei
- 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).







No. CANEC1320251601

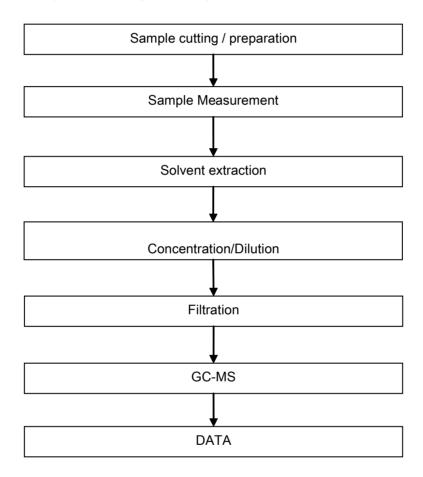
Page 6 of 10

Date: 02 Jan 2014

#### **ATTACHMENTS**

#### **Phthalates Testing Flow Chart**

- 1) Name of the person who made testing: Liu Qiong
- 2) Name of the person in charge of testing: Yolanda Wei







No. CANEC1320251601

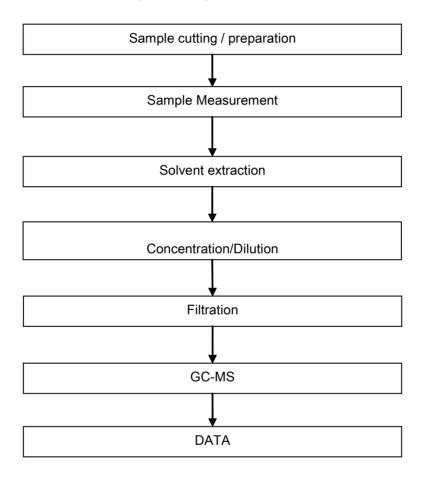
Date: 02 Jan 2014

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#### **ATTACHMENTS**

#### **HBCDD Testing Flow Chart**

- 1) Name of the person who made testing: Cutey Yu
- 2) Name of the person in charge of testing: Yolanda Wei







No. CANEC1320251601

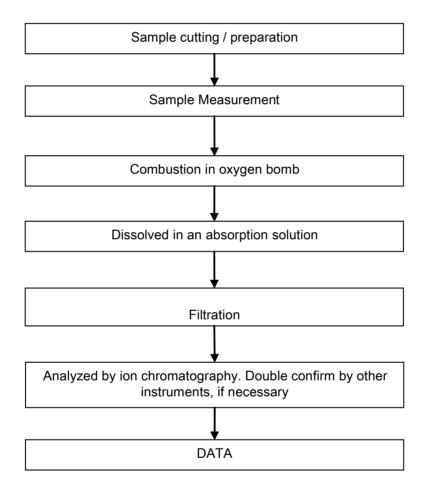
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Date: 02 Jan 2014

#### **ATTACHMENTS**

#### Halogen Testing Flow Chart

- 1) Name of the person who made testing: Bella Wang
- 2) Name of the person in charge of testing: Adams Yu







No. CANEC1320251601

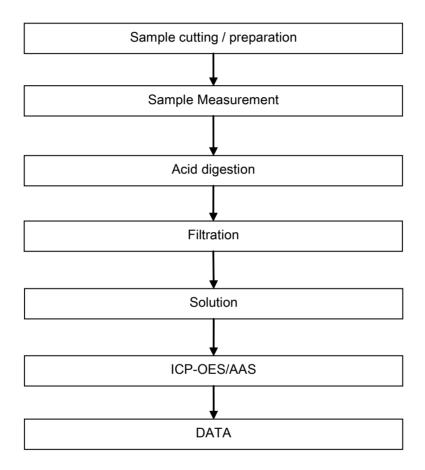
#### Page 9 of 10

Date: 02 Jan 2014

#### **ATTACHMENTS**

#### **Elementary Testing Flow Chart**

- 1) Name of the person who made testing: Bella Wang
- 2) Name of the person in charge of testing: Adams Yu







No. CANEC1320251601

Page 10 of 10

Date: 02 Jan 2014

Sample photo:



SGS authenticate the photo on original report only

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





Test Report No. CKGEC1400086903 Date: 21 Mar 2014 Page 1 of 4

#### ZHIDA PRECISION ELECTRONIC

LUOJIANGXIAN DEYANG CITY OF GOLDPEAKINDUSTRIES FOCUS ON THE DEVELOPMENT OF DISTRICT

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

SGS Job No.: 15163262 - CQ

Model No.: B0042

Client Ref. Info.: B0008; B0001; T0001

Tested Sample Info. : Cusn and coatings

Date of Sample Received: 17 Mar 2014

17 Mar 2014 - 20 Mar 2014 Testing Period:

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: Based on the performed tests on selected part of submitted sample(s), the

results of Cadmium, Lead, Mercury, Hexavalent chromium comply with the limits

as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of SGS-CSTC Ltd.



Tess Lv Approved Signatory



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e sgs.china@sgs.com

f (86-23) 67613247



No. CKGEC1400086903

Page 2 of 4

Date: 21 Mar 2014

Test Results:

#### Test Part Description:

Specimen No. SGS Sample ID Description
SN1 CKG14-000869.004 Silvery metal

#### Remarks:

(1) 1 mg/kg = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected ( < MDL)

(4) "-" = Not Regulated

#### RoHS Directive 2011/65/EU

Test Method: (1) With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.

(2) With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.

(3) With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.

(4) With reference to IEC 62321:2008, determination of Hexavalent Chromium by spot test / Colorimetric Method using UV-Vis.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>004</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	18
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	-	$\Diamond$	Negative

#### Notes:

- (1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II
- (2) 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.

Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.



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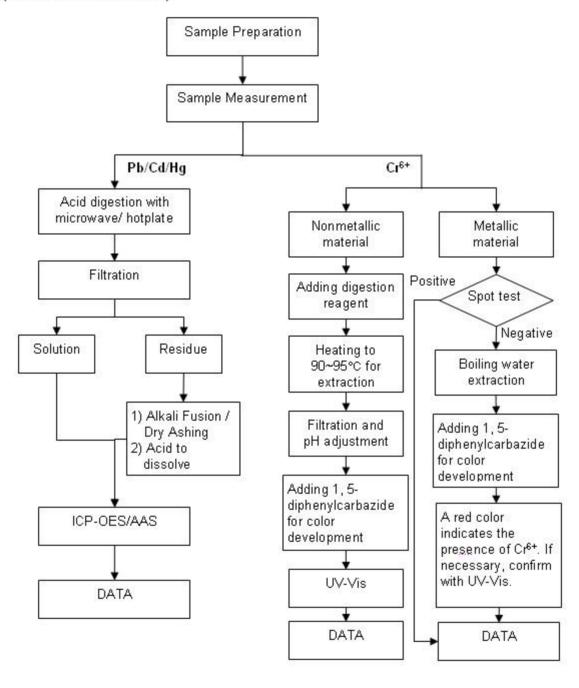
Page 3 of 4

Date: 21 Mar 2014

#### ATTACHMENTS

#### Pb/Cd/Hg/Cr6+ Testing Flow Chart

- 1) Name of the person who made testing: Gavin Hu/Mary Zou
- Name of the person in charge of testing: Lyra Cheng
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr6+ test method excluded)





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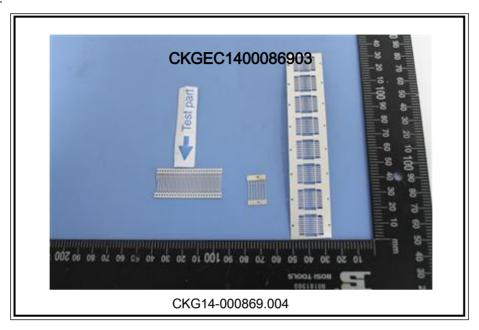


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Date: 21 Mar 2014

Sample photo:



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Test Report No. CANEC1413436802 Date: 19 Aug 2014 Page 1 of 5

XIAMEN EPAN KOKI CO.,LTD

NO 61, WEST FENGSHAN ROAD, DONGFU TOWN, HAICANG DISTRICT, XIAMEN, CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : SN/CU LEAD FREE ENVIRONMENT-FRIENDLY SOLDER WIRE

SGS Job No.: CP14-044543 - GZ

Date of Sample Received: 14 Aug 2014

Testing Period: 14 Aug 2014 - 19 Aug 2014

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: Based on the performed tests on submitted sample(s), the results of Lead,

Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) comply with the limits as set by RoHS

Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of SGS-CSTC Ltd.

Merry Lv

Approved Signatory



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#### **Test Report** No. CANEC1413436802 Date: 19 Aug 2014 Page 2 of 5

Test Results:

#### **Test Part Description:**

Specimen No. SGS Sample ID Description
SN1 CAN14-134368.002 Silvery metal wire

#### Remarks:

(1) 1 mg/kg = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected ( < MDL)

(4) "-" = Not Regulated

#### RoHS Directive 2011/65/EU

Test Method: (1)With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.

(2)With reference to IEC 62321-5:2013, determination of Lead by ICP-OES. (3)With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.

(4)With reference to IEC 62321:2008, determination of Hexavalent Chromium by spot test /

Colorimetric Method using UV-Vis.

(5) With reference to IEC 62321:2008, determination of PBBs and PBDEs by GC-MS.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	33
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	-	$\Diamond$	Negative
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND



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Test Report	No. CANEC14134368	302	Date: 1	9 Aug 2014	Page 3 of 5
Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>	
Dibromodiphenyl ether	-	mg/kg	5	ND	
Tribromodiphenyl ether	-	mg/kg	5	ND	
Tetrabromodiphenyl ether	-	mg/kg	5	ND	
Pentabromodiphenyl ether	-	mg/kg	5	ND	
Hexabromodiphenyl ether	-	mg/kg	5	ND	
Heptabromodiphenyl ether	-	mg/kg	5	ND	
Octabromodiphenyl ether	-	mg/kg	5	ND	
Nonabromodiphenyl ether	-	mg/kg	5	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	

#### Notes:

- (1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II
- (2) 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.

Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.





No. CANEC1413436802

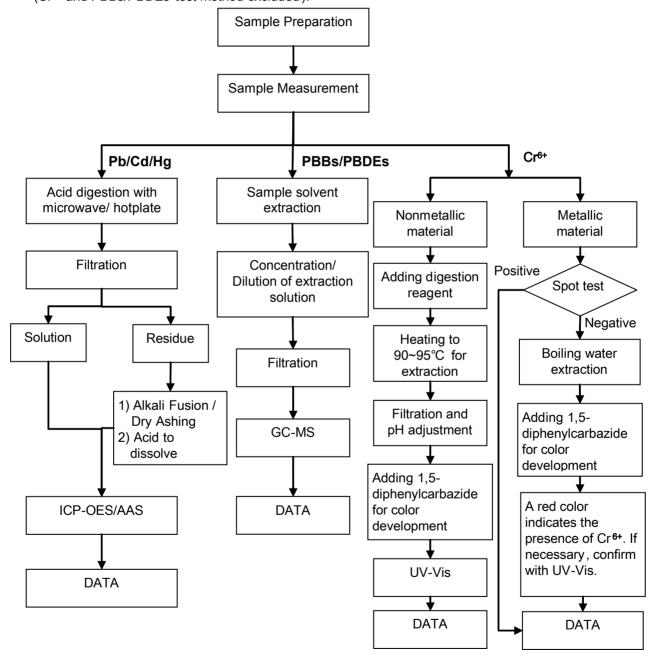
#### Page 4 of 5

Date: 19 Aug 2014

#### **ATTACHMENTS**

#### **RoHS Testing Flow Chart**

- 1) Name of the person who made testing: Bruce Xiao / Sunny Hu
- 2) Name of the person in charge of testing: Bella Wang / Cutey Yu
- 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).





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Date: 19 Aug 2014

Sample photo:



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# 檢測報告

## **Test Report**

報告編號 RHS05G002167001E **Report No.** RHS05G002167001E 第 1 頁 共 9 頁 Page 1 of 9

申請單位 傑地有限公司

Address

ApplicantJASDI CHEMICALS CO., LTD.地址244 新北市林口區八德路 38-1 號

NO.38-1, PA-TEH ROAD, LINKOU DIST., NEW TAIPEI CITY 244, TAIWAN

以下測試之樣品及樣品信息由申請者提供並確認

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

樣品名稱 Sample Name EMBEDDING COMPOUND POTTING AND CONFORMAL COATING

樣品型號 Part No. 471-5LL(HV)AB

樣品顏色 Color 黑,黑,透明 black, Black, Transparent

製造商 Manufacturer ELANTAS PDG, INC. / RIPLEY RESIN

樣品接收日期 2014.01.20 Sample Received Date Jan.20,2014

樣品檢測日期 2014.01.20 – 2014.01.23 Testing Period Jan.20,2014 to Jan.23,2014

檢測要求 根據客戶要求,對所提交樣品中的鉛(Pb), 鎘(Cd), 汞(Hg), 六價鉻

(Cr(VI)), 多溴聯苯(PBBs), 多溴二苯醚(PBDEs), 六溴環十二烷 (HBCDD), 鄰苯二甲酸酯, 氟(F), 氯(Cl), 溴(Br), 碘(I), 全氟辛烷酸

(PFOA),全氟辛烷磺酸(PFOS)進行測試。

**Test Requested** As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg),

Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs), Hexabromocyclododecane (HBCDD), Phthalates, Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I),

Perfluorooctanoic Acid (PFOA), Perfluorooctane Sulfonates(PFOS) in the

submitted sample(s).

檢測依據 Test Method 請參見下頁 Please refer to following pages.

檢測結果 Test Result 請參見下頁 Please refer to following pages.

主

\_\_\_\_\_\_

Tested by

Chen Lijuan

Su Hongwei enior Laboratory Manager 審 核

Reviewed by

日 期

Date

2014.01.23

No. 1102196689

深圳市華測檢測技術股份有限公司上海分公司

上海市浦東新區新金橋路 1996 號

Centre Testing International Co.,Ltd. Shanghai Branch No.1996,New Jinqiao Road, Pudong District,Shanghai,China

Complaint call: 0755-33681700



報告編號 RHS05G002167001E **Report No.** RHS05G002167001E 第 2 頁 共 9 頁 Page 2 of 9

#### 檢測依據 Test Method

測試項目 Tested Item	測試方法 Test Method	測試儀器 Measured Equipment
给(Pb) Lead (Pb)	IEC 62321:2008 Ed.1 Sec.10	ICP-OES
鎘(Cd) Cadmium (Cd)	IEC 62321:2008 Ed.1 Sec.10	ICP-OES
汞(Hg) Mercury (Hg)	IEC 62321:2008 Ed.1 Sec.7	ICP-OES
六價鉻(Cr(VI)) Hexavalent Chromium (Cr(VI))	IEC 62321:2008 Ed.1 Annex C	UV-Vis
多溴聯苯(PBBs) Polybrominated Biphenyls (PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
多溴二苯醚(PBDEs) Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
氟(F) Fluorine(F)	參考 BS EN 14582:2007 Refer to BS EN 14582:2007	IC
氯(Cl) Chlorine Cl)	參考 BS EN 14582:2007 Refer to BS EN 14582:2007	IC
溴(Br) Bromine(Br)	參考 BS EN 14582:2007 Refer to BS EN 14582:2007	IC
碘(I) Iodine(I)	參考 BS EN 14582:2007 Refer to BS EN 14582:2007	IC
全氟辛烷酸(PFOA) Perfluorooctanoic Acid (PFOA)	參考 US EPA 3550C:2007 Refer to US EPA 3550C:2007	LC-MS-MS
全氟辛烷磺酸(PFOS) Perfluorooctane Sulfonates (PFOS)	參考 US EPA 3550C:2007 Refer to US EPA 3550C:2007	LC-MS-MS
六溴環十二烷(HBCDD) Hexabromocyclododecane (HBCDD)	參考 US EPA3550C:2007 Refer to US EPA3550C:2007	GC-MS
鄰苯二甲酸酯 Phthalates	參考 EN 14372:2004(E) Refer to EN 14372:2004(E)	GC-MS













報告編號 RHS05G002167001E **Report No.** RHS05G002167001E 第 3 頁 共 9 頁 Page 3 of 9

#### 檢測結果 Test Result

測試項目 Tested Item	結果 Result	方法檢測限 MDL
鉛 Lead (Pb)	N.D.	2mg/kg
鎘 Cadmium (Cd)	N.D.	2mg/kg
汞 Mercury (Hg)	N.D.	2mg/kg
六價鉻 Hexavalent Chromium (Cr(VI))	N.D.	2mg/kg

測試項目 Tested Item	結果 Result	方法檢測限 MDL
多溴聯苯 Polybrominated Biphenyls(PBBs)		3")
一溴聯苯 Monobromodiphenyl	N.D.	5mg/kg
二溴聯苯 Dibromobiphenyl	N.D.	5mg/kg
三溴聯苯 Tribromobiphenyl	N.D.	5mg/kg
四溴聯苯 Tetrabromobiphenyl	N.D.	5mg/kg
五溴聯苯 Pentabromobiphenyl	N.D.	5mg/kg
六溴聯苯 Hexabromobiphenyl	N.D.	5mg/kg
七溴聯苯 Heptabromobiphenyl	N.D.	5mg/kg
八溴聯苯 Octabromobiphenyl	N.D.	5mg/kg
九溴聯苯 Nonabromobiphenyl	N.D.	5mg/kg
十溴聯苯 Decabromobiphenyl	N.D.	5mg/kg
多溴二苯醚 Polybrominated Diphenyl Ether	rs(PBDEs)	
一溴二苯醚 Monobromodiphenyl ether	N.D.	5mg/kg
二溴二苯醚 Dibromobiphenyl ether	N.D.	5mg/kg
三溴二苯醚 Tribromobiphenyl ether	N.D.	5mg/kg
四溴二苯醚 Tetrabromobiphenyl ether	N.D.	5mg/kg
五溴二苯醚 Pentabromobiphenyl ether	N.D.	5mg/kg
六溴二苯醚 Hexabromobiphenyl ether	N.D.	5mg/kg
七溴二苯醚 Heptabromobiphenyl ether	N.D.	5mg/kg
八溴二苯醚 Octabromobiphenyl ether	N.D.	5mg/kg
九溴二苯醚 Nonabromobiphenyl ether	N.D.	5mg/kg
十溴二苯醚 Decabromobiphenyl ether	N.D.	5mg/kg















報告編號 RHS05G002167001E **Report No.** RHS05G002167001E 第 4 頁 共 9 頁 Page 4 of 9

測試項目 Tested Item(s)	結果 Result	方法檢測限 MDL
鹵素 Halogen		
氟 Fluorine (F)	N.D.	10mg/kg
氯 Chlorine (Cl)	297 mg/kg	10mg/kg
溴 Bromine (Br)	N.D.	10mg/kg
碘 Iodine (I)	N.D.	10mg/kg

測試項目 Tested Item	結果 Result	方法檢測限 MDL
六溴環十二烷(HBCDD)	N.D.	5mg/kg
Hexabromocyclododecane (HBCDD)	N.D.	
全氟辛烷酸(PFOA)	N.D.	5mg/kg
Perfluorooctanoic Acid (PFOA)	N.D.	
全氟辛烷磺酸(PFOS)	N.D.	5mg/kg
Perfluorooctane Sulfonates (PFOS)	N.D.	

測試項目 Tested Item(s)	結果 Result	方法檢測限 MDL
鄰苯二甲酸酯 Phthalates		
鄰苯二甲酸二(2-乙基己基)酯 (DEHP)		
Bis(2-ethyl(hexyl)) phthalate (DEHP)	N.D.	50mg/kg
CAS#:117-81-7		
鄰苯二甲酸二正丁酯(DBP)	(0,)	(0,)
Dibutyl phthalate (DBP)	N.D.	50mg/kg
CAS#:84-74-2		
鄰苯二甲酸丁基苄酯(BBP)		
Benzylbutyl phthalate (BBP)	N.D.	50mg/kg
CAS#:85-68-7		

#### 測試樣品/部位描述 Tested Sample/Part Description

混測,黑色膏體:黑色液體:無色透明液體=1:1:1(質量比)

Mixed test, black paste:black liquid:colorless transparent liquid=1:1:1(by weight)















報告編號 RHS05G002167001E **Report No.** RHS05G002167001E 第 5 頁 共 9 頁 Page 5 of 9

#### 注釋: 對於檢測鉛, 鎘, 汞之樣品已完全溶解。

- -N.D. = 未檢出 (小於方法檢測限).
- -mg/kg=ppm=百萬分之幾.
- -根據客戶要求,對樣品進行混合測試,測試結果不代表混合測試樣品中任何一種單一材質的含量。

#### Note: The sample had been dissolved totally tested for Lead, Cadmium, Mercury.

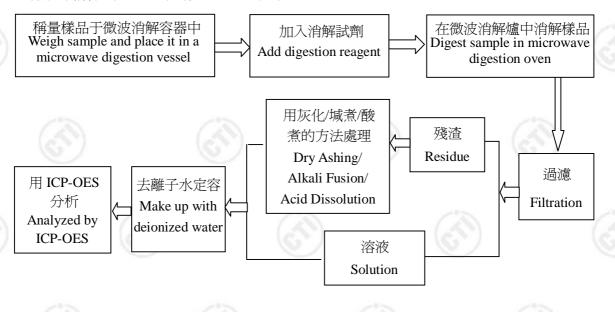
- -MDL = Method Detection Limit
- -N.D. = Not Detected (<MDL)
- -mg/kg= ppm =parts per million.
- -As specified by client, the test was conducted by mixing several samples together. The result(s) shown on this report may be different from the content of any homogeneous material.

#### 備註: 報告編號中"E"表示此報告爲中英文對照版本。

Remark: The end sign of report number E represents the bilingual version.

#### 檢測流程 Test Process

1. 鉛(Pb) ,鎘(Cd) Lead(Pb), Cadmium(Cd)



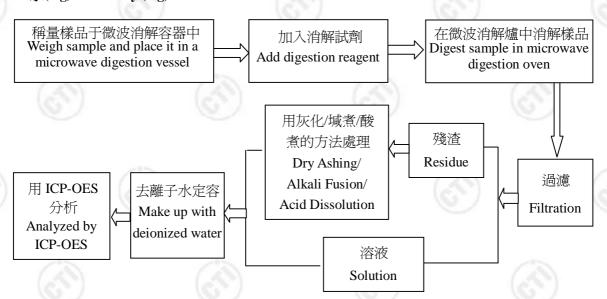


# 檢測報告

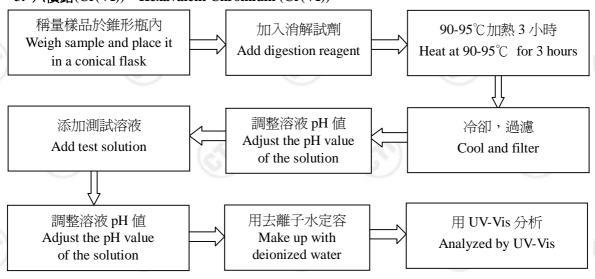
## **Test Report**

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#### 2. 汞(Hg) Mercury (Hg)



#### 3. 六價鉻(Cr(VI)) Hexavalent Chromium (Cr(VI))





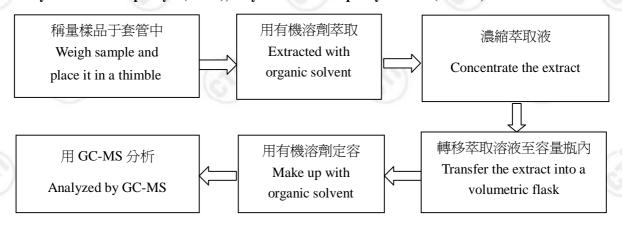


## 檢測報告 **Test Report**

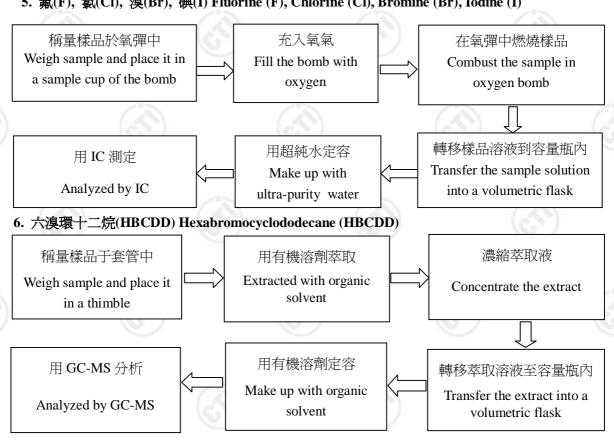
RHS05G002167001E Report No. RHS05G002167001E

#### 4. 多溴聯苯(PBBs),多溴二苯醚(PBDEs)

Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)



#### 5. 氟(F), 氯(Cl), 溴(Br), 碘(I) Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I)





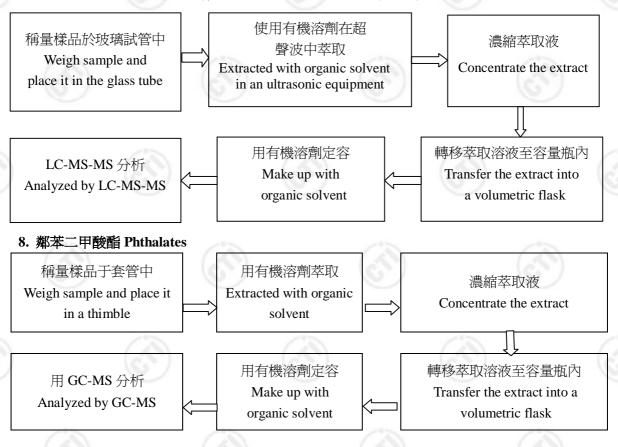


## 檢測報告 Test Report

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#### 7. 全氟辛烷酸(PFOA),全氟辛烷磺酸(PFOS)

Perfluorooctanoic Acid (PFOA), Perfluorooctane Sulfonates (PFOS)





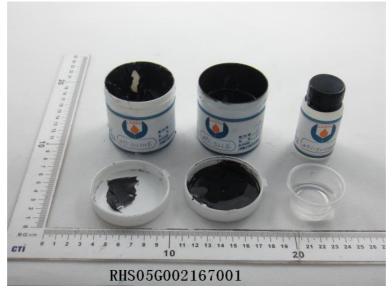




## 檢測報告 Test Report

報告編號 RHS05G002167001E **Report No.** RHS05G002167001E 第 9 頁 共 9 頁 Page 9 of 9

## 樣品圖片 Photo(s) of the sample(s)

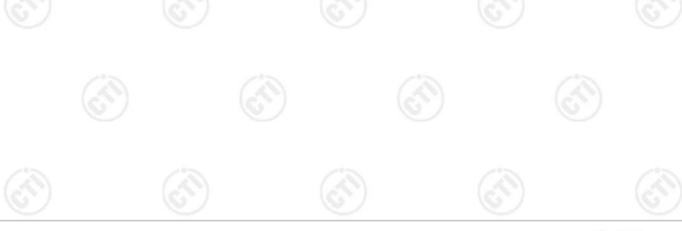


\*\*\* 報告結束 \*\*\*

\*\*\*End of report \*\*\*

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Complaint call: 0755-33681700



Number : TWNC00366439S1

報告號碼

Applicant 申請廠商: Ta-I Technology Co., Ltd.

> No. 26, Lane 470, Nan-Shan Rd., Sec. 2,

Lu-Chu Hsiang, Taoyuan, Taiwan, R.O.C.

Date 日期 : Apr 30, 2014 This is to supersede report No. TWNC00366439 dated Apr 22, 2014

#### Sample Description 樣品敘述:

One (1) group of submitted samples said to be:

以下測試樣品乃供應商所提供及確認:

Sample Description : Thick Flim Chip Resistors(General Purpose)"RM Series",

樣品名稱 Thick Flim Chip Resistor Arrays(Networks)-Convex Type"CN Series "

Thick Flim Chip Resistors Arrays(Networks)-Concave Type"CNC Series",

Thick Film Trimmable Chip Resistors"RT Series",

Low Ohmic Chip Resistors"RL Series"

Style / Item No. : RM01/RM02/RM04/RM06/RM10/RM12/RM13/RM20/RM25;

產品型號 CN12/CN14/CN22/CN24/CN28/CN32/CN34/CN35;

CNC22/CNC24/CNC34;

RT10/RT12 **RL Series** : Apr 10, 2014

Date Sample Received

收件日期

Date Test Started 開始測試日期

: Apr 14, 2014

#### Test Conducted 測試執行:

As requested by the applicant, for details please refer to attached pages.

依申請商之要求,細節請參考附頁.

#### Tested Components 測試元件:

- (1)Black electronic component (RM25)
- (2)Black electronic component (RL25)
- Black electronic component (RT12) (3)
- Black electronic component (CN35) (4)
- (5) Black electronic component (CNC34)

Authorized by:

On Behalf of Intertek Testing Services

Taiwan Limited

K. Y. Liana Director

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Test Conducted 測試執行

Test Result Summary 測試結果:

<u>Test Item</u>	<u>Unit</u>	<u>Test Method</u>	Result 結果	- RL
測試項目	單位	<u>測試方法</u>	(1/2/3/4/5)(#)	<u>KL</u>
Heavy Metal 重金屬				
Cadmium (Cd) Content 鎘含量	ppm	With reference to IEC 62321-5: 2013, by microwave or acid digestion and determined by ICP-OES. 参考 IEC 62321-5: 2013,以微波或酸液消化法消化樣品並用感應耦合電漿原子發射光譜儀分析。	ND	2
Lead (Pb) Content 鉛含量	ppm	With reference to IEC 62321-5: 2013, by microwave or acid digestion and determined by ICP-OES. 参考 IEC 62321-5: 2013,以微波或酸液消化法消化樣品並用感應耦合電漿原子發射光譜儀分析。	824	2
Mercury (Hg) Content 汞含量	ppm	With reference to IEC 62321-4: 2013, by microwave or acid digestion and determined by ICP-OES. 参考 IEC 62321-4: 2013,以微波或酸液消化法消化樣品並用感應耦合電漿原子發射光譜儀分析。	ND	2
Beryllium (Be) Content 鈹含量	ppm	With reference to USEPA 3052, by microwave digestion and determined by ICP-OES. 参考 USEPA 3052,以微波消化法並用感應耦合電漿原子發射光譜儀分析。	ND	2
Antimony (Sb) Content 銻含量	ppm	With reference to USEPA 3052, by microwave digestion and determined by ICP-OES. 参考 USEPA 3052,以微波消化法並用感應耦合電漿原子發射光譜儀分析。	ND	2





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Test Conducted 測試執行

<u>Test Item</u>	<u>Unit</u>	<u>Test Method</u>	Result 結果	DI
測試項目	單位	測試方法	(1/2/3/4/5)(#)	<u>RL</u>
Chromium VI (Cr <sup>6+</sup> ) Content 六價鉻含量	ppm	With reference to IEC 62321: 2008, by alkaline digestion and determined by UV-Vis Spectrophotometer. 参考 IEC 62321:2008,以鹼液消化並用紫外光-可見光分光光度計分析。	ND	1
Polybrominated Biphenyls (PBE	<b>8s)</b> 多溴聯	苯		
Monobrominated Biphenyls (MonoBB) 單溴聯苯	ppm		ND	5
Dibrominated Biphenyls (DiBB) 二溴聯苯	ppm		ND	5
Tribrominated Biphenyls (TriBB) 三溴聯苯	ppm	With reference to IEC 62321: 2008, by solvent extraction and determined by GC-MS and further HPLC-DAD. confirmation when necessary.	ND	5
Tetrabrominated Biphenyls (TetraBB) 四溴聯苯	ppm		ND	5
Pentabrominated Biphenyls (PentaBB) 五溴聯苯	ppm		ND	5
Hexabrominated Biphenyls (HexaBB) 六溴聯苯	ppm	參考 IEC 62321: 2008,以溶劑 萃取並用氣相層析質譜儀分	ND	5
Heptabrominated Biphenyls (HeptaBB) 七溴聯苯	ppm	析,必要時會以高效液相層析 儀光二極體陣列偵測儀進行確 認。	ND	5
Octabrominated Biphenyls (OctaBB) 八溴聯苯	ppm		ND	5
Nonabrominated Biphenyls (NonaBB) 九溴聯苯	ppm		ND	5
Decabrominated Biphenyl (DecaBB) 十溴聯苯	ppm		ND	5



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Test Conducted 測試執行

<u>Test Item</u> 測試項目	<u>Unit</u> 單位	<u>Test Method</u> 測試方法	<u>Result 結果</u> (1/2/3/4/5)(#)	<u>RL</u>
Polybrominated Diphenyl Ether			<u>(1/2/3/1/3)(11)</u>	
Monobrominated Diphenyl Ethers (MonoBDE) 單溴聯苯醚	ppm		ND	5
Dibrominated Diphenyl Ethers (DiBDE) 二溴聯苯醚	ppm		ND	5
Tribrominated Diphenyl Ethers (TriBDE) 三溴聯苯醚	ppm	With reference to IEC 62321:	ND	5
Tetrabrominated Diphenyl Ethers (TetraBDE) 四溴聯苯醚	ppm	2008, by solvent extraction and determined by GC-MS and	ND	5
Pentabrominated Diphenyl Ethers (PentaBDE) 五溴聯苯醚	ppm	further HPLC-DAD. confirmation when necessary.	ND	5
Hexabrominated Diphenyl Ethers (HexaBDE) 六溴聯苯醚	ppm	參考 IEC 62321: 2008,以溶劑萃取並用氣相層析質譜儀分	ND	5
Heptabrominated Diphenyl Ethers (HeptaBDE) 七溴聯苯醚	ppm	析,必要時會以高效液相層析 儀光二極體陣列偵測儀進行確 認。	ND	5
Octabrominated Diphenyl Ethers (OctaBDE) 八溴聯苯醚	ppm		ND	5
Nonabrominated Diphenyl Ethers (NonaBDE) 九溴聯苯醚	ppm		ND	5
Decabrominated Diphenyl Ether (DecaBDE) 十溴聯苯醚	ppm		ND	5
Phthalates 鄰苯二甲酸酯				
Di(2-ethylhexyl) Phthalate (DEHP) 鄰苯二甲酸二(2-乙基己基)酯	ppm		ND	50
Dibutyl Phthalate (DBP) 鄰苯二甲酸二丁酯	ppm		ND	50
Benzyl Butyl Phthalate (BBP) 鄰苯二甲酸苯基丁酯	ppm	With reference to EN 14372: 2004, by solvent extraction	ND	50
Di-(Iso-Nonyl) Phthalate (DINP) 鄰苯二甲酸二異壬酯	ppm	and determined by GC-MS. 参考 EN 14372: 2004,以溶劑	ND	50
Di-(Iso-Decyl) Phthalate (DIDP) 鄰苯二甲酸二異癸酯	ppm	萃取並用氣相層析質譜儀分 析。	ND	50
Di-(N-Octyl) Phthalate (DNOP) 鄰苯二甲酸二辛酯	ppm		ND	50
Diisobutyl Phthalate (DIBP) 鄰苯二甲酸二異丁酯	ppm		ND	50



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Test Conducted 測試執行

<u>Test Item</u>	<u>Unit</u>	<u>Test Method</u>	Result 結果	RL
測試項目	<u>單位</u>	<u>測試方法</u>	(1/2/3/4/5)(#)	<u>KL</u>
Halogen Content 鹵素含量				
Fluorine (F) 氟	ppm	With reference to EN 14582:2007 by combustion	ND	50
Chlorine (CI) 氯	ppm	bomb with oxygen and determined by Ion	ND	50
Bromine (Br) 溴	ppm	Chromatography. 参考 EN 14582:2007,以氧彈	ND	50
Iodine (I) 碘	ppm	燃燒集氣法並用離子層析儀分 析。	ND	50
Others 其他				
Hexabromocyclododecane (HBCDD) 六溴環十二烷	ppm	With reference to USEPA 3540C, by solvent extraction and determined by GC-MS. 参考 USEPA 3540C, 以溶劑萃取並用氣相層析質譜儀分析。	ND	10
Perfluorooctane Sulfonates (PFOS) 全氟辛磺酸	ppm	With reference to CEN/TS 15968:2010, by solvent extraction and determined by LC-MS-MS. 参考 CEN/TS 15968:2010,以 溶劑萃取並用液相層析串聯質 譜儀分析。	ND	1
Perfluorooctanoic Acid (PFOA) 全氟辛酸	ppm	With reference to CEN/TS 15968:2010, by solvent extraction and determined by LC-MS-MS. 参考 CEN/TS 15968:2010,以 溶劑萃取並用液相層析串聯質 譜儀分析。	ND	1



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Test Conducted 測試執行

Test Item	<u>Unit</u>	<u>Test Method</u>	Result 結果	<u>RL</u>
測試項目	單位	測試方法	(1)	
Polyvinyl Chloride (PVC) 聚氯乙烯和聚氯乙烯混合物	NA	By Beilstein's test (Flame Test) and FT-IR analysis. 以火焰法及傅立葉轉換紅外線 光譜儀檢測。	Negative	NA

Remarks: ppm = Parts per million based on weight of tested sample = mg/kg

備註

百萬分之一,依據測試樣品重量計算 = 毫克/公斤

ND = Not detected 未檢測出

RL = Reporting limit, quantitation limit of analyte in sample

報告極限,測試樣品之定量偵測極限

NA = Not applicable 不適用

Negative = A negative test result indicated positive observation was not found at the time of test.

此陰性結果顯示樣品在分析過程中無發現任何陽性現象的存在。

# = Test results were for reference only and might not represent the real content in each component as the composite sampling procedure was according to the special request of client. Please be noted the fewer components are mixed up, the better representation of sampling will get.

依據客戶要求進行混合測試,故本測試結果僅供參考,且該混測結果不一定能代表各分測結果。 請注意混測數量越少,各樣品取樣代表性會越佳。

Responsibility of Chemist 分析人員 : Ryan Lin/ Pelny Hsiao/ Vico Lin

Date Sample Received 樣品收件日期 : Apr 10, 2014

Test Period 樣品測試期間 : Apr 14, 2014 to Apr 18, 2014

#### RoHS Limit RoHS 限值

Restricted Substances 限用物質	<u>Limits 限值</u>
Cadmium (Cd) content 鎘含量	0.01% (100ppm)
Lead (Pb) content 鉛含量	0.1% (1000ppm)
Mercury (Hg) content 汞含量	0.1% (1000ppm)
Chromium VI (Cr <sup>6+</sup> ) content 六價鉻含量	0.1% (1000ppm)
Polybrominated Biphenyls (PBBs) 多溴聯苯	0.1% (1000ppm)
Polybrominated Diphenyl Ethers (PBDEs) 多溴聯苯醚	0.1% (1000ppm)

The limits were quoted from Annex II of 2011/65/EU for homogeneous material.

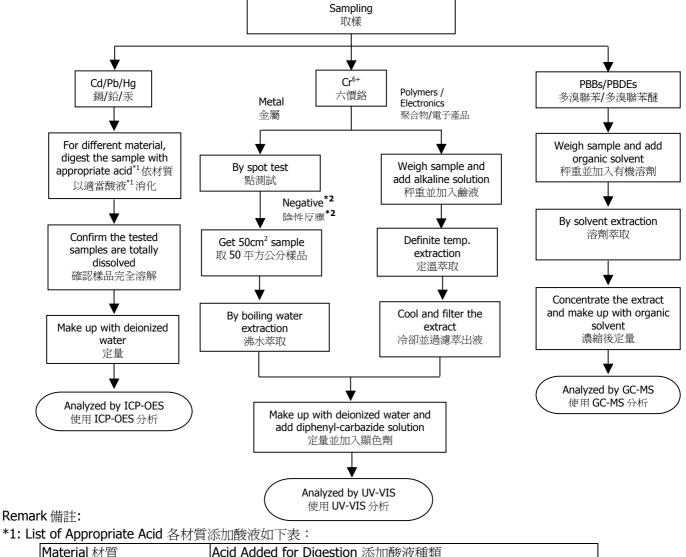
本限值是依據歐盟指令 2011/65/EU 附錄二針對均質材質所訂定。



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Test Conducted 測試執行 Measurement Flowchart 測試流程圖:

Test for Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents RoHS 六項測試 Reference Method 參考方法: Cd/Pb: IEC 62321-5:2013; Hg: IEC 62321-4:2013; Chromium (VI)/PBBs/PBDEs: IEC 62321:2008



Material 材質	Acid Added for Digestion 添加酸液種類
Polymers 聚合物	$HNO_3$ , $HCI$ , $HF$ , $H_2O_2$ , $H_3BO_3$ 硝酸、鹽酸、氫氟酸、雙氧水、硼酸
Metals 金屬	HNO <sub>3,</sub> HCl,HF 硝酸、鹽酸、氫氟酸
Electronics 電子產品	$HNO_{3,}HCl,H_{2}O_{2,}HBF_{4}$ 硝酸、鹽酸、雙氧水、氟硼酸

\*2: If the result of spot test is positive, Chromium VI would be determined as detected.

若點測試的結果爲陽性反應,則直接判定爲測試樣品含有六價鉻。





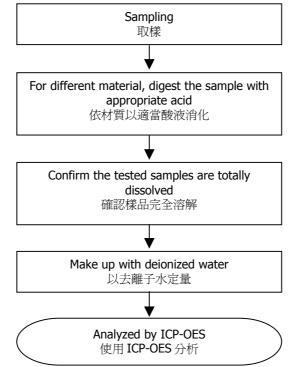
Number : TWNC00366439S1

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Test Conducted 測試執行 Measurement Flowchart 測試流程圖:

Test for Heavy Metal (Be/Sb) Contents 重金屬(鈹/銻)

Reference Method 參考方法: USEPA 3052



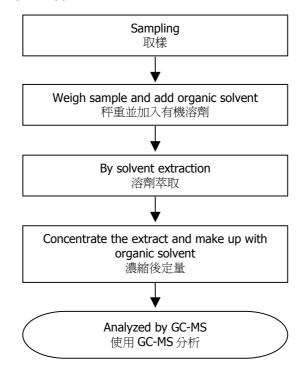


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Test Conducted 測試執行 Measurement Flowchart 測試流程圖:

Test for Phthalates Contents 鄰苯二甲酸酯測試 Reference Method 參考方法: EN 14372: 2004



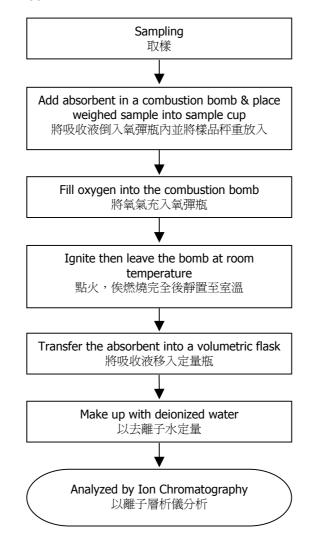


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Test Conducted 測試執行 Measurement Flowchart 測試流程圖:

Test for Halogen Content 鹵素測試 Reference Method 參考方法: EN 14582





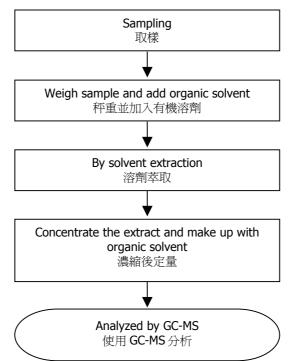
Number : TWNC00366439S1

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Test Conducted 測試執行 Measurement Flowchart 測試流程圖:

Test for Hexabromocyclododecane (HBCDD) 六溴環十二烷測試

Reference Method 參考方法: USEPA 3540C





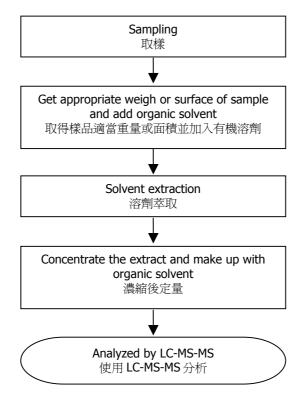
Number

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Test Conducted 測試執行 Measurement Flowchart 測試流程圖:

Test for Perfluorooctane Sulfonates (PFOS) / Perfluorooctanoic Acid (PFOA) Contents 全氟辛磺酸 /全氟辛酸測試 Reference Method 參考方法: CEN/TS 15968:2010





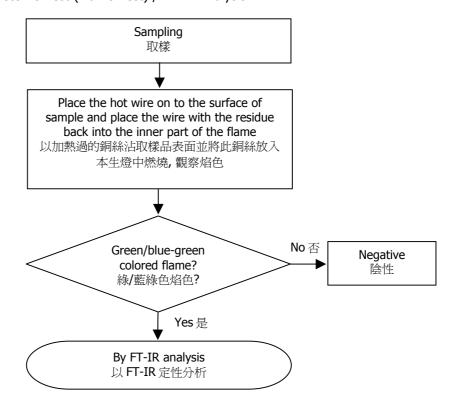
Number

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Test Conducted 測試執行 Measurement Flowchart 測試流程圖:

Test for Polyvinyl Chloride (PVC) 聚氯乙烯測試 Reference Method 參考方法: Beilstein's Test (Flame Test) / FT-IR Analysis





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End of Report

This report is made solely on the basis of your instructions and/or information and materials supplied by you. It is not intended to be a recommendation for any particular course of action. Intertek does not accept a duty of care or any other responsibility to any person other than the Client in respect of this report and only accepts liability to the Client insofar as is expressly contained in the terms and conditions governing Intertek's provision of services to you. Intertek makes no warranties or representations either express or implied with respect to this report save as provided for in those terms and conditions. We have aimed to conduct the Review on a diligent and careful basis and we do not accept any liability to you for any loss arising out of or in connection with this report, in contract, tort, by statute or otherwise, except in the event of our gross negligence or wilful misconduct.



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#### TERMS AND CONDITIONS OF BUSINESS

- Intertek Testing Services Taiwan Ltd. (hereinafter "the Company") agrees to provide its services in accordance with and subject to the terms and conditions herein contained (hereinafter "the Conditions"). The Conditions may only be modified by a variation expressed in writing and signed on behalf of the Company by a director and no other action on the part of the Company or its employees or agents shall be construed as an acceptance of any other terms and conditions
- The Company acts for the person or body from whom the request to provide its services has originated (hereinafter "the Principal"). No other party is entitled to give instructions to the Company unless agreed by the Company.
- All rights (including but not limited to copyright) in any test reports, surveys, certificates of inspection or other material produced by the Company in the course of providing its services shall remain vested in the Company. The Principal shall not reproduce or make copies, publish or disclose the contents of any such material or extracts thereof to any third party without the Company's prior written consent, which may be refused at its discretion. The Principal further undertakes that its 3 servants and agents shall keep confidential and shall not publish or otherwise use any information that may be acquired relating to the Company's activities.
- The Company undertakes to exercise due care and skill in the performance of its services and accepts responsibility only where such skill and care is not 4.1 exercised
  - 4.2 The liability of the Company in respect of any claims for loss, damage or expense of whatsoever nature and howsoever arising in respect of any breach of contract and/or any failure to exercise due skill and care by the Company shall in no circumstances exceed a total aggregate sum equal to ten (10) times the amount of the fee or commission payable in respect of the specific service required under the particular contract with the Company which gives rise to such claims provided however that the Company shall have no liability in respect of any claims for indirect or consequential loss including loss of profit and/or loss of future business and/or loss of production and/or cancellation of contracts entered into by the Principal.
  - The Company shall not in any event be liable for any loss or damage caused by delay in performance or non-performance of any of its services where the same is occasioned by any cause whatsoever that is beyond the Company's control including but not limited to war, civil disturbance, requisitioning, governmental or parliamentary restriction, prohibitions or enactment of any kind, import or export regulations, strike or trade dispute (whether involving its own employees or those of any other person), difficulties in obtaining workmen or materials, breakdown of machinery, fire or accident. Should any such event occur the Company may cancel or suspend any contract for the provision of services without incurring any liability whatsoever
  - 44 The Company will not be liable to the Principal for any loss or damage whatsoever sustained by the Principal as a result of any failure by the Company to comply with any time estimate given by the Company relating to the provision of its services. [See clause 9.1] [See clause 9.2]

    The Principal acknowledges that samples may be damaged or destroyed in the course of testing carried out by the Company or any of the Company's agent
  - 4.5 or subcontractor as part of the necessary testing process and the Company shall not in any event be liable for any loss or damage arising from the damage or destruction of the samples subject to testing.
  - 4 6 In the event that the Principal requests for the return of the samples, the Company shall not be responsible for any re-packaging of the samples prior to such return and the Company shall in no circumstances be liable for any loss or damage caused to any of the samples during or as a result of their shipment to the Principal for the purpose of this Clause 4.6.
- Subject to the Principal's instructions as accepted by the Company, the test reports, surveys, certificates of inspection or other material produced by the 5.1 Company shall contain statements of opinion made with due care within the limitation of the instructions received by the Company. The Company is under no obligation to refer to or report upon any facts or circumstances which are outside the specific instructions received.

  For pre-shipment inspection or survey of goods, the Company's inspector shall perform the inspection or survey when goods are 100% completed, packed
  - 5.2 and marked (unless otherwise agreed between the Company and the Principal). Goods for inspection or survey shall be unpacked in the presence of the Company's inspection and inspection or survey shall, subject to Condition 5.3, take place at the place specified by the Principal.
  - 5.3 If the Company's inspector finds that the location is not suitable for carrying out a proper inspection or survey of goods or where necessary equipment for inspection or survey is not available the inspector may, if practical in the circumstances, draw samples of goods from the location and carry out the inspection or survey at the premises of the Company. The Principal shall be responsible for all costs and expenses incurred in relation thereto.
  - Reports, surveys or certificates issued following testing or analysis of samples contain the Company's specific opinion on those samples only but do not express any opinion upon the bulk from which the samples were drawn. If an opinion on the bulk is requested special arrangements in writing must be made in advance with the Company for the inspection and sampling of the bulk. In no circumstances shall the Company's responsibility extend beyond inspection, testing and reporting upon the samples actually drawn from the bulk and inspected, tested and surveyed by the Company and any inference to be drawn from the results of such inspection or survey or testing shall be entirely in the discretion and at the sole and exclusive responsibility of the Principal.
- The Company shall be entitled at its discretion to delegate the performance of the whole or any part of the services contracted for with the Principal to any agent or 6 subcontractor
- Every officer, employee, agent or subcontractor of the Company shall have the benefit of the limitations of liability and the indemnities contained in the General Conditions. So far as relates to such limitations and indemnities, any contract entered into by the Company is entered into not only on its own behalf but also as agent and trustee for every such person as aforesaid.
- If the requirements of the Principal necessitate the analysis of samples by the Principal or by any third party the Company will pass on the results of the analysis but without responsibility for its accuracy. Where the Company is only able to witness an analysis by the Principal or by any third party the Company will provide confirmation, if such be the case, that a correct sample has been analysed but will not otherwise be responsible for the accuracy of such analysis.
- The Principal will:
  - ensure that instructions to the Company are given in due time and are accompanied by sufficient information to enable the required services to be performed effectively
  - 9.2 accept that documents reflecting arrangements or agreements made between the Principal and any third party, or third party documents such as copies of contracts of sale, letters of credit, bills of lading, etc. are -if received by the Company considered to be for information only, without extending or restricting the services to be provided or obligations accepted by the Company.
  - 9.3 procure all necessary access for the Company's representatives to enable the required services to be performed effectively

  - supply, if required, any special equipment and personnel necessary for the performance of the required services.
    ensure that all necessary measures are taken for safety and security of working conditions, sites and installations during the performance of the required services:





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- take all necessary steps to eliminate or remedy any obstruction to or interruptions in the performance of the required services and repack all inspected goods immediately after any inspection or survey of them;
- inform the Company in advance of any known hazards or dangers, actual or potential, associated with any request for the provision of services by the Company including but not limited to the presence or risk of radiation, toxic or noxious or explosive elements or materials, environmental pollution or poisons;
- 10. The Principal shall guarantee, hold harmless and indemnify the Company and its officers, employees, agents or subcontractors against
  - 10.1 all claims made by any third party for any loss, damage or expense of whatsoever nature and howsoever arising relating to the performance, purported performance or non-performance of any of services to the extent that the aggregate of any such claims relating to any one service exceeds the limit mentioned in Condition 4.2.
  - 10.2 any loss or damage suffered by the Company as a result of the provision of services by the Company to the Principal otherwise than resulting from the Company's own error, negligence or wilful default.
- 11. 11.1 The Principal will punctually pay the Company immediately upon presentation of the relevant invoice or within such other period as may have been agreed in writing by the Company all charges rendered by the Company failing which interest will become due at the rate of 1.5 per cent per month from the date of invoice until payment. The Principal further agrees and undertakes to reimburse the Company all disbursements reasonably incurred in connection with the provision of its services
  - 11.2 The Principal shall not be entitled to retain or defer payment of any sums due to the Company on account of any dispute, cross claim or set off which it may allege against the Company.
  - 11.3 In the event of any suspension of payment arrangement with creditors, bankruptcy, insolvency, receivership or cessation of business or failure of the Principal to pay part or all of any sums owing to the Company, the Company shall be entitled to suspend all further performance of its services and withhold the issue of any test report, survey, certificate of inspection or other material requested forthwith and without liability until payment of all sums owing to the Company together with interest thereon is made
- 12. Without prejudice to any rights the Company may have at law or under the Conditions, the Company has the following rights in the event of non-payment of sums owing to the Company as set out below.
  - 12.1 The Company has a general and particular lien over all samples delivered to be tested for all claims and sums owing by the Principal to the Company under any contract whatsoever and in any other way whatsoever
  - 12.2 During the currency of any such lien the Company is entitled to be paid reasonable storage charges for samples retained in the Company's custody.
  - 12.3 Without prejudice to the Company's lien and other rights under Conditions 12.1 to 12.2 above, if test, inspection or survey of the goods takes place on the premises of the Company, the Company may give notice to the Principal that the goods (or any part thereof) are ready for collection and the Principal shall collect the same within three (3) calendar days (Saturdays, Sundays and Public Holidays excepted). Upon the expiry of this period, if the goods are not collected by the Principal, at the sole discretion of the Company the goods may be deemed abandoned and/or destroyed.
  - 12.4 Without prejudice to Conditions 12.3 above, the Company shall have the discretion to store the goods (or any of them) at their own premises or elsewhere at the Principal's expense if the Principal has deposited the goods at the Company's premises for the performance of these services and has subsequently failed to collect the said goods
  - 12.5 The expenses by way of disbursements that the Company may reclaim from the Principal include all reasonable costs incurred by the Company (whether by way of storage, insurance or otherwise) in respect of the goods and it is expressly declared that it shall be reasonable but not mandatory for the Company to effect comprehensive insurance in respect of the goods.
  - Without prejudice to the Company's lien and other rights under Conditions 12.1 to 12.5 above, the risk and property in the goods shall remain at all times in the Principal
- 13. In the event of the Company being prevented by reason of any cause whatsoever outside the Company's control from performing or completing any service for which an order has been given or an agreement made, the Principal will pay to the Company:
  - 13.1 the amount of all abortive expenditure actually made or incurred; and
  - 13.2 a proportion of the agreed fee or commission equal to the proportion (if any) of the service actually carried out;
  - and the Company shall be relieved of all responsibility whatsoever for the partial or total non-performance of the required service.
- 14. The Company shall be discharged from all liability to the Principal for all claims for loss, damage or expense unless suit is brought within twelve (12) months after the date of the performance by the Company of the service which gives rise to the claim or in the event of any alleged non-performance within twelve (12) months of the date when such service should have been completed.
- 15. In the event that any unforeseen additional time or costs are incurred in the course of carrying out any of its services the Company shall be entitled to render additional charges as shall reasonably reflect such additional time and costs incurred.
- 16. All contracts for provision of services by the Company and the Conditions shall be construed in accordance with and governed by the laws of the ROC and for the purpose of any arbitral or litigation proceedings such contracts shall be deemed to have been made and performed in Taiwan. If any provision contained in the Conditions is and/or becomes invalid, illegal or unenforceable in any respect under the laws of the ROC, the validity, legality and enforceability of the remaining
- provisions hereof shall not in any way be affected or impaired thereby.

  17. Any dispute or claim arising out of or relating to the provision of, or any agreement to provide, services by the Company shall be referred to and determined by arbitration subject to the Company's sole and overriding discretion to commence litigation proceedings in the courts of Taiwan or the courts of any other country as the Company may choose. The parties may agree to the appointment of an arbitrator failing which either party may, after having made a written request to concur in the appointment of an arbitrator, request the ROC Arbitration Association to appoint an arbitrator. The place of arbitration shall be in Taiwan. There shall only be one arbitrator.





Issued Date: 2014.01.14

#### SAMSUNG ELECTRO-MECHANICS CO., LTD.

314Maetan-dong,Yeoungtong-gu Suwon-si,Gyeonggi-do Korea

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

SGS File No. : AYAA14-01204

Product Name : MLCC COG Ni TYPE

Item No./Part No. : N/A

Client Reference Data: CLxxCxxxxxXNxxx

**Received Date** : 2014. 01. 07

Test Period : 2014. 01. 08 to 2014. 01. 14

Test Comments : By the applicant's specific request, the sampling and testing was performed only for the part

indicated in the photo without disassembly.

Report Comments : By the applicant's request, item No.s/part No.s & client reference information are stated/added on

report.

**Test Results**: For further details, please refer to following page(s)

SGS Korea Co., Ltd.

Jeff Jang / Chemical Lab Mgr

Page 1 of 10

The results shown in this test report refer only to the sample(s) submitted by the client, not cover the quality of the whole batch. This report should be used as intended, and shall not be used for advertisement and lawsuit.

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Sample No. : AYAA14-01204.001
Sample Description : MLCC COG Ni TYPE

Item No./Part No. : N/A
Materials : N/A

#### **Heavy Metals**

Test Items	Unit	Test Method	MDL	Results
Cadmium (Cd)	mg/kg	With reference to IEC 62321:2013, ICP	0.5	N.D.
Lead (Pb)	mg/kg	With reference to IEC 62321:2013, ICP	5	N.D.
Mercury (Hg)	mg/kg	With reference to IEC 62321:2013, ICP	2	N.D.
Hexavalent Chromium (Cr VI)	mg/kg	With reference to IEC 62321:2008, UV-VIS	1	N.D.
Antimony (Sb)	mg/kg	With reference to EPA 3052(1996), US EPA 6010B(1996), ICP	10	N.D.
Beryllium (Be)	mg/kg	With reference to EPA 3052(1996), US EPA 6010B(1996), ICP	0.5	N.D.

#### Flame Retardants-PBBs/PBDEs

Test Items	Unit	Test Method	MDL	Results
Monobromobiphenyl	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Dibromobiphenyl	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Tribromobiphenyl	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Tetrabromobiphenyl	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Pentabromobiphenyl	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Hexabromobiphenyl	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Heptabromobiphenyl	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Octabromobiphenyl	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Nonabromobiphenyl	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Decabromobiphenyl	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Monobromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Dibromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Tribromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Tetrabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Pentabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Hexabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Heptabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Octabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Nonabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.
Decabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008, GC-MS	5	N.D.

#### **Phthalates**

Test Items	Unit	Test Method	MDL	Results
Di-(2-ethylhexyl) phthalate (DEHP)	mg/kg	With reference to EPA 8061A , GC/MS	50	N.D.

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Issued Date: 2014. 01. 14

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Sample No. : AYAA14-01204.001
Sample Description : MLCC COG Ni TYPE

Item No./Part No. : N/A
Materials : N/A

#### **Phthalates**

Test Items	Unit	Test Method	MDL	Results
Dibutyl phthalate (DBP)	mg/kg	With reference to EPA 8061A, GC/MS	50	N.D.
Benzyl butyl phthalate (BBP)	mg/kg	With reference to EPA 8061A, GC/MS	50	N.D.
Di-isodecyl phthalate (DIDP)	mg/kg	With reference to EPA 8061A, GC/MS	50	N.D.
Di-isononyl phthalate (DINP)	mg/kg	With reference to EPA 8061A, GC/MS	50	N.D.
Di-n-octyl phthalate (DNOP)	mg/kg	With reference to EPA 8061A, GC/MS	50	N.D.
Di-ethyl phthalate(DEP)	mg/kg	With reference to EPA 8061A, GC/MS	50	N.D.
Di-methyl phthalate (DMP)	mg/kg	With reference to EPA 8061A, GC/MS	50	N.D.
Di-isobutyl phthalate (DIBP)	mg/kg	With reference to EPA 8061A , GC/MS	50	N.D.

#### **Halogen Content**

Test Items	Unit	Test Method	MDL	Results
Bromine(Br)	mg/kg	BS EN 14582:2007 , IC	30	N.D.
Chlorine(Cl)	mg/kg	BS EN 14582:2007 , IC	30	N.D.

#### Flame Retardants

Test Items	Unit	Test Method	MDL	Results
Hexabromocyclododecane (HBCDD)	mg/kg	USEPA 3540C, LC/MS	5	N.D.

#### Other(s)

Test Items	Unit	Test Method	MDL	Results
PFOA (Perfluorooctanoic acid)	mg/kg	US EPA 3540C/3550C, LC/MS	1	N.D.
PFOS (Perfluorooctane Sulfonates-Acid/Metal Salt/Amide)	mg/kg	US EPA 3540C/3550C, LC/MS	1	N.D.

NOTE: (1) N.D. = Not detected.(<MDL)

(2) mg/kg = ppm

(3) MDL = Method Detection Limit

(4) - = No regulation

(5) Negative = Undetectable / Positive = Detectable

(6) \*\* = Qualitative analysis (No Unit)

(7) \* = 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.

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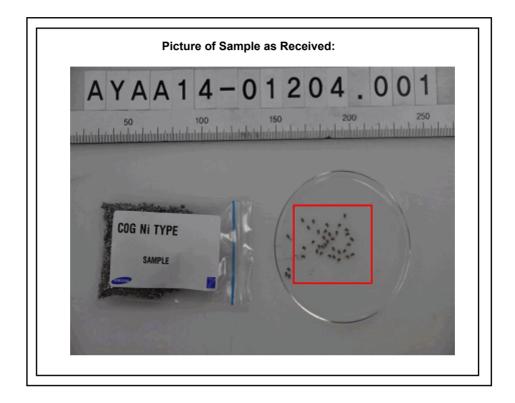
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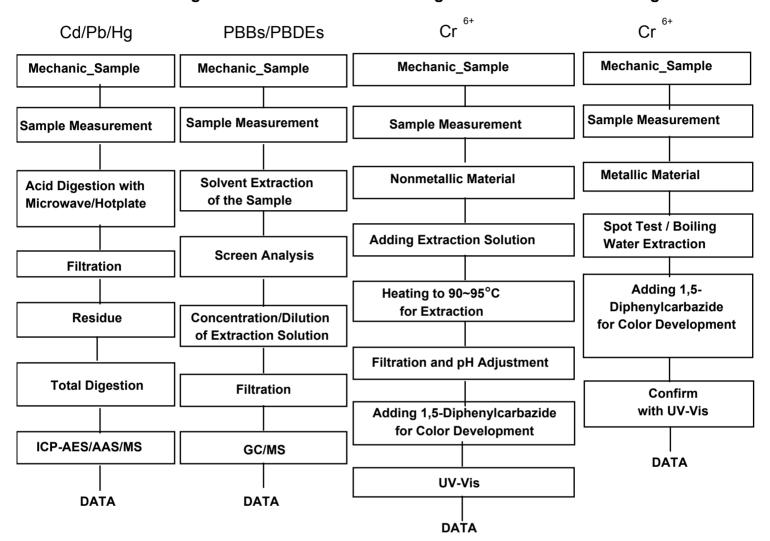




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#### Testing Flow Chart for RoHS:Cd/Pb/Hg/Cr6+ /PBBs&PBDEs Testing

Issued Date: 2014. 01. 14



The samples were dissolved totally by pre-conditioning method according to above flow chart for Cd,Pb,Hg. Section Chief: Gilsae Yi

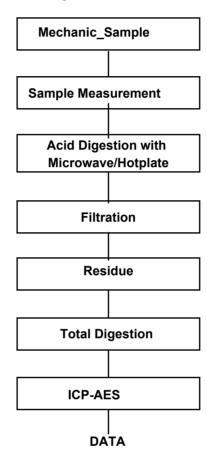
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#### Flow Chart for Inorganic Elements Testing

### Inorganic Elements



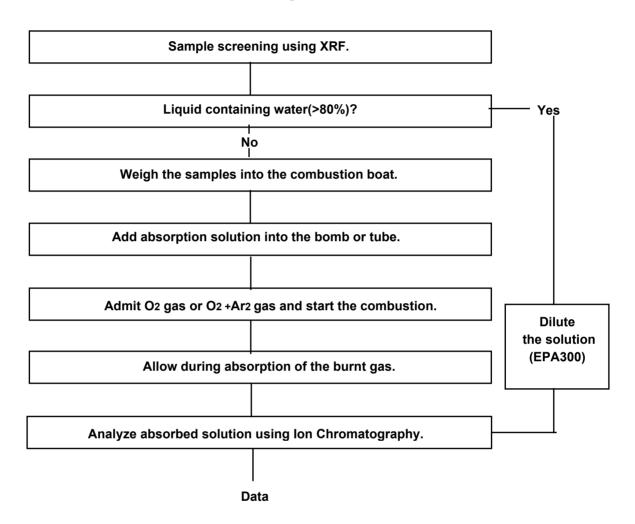
Major Inorganic Antimony(Sb) , Beryllium(Be) , Phosphorus(P) ,
Heavy Metals Arsenic(As) etc.

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#### Flow Chart for Halogen Test



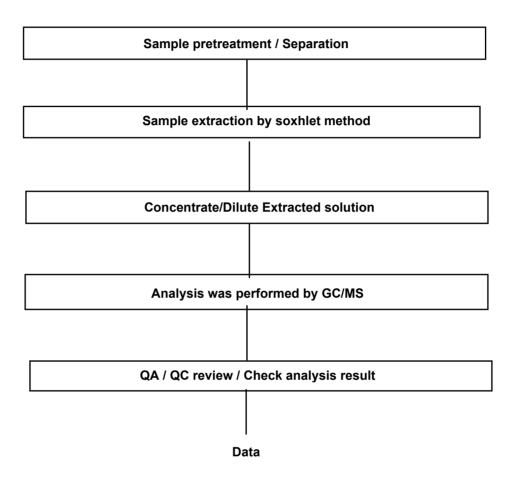
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#### Flow Chart for Phthalate Test

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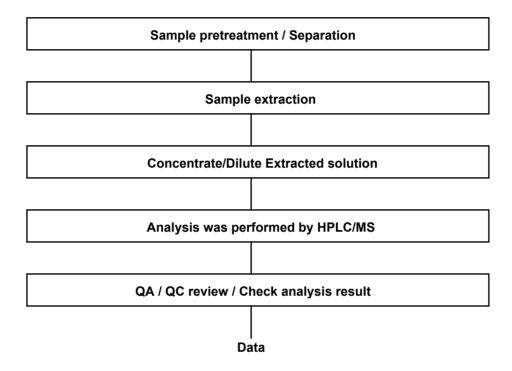
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#### Flow Chart for PFOS/PFOA Test

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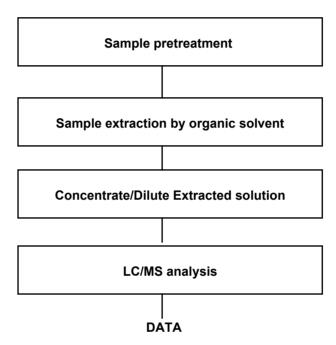




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### **Testing Flow Chart for HBCD**

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

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**Test Report** No. : CE/2014/13460 Date : 2014/01/21 Page: 1 of 7

AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

G& (L?\$>AL>@AC\$G

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

Sample Submitted By : AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH

Sample Description : TAJ SERIES

Style/Item No. : TANTALUM DIVISION

Sample Receiving Date : 2014/01/15

Testing Period : 2014/01/15 TO 2014/01/21

------

Test Requested : (1) As specified by client, to test Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs

contents in the submitted sample.

(2) As specified by client, to test Halogen-Chlorine, Bromine contents in the

submitted sample.

**Test Method** : Please refer to next page(s).

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



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No.: CE/2014/13460 Date: 2014/01/21

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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#### Test Result(s)

PART NAME No.1 : MIXED ALL PARTS

Test Item(s)	Unit	Method	MDL	Result
rest item(s)	Offic	Wethod	WIDL	No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
Sum of PBBs			-	n.d.
Monobromobiphenyl			5	n.d.
Dibromobiphenyl			5	n.d.
Tribromobiphenyl			5	n.d.
Tetrabromobiphenyl		With reference to IEC 62321: 2008 and performed by GC/MS.	5	n.d.
Pentabromobiphenyl			5	n.d.
Hexabromobiphenyl			5	n.d.
Heptabromobiphenyl			5	n.d.
Octabromobiphenyl			5	n.d.
Nonabromobiphenyl			5	n.d.
Decabromobiphenyl	ma/ka		5	n.d.
Sum of PBDEs	mg/kg		-	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.

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No. : CE/2014/13460 Date : 2014/01/21

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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Test Item(s)	Unit	Method	MDL	Result No.1
Halogen-Chlorine (CI) (CAS No.: 22537-15-1)		With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.

#### Note:

1. mg/kg = ppm; 0.1wt% = 1000ppm

2. n.d. = Not Detected

3. MDL = Method Detection Limit

4. " - " = Not Regulated

5. The sample(s) was/were analyzed on behalf of the applicant as mixing sample in one testing. The above result(s) was/were only given as the informality value.



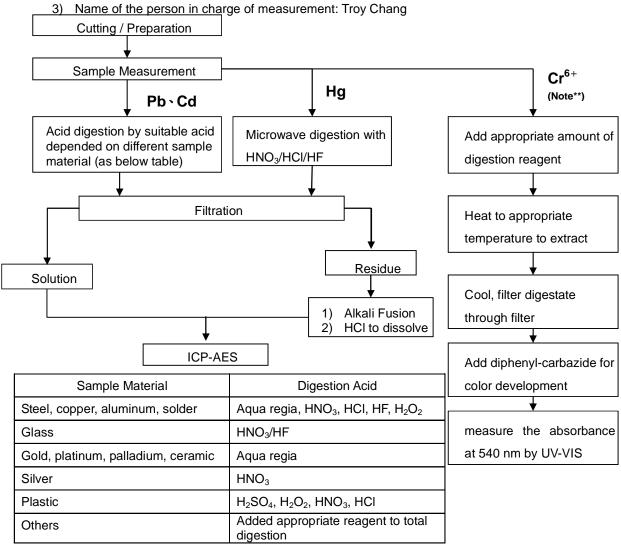
No. : CE/2014/13460 Date : 2014/01/21

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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- 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: Climbgreat Yang



**Note\*\***: (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95°C.

(2) For metallic material, add pure water and heat to boiling.

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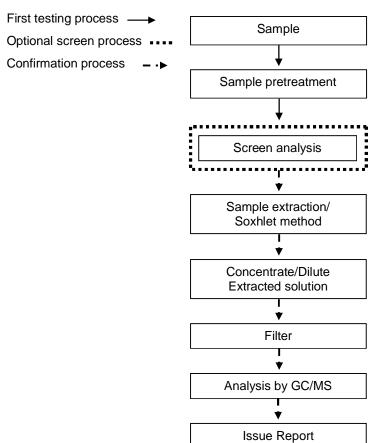
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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#### PBB/PBDE analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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No.: CE/2014/13460 Date: 2014/01/21

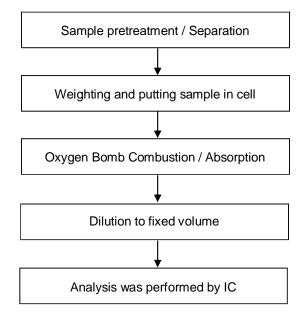
Page: 6 of 7

AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

G&(L?\$>AL>@AC\$G

#### Analytical flow chart of halogen content

- Name of the person who made measurement: Rita Chen
- Name of the person in charge of measurement: Troy Chang



Xlmdnsgyq irdwdwwyihf)9liSsq ter)8yfrigdssaw3(irivessrhmarv%;Wivzmistunxihsziyiej@zermefpisrädiyiwdsvdeggiwwfpisoSxt20({\delta Modzag 3irXivq werhfisrhmarv%;Wivzmistunxihsziyiej@zermefpisrädiyiwdsvdeggiwwfpisoSxt20({\delta Modzag 3irXivq werhfisrhmarv%;Wivzmista Indonessaw3)({\delta Modzag 3irXivq werhfisrhmarv%;Wivzmista Indonessaw3)({



No.: CE/2014/13460

Date: 2014/01/21

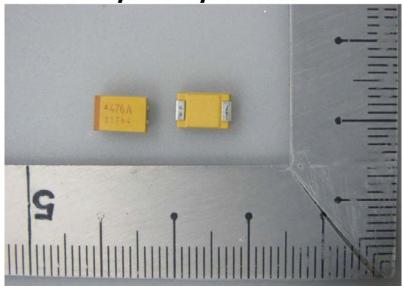
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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\* The tested sample / part is marked by an arrow if it's shown on the photo. \*

CE/2014/13460



\*\* End of Report \*\*



**Test Report** No. : CE/2014/13396 Date : 2014/01/21 Page: 1 of 7

AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

G&(L?\$>AL>@@FCG

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

Sample Submitted By : AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH

Sample Description : TANTALUM POWDER I.
Style/Item No. : TANTALUM DIVISION

Sample Receiving Date : 2014/01/15

Testing Period : 2014/01/15 TO 2014/01/21

Test Requested : (1) As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to

determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the

submitted sample.

(2) As specified by client, to test Halogen-Chlorine, Bromine contents in the

submitted sample.

**Test Method** : Please refer to next page(s).

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



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**Test Report** No. : CE/2014/13396 Date : 2014/01/21 Page: 2 of 7

AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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# Test Result(s)

PART NAME No.1 : BLACK POWDER

Toot Itom(a)	Unit	nit Method	MDL	Result
Test Item(s)	Onit	Metriod	MIDL	No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013	2	n.d.
		and performed by ICP-AES.		
Lead (Pb)	mg/kg	With reference to IEC 62321-5: 2013	2	n.d.
		and performed by ICP-AES.		
Mercury (Hg)	mg/kg	With reference to IEC 62321-4: 2013	2	n.d.
		and performed by ICP-AES.		
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
Sum of PBBs			-	n.d.
Monobromobiphenyl			5	n.d.
Dibromobiphenyl		With reference to IEC 62321: 2008 and performed by GC/MS.	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.
Sum of PBDEs	mg/kg		-	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.



No. : CE/2014/13396 Date : 2014/01/21

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

Test Item(s)	Unit	Method	MDL	Result No.1
Halogen-Chlorine (CI) (CAS No.: 22537-15-1)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.

#### Note:

1. mg/kg = ppm; 0.1wt% = 1000ppm

2. n.d. = Not Detected

3. MDL = Method Detection Limit

4. " - " = Not Regulated



No. : CE/2014/13396 Date : 2014/01/21

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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- 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: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang Cutting / Preparation Sample Measurement Hg (Note\*\*) Pb · Cd Acid digestion by suitable acid Microwave digestion with Add appropriate amount of depended on different sample HNO<sub>3</sub>/HCI/HF digestion reagent material (as below table) Filtration Heat to appropriate temperature to extract Residue Solution Cool, filter digestate Alkali Fusion through filter HCI to dissolve 2) **ICP-AES** Add diphenyl-carbazide for Sample Material **Digestion Acid** color development Aqua regia, HNO<sub>3</sub>, HCI, HF, H<sub>2</sub>O<sub>2</sub> Steel, copper, aluminum, solder measure the absorbance HNO<sub>3</sub>/HF Glass at 540 nm by UV-VIS 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>, HCI Added appropriate reagent to total Others digestion

**Note\*\***: (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95°C.

(2) For metallic material, add pure water and heat to boiling.



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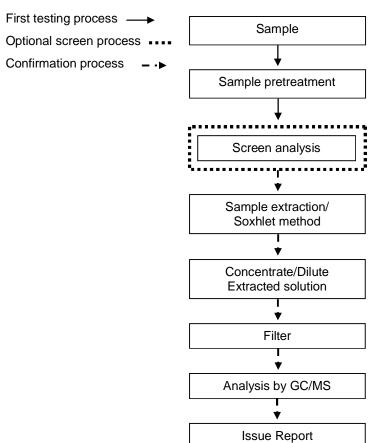
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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# PBB/PBDE analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang





No. : CE/2014/13396

Date: 2014/01/21

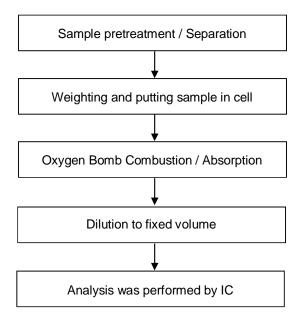
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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## Analytical flow chart of halogen content

- Name of the person who made measurement: Rita Chen
- Name of the person in charge of measurement: Troy Chang





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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

G&(L?\$>AL>@@FCG

\* The tested sample / part is marked by an arrow if it's shown on the photo. \*

CE/2014/13396



\*\* End of Report \*\*

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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

Sample Submitted By : AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH

Sample Description : Ta WIRE

Style/Item No. : TANTALUM DIVISION

Sample Receiving Date : 2014/01/15

Testing Period : 2014/01/15 TO 2014/01/21

Test Requested : (1) As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to

determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the

submitted sample.

(2) As specified by client, to test Halogen-Chlorine, Bromine contents in the

submitted sample.

**Test Method** : Please refer to next page(s).

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



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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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# Test Result(s)

PART NAME No.1 : SILVER COLORED METAL WIRE

Toot Itom(a)	Unit	Method	MDL	Result
Test Item(s)	Unit	wethod	MIDL	No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013	2	n.d.
		and performed by ICP-AES.		
Lead (Pb)	mg/kg	With reference to IEC 62321-5: 2013	2	n.d.
		and performed by ICP-AES.		
Mercury (Hg)	mg/kg	With reference to IEC 62321-4: 2013	2	n.d.
		and performed by ICP-AES.		
Hexavalent Chromium Cr(VI)	**	With reference to IEC 62321: 2008 and	#	Negative
		performed by Boiling water extraction		
		Method.#		
Sum of PBBs			-	n.d.
Monobromobiphenyl		g/kg With reference to IEC 62321: 2008 and performed by GC/MS.	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	ma/ka		5	n.d.
Sum of PBDEs	IIIg/kg		-	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.



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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

G&(L?\$>AL>@BAEG

Test Item(s)	Unit	Method	MDL	Result No.1
Halogen-Chlorine (CI) (CAS No.: 22537-15-1)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Halogen-Bromine (Br) (CAS No.: 10097-32-2)	0 0	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.

#### Note:

1. mg/kg = ppm; 0.1wt% = 1000ppm

2. n.d. = Not Detected

3. MDL = Method Detection Limit

4. " - " = Not Regulated

5. \*\* = Qualitative analysis (No Unit)

6. # = a. Positive means the presence of CrVI on the tested areas

b. Negative means the absence of CrVI on the tested areas

The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm<sup>2</sup> tested areas.



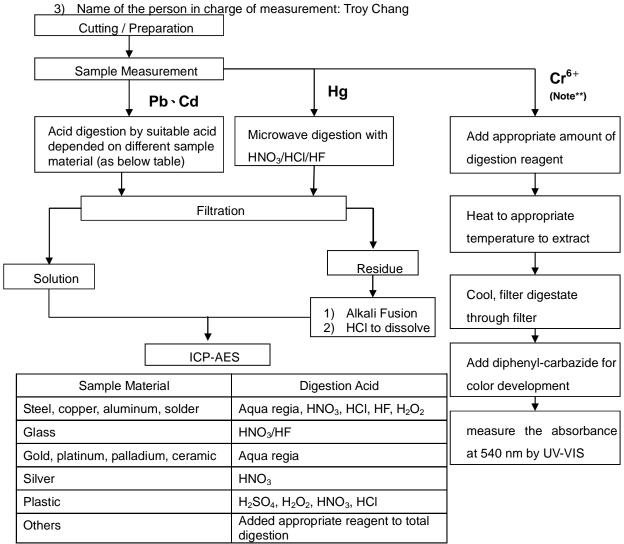
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

G&(L?\$>AL>@BAEG

- 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: Climbgreat Yang



**Note\*\*** : (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95°C.

(2) For metallic material, add pure water and heat to boiling.



No.: CE/2014/13548

Date: 2014/01/21

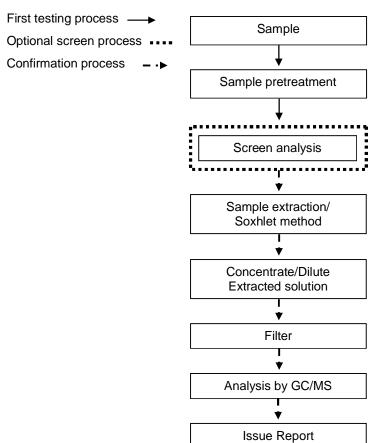
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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# PBB/PBDE analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang





No.: CE/2014/13548 Date: 2014/01/21

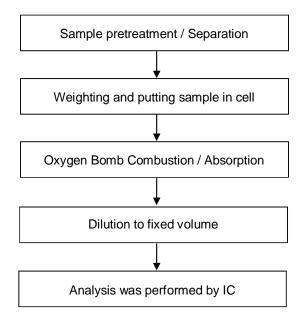
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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## Analytical flow chart of halogen content

- Name of the person who made measurement: Rita Chen
- Name of the person in charge of measurement: Troy Chang





No.: CE/2014/13548

Date: 2014/01/21

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

G&(L?\$>AL>@BAEG

\* The tested sample / part is marked by an arrow if it's shown on the photo. \*

CE/2014/13548



\*\* End of Report \*\*

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**Test Report** No. : CE/2014/13403 Date : 2014/01/21 Page: 1 of 7

AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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

Sample Submitted By : AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH

Sample Description : MANGANESE NITRATE
Style/Item No. : TANTALUM DIVISION

Sample Receiving Date : 2014/01/15

Testing Period : 2014/01/15 TO 2014/01/21

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Test Requested : (1) As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to

determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the

submitted sample.

(2) As specified by client, to test Halogen-Chlorine, Bromine contents in the

submitted sample.

**Test Method** : Please refer to next page(s).

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



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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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# Test Result(s)

PART NAME No.1 : ORANGE LIQUID

Test Item(s)	Unit	Jnit Method	MDL	Result
rest item(s)	Onit	Metriod	MIDL	No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013	2	n.d.
		and performed by ICP-AES.		
Lead (Pb)	mg/kg	With reference to IEC 62321-5: 2013	2	n.d.
		and performed by ICP-AES.		
Mercury (Hg)	mg/kg	With reference to IEC 62321-4: 2013	2	n.d.
		and performed by ICP-AES.		
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
Sum of PBBs			-	n.d.
Monobromobiphenyl	7		5	n.d.
Dibromobiphenyl			5	n.d.
Tribromobiphenyl		With reference to IEC 62321: 2008 and performed by GC/MS.	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.
Sum of PBDEs	mg/kg		-	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.



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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

G&(L?\$>AL>@A\$@G

Test Item(s)	Unit	Method	MDL	Result No.1
Halogen-Chlorine (CI) (CAS No.: 22537-15-1)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.

#### Note:

1. mg/kg = ppm; 0.1wt% = 1000ppm

2. n.d. = Not Detected

3. MDL = Method Detection Limit

4. " - " = Not Regulated



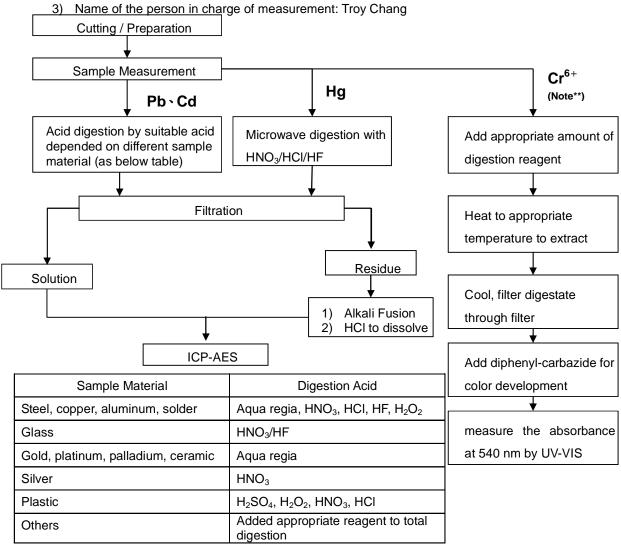
No. : CE/2014/13403 Date : 2014/01/21

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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- 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: Climbgreat Yang



**Note\*\*** : (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95°C.

(2) For metallic material, add pure water and heat to boiling.



No. : CE/2014/13403 Date : 2014/01/21

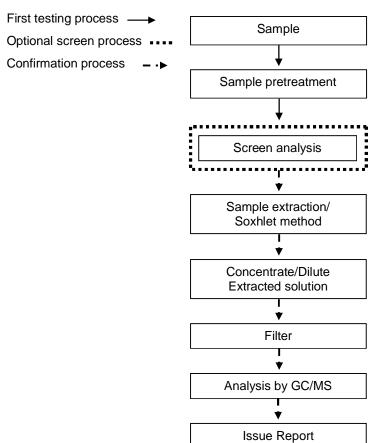
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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# PBB/PBDE analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang





No. : CE/2014/13403 Date : 2014/01/21

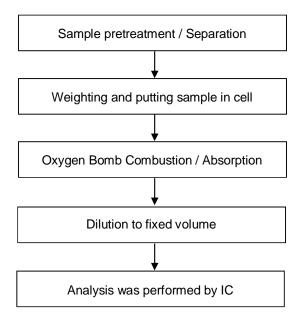
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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## Analytical flow chart of halogen content

- Name of the person who made measurement: Rita Chen
- Name of the person in charge of measurement: Troy Chang





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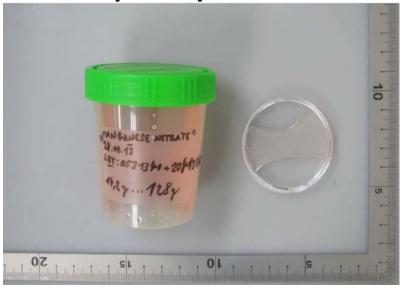
AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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\* The tested sample / part is marked by an arrow if it's shown on the photo. \*

Date: 2014/01/21

CE/2014/13403



\*\* End of Report \*\*

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**Test Report** No. : CE/2014/13413 Date : 2014/01/21 Page: 1 of 7

AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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

Sample Submitted By : AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH

Sample Description : GRAPHITE STD.
Style/Item No. : TANTALUM DIVISION

Sample Receiving Date : 2014/01/15

Testing Period : 2014/01/15 TO 2014/01/21

\_\_\_\_\_\_

Test Requested : (1) As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to

determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the

submitted sample.

(2) As specified by client, to test Halogen-Chlorine, Bromine contents in the

submitted sample.

**Test Method** : Please refer to next page(s).

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



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No. : CE/2014/13413 Date : 2014/01/21

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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## Test Result(s)

PART NAME No.1 : BLACK PASTE

Test Item(s)	Unit	Unit Method	MDL	Result
rest item(s)	Unit	Wethod	MIDL	No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
Sum of PBBs			-	n.d.
Monobromobiphenyl		l	5	n.d.
Dibromobiphenyl		l	5	n.d.
Tribromobiphenyl		With reference to IEC 62321: 2008 and performed by GC/MS.	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.
Sum of PBDEs	mg/kg		-	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.



No. : CE/2014/13413 Date : 2014/01/21

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

Test Item(s)	Unit	Method	MDL	Result
rest item(s)	Onit	Wethod		No.1
Halogen-Chlorine (CI) (CAS No.: 22537-15-1)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	168
Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.

#### Note:

1. mg/kg = ppm; 0.1wt% = 1000ppm

2. n.d. = Not Detected

3. MDL = Method Detection Limit

4. " - " = Not Regulated



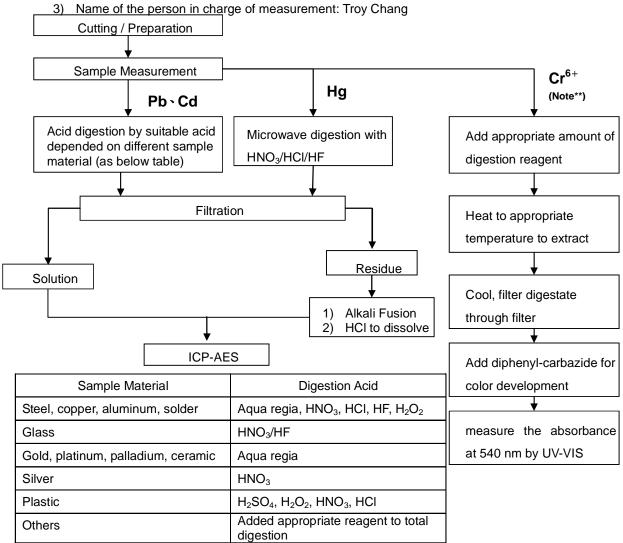
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

- 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: Climbgreat Yang



**Note\*\*** : (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95°C.

(2) For metallic material, add pure water and heat to boiling.



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Date: 2014/01/21

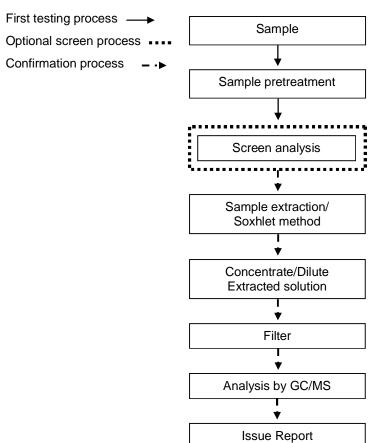
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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# PBB/PBDE analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang





No.: CE/2014/13413 Date: 2014/01/21

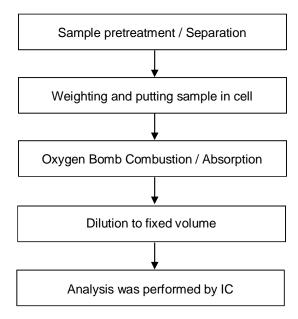
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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## Analytical flow chart of halogen content

- Name of the person who made measurement: Rita Chen
- Name of the person in charge of measurement: Troy Chang





No.: CE/2014/13413

Date: 2014/01/21

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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\* The tested sample / part is marked by an arrow if it's shown on the photo. \*

CE/2014/13413



\*\* End of Report \*\*

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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

Sample Submitted By : AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH

Sample Description : SILICONE

Style/Item No. : TANTALUM DIVISION

Sample Receiving Date : 2014/01/15

Testing Period : 2014/01/15 TO 2014/01/21

Test Requested : (1) As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to

determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the

submitted sample.

(2) As specified by client, to test Halogen-Chlorine, Bromine contents in the

submitted sample.

**Test Method** : Please refer to next page(s).

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



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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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# Test Result(s)

PART NAME No.1 : TRANSPARENT LIQUID

Toot Itom(a)	Unit	nit Method	MDL	Result
Test Item(s)	Onit	Metriod	MIDL	No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013	2	n.d.
		and performed by ICP-AES.		
Lead (Pb)	mg/kg	With reference to IEC 62321-5: 2013	2	n.d.
		and performed by ICP-AES.		
Mercury (Hg)	mg/kg	With reference to IEC 62321-4: 2013	2	n.d.
		and performed by ICP-AES.		
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
Sum of PBBs			-	n.d.
Monobromobiphenyl			5	n.d.
Dibromobiphenyl		With reference to IEC 62321: 2008 and performed by GC/MS.	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.
Sum of PBDEs	mg/kg		-	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.



No. : CE/2014/13415 Date : 2014/01/21

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

G&(L?\$>AL>@A>BG

Test Item(s)	Unit	Method	MDL	Result No.1
Halogen-Chlorine (CI) (CAS No.: 22537-15-1)	0 0	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Halogen-Bromine (Br) (CAS No.: 10097-32-2)	0 0	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.

#### Note:

1. mg/kg = ppm; 0.1wt% = 1000ppm

2. n.d. = Not Detected

3. MDL = Method Detection Limit

4. " - " = Not Regulated



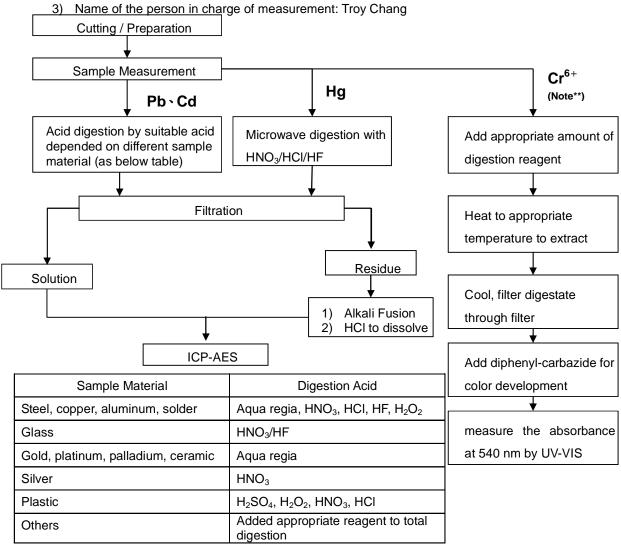
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

G&(L?\$>AL>@A>BG

- 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: Climbgreat Yang



**Note\*\***: (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95°C.

(2) For metallic material, add pure water and heat to boiling.



No.: CE/2014/13415

Date: 2014/01/21

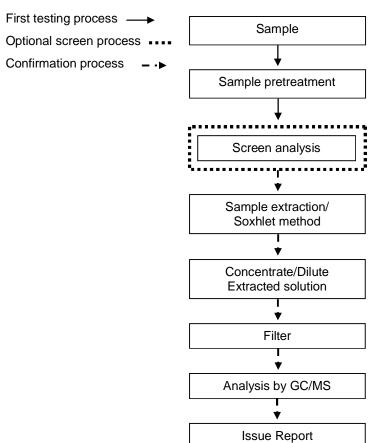
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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# PBB/PBDE analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang





No.: CE/2014/13415 Date: 2014/01/21

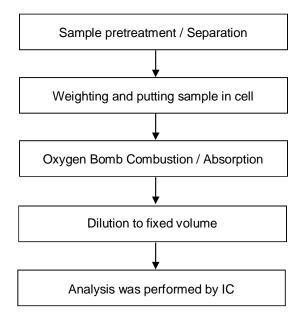
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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## Analytical flow chart of halogen content

- Name of the person who made measurement: Rita Chen
- Name of the person in charge of measurement: Troy Chang





No.: CE/2014/13415

Date: 2014/01/21

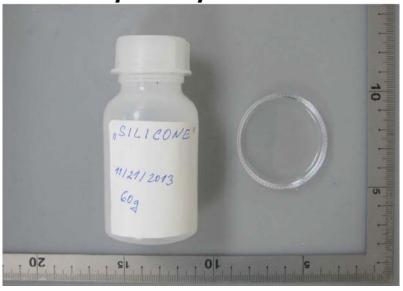
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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\* The tested sample / part is marked by an arrow if it's shown on the photo. \*

CE/2014/13415



\*\* End of Report \*\*

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**Test Report** No. : CE/2014/13406 Date : 2014/01/21 Page: 1 of 7

AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

G&(L?\$>AL>@A\$CG

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

Sample Submitted By : AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH

Sample Description : GREEN TEFLON I.
Style/Item No. : TANTALUM DIVISION

Sample Receiving Date : 2014/01/15

Testing Period : 2014/01/15 TO 2014/01/21

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Test Requested : (1) As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to

determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the

submitted sample.

(2) As specified by client, to test Halogen-Chlorine, Bromine contents in the

submitted sample.

**Test Method** : Please refer to next page(s).

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



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**Test Report** No. : CE/2014/13406

Date: 2014/01/21

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

G&(L?\$>AL>@A\$CG

## Test Result(s)

PART NAME No.1 : GREEN LIQUID

Test Item(s)	Unit	Method	MDL	Result
rest item(s)	Onit	Metriod	WIDL	No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013	2	n.d.
		and performed by ICP-AES.		
Lead (Pb)	mg/kg	With reference to IEC 62321-5: 2013	2	n.d.
		and performed by ICP-AES.		
Mercury (Hg)	mg/kg	With reference to IEC 62321-4: 2013	2	n.d.
		and performed by ICP-AES.		
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	3
Sum of PBBs			-	n.d.
Monobromobiphenyl			5	n.d.
Dibromobiphenyl		With reference to IEC 62321: 2008 and performed by GC/MS.	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.
Sum of PBDEs	mg/kg		-	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.



No. : CE/2014/13406 Date : 2014/01/21

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

G&(L?\$>AL>@A\$CG

Test Item(s)	Unit	Method	MDL	Result No.1
Halogen-Chlorine (CI) (CAS No.: 22537-15-1)	0 0	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Halogen-Bromine (Br) (CAS No.: 10097-32-2)	0 0	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.

#### Note:

1. mg/kg = ppm; 0.1wt% = 1000ppm

2. n.d. = Not Detected

3. MDL = Method Detection Limit

4. " - " = Not Regulated



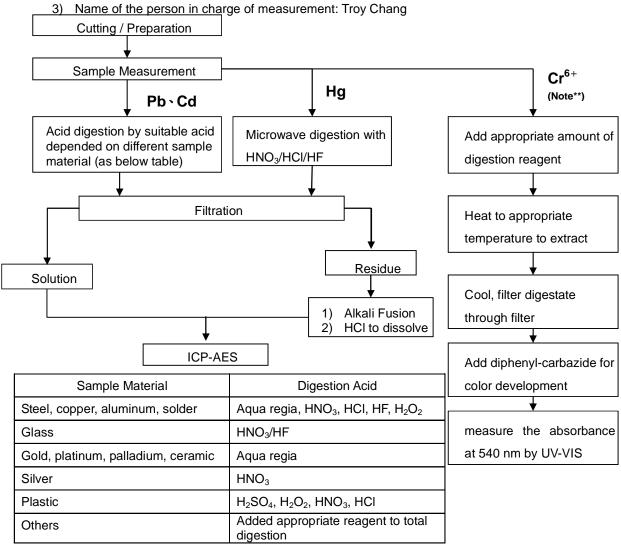
No. : CE/2014/13406 Date : 2014/01/21

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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- 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: Climbgreat Yang



**Note\*\***: (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95°C.

(2) For metallic material, add pure water and heat to boiling.



No.: CE/2014/13406

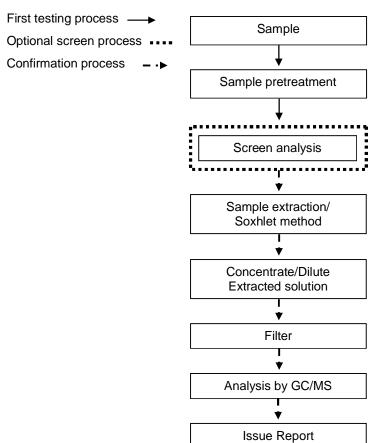
Date: 2014/01/21 Page: 5 of 7

AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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## PBB/PBDE analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang





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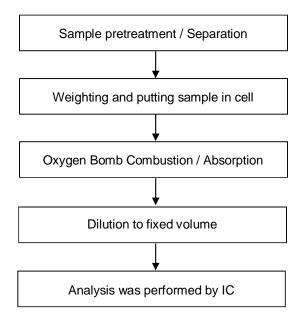
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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## Analytical flow chart of halogen content

- Name of the person who made measurement: Rita Chen
- Name of the person in charge of measurement: Troy Chang





No.: CE/2014/13406

Date: 2014/01/21

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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\* The tested sample / part is marked by an arrow if it's shown on the photo. \*

CE/2014/13406



\*\* End of Report \*\*

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**Test Report** No. : CE/2014/13423 Date : 2014/01/21 Page: 1 of 7

AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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

Sample Submitted By : AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH

Sample Description : PASTE II.

Style/Item No. : TANTALUM DIVISION

Sample Receiving Date : 2014/01/15

Testing Period : 2014/01/15 TO 2014/01/21

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Test Requested : (1) As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to

determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the

submitted sample.

(2) As specified by client, to test Halogen-Chlorine, Bromine contents in the

submitted sample.

**Test Method** : Please refer to next page(s).

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



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**Test Report** No. : CE/2014/13423 Date : 2014/01/21 Page: 2 of 7

AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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## Test Result(s)

PART NAME No.1 : GRAY PASTE

Test Item(s)	Unit	Method	MDL	Result
rest item(s)	Onit	Metriod	MIDL	No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013	2	n.d.
		and performed by ICP-AES.		
Lead (Pb)	mg/kg	With reference to IEC 62321-5: 2013	2	n.d.
		and performed by ICP-AES.		
Mercury (Hg)	mg/kg	With reference to IEC 62321-4: 2013	2	n.d.
		and performed by ICP-AES.		
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
Sum of PBBs			-	n.d.
Monobromobiphenyl			5	n.d.
Dibromobiphenyl			5	n.d.
Tribromobiphenyl		With reference to IEC 62321: 2008 and performed by GC/MS.	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.
Sum of PBDEs	mg/kg		-	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.



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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

Test Item(s)	Unit Method	MDL	Result	
rest item(s)	Oilit	Wethou	MIDL	No.1
Halogen-Chlorine (CI) (CAS No.: 22537-15-1)		With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.

#### Note:

1. mg/kg = ppm; 0.1wt% = 1000ppm

2. n.d. = Not Detected

3. MDL = Method Detection Limit

4. " - " = Not Regulated



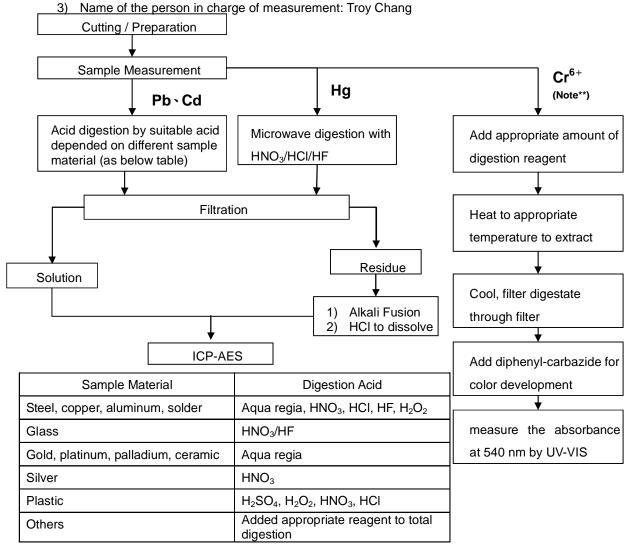
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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- 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: Climbgreat Yang



**Note\*\*** : (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95°C.

(2) For metallic material, add pure water and heat to boiling.



No.: CE/2014/13423

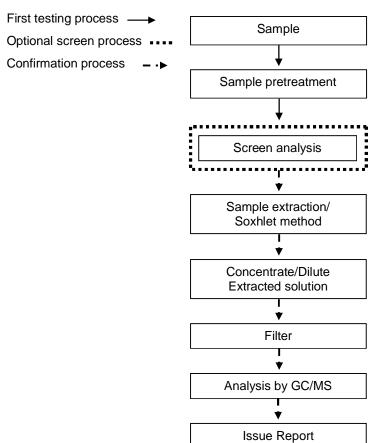
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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## PBB/PBDE analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang





No.: CE/2014/13423

Date: 2014/01/21

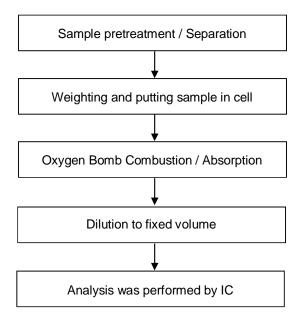
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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## Analytical flow chart of halogen content

- Name of the person who made measurement: Rita Chen
- Name of the person in charge of measurement: Troy Chang





No.: CE/2014/13423

Date: 2014/01/21

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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\* The tested sample / part is marked by an arrow if it's shown on the photo. \*

CE/2014/13423



\*\* End of Report \*\*

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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

Sample Submitted By : AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH

Sample Description : SILVER I.

Style/Item No. : TANTALUM DIVISION

Sample Receiving Date : 2014/01/15

Testing Period : 2014/01/15 TO 2014/01/21

Test Requested : (1) As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to

determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the

submitted sample.

(2) As specified by client, to test Halogen-Chlorine, Bromine contents in the

submitted sample.

**Test Method** : Please refer to next page(s).

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



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No.: CE/2014/13417 Date: 2014/01/21

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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## Test Result(s)

PART NAME No.1 : GRAY PASTE

Test Item(s)	Unit	Method	MDL	Result
rest item(s)	Unit	Wethod	MIDL	No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
Sum of PBBs			-	n.d.
Monobromobiphenyl		l	5	n.d.
Dibromobiphenyl		l	5	n.d.
Tribromobiphenyl		With reference to IEC 62321: 2008 and performed by GC/MS.	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.
Sum of PBDEs	mg/kg		-	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.



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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

G&(L?\$>AL>@A>DG

Test Item(s)	Unit	Method	MDL	Result No.1
Halogen-Chlorine (CI) (CAS No.: 22537-15-1)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.

#### Note:

1. mg/kg = ppm; 0.1wt% = 1000ppm

2. n.d. = Not Detected

3. MDL = Method Detection Limit

4. " - " = Not Regulated



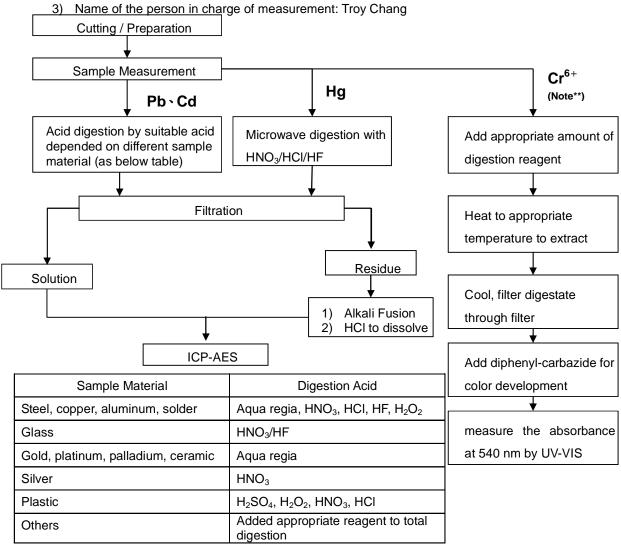
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

G&(L?\$>AL>@A>DG

- 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: Climbgreat Yang



**Note\*\***: (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95°C.

(2) For metallic material, add pure water and heat to boiling.



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Date: 2014/01/21

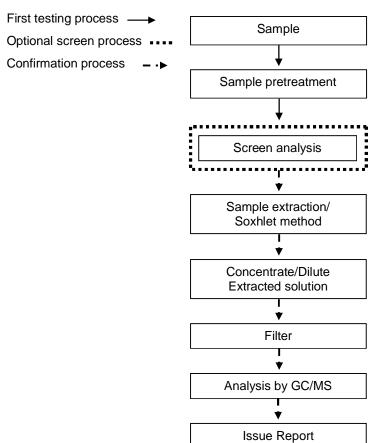
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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## PBB/PBDE analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang





No. : CE/2014/13417 Date : 2014/01/21

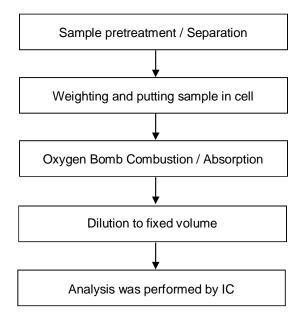
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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## Analytical flow chart of halogen content

- Name of the person who made measurement: Rita Chen
- Name of the person in charge of measurement: Troy Chang





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Date: 2014/01/21 Page: 7 of 7

AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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\* The tested sample / part is marked by an arrow if it's shown on the photo. \*

CE/2014/13417



\*\* End of Report \*\*

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**Test Report** No. : CE/2014/13438 Date : 2014/01/21 Page: 1 of 7

AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

G&(L?\$>AL>@A@EG

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

Sample Submitted By : AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH

Sample Description : MOULDING GOLD GREEN I.

Style/Item No. : TANTALUM DIVISION

Sample Receiving Date : 2014/01/15

Testing Period : 2014/01/15 TO 2014/01/21

\_\_\_\_\_\_

Test Requested : (1) As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to

determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the

submitted sample.

(2) As specified by client, to test Halogen-Chlorine, Bromine contents in the

submitted sample.

**Test Method** : Please refer to next page(s).

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



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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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## Test Result(s)

PART NAME No.1 : YELLOW LUMP

Test Item(s)	Unit	Method	MDL	Result
rest item(s)	Onit	Metriod	MIDL	No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013	2	n.d.
		and performed by ICP-AES.		
Lead (Pb)	mg/kg	With reference to IEC 62321-5: 2013	2	n.d.
		and performed by ICP-AES.		
Mercury (Hg)	mg/kg	With reference to IEC 62321-4: 2013	2	n.d.
		and performed by ICP-AES.		
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
Sum of PBBs			-	n.d.
Monobromobiphenyl			5	n.d.
Dibromobiphenyl			5	n.d.
Tribromobiphenyl		With reference to IEC 62321: 2008 and performed by GC/MS.	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.
Sum of PBDEs	mg/kg		-	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.



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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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Test Item(s)	Unit	Method	MDL	Result No.1
Halogen-Chlorine (CI) (CAS No.: 22537-15-1)	0 0	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	142
Halogen-Bromine (Br) (CAS No.: 10097-32-2)	0 0	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.

#### Note:

1. mg/kg = ppm; 0.1wt% = 1000ppm

2. n.d. = Not Detected

3. MDL = Method Detection Limit

4. " - " = Not Regulated



No. : CE/2014/13438 Date : 2014/01/21

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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- 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: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang Cutting / Preparation Sample Measurement Hg (Note\*\*) Pb · Cd Acid digestion by suitable acid Microwave digestion with Add appropriate amount of depended on different sample HNO<sub>3</sub>/HCI/HF digestion reagent material (as below table) Filtration Heat to appropriate temperature to extract Residue Solution Cool, filter digestate Alkali Fusion through filter HCI to dissolve 2) **ICP-AES** Add diphenyl-carbazide for Sample Material **Digestion Acid** color development Aqua regia, HNO<sub>3</sub>, HCI, HF, H<sub>2</sub>O<sub>2</sub> Steel, copper, aluminum, solder measure the absorbance HNO<sub>3</sub>/HF Glass at 540 nm by UV-VIS 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>, HCI Added appropriate reagent to total Others digestion

**Note\*\***: (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95°C.

(2) For metallic material, add pure water and heat to boiling.



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Date: 2014/01/21

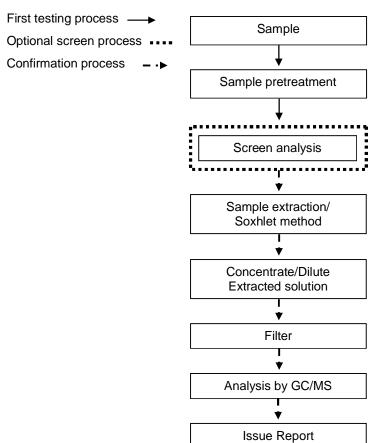
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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## PBB/PBDE analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang





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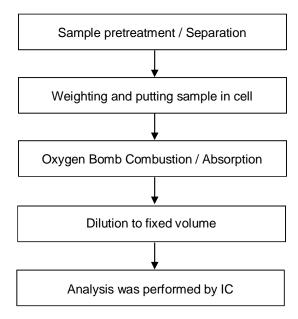
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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## Analytical flow chart of halogen content

- Name of the person who made measurement: Rita Chen
- Name of the person in charge of measurement: Troy Chang





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Date: 2014/01/21

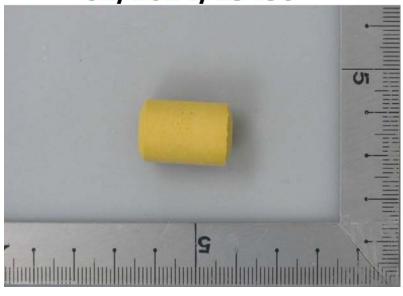
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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\* The tested sample / part is marked by an arrow if it's shown on the photo. \*

CE/2014/13438



\*\* End of Report \*\*



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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

G&(L?\$>AL>@BB?G

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

Sample Submitted By : AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH

Sample Description : LF Cu-Sn I.a

Style/Item No. : TANTALUM DIVISION

Sample Receiving Date : 2014/01/15

Testing Period : 2014/01/15 TO 2014/01/21

\_\_\_\_\_\_

Test Requested : As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to

determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the

submitted sample.

**Test Method** : Please refer to next pages.

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



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**Test Report** No.: CE/2014/13552 Date: 2014/01/21 Page: 2 of 7

AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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#### Test Result(s)

PART NAME No.1 : PLATING LAYER OF SILVER COLORED METAL PART NAME No.2 : BASE MATERIAL OF SILVER COLORED METAL

Test Item(s)	Unit	Method	MDL -	Res	sult
rest item(s)	Offic	Wiethod	MDL	No.1	No.2
Cadmium (Cd)	mg/kg	IEC 62321-5: 2013 application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.	
	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2		n.d.
Lead (Pb)	mg/kg	IEC 62321-5: 2013 application of modified digestion by surface etching and performed by ICP-AES.	2	61	
	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2		24
Mercury (Hg)	mg/kg	IEC 62321-4: 2013 application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.	
	mg/kg	With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2		n.d.
Hexavalent Chromium Cr(VI)	**	With reference to IEC 62321: 2008 and performed by Boiling water extraction Method.#	#	Negative	Negative
Sum of PBBs	mg/kg		-		n.d.
Monobromobiphenyl	mg/kg	]	5		n.d.
Dibromobiphenyl	mg/kg	]	5		n.d.
Tribromobiphenyl	mg/kg		5		n.d.
Tetrabromobiphenyl	mg/kg	With reference to IEC 62321: 2008 and	5		n.d.
Pentabromobiphenyl	mg/kg	performed by GC/MS.	5		n.d.
Hexabromobiphenyl	mg/kg	portornica by GO/IVIO.	5		n.d.
Heptabromobiphenyl	mg/kg		5		n.d.
Octabromobiphenyl	mg/kg		5		n.d.
Nonabromobiphenyl	mg/kg		5		n.d.
Decabromobiphenyl	mg/kg		5		n.d.

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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Test Item(s)	Unit	Method	MDL	Re	Result	
rest item(s)	Unit	Wethod	MIDL	No.1	No.2	
Sum of PBDEs	mg/kg		-		n.d.	
Monobromodiphenyl ether	mg/kg		5		n.d.	
Dibromodiphenyl ether	mg/kg		5		n.d.	
Tribromodiphenyl ether	mg/kg		5		n.d.	
Tetrabromodiphenyl ether	mg/kg	With reference to IEC 62321: 2008 and performed by GC/MS.	5		n.d.	
Pentabromodiphenyl ether	mg/kg		5		n.d.	
Hexabromodiphenyl ether	mg/kg	performed by GC/MS.	5		n.d.	
Heptabromodiphenyl ether	mg/kg		5		n.d.	
Octabromodiphenyl ether	mg/kg		5		n.d.	
Nonabromodiphenyl ether	mg/kg		5		n.d.	
Decabromodiphenyl ether	mg/kg		5		n.d.	

#### Note:

- 1. mg/kg = ppm; 0.1wt% = 1000ppm
- 2. n.d. = Not Detected
- 3. MDL = Method Detection Limit
- 4. " " = Not Regulated
- 5. "---" = Not Conducted
- 6. \*\* = Qualitative analysis (No Unit)
- 7. # = a. Positive means the presence of CrVI on the tested areas
  - b. Negative means the absence of CrVI on the tested areas

The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm<sup>2</sup> tested areas.

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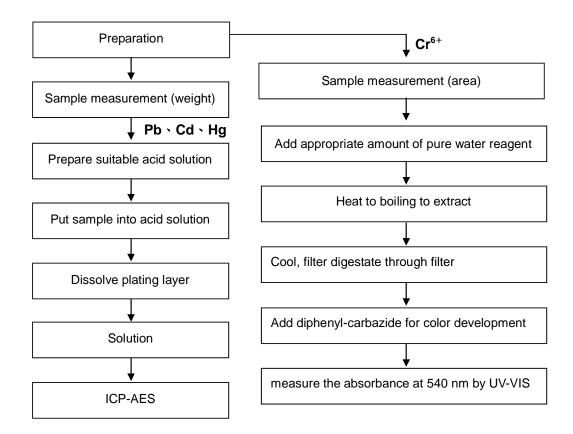
AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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No.1 The plating layer of samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)

- Name of the person who made measurement: Climbgreat Yang
- Name of the person in charge of measurement: Troy Chang

## Flow Chart of Stripping method for metal analysis





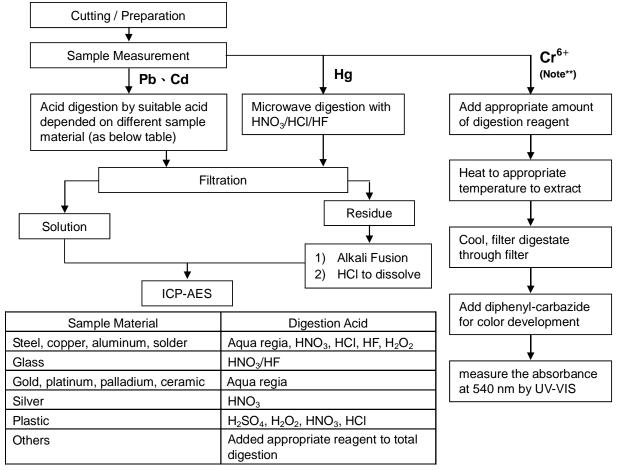
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#### No.2

- 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: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



#### Note\*\* (For IEC 62321)

- (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95  $^{\circ}$ C.
- (2) For metallic material, add pure water and heat to boiling.



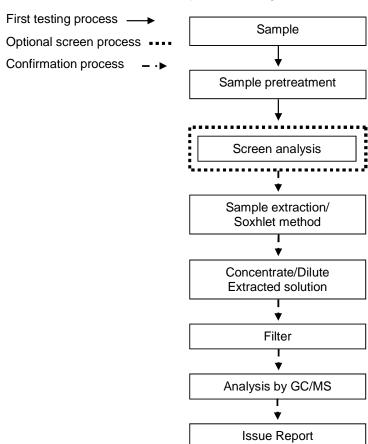
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## PBB/PBDE analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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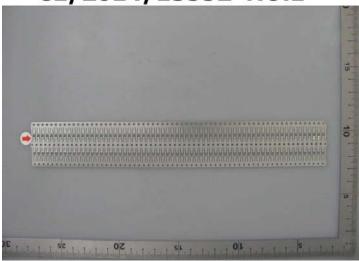
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

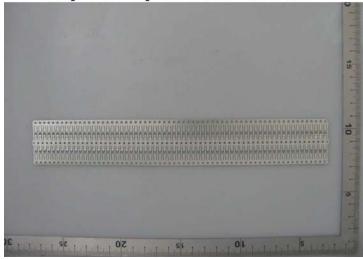
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\* The tested sample / part is marked by an arrow if it's shown on the photo. \*

CE/2014/13552 NO.1



CE/2014/13552 NO.2



\*\* End of Report \*\*

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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

Sample Submitted By : AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH

Sample Description : LF NILO-Sn I.

Style/Item No. : TANTALUM DIVISION

Sample Receiving Date : 2014/01/15

Testing Period : 2014/01/15 TO 2014/01/21

Test Requested : As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to

determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the

submitted sample.

**Test Method** : Please refer to next pages.

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



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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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#### Test Result(s)

PART NAME No.1 : PLATING LAYER OF SILVER COLORED METAL PART NAME No.2 : BASE MATERIAL OF SILVER COLORED METAL

Tool Home(a)	11:4:4	Mathad	MDI	Re	sult
Test Item(s)	Unit	Method	MDL	No.1	No.2
Cadmium (Cd)	mg/kg	IEC 62321-5: 2013 application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.	
	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2		n.d.
Lead (Pb)	mg/kg	IEC 62321-5: 2013 application of modified digestion by surface etching and performed by ICP-AES.	2	43	
	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2		n.d.
Mercury (Hg)	mg/kg	IEC 62321-4: 2013 application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.	
	mg/kg	With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2		n.d.
Hexavalent Chromium Cr(VI)	**	With reference to IEC 62321: 2008 and performed by Boiling water extraction Method.#	#	Negative	Negative
Sum of PBBs	mg/kg		-		n.d.
Monobromobiphenyl	mg/kg	1	5		n.d.
Dibromobiphenyl	mg/kg		5		n.d.
Tribromobiphenyl	mg/kg		5		n.d.
Tetrabromobiphenyl	mg/kg	With reference to IEC 62321: 2008 and	5		n.d.
Pentabromobiphenyl	mg/kg	performed by GC/MS.	5		n.d.
Hexabromobiphenyl	mg/kg	performed by Oo/Wo.	5		n.d.
Heptabromobiphenyl	mg/kg	]	5		n.d.
Octabromobiphenyl	mg/kg	]	5		n.d.
Nonabromobiphenyl	mg/kg	_	5		n.d.
Decabromobiphenyl	mg/kg		5		n.d.

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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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Test Item(s)	Unit	Method	MDL	Res	sult
	Onit	Metriod	INIDL	No.1	No.2
Sum of PBDEs	mg/kg		-		n.d.
Monobromodiphenyl ether	mg/kg		5		n.d.
Dibromodiphenyl ether	mg/kg		5		n.d.
Tribromodiphenyl ether	mg/kg	With reference to IEC 62321: 2008 and performed by GC/MS.	5		n.d.
Tetrabromodiphenyl ether	mg/kg		5		n.d.
Pentabromodiphenyl ether	mg/kg		5		n.d.
Hexabromodiphenyl ether	mg/kg		5		n.d.
Heptabromodiphenyl ether	mg/kg		5		n.d.
Octabromodiphenyl ether	mg/kg		5		n.d.
Nonabromodiphenyl ether	mg/kg		5		n.d.
Decabromodiphenyl ether	mg/kg		5		n.d.

#### Note:

- 1. mg/kg = ppm; 0.1wt% = 1000ppm
- 2. n.d. = Not Detected
- 3. MDL = Method Detection Limit
- 4. " " = Not Regulated
- 5. "---" = Not Conducted
- 6. \*\* = Qualitative analysis (No Unit)
- 7. # = a. Positive means the presence of CrVI on the tested areas
  - b. Negative means the absence of CrVI on the tested areas

The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm<sup>2</sup> tested areas.

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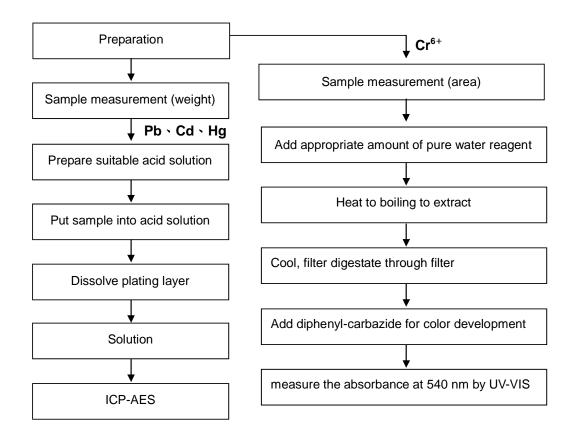
AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

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No.1 The plating layer of samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)

- Name of the person who made measurement: Climbgreat Yang
- Name of the person in charge of measurement: Troy Chang

### Flow Chart of Stripping method for metal analysis





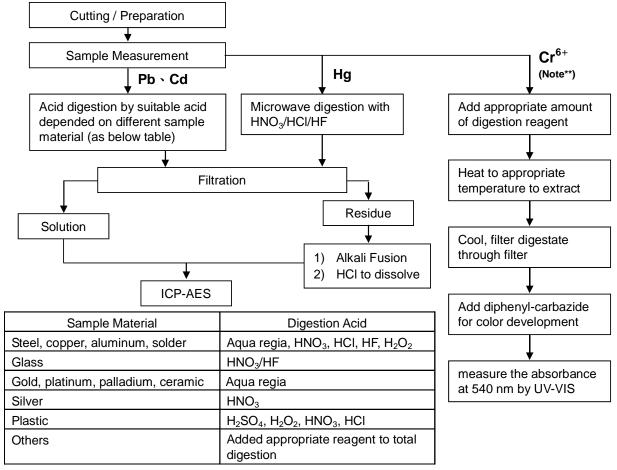
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#### No.2

- 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: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



#### Note\*\* (For IEC 62321)

- (1) For non-metallic material, add alkaline digestion reagent and heat to  $90\sim95\,^{\circ}$  C.
- (2) For metallic material, add pure water and heat to boiling.



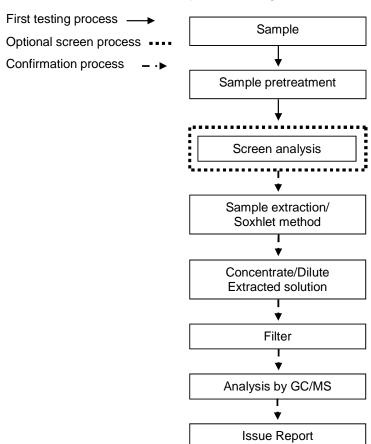
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### PBB/PBDE analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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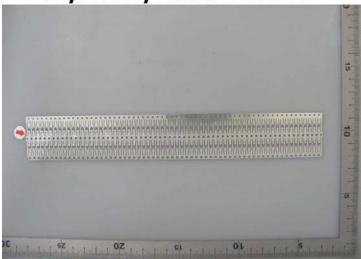
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AVX / KYOCERA HONG KONG LTD. TAIWAN BRANCH 7F-1, NO. 56, LANE 258, RUIGUANG ROAD, 11491 NEIHU, TAIPEI, TAIWAN

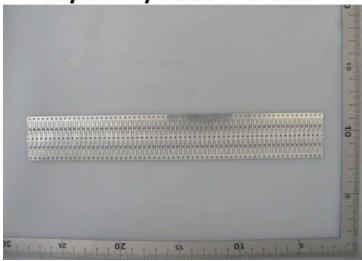
G&(L?\$>AL>@BBAG

\* The tested sample / part is marked by an arrow if it's shown on the photo. \*

CE/2014/13554 NO.1



CE/2014/13554 NO.2



\*\* End of Report \*\*

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# **Test Report**

號碼(No.) : CE/2013/C2893A 日期(Date) : 2014/01/13 頁數(Page) : 1 of 13

皇緯國際股份有限公司

KINGWELL TECHNOLOGY CORP., LTD.

台北市松山區南京東路四段143號7樓之1

7F-1., NO.143, SEC. 4, NANKING E. RD., SONGSHAN DISTRICT, TAIPEI CITY 105, TAIWAN

以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by/on behalf of the applicant as):

樣品名稱(Sample Description) : SURFACE MOUNT PLASTIC MOLDER AND AXIAL TYPE PRODUCTS(各項貼片及軸項型封

装產品)

樣品型號(Style/Item No.) : SMA、SMAS、SMB、SMC、SOD-323F、SOD-123F、SOD-123S、SOD-123ST、SOT-89、

SOT-223 · TO-252(DPAK) · TO-263(D2PAK) · TO-277 · TO-247 · TO-220AB ·

ITO-220AB \ TO-220AC \ ITO-220AC \ DO-201AE \ DO-35 \ DO-15 \ DO-27 \ DO-41 \

DO-41G · R-1 · R-6 · SOD-80 · MDS · GBU · ABS · SC-59 · QFN

收件日期(Sample Receiving Date) : 2013/12/17

測試期間(Testing Period) : 2013/12/17 TO 2013/12/24

\_\_\_\_\_\_

測試結果(Test Results) : 請見下一頁 (Please refer to next pages).





# **Test Report**

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皇緯國際股份有限公司

KINGWELL TECHNOLOGY CORP., LTD.

台北市松山區南京東路四段143號7樓之1

7F-1., NO.143, SEC. 4, NANKING E. RD., SONGSHAN DISTRICT, TAIPEI CITY 105, TAIWAN

### 測試結果(Test Results)

測試部位(PART NAME)No.1 : 整體混測 (MIXED ALL PARTS)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
鎬 / Cadmium (Cd)	mg/kg	參考IEC 62321-5: 2013方法,以感應耦合 電漿原子發射光譜儀檢測./With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
鉛 / Lead (Pb)	mg/kg	參考IEC 62321-5: 2013方法, 以感應耦合 電漿原子發射光譜儀檢測. / With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	6190
汞 / Mercury (Hg)	mg/kg	參考IEC 62321-4: 2013方法, 以感應耦合 電漿原子發射光譜儀檢測. / With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	参考IEC 62321: 2008方法,以UV-VIS檢測. / With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	参考US EPA 3550C: 2007方法,以液相層析/質譜儀檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.
全氟辛酸 / PFOA (CAS No.: 335-67- 1)	mg/kg	参考US EPA 3550C: 2007方法,以液相層析/質譜儀檢測./ With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.

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# **Test Report**

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皇緯國際股份有限公司

KINGWELL TECHNOLOGY CORP., LTD.

台北市松山區南京東路四段143號7樓之1

7F-1., NO.143, SEC. 4, NANKING E. RD., SONGSHAN DISTRICT, TAIPEI CITY 105, TAIWAN

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
鄰苯二甲酸甲苯基丁酯 / BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)	%	参考EN 14372, 以氣相層析/質譜儀檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
鄰苯二甲酸二 (2-乙基己基)酯 / DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	%	參考EN 14372, 以氣相層析/質譜儀檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
鄰苯二甲酸二異癸酯 / DIDP (Di- isodecyl phthalate) (CAS No.: 26761-40-0; 68515-49-1)	%	參考EN 14372, 以氣相層析/質譜儀檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.
鄰苯二甲酸二異壬酯 / DINP (Di- isononyl phthalate) (CAS No.: 28553-12-0; 68515-48-0)	%	参考EN 14372, 以氣相層析/質譜儀檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.
鄰苯二甲酸二正辛酯 / DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)	%	参考EN 14372, 以氣相層析/質譜儀檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	%	參考EN 14372, 以氣相層析/質譜儀檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
六溴環十二烷及所有主要被辨别出的異構物 / Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ - HBCDD, $\beta$ - HBCDD, $\gamma$ - HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	mg/kg	参考IEC 62321: 2008方法,以氣相層析/質 譜儀檢測. / With reference to IEC 62321: 2008 method. Analysis was performed by GC/MS.	5	n.d.
富馬酸二甲酯 / Dimethyl Fumarate (CAS No.: 624-49-7) (DMFU)	mg/kg	参考US EPA 3550C方法,以氣相層析/質譜 儀檢測. / With reference to US EPA 3550C method. Analysis was performed by GC/MS.	0.1	n.d.



# **Test Report**

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皇緯國際股份有限公司

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7F-1., NO.143, SEC. 4, NANKING E. RD., SONGSHAN DISTRICT, TAIPEI CITY 105, TAIWAN

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
多溴聯苯總和 / Sum of PBBs			-	n.d.
一溴聯苯 / Monobromobiphenyl			5	n.d.
二溴聯苯 / Dibromobiphenyl			5	n.d.
三溴聯苯 / Tribromobiphenyl			5	n.d.
四溴聯苯 / Tetrabromobiphenyl			5	n.d.
五溴聯苯 / Pentabromobiphenyl			5	n.d.
六溴聯苯 / Hexabromobiphenyl			5	n.d.
七溴聯苯 / Heptabromobiphenyl			5	n.d.
八溴聯苯 / Octabromobiphenyl			5	n.d.
九溴聯苯 / Nonabromobiphenyl		A + I DO COOO 1 0000 上 いたいほと(所	5	n.d.
十溴聯苯 / Decabromobiphenyl	/1	參考IEC 62321: 2008方法, 以氣相層析/質	5	n.d.
多溴聯苯醚總和 / Sum of PBDEs	mg/kg	譜儀檢測. / With reference to IEC	-	n.d.
一溴聯苯醚 / Monobromodiphenyl ether	1	62321: 2008 and performed by GC/MS.	5 5	n.d.
二溴聯苯醚 / Dibromodiphenyl ether				n.d.
三溴聯苯醚 / Tribromodiphenyl ether			5	n.d.
四溴聯苯醚 / Tetrabromodiphenyl ether			5	n.d.
五溴聯苯醚 / Pentabromodiphenyl ether			5	n.d.
六溴聯苯醚 / Hexabromodiphenyl ether			5	n.d.
七溴聯苯醚 / Heptabromodiphenyl ether			5	n.d.
八溴聯苯醚 / Octabromodiphenyl ether			5	n.d.
九溴聯苯醚 / Nonabromodiphenyl ether			5	n.d.
十溴聯苯醚 / Decabromodiphenyl ether			5	n.d.
鹵素 / Halogen				
鹵素 (氟) / Halogen-Fluorine (F) (CAS No.: 14762-94-8)			50	n.d.
鹵素 (氣) / Halogen-Chlorine (C1) (CAS No.: 22537-15-1)	mg/kg	参考BS EN 14582:2007, 以離子層析儀分析. / With reference to BS EN	50	n.d.
鹵素(溴)/ Halogen-Bromine (Br) (CAS No.: 10097-32-2)		14582:2007. Analysis was performed by IC.	50	n.d.
鹵素(碘)/ Halogen-Iodine(I) (CAS No.: 14362-44-8)			50	n.d.



# **Test Report**

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皇緯國際股份有限公司

KINGWELL TECHNOLOGY CORP., LTD.

台北市松山區南京東路四段143號7樓之1

7F-1., NO.143, SEC. 4, NANKING E. RD., SONGSHAN DISTRICT, TAIPEI CITY 105, TAIWAN

### 備註(Note):

- 1. mg/kg = ppm ; 0.1wt% = 1000ppm
- 2. n.d. = Not Detected (未檢出)
- 3. MDL = Method Detection Limit (方法偵測極限值)
- 4. "-" = Not Regulated (無規格值)
- 5. 樣品的測試是基於申請人要求混合測試,報告中的混合測試結果不代表其中個别單一材質的含量. (The samples was/were analyzed on behalf of the applicant as mixing sample in one testing. The above results was/were only given as the informality value.)

### PFOS参考資訊(Reference Information): 持久性有機污染物 POPs - (EU) 757/2010

PFOS濃度在物質或製備中不得超過0.001%(10ppm),在半成品、成品或零部件中不得超過0.1%(1000ppm),在紡織品或塗層材料中不得超過 $1\mu g/m^2$ 。

(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semifinished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above  $1\mu g/m^2$ .)



# **Test Report**

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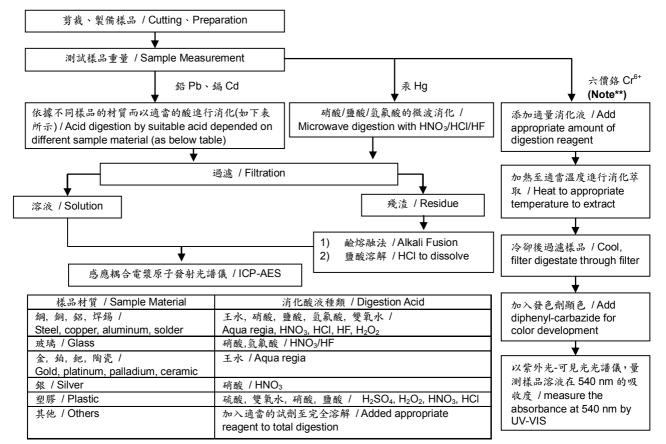
皇緯國際股份有限公司

KINGWELL TECHNOLOGY CORP., LTD.

台北市松山區南京東路四段143號7樓之1

7F-1., NO.143, SEC. 4, NANKING E. RD., SONGSHAN DISTRICT, TAIPEI CITY 105, TAIWAN

- 1) 根據以下的流程圖之條件,樣品已完全溶解。( 六價鉻測試方法除外 ) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (  $Cr^{6+}$  test method excluded )
- 2) 測試人員:楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang



### Note\*\* (For IEC 62321)

- (1) 針對非金屬材料加入鹼性消化液,加熱至 90~95℃萃取. / For non-metallic material, add alkaline digestion reagent and heat to 90~95℃.
- (2) 針對金屬材料加入純水,加熱至沸騰萃取. / For metallic material, add pure water and heat to boiling.

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# **Test Report**

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皇緯國際股份有限公司

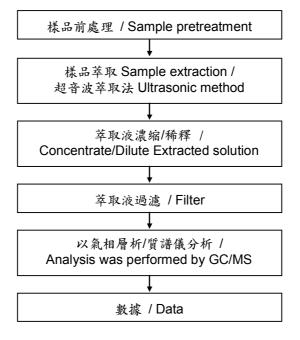
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7F-1., NO.143, SEC. 4, NANKING E. RD., SONGSHAN DISTRICT, TAIPEI CITY 105, TAIWAN

### 富馬酸二甲酯分析流程圖 / Dimethyl Fumarate analytical flow chart

- 測試人員: 翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





# **Test Report**

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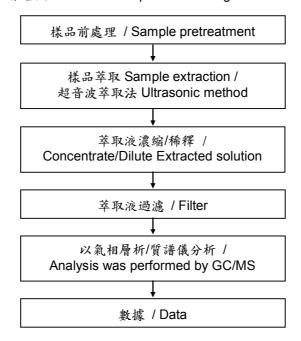
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### 六溴環十二烷分析流程圖 / HBCDD analytical flow chart

- 測試人員:翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





# **Test Report**

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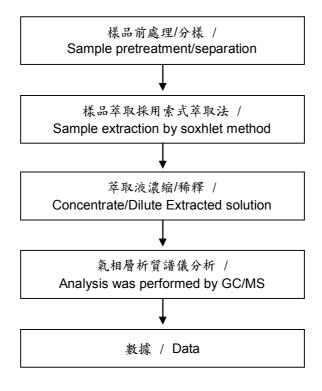
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### 可塑劑分析流程圖 / Analytical flow chart of phthalate content

- 測試人員:翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





# **Test Report**

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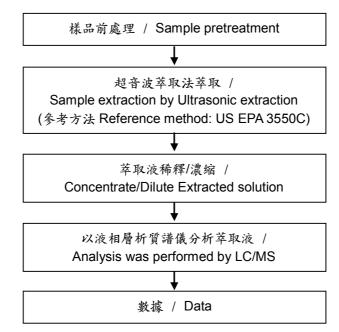
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### 全氟辛酸/全氟辛烷磺酸分析流程圖 / PFOA/PFOS analytical flow chart

- 測試人員: 翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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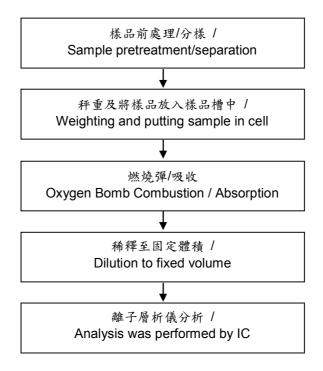
KINGWELL TECHNOLOGY CORP., LTD.

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7F-1., NO.143, SEC. 4, NANKING E. RD., SONGSHAN DISTRICT, TAIPEI CITY 105, TAIWAN

### 鹵素分析流程圖 / Analytical flow chart of halogen content

- 測試人員: 陳恩臻 / Name of the person who made measurement: Rita Chen
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





# **Test Report**

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皇緯國際股份有限公司

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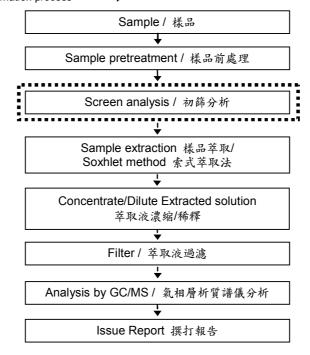
台北市松山區南京東路四段143號7樓之1

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### 多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 測試人員:翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang

確認程序 / Confirmation process - - - - →





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# **Test Report**

KINGWELL TECHNOLOGY CORP., LTD.

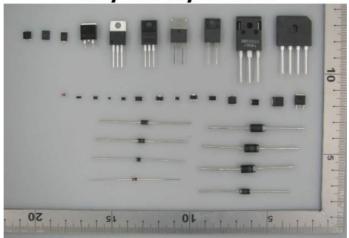
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7F-1., NO.143, SEC. 4, NANKING E. RD., SONGSHAN DISTRICT, TAIPEI CITY 105, TAIWAN

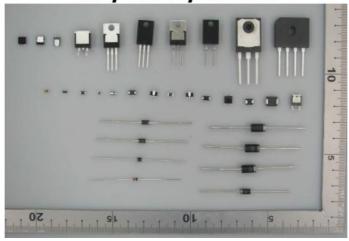
\* 照片中如有箭頭標示,則表示為實際檢測之樣品/部位. \*

(The tested sample / part is marked by an arrow if it's shown on the photo.)

CE/2013/C2893



CE/2013/C2893



\*\* 報告結尾 (End of Report) \*\*

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33, Wu Chuan Rd., New Taipei Industrial Park, New Taipei City, Taiwan / 新北市新北產業園區五權路33號 t+886 (02)2299 3279 f+886 (02)2299 3237 www.sgs.tw



# **Test Report**

號碼(No.) : CE/2014/33463B 日期(Date) : 2014/04/01 頁數(Page) : 1 of 12

耕興股份有限公司

SPORTON INTERNATIONAL INC.

新北市中和區建一路186號14樓之二

14F.-2, NO. 186, JIAN 1ST RD., ZHONGHE DISTRICT, NEW TAIPEI CITY 235, TAIWAN (R. O. C.)

以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by/on behalf of the applicant as):

樣品名稱(Sample Description) : FERRITE Ni-Zn SERIES

樣品型號(Style/Item No.) : Ni-Zn T001 收件日期(Sample Receiving Date) : 2014/03/14

測試期間(Testing Period) : 2014/03/14 TO 2014/03/21

\_\_\_\_\_\_

測試結果(Test Results) : 請見下一頁 (Please refer to next pages).





# **Test Report**

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SPORTON INTERNATIONAL INC.

新北市中和區建一路186號14樓之二

14F.-2, NO. 186, JIAN 1ST RD., ZHONGHE DISTRICT, NEW TAIPEI CITY 235, TAIWAN (R. O. C.)

### 測試結果(Test Results)

測試部位(PART NAME)No.1 : 深灰色粉末 (DK. GRAY POWDER)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
鎬 / Cadmium (Cd)	mg/kg	參考IEC 62321-5: 2013方法,以感應耦合 電漿原子發射光譜儀檢測. / With	2	n.d.
鉛 / Lead (Pb)	mg/kg	reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
汞 / Mercury (Hg)	mg/kg	參考IEC 62321-4: 2013方法, 以感應耦合 電漿原子發射光譜儀檢測. / With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	参考IEC 62321: 2008方法,以UV-VIS檢測. / With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
绨 / Antimony (Sb)	mg/kg	参考US EPA 3052方法,以感應耦合電漿原子發射光譜儀檢測. / With reference to US EPA Method 3052. Analysis was performed by ICP-AES.	2	n.d.
六溴環十二烷及所有主要被辨别出的異構物 / Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ -HBCDD, $\beta$ -HBCDD, $\gamma$ -HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	mg/kg	參考IEC 62321: 2008方法,以氣相層析/質 譜儀檢測. / With reference to IEC 62321: 2008 method. Analysis was performed by GC/MS.	5	n.d.



# **Test Report**

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SPORTON INTERNATIONAL INC.

新北市中和區建一路186號14樓之二

14F.-2, NO. 186, JIAN 1ST RD., ZHONGHE DISTRICT, NEW TAIPEI CITY 235, TAIWAN (R. O. C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
鄰苯二甲酸二異丁酯 / DIBP (Di- isobutyl phthalate) (CAS No.: 84- 69-5)	%	参考EN 14372, 以氣相層析/質譜儀檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
鄰苯二甲酸甲苯基丁酯 / BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)	%	参考EN 14372,以氣相層析/質譜儀檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
鄰苯二甲酸二 (2-乙基己基)酯 / DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	%	参考EN 14372, 以氣相層析/質譜儀檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
鄰苯二甲酸二異癸酯 / DIDP (Di- isodecyl phthalate) (CAS No.: 26761-40-0; 68515-49-1)	%	参考EN 14372, 以氣相層析/質譜儀檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.
鄰苯二甲酸二異壬酯 / DINP (Di- isononyl phthalate) (CAS No.: 28553-12-0; 68515-48-0)	%	参考EN 14372, 以氣相層析/質譜儀檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.
鄰苯二甲酸二正辛酯 / DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)	%	參考EN 14372, 以氣相層析/質譜儀檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	%	参考EN 14372, 以氣相層析/質譜儀檢測之. / With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.



# **Test Report**

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SPORTON INTERNATIONAL INC.

新北市中和區建一路186號14樓之二

14F.-2, NO. 186, JIAN 1ST RD., ZHONGHE DISTRICT, NEW TAIPEI CITY 235, TAIWAN (R. O. C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値	結果 (Result)
(Test Items)	(OHIT)	(Method)	(MDL)	No.1
多溴聯苯總和 / Sum of PBBs	mg/kg		-	n.d.
一溴聯苯 / Monobromobiphenyl	mg/kg		5	n.d.
二溴聯苯 / Dibromobiphenyl	mg/kg		5	n.d.
三溴聯苯 / Tribromobiphenyl	mg/kg		5	n.d.
四溴聯苯 / Tetrabromobiphenyl	mg/kg		5	n.d.
五溴聯苯 / Pentabromobiphenyl	mg/kg		5	n.d.
六溴聯苯 / Hexabromobiphenyl	mg/kg		5	n.d.
七溴聯苯 / Heptabromobiphenyl	mg/kg		5	n.d.
八溴聯苯 / Octabromobiphenyl	mg/kg		5	n.d.
九溴聯苯 / Nonabromobiphenyl	mg/kg		5	n.d.
十溴聯苯 / Decabromobiphenyl	mg/kg	參考IEC 62321: 2008方法, 以氣相層析/質	5	n.d.
多溴聯苯醚總和 / Sum of PBDEs	mg/kg	譜儀檢測. / With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.
一溴聯苯醚 / Monobromodiphenyl ether	mg/kg	02321. 2006 and periormed by GC/MS.	5	n.d.
二溴聯苯醚 / Dibromodiphenyl ether	mg/kg		5	n.d.
三溴聯苯醚 / Tribromodiphenyl ether	mg/kg		5	n.d.
四溴聯苯醚 / Tetrabromodiphenyl ether	mg/kg		5	n.d.
五溴聯苯醚 / Pentabromodiphenyl ether	mg/kg		5	n.d.
六溴聯苯醚 / Hexabromodiphenyl ether	mg/kg		5	n.d.
七溴聯苯醚 / Heptabromodiphenyl ether	mg/kg		5	n.d.
八溴聯苯醚 / Octabromodiphenyl ether	mg/kg		5	n.d.
九溴聯苯醚 / Nonabromodiphenyl ether	mg/kg		5	n.d.
十溴聯苯醚 / Decabromodiphenyl ether	mg/kg		5	n.d.



耕興股份有限公司

# **Test Report**

號碼(No.): CE/2014/33463B 日期(Date): 2014/04/01 頁數(Page): 5 of 12

SPORTON INTERNATIONAL INC.

新北市中和區建一路186號14樓之二

14F.-2, NO. 186, JIAN 1ST RD., ZHONGHE DISTRICT, NEW TAIPEI CITY 235, TAIWAN (R. O. C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
鹵素 / Halogen				
鹵素 (氟) / Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg		50	n.d.
鹵素 (氣) / Halogen-Chlorine (C1) (CAS No.: 22537-15-1)	mg/kg	参考BS EN 14582:2007, 以離子層析儀分 析. / With reference to BS EN	50	n.d.
鹵素 (溴) / Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	14582:2007. Analysis was performed by IC.	50	n.d.
鹵素(碘)/ Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg		50	n.d.

#### 備註(Note):

- 1. mg/kg = ppm ; 0.1wt% = 1000ppm
- 2. n.d. = Not Detected (未檢出)
- 3. MDL = Method Detection Limit (方法偵測極限值)
- 4. "-" = Not Regulated (無規格值)



## **Test Report**

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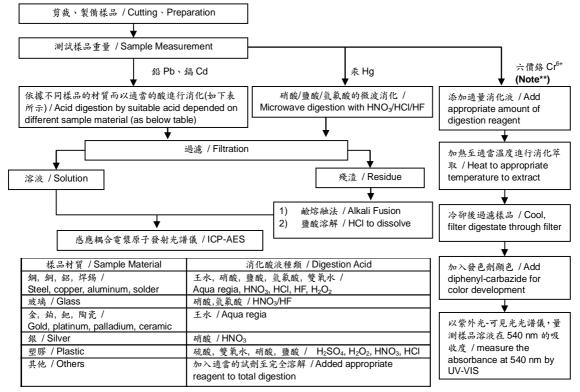
耕興股份有限公司

SPORTON INTERNATIONAL INC.

新北市中和區建一路186號14樓之二

14F.-2, NO. 186, JIAN 1ST RD., ZHONGHE DISTRICT, NEW TAIPEI CITY 235, TAIWAN (R. O. C.)

- 1) 根據以下的流程圖之條件,樣品已完全溶解。( 六價鉻測試方法除外 ) / These samples were dissolved totally by pre-conditioning method according to below flow chart. ( Cr<sup>6+</sup> test method excluded )
- 2) 測試人員:楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang



#### Note\*\* (For IEC 62321)

- (1) 針對非金屬材料加入鹼性消化液,加熱至 90~95℃ 萃取. / For non-metallic material, add alkaline digestion reagent and heat to 90~95℃.
- (2) 針對金屬材料加入純水,加熱至沸騰萃取. / For metallic material, add pure water and heat to boiling.

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# **Test Report**

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SPORTON INTERNATIONAL INC.

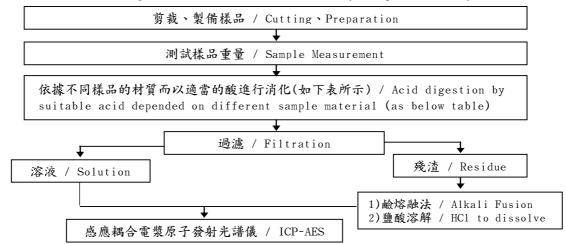
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14F.-2, NO. 186, JIAN 1ST RD., ZHONGHE DISTRICT, NEW TAIPEI CITY 235, TAIWAN (R. O. C.)

- 1) 根據以下的流程圖之條件,樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.
- 2) 測試人員:楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang

### 元素以 ICP-AES 分析的消化流程圖

(Flow Chart of digestion for the elements analysis performed by ICP-AES)



鋼,銅,鋁,焊錫 / Steel, copper, aluminum, solder	王水,硝酸,鹽酸,氫氟酸,雙氧水 /
	Aqua regia, HNO3, HC1, HF, H2O2
玻璃 / Glass	硝酸,氫氟酸 / HNO <sub>3</sub> /HF
金,鉑,鈀,陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO3
塑膠 / Plastic	硫酸,雙氧水,硝酸,鹽酸 / H2SO4, H2O2, HNO3, HC1
其他 / Others	加入適當的試劑至完全溶解 / Added appropriate
	reagent to total digestion



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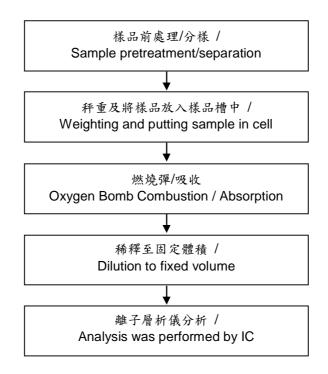
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### 鹵素分析流程圖 / Analytical flow chart of halogen content

- 測試人員:陳恩臻 / Name of the person who made measurement: Rita Chen
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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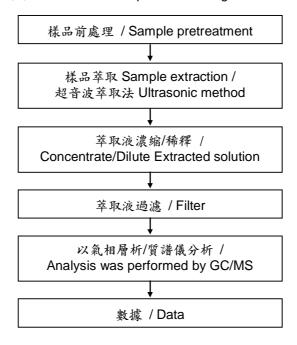
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14F.-2, NO. 186, JIAN 1ST RD., ZHONGHE DISTRICT, NEW TAIPEI CITY 235, TAIWAN (R. O. C.)

### 六溴環十二烷分析流程圖 / HBCDD analytical flow chart

- 測試人員:翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





# **Test Report**

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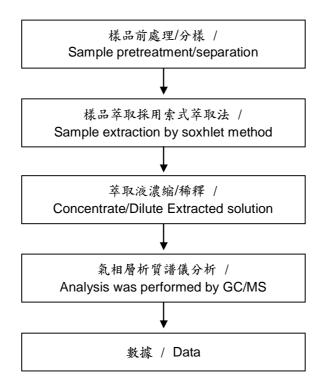
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14F.-2, NO. 186, JIAN 1ST RD., ZHONGHE DISTRICT, NEW TAIPEI CITY 235, TAIWAN (R. O. C.)

#### 可塑劑分析流程圖 / Analytical flow chart of phthalate content

- 測試人員:翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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SPORTON INTERNATIONAL INC.

新北市中和區建一路186號14樓之二

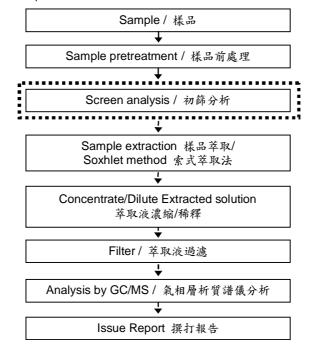
14F.-2, NO. 186, JIAN 1ST RD., ZHONGHE DISTRICT, NEW TAIPEI CITY 235, TAIWAN (R. O. C.)

### 多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 測試人員: 翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang

初次測試程序 / First testing process → 選擇性篩檢程序 / Optional screen process •••••••

確認程序 / Confirmation process - · - • ▶





# **Test Report**

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SPORTON INTERNATIONAL INC.

新北市中和區建一路186號14樓之二

14F.-2, NO. 186, JIAN 1ST RD., ZHONGHE DISTRICT, NEW TAIPEI CITY 235, TAIWAN (R. O. C.)

\* 照片中如有箭頭標示,則表示為實際檢測之樣品/部位. \*
(The tested sample / part is marked by an arrow if it's shown on the photo.)



\*\* 報告結尾 (End of Report) \*\*



**Test Report** No. : CE/2013/B3958 Date : 2013/11/27 Page: 1 of 6

NAMICS CORPORATION 3993 NIGORIKAWA, KITA-KU, NIIGATA-CITY 950-3131, JAPAN



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

Sample Submitted By : NAMICS CORPORATION

Sample Description : DP4303W Sample Receiving Date : 2013/11/21

Testing Period : 2013/11/21 TO 2013/11/27

Test Requested : As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to

determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the

submitted sample.

**Test Method** : Please refer to next pages.

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





No.: CE/2013/B3958 Date: 2013/11/27

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NAMICS CORPORATION 3993 NIGORIKAWA, KITA-KU, NIIGATA-CITY 950-3131, JAPAN 

### Test Result(s)

PART NAME No.1 : DARK GRAY PASTE

Tost Itom/s)	Unit	Method	MDL	Result
Test Item(s)	Unit	Metriod	MIDL	No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
Sum of PBBs	mg/kg		=	n.d.
Monobromobiphenyl	mg/kg	1	5	n.d.
Dibromobiphenyl	mg/kg	1	5	n.d.
Tribromobiphenyl	mg/kg	]	5	n.d.
Tetrabromobiphenyl	mg/kg	1	5	n.d.
Pentabromobiphenyl	mg/kg	1	5	n.d.
Hexabromobiphenyl	mg/kg	1	5	n.d.
Heptabromobiphenyl	mg/kg	]	5	n.d.
Octabromobiphenyl	mg/kg	]	5	n.d.
Nonabromobiphenyl	mg/kg	]	5	n.d.
Decabromobiphenyl	mg/kg	With reference to IEC 62321: 2008	5	n.d.
Sum of PBDEs	mg/kg	and performed by GC/MS.	-	n.d.
Monobromodiphenyl ether	mg/kg	]	5	n.d.
Dibromodiphenyl ether	mg/kg	]	5	n.d.
Tribromodiphenyl ether	mg/kg		5	n.d.
Tetrabromodiphenyl ether	mg/kg	]	5	n.d.
Pentabromodiphenyl ether	mg/kg	]	5	n.d.
Hexabromodiphenyl ether	mg/kg		5	n.d.
Heptabromodiphenyl ether	mg/kg		5	n.d.
Octabromodiphenyl ether	mg/kg		5	n.d.
Nonabromodiphenyl ether	mg/kg	]	5	n.d.
Decabromodiphenyl ether	mg/kg	]	5	n.d.



No.: CE/2013/B3958 Date: 2013/11/27

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NAMICS CORPORATION 3993 NIGORIKAWA, KITA-KU, NIIGATA-CITY 950-3131, JAPAN



### Note:

1. mg/kg = ppm; 0.1wt% = 1000ppm

2. n.d. = Not Detected

3. MDL = Method Detection Limit

4. " - " = Not Regulated

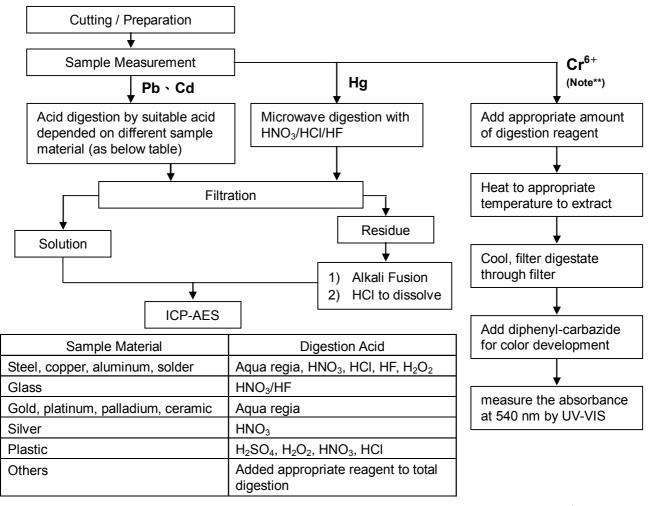


No. : CE/2013/B3958 Date : 2013/11/27

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NAMICS CORPORATION 3993 NIGORIKAWA, KITA-KU, NIIGATA-CITY 950-3131, JAPAN

- 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: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



**Note\*\***: (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95℃.

(2) For metallic material, add pure water and heat to boiling.



No. : CE/2013/B3958 Date : 2013/11/27

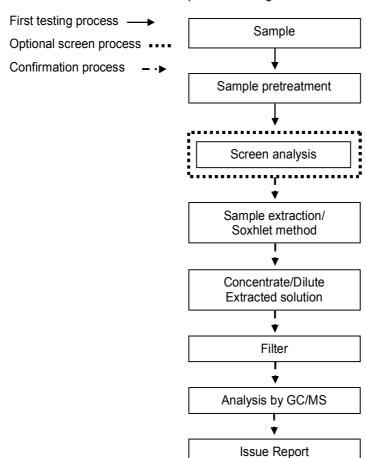
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NAMICS CORPORATION 3993 NIGORIKAWA, KITA-KU, NIIGATA-CITY 950-3131, JAPAN



### PBB/PBDE analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang





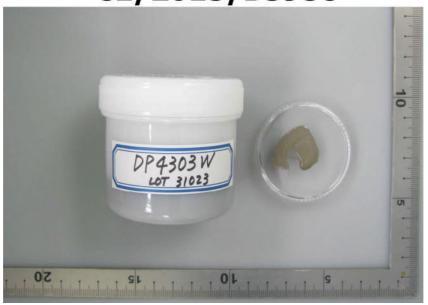
No. : CE/2013/B3958 Date : 2013/11/27

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NAMICS CORPORATION 3993 NIGORIKAWA, KITA-KU, NIIGATA-CITY 950-3131, JAPAN

\* The tested sample / part is marked by an arrow if it's shown on the photo. \*

CE/2013/B3958



\*\* End of Report \*\*

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Vale Canada Limited

200 Bay Street, Royal Bank Plaza, Suite 1600, South Tower, P.O. Box 70, Toronto, Ontario, M5J 2K2, Canada

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

Sample Submitted By : Vale Canada Limited

Sample Description : VALE Electrolytic Nickel S Rounds

Sample Receiving Date : 2013/11/19

Testing Period : 2013/11/19 TO 2013/11/26

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

Conclusion : Based on the performed tests on submitted samples, the test results of Cadmium, Lead,

Mercury, Hexavalent Chromium Cr(VI), PBBs and PBDEs comply with the limits as set by

RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.





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Vale Canada Limited

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#### Test Result(s)

PART NAME No.1 : SILVER COLORED METAL

Test Item(s)	Unit	Method	MDL	Result	Limit
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	No.1 n.d.	100
Lead (Pb)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.	1000
Mercury (Hg)	mg/kg	With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.	1000
Hexavalent Chromium Cr(VI)	**	With reference to IEC 62321: 2008 and performed by Boiling water extraction (UV-VIS) Method.#	#	Negative	#
Antimony (Sb)	mg/kg	With reference to US EPA Method 3050B. Analysis was performed by ICP-AES.	2	n.d.	-
Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.	-
PFOA (CAS No.: 335-67-1)	mg/kg	With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.	-
PVC	**	Analysis was performed by FTIR and FLAME Test.	-	Negative	-
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α- HBCDD, β- HBCDD, γ- HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	mg/kg	With reference to IEC 62321: 2008 method. Analysis was performed by GC/MS.	5	n.d.	-
BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.	-
DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.	-
DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0; 68515-49-1)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.	-



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Vale Canada Limited

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Took Hom/o)	11:4:4	Unit Method		Result	Limit
Test Item(s)	Unit	wethod	MDL	No.1	Limit
DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0; 68515-48-0)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.	-
DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.	-
DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.	-
Sum of PBBs			-	n.d.	1000
Monobromobiphenyl			5	n.d.	-
Dibromobiphenyl			5	n.d.	-
Tribromobiphenyl			5	n.d.	-
Tetrabromobiphenyl			5	n.d.	-
Pentabromobiphenyl			5	n.d.	-
Hexabromobiphenyl		/kg With reference to IEC 62321: 2008 and performed by GC/MS.	5	n.d.	-
Heptabromobiphenyl			5	n.d.	-
Octabromobiphenyl			5	n.d.	-
Nonabromobiphenyl			5	n.d.	-
Decabromobiphenyl	mg/kg		5	n.d.	-
Sum of PBDEs	mg/kg		-	n.d.	1000
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.	-



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Vale Canada Limited

200 Bay Street, Royal Bank Plaza, Suite 1600, South Tower, P.O. Box 70, Toronto, Ontario, M5J 2K2, Canada

Test Item(s)	Unit	Method	MDL	Result No.1	Limit
Halogen					
Halogen-Fluorine (F) (CAS No.: 14762-94-8)	ma/ka		50	n.d.	-
Halogen-Chlorine (CI) (CAS No.: 22537-15-1)		With reference to BS EN 14582:2007.	50	n.d.	-
Halogen-Bromine (Br) (CAS No.: 10097-32-2)		Analysis was performed by IC.	50	n.d.	-
Halogen-Iodine (I) (CAS No.: 14362-44-8)			50	n.d.	-

#### Note:

- 1. mg/kg = ppm; 0.1wt% = 1000ppm
- 2. n.d. = Not Detected
- 3. MDL = Method Detection Limit
- 4. " " = Not Regulated
- 5. \*\* = Qualitative analysis (No Unit)
- 6. Negative = Undetectable / Positive = Detectable
- 7. # = a. Positive means the presence of CrVI on the tested areas
  - b. Negative means the absence of CrVI on the tested areas

The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm² tested areas.

#### PFOS Reference Information: POPs - (EU) 757/2010

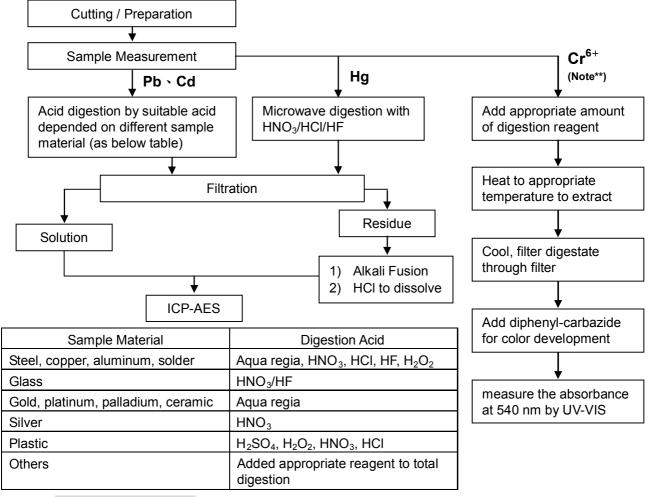
Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above  $1\mu g/m^2$ .



No.: CE/2013/B3493 Date: 2013/11/27 Page: 5 of 13

Vale Canada Limited
200 Bay Street, Royal Bank Plaza, Suite 1600, South Tower, P.O. Box 70, Toronto, Ontario, M5J 2K2, Canada

- 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: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



#### Note\*\* (For IEC 62321)

- (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95 ℃.
- (2) For metallic material, add pure water and heat to boiling.

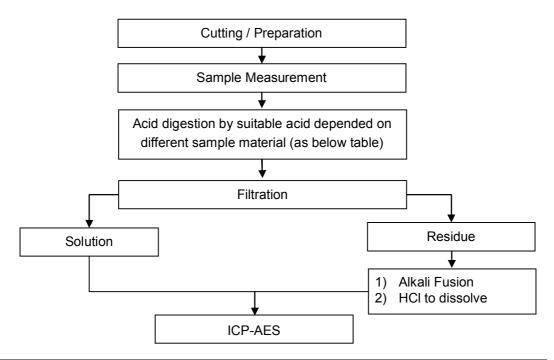


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Vale Canada Limited
200 Bay Street, Royal Bank Plaza, Suite 1600, South Tower, P.O. Box 70, Toronto, Ontario, M5J 2K2, Canada

- 1) These samples were dissolved totally by pre-conditioning method according to below flow
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang

#### Flow Chart of digestion for the elements analysis performed by ICP-AES



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	Added appropriate reagent to total digestion

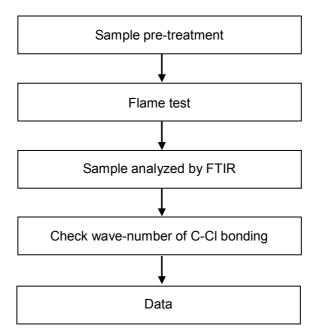


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Vale Canada Limited
200 Bay Street, Royal Bank Plaza, Suite 1600, South Tower, P.O. Box 70, Toronto, Ontario, M5J 2K2, Canada

#### Analysis flow chart for determination of PVC in material

- Name of the person who made measurement: Ginny Chen
- Name of the person in charge of measurement: Troy Chang



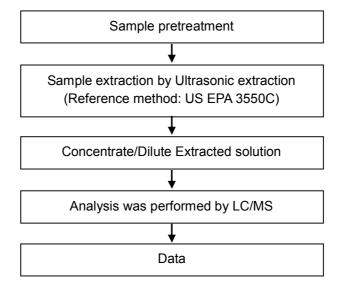


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Vale Canada Limited
200 Bay Street, Royal Bank Plaza, Suite 1600, South Tower, P.O. Box 70, Toronto, Ontario, M5J 2K2, Canada

#### PFOA/PFOS analytical flow chart of Ultrasonic extraction (LC/MS) procedure

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



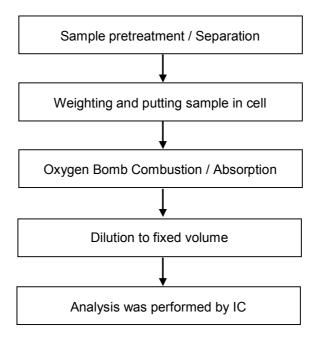


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Vale Canada Limited
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### Analytical flow chart of halogen content

- Name of the person who made measurement: Rita Chen
- Name of the person in charge of measurement: Troy Chang



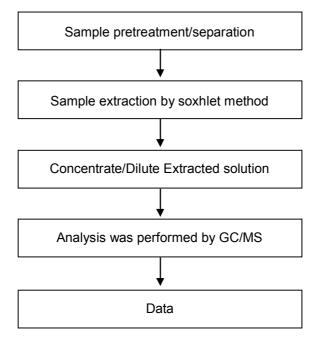


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Vale Canada Limited
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#### Analytical flow chart of phthalate content

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



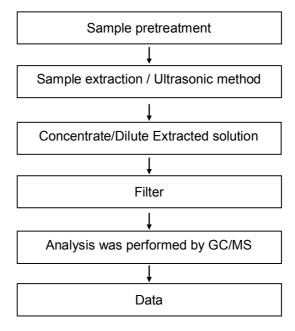


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Vale Canada Limited
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#### **HBCDD** analytical flow chart

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



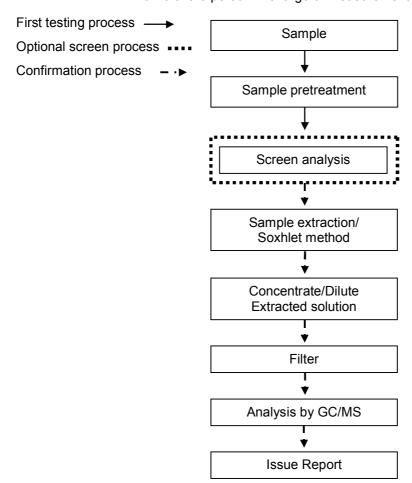


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Vale Canada Limited
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#### PBB/PBDE analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang





No.: CE/2013/B3493 Date: 2013/11/27 Page: 13 of 13

Vale Canada Limited
200 Bay Street, Royal Bank Plaza, Suite 1600, South Tower, P.O. Box 70, Toronto, Ontario, M5J 2K2, Canada

\* The tested sample / part is marked by an arrow if it's shown on the photo. \*

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\*\* End of Report \*\*

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### **Test Report**

號碼(No.) : CE/2014/24838 日期(Date) : 2014/03/04 頁數(Page) : 1 of 13

岱暉綠能材料股份有限公司 / DYFENCO GREEN APPLIED MATERIALS CO., LTD.

(永金金屬材料 (東莞) 有限公司 / FOREVER GOLD METAL MATERIAL (D.G.) CO., LTD.) (蘇州岱暉電子貿易有限公司 / SUZHOU DYFENCO ELECTRONIC ENTERPRISE CO., LTD.)

高雄市燕巢區四林路136號 / NO. 136, SILIN RD., YANCHAO DIST., KAOHSIUNG CITY 824, TAIWAN (R. O. C.)

以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by/on behalf of the applicant as):

樣品名稱(Sample Description) : LEAD FREE SOLDER (無鉛銲錫)

樣品型號(Style/Item No.) : 4N PURE TIN ELECTROPLATING ANODE BALL

收件日期(Sample Receiving Date) : 2014/02/24

測試期間(Testing Period) : 2014/02/24 TO 2014/03/03

\_\_\_\_\_\_\_

測試結果(Test Results) : 請見下一頁 (Please refer to next pages).



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# **Test Report**

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岱暉綠能材料股份有限公司 / DYFENCO GREEN APPLIED MATERIALS CO., LTD.

(永金金屬材料 (東莞) 有限公司 / FOREVER GOLD METAL MATERIAL (D.G.) CO., LTD.)

(蘇州岱暉電子貿易有限公司 / SUZHOU DYFENCO ELECTRONIC ENTERPRISE CO., LTD.)

高雄市燕巢區四林路136號 / NO. 136, SILIN RD., YANCHAO DIST., KAOHSIUNG CITY 824, TAIWAN (R. O. C.)

### 測試結果(Test Results)

測試部位(PART NAME)No.1 : 銀色金屬 (SILVER COLORED METAL)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
鎬 / Cadmium (Cd)	mg/kg	參考IEC 62321-5: 2013方法,以感應耦合 電漿原子發射光譜儀檢測./With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
鉛 / Lead (Pb)	mg/kg	參考IEC 62321-5: 2013方法,以感應耦合 電漿原子發射光譜儀檢測. / With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	13
汞 / Mercury (Hg)	mg/kg	參考IEC 62321-4: 2013方法, 以感應耦合 電漿原子發射光譜儀檢測. / With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.
六價鉻 / Hexavalent Chromium Cr(VI)	**	参考IEC 62321: 2008方法,以沸水萃取法 檢測. / With reference to IEC 62321: 2008 and performed by Boiling water extraction Method.#	#	Negative
绨 / Antimony (Sb)	mg/kg	参考US EPA 3050B方法,以感應耦合電漿原子發射光譜儀檢測. / With reference to US EPA Method 3050B. Analysis was performed by ICP-AES.	2	n.d.
六溴環十二烷及所有主要被辨别出的異構物 / Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ - HBCDD, $\beta$ - HBCDD, $\gamma$ - HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	mg/kg	参考IEC 62321: 2008方法,以氣相層析/質 譜儀檢測. / With reference to IEC 62321: 2008 method. Analysis was performed by GC/MS.	5	n.d.



# **Test Report**

號碼(No.): CE/2014/24838 日期(Date): 2014/03/04 頁數(Page): 3 of 13

岱暉綠能材料股份有限公司 / DYFENCO GREEN APPLIED MATERIALS CO., LTD. (永金金屬材料 (東莞) 有限公司 / FOREVER GOLD METAL MATERIAL (D.G.) CO., LTD.) (蘇州岱暉電子貿易有限公司 / SUZHOU DYFENCO ELECTRONIC ENTERPRISE CO., LTD.)

高雄市燕巢區四林路136號 / NO. 136, SILIN RD., YANCHAO DIST., KAOHSIUNG CITY 824, TAIWAN (R. O. C.)

測試項目	測試項目 單位 測試方法 (Test Items) (Unit) (Method)		方法偵測 極限値	結果 (Result)
(lest liems)	(Unit)	(method)	(MDL)	No.1
鄰苯二甲酸甲苯基丁酯 / BBP	%	參考EN 14372, 以氣相層析/質譜儀檢測./	0.003	n.d.
(Benzyl butyl phthalate) (CAS		With reference to EN 14372. Analysis		
No.: 85-68-7)		was performed by GC/MS.		
鄰苯二甲酸二 (2-乙基己基)酯 /	%	參考EN 14372, 以氣相層析/質譜儀檢測./	0.003	n.d.
DEHP (Di- (2-ethylhexyl)		With reference to EN 14372. Analysis		
phthalate) (CAS No.: 117-81-7)		was performed by GC/MS.		
鄰苯二甲酸二異癸酯 / DIDP (Di-	%	參考EN 14372, 以氣相層析/質譜儀檢測./	0.01	n.d.
isodecyl phthalate) (CAS No.:		With reference to EN 14372. Analysis		
26761-40-0; 68515-49-1)		was performed by GC/MS.		
鄰苯二甲酸二異壬酯 / DINP (Di-	%	參考EN 14372, 以氣相層析/質譜儀檢測./	0.01	n.d.
isononyl phthalate) (CAS No.:		With reference to EN 14372. Analysis		
28553-12-0; 68515-48-0)		was performed by GC/MS.		
鄰苯二甲酸二正辛酯 / DNOP (Di-n-	%	參考EN 14372, 以氣相層析/質譜儀檢測./	0.003	n.d.
octyl phthalate) (CAS No.: 117-		With reference to EN 14372. Analysis		
84-0)		was performed by GC/MS.		
鄰苯二甲酸二丁酯 / DBP (Dibutyl	%	參考EN 14372, 以氣相層析/質譜儀檢測./	0.003	n.d.
phthalate) (CAS No.: 84-74-2)		With reference to EN 14372. Analysis		
		was performed by GC/MS.		
鄰苯二甲酸二異丁酯 / DIBP (Di-	%	參考EN 14372, 以氣相層析/質譜儀檢測./	0.003	n.d.
isobutyl phthalate) (CAS No.: 84-		With reference to EN 14372. Analysis		
69-5)		was performed by GC/MS.		
聚氯乙烯 / PVC	**	以紅外光譜分析及焰色法檢測. / Analysis	-	Negative
		was performed by FTIR and FLAME Test.		



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# **Test Report**

岱暉綠能材料股份有限公司 / DYFENCO GREEN APPLIED MATERIALS CO., LTD.

(永金金屬材料 (東莞) 有限公司 / FOREVER GOLD METAL MATERIAL (D.G.) CO., LTD.)

(蘇州岱暉電子貿易有限公司 / SUZHOU DYFENCO ELECTRONIC ENTERPRISE CO., LTD.) 高雄市燕巢區四林路136號 / NO. 136, SILIN RD., YANCHAO DIST., KAOHSIUNG CITY 824, TAIWAN (R. O. C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
多溴聯苯總和 / Sum of PBBs			-	n.d.
一溴聯苯 / Monobromobiphenyl			5	n.d.
二溴聯苯 / Dibromobiphenyl			5	n.d.
三溴聯苯 / Tribromobiphenyl			5	n.d.
四溴聯苯 / Tetrabromobiphenyl			5	n.d.
五溴聯苯 / Pentabromobiphenyl			5	n.d.
六溴聯苯 / Hexabromobiphenyl			5	n.d.
七溴聯苯 / Heptabromobiphenyl			5	n.d.
八溴聯苯 / Octabromobiphenyl			5	n.d.
九溴聯苯 / Nonabromobiphenyl		& セIPO co201 0000 とは . いたいほと / sif	5	n.d.
十溴聯苯 / Decabromobiphenyl	/1	参考IEC 62321: 2008方法,以氣相層析/質 譜儀檢測. / With reference to IEC 62321: 2008 and performed by GC/MS.	5	n.d.
多溴聯苯醚總和 / Sum of PBDEs	mg/kg		-	n.d.
一溴聯苯醚 / Monobromodiphenyl ether			5	n.d.
二溴聯苯醚 / Dibromodiphenyl ether			5	n.d.
三溴聯苯醚 / Tribromodiphenyl ether			5	n.d.
四溴聯苯醚 / Tetrabromodiphenyl ether			5	n.d.
五溴聯苯醚 / Pentabromodiphenyl ether			5	n.d.
六溴聯苯醚 / Hexabromodiphenyl ether			5	n.d.
七溴聯苯醚 / Heptabromodiphenyl ether			5	n.d.
八溴聯苯醚 / Octabromodiphenyl ether			5	n.d.
九溴聯苯醚 / Nonabromodiphenyl ether			5	n.d.
十溴聯苯醚 / Decabromodiphenyl ether			5	n.d.
鹵素 / Halogen				
鹵素 (氟) / Halogen-Fluorine (F)			50	n.d.
(CAS No.: 14762-94-8)				
鹵素 (氣) / Halogen-Chlorine (Cl)		参考BS EN 14582:2007, 以離子層析儀分	50	n.d.
(CAS No.: 22537-15-1)	mar/lear	析. / With reference to BS EN		
鹵素 (溴) / Halogen-Bromine (Br)	mg/kg	14582:2007. Analysis was performed by	50	n.d.
(CAS No.: 10097-32-2)		IC.		
鹵素(碘)/ Halogen-Iodine (I)			50	n.d.
(CAS No.: 14362-44-8)				



## **Test Report**

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岱暉綠能材料股份有限公司 / DYFENCO GREEN APPLIED MATERIALS CO., LTD.

(永金金屬材料 (東莞) 有限公司 / FOREVER GOLD METAL MATERIAL (D.G.) CO., LTD.)

(蘇州岱暉電子貿易有限公司 / SUZHOU DYFENCO ELECTRONIC ENTERPRISE CO., LTD.)

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#### 備註(Note):

- 1. mg/kg = ppm ; 0.1wt% = 1000ppm
- 2. n.d. = Not Detected (未檢出)
- 3. MDL = Method Detection Limit (方法偵測極限值)
- 4. "-" = Not Regulated (無規格值)
- 5. \*\*= Qualitative analysis (No Unit) 定性分析(無單位)
- 6. Negative = Undetectable 陰性(未偵測到); Positive = Detectable 陽性(已偵測到)
- 7.# = a. Positive means the presence of CrVI on the tested areas (Positive表示測試區域偵測到六價鉻)
  - b. Negative means the absence of CrVI on the tested areas (Negative表示測試區域未偵測到六價鉻)

The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm² tested areas. / 該溶液濃度≧0.02 mg/kg with 50 cm² (tested areas)

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## **Test Report**

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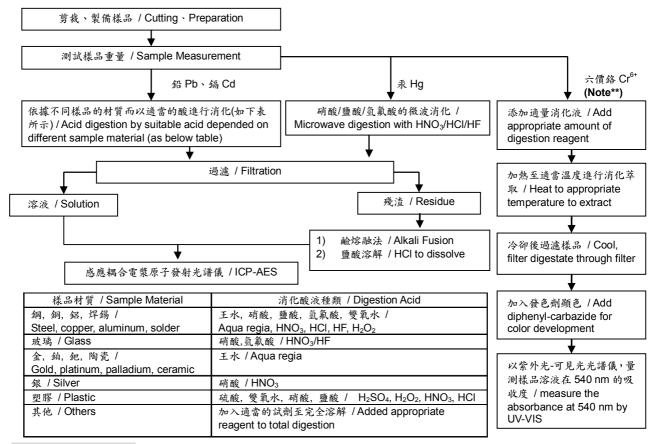
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- 1) 根據以下的流程圖之條件,樣品已完全溶解。( 六價鉻測試方法除外 ) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded )
- 2) 测試人員:楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang



### Note\*\* (For IEC 62321)

- (1) 針對非金屬材料加入鹼性消化液,加熱至 90~95℃ 萃取. / For non-metallic material, add alkaline digestion reagent and heat to 90~95℃.
- (2) 針對金屬材料加入純水,加熱至沸騰萃取. / For metallic material, add pure water and heat to boiling.



# **Test Report**

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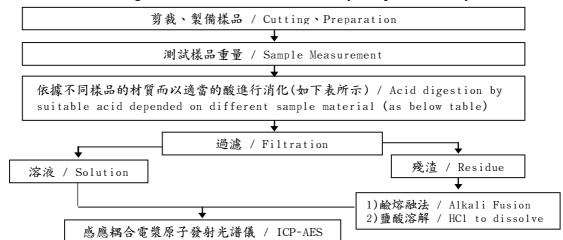
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- 1) 根據以下的流程圖之條件,樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.
- 2) 測試人員:楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang

#### 元素以 ICP-AES 分析的消化流程圖

(Flow Chart of digestion for the elements analysis performed by ICP-AES)



鋼,銅,鋁,焊錫 / Steel, copper, aluminum, solder	王水,硝酸,鹽酸,氫氟酸,雙氧水 /
	Aqua regia, HNO3, HC1, HF, H2O2
玻璃 / Glass	硝酸,氫氟酸 / HNO3/HF
金,鉑,鈀,陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO3
塑膠 / Plastic	硫酸,雙氧水,硝酸,鹽酸 / H2SO4, H2O2, HNO3, HC1
其他 / Others	加入適當的試劑至完全溶解 / Added appropriate
	reagent to total digestion



### **Test Report**

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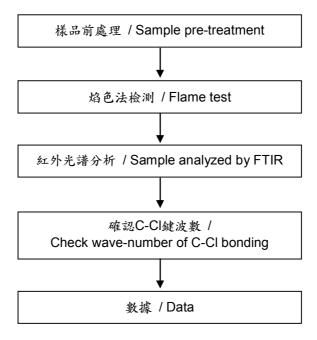
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### 聚氯乙烯物質判定分析流程圖 /

### Analysis flow chart for determination of PVC in material

- 測試人員:陳君涵 / Name of the person who made measurement: Ginny Chen
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





# **Test Report**

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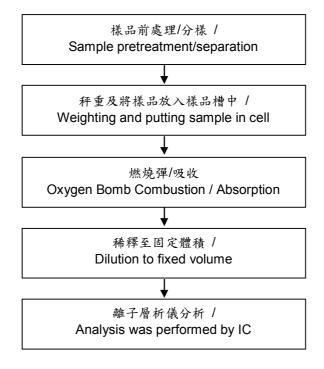
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#### 鹵素分析流程圖 / Analytical flow chart of halogen content

- 測試人員:陳恩臻 / Name of the person who made measurement: Rita Chen
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





### **Test Report**

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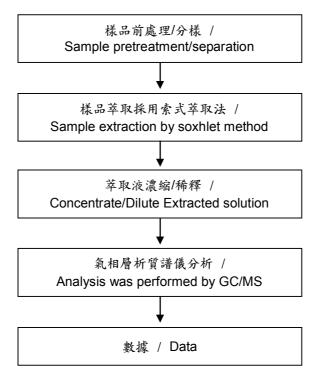
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#### 可塑劑分析流程圖 / Analytical flow chart of phthalate content

- 測試人員:翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang



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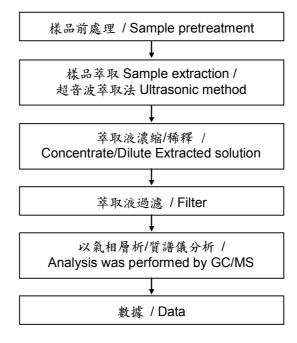
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#### 六溴環十二烷分析流程圖 / HBCDD analytical flow chart

- 測試人員: 翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang



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### **Test Report**

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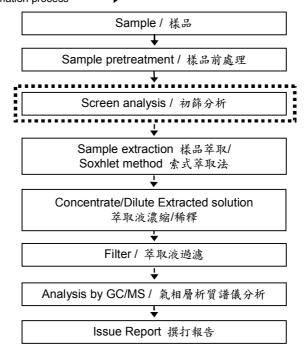
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#### 多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 測試人員:翁賜彬 / Name of the person who made measurement: Roman Wong





### **Test Report**

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\* 照片中如有箭頭標示,則表示為實際檢測之樣品/部位. \*
(The tested sample / part is marked by an arrow if it's shown on the photo.)

CE/2014/24838



\*\* 報告結尾 (End of Report) \*\*

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报告编号 RHS03F003942012ER1 RHS03F003942012ER1 Report No.

第 1 页 共 8 页 Page 1 of 8

申请单位 江门市长利光电科技有限公司

JIANGMEN CHANGLI OPTOELECTRONIC TECHNOLOGY CO..LTD **Applicant** 

地 址 「东省江门市高新技术开发区邦民路36号

Address NO.36, BANGMIN ROAD, HIGH-TECH DEVELOPMENT

ZONE, JIANGMEN, GUANGDONG, CHINA

### 以下测试之样品及样品信息由申请者提供并确认

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

样品名称 贴片(小功率)

Sample Name SMD3528、5050、5730、3014、2835、0603

2013.12.09 样品接收日期 Sample Received Date Dec. 9, 2013

样品检测日期 2013.12.09-2013.12.12

**Testing Period** Dec. 9, 2013 to Dec. 12, 2013

检测要求 根据客户要求,对所提交样品中的铅(Pb),镉(Cd),汞(Hg),六价铬(Cr(VI)),

多溴联苯(PBBs),多溴二苯醚(PBDEs),六溴环十二烷(HBCDD),邻苯二甲酸

盐进行测试。

As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), **Test Requested** 

Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers(PBDEs), Hexabromocyclododecane

(HBCDD), Phthalates in the submitted sample(s).

检测依据/检测结果

批

**Test Method/Test Result(s)** 

请参见下页。

Please refer to the following page(s).

Tested by

Qinghong Wan echnical Manager Reviewed by

期 H Date

2013.12.13

No. 1066815955

术股份有限公司顺德分公司 广东省佛山市顺德区容桂容奇大道东8号之二永盈大厦9楼 Centre Testing International Co., Ltd. Shunde Branch Building, Section 2, No.8, East of Rongqi Avenue, Ronggui, Shunde District, Foshan, Guangdong, China



报告编号 RHS03F003942012ER1 Report No. RHS03F003942012ER1 第 2 页 共 8 页 Page 2 of 8

### 检测依据 Test Method

A STATE OF THE STA	176.0	10.0 . /
测试项目 Test Item(s)	测试方法 Test Method	测试仪器 Measured Equipment(s)
铅(Pb) Lead(Pb)	IEC 62321:2008 Ed.1 Sec.10	ICP-OES
镉(Cd) Cadmium(Cd)	IEC 62321:2008 Ed.1 Sec.10	ICP-OES
汞(Hg) Mercury(Hg)	IEC 62321:2008 Ed.1 Sec.7	ICP-OES
六价铬(Cr(VI)) Hexavalent Chromium (Cr(VI))	IEC 62321:2008 Ed.1 Annex C	UV-Vis
多溴联苯(PBBs) Polybrominated Biphenyls (PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
多溴二苯醚(PBDEs) Polybrominated Diphenyl Ethers(PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
六溴环十二烷(HBCDD) Hexabromocyclododecane (HBCDD)	参考US EPA 3540C: 1996 Refer to US EPA 3540C:1996	GC-MS
邻苯二甲酸盐 Phthalates	参考EN 14372: 2004(E) Refer to EN 14372:2004(E)	GC-MS

### 检测结果 Test Result(s)

测试项目 Test Item(s)	结果 Result	方法检测限 MDL
铅(Pb) Lead(Pb)	N.D.	2 mg/kg
镉(Cd) Cadmium(Cd)	N.D.	2 mg/kg
汞(Hg) Mercury(Hg)	N.D.	2 mg/kg
六价铬(Cr(VI)) Hexavalent Chromium(Cr(VI))	N.D.	2 mg/kg

测试项目 Test Item(s)	结果 Result	方法检测限 MDL
多溴联苯(PBBs) Polybrominated Biphenyls (PBBs)		
一溴联苯 Monobromobiphenyl	N.D.	5 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	5 mg/kg
三溴联苯 Tribromobiphenyl	N.D.	5 mg/kg
四溴联苯 Tetrabromobiphenyl	N.D.	5 mg/kg
五溴联苯 Pentabromobiphenyl	N.D.	5 mg/kg
六溴联苯 Hexabromobiphenyl	N.D.	5 mg/kg
七溴联苯 Heptabromobiphenyl	N.D.	5 mg/kg
八溴联苯 Octabromobiphenyl	N.D.	5 mg/kg





报告编号 RHS03F003942012ER1 Report No. RHS03F003942012ER1 

九溴联苯 Nonabromobiphenyl	N.D.	5 mg/kg
十溴联苯 Decabromobiphenyl	N.D.	5 mg/kg

测试项目 Test Item(s)	结果 Result	方法检测限 MDL	
多溴二苯醚(PBDEs) Polybrominated Diphenyl Ethers(PBDEs)			
一溴二苯醚 Monobromodiphenyl ether	N.D.	5 mg/kg	
二溴二苯醚 Dibromodiphenyl ether	N.D.	5 mg/kg	
三溴二苯醚 Tribromodiphenyl ether	N.D.	5 mg/kg	
四溴二苯醚 Tetrabromodiphenyl ether	N.D.	5 mg/kg	
五溴二苯醚 Pentabromodiphenyl ether	N.D.	5 mg/kg	
六溴二苯醚 Hexabromodiphenyl ether	N.D.	5 mg/kg	
七溴二苯醚 Heptabromodiphenyl ether	N.D.	5 mg/kg	
八溴二苯醚 Octabromodiphenyl ether	N.D.	5 mg/kg	
九溴二苯醚 Nonabromodiphenyl ether	N.D.	5 mg/kg	
十溴二苯醚 Decabromodiphenyl ether	N.D.	5 mg/kg	

测试项目 Test Item(s)	结果 Result	方法检测限 MDL
六溴环十二烷(HBCDD) Hexabromocyclododecane (HBCDD)	N.D.	5 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检测限 MDL
邻苯二甲酸盐 Phthalates	(30)	(4)
邻苯二甲酸二丁酯(DBP) Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
邻苯二甲酸苯基丁酯 (BBP) Benzylbutyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
邻苯二甲酸二(2-乙基己基酯) (DEHP) Di-2-ethylhexyl phthalate(DEHP) CAS#:117-81-7	N.D.	50 mg/kg

测试样品/部位描述

混测, 黄色、橙色和透明本体

**Tested Sample/Part Description** 

Mixed test, yellow, orange and transparent body

注释:

- 1. 对于检测铅,镉,汞之样品已完全溶解。
- 2. 根据客户要求,对样品进行混合测试,测试结果不代表混合测试样品中任何一种单一材质的含量。
- -N.D. = 未检出 (小于方法检测限)
- -mg/kg= ppm = 百万分之几









RHS03F003942012ER1

第4页 共8页

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Report No. Note:

1. The sample had been dissolved totally tested for Lead, Cadmium, Mercury.

2. As specified by client, the test was conducted by mixing several samples together. The result(s) shown on this report may be different from the content of any homogeneous

material.

-MDL = Method Detection Limit -N.D. = Not Detected (<MDL) -mg/kg = ppm = parts per million

备注: 1.本报告替换原报告 RHS03F003942012E, 自本报告签发之日起,原报告

RHS03F003942012E 作废。本报告编号末尾中 R1 表示本次修改后的报告版本。

2. 报告编号中"E"表示此报告为中英文对照版本。

Remark: 1. This testing report displaces the original report of No. RHS03F003942012E, and the

original one No. RHS03F003942012E was invalid since the date of this testing report

released. The end sign of report number R1 represents the revised version.

2. The end sign of report number E represents the bilingual version.

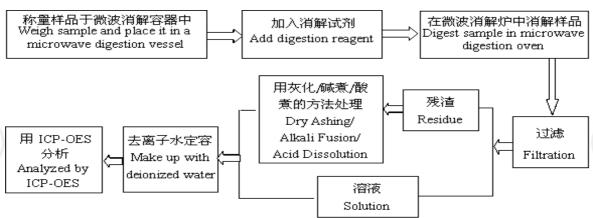




报告编号 RHS03F003942012ER1 Report No. RHS03F003942012ER1 第 5 页 共 8 页 Page 5 of 8

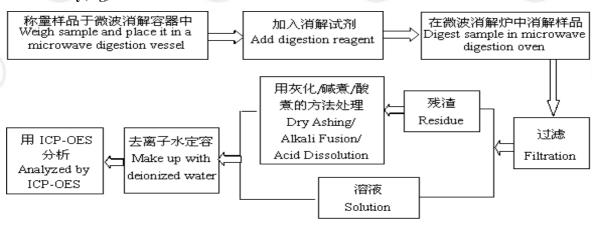
#### 检测流程 Test Process

1. 铅(Pb),镉(Cd) Lead(Pb), Cadmium(Cd)



### 2. 汞(Hg)

#### Mercury(Hg)

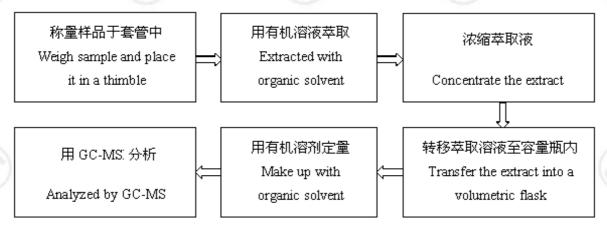




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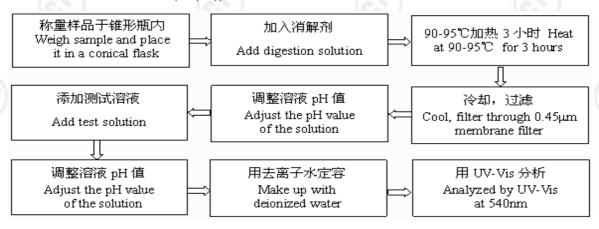
第 6 页 共 8 页 Page 6 of 8

3. 邻苯二甲酸盐 Phthalates



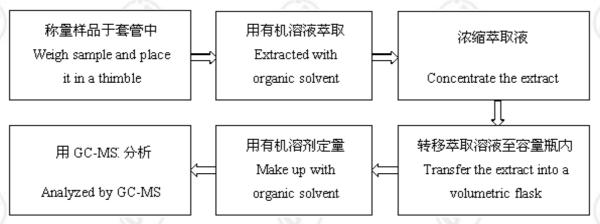
4. 六价铬(Cr(VI))

#### **Hexavalent Chromium (Cr(VI))**



5. 六溴环十二烷(HBCDD)

### Hexabromocyclododecane (HBCDD)





报告编号 RHS03F003942012ER1 Report No. RHS03F003942012ER1

多溴联苯(PBBs),多溴二苯醚(PBDEs)
 Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers(PBDEs)





报告编号 RHS03F003942012ER1 Report No. RHS03F003942012ER1 第 8 页 共 8 页 Page 8 of 8

# 样品图片 Photo(s) of the sample(s)



\*\*\*报告结束\*\*\* \*\*\* End of report \*\*\*

检测报告无批准人签字及"报告专用章"无效,本报告检测结果仅对受测样品负责。未经CTI书面同意,不得部分复制本报告。

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.





**Test Report** No. CANEC1400103601 Date: 09 Jan 2014 Page 1 of 6

SHENZHEN JINXIONGFA ELECTRONICS TECHNOLOGY CO., LTD.

4F,61 BUILDING,MIAOYING HUI INDUSTRIAL PARK ZHONG WU VILLAGE, XIXIANG TOWN SHENZHEN CHINA

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

SGS Job No. : CP14-000209 - SZ

Date of Sample Received: 03 Jan 2014

Testing Period: 03 Jan 2014 - 09 Jan 2014

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).

Signed for and on behalf of SGS-CSTC Ltd.

Merry Lv

Approved Signatory



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## **Test Report** No. CANEC1400103601 Date: 09 Jan 2014 Page 2 of 6

Test Results:

#### Test Part Description:

Specimen No. SGS Sample ID Description

SN1 CAN14-001036.001 Silvery/golden plated metal

#### Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected ( < MDL)

(4) "-" = Not Regulated

#### Elementary Analysis

Test Method: (1)With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.

(2)With reference to IEC 62321-5:2013, determination of Lead by ICP-OES. (3)With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.

(4)With reference to IEC 62321:2008, determination of Hexavalent Chromium by spot test /

Colorimetric Method using UV-Vis.

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Cadmium (Cd)	mg/kg	2	ND
Lead (Pb)	mg/kg	2	30
Mercury (Hg)	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	$\Diamond$	Negative

#### Notes:

(1) 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.

Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

## Perfluorooctane Sulfonates (PFOS) and Perfluorooctanoic Acid (PFOA)





**Test Report** No. CANEC1400103601 Date: 09 Jan 2014 Page 3 of 6

Test Method: With reference to US EPA Method 3550C:2007, analysis was performed by HPLC-MS.

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Perfluorooctane Sulfonates (PFOS) and related	μg/m²	1	ND
Acid,Metal Salt and Amide			
Perfluorooctanoic Acid (PFOA)	µg/m²	1	ND

#### Notes:

- (1) PFOS Reference Information: Entry 53 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2006/122/EC)
  - (i) May not be placed on the market or used as a substance or constituent of preparations in a concentration equal to or higher than 0.005 % by mass.
  - (ii) May 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. Please refer to Regulation (EC) No 552/2009 to get more detail information





No. CANEC1400103601

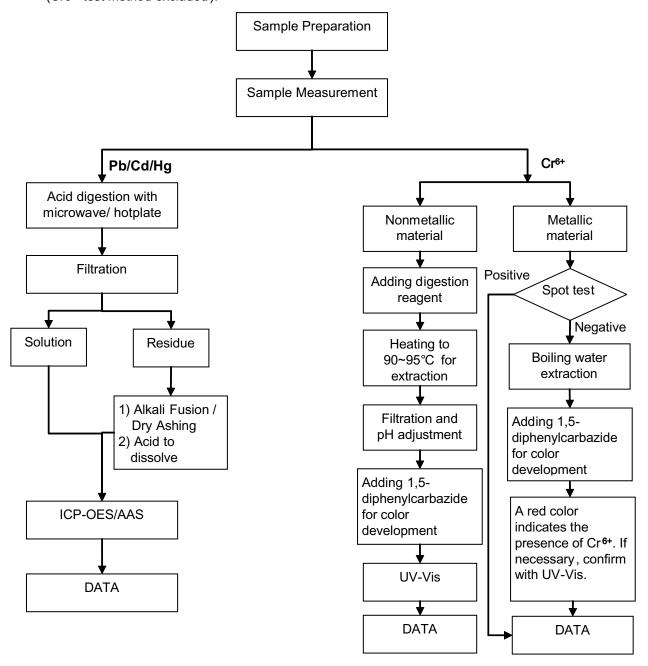
Date: 09 Jan 2014

Page 4 of 6

## **ATTACHMENTS**

#### **RoHS Testing Flow Chart**

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







No. CANEC1400103601

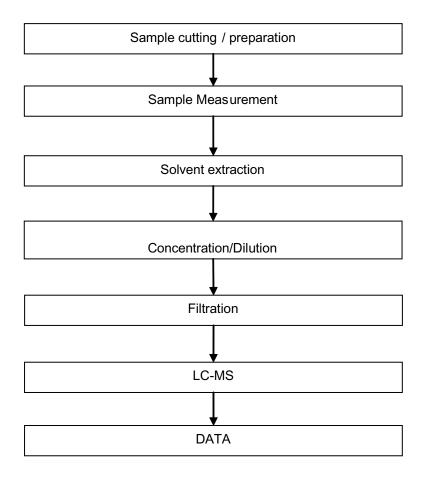
Date: 09 Jan 2014

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## **ATTACHMENTS**

## PFOA / PFOS Testing Flow Chart

- 1) Name of the person who made testing: Tina Zhao
- 2) Name of the person in charge of testing: Yolanda Wei





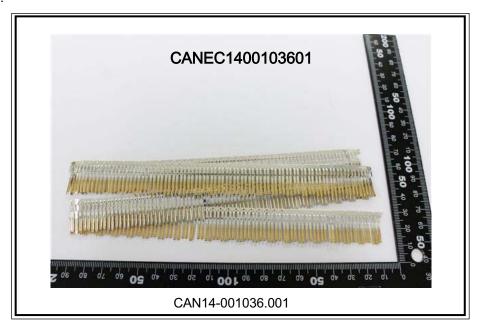


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Sample photo:



SGS authenticate the photo on original report only

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





**Test Report** No. CANEC1314274905 Date: 18 Sep 2013 Page 1 of 15

DONGGUAN JINDA ELECTRONICS CO.,LTD

5#,ROAD NORTH,PUXINHU COUNTRY,TANGXIA TOWN,DONGGUAN,GUANGDONG CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as: Nylon 66 UL94V-0

SGS Job No.: CP13-048427 - SZ

Date of Sample Received: 11 Sep 2013

Testing Period: 11 Sep 2013 - 17 Sep 2013

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: Based on the performed tests on submitted samples, the results of Lead,

Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS

Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of SGS-CSTC Ltd.

Almay Gao

Approved Signatory



## **Test Report** No. CANEC1314274905 Date: 18 Sep 2013 Page 2 of 15

Test Results:

#### **Test Part Description:**

Specimen No. SGS Sample ID Description

1 CAN13-142749.005 White plastic grains

#### Remarks:

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected ( < MDL)
- (4) "-" = Not Regulated

#### RoHS Directive 2011/65/EU

Test Method: (1)With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.

(2)With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.

(3) With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.

(4)With reference to IEC 62321:2008, determination of Hexavalent Chromium by Colorimetric

Method using UV-Vis.

(5)With reference to IEC 62321:2008, determination of PBBs and PBDEs by GC-MS.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>005</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	2	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

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Member of the SGS Group (SGS SA)



Test Report	No. CANEC13142749	05	Date: 18	Sep 2013	Page 3 of 15
Test Item(s)	<u>Limit</u>	<u>Unit</u>	MDL	<u>005</u>	
Dibromodiphenyl ether	-	mg/kg	5	ND	
Tribromodiphenyl ether	-	mg/kg	5	ND	
Tetrabromodiphenyl ether	-	mg/kg	5	ND	
Pentabromodiphenyl ether	-	mg/kg	5	ND	
Hexabromodiphenyl ether	-	mg/kg	5	ND	
Heptabromodiphenyl ether	-	mg/kg	5	ND	
Octabromodiphenyl ether	-	mg/kg	5	ND	
Nonabromodiphenyl ether	-	mg/kg	5	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	

#### Notes:

(1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II

## Polynuclear Aromatic Hydrocarbons (PAHs)

Test Method: With reference to ZEK 01.4-08 of German ZLS and its amendments, analysis was performed by GC-MS.

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>005</u>
Naphthalene(NAP)	mg/kg	0.2	ND
Acenaphthylene(ANY)	mg/kg	0.2	ND
Acenaphthene(ANA)	mg/kg	0.2	ND
Fluorene(FLU)	mg/kg	0.2	ND
Phenanthrene(PHE)	mg/kg	0.2	ND
Anthracene(ANT)	mg/kg	0.2	ND
Fluoranthene(FLT)	mg/kg	0.2	ND
Pyrene(PYR)	mg/kg	0.2	ND
Benzo(a)anthracene(BaA)	mg/kg	0.2	ND
Chrysene(CHR)	mg/kg	0.2	ND
Benzo(b)fluoranthene(BbF) + Benzo(j)fluoranthene(BjF)	mg/kg	0.4	ND



Test Report	No. CANEC1314274905	Date: 18 S	Sep 2013	Page 4 of 15
<u>Test Item(s)</u> Benzo(k)fluoranthene(BkF)	<u>Unit</u> mg/kg	MDL 0.2	<u>005</u> ND	
Benzo(e)pyrene(BeP)	mg/kg	0.2	ND	
Benzo(a)pyrene(BaP)	mg/kg	0.2	ND	
Indeno(1,2,3-c,d)pyrene(IPY)	mg/kg	0.2	ND	
Dibenzo(a,h)anthracene(DBA)	mg/kg	0.2	ND	
Benzo(g,h,i)perylene(BPE)	mg/kg	0.2	ND	
Sum of 18 PAHs	mg/kg	-	ND	

## ZEK 01.4-08: Restraining maximum values for products

Parameter	Category 1	Category 2	Category 3
	Material indented to be put in the mouth or material for toys with normal skin contact for children aged < 36 months	Materials those are not included in Category 1, with predictable contact with the skin longer than 30 s. (long-term skin contact).	Materials those are not included in Category 1 or 2, with predictable skin contact up to 30 s (short-term skin contact).
Benzo(a)pyrene (mg/kg)	<0.2**	1	20
Sum of 18 PAH (mg/kg)*	<0.2**	10	200

#### Notes:

## **Phthalate**

Test Method: With reference to EN14372: 2004. Analysis was performed by GC-MS.

Test Item(s)	CAS NO.	<u>Unit</u>	<u>MDL</u>	<u>005</u>
Dibutyl Phthalate (DBP)	84-74-2	% (w/w)	0.003	ND
Benzylbutyl Phthalate (BBP)	85-68-7	% (w/w)	0.003	ND

Only PAH substances > 0.2 mg/kg are taken into account while calculating the sum of PAHs

<sup>\*\* =</sup> In case that the maximum values exceed the limits of category 1, but are within the limits of category 2, one may confirm the suitability of the tested material which is indented to be put in the mouth by additional specific migration tests of PAH components based on DIN EN 1186ff and §64 LFGB 80.30-1. The conclusion of the migration test results must be made based on food law criteria.



Test Report	No. CANEC13142	274905	Date: 18 \$	Sep 2013	Page 5 of 15
Test Item(s)	CAS NO.	<u>Unit</u>	MDL	<u>005</u>	
Bis-(2-ethylhexyl) Phthalate (DEHP)	117-81-7	% (w/w)	0.003	ND	
Diisononyl Phthalate (DINP)	28553-12-0 / 68515-48-0	% (w/w)	0.01	ND	
Di-n-octyl Phthalate (DNOP)	117-84-0	% (w/w)	0.003	ND	
Diisodecyl Phthalate (DIDP)	26761-40-0 / 68515-49-1	% (w/w)	0.01	ND	
Dimethyl Phthalate (DMP)	131-11-3	% (w/w)	0.003	ND	
Diethyl Phthalate (DEP)	84-66-2	% (w/w)	0.003	ND	
Diisobutyl Phthalate (DIBP)	84-69-5	% (w/w)	0.003	ND	
Dinonyl Phthalate (DNP)	84-76-4	% (w/w)	0.003	ND	
Diisooctyl Phthalate (DiOP)	27554-26-3	% (w/w)	0.010	ND	
Dipropyl Phthalate (DPrP)	131-16-8	% (w/w)	0.003	ND	
Dicyclohexyl Phthalate (DCHP)	84-61-7	% (w/w)	0.003	ND	
Dipentyl Phthalate (DPP)	131-18-0	% (w/w)	0.003	ND	
Dibenzyl Phthalate (DBzP)	523-31-9	% (w/w)	0.003	ND	
Diphenyl Phthalate (DPhP)	84-62-8	% (w/w)	0.003	ND	
Di-n-hexyl Phthalate (DnHP)	84-75-3	% (w/w)	0.003	ND	

#### Notes:

- (1)DBP,BBP,DEHP Reference information: Entry 51 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC):
- i) Shall not be used as substances or in mixtures, in concentrations greater than 0.1 % by weight of the plasticised material, in toys and childcare articles.
- ii) Toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.

Please refer to Regulation (EC) No 552/2009 to get more detail information

- (2)DINP, DNOP, DIDP Reference information: Entry 52 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC).
- i) Shall not be used as substances or in mixtures, in concentrations greater than 0.1 % by weight of the plasticised material, in toys and childcare articles which can be placed in the mouth by children.
- ii) Such toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by



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Date: 18 Sep 2013

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weight of the plasticised material shall not be placed on the market. Please refer to Regulation (EC) No 552/2009 to get more detail information

## Tetrabromobisphenol A (TBBP-A)

Test Method: With reference to US EPA Method 3540C:1996, analysis was performed by GC-MS&HPLC-MS.

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>005</u>
Tetrabromobisphenol A (TBBP-A)	mg/kg	10	ND

## **Dimethyl Fumarate (DMF)**

Test Method: SGS In house method(GZTC CHEM-TOP-095), alalysis was performed by GC-MS

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>005</u>
Dimethyl fumarate(DMF)	0.1	mg/kg	0.1	ND
Conclusion				PASS

Notes:

(1) The maximum permissible limit is quoted from the document Commission Regulation (EU) No 412/2012 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Commission Decision 2012/48/EU)

## Hexabromocyclododecane (HBCDD)

Test Method: With reference to IEC 62321:2008, analysis was performed by GC-MS.

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>005</u>
Hexabromocyclododecane (HBCDD)	mg/kg	10	ND

## PFOS (Perfluorooctane Sulfonates) and PFOA (Perfluorooctanoic Acid)

Test Method: With reference to US EPA Method 3550C: 2007, analysis was performed by HPLC-MS.

Test Item(s)	<u>Unit</u>	MDL	<u>005</u>
Perfluorooctane Sulfonates (PFOS) and related	mg/kg	10	ND
Acid,Metal Salt and Amide			
Perfluorooctanoic Acid (PFOA)	mg/kg	10	ND



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Date: 18 Sep 2013

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#### Notes:

For reference: commission regulation (EU) No 757/2010 amending regulation (EC) No 850/2004:

- (1) For the purposes of this entry, Article 4(1) (b) shall apply to concentrations of PFOS equal to or below 10 mg/kg (0,001 % by weight) when it occurs in substances or in preparations.
- (2) For the purposes of this entry, Article 4(1) (b) shall apply to concentrations of PFOS in semi-finished products or articles, or parts thereof, if the concentration of PFOS is lower than 0,1 % by weight calculated with reference to the mass of structurally or micro-structurally distinct parts that contain PFOS or, for textiles or other coated materials, if the amount of PFOS is lower than 1µg /m2 of the coated material.



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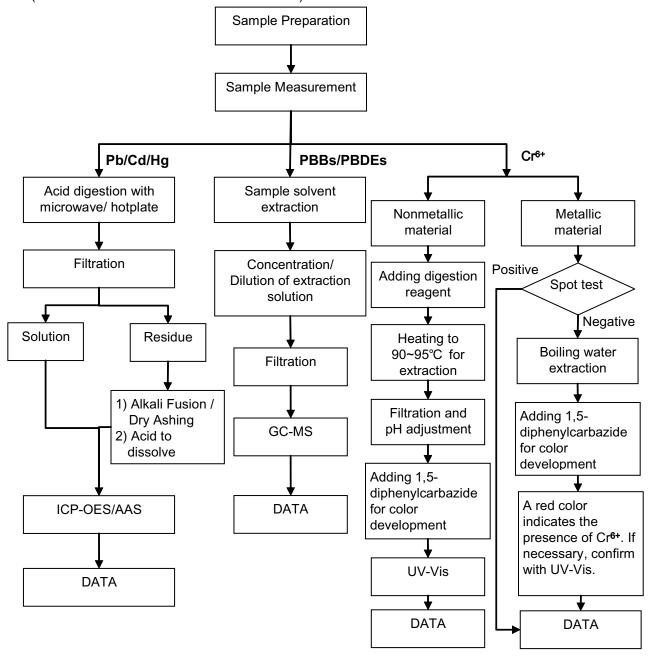
Date: 18 Sep 2013

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## **ATTACHMENTS**

#### **RoHS Testing Flow Chart**

- 1) Name of the person who made testing: Michael Tso / Cutey Yu
- 2) Name of the person in charge of testing: Adams Yu / Yolanda Wei
- 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).



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No. CANEC1314274905

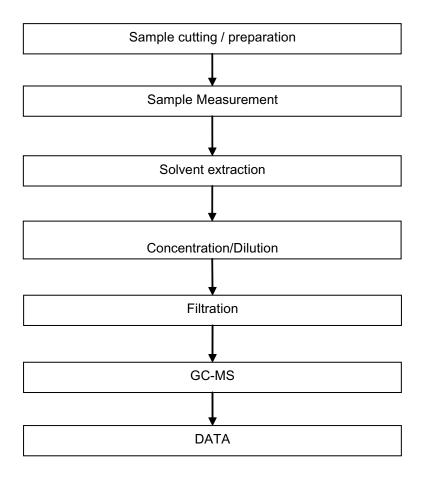
Date: 18 Sep 2013

Page 9 of 15

## **ATTACHMENTS**

## **HBCDD Testing Flow Chart**

- 1) Name of the person who made testing: Cutey Yu
- 2) Name of the person in charge of testing: Yolanda Wei



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S-CST Standards Technical Services to., Ltd.
angahou Brand Services to Laboratory.



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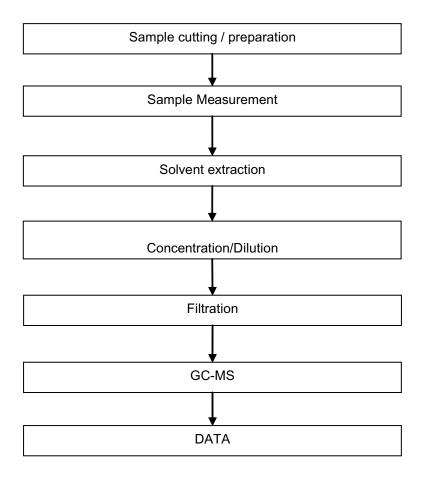
Date: 18 Sep 2013

Page 10 of 15

## **ATTACHMENTS**

## **Phthalates Testing Flow Chart**

- 1) Name of the person who made testing: Liu Qiong
- 2) Name of the person in charge of testing: Yolanda Wei





No. CANEC1314274905

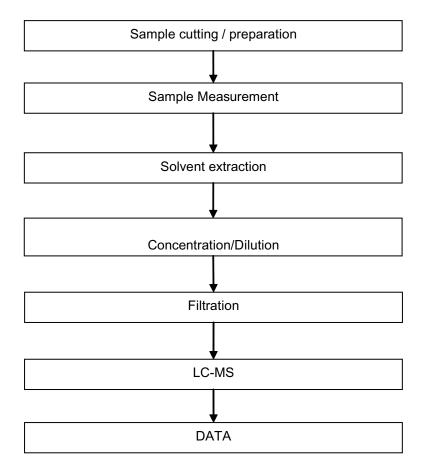
Date: 18 Sep 2013

Page 11 of 15

## **ATTACHMENTS**

## PFOA / PFOS Testing Flow Chart

- 1) Name of the person who made testing: Tina Zhao
- 2) Name of the person in charge of testing: Yolanda Wei





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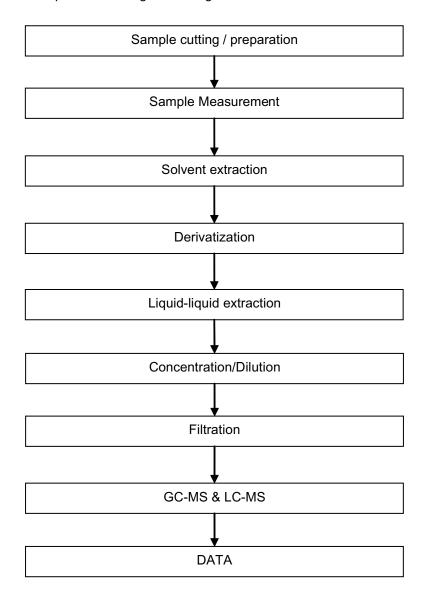
Date: 18 Sep 2013

Page 12 of 15

## **ATTACHMENTS**

## **TBBP-A Testing Flow Chart**

- 1) Name of the person who made testing: Cutey Yu
- 2) Name of the person in charge of testing: Yolanda Wei



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中国·广州·经济技术开发区科学城科珠路198号



No. CANEC1314274905

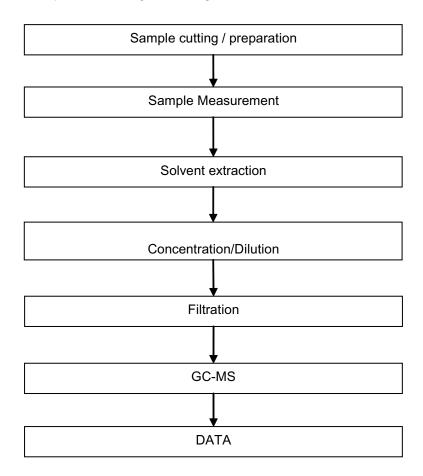
Date: 18 Sep 2013

Page 13 of 15

## **ATTACHMENTS**

## **PAHs Testing Flow Chart**

- 1) Name of the person who made testing: Cutey Yu
- 2) Name of the person in charge of testing: Yolanda Wei





No. CANEC1314274905

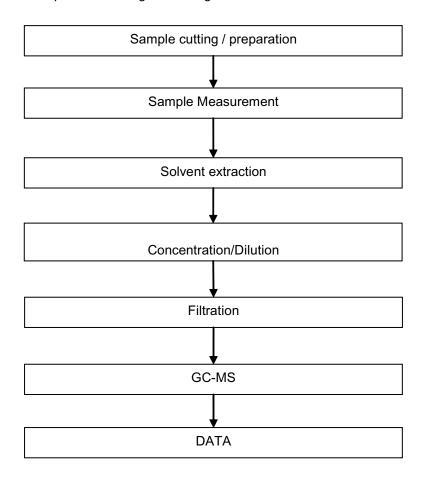
Date: 18 Sep 2013

Page 14 of 15

## **ATTACHMENTS**

## **Dimethyl Fumarate Testing Flow Chart**

- 1) Name of the person who made testing: Liu Qiong
- 2) Name of the person in charge of testing: Yolanda Wei





No. CANEC1314274905

Date: 18 Sep 2013

Page 15 of 15

Sample photo:



SGS authenticate the photo on original report only

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



**Test Report** No. CANEC1400105105 Date: 09 Jan 2014 Page 1 of 9

FOSHAN DEXIANGYUAN MATERIALS CO.,LTD

1/F-2/F,20 EAST OF THE FOSHANDAQIAO TOLL STATION NORTHCHANCHENG,FOSHAN CITY CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as: C2680

SGS Job No. : CP14-000225 - GZ

Date of Sample Received: 03 Jan 2014

Testing Period: 03 Jan 2014 - 09 Jan 2014

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: Based on the performed tests on submitted samples, the results of Lead,

Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS

Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of SGS-CSTC Ltd.

Merry Lv

Approved Signatory





No. CANEC1400105105

Date: 09 Jan 2014

Page 2 of 9

Test Results:

#### **Test Part Description:**

Specimen No. SGS Sample ID Description

SN1 CAN14-001051.003 Brassy metal sheet

#### Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected ( < MDL)

(4) "-" = Not Regulated

#### RoHS Directive 2011/65/EU

Test Method: (1)With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.

(2)With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.

(3) With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.

(4)With reference to IEC 62321:2008, determination of Hexavalent Chromium by spot test /

Colorimetric Method using UV-Vis.

(5) With reference to IEC 62321:2008, determination of PBBs and PBDEs by GC-MS.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	20
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	-	$\Diamond$	Negative
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND





Test Report	No. CANEC14001051	105	Date: 0	9 Jan 2014	Page 3 of 9
Test Item(s)	<u>Limit</u>	<u>Unit</u>	MDL	<u>003</u>	
Dibromodiphenyl ether	-	mg/kg	5	ND	
Tribromodiphenyl ether	-	mg/kg	5	ND	
Tetrabromodiphenyl ether	-	mg/kg	5	ND	
Pentabromodiphenyl ether	-	mg/kg	5	ND	
Hexabromodiphenyl ether	-	mg/kg	5	ND	
Heptabromodiphenyl ether	-	mg/kg	5	ND	
Octabromodiphenyl ether	-	mg/kg	5	ND	
Nonabromodiphenyl ether	-	mg/kg	5	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	

#### Notes:

- (1) The maximum permissible limit is quoted from directive 2011/65/EU, Annex II
- (2) 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.

Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

## Hexabromocyclododecane (HBCDD)

Test Method: Determination of HBCDD by GC-MS based on IEC 62321:2008.

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Hexabromocyclododecane (HBCDD)	mg/kg	10	ND

## Notes:

Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC:
 Hexabromocyclododecane (HBCDD) is considered as a priority for risk evaluation and substance
 restriction.

## PFOS (Perfluorooctane Sulfonates) and PFOA (Perfluorooctanoic Acid)

Test Method: With reference to US EPA Method 3550C: 2007, analysis was performed by HPLC-MS.





**Test Report** No. CANEC1400105105 Date: 09 Jan 2014 Page 4 of 9

Test Item(s)	<u>Unit</u>	MDL	003
Perfluorooctane Sulfonates (PFOS) and related	mg/kg	10	ND
Acid,Metal Salt and Amide			
Perfluorooctanoic Acid (PFOA)	ma/ka	10	ND

#### Notes:

For reference: commission regulation (EU) No 757/2010 amending regulation (EC) No 850/2004:

- (1) For the purposes of this entry, Article 4(1) (b) shall apply to concentrations of PFOS equal to or below 10 mg/kg (0,001 % by weight) when it occurs in substances or in preparations.
- (2) For the purposes of this entry, Article 4(1) (b) shall apply to concentrations of PFOS in semi-finished products or articles, or parts thereof, if the concentration of PFOS is lower than 0,1 % by weight calculated with reference to the mass of structurally or micro-structurally distinct parts that contain PFOS or, for textiles or other coated materials, if the amount of PFOS is lower than 1µg /m2 of the coated material.

## **Phthalate**

Test Method: Determination of phthalates by GC-MS based on EN 14372:2004.

<u>Test Item(s)</u> Dibutyl Phthalate (DBP)	<u>CAS NO.</u> 84-74-2	<u>Unit</u> %(W/W)	MDL 0.003	<i>003</i> ND
Benzylbutyl Phthalate (BBP)	85-68-7	%(W/W)	0.003	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	117-81-7	%(W/W)	0.003	ND

#### Notes:

(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC: Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP) and Dibutyl phthalate (DBP) are considered as a priority for risk evaluation and substance restriction.





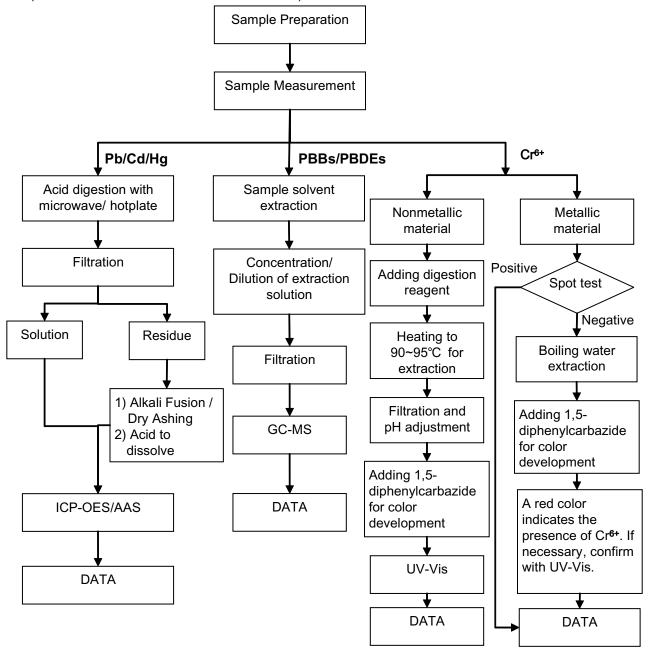
No. CANEC1400105105

## Date: 09 Jan 2014 Page 5 of 9

## **ATTACHMENTS**

## **RoHS Testing Flow Chart**

- 1) Name of the person who made testing: Michael Tso / Cutey Yu
- 2) Name of the person in charge of testing: Adams Yu / Yolanda Wei
- 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).







No. CANEC1400105105

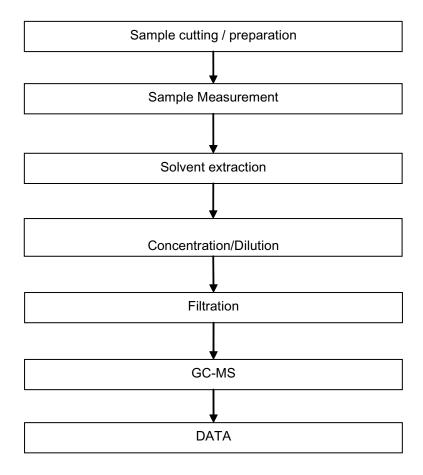
Date: 09 Jan 2014

Page 6 of 9

## **ATTACHMENTS**

## **Phthalates Testing Flow Chart**

- 1) Name of the person who made testing: Liu Qiong
- 2) Name of the person in charge of testing: Yolanda Wei







No. CANEC1400105105

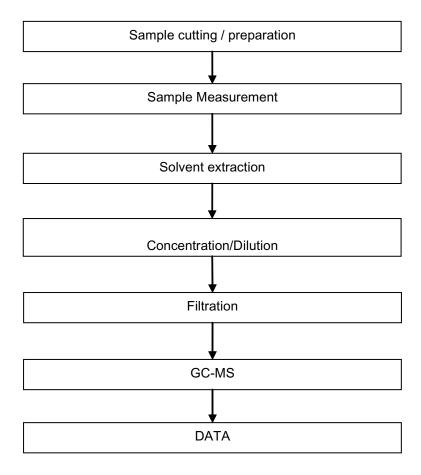
Date: 09 Jan 2014

Page 7 of 9

## **ATTACHMENTS**

## **HBCDD Testing Flow Chart**

- 1) Name of the person who made testing: Cutey Yu
- 2) Name of the person in charge of testing: Yolanda Wei







No. CANEC1400105105

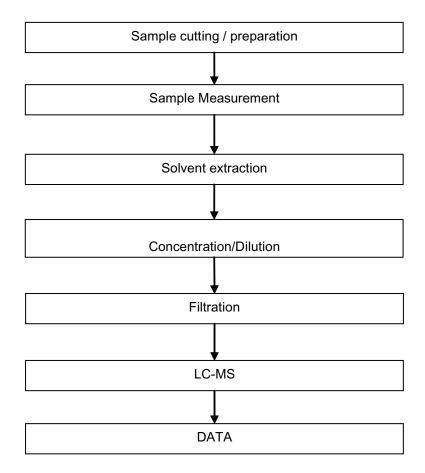
Date: 09 Jan 2014

Page 8 of 9

## **ATTACHMENTS**

## PFOA / PFOS Testing Flow Chart

- 1) Name of the person who made testing: Tina Zhao
- 2) Name of the person in charge of testing: Yolanda Wei





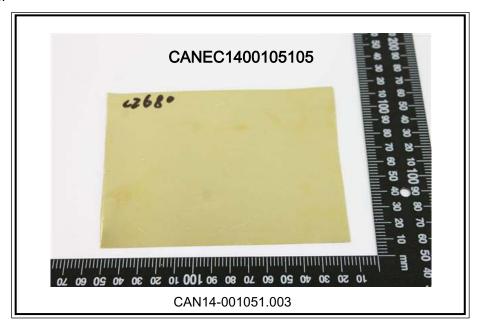


No. CANEC1400105105

Page 9 of 9

Date: 09 Jan 2014

Sample photo:



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





# 测试报告

No. CANE1301022601

日期: 2013年01月12日 第1页,共5页

万年青电子有限公司 江西南昌高新开发区京东大道399号

以下测试之样品是由申请者所提供及确认:

柱状石英谐振器

SGS工作编号 : CP13-010226 - SZ 样品接收日期 : 2013年01月12日

测试周期 : 2013年01月06日 - 2013年01月12日

测试要求 : 根据客户要求测试

测试方法 : 请参见下一页

测试结果 : 请参见下一页

通标标准技术服务有限公司

授权签名

Lucy Wu吴丽纯 批准签署人

备注: 根据客户申请, SGS出具了此中文报告, 英文版本可根据客户要求提供. (The Chinese test report is issued according to the applicant's request. The English version is available from SGS if further needed)

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日期: 2013年01月12日 第2页,共5页

测试结果:

样品1 ID : CAN13-010226.001

样品1描述 : 带银色金属脚的银色本体 (混合 )

测试项目	单位	测试方法(参考)	测试结果	MDL
镉 (Cd)	mg/kg	IEC 62321:2008, ICP-OES	N.D.	2
铅 (Pb)	mg/kg	IEC 62321:2008, ICP-OES	32	2
汞 (Hg)	mg/kg	IEC 62321:2008, ICP-OES	N.D.	2
碱性溶液萃取测六价铬(Cr VI)	mg/kg	IEC 62321:2008, UV-Vis	N.D.	2

#### 注释:

- 1. mg/kg = ppm
- 2. N.D.= 未检出 (< MDL)
- 3. MDL = 方法检测限

测试项目	单位	测试方法(参考)	测试结果	MDL
多溴联苯(PBBs)之和	mg/kg	-	N.D.	-
单溴联苯	mg/kg	IEC 62321:2008, GC-MS	N.D.	5
二溴联苯	mg/kg	IEC 62321:2008, GC-MS	N.D.	5
三溴联苯	mg/kg	IEC 62321:2008, GC-MS	N.D.	5
四溴联苯	mg/kg	IEC 62321:2008, GC-MS	N.D.	5
五溴联苯	mg/kg	IEC 62321:2008, GC-MS	N.D.	5
六溴联苯	mg/kg	IEC 62321:2008, GC-MS	N.D.	5
七溴联苯	mg/kg	IEC 62321:2008, GC-MS	N.D.	5
八溴联苯	mg/kg	IEC 62321:2008, GC-MS	N.D.	5
九溴联苯	mg/kg	IEC 62321:2008, GC-MS	N.D.	5
十溴联苯	mg/kg	IEC 62321:2008, GC-MS	N.D.	5
多溴二苯醚(PBDEs)之和	mg/kg	-	N.D.	-
单溴二苯醚	mg/kg	IEC 62321:2008, GC-MS	N.D.	5
二溴二苯醚	mg/kg	IEC 62321:2008, GC-MS	N.D.	5
三溴二苯醚	mg/kg	IEC 62321:2008, GC-MS	N.D.	5
四溴二苯醚	mg/kg	IEC 62321:2008, GC-MS	N.D.	5
五溴二苯醚	mg/kg	IEC 62321:2008, GC-MS	N.D.	5
六溴二苯醚	mg/kg	IEC 62321:2008, GC-MS	N.D.	5
七溴二苯醚	mg/kg	IEC 62321:2008, GC-MS	N.D.	5
八溴二苯醚	mg/kg	IEC 62321:2008, GC-MS	N.D.	5
九溴二苯醚	mg/kg	IEC 62321:2008, GC-MS	N.D.	5
十溴二苯醚	mg/kg	IEC 62321:2008, GC-MS	N.D.	5

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日期: 2013年01月12日 第3页,共5页

## 注释:

- 1. mg/kg = ppm
- 2. N.D. = 未检出 (< MDL)
- 3. MDL = 方法检测限
- 4. "-" = 未规定
- 5. 多溴二苯醚 = 多溴联苯醚

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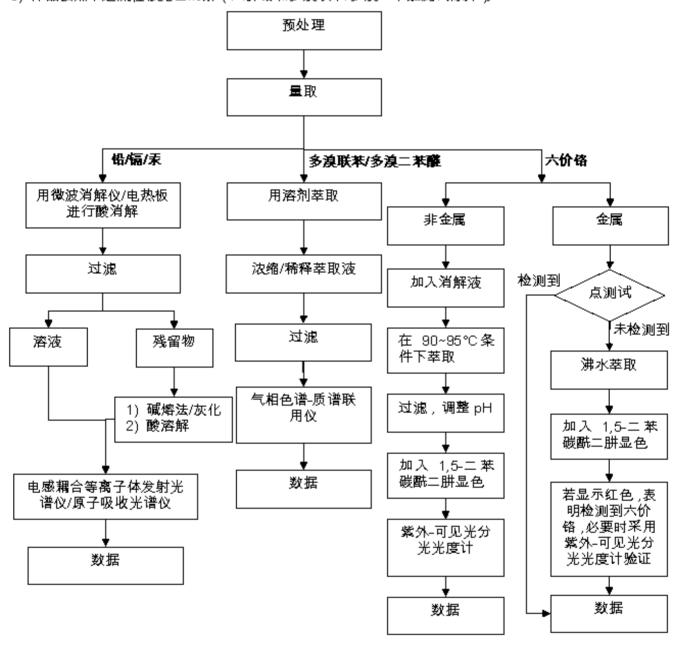


日期: 2013年01月12日 第4页.共5页

## 附件

## RoHS 测试流程图

- 1) 分析人员: 汪丹 / 余晓璐 / 詹达琦
- 2) 项目负责人:余奕东/杨伟兴
- 3) 样品按照下述流程被完全消解(六价铬和多溴联苯/多溴二苯醛测试除外)。



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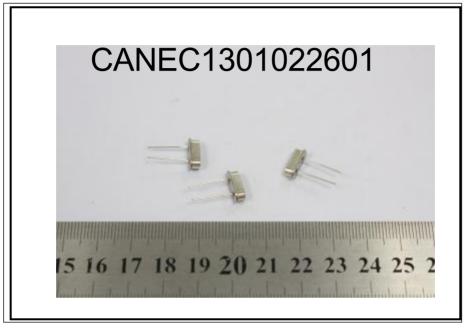
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日期: 2013年01月12日 第5页,共5页

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**Report No.** RLSZF001622580004

Page 1 of 4

Applicant SHENZHEN JIN HEYUAN TECHNOLOGY CO., LTD.

Address VENTURE THREE ROAD SHENZHEN CITY BAOAN DISTRICT TOWN

INDUSTRIAL ZONE, SONGGANG RIVER

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

Sample Name 亮锡镀层(Sn) Sample Received Date Mar. 21, 2013

Testing Period Mar. 21, 2013 to Mar. 26, 2013

**Test Requested** As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg),

Hexavalent Chromium(Cr(VI)) in the submitted sample(s).

**Test Method** Please refer to the following page(s).

**Test Result(s)** Please refer to the following page(s).

\*

#### Conclusion

Tested Sample	According to directive	Result	
Submitted Sample	2011/65/EU*	Pass	
			·

\*=July 1, 2011, the EU Official Journal (OJ) released the directive 2011/65/EU which as a new version of RoHS Directive (2002/95/EC). The revised directive has entered into force on the twentieth day after its publication in the OJ.

Tested by Rick Live CTI Reviewed by Approved by

Danny Liu SZ03

owy 1

Mar. 26, 2013

No. 1498398448

Centre Testing International (Shenzhen) Co., Ltd. Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China

Technical Manager



**Report No.** RLSZF001622580004

Page 2 of 4

## **Test Method**

Test Item(s)	Test Method	Measured Equipment(s)	MDL
Lead(Pb)	Refer to IEC 62321:2008 Ed.1	ICP-OES	2 mg/kg
Cadmium(Cd)	Refer to IEC 62321:2008 Ed.1	ICP-OES	2 mg/kg
Mercury(Hg)	Refer to IEC 62321:2008 Ed.1	ICP-OES	2 mg/kg
Hexavalent Chromium(Cr(VI))	IEC 62321:2008 Ed.1 Annex B	UV-Vis	/

Test Result(s)

Tested Item(s)	Result	Limit of Directive 2011/65/EU
Lead(Pb)	38 mg/kg	1000 mg/kg
Cadmium (Cd)	N.D.	100 mg/kg
Mercury(Hg)	N.D.	1000 mg/kg
Hexavalent Chromium(Cr(VI))	Negative	1000 mg/kg

**Tested Sample/Part Description** Silvery plating

Note: The washed plating had been dissolved totally tested for Lead, Cadmium,

Mercury.

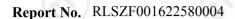
-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

-Negative = Absence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is less than 0.02~mg/kg with  $50cm^2$  sample surface area used.

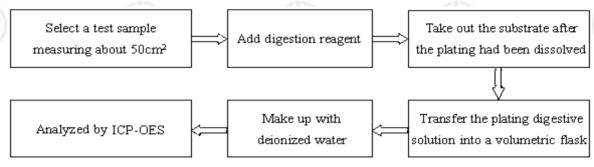




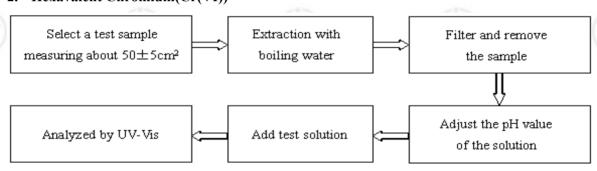
Page 3 of 4

## **Test Process**

## 1. Lead(Pb), Cadmium(Cd), Mercury(Hg)



## 2. Hexavalent Chromium(Cr(VI))







**Report No.** RLSZF001622580004

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Photo(s) of the sample(s)



\*\*\* End of report \*\*\*

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.





**Test Report** No. CANEC1304337401 Date: 08 Apr 2013 Page 1 of 8

SHENZHEN JINHEYUAN TECHNOLOGY CO.,LTD.

CHUANGYESAN ROAD, JIANGBIAN, SONGGANG, BAOAN DISTRICT, SHENZHEN CITY, GUANGDONG PROVINCE. CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as: USB CONNECTOR

SGS Job No. : CP13-015430 - GZ
Client Ref. Info. : NICKEL PLATED

Date of Sample Received: 01 Apr 2013

Testing Period : 01 Apr 2013 - 08 Apr 2013

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: Based on the performed tests on submitted samples, the results of Lead,

Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS

Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of SGS-CSTC Ltd.

Trophy Zhang
Approved Signatory

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The properties of the first properties of the sample (s) tested.



## **Test Report** No. CANEC1304337401 Date: 08 Apr 2013 Page 2 of 8

Test Results:

### **Test Part Description:**

Specimen No. SGS Sample ID Description

1 CAN13-043374.001 Silver-grey metal

#### Remarks:

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected ( < MDL)
- (4) "-" = Not Regulated

### RoHS Directive 2011/65/EU

Test Method: With reference to IEC 62321:2008

- (1) Determination of Cadmium by ICP-OES.
- (2) Determination of Lead by ICP-OES.
- (3) Determination of Mercury by ICP-OES.
- (4) Determination of Hexavalent Chromium by Spot test / Colorimetric Method using UV-Vis.
- (5) Determination of PBBs / PBDEs by GC-MS.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	-	$\Diamond$	Negative
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

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Test Report	No. CANEC13043374	01	Date: 08	Apr 2013	Page 3 of 8
Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>	
Dibromodiphenyl ether	-	mg/kg	5	ND	
Tribromodiphenyl ether	-	mg/kg	5	ND	
Tetrabromodiphenyl ether	-	mg/kg	5	ND	
Pentabromodiphenyl ether	-	mg/kg	5	ND	
Hexabromodiphenyl ether	-	mg/kg	5	ND	
Heptabromodiphenyl ether	-	mg/kg	5	ND	
Octabromodiphenyl ether	-	mg/kg	5	ND	
Nonabromodiphenyl ether	-	mg/kg	5	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	

#### Notes:

- (1) The maximum permissible limit is quoted from directive 2011/65/EU, Annex II
- (2) 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.

Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

## Hexabromocyclododecane (HBCDD)

Test Method: Determination of HBCDD by GC-MS based on IEC 62321:2008.

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Hexabromocyclododecane (HBCDD)	mg/kg	10	ND

## Notes:

(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC: Hexabromocyclododecane (HBCDD) is considered as a priority for risk evaluation and substance restriction.

#### **Phthalate**

Test Method: Determination of phthalates by GC-MS based on EN 14372:2004.

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**Test Report** No. CANEC1304337401 Date: 08 Apr 2013 Page 4 of 8

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Dibutyl Phthalate (DBP)	% (w/w)	0.003	ND
Benzylbutyl Phthalate (BBP)	% (w/w)	0.003	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	% (w/w)	0.003	ND

#### Notes:

(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC: Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP) and Dibutyl phthalate (DBP) are considered as a priority for risk evaluation and substance restriction.

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No. CANEC1304337401

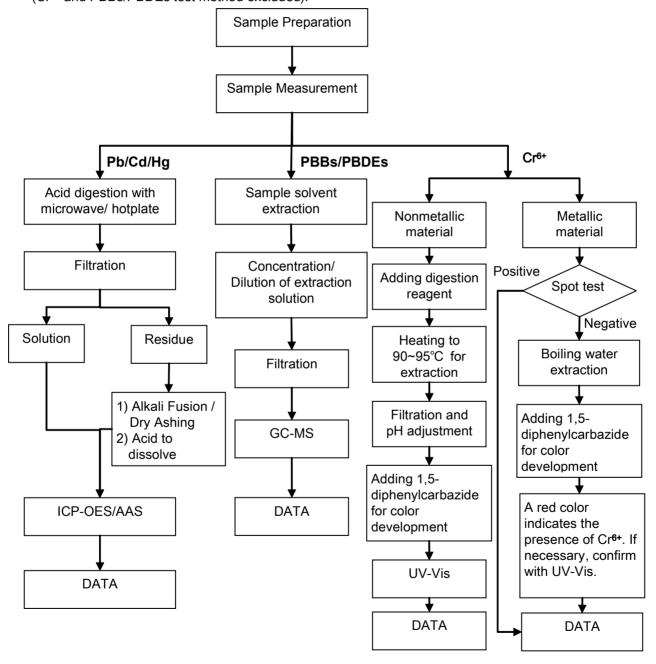
Page 5 of 8

Date: 08 Apr 2013

### **ATTACHMENTS**

#### **RoHS Testing Flow Chart**

- 1) Name of the person who made testing: Michael Tso / Cutey Yu
- 2) Name of the person in charge of testing: Adams Yu / Yolanda Wei
- 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).



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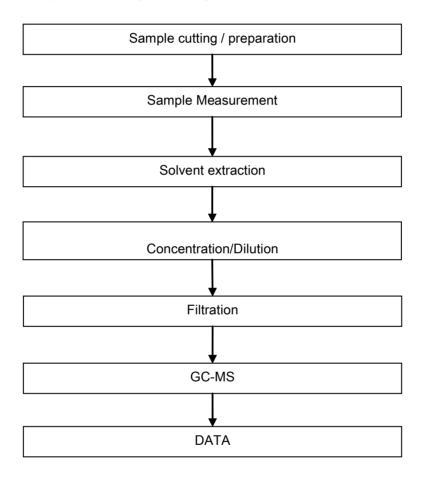


**Test Report** No. CANEC1304337401 Date: 08 Apr 2013 Page 6 of 8

## **ATTACHMENTS**

## **Phthalates Testing Flow Chart**

- 1) Name of the person who made testing: Liu Qiong
- 2) Name of the person in charge of testing: Yolanda Wei



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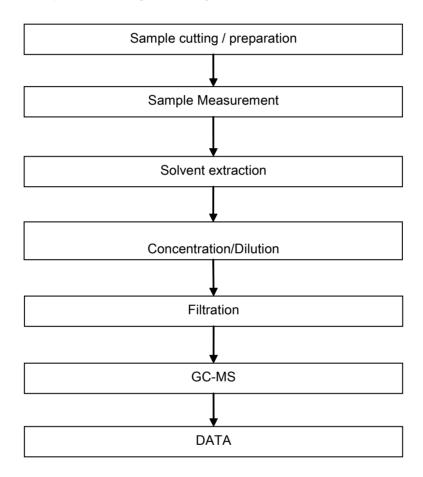


**Test Report** No. CANEC1304337401 Date: 08 Apr 2013 Page 7 of 8

## **ATTACHMENTS**

## **HBCDD Testing Flow Chart**

- 1) Name of the person who made testing: Cutey Yu
- 2) Name of the person in charge of testing: Yolanda Wei



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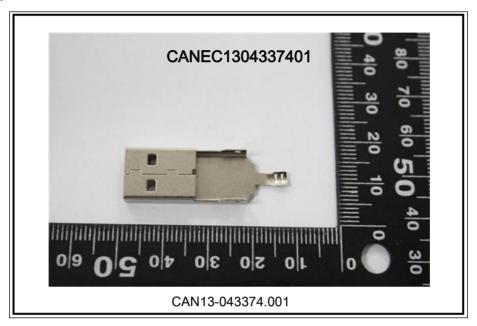


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Date: 08 Apr 2013

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Sample photo:



SGS authenticate the photo on original report only

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Test Report No. CANEC1302083702 Date: 26 Feb 2013 Page 1 of 5

DONGGUAN CITY XIANGJUN PLASTIC PRODUCTS LTD.

LANGZHOU INDUSTRIAL CHANGPING TOWN DONGGUAN GUANGDONG CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : PBT GF(NC BK GREEN BLUE GREY RED)MIXTURE

SGS Job No. : CP13-005864 - GZ

Date of Sample Received: 21 Feb 2013

Testing Period : 21 Feb 2013 - 26 Feb 2013

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: Based on the performed tests on submitted samples, the results of Lead,

Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS

Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of SGS-CSTC Ltd.

Merry Lv

Approved Signatory

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## Test Report No. CANEC1302083702 Date: 26 Feb 2013 Page 2 of 5

Test Results:

#### **Test Part Description:**

Specimen No. SGS Sample ID Description

1 CAN13-020837.002 Black plastic sheet

#### Remarks:

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected ( < MDL)
- (4) "-" = Not Regulated

### RoHS Directive 2011/65/EU

Test Method: With reference to IEC 62321:2008

- (1) Determination of Cadmium by ICP-OES.
- (2) Determination of Lead by ICP-OES.
- (3) Determination of Mercury by ICP-OES.
- (4) Determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.
- (5) Determination of PBBs / PBDEs content by GC-MS.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	5
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	2	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

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Unless otherwise state of the results shown in this test report refer only to the sample(s) tested.



Test Report	No. CANEC13020837	02	Date: 26	Feb 2013	Page 3 of 5
Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>	
Dibromodiphenyl ether	-	mg/kg	5	ND	
Tribromodiphenyl ether	-	mg/kg	5	ND	
Tetrabromodiphenyl ether	-	mg/kg	5	ND	
Pentabromodiphenyl ether	-	mg/kg	5	ND	
Hexabromodiphenyl ether	-	mg/kg	5	ND	
Heptabromodiphenyl ether	-	mg/kg	5	ND	
Octabromodiphenyl ether	-	mg/kg	5	ND	
Nonabromodiphenyl ether	-	mg/kg	5	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	

#### Notes:

(1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II

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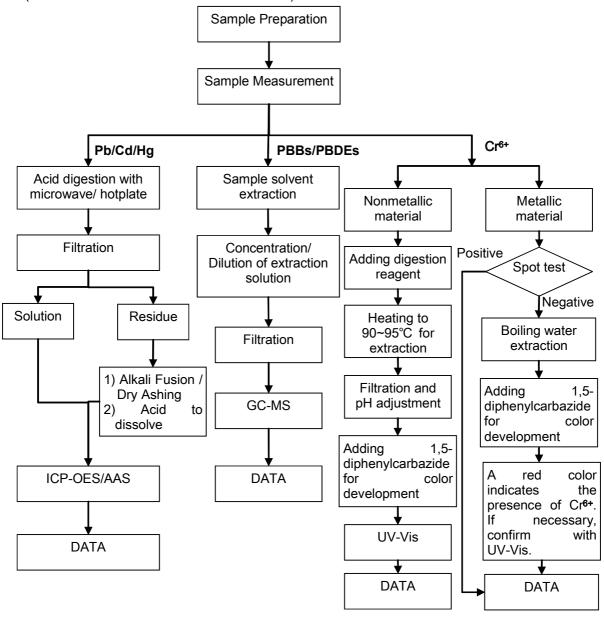
Date: 26 Feb 2013

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### **ATTACHMENTS**

### **RoHS Testing Flow Chart**

- 1) Name of the person who made testing: Michael Tso / Cutey Yu
- 2) Name of the person in charge of testing: Adams Yu / Yolanda Wei
- 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).



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No. CANEC1302083702

Date: 26 Feb 2013

Page 5 of 5

Sample photo:



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Test Report No. CANEC1216501701 Date: 06 Dec 2012 Page 1 of 5

DONGGUAN CHUANGXIN METAL CO.,LTD FUZHUSHAN VILLAGE,LIAOBU TOWN,DONGGUAN CITY CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as: C2680

SGS Job No.: CP12-057531 - GZ

Date of Sample Received: 03 Dec 2012

Testing Period: 03 Dec 2012 - 06 Dec 2012

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: Based on the performed tests on submitted samples, the results of Lead,

Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS

Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of SGS-CSTC Ltd.

Almay Gao

Approved Signatory

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## **Test Report** No. CANEC1216501701 Date: 06 Dec 2012 Page 2 of 5

Test Results:

### **Test Part Description:**

Specimen No. SGS Sample ID Description

1 CAN12-165017.001 Brassy metal sheet

#### Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected ( < MDL)

(4) "-" = Not Regulated

## RoHS Directive 2011/65/EU

Test Method: With reference to IEC 62321:2008

(1) Determination of Cadmium by ICP-OES.

(2) Determination of Lead by ICP-OES.

(3) Determination of Mercury by ICP-OES.

(4) Determination of Hexavalent Chromium by Spot test / Colorimetric Method using UV-Vis.

(5) Determination of PBBs / PBDEs by GC-MS.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	9
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	-	$\Diamond$	Negative
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

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Test Report	No. CANEC12165017	01	Date: 06	Dec 2012	Page 3 of 5
Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>	
Dibromodiphenyl ether	-	mg/kg	5	ND	
Tribromodiphenyl ether	-	mg/kg	5	ND	
Tetrabromodiphenyl ether	-	mg/kg	5	ND	
Pentabromodiphenyl ether	-	mg/kg	5	ND	
Hexabromodiphenyl ether	-	mg/kg	5	ND	
Heptabromodiphenyl ether	-	mg/kg	5	ND	
Octabromodiphenyl ether	-	mg/kg	5	ND	
Nonabromodiphenyl ether	-	mg/kg	5	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	

#### Notes:

- (1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II
- (2)♦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.

For corrosion protection coatings on metals: Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

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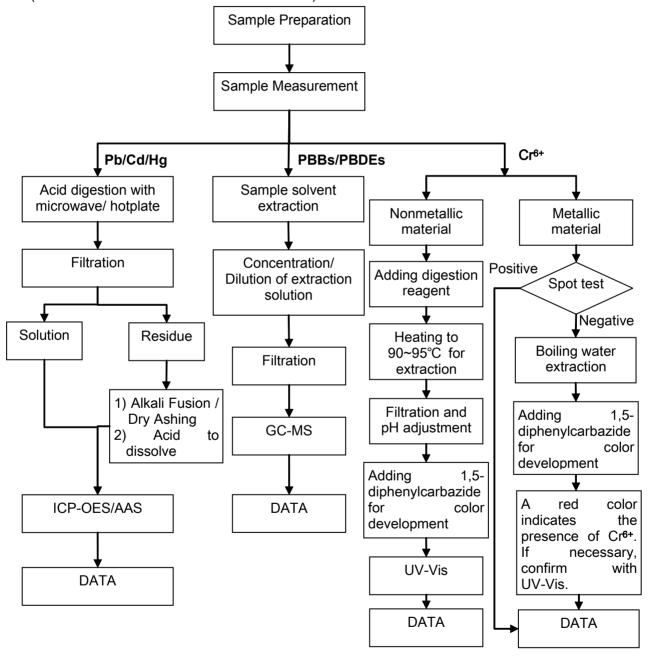
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Page 4 of 5

### **ATTACHMENTS**

### **RoHS Testing Flow Chart**

- 1) Name of the person who made testing: Michael Tso / Cutey Yu
- 2) Name of the person in charge of testing: Adams Yu / Yolanda Wei
- 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).



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Date: 06 Dec 2012

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Date: 2013/01/02 No.: KA/2012/C1647 Page: 1 of 8

**CHI-MEI CORPORATION** 59-1, SAN CHIA, JEN TE, TAINAN CITY 71702, TAIWAN

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

**POLYCARBONATE** Sample Description

Style/Item No. WONDERLITE® PC-110

Sample Receiving Date 2012/12/20

**Testing Period** 2012/12/20 TO 2013/01/02 Sample Submitted By **CHI-MEI CORPORATION** 

As specified by client, with reference to RoHS Directive **Test Requested** 

2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the submitted

sample.

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

> Based on the performed tests on submitted samples, the test results of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting

2002/95/EC.

Ray Chang / Asst. Manage Signed for and on behalf of

SGS Taiwan Limited

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No.: KA/2012/C1647 Date: 2013/01/02 Page: 2 of 8

**CHI-MEI CORPORATION** 59-1, SAN CHIA, JEN TE, TAINAN CITY 71702, TAIWAN

### Test Result(s)

PART NAME NO.1 NATURE POLYCARBONATE

Test Item (s):	Unit	Method	MDL	Result No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI) by alkaline extraction	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
Sum of PBBs			-	n.d.
Monobromobiphenyl			5	n.d.
Dibromobiphenyl			5	n.d.
Tribromobiphenyl			5	n.d.
Tetrabromobiphenyl		With reference to IEC 62321: 2008	5	n.d.
Pentabromobiphenyl	mg/kg	and performed by GC/MS.	5	n.d.
Hexabromobiphenyl			5	n.d.
Heptabromobiphenyl			5	n.d.
Octabromobiphenyl			5	n.d.
Nonabromobiphenyl			5	n.d.
Decabromobiphenyl			5	n.d.
Sum of PBDEs			-	n.d.
Monobromodiphenyl ether			5	n.d.
Dibromodiphenyl ether			5	n.d.
Tribromodiphenyl ether			5	n.d.
Tetrabromodiphenyl ether	1	M/:th mafamana to IEO 00004: 0000	5	n.d.
Pentabromodiphenyl ether	mg/kg	With reference to IEC 62321: 2008 and performed by GC/MS.	5	n.d.
Hexabromodiphenyl ether		and performed by Go/Mo.	5	n.d.
Heptabromodiphenyl ether			5	n.d.
Octabromodiphenyl ether	1		5	n.d.
Nonabromodiphenyl ether			5	n.d.
Decabromodiphenyl ether			5	n.d.

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No.: KA/2012/C1647 Date: 2013/01/02 Page: 3 of 8

**CHI-MEI CORPORATION** 59-1, SAN CHIA, JEN TE, TAINAN CITY 71702, TAIWAN

Test Item (s):	Unit	Method	MDL	Result
rest item (s).	5	Wethod	MDL	No.1
Hexabromocyclododecane (HBCDD) (CAS No.: 25637-99-4)	mg/kg	With reference to US EPA 3540C: 1996 method. Analysis was performed by GC/MS.	5	n.d.
DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.

Note : 1. mg/kg = ppm ; 0.1wt% = 1000ppm

2. n.d. = Not Detected

3. MDL = Method Detection Limit

4. " - " = Not Regulated

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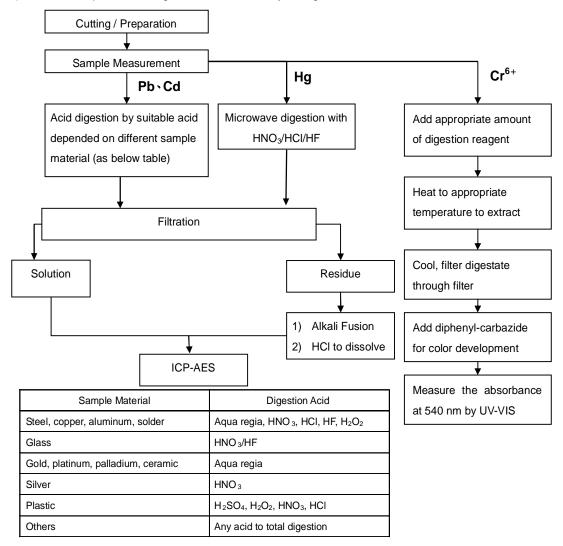
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No.: KA/2012/C1647 Date: 2013/01/02 Page: 4 of 8

## **CHI-MEI CORPORATION** 59-1, SAN CHIA, JEN TE, TAINAN CITY 71702, TAIWAN

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



**Note\*\***: (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95 ℃.

(2) For metallic material, add pure water and heat to boiling.

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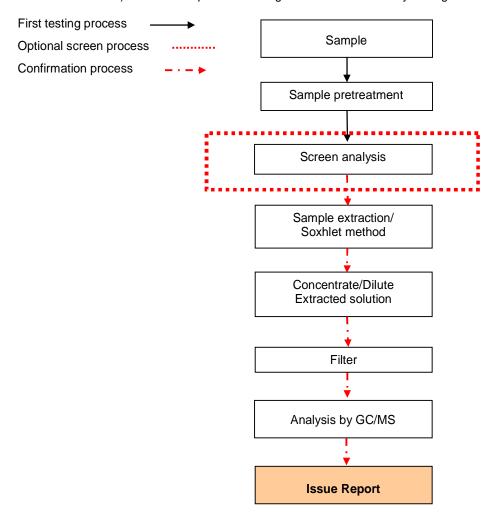


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**CHI-MEI CORPORATION** 59-1, SAN CHIA, JEN TE, TAINAN CITY 71702, TAIWAN

## PBB/PBDE analytical FLOW CHART

- 1) Name of the person who made measurement: Anson Tsao
- 2) Name of the person in charge of measurement: Ray Chang



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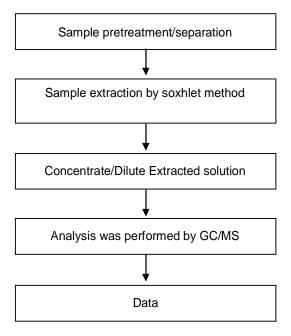


No.: KA/2012/C1647 Date: 2013/01/02 Page: 6 of 8

**CHI-MEI CORPORATION** 59-1, SAN CHIA, JEN TE, TAINAN CITY 71702, TAIWAN

## Analytical flow chart of phthalate content

- 1) Name of the person who made measurement: Anson Tsao
- 2) Name of the person in charge of measurement: Ray Chang



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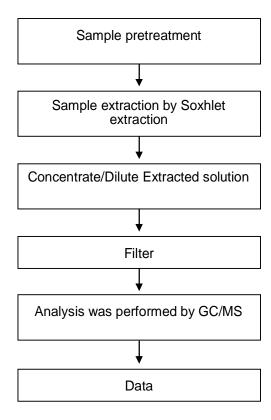


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**CHI-MEI CORPORATION** 59-1, SAN CHIA, JEN TE, TAINAN CITY 71702, TAIWAN

## **HBCDD Analytical FLOW CHART**

- 1) Name of the person who made measurement: Anson Tsao
- Name of the person in charge of measurement: Ray Chang



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No.: KA/2012/C1647 Date: 2013/01/02 Page: 8 of 8

**CHI-MEI CORPORATION** 59-1, SAN CHIA, JEN TE, TAINAN CITY 71702, TAIWAN

\* The tested sample / part is marked by an arrow if it's shown on the photo. \*





\*\* End of Report \*\*

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## **Test Report**

號碼(No.) : CE/2014/72217 日期(Date) : 2014/07/17 頁數(Page) : 1 of 9

中華紙漿股份有限公司

CHUNG HWA PULP CORPORATION

台北市中正區重慶南路二段51號12樓

12F, NO. 51, SEC. 2, CHONGCING S. RD., JHONGJHENG DISTRICT, TAIPEI CITY 100, TAIWAN, R. O. C.

以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by/on behalf of the applicant as):

\_\_\_\_\_\_\_

送樣廠商(Sample Submitted By)

: 中華紙漿股份有限公司 (CHUNG HWA PULP CORPORATION)

樣品名稱(Sample Description)

: COATED DUPLEX BOARD (灰紙板類)

應用於(Used For)

:灰底白紙板,白底白紙板,全塗灰底銅版卡紙(輕塗),環保灰銅卡,白面牛皮裱面紙板,赤面牛皮裱面紙板,灰紙板,紗管紙,豐厚卡,豐厚特卡,精緻灰卡 (COATED DUPLEX BOARD WITH GRAY BACK, COATED DUPLEX BOARD WITH WHITE BACK, LIGHT WEIGHT COATED DUPLEX BOARD WITH GRAY BACK, RECYCLED COATED DUPLEX BOARD WITH GRAY BACK, LINER BOARD, CHIP PAPER BOARD, TEXTURE

PAPER / COP TUBE PAPER)

收件日期(Sample Receiving Date)

: 2014/07/10

測試期間(Testing Period)

: 2014/07/10 TO 2014/07/17

測試結果(Test Results) : 請見下一頁 (Please refer to next pages).

Troy Chang Manager - Tech Signed for and on behalf of SGS TAIWAN LTD. Chemical Laboratory - Taipei

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## **Test Report**

CHUNG HWA PULP CORPORATION

號碼(No.): CE/2014/72217 日期(Date): 2014/07/17 頁數(Page): 2 of 9

中華紙漿股份有限公司

台北市中正區重慶南路二段51號12樓

12F, NO. 51, SEC. 2, CHONGCING S. RD., JHONGJHENG DISTRICT, TAIPEI CITY 100, TAIWAN, R. O. C.

### 測試結果(Test Results)

測試部位(PART NAME)No.1 : 白色/灰色紙板 (WHITE/GRAY CARDBOARD)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
鎬 / Cadmium (Cd)	mg/kg	参考IEC 62321-5: 2013方法, 以感應耦合 電漿原子發射光譜儀檢測. / With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
鉛 / Lead (Pb)	mg/kg	參考IEC 62321-5: 2013方法, 以感應耦合 電漿原子發射光譜儀檢測. / With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	6
汞 / Mercury (Hg)	mg/kg	參考IEC 62321-4: 2013方法, 以感應耦合 電漿原子發射光譜儀檢測. / With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	参考IEC 62321: 2008方法,以UV-VIS檢測. / With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
六溴環十二烷及所有主要被辨别出的 異構物 / Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ - HBCDD, $\beta$ - HBCDD, $\gamma$ - HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	mg/kg	參考IEC 62321: 2008方法,以氣相層析/質 譜儀檢測./ With reference to IEC 62321: 2008 method. Analysis was performed by GC/MS.	5	n.d.
鄰苯二甲酸甲苯基丁酯 / BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)	%	參考EN 14372, 以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.



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中華紙漿股份有限公司

CHUNG HWA PULP CORPORATION

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12F, NO. 51, SEC. 2, CHONGCING S. RD., JHONGJHENG DISTRICT, TAIPEI CITY 100, TAIWAN, R. O. C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
鄰苯二甲酸二 (2-乙基己基)酯 / DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	%	參考EN 14372, 以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
鄰苯二甲酸二異癸酯 / DIDP (Di- isodecyl phthalate) (CAS No.: 26761-40-0; 68515-49-1)	%	参考EN 14372, 以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.
鄰苯二甲酸二異壬酯 / DINP (Di- isononyl phthalate) (CAS No.: 28553-12-0; 68515-48-0)	%	参考EN 14372, 以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.
鄰苯二甲酸二正辛酯 / DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)	%	参考EN 14372, 以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	%	参考EN 14372, 以氣相層析/質譜儀檢測./ With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
多溴聯苯總和 / Sum of PBBs	mg/kg		-	n.d.
一溴聯苯 / Monobromobiphenyl	mg/kg		5	n.d.
二溴聯苯 / Dibromobiphenyl	mg/kg		5	n.d.
三溴聯苯 / Tribromobiphenyl	mg/kg		5	n.d.
四溴聯苯 / Tetrabromobiphenyl	mg/kg	参考IEC 62321: 2008方法,以氣相層析/質	5	n.d.
五溴聯苯 / Pentabromobiphenyl	mg/kg	譜儀檢測. / With reference to IEC	5	n.d.
六溴聯苯 / Hexabromobiphenyl	mg/kg	62321: 2008 and performed by GC/MS.	5	n.d.
七溴聯苯 / Heptabromobiphenyl	mg/kg		5	n.d.
八溴聯苯 / Octabromobiphenyl	mg/kg		5	n.d.
九溴聯苯 / Nonabromobiphenyl	mg/kg		5	n.d.
十溴聯苯 / Decabromobiphenyl	mg/kg		5	n.d.

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**Test Report** 

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中華紙漿股份有限公司

CHUNG HWA PULP CORPORATION

台北市中正區重慶南路二段51號12樓

12F, NO. 51, SEC. 2, CHONGCING S. RD., JHONGJHENG DISTRICT, TAIPEI CITY 100, TAIWAN, R. O. C.

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
多溴聯苯醚總和 / Sum of PBDEs	mg/kg	参考IEC 62321: 2008方法,以氣相層析/質 譜儀檢測. / With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.
一溴聯苯醚 / Monobromodiphenyl ether	mg/kg		5	n.d.
二溴聯苯醚 / Dibromodiphenyl ether	mg/kg		5	n.d.
三溴聯苯醚 / Tribromodiphenyl ether	mg/kg		5	n.d.
四溴聯苯醚 / Tetrabromodiphenyl ether	mg/kg		5	n.d.
五溴聯苯醚 / Pentabromodiphenyl ether	mg/kg		5	n.d.
六溴聯苯醚 / Hexabromodiphenyl ether	mg/kg		5	n.d.
七溴聯苯醚 / Heptabromodiphenyl ether	mg/kg		5	n.d.
八溴聯苯醚 / Octabromodiphenyl ether	mg/kg		5	n.d.
九溴聯苯醚 / Nonabromodiphenyl ether	mg/kg		5	n.d.
十溴聯苯醚 / Decabromodiphenyl ether	mg/kg		5	n.d.

### 備註(Note):

- 1. mg/kg = ppm ; 0.1wt% = 1000ppm
- 2. n.d. = Not Detected (未檢出)
- 3. MDL = Method Detection Limit (方法偵測極限值)
- 4. "-" = Not Regulated (無規格值)

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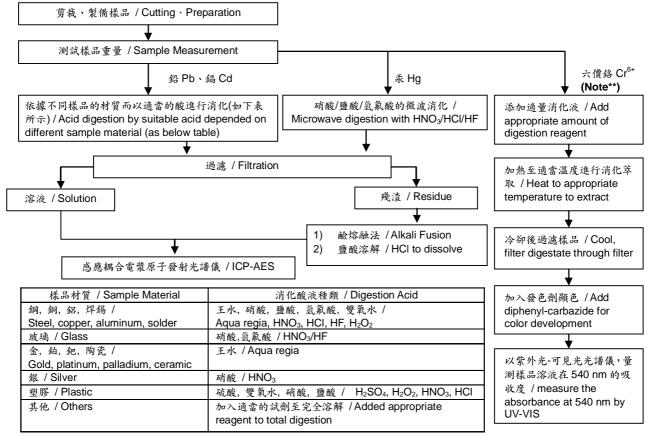
中華紙漿股份有限公司

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台北市中正區重慶南路二段51號12樓

12F, NO. 51, SEC. 2, CHONGCING S. RD., JHONGJHENG DISTRICT, TAIPEI CITY 100, TAIWAN, R. O. C.

- 1) 根據以下的流程圖之條件,樣品已完全溶解。( 六價鉻測試方法除外 ) / These samples were dissolved totally by pre-conditioning method according to below flow chart. ( Cr<sup>6+</sup> test method excluded )
- 2) 测試人員:楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang



#### Note\*\* (For IEC 62321)

- (1) 針對非金屬材料加入鹼性消化液,加熱至 90~95℃萃取. / For non-metallic material, add alkaline digestion reagent and heat to 90~95℃
- (2) 針對金屬材料加入純水,加熱至沸騰萃取. / For metallic material, add pure water and heat to boiling.

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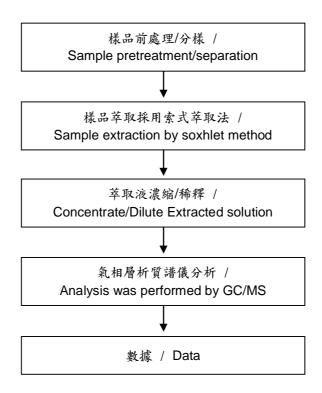
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#### 可塑劑分析流程圖 / Analytical flow chart of phthalate content

- 測試人員:翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





## **Test Report**

號碼(No.): CE/2014/72217 日期(Date): 2014/07/17 頁數(Page): 7 of 9

中華紙漿股份有限公司

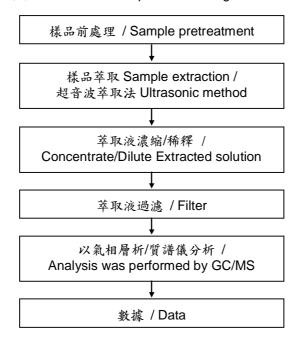
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## 六溴環十二烷分析流程圖 / HBCDD analytical flow chart

- 測試人員:翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





## **Test Report**

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中華紙漿股份有限公司

CHUNG HWA PULP CORPORATION

台北市中正區重慶南路二段51號12樓

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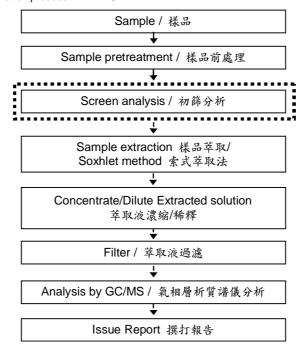
### 多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 測試人員: 翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang

初次測試程序 / First testing process ———

選擇性篩檢程序 / Optional screen process •••••

確認程序 / Confirmation process - · - · ▶





## 測試報告

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## **Test Report**

中華紙漿股份有限公司

CHUNG HWA PULP CORPORATION

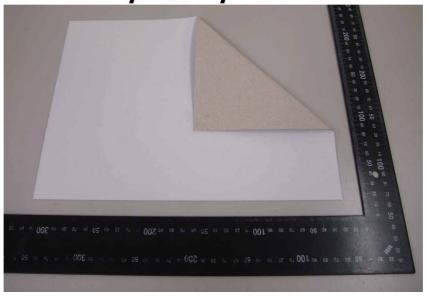
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\* 照片中如有箭頭標示,則表示為實際檢測之樣品/部位. \*

(The tested sample / part is marked by an arrow if it's shown on the photo.)

CE/2014/72217



\*\* 報告結尾 (End of Report) \*\*

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Report No. RHS01F014487 Page 1 of 7

Applicant DONGGUAN JUNAO CONNECTOR CO.,LTD.

Address 7 CHUANGYE NO.2ROAD, HELU INDUSTRIAL AREA, HUANGJIANG TOWN,

DONGGUAN CITY, GUANGDONG PROVINCE, CHINA

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

Sample Name Housing, Wafer

Part No. Please refer to the following page(s).

Sample Received Date Sep. 16, 2013

Testing Period Sep. 16, 2013 to Sep. 23, 2013

**Test Requested** As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg),

Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs),

Polybrominated Diphenyl Ethers(PBDEs),

Hexabromocyclododecane(HBCDD), Phthalates in the submitted

sample(s).

#### **Test Method**

Tested Item(s)	Test Method	Measured Equipment(s)
Lead (Pb)	IEC 62321:2008 Ed.1 Sec.8	ICP-OES
Cadmium (Cd)	IEC 62321:2008 Ed.1 Sec.8	ICP-OES
Mercury (Hg)	IEC 62321:2008 Ed.1 Sec.7	ICP-OES
Hexavalent Chromium (Cr(VI))	IEC 62321:2008 Ed.1 Annex C	UV-Vis
Polybrominated Biphenyls (PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996	GC-MS
Phthalates	Refer to EN 14372:2004(E)	GC-MS

**Test Result(s)** Please refer to the following page(s).

Tested by

Rick Lin

Reviewed by

Vargar de

Sep. 23, 2013

Approved by

Danny Liu

Technical Manager

No. 1012289240

Centre Testing International (Shenzhen) Co., Ltd. Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China

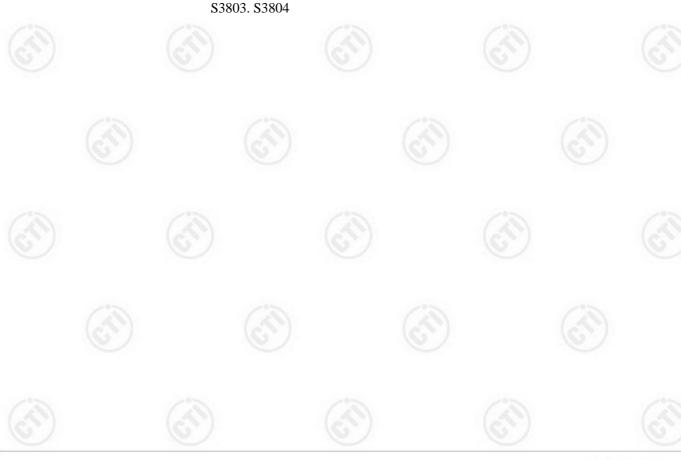




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Part No.

A0800. A1001. A1001HA. A1002. A1003. A1004. A1005. A1006. A1007. A1008. A1024. A1024HA. A1200. A1201. A1201. A1250. A1251, A1252, A1253, A1253HA, A1254, A1254HA, A1255, A1256, A1258. A1500. A1501. A2001. A2002. A2004. A2004HA. A2004HB. A2005. A2006. A2007. A2008. A2009. A2013. A2015. A2016. A2100. A2211. A2500. A2501. A2501HA. A2502. A2503. A2504. A2506. A2508. A2509. A2511. A2513. A2514. A2515. A2516. A2518. A2519. A2540, A2541, A2542, A2543, A2544, A2545, A2546, A2547, A2549, A2550. A2551. A2552. A3500. A3960. A3961. A3962. A3963. A4000. A4001, A4002, A5000, A5081, A7500, A7501, A7921, A1080, A1300, B1259, B1502, B2011, B2512, B3964, B3965, B1010, B1200, B1400, B1800. B2600. B3200. C1250. C1581. C2003. C2504. C2505. C2560. C2561. C2562. C2563. C2564. C3030. C3500. C3700. C3701. C3966. C4000. C4140. C4200. C4255. C4256. C4500. C5030. C5080. C5500. C6200. C6201. C6350. C6700. C6501. C6502. D2050. D2051. D2052. D2054. D2055. D2056. D2057. D2058. D0800. D0801. D1000. D1001. D1271, D1272, D2007, D2008, D2009, D2010, D2553, D2554, D2555, D2556. D2557. D2558. F0101. F0102. F0103. F0104. F0500. F0501. F0502, F0503, F1250, F1251, 110, 187, 205, 250, S3800, S3801, S3802,









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#### Test Result(s)

Tested Item(s)	Result	MDL
Lead (Pb)	N.D.	2 mg/kg
Cadmium (Cd)	N.D.	2 mg/kg
Mercury (Hg)	N.D.	2 mg/kg
Hexavalent Chromium (Cr(VI))	N.D.	2 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		0
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Polybrominated Diphenyl Ethers(PBI	DEs)	
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg









N.D.



5 mg/kg











Decabromodiphenyl ether





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#### Test Result(s)

Tested Item(s)	Result	MDL
Hexabromocyclododecane (HBCDD)	N.D.	5 mg/kg

Tested Item(s)	Result	MDL
Phthalates		20
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butylbenzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-2-ethylhexyl phthalate(DEHP)	N.D.	50 /1
CAS#:117-81-7		50 mg/kg

Tested Sample/Part Description Mixed test, white, black and beige-white plastic

Note: -The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

- As specified by client, the test was conducted by mixing several samples together. The result(s) shown on this report may be different from the content of any homogeneous material.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million



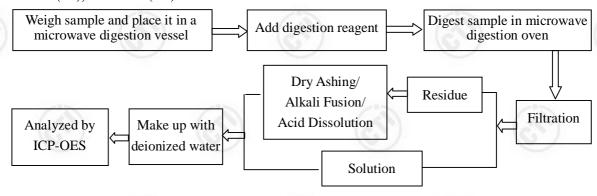


Report No. RHS01F014487

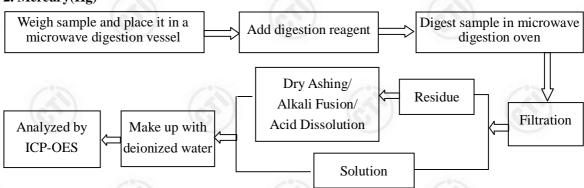
Page 5 of 7

#### **Test Process**

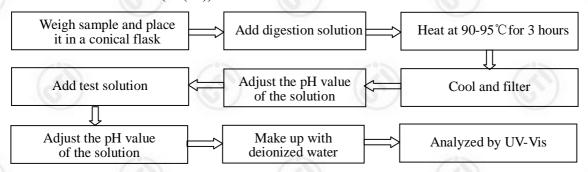
#### 1. Lead(Pb), Cadmium(Cd)



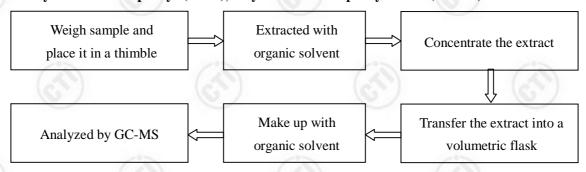
#### 2. Mercury(Hg)



#### 3. Hexavalent Chromium(Cr(VI))

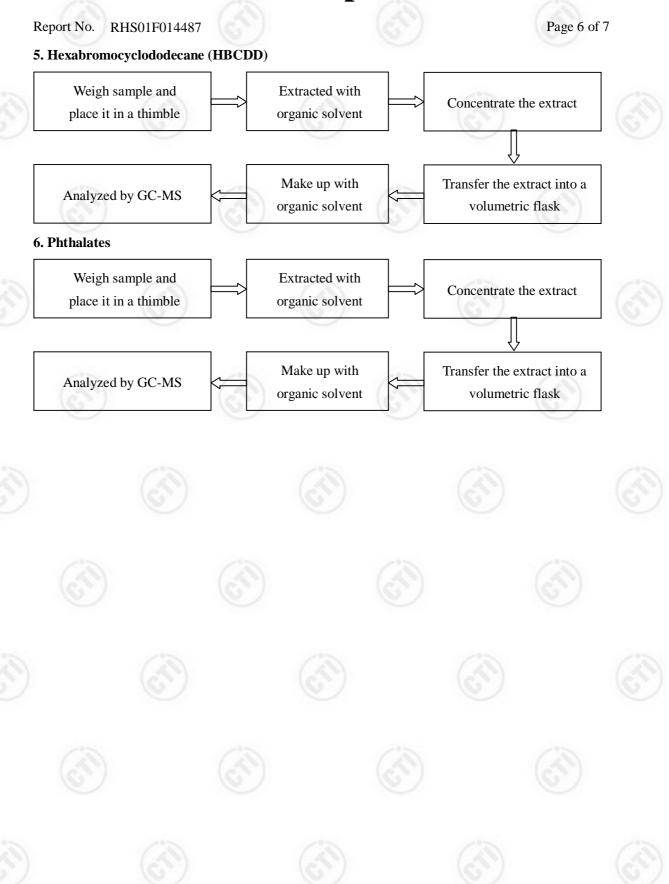


#### 4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs)











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## Photo(s) of the sample(s)



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

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.





**Test Report** No. CANEC1300355801 Date: 15 Jan 2013 Page 1 of 11

SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO.,LTD.

WOER MANSION,LANJING NORTH ROAD,PINGSHAN INDUSTRIAL ZONE,LONGGANG DISTRICT,SHENZHEN
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as: Please see remark

SGS Job No.: CP13-000963 - SZ

Date of Sample Received: 08 Jan 2013

Testing Period: 08 Jan 2013 - 15 Jan 2013

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: Based on the performed tests on submitted samples, the results of Lead,

Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS

Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of SGS-CSTC Ltd.

Marco liang

Approved Signatory

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## **Test Report** No. CANEC1300355801 Date: 15 Jan 2013 Page 2 of 11

Test Results:

#### **Test Part Description:**

Specimen No. SGS Sample ID Description

1 CAN13-003558.001 Black plastic tube w/ white printing

#### Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected ( < MDL)

(4) "-" = Not Regulated

#### RoHS Directive 2011/65/EU

Test Method: With reference to IEC 62321:2008

(1) Determination of Cadmium by ICP-OES.

(2) Determination of Lead by ICP-OES.

(3) Determination of Mercury by ICP-OES.

(4) Determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.

(5) Determination of PBBs / PBDEs content by GC-MS.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	MDL	<u>001</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	2	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

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Test Report	No. CANEC13003558	No. CANEC1300355801		Jan 2013	Page 3 of 11	
Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>		
Dibromodiphenyl ether	-	mg/kg	5	ND		
Tribromodiphenyl ether	-	mg/kg	5	ND		
Tetrabromodiphenyl ether	-	mg/kg	5	ND		
Pentabromodiphenyl ether	-	mg/kg	5	ND		
Hexabromodiphenyl ether	-	mg/kg	5	ND		
Heptabromodiphenyl ether	-	mg/kg	5	ND		
Octabromodiphenyl ether	-	mg/kg	5	ND		
Nonabromodiphenyl ether	-	mg/kg	5	ND		
Decabromodiphenyl ether	-	mg/kg	5	ND		

#### Notes:

(1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II.

#### **Halogen**

Test Method: With reference to EN 14582: 2007, analysis was performed by Ion Chromatograph (IC).

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Fluorine (F)	mg/kg	50	91
Chlorine (CI)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND
lodine (I)	mg/kg	50	ND

#### **Elementary Analysis**

Test Method: With reference to US EPA Method 3052:1996, analysis was performed by ICP-OES.

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Arsenic (As)	mg/kg	10	ND
Selenium (Se)	mg/kg	10	ND
Antimony (Sb)	mg/kg	10	ND
Barium (Ba)	mg/kg	10	ND

#### Hexabromocyclododecane (HBCDD)

Test Method: Determination of HBCDD by GC-MS based on IEC 62321:2008.

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**Test Report** No. CANEC1300355801 Date: 15 Jan 2013 Page 4 of 11

Test Item(s) Unit MDL 001
Hexabromocyclododecane (HBCDD) mg/kg 10 ND

Notes:

(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC: Hexabromocyclododecane (HBCDD) is considered as a priority for risk evaluation and substance restriction.

#### **Phthalate**

Test Method: Determination of phthalates by GC-MS based on EN 14372:2004.

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Dibutyl Phthalate (DBP)	% (w/w)	0.003	ND
Benzylbutyl Phthalate (BBP)	% (w/w)	0.003	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	% (w/w)	0.003	ND

#### Notes:

(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC: Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP) and Dibutyl phthalate (DBP) are considered as a priority for risk evaluation and substance restriction.

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**Test Report** No. CANEC1300355801 Date: 15 Jan 2013 Page 5 of 11

Sample Name:

RSFR-H HEAT SHRINKABLE TUBINGS (E203950 A WOER RSFR-H

TUBE 125°C VW-1 H)

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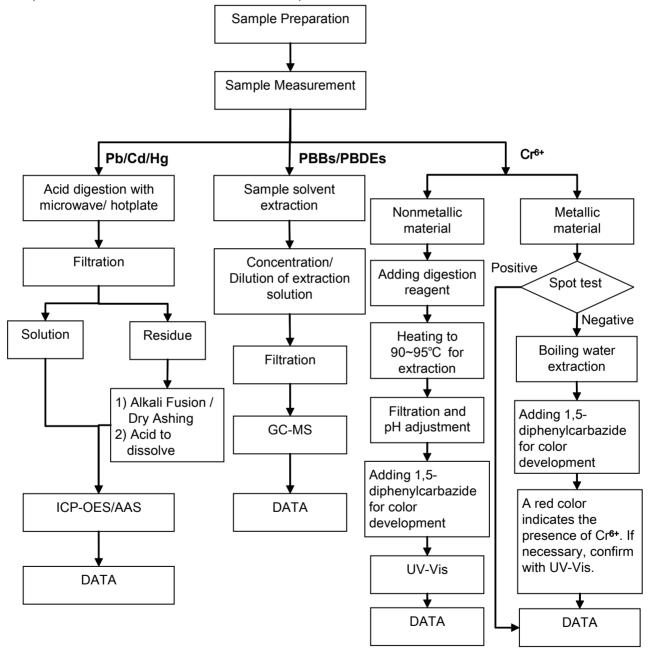
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Date: 15 Jan 2013

#### **ATTACHMENTS**

#### **RoHS Testing Flow Chart**

- 1) Name of the person who made testing: Michael Tso / Cutey Yu
- 2) Name of the person in charge of testing: Adams Yu / Yolanda Wei
- 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).



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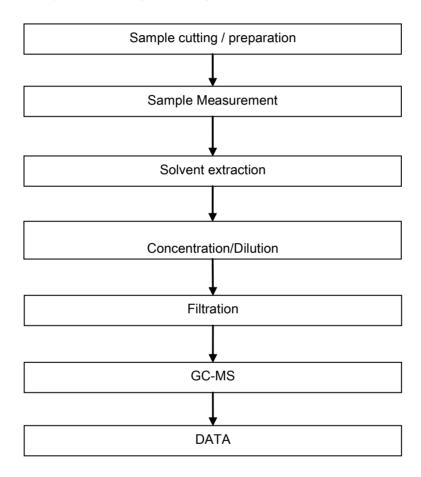
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#### **ATTACHMENTS**

#### **Phthalates Testing Flow Chart**

- 1) Name of the person who made testing: Liu Qiong
- 2) Name of the person in charge of testing: Yolanda Wei



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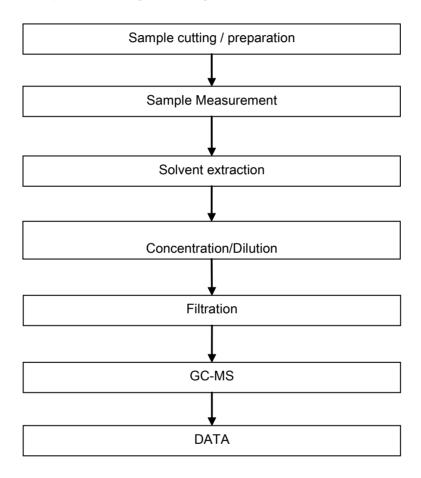
Date: 15 Jan 2013

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#### **ATTACHMENTS**

#### **HBCDD Testing Flow Chart**

- 1) Name of the person who made testing: Cutey Yu
- 2) Name of the person in charge of testing: Yolanda Wei



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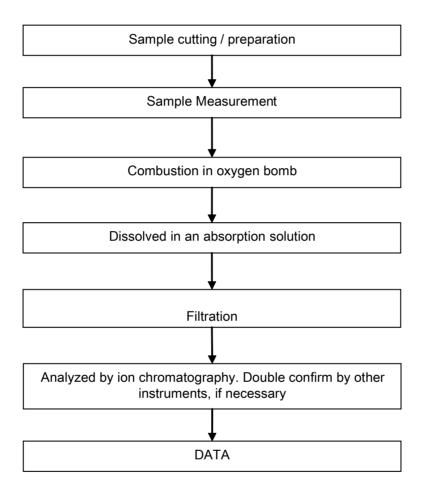
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#### **ATTACHMENTS**

## **Halogen Testing Flow Chart**

- 1) Name of the person who made testing: Bella Wang
- 2) Name of the person in charge of testing: Adams Yu



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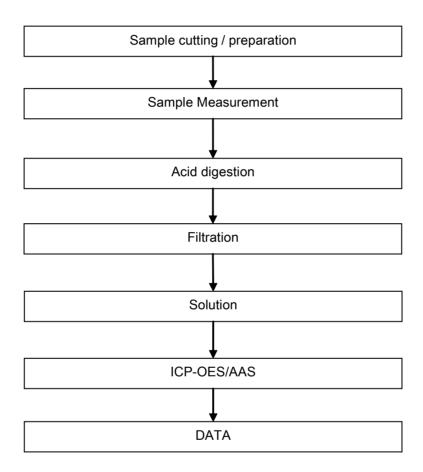
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#### **ATTACHMENTS**

## **Elementary Testing Flow Chart**

- 1) Name of the person who made testing: Bella Wang
- 2) Name of the person in charge of testing: Adams Yu



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Sample photo:



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

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DONGGUAN JINLE METALS MATERIAL CO.,LTD

YUCHENG ROAD, NUMBER 22, SHATOUSHA DISTRICT, CHANGAN TOWN, DONGGUAN CITY CHINA

This report is to supersede test report CANML1300917501

The following sample(s) was/were submitted and identified on behalf of the clients as: C2680

SGS Job No. : GC130100332 - GZ

Internal Reference No. : 6.1

Date of Sample Received : 17 Jan 2013

Testing Period : 17 Jan 2013 - 25 Jan 2013

Test Requested: A: As requested by client, SVHC screening is performed according to:

(i) One hundred and thirty eight (138) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before Dec 19, 2012 regarding Regulation (EC) No 1907/2006 concerning

the REACH.

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

Summary: A:

According to the specified scope and analytical techniques, concentrations of tested SVHC are ≤ 0.1% (w/w) in the

submitted sample.

**PASS** 

Conclusion: : B: Based on the performed tests on submitted samples, the results of Lead,

Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) **comply with** the limits as set by

RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of SGS-CSTC Ltd.

Zm guan

Approved Signatory

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**Test Sample:** 

**Test Part Description:** 

Specimen No. SGS Sample ID Description

1 CAN13-009175.001 Brassy metal sheet

#### A: SVHC

#### Remark:

(1) The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:

http://echa.europa.eu/web/guest/candidate-list-table

These lists are under evaluation by ECHA and may subject to change in the future.

#### (2) Concerning article(s):

In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).

Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.

SGS adopts the interpretation of ECHA for SVHC in article unless indicated otherwise. Detail explanation is available at the following link:

http://webstage.contribute.sgs.net/corpreach/documents/SGS-CTS\_SVHC-paper-EN-11.pdf

#### (3) Concerning material(s):

Test results in this report are based on the tested sample. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article. If this report refers to testing result of composite material group by equal weight proportion, the material in each composite test group may come from more than one article.

If the sample is a substance or mixture, and it directly exports to EU, client has the obligation to comply with the supply chain communication obligation under Article 31 of Regulation (EC) No. 1907/2006 and the conditions of Authorization of substance of very high concern included in the Annex XIV of the Regulation (EC) No. 1907/2006.

(4) Concerning substance and preparation:

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If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and No 790/2009, client is suggested to prepare a Safety Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:

- a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
- a mixture that is classified as dangerous according Dangerous Preparations Directive 1999/45/EC or classified as hazardous under the CLP Regulation (EC) No 1272/2008, when their concentrations are equal to, or greater than, those defined in the Article 3(3) of 1999/45/EC or the lower values given in Part 3 of Annex VI of Regulation (EC) No. 1272/2008; or
- a mixture is not classified as dangerous under Directive 1999/45/EC, but contains either:
- (a) a substance posing human health or environmental hazards in an individual concentration of  $\geq$  1 % by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or  $\geq$  0.2 % by volume for gaseous mixtures; or
- (b) a substance that is PBT, or vPvB in an individual concentration of  $\geq 0.1$  % by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
- (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of  $\geq$  0.1 % by weight for non-gaseous mixtures; or
- (d) a substance for which there are Europe-wide workplace exposure limits.
- (5) If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

#### **Test Method:**

SGS In-House method- GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, Analyzed by ICP-OES, GC-MS, UV-VIS and Colorimetric Method/HPLC-DAD/MS.

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#### Test Result: (Substances in the Candidate List of SVHC)

No.	Substance Name	CAS No.	EC No.	001 Concentration (%)	RL(%)
1	[Phthalato(2-)]dioxotrilead*	69011-06-9	273-688-5	ND	0.005
2	[4-[[4-anilino-1-naphthyl][4- (dimethylamino)phenyl]methylene]cyclohe xa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26)§	2580-56-5	219-943-6	ND	0.050
3	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1- ylidene]dimethylammonium chloride (C.I. Basic Violet 3) §	548-62-9	208-953-6	ND	0.050
4	1,2,3-trichloropropane	96-18-4	202-486-1	ND	0.050
5	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	276-158-1	ND	0.050
6	1,2-Benzenedicarboxylic acid, di-C7-11- branched and linear alkyl esters	68515-42-4	271-084-6	ND	0.050
7	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	284-032-2	ND	0.050
8	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	203-977-3	ND	0.050
9	1,2-dichloroethane	107-06-2	203-458-1	ND	0.050
10	1,2-Diethoxyethane	629-14-1	211-076-1	ND	0.050
11	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	203-794-9	ND	0.050
12	1-Bromopropane	106-94-5	203-445-0	ND	0.050
13	1-Methyl-2-pyrrolidone	872-50-4	212-828-1	ND	0.050
14	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	202-918-9	ND	0.050
15	2-Methoxyaniline; o-Anisidine	90-04-0	201-963-1	ND	0.050
16	2,4-Dinitrotoluene	121-14-2	204-450-0	ND	0.050
17	2-Ethoxyethanol	110-80-5	203-804-1	ND	0.050
18	2-Ethoxyethyl acetate	111-15-9	203-839-2	ND	0.050

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No.	Substance Name	CAS No.	EC No.	001 Concentration (%)	RL(%)
19	2-Methoxyethanol	109-86-4	203-713-7	ND	0.050
20	3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	421-150-7	ND	0.050
21	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	205-426-2	ND	0.050
22	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	-	ND	0.050
23	4,4'-bis(dimethylamino) benzophenone (Michler's Ketone)	90-94-8	202-027-5	ND	0.050
24	4,4'-bis(dimethylamino)-4"- (methylamino)trityl alcohol <sup>§</sup>	561-41-1	209-218-2	ND	0.050
25	4,4'-Diaminodiphenylmethane(MDA)	101-77-9	202-974-4	ND	0.050
26	4,4'-Methylenedi-o-toluidine	838-88-0	212-658-8	ND	0.050
27	4,4'-Oxydianiline and its salts	101-80-4	202-977-0	ND	0.050
28	4-Aminoazobenzene	60-09-3	200-453-6	ND	0.050
29	4-Methyl- <i>m</i> -phenylenediamine	95-80-7	202-453-1	ND	0.050
30	4-Nonylphenol, branched and linear	-	-	ND	0.050
31	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	201-329-4	ND	0.050
32	6-Methoxy- <i>m</i> -toluidine	120-71-8	204-419-1	ND	0.050
33	Acetic acid, lead salt, basic*	51404-69-4	257-175-3	ND	0.005
34	Acrylamide	79-06-1	201-173-7	ND	0.050
35	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	287-476-5	ND	0.050
36	Aluminosilicate Refractory Ceramic Fibres* <sup>♣</sup>	650-017-00-8 (Index no.)	-	ND	0.005
37	Ammonium dichromate*	7789-09-5	232-143-1	ND	0.005
38	Anthracene	120-12-7	204-371-1	ND	0.050
39	Anthracene oil*	90640-80-5	292-602-7	ND	0.050
40	Anthracene oil, anthracene paste*	90640-81-6	292-603-2	ND	0.050

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No.	Substance Name	CAS No.	EC No.	001 Concentration (%)	RL(%)
41	Anthracene oil, anthracene paste, anthracene fraction*	91995-15-2	295-275-9	ND	0.050
42	Anthracene oil, anthracene paste, distn. Lights*	91995-17-4	295-278-5	ND	0.050
43	Anthracene oil, anthracene-low*	90640-82-7	292-604-8	ND	0.050
44	Arsenic acid*	7778-39-4	231-901-9	ND	0.005
45	Benzyl butyl phthalate (BBP)	85-68-7	201-622-7	ND	0.050
46	Biphenyl-4-ylamine	92-67-1	202-177-1	ND	0.050
47	Bis(2-ethylhexyl)phthalate (DEHP)	117-81-7	204-211-0	ND	0.050
48	Bis(2-methoxyethyl) ether	111-96-6	203-924-4	ND	0.050
49	Bis(2-methoxyethyl) phthalate	117-82-8	204-212-6	ND	0.050
50	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	214-604-9	ND	0.050
51	Bis(tributyltin)oxide (TBTO)	56-35-9	200-268-0	ND	0.050
52	Boric acid*	10043-35-3 11113-50-1	233-139-2 234-343-4	ND	0.005
53	Calcium arsenate*	7778-44-1	231-904-5	ND	0.005
54	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid*	7738-94-5, - 13530-68-2	231-801-5, - 236-881-5	ND	0.005
55	Chromium trioxide*	1333-82-0	215-607-8	ND	0.005
56	Cobalt dichloride*	7646-79-9	231-589-4	ND	0.005
57	Cobalt(II) carbonate*	513-79-1	208-169-4	ND	0.005
58	Cobalt(II) diacetate*	71-48-7	200-755-8	ND	0.005
59	Cobalt(II) dinitrate*	10141-05-6	233-402-1	ND	0.005

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No.	Substance Name	CAS No.	EC No.	001 Concentration (%)	RL(%)
60	Cobalt(II) sulphate*	10124-43-3	233-334-2	ND	0.005
61	Diarsenic pentaoxide*	1303-28-2	215-116-9	ND	0.005
62	Diarsenic trioxide*	1327-53-3	215-481-4	ND	0.005
63	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	204-650-8	ND	0.050
64	Diboron trioxide*	1303-86-2	215-125-8	ND	0.005
65	Dibutyltin dichloride (DBTC)	683-18-1	211-670-0	ND	0.050
66	Dibutyl phthalate (DBP)	84-74-2	201-557-4	ND	0.050
67	Dichromium tris(chromate)*	24613-89-6	246-356-2	ND	0.005
68	Diethyl sulphate	64-67-5	200-589-6	ND	0.050
69	Diisobutyl phthalate	84-69-5	201-553-2	ND	0.050
70	Disodium tetraborate, anhydrous*	1303-96-4, 1330-43-4, 12179-04-3	215-540-4	ND	0.005
71	Diisopentylphthalate	605-50-5	210-088-4	ND	0.050
72	Dimethyl sulphate	77-78-1	201-058-1	ND	0.050
73	Dinoseb	88-85-7	201-861-7	ND	0.050
74	Dioxobis(stearato)trilead*	12578-12-0	235-702-8	ND	0.005
75	Fatty acids, C16-18, lead salts*	91031-62-8	292-966-7	ND	0.005
76	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	500-036-1	ND	0.050
77	Formamide	75-12-7	200-842-0	ND	0.050
78	Furan	110-00-9	203-727-3	ND	0.050

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No.	Substance Name	CAS No.	EC No.	001 Concentration (%)	RL(%)
79	Henicosafluoroundecanoic acid	2058-94-8	218-165-4	ND	0.050
80	Heptacosafluorotetradecanoic acid	376-06-7	206-803-4	ND	0.050
81	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ -HBCDD, $\beta$ -HBCDD, $\gamma$ -HBCDD) $\Delta$	25637-99-4, 3194- 55-6	247-148-4, 221-695-9	ND	0.050
82	Cyclohexane-1,2-dicarboxylic anhydride, cis-cyclohexane-1,2-dicarboxylic anhydride, trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7, 13149-00-3, 14166-21-3	201-604-9, 236-086-3, 238-009-9	ND	0.050
83	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	À	À	ND	0.050
84	Hydrazine	7803-57-8, 302-01-2	206-114-9	ND	0.050
85	Lead bis(tetrafluoroborate)*	13814-96-5	237-486-0	ND	0.005
86	Lead chromate*	7758-97-6	231-846-0	ND	0.005
87	Lead cyanamidate*	20837-86-9	244-073-9	ND	0.005
88	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*	12656-85-8	235-759-9	ND	0.005
89	Lead diazide, Lead azide*	13424-46-9	236-542-1	ND	0.005
90	Lead dipicrate*	6477-64-1	229-335-2	ND	0.005
91	Lead dinitrate*	10099-74-8	233-245-9	ND	0.005
92	Lead hydrogen arsenate*	7784-40-9	232-064-2	ND	0.005
93	Lead monoxide*	1317-36-8	215-267-0	ND	0.005
94	Lead oxide sulfate*	12036-76-9	234-853-7	ND	0.005
95	Lead styphnate*	15245-44-0	239-290-0	ND	0.005

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No.	Substance Name	CAS No.	EC No.	001 Concentration (%)	RL(%)
96	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	215-693-7	ND	0.005
97	Lead tetroxide (orange lead)*	1314-41-6	215-235-6	ND	0.005
98	Lead titanium trioxide*	12060-00-3	235-038-9	ND	0.005
99	Lead titanium zirconium oxide*	12626-81-2	235-727-4	ND	0.005
100	Lead(II) bis(methanesulfonate)*	17570-76-2	401-750-5	ND	0.005
101	Methoxyacetic acid	625-45-6	210-894-6	ND	0.050
102	N,N,N',N'-tetramethyl-4,4'- methylenedianiline (Michler's base)	101-61-1	202-959-2	ND	0.050
103	N,N-dimethylacetamide	127-19-5	204-826-4	ND	0.050
104	N,N-dimethylformamide	68-12-2	200-679-5	ND	0.050
105	N-Methylacetamide	79-16-3	201-182-6	ND	0.050
106	N-Pentyl-isopentylphthalate	776297-69-9	-	ND	0.050
107	o-Aminoazotoluene	97-56-3	202-591-2	ND	0.050
108	o-Toluidine	95-53-4	202-429-0	ND	0.050
109	Pentacosafluorotridecanoic acid	72629-94-8	276-745-2	ND	0.050
110	Pentalead tetraoxide sulphate*	12065-90-6	235-067-7	ND	0.005
111	Pentazinc chromate octahydroxide*	49663-84-5	256-418-0	ND	0.005
112	Phenolphthalein	77-09-8	201-004-7	ND	0.050
113	Pitch, coal tar, high temp.*	65996-93-2	266-028-2	ND	0.050
114	Potassium chromate*	7789-00-6	232-140-5	ND	0.005

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No.	Substance Name	CAS No.	EC No.	001 Concentration (%)	RL(%)
115	Potassium dichromate*	7778-50-9	231-906-6	ND	0.005
116	Potassium hydroxyoctaoxodizincatedichromate*	11103-86-9	234-329-8	ND	0.005
117	Methyloxirane (Propylene oxide)	75-56-9	200-879-2	ND	0.050
118	Pyrochlore, antimony lead yellow*	8012-00-8	232-382-1	ND	0.005
119	Silicic acid, barium salt, lead-doped*	68784-75-8	272-271-5	ND	0.005
120	Silicic acid, lead salt*	11120-22-2	234-363-3	ND	0.005
121	Sodium chromate*	7775-11-3	231-889-5	ND	0.005
122	Sodium dichromate*	7789-12-0, 10588-01-9	234-190-3	ND	0.005
123	Strontium chromate*	7789-06-2	232-142-6	ND	0.005
124	Sulfurous acid, lead salt, dibasic*	62229-08-7	263-467-1	ND	0.005
125	Tetraboron disodium heptaoxide, hydrate*	12267-73-1	235-541-3	ND	0.005
126	Tetraethyllead*	78-00-2	201-075-4	ND	0.005
127	Tetralead trioxide sulphate*	12202-17-4	235-380-9	ND	0.005
128	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9	219-514-3	ND	0.050
129	Trichloroethylene	79-01-6	201-167-4	ND	0.050
130	Tricosafluorododecanoic acid	307-55-1	206-203-2	ND	0.050
131	Triethyl arsenate*	15606-95-8	427-700-2	ND	0.005
132	Trilead bis(carbonate)dihydroxide (basic lead carbonate)*	1319-46-6	215-290-6	ND	0.005
133	Trilead diarsenate*	3687-31-8	222-979-5	ND	0.005

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No.	Substance Name	CAS No.	EC No.	001 Concentration (%)	RL(%)
134	Trilead dioxide phosphonate*	12141-20-7	235-252-2	ND	0.005
135	Tris(2-chloroethyl)phosphate	115-96-8	204-118-5	ND	0.050
136	Zirconia Aluminosilicate Refractory Ceramic Fibres* <sup>A</sup>	650-017-00-8 (Index no.)	-	ND	0.005
137	α,α-Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) <sup>§</sup>	6786-83-0	229-851-8	ND	0.050
138	β-TGIC (1,3,5-tris[(2S and 2R)-2,3- epoxypropyl]-1,3,5-triazine-2,4,6- (1H,3H,5H)-trione)	59653-74-6	423-400-0	ND	0.050

#### Notes:

- (1)RL = Reporting Limit. All RL are based on homogenous material ND = Not detected (lower than RL), ND is denoted on the SVHC substance.
- (2)  $^{\triangle}$  CAS No. of diastereoisomers identified ( $\alpha$ -HBCDD,  $\beta$ -HBCDD,  $\gamma$ -HBCDD): 134237-50-6, 134237-51-7, 134237-52-8
  - ☆ CAS No. of Hexahydromethylphathalic anhydride, Hexahydro-4-methylphathalic anhydride, Hexahydro-1-methylphathalic anhydride, Hexahydro-3-methylphathalic anhydride: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9; EC No. of those: 247-094-1, 243-072-0, 256-356-4, 260-566-1.
- (3) \* The test result is based on the calculation of selected element(s) / marker(s) and to the worst-case scenario. For detail information, please refer to the SGS REACH website: <a href="www.reach.sgs.com/substance-of-very-high-concern-analysis-information-page.htm">www.reach.sgs.com/substance-of-very-high-concern-analysis-information-page.htm</a>

Calculated concentration of diboron trioxide, boric acid, disodium tetraborate anhydrous, tetraboron disodium heptaoxide hydrate and Lead bis(tetrafluoroborate) are based on the water extractive boron and sodium by ICP-OES.

- RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, sodium, chromium (VI), silicon, aluminum, zirconium, boron, potassium, strontium, zinc, calcium, antimony, titanium and barium respectively), except molybdenum RL=0.0005%, boron RL=0.0025% (only for Lead bis(tetrafluoroborate)).
- (4) § The substance is proposed for the identification as SVHC only where it contains Michler's ketone (CAS Number: 90-94-8) or Michler's base (CAS Number: 101-61-1) ≥0.1% (w/w).
- (5) On Jun 18, 2012, ECHA consolidated two entries of aluminosilicate refractory ceramic fibres and two of zirconia aluminosilicate refractory ceramic fibres in the Candidate List of SVHC for authorization published in Jan 2010 and Dec 2011 into one entry for aluminosilicate refractory ceramic fibres and one for zirconia aluminosilicate refractory ceramic fibres.

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#### B: RoHS Directive 2011/65/EU

Test Method: With reference to IEC 62321:2008

- (1) Determination of Cadmium by ICP-OES.
- (2) Determination of Lead by ICP-OES.
- (3) Determination of Mercury by ICP-OES.
- (4) Determination of Hexavalent Chromium by spot test / Colorimetric Method using UV-Vis.
- (5) Determination of PBBs and PBDEs by GC-MS.

Test Item(s):	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Cadmium(Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	16
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	-	-	$\Diamond$	Negative
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND

#### Notes:

(1) The maximum permissible limit is quoted from directive 2011/65/EU, Annex II

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(2) 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.

Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

#### C: Hexabromocyclododecane (HBCDD)

Test method: Determination of HBCDD by GC-MS based on IEC 62321:2008.

Test Item(s):	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Hexabromocyclododecane (HBCDD)	mg/kg	10	ND

#### Note:

(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC: Hexabromocyclododecane (HBCDD) is considered as a priority for risk evaluation and substance restriction.

#### D: Phthalates

Test Method: Determination of phthalates by GC-MS based on EN 14372:2004.

Test Item(s):	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Dibutyl phthalate (DBP)	%(w/w)	0.003	ND
Butyl benzyl phthalate (BBP)	%(w/w)	0.003	ND
Bis (2-ethylhexyl) phthalate (DEHP)	%(w/w)	0.003	ND

#### Note:

(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC: Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP) and Dibutyl phthalate (DBP) are considered as a priority for risk evaluation and substance restriction.

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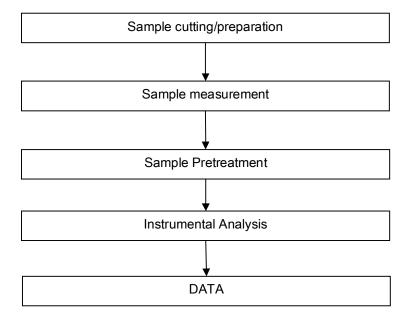
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#### **ATTACHMENTS**

#### **SVHC Testing Flow Chart**

- 1) Name of the person who made testing: Michael Tso / Liu Qiong
- 2) Name of the person in charge of testing: Adams Yu / Yolanda Wei



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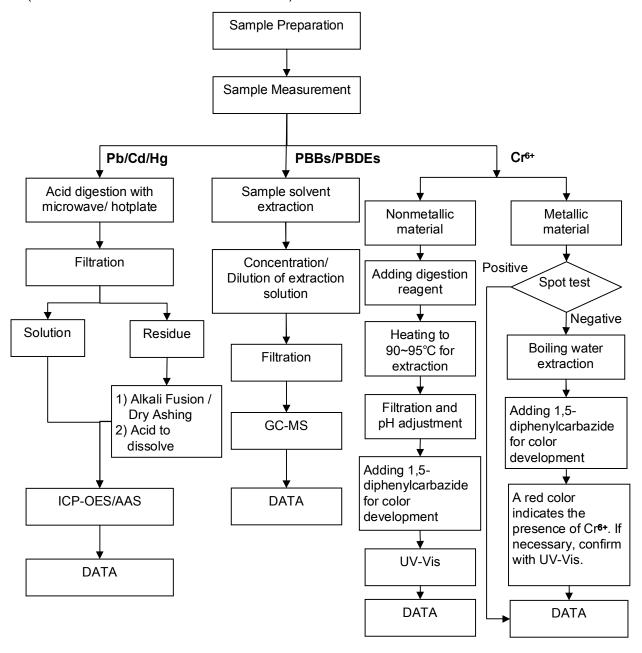
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#### **ATTACHMENTS**

#### **RoHS Testing Flow Chart**

- 1) Name of the person who made testing: Michael Tso / Cutey Yu
- 2) Name of the person in charge of testing: Adams Yu / Yolanda Wei
- 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).



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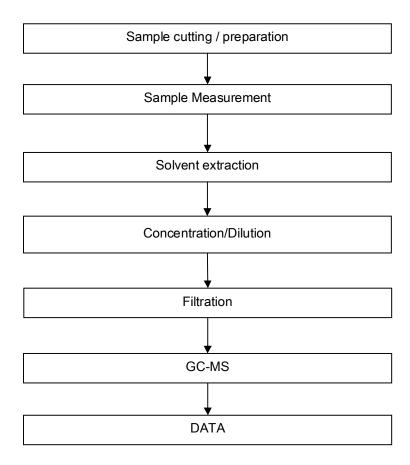
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#### **ATTACHMENTS**

#### **HBCDD Testing Flow Chart**

- 1) Name of the person who made testing: Cutey Yu
- 2) Name of the person in charge of testing: Yolanda Wei



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No. CANML1300917508 A01

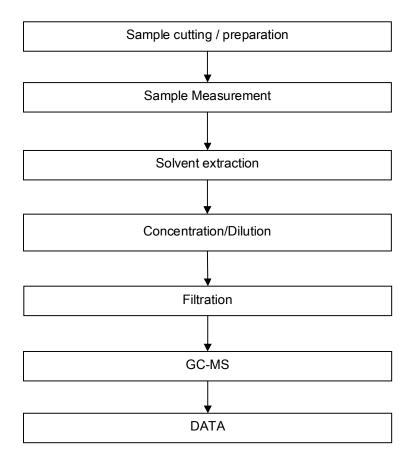
Date: 28 Jan 2013

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#### **ATTACHMENTS**

### **Phthalates Testing Flow Chart**

- 1) Name of the person who made testing: Liu Qiong
- 2) Name of the person in charge of testing: Yolanda Wei



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No. CANML1300917508 A01

Date: 28 Jan 2013

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Sample photo:



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Report No. RHS01F014487001 Page 1 of 5

Applicant DONGGUAN JUNAO CONNECTOR CO.,LTD.

Address 7 CHUANGYE NO.2ROAD, HELU INDUSTRIAL AREA, HUANGJIANG TOWN,

DONGGUAN CITY, GUANGDONG PROVINCE, CHINA

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

Sample Name Terminal

Part No. Please refer to the following page(s).

Sample Received Date Sep. 16, 2013

Testing Period Sep. 16, 2013 to Sep. 23, 2013

**Test Requested** As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg),

Hexavalent Chromium(Cr(VI)) in the submitted sample(s).

#### **Test Method**

Tested Item(s)	Test Method	Measured Equipment(s)		
Lead (Pb)	IEC 62321:2008 Ed.1 Sec.9	ICP-OES		
Cadmium (Cd)	IEC 62321:2008 Ed.1 Sec.9	ICP-OES		
Mercury (Hg)	IEC 62321:2008 Ed.1 Sec.7	ICP-OES		
Hexavalent Chromium (Cr(VI))	IEC 62321:2008 Ed.1 Annex B	UV-Vis		

**Test Result(s)** Please refer to the following page(s).

Tested by

Approved by

Reviewed by

Sep. 23, 2013

Danny Liu

Rick Lin

Technical Manager

No. 1012289240

Centre Testing International (Shenzhen) Co., Ltd. Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China





RHS01F014487001 Report No.

Page 2 of 5

Part No.

A0800. A1001. A1001HA. A1002. A1003. A1004. A1005. A1006. A1007, A1008, A1024, A1024HA, A1200, A1201, A1201, A1250, A1251. A1252. A1253. A1253HA. A1254. A1254HA. A1255. A1256. A1258. A1500. A1501. A2001. A2002. A2004. A2004HA. A2004HB. A2005. A2006. A2007. A2008. A2009. A2013. A2015. A2016. A2100. A2211. A2500. A2501. A2501HA. A2502. A2503. A2504. A2506. A2508, A2509, A2511, A2513, A2514, A2515, A2516, A2518, A2519. A2540. A2541. A2542. A2543. A2544. A2545. A2546. A2547. A2549. A2550, A2551, A2552, A3500, A3960, A3961, A3962, A3963, A4000, A4001. A4002. A5000. A5081. A7500. A7501. A7921. A1080. A1300. B1259. B1502. B2011. B2512. B3964. B3965. B1010. B1200. B1400. B1800. B2600. B3200. C1250. C1581. C2003. C2504. C2505. C2560. C2561. C2562. C2563. C2564. C3030. C3500. C3700. C3701. C3966. C4000. C4140. C4200. C4255. C4256. C4500. C5030. C5080. C5500. C6200. C6201. C6350. C6700. C6501. C6502. D2050. D2051. D2052. D2054, D2055, D2056, D2057, D2058, D0800, D0801, D1000, D1001, D1271. D1272. D2007. D2008. D2009. D2010. D2553. D2554. D2555. D2556, D2557, D2558, F0101, F0102, F0103, F0104, F0500, F0501. F0502. F0503. F1250. F1251. 110. 187. 205. 250. S3800. S3801. S3802.





S3803. S3804

























































Report No. RHS01F014487001

Page 3 of 5

### Test Result(s)

Tested Item(s)	Result	MDL
Lead (Pb)	50 mg/kg	2 mg/kg
Cadmium (Cd)	N.D.	2 mg/kg
Mercury (Hg)	N.D.	2 mg/kg
Hexavalent Chromium (Cr(VI))	Negative	/

**Tested Sample/Part Description** Cupreous metal

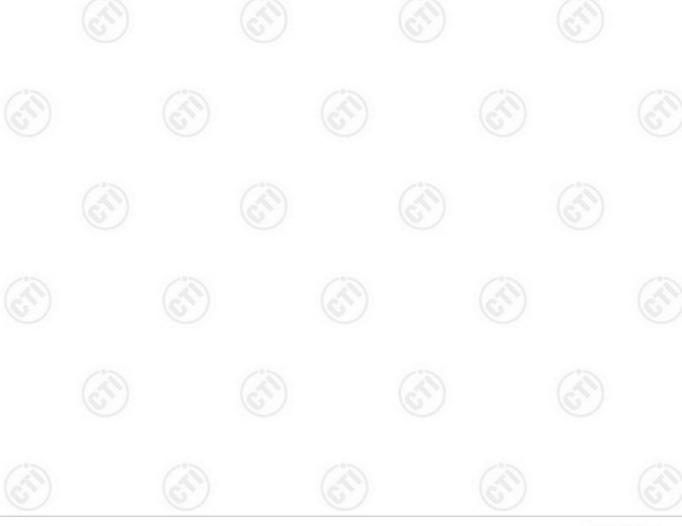
Note: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

-Negative = Absence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is less than 0.02 mg/kg with  $50\text{cm}^2$  sample surface area used.



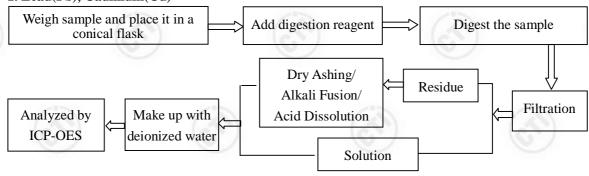




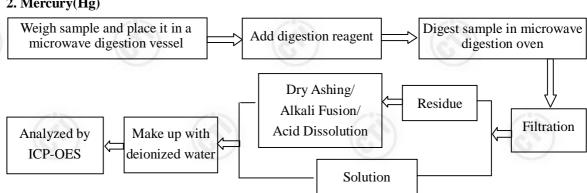
Page 4 of 5

#### **Test Process**

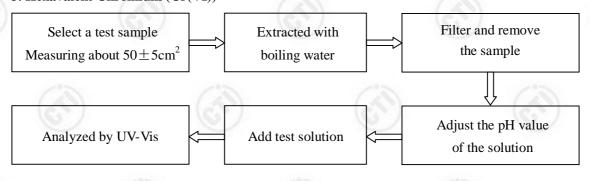
## 1. Lead(Pb), Cadmium(Cd)



#### 2. Mercury(Hg)



## 3. Hexavalent Chromium (Cr(VI))







Report No. RHS01F014487001

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# Photo(s) of the sample(s)



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

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.





Test Report No. CANEC1300931601 Date: 22 Jan 2013 Page 1 of 4

ZHONGSHAN TACWIRE WIRE LIMITED

MA'AN INDUSTRIAL AREA,HUANGPU TOWN,ZHONGSHAN CITY,GUANGDONG PROVINCE CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as: Tinned round copper

wire

SGS Job No.: CP13-002145 - GZ

Model No. : TXR

Main Substance : Cu,Sn

Date of Sample Received: 17 Jan 2013

Testing Period: 17 Jan 2013 - 22 Jan 2013

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: Based on the performed tests on submitted samples, the results of Lead,

Mercury, Cadmium, Hexavalent chromium comply with the limits as set by RoHS

Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of SGS-CSTC Ltd.

Merry Lv

Approved Signatory

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No. CANEC1300931601

Date: 22 Jan 2013

Page 2 of 4

Test Results:

#### **Test Part Description:**

Specimen No. SGS Sample ID Description

1 CAN13-009316.001 Silvery metal wire

#### Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected ( < MDL)

(4) "-" = Not Regulated

## RoHS Directive 2011/65/EU

Test Method: With reference to IEC 62321:2008

(1) Determination of Cadmium by ICP-OES.

(2) Determination of Lead by ICP-OES.

(3) Determination of Mercury by ICP-OES.

(4) Determination of Hexavalent Chromium by Spot test / Colorimetric Method using UV-Vis.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	-	$\Diamond$	Negative

#### Notes:

- (1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II
- (2) 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.

Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

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No. CANEC1300931601

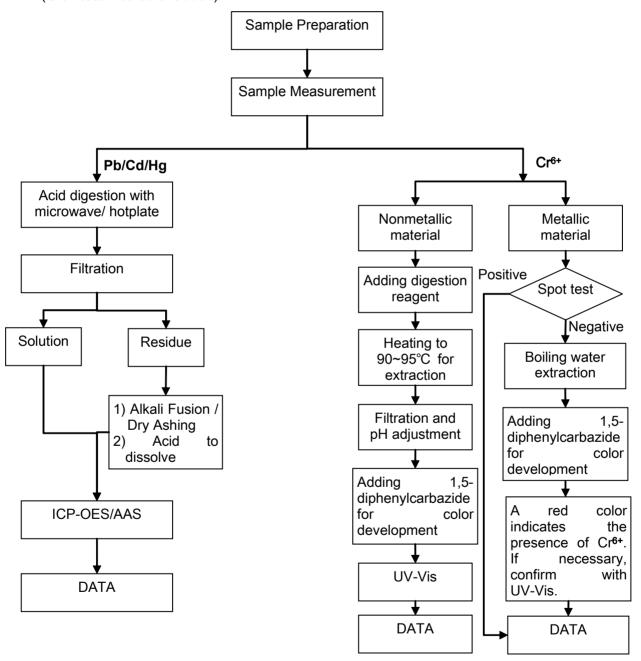
Date: 22 Jan 2013

Page 3 of 4

### **ATTACHMENTS**

### **RoHS Testing Flow Chart**

- 1) Name of the person who made testing: Michael Tso
- 2) Name of the person in charge of testing: 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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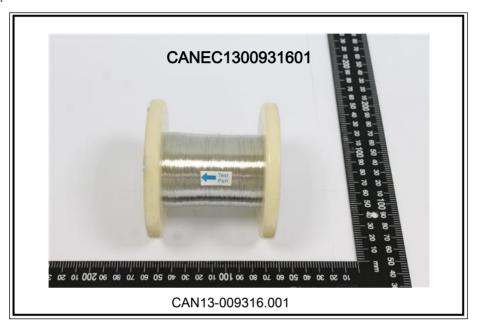


No. CANEC1300931601

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Date: 22 Jan 2013

Sample photo:



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**Test Report** No. CANEC1213643301 Date: 17 Oct 2012 Page 1 of 5

SHENZHEN HAOCHANG PLASTIC CO.,LTD

BUILDING A29, TANTOU WEST INDUSTRIAL ZONE, SONGGANG TOWN BAOAN DISTRICT SHENZHEN CITY CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : Transparent PVC Plastic

SGS Job No.: CP12-048187 - SZ

Date of Sample Received: 11 Oct 2012

Testing Period: 11 Oct 2012 - 17 Oct 2012

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: Based on the performed tests on submitted samples, the results of Lead,

Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS

Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of SGS-CSTC Ltd.

Trophy Zhang
Approved Signatory

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The properties of the first properties of the sample (s) tested.



# **Test Report** No. CANEC1213643301 Date: 17 Oct 2012 Page 2 of 5

Test Results:

### **Test Part Description:**

Specimen No. SGS Sample ID Description

1 CAN12-136433.001 Transparent plastic grains

#### Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected ( < MDL)

(4) "-" = Not Regulated

## RoHS Directive 2011/65/EU

Test Method: With reference to IEC 62321:2008

(1) Determination of Cadmium by ICP-OES.

(2) Determination of Lead by ICP-OES.

(3) Determination of Mercury by ICP-OES.

(4) Determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.

(5) Determination of PBBs / PBDEs content by GC-MS.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	MDL	<u>001</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	2	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

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Julies of the way to the sample (s) tested.

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Test Report	No. CANEC1213643301		Date: 17	Oct 2012	Page 3 of 5
Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>	
Dibromodiphenyl ether	-	mg/kg	5	ND	
Tribromodiphenyl ether	-	mg/kg	5	ND	
Tetrabromodiphenyl ether	-	mg/kg	5	ND	
Pentabromodiphenyl ether	-	mg/kg	5	ND	
Hexabromodiphenyl ether	-	mg/kg	5	ND	
Heptabromodiphenyl ether	-	mg/kg	5	ND	
Octabromodiphenyl ether	-	mg/kg	5	ND	
Nonabromodiphenyl ether	-	mg/kg	5	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	

#### Notes:

(1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II

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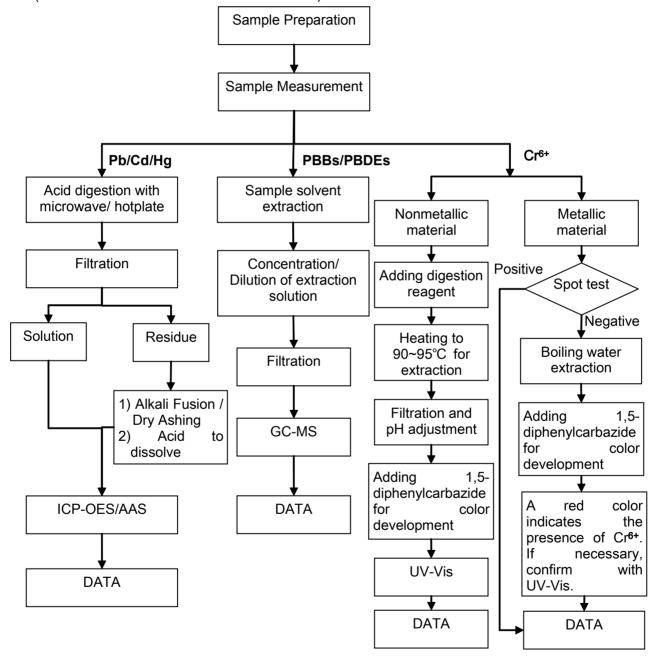
No. CANEC1213643301

Date: 17 Oct 2012 Page 4 of 5

### **ATTACHMENTS**

## **RoHS Testing Flow Chart**

- 1) Name of the person who made testing: Bella Wang / Cutey Yu
- 2) Name of the person in charge of testing: Adams Yu / Ryan Yang
- 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).



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Date: 17 Oct 2012

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**Test Report** No. CANEC1214056901 Date: 25 Oct 2012 Page 1 of 5

SHENZHEN HAOCHANG PLASTIC CO.,LTD

BUILDING A29, TANTOU WEST LNDUSTRLAL ZONE, SONGGANG TOWN BAONA DISTRIT SHENZHEN CITY CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as: BLACK PVC

SGS Job No.: CP12-048992 - SZ

Date of Sample Received: 19 Oct 2012

Testing Period : 19 Oct 2012 - 25 Oct 2012

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: Based on the performed tests on submitted samples, the results of Lead,

Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS

Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of SGS-CSTC Ltd.

Trophy Zhang
Approved Signatory

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The properties of the first properties of the sample (s) tested.



# **Test Report** No. CANEC1214056901 Date: 25 Oct 2012 Page 2 of 5

Test Results:

### **Test Part Description:**

Specimen No. SGS Sample ID Description

1 CAN12-140569.001 Black plastic grains

#### Remarks:

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected ( < MDL)

(4) "-" = Not Regulated

## RoHS Directive 2011/65/EU

Test Method: With reference to IEC 62321:2008

(1) Determination of Cadmium by ICP-OES.

(2) Determination of Lead by ICP-OES.

(3) Determination of Mercury by ICP-OES.

(4) Determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.

(5) Determination of PBBs / PBDEs content by GC-MS.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	2	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

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Julies of the way to the sample (s) tested.

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development Distrid,Guangzhou,China 510663 t (86–20) 82155555 f (86–20) 82075113 www.cn.sgs.com 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) 82075113 e sgs.china@sgs.com



Test Report	No. CANEC1214056901		01 Date: 25 Oct 2012		Page 3 of 5
Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>	
Dibromodiphenyl ether	-	mg/kg	5	ND	
Tribromodiphenyl ether	-	mg/kg	5	ND	
Tetrabromodiphenyl ether	-	mg/kg	5	ND	
Pentabromodiphenyl ether	-	mg/kg	5	ND	
Hexabromodiphenyl ether	-	mg/kg	5	ND	
Heptabromodiphenyl ether	-	mg/kg	5	ND	
Octabromodiphenyl ether	-	mg/kg	5	ND	
Nonabromodiphenyl ether	-	mg/kg	5	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	

#### Notes:

(1) The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II

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No. CANEC1214056901

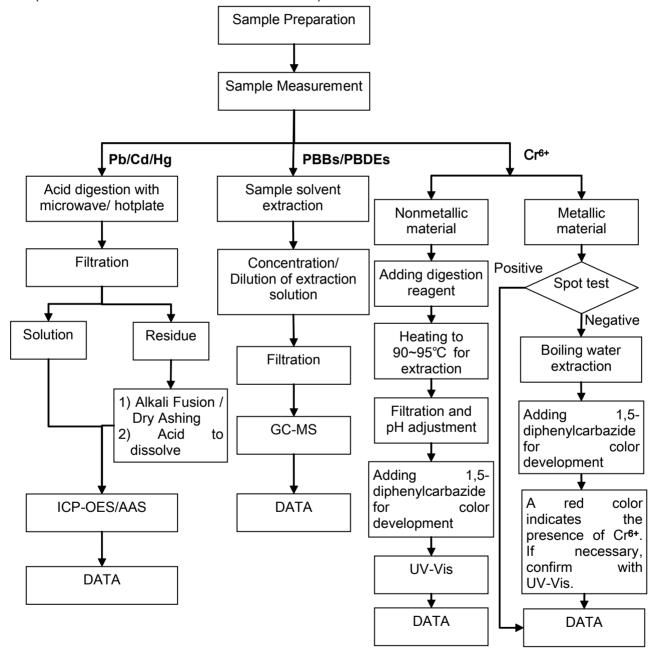
Date: 25 Oct 2012

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#### **ATTACHMENTS**

### **RoHS Testing Flow Chart**

- 1) Name of the person who made testing: Bella Wang / Cutey Yu
- 2) Name of the person in charge of testing: Adams Yu / Ryan Yang 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).



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No. CANEC1214056901

Date: 25 Oct 2012

Page 5 of 5

Sample photo:



SGS authenticate the photo on original report only

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

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**Test Report** No.: CE/2013/84347 Date: 2013/09/03 Page: 1 of 9

SYMBIO, INC. 12, XING HUA RD., TAOYUAN 

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

Sample Submitted By

: SYMBIO, INC.

Sample Description

: MATTE MATELLIZED POLYESTER LABEL

: PO32,PO32B,PO32H,PO32P,PO3B,PO3BP,PO3HP,PO4HP,PO3M,PO3MH,PO3Y, PO7Y,

PO7YG

Sample Receiving Date

: 2013/8/28

Testing Period

Style/Item No.

: 2013/8/28 TO 2013/09/03

\_\_\_\_\_\_\_

**Test Requested** 

: (1) As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the submitted sample.

(2) As specified by client, to test PFOA, PFOS, Halogen-Fluorine, Chlorine, Bromine,

lodine contents in the submitted sample.

**Test Method** : Please refer to next page(s).

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

Conclusion : (1) Based on the performed tests on selected part of submitted sample(s), the test results

of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs comply with the limits as set by RoHS

Directive 2011/65/EU Annex II; recasting 2002/95/EC.



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**Test Report** No. : CE/2013/84347 Date : 2013/09/03 Page : 2 of 9

SYMBIO, INC. 12, XING HUA RD., TAOYUAN 

#### Test Result(s)

PART NAME No.1 : SILVER COLORED LABEL (EXCLUDING THE RELEASE PAPER)

Took Hom/o)	l lmi4	Linit Mathad		Result	l imals
Test Item(s)	Unit	Method	MDL	No.1	Limit
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.	100
Lead (Pb)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.	1000
Mercury (Hg)	mg/kg	With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.	1000
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.	1000
Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.	-
PFOA (CAS No.: 335-67-1)	mg/kg	With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.	-
Halogen					
Halogen-Fluorine (F) (CAS No.: 14762-94-8)			50	n.d.	-
Halogen-Chlorine (CI) (CAS No.: 22537-15-1)		With reference to BS EN 14582:2007.	50	n.d.	-
Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	Analysis was performed by IC.	50	n.d.	-
Halogen-lodine (I) (CAS No.: 14362-44-8)			50	n.d.	-



**Test Report** No.: CE/2013/84347 Date: 2013/09/03 Page: 3 of 9

SYMBIO, INC. 12, XING HUA RD., TAOYUAN 

To at Itama(a)	I I m ! 4	Madhad	MDI	Result	1 !!4
Test Item(s)	Unit	Method	MDL	No.1	Limit
Sum of PBBs			-	n.d.	1000
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		With reference to IEC 62321: 2008	5	n.d.	=
Sum of PBDEs	mg/kg	and performed by GC/MS.	-	n.d.	1000
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.	-

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**Test Report** No.: CE/2013/84347 Date: 2013/09/03 Page: 4 of 9

SYMBIO, INC. 12, XING HUA RD., TAOYUAN



#### Note:

- 1. mg/kg = ppm; 0.1wt% = 1000ppm
- 2. n.d. = Not Detected
- 3. MDL = Method Detection Limit
- 4. " " = Not Regulated

### PFOS Reference Information: POPs - (EU) 757/2010

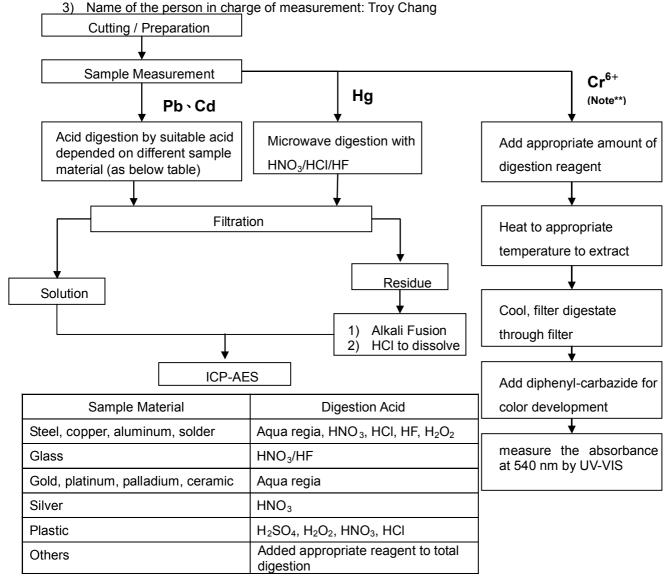
Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above 1µg/m².



**Test Report** No.: CE/2013/84347 Date: 2013/09/03 Page: 5 of 9

SYMBIO, INC. 12, XING HUA RD., TAOYUAN 

- 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: Climbgreat Yang



Note\*\*: (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95 ℃.

(2) For metallic material, add pure water and heat to boiling.



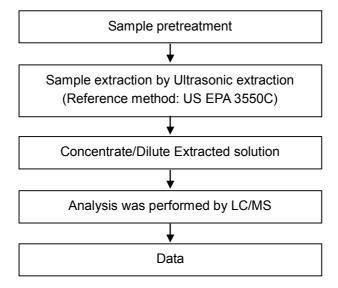
**Test Report** No.: CE/2013/84347 Date: 2013/09/03 Page: 6 of 9

SYMBIO, INC. 12, XING HUA RD., TAOYUAN



#### PFOA/PFOS analytical flow chart of Ultrasonic extraction (LC/MS) procedure

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang





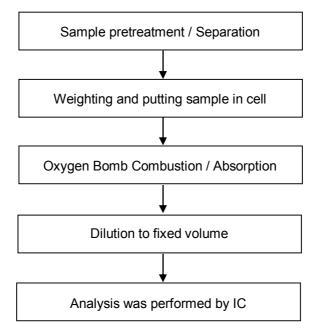
**Test Report** No.: CE/2013/84347 Date: 2013/09/03 Page: 7 of 9

SYMBIO, INC. 12, XING HUA RD., TAOYUAN



## Analytical flow chart of halogen content

- Name of the person who made measurement: Rita Chen
- Name of the person in charge of measurement: Troy Chang





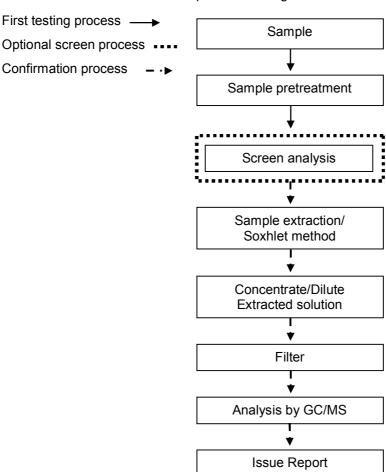
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SYMBIO, INC. 12, XING HUA RD., TAOYUAN



### **PBB/PBDE** analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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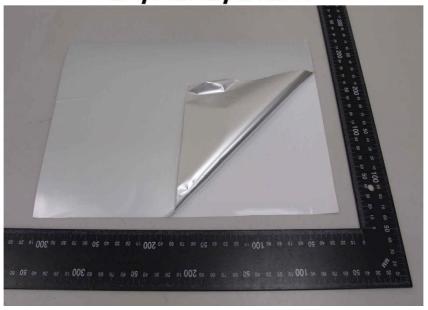
**Test Report** No.: CE/2013/84347 Date: 2013/09/03 Page: 9 of 9

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\* The tested sample / part is marked by an arrow if it's shown on the photo. \*

CE/2013/84347



\*\* End of Report \*\*



# 測試報告

# **Test Report**

號碼(No.): CE/2013/64304 日期(Date): 2013/07/01 頁數(Page): 1 of 9

鴻瑞包裝材料有限公司

HUNG JUEI PACKING MATERIAL CO., LTD.

新店區中正路四維卷8弄7號1樓

1F., NO. 7, ALY. 8, SIWEI LN., ZHONGZHENG RD., XINDIAN DIST., NEW TAIPEI

CITY231, TAIWAN (R. O. C.)

以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by/on behalf of the applicant as):

送樣廠商(Sample Submitted By)

: 鴻瑞包裝材料有限公司 (HUNG JUEI PACKING MATERIAL CO., LTD.)

樣品名稱(Sample Description)

低密度聚乙稀 (LDPE)

樣品型號(Style/Item No.)

PE ANTISTATIC BAGS (包裝袋, 防靜電包裝袋全系列產品)

收件日期(Sample Receiving Date)

2013/06/24

測試期間(Testing Period)

2013/06/24 TO 2013/07/01

\_\_\_\_\_\_

測試需求(Test Requested)

(1) 依據客户指定,進行鎬,鉛,汞,六價鉻,多溴聯苯,多溴聯苯醚測試.(As specified by client, to test Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the submitted sample.)

(2) 依據客户指定,進行全氟辛酸(銨)、全氟辛烷磺酸、鹵素-氟、氟、溴、碘测 試. (As specified by client, to test PFOA, PFOS, Halogen-Fluorine, Chlorine, Bromine, Iodine contents in the submitted sample.)

測試方法(Test Method)

: 請見下一頁 (Please refer to next pages).

測試結果(Test Results)

: 請見下一頁 (Please refer to next pages).

Edison Chang/Sr. Supervisor Signed for and on behalf of SGS TAIWAN LTD Chemical Laboratory – Taipei

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號碼(No.): CE/2013/64304 日期(Date): 2013/07/01 頁數(Page): 2 of 9

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1F., NO. 7, ALY. 8, SIWEI LN., ZHONGZHENG RD., XINDIAN DIST., NEW TAIPEI

CITY231, TAIWAN (R. O. C.)

### 測試結果(Test Results)

測試部位(PART NAME) No.1: 混測透明紅色及透明/黑色塑膠袋 (3款) (MIXED TRANSPARENT-PINK AND TRANSPARENT/BLACK PLASTIC BAG (3 TYPES))

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
鎬 / Cadmium (Cd)	mg/kg	參考IEC 62321: 2008方法,以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
鉛 / Lead (Pb)	mg/kg	參考IEC 62321: 2008方法,以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
汞 / Mercury (Hg)	mg/kg	參考IEC 62321: 2008方法,以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	參考IEC 62321: 2008方法,以UV-VIS 檢測. / With reference to IEC 62321: 2008 and performed by UV- VIS.	2	n.d.
全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	參考US EPA 3550C: 2007方法,以液相層析/質譜儀檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.
全氟辛酸(銨)/ PFOA (CAS No.: 335-67- 1)	mg/kg	參考US EPA 3550C: 2007方法,以液相層析/質譜儀檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.

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日期(Date): 2013/07/01 頁數(Page): 3 of 9 號碼(No.): CE/2013/64304

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HUNG JUEI PACKING MATERIAL CO., LTD.

新店區中正路四維巷8弄7號1樓

1F., NO. 7, ALY. 8, SIWEI LN., ZHONGZHENG RD., XINDIAN DIST., NEW TAIPEI CITY231, TAIWAN (R. O. C.)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
多溴聯苯總和 / Sum of PBBs一溴聯苯 / Monobromobiphenyl二溴聯苯 / Dibromobiphenyl三溴聯苯 / Tribromobiphenyl五溴聯苯 / Pentabromobiphenyl五溴聯苯 / Pentabromobiphenyl六溴聯苯 / Hexabromobiphenyl八溴聯苯 / Octabromobiphenyl九溴聯苯 / Nonabromobiphenyl九溴聯苯 / Decabromobiphenyl十溴聯苯 / Decabromobiphenyl李溴聯苯醚 / Monobromodiphenyl ether二溴聯苯醚 / Tribromodiphenyl ether三溴聯苯醚 / Tetrabromodiphenyl ether五溴聯苯醚 / Pentabromodiphenyl ether六溴聯苯醚 / Hexabromodiphenyl ether八溴聯苯醚 / Heptabromodiphenyl ether八溴聯苯醚 / Octabromodiphenyl ether八溴聯苯醚 / Octabromodiphenyl ether	mg/kg	参考IEC 62321: 2008方法,以氣相層析/質譜儀檢測. / With reference to IEC 62321: 2008 and performed by GC/MS.	(MDL)  - 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	No.1  n.d.  n.d.
九溴聯苯醚 / Nonabromodiphenyl ether 十溴聯苯醚 / Decabromodiphenyl ether			5 5	n.d.
鹵素 / Halogen				n.u.
鹵素 (氟) / Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg		50	n.d.
鹵素 (氣) / Halogen-Chlorine (C1) (CAS No.: 22537-15-1)	mg/kg	参考BS EN 14582:2007, 以離子層析 儀分析. / With reference to BS EN	50	n.d.
鹵素(溴)/ Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	14582:2007. Analysis was performed by IC.	50	n.d.
鹵素(碘)/ Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg		50	n.d.



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#### 備註(Note):

- 1. mg/kg = ppm ; 0.1wt% = 1000ppm
- 2. n.d. = Not Detected (未檢出)
- 3. MDL = Method Detection Limit (方法偵測極限値)
- 4. "-" = Not Regulated (無規格值)
- 5. 樣品的測試是基於申請人要求混合測試,報告中的混合測試結果不代表其中個别單一材質的含量. (The samples was/were analyzed on behalf of the applicant as mixing sample in one testing. The above results was/were only given as the informality value.)

#### PFOS参考資訊(Reference Information): 持久性有機污染物 POPs - (EU) 757/2010

PFOS濃度在物質或製備中不得超過0.001%(10ppm),在半成品、成品或零部件中不得超過0.1%(1000ppm),在紡織品或塗層材料中不得超過1 $\mu$ g/m²。(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above  $1\mu$ g/m².)

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# 測試報告

# **Test Report**

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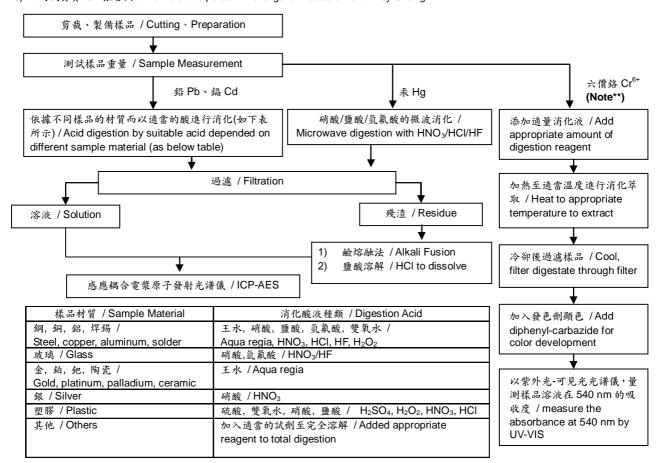
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新店區中正路四維巷8弄7號1樓

1F., NO. 7, ALY. 8, SIWEI LN., ZHONGZHENG RD., XINDIAN DIST., NEW TAIPEI CITY231, TAIWAN (R. O. C.)

- 1) 根據以下的流程圖之條件,樣品已完全溶解。( 六價鉻測試方法除外 ) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)
- 2) 测試人員:楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 测試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang



Note\*\*:(1) 針對非金屬材料加入鹼性消化液 , 加熱至 90~95℃萃取. / For non-metallic material, add alkaline digestion reagent and heat to 90~95℃.

(2) 針對金屬材料加入純水,加熱至沸騰萃取. / For metallic material, add pure water and heat to boiling.

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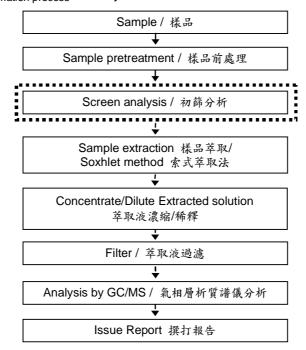
#### 多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 測試人員:翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang

初次測試程序 / First testing process ———

選擇性篩檢程序 / Optional screen process ■■■■■■■

確認程序 / Confirmation process - - - - →



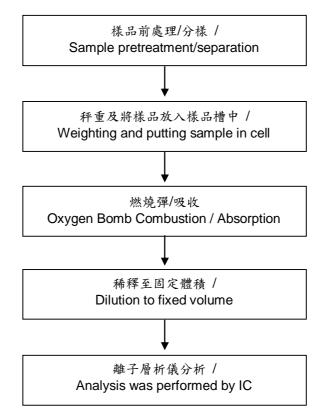


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## 鹵素分析流程圖 / Analytical flow chart of halogen content

- 測試人員:陳恩臻 / Name of the person who made measurement: Rita Chen
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang



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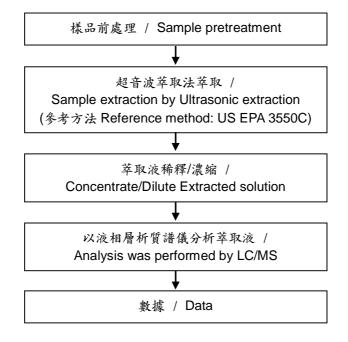
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#### 全氟辛酸(銨)/全氟辛烷磺酸分析流程圖 / PFOA/PFOS analytical flow chart

- 測試人員: 翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang



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\* 照片中如有箭頭標示,則表示為實際檢測之樣品/部位. \*
(The tested sample / part is marked by an arrow if it's shown on the photo.)

CE/2013/64304



\*\* 報告結尾(End of Report) \*\*



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**Test Report** 

正隆股份有限公司

CHENG LOONG CORP.

新北市板橋區民生路一段1號

1, SEC. 1, MIN SHENG ROAD. PAN-CHIAO DIST., NEW TAIPEI CITY TAIWAN R. O. C.

以下測試樣品係由客户送樣,且由客户聲稱並經客户確認如下(The following samples was/were submitted and identified by/on behalf of the client as):

樣品名稱(Sample Description) : CORRUGATING MEDIUM (瓦楞芯紙)

收件日期(Sample Receiving Date) : 2013/01/15

測試期間(Testing Period) : 2013/01/15 TO 2013/01/22

依據客户要求,參考RoHS 2011/65/EU Annex II 指令進行鎘,鉛,汞,六價鉻,多溴聯苯, 測試需求(Test Requested):

> 多溴聯苯醚測試. (As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs

contents in the submitted sample.)

參考IEC 62321: 2008方法 / With reference to IEC 62321: 2008. 測試方法(Test Method)

測試結果(Test Results) 請見下一頁 (Please refer to next pages).

根據客户所提供的樣品,其鎬,鉛,汞,六價鉻,多溴聯苯,多溴聯苯醚的測試結果符合 結論(Conclusion)

> RoHS指令2002/95/EC的更新指令2011/65/EU之要求 (Based on the performed tests on submitted samples, the test result(s) of Cadmium, Lead, Mercury, Cr(VI), PBBs,

PBDEs comply with the limits as set by RoHS Directive 2011/65/EU Annex II;

recasting 2002/95/EC.)



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**Test Report** 

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#### 測試結果(Test Results)

測試部位(PART NAME)No.1 : 棕色紙板 (BROWN CARDBOARD)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1	法規 限値 (Limit)
鎬 / Cadmium (Cd)	mg/kg	参考IEC 62321: 2008方法, 以感應耦合電	2	n.d.	100
鋁 / Lead (Pb)	mg/kg	漿原子發射光譜儀檢測. / With reference	2	6	1000
汞 / Mercury (Hg)	mg/kg	to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.	1000
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	参考IEC 62321: 2008方法,以UV-VIS檢測. / With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.	1000
多溴聯苯總和 / Sum of PBBs	mg/kg		-	n.d.	1000
一溴聯苯 / Monobromobiphenyl	mg/kg		5	n.d.	-
二溴聯苯 / Dibromobiphenyl	mg/kg		5	n.d.	-
三溴聯苯 / Tribromobiphenyl	mg/kg		5	n.d.	-
四溴聯苯 / Tetrabromobiphenyl	mg/kg	参考IEC 62321: 2008方法, 以氣相層析/質	5	n.d.	-
五溴聯苯 / Pentabromobiphenyl	mg/kg	譜儀檢測. / With reference to IEC	5	n.d.	-
六溴聯苯 / Hexabromobiphenyl	mg/kg	62321: 2008 and performed by GC/MS.	5	n.d.	-
七溴聯苯 / Heptabromobiphenyl	mg/kg		5	n.d.	-
八溴聯苯 / Octabromobiphenyl	mg/kg		5	n.d.	-
九溴聯苯 / Nonabromobiphenyl	mg/kg		5	n.d.	-
十溴聯苯 / Decabromobiphenyl	mg/kg		5	n.d.	-

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1	法規 限値 (Limit)
多溴聯苯醚總和 / Sum of PBDEs	mg/kg		-	n.d.	1000
一溴聯苯醚 / Monobromodiphenyl ether	mg/kg		5	n.d.	-
二溴聯苯醚 / Dibromodiphenyl ether	mg/kg		5	n.d.	-
三溴聯苯醚 / Tribromodiphenyl ether	mg/kg		5	n.d.	-
四溴聯苯醚 / Tetrabromodiphenyl ether	mg/kg	參考IEC 62321: 2008方法,以氣相層析/質	5	n.d.	-
五溴聯苯醚 / Pentabromodiphenyl ether	mg/kg	譜儀檢測. / With reference to IEC	5	n.d.	-
六溴聯苯醚 / Hexabromodiphenyl ether	mg/kg	62321: 2008 and performed by GC/MS.	5	n.d.	-
七溴聯苯醚 / Heptabromodiphenyl ether	mg/kg		5	n.d.	=
八溴聯苯醚 / Octabromodiphenyl ether	mg/kg		5	n.d.	-
九溴聯苯醚 / Nonabromodiphenyl ether	mg/kg		5	n.d.	=
十溴聯苯醚 / Decabromodiphenyl ether	mg/kg		5	n.d.	-

#### 備註(Note):

- 1. mg/kg = ppm ; 0.1wt% = 1000ppm
- 2. n.d. = Not Detected (未檢出)
- 3. MDL = Method Detection Limit (方法偵測極限值)
- 4. "-" = Not Regulated (無規格值)

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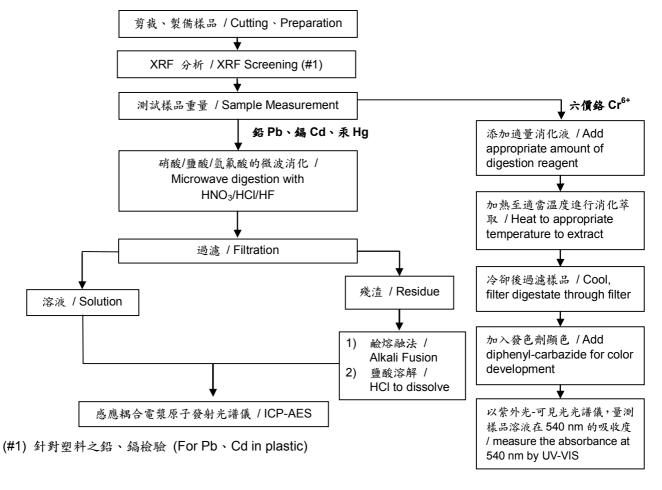
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依據 SONY QAR-05-002 的要求: / Per requirements of SONY QAR-05-002:

- 1) 根據以下的流程圖之條件,樣品已完全溶解。( 六價鉻測試方法除外 ) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (  $Cr^{6+}$  test method excluded )
- 2) 測試人員:楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang



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正隆股份有限公司

CHENG LOONG CORP.

新北市板橋區民生路一段1號

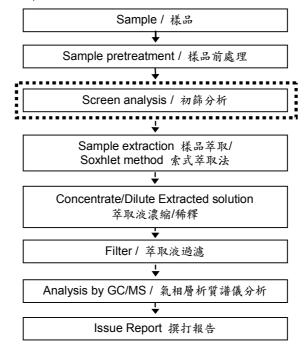
1, SEC. 1, MIN SHENG ROAD. PAN-CHIAO DIST., NEW TAIPEI CITY TAIWAN R. O. C.

#### 多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 測試人員: 翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang 初次測試程序 / First testing process -

選擇性篩檢程序 / Optional screen process ••••

確認程序 / Confirmation process - · - · ▶



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號碼(No.): CE/2013/13553A 日期(Date): 2013/01/22

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正隆股份有限公司

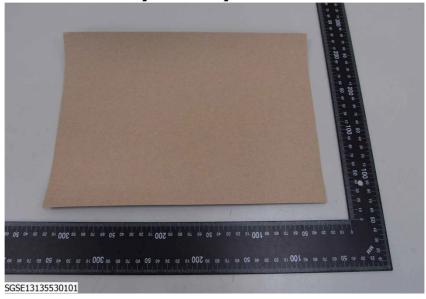
CHENG LOONG CORP.

新北市板橋區民生路一段1號

1, SEC. 1, MIN SHENG ROAD. PAN-CHIAO DIST., NEW TAIPEI CITY TAIWAN R. O. C.

\* 照片中如有箭頭標示,則表示為實際檢測之樣品/部位. \* (The tested sample / part is marked by an arrow if it's shown on the photo.)

CE/2013/13553



\*\* 報告結尾 (End of Report) \*\*

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### **Test Report**

號碼(No.) : CE/2014/55013A 日期(Date) : 2014/06/03 頁數(Page) : 1 of 20

一名工業股份有限公司

WINNER BROS. INDUSTRIAL CORP.

桃園縣楊梅市幼獅工業區獅一路16號

16, SHIH 1 RD., YOUTH INDUSTRIAL DISTRICT 32657 YANG MEI, TAO YUAN HSIEN, TAIWAN

以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by/on behalf of the applicant as):

送樣廠商(Sample Submitted By)

: 一名工業股份有限公司 (WINNER BROS. INDUSTRIAL CORP.)

樣品名稱(Sample Description)

: WATER BASES PRINTING INK (水性印墨)

樣品型號(Style/Item No.)

: 基墨混合品 (水性油墨 302 中紅, 水性油墨 303 紅色, 水性油墨 308 大紅,

水性油墨 309 金紅, 水性油墨 311 黄色, 水性油墨 330 桔色, 水性油墨 340 紺藍,

水性油墨 341 原藍, 水性油墨 343 藍色, 水性油墨 375 白色, 水性油墨 377 白色,

水性油墨 378 黑色, 水性油墨 381 綠色, 水性油墨 383 紫色,

水性油墨 四色版-黄色, 水性油墨 四色版-紅色, 水性油墨 四色版-藍色,

水性油墨 四色版-黑色,水性油墨 光油,水性油墨 添加劑(pH調整劑、

分散劑、快乾劑、慢乾劑、耐磨劑、消泡劑、分散劑、抗撥水劑、增黏劑、

轉移劑、疊色劑) (COLOR BASE COMPLEX (WATER BASES INK 302 RED,

WATER BASES INK 303 INDUSTRAIL RED, WATER BASES INK 308 DARK RED,

WATER BASES INK 309 BRONZE RED, WATER BASES INK 311 YELLOW,

WATER BASES INK 330 ORANGE, WATER BASES INK 340 INDUSTRAIL BLUE,

WATER BASES INK 341 CYAN BLUE, WATER BASES INK 343 BLUE,

WATER BASES INK 375 WHITE, WATER BASES INK 377 SUPER WHITE,

WATER BASES INK 378 BLACK, WATER BASES INK 381 GREEN,

WATER BASES INK 383 VIOLET, WATER BASES INK PROCESS YELLOW,

WATER BASES INK PROCESS MAGENTA, WATER BASES INK PROCESS CYAN,

WATER BASES INK PROCESS BLACK, OVERPRINTING VARNISHES COMPLEX,

WATER BASE INK ADDITIVES))

收件日期(Sample Receiving Date)

測試期間(Testing Period)

: 2014/04/25 AND 2014/05/27

2014/04/25 TO 2014/05/16 AND 2014/05/20 TO 2014/05/26 AND

2014/05/27 TO 2014/05/29

\_\_\_\_\_\_

測試結果(Test Results)

請見下一頁 (Please refer to next pages).

业份報告爲合併CE/2014/45381A及CE/2014/55013之報告 \*

This report is combined with reports of CE/2014/45381A and CE/2014/55013)

Troy Chang Manager - Tech Signed for and on Dehalf of

SGS TAIWAN LTD.

Chemical Laboratory – Taipei

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# **Test Report**

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一名工業股份有限公司

WINNER BROS. INDUSTRIAL CORP.

桃園縣楊梅市幼獅工業區獅一路16號

16, SHIH 1 RD., YOUTH INDUSTRIAL DISTRICT 32657 YANG MEI, TAO YUAN HSIEN, TAIWAN

測試結果(Test Results)

測試部位(PART NAME)No.1 : 黑色油墨(客户自行混測之樣品)(BLACK INK (SAMPLE IS MIXED BY CLIENT)

(CE/2014/45381A))

測試部位(PART NAME)No.2 : 黑色油墨 (客户自行調配之樣品) (BLACK INK (SAMPLE IS BLENDED BY CLIENT)

(CE/2014/55013))

測試項目 (Test Items)	單位	測試方法	方法偵測 極限値	結果 (F	Result)	
	(Unit)	(Method)	(MDL)	No.1	No.2	
鎬 / Cadmium (Cd)	mg/kg	參考IEC 62321-5: 2013方法,以感應耦合 電漿原子發射光譜儀檢測. / With	2	n.d.		
鉛 / Lead (Pb)	mg/kg	reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.		
汞 / Mercury (Hg)	mg/kg	參考IEC 62321-4: 2013方法,以感應耦合 電漿原子發射光譜儀檢測. / With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.		
六價络 / Hexavalent Chromium Cr(VI)	mg/kg	参考IEC 62321: 2008方法,以UV-VIS檢 測. / With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.		
聚氯乙烯 / PVC	**	以紅外光譜分析及焰色法檢測. / Analysis was performed by FTIR and FLAME Test.	-	Negative		
揮發性有機化合物(不含水份)/ Volatile organic compounds (Exclude moisture)	重量分率 g/g	参考NIEA A717.10C方法測試. / With reference to NIEA A717.10C method.	0.00005	0.0424		
揮發性有機化合物(含水份)/ Volatile organic compounds (Include moisture)	重量分率 g/g	參考NIEA A717.10C方法測試. / With reference to NIEA A717.10C method.	0.00005	0.624		
多氣聯苯 / Polychlorinated Biphenyls (PCBs) (CAS No.: 1336-36-3)	mg/kg	参考US EPA 3540C方法,以氣相層析/質譜 儀檢測. / With reference to US EPA 3540C method. Analysis was performed by GC/MS.	0.5	n.d.		

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# **Test Report**

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一名工業股份有限公司

WINNER BROS. INDUSTRIAL CORP.

桃園縣楊梅市幼獅工業區獅一路16號

16, SHIH 1 RD., YOUTH INDUSTRIAL DISTRICT 32657 YANG MEI, TAO YUAN HSIEN, TAIWAN

測試項目 (Test Items)	單位	測試方法	方法偵測 極限値	結果 (Result)	
(Test Items)	(Unit)	(Method)	(MDL)	No.1	No.2
四溴雙酚-A / Tetrabromobisphenol A (TBBP-A) (CAS No.: 79-94-7)	mg/kg	參考Global SOP RSTS-E&E-121方法,以液相層析/質譜儀分析. / With reference to Global SOP RSTS-E&E-121. Analysis was performed by LC/MS.	10	n.d.	
鹵素 / Halogen					
鹵素(氟)/ Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg		50		n.d.
鹵素(氯)/ Halogen-Chlorine (C1) (CAS No.: 22537-15-1)	mg/kg	参考BS EN 14582:2007, 以離子層析儀分析. / With reference to BS EN 14582:2007. Analysis was performed by IC.	50		n.d.
鹵素(溴)/ Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg		50		n.d.
鹵素(碘)/ Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg		50		n.d.
鄰苯二甲酸甲苯基丁酯 / BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)	%		0.003	n.d.	
鄰苯二甲酸二 (2-乙基己基)酯 / DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	%		0.003	n.d.	
鄰苯二甲酸二異癸酯 / DIDP (Di- isodecyl phthalate) (CAS No.: 26761- 40-0; 68515-49-1)	%	参考EN 14372,以氣相層析/質譜儀檢測. / With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.	
鄰苯二甲酸二異壬酯 / DINP (Di- isononyl phthalate) (CAS No.: 28553- 12-0; 68515-48-0)	%		0.01	n.d.	
鄰苯二甲酸二正辛酯 / DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)	%		0.003	n.d.	
鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	%		0.003	n.d.	



# **Test Report**

一名工業股份有限公司

號碼(No.): CE/2014/55013A 日期(Date): 2014/06/03 頁數(Page): 4 of 20

WINNER BROS. INDUSTRIAL CORP.

桃園縣楊梅市幼獅工業區獅一路16號

16, SHIH 1 RD., YOUTH INDUSTRIAL DISTRICT 32657 YANG MEI, TAO YUAN HSIEN, TAIWAN

測試項目	單位	測試方法	方法偵測 極限値	結果 (Result)	
(Test Items)	(Unit)	(Method)	(MDL)	No.1	No.2
全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	參考US EPA 3550C: 2007方法,以液相層析/質譜儀檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.	
全氟辛酸 / PFOA (CAS No.: 335-67-1)	mg/kg	參考US EPA 3550C: 2007方法,以液相層析/質譜儀檢測. / With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.	
多溴聯苯總和 / Sum of PBBs	mg/kg		-	n.d.	
一溴聯苯 / Monobromobiphenyl	mg/kg	1	5	n.d.	
二溴聯苯 / Dibromobiphenyl	mg/kg	参考IEC 62321: 2008方法,以氣相層析/ 質譜儀檢測./With reference to IEC	5	n.d.	
三溴聯苯 / Tribromobiphenyl	mg/kg		5	n.d.	
四溴聯苯 / Tetrabromobiphenyl	mg/kg		5	n.d.	
五溴聯苯 / Pentabromobiphenyl	mg/kg		5	n.d.	
六溴聯苯 / Hexabromobiphenyl	mg/kg		5	n.d.	
七溴聯苯 / Heptabromobiphenyl	mg/kg		5	n.d.	
八溴聯苯 / Octabromobiphenyl	mg/kg		5	n.d.	
九溴聯苯 / Nonabromobiphenyl	mg/kg		5	n.d.	
十溴聯苯 / Decabromobiphenyl	mg/kg		5	n.d.	
多溴聯苯醚總和 / Sum of PBDEs	mg/kg		-	n.d.	
一溴聯苯醚 / Monobromodiphenyl ether	mg/kg	62321: 2008 and performed by GC/MS.	5	n.d.	
二溴聯苯醚 / Dibromodiphenyl ether	mg/kg	1	5	n.d.	
三溴聯苯醚 / Tribromodiphenyl ether	mg/kg		5	n.d.	
四溴聯苯醚 / Tetrabromodiphenyl ether	mg/kg		5	n.d.	
五溴聯苯醚 / Pentabromodiphenyl ether	mg/kg		5	n.d.	
六溴聯苯醚 / Hexabromodiphenyl ether	mg/kg		5	n.d.	
七溴聯苯醚 / Heptabromodiphenyl ether	mg/kg		5	n.d.	
八溴聯苯醚 / Octabromodiphenyl ether	mg/kg	]	5	n.d.	
九溴聯苯醚 / Nonabromodiphenyl ether	mg/kg		5	n.d.	
十溴聯苯醚 / Decabromodiphenyl ether	mg/kg	]	5	n.d.	



# **Test Report**

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一名工業股份有限公司

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16, SHIH 1 RD., YOUTH INDUSTRIAL DISTRICT 32657 YANG MEI, TAO YUAN HSIEN, TAIWAN

測試項目 (Test Items)	單位	測試方法	方法偵測 極限値	結果(Result)	
(Test Items)	(Unit)	(Method)	(MDL)	No.1	No.2
多環芳香煙 / Polynuclear Aromatic Hydrocarbons (PAHs)					
芭 / Acenaphthene (CAS No.: 83-32-9)	mg/kg		0.2	n.d.	
苊烯 / Acenaphthylene (CAS No.: 208-96-8)	mg/kg		0.2	n.d.	
蒽 / Anthracene (CAS No.: 120-12-7)	mg/kg		0.2	n.d.	
苯騈蒽 / Benzo(a)anthracene (CAS No.: 56-55-3)	mg/kg		0.2	n.d.	
苯騈(a)芘 / Benzo[a]pyrene (CAS No.: 50-32-8)	mg/kg		0.2	n.d.	
苯(b)苯駢芴 / Benzo[b]fluoranthene (CAS No.: 205-99-2)	mg/kg		0.2	n.d.	
苯駢菲 / Benzo[g,h,i]perylene (CAS No.: 191-24-2)	mg/kg	参考ZLS standard ZEK 01.4-08方法,以	0.2	n.d.	
苯(k)苯駢芴 / Benzo[k]fluoranthene (CAS No.: 207-08-9)	mg/kg		0.2	n.d.	
Chrysene (CAS No.: 218-01-9)	mg/kg	氣相層析/質譜儀檢測. / With reference	0.2	n.d.	
二苯駢蒽 / Dibenzo[a,h]anthracene (CAS No.: 53-70-3)	mg/kg	to ZLS standard ZEK 01.4-08 method. Analysis was performed by GC/MS.	0.2	n.d.	
苯駢芴 / Fluoranthene (CAS No.: 206-44-0)	mg/kg		0.2	n.d.	
芴 / Fluorene (CAS No.: 86-73-7)	mg/kg	1	0.2	n.d.	
茚酮芘 / Indeno[1,2,3-c,d] pyrene (CAS No.: 193-39-5)	mg/kg		0.2	n.d.	
萘 / Naphthalene (CAS No.: 91-20-3)	mg/kg	]	0.2	n.d.	
菲 / Phenanthrene (CAS No.: 85-01-8)	mg/kg		0.2	n.d.	
芘 / Pyrene (CAS No.: 129-00-0)	mg/kg	]	0.2	n.d.	
苯(j)苯駢芴 / Benzo[j]fluoranthene (CAS No.: 205-82-3)	mg/kg		0.2	n.d.	
苯駢(e)芘 / Benzo[e]pyrene (CAS No.: 192-97-2)	mg/kg		0.2	n.d.	
多環芳香烴18項總和 / Sum of 18 PAHs	mg/kg		-	n.d.	



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# **Test Report**

一名工業股份有限公司

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16, SHIH 1 RD., YOUTH INDUSTRIAL DISTRICT 32657 YANG MEI, TAO YUAN HSIEN, TAIWAN

測試項目 (Test Items)	単位   測試方法   1		方法偵測 極限値	結果 (Result)	
	(Unit)	(Method)	(MDL)	No.1	No.2
偶氮 (AZO)					
1): 4-氨基二苯 / 4-AMINODIPHENYL (CAS No.: 92-67-1)	mg/kg	参考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
2): 聯苯胺 / BENZIDINE (CAS No.: 92- 87-5)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
3): 4-氣鄰甲苯胺 / 4-CHLORO-O- TOLUIDINE (CAS No.: 95-69-2)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
4): 2-萘 <b>胺</b> / 2-NAPHTHYLAMINE (CAS No.: 91-59-8)	mg/kg	参考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
5): 鄰氨基二甲基偶氮 / O- AMINOAZOTOLUENE (CAS No.: 97-56-3)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
6): 對硝基鄰甲苯胺 / 2-AMINO-4- NITROTOLUENE (CAS No.: 99-55-8)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測./ With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
7): 對氣苯胺 / P-CHLOROANILINE (CAS No.: 106-47-8)	mg/kg	参考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
8): 4-甲氧基-間苯二胺 / 2,4- DIAMINOANISOLE (CAS No.: 615-05-4)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	

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# **Test Report**

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一名工業股份有限公司

WINNER BROS. INDUSTRIAL CORP.

桃園縣楊梅市幼獅工業區獅一路16號

16, SHIH 1 RD., YOUTH INDUSTRIAL DISTRICT 32657 YANG MEI, TAO YUAN HSIEN, TAIWAN

測試項目 (Test Items)	單位	(Unit) (Method)		結果 (Result)	
(lest Items)	(Unit)	(Method)	(MDL)	No.1	No.2
9): 4,4'-二氨基二苯甲烷 / 4,4'- DIAMINODIPHENYLMETHANE (CAS No.: 101- 77-9)	mg/kg	参考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
10): 3,3'-二氯聯苯胺 / 3,3'- DICHLOROBENZIDINE (CAS No.: 91-94-1)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
11): 3,3'-二甲氧基聯苯胺 / 3,3'- DIMETHOXYBENZIDINE (CAS No.: 119-90- 4)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
12): 3,3'-二甲基聯苯胺 / 3,3'- DIMETHYLBENZIDINE (CAS No.: 119-93-7)	mg/kg	参考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
13): 3,3'-二甲基-4,4'-二氨基二苯甲烷 / 3,3'-DIMETHYL-4,4'- DIAMINODIPHENYLMETHANE (CAS No.: 838- 88-0)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
14): 2-甲氧基-5-甲基聯苯 / P- CRESIDINE (2-METHOXY-5-METHYLANILINE) (CAS No.: 120-71-8)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
15): 4,4'-亞甲基雙(氣苯胺)/ 4,4'- METHYLENE-BIS- (2-CHLOROANILINE) (CAS No.: 101-14-4)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
16): 4,4'-氧化雙苯胺 / 4,4'- OXYDIANILINE (CAS No.: 101-80-4)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	

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一名工業股份有限公司

WINNER BROS. INDUSTRIAL CORP.

桃園縣楊梅市幼獅工業區獅一路16號

16, SHIH 1 RD., YOUTH INDUSTRIAL DISTRICT 32657 YANG MEI, TAO YUAN HSIEN, TAIWAN

測試項目 (Test Items)	單位	測試方法	方法偵測 極限値	結果 (Result)	
	(Unit)	(Method)	(MDL)	No.1	No.2
17): 4,4'-硫代雙苯胺 / 4,4'- THIODIANILINE (CAS No.: 139-65-1)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
18): 鄰甲苯胺 / O-TOLUIDINE (CAS No.: 95-53-4)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
19): 2,4-二氨基甲苯 / 2,4- TOLUYLENEDIAMINE (CAS No.: 95-80-7)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
20): 2,4,5-三甲基苯胺 / 2,4,5- TRIMETHYLANILINE (CAS No.: 137-17-7)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
21): 鄰位甲氧基苯胺 / O-ANISIDINE (CAS No.: 90-04-0)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
22): 對氨基偶氮苯 / 4-AMINOAZOBENZENE (CAS No.: 60-09-3)	mg/kg	參考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
23): 2,4-二甲基苯胺 / 2,4-XYLIDINE (CAS No.: 95-68-1)	mg/kg	参考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	
24): 2,6-二甲基苯胺 / 2,6-XYLIDINE (CAS No.: 87-62-7)	mg/kg	参考LFGB 82.02-2方法,以氣相層析/質譜 儀檢測. / With reference to LFGB 82.02-2. Analysis was performed by GC/MS.	3	n.d.	

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# **Test Report**

一名工業股份有限公司

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WINNER BROS. INDUSTRIAL CORP.

桃園縣楊梅市幼獅工業區獅一路16號

16, SHIH 1 RD., YOUTH INDUSTRIAL DISTRICT 32657 YANG MEI, TAO YUAN HSIEN, TAIWAN

#### 備註(Note):

- 1. mg/kg = ppm ; 0.1wt% = 1000ppm
- 2. n.d. = Not Detected (未檢出)
- 3. MDL = Method Detection Limit (方法偵測極限值)
- 4. "-" = Not Regulated (無規格值)
- 5. \*\*= Qualitative analysis (No Unit) 定性分析(無單位)
- 6. Negative = Undetectable 陰性(未偵測到); Positive = Detectable 陽性(已偵測到)
- 7. "---" = Not Conducted (未測項目)

#### PFOS参考資訊(Reference Information): 持久性有機污染物 POPs - (EU) 757/2010

PFOS濃度在物質或製備中不得超過0.001%(10ppm),在半成品、成品或零部件中不得超過0.1%(1000ppm),在紡織品或塗層 材料中不得超過1µg/m²。

(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above 1  $\mu g/m^2$ .)



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一名工業股份有限公司

WINNER BROS. INDUSTRIAL CORP.

桃園縣楊梅市幼獅工業區獅一路16號

16, SHIH 1 RD., YOUTH INDUSTRIAL DISTRICT 32657 YANG MEI, TAO YUAN HSIEN, TAIWAN

PAHs 参考資料 (Reference information):

依據ZEK 01.4-08之要求: 產品中最大值為

(Requirement of ZEK 01.4-08: Restraining maximum values for products)

項目 (Parameter)	第1類 (Category 1)	第2類 (Category 2)	第3類 (Category 3)
	意圖放入嘴内的材料或與	可預見與皮膚接觸逾30秒	可預見與皮膚接觸短於30
	36個月以下的幼兒皮膚有	(長期與皮膚接觸), 以及	秒(短期與皮膚接觸),以
	所接觸的玩具.	不屬於第1類的材料.	及不屬於第1類或第2類的
	(Material indented to	(Materials not falling	材料. (Materials not
	be put in the mouth or	under category 1 with	falling under category
	toys for children aged	foreseeable contact to	1 or 2 with foreseeable
	< 36 months with	skin for longer than 30	contact to skin for
	intended skin contact.)	seconds (long-term skin	less than 30 seconds
		contact).)	(short-term skin
			contact).)
苯駢(a)芘 Benzo[a]pyrene (mg/kg)	<mdl (<0.2)**<="" td=""><td>1</td><td>20</td></mdl>	1	20
18項PAH總濃度			
(Sum of 18 PAH)	<mdl (<0.2)**<="" td=""><td>10</td><td>200</td></mdl>	10	200
(mg/kg)*			

#### 注意(Remark):

\* = PAH濃度大於0.2mg/kg時,則須計算PAH總濃度值.

(Only PAH substances >0.2 mg/kg are taken into account while calculating the sum of PAHs.)

\*\* = 最大濃度值超出等級一的限制,但在等級二的濃度限制值内時,可能需要確認測試材質是否適用於與食品或與口腔黏膜接觸,並依照EN 1186 ff. and  $\S$  64 LFBG 80.30-1方法,針對特定PAH的遷移測試進行測試。遷移測試的結論需依照食品規範評估。

(If the limits of category 1 are surpassed but the limits of category 2 still met, the confirmation of suitability of contact with foodstuff or the oral mucosa can be verified by an additional specific migration test of the PAH components according to EN 1186 ff. and § 64 LFBG 80.30-1. The results of the migration test shall be evaluated according to law criteria for foodstuff.)

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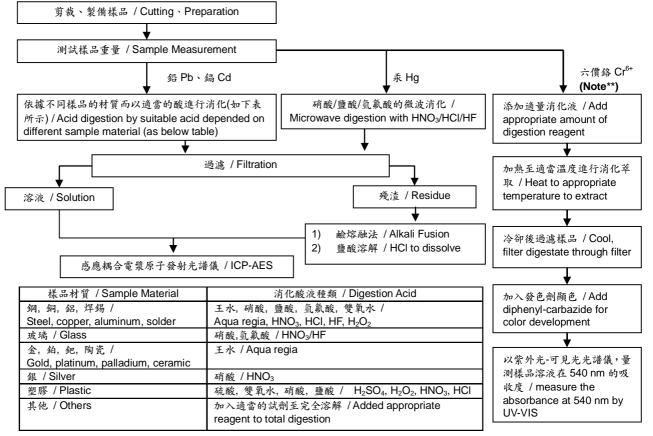
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WINNER BROS. INDUSTRIAL CORP.

桃園縣楊梅市幼獅工業區獅一路16號

16, SHIH 1 RD., YOUTH INDUSTRIAL DISTRICT 32657 YANG MEI, TAO YUAN HSIEN, TAIWAN

- 1) 根據以下的流程圖之條件,樣品已完全溶解。( 六價鉻測試方法除外 ) / These samples were dissolved totally by pre-conditioning method according to below flow chart. ( Cr<sup>6+</sup> test method excluded )
- 2) 測試人員:楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang



#### Note\*\* (For IEC 62321)

- (1) 針對非金屬材料加入鹼性消化液,加熱至 90~95℃萃取. / For non-metallic material, add alkaline digestion reagent and heat to 90~95℃.
- (2) 針對金屬材料加入純水,加熱至沸騰萃取. / For metallic material, add pure water and heat to boiling.

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### **Test Report**

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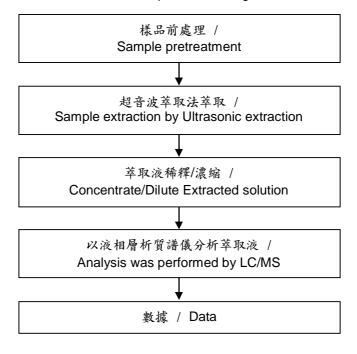
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#### 四溴雙酚-A 分析流程圖 / TBBP-A analytical flow chart

- 測試人員:林建宇 / Name of the person who made measurement: Roy Lin
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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一名工業股份有限公司

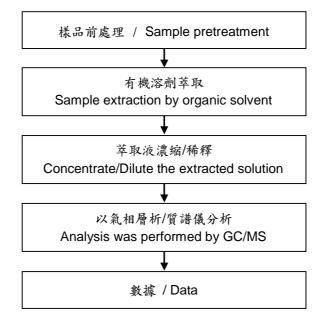
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#### 多氯聯苯分析流程圖 / PCBs analytical flow chart

- 測試人員:曾勃鈞 / Name of the person who made measurement: Barry Tseng
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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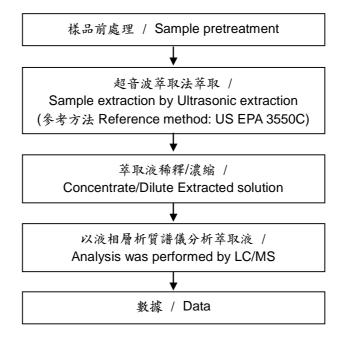
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#### 全氟辛酸/全氟辛烷磺酸分析流程圖 / PFOA/PFOS analytical flow chart

- 測試人員:翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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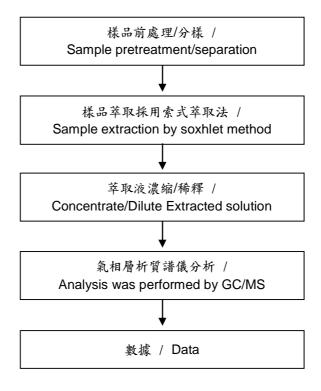
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#### 可塑劑分析流程圖 / Analytical flow chart of phthalate content

- 測試人員: 翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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一名工業股份有限公司

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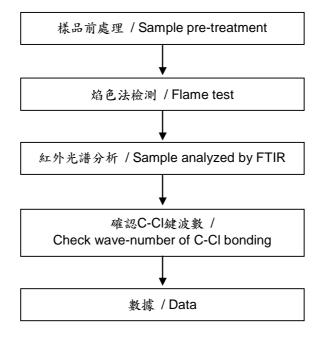
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#### 聚氯乙烯物質判定分析流程圖 /

#### Analysis flow chart for determination of PVC in material

- 測試人員:林建宇 / Name of the person who made measurement: Roy Lin
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





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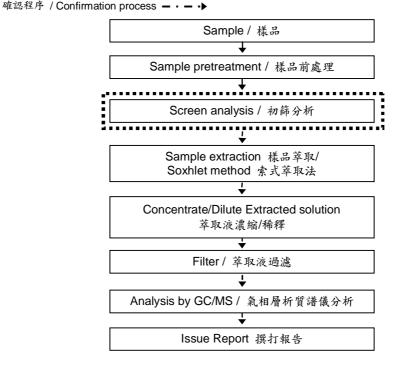
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#### 多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 測試人員: 翁賜彬 / Name of the person who made measurement: Roman Wong



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### **Test Report**

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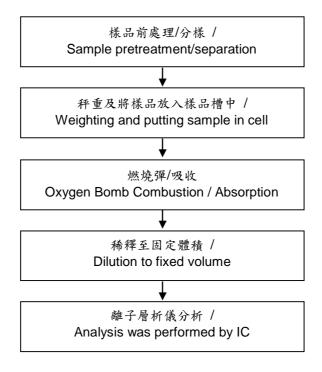
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16, SHIH 1 RD., YOUTH INDUSTRIAL DISTRICT 32657 YANG MEI, TAO YUAN HSIEN, TAIWAN

#### 鹵素分析流程圖 / Analytical flow chart of halogen content

- 測試人員:陳恩臻 / Name of the person who made measurement: Rita Chen
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang





### **Test Report**

號碼(No.) : CE/2014/55013A 日期(Date) : 2014/06/03 頁數(Page) : 19 of 20

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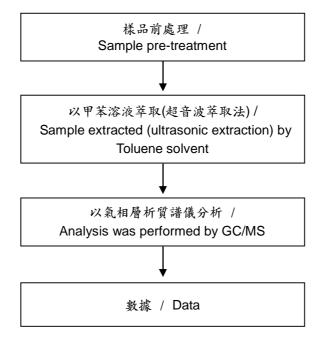
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#### 多環芳香烴分析流程圖 / PAHs (Polynuclear Aromatic Hydrocarbons) analytical flow chart

- 測試人員:翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人:張啓興 / Name of the person in charge of measurement: Troy Chang



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一名工業股份有限公司

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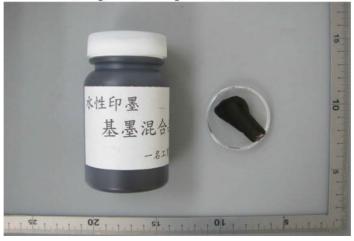
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\* 照片中如有箭頭標示,則表示為實際檢測之樣品/部位. \*

(The tested sample / part is marked by an arrow if it's shown on the photo.)

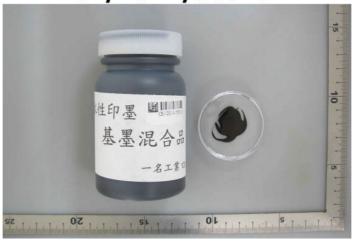
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