



WHA YU INDUSTRIAL CO., LTD.(HEAD OFFICE)
 DONGGUAN AEON TECH CO.,LTD.(CHINA)
 SUZHOU AEON TECH CO.,LTD.(CHINA)
 AEON TECH (SHANGHAI) CO.,LTD(CHINA)
 DONGGUAN PARNER TECH CO.,LTD.(CHINA)



SPECIFICATION FOR APPROVAL

CUSTOMER: 南京汉桑

PART NAME: RF cable 一端I-PEX,一端铜管 加磁环 L=229.5mm 含胶套管

PART NO.: 29-04100-00

REVISION:

W. Y. P/NO.: C6048-510051PA

REV.:A

	MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
APPROVED BY :		
DATE :	2012.8.29 2012.8.29 承認書	

WHA YU GROUP

WHA YU INDUSTRIAL CO., LTD.(HEAD OFFICE)

譚裕實業股份有限公司

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DONGGUAN AEON TECH CO.,LTD.(CHINA)

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DONGGUAN PARNER TECH CO.,LTD.(CHINA)

東莞倍能電子有限公司

Address:Hupan Industrial District, Shida Road, Tai Ling Shan Town,

Dong Guan City, Guangdong, China

Tel:+86-769-81662366

Fax:+86-769-81602681

RF Antenna Assembly

Specification

1. Electrical Properties :

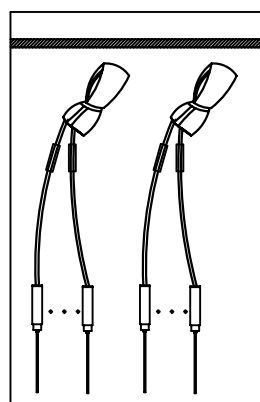
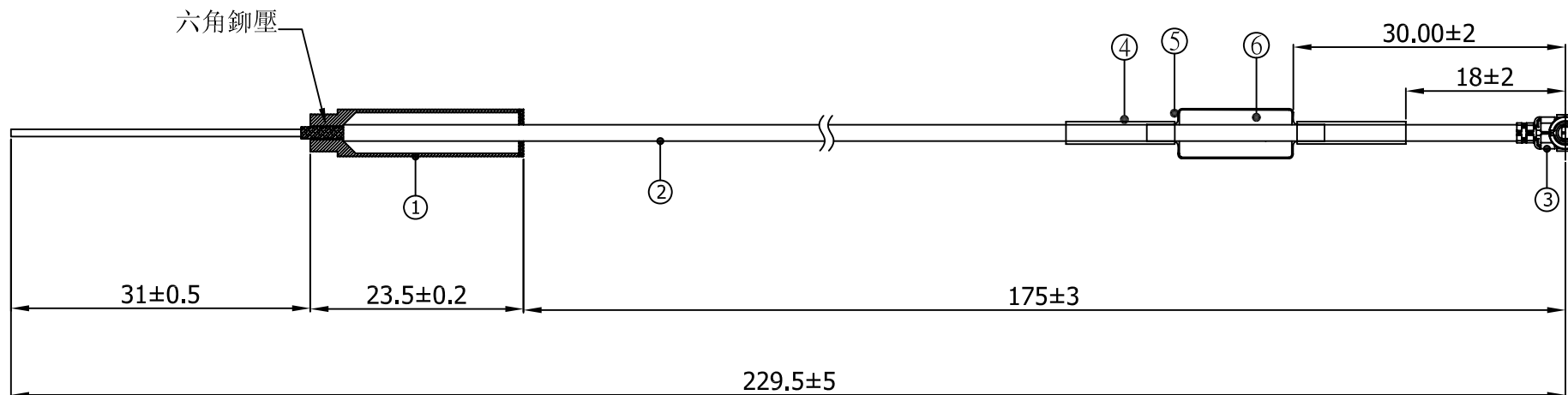
- 1.1 Frequency Range..... 2.4-2.5GHz
- 1.2 Impedance 50Ω
- 1.3 VSWR <2.5
- 1.4 Gain 2.0dBi
- 1.5 Polarization..... Vertical
- 1.6 Radiation..... Omni

2. Physical Properties :

- 2.1 Cable..... RG-178 Coaxial cable
- 2.2 Connector..... I-PEX
- 2.3 Operating Temp. $-20^{\circ}\text{C} \sim +65^{\circ}\text{C}$
- 2.4 Storage Temp. $-30^{\circ}\text{C} \sim +75^{\circ}\text{C}$

CG4-965

REV	DATE	DESCRIPTION
A	08/28-2012	New Issue



2*10pcs/bag

SPEC:

频率: 2.4GHz-2.5GHz

VSWR:<2.5

增益:2.0dBi

端子拉力>2kg

Core拉力>0.4kg

产品符合ROSH标准

6	Core	RH5.5*3*12.7mm	1	
5	H.S.Tube	Heat Shrink Tube Ø6.0*20mm	1	
4	H.S.Tube	含胶热缩套管 Ø3.2*12mm	2	
3	MHF	I-PEX	1	
2	CABLE	RG-178;棕色	1	
1	銅管	Ø5.20*23.5mm	1	
NO	DESCRIPTION		QTY	REMARK

CUSTOMER'S SINGATURE

XX.	±5.0
X.	±3.0
.X	±0.2
.XX	±0.1
.XXX	±0.05
⊕	≡

APPROVED

CHECKED

DRAWING

CUSTOMER: 南京汉桑

PART NO : 29-04100-00

PART NAME: RF Antenna Assembly

W.Y P/NO : C6048-510051PA

REV UNIT FILE :

A mm SHEET : 1/1

M.gear Wha Yu Group

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普翔电子貿易(上海)有限公司

華裕實業股份有限公司

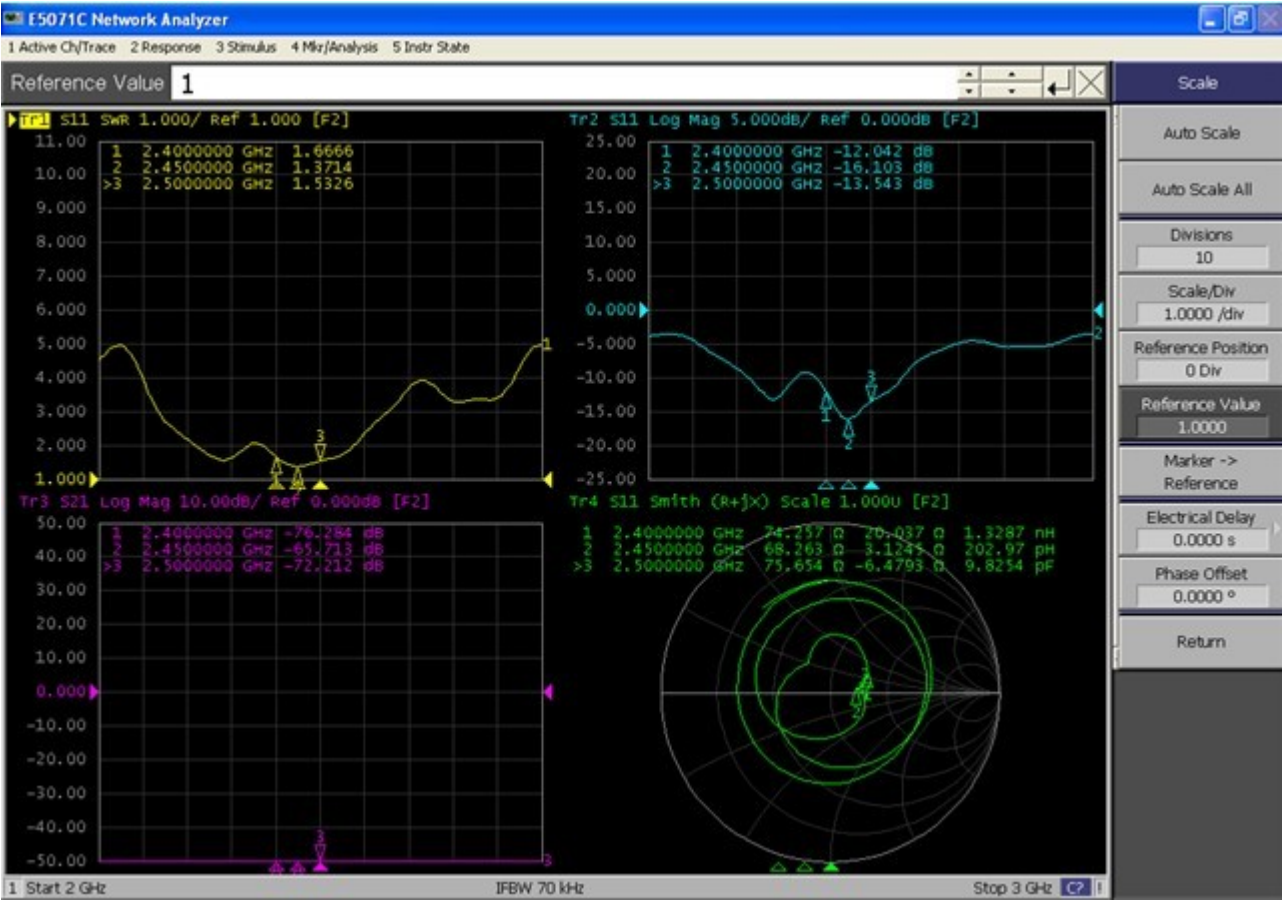
天線测试報告

(2.4GHz 天线)

2012. 06.26

Project:		Author:汪 卫	
Date:			
Rev: A	Language:	Check:	
Project No:			
普翔电子貿易(上海)有限公司.			

配合客户机器测试数据



配合客户机器测试数据如下:

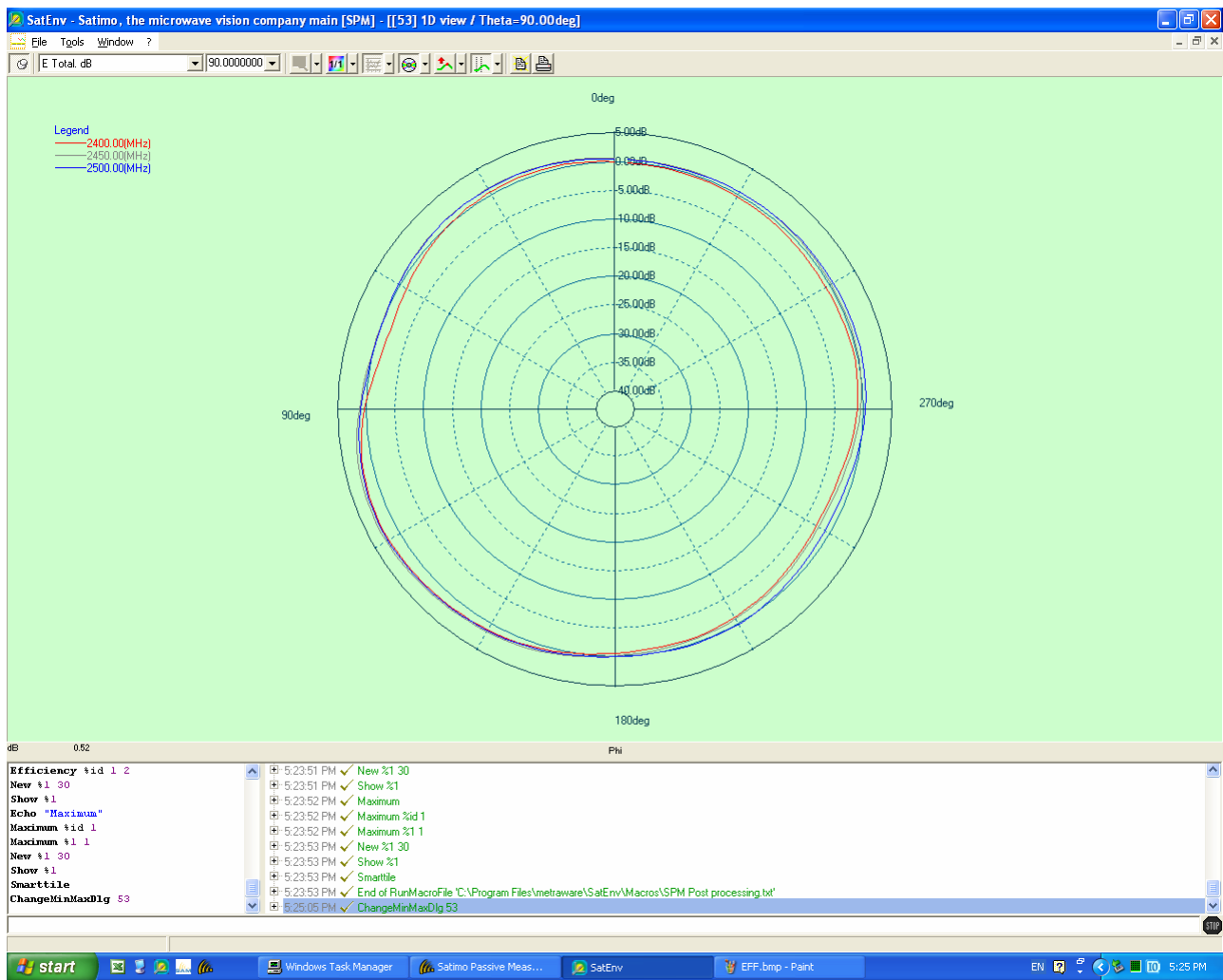
频段(MHz)	2400	2450	2500
驻 波	1.6	1.3	1.5
效 率	73%	80%	74%
增益(dBi)	2.8	3.2	2.7

若天线直接在自由空间测试,则驻波会与上面配合机器测试的驻波不同.

Project:		Author:汪 卫	
Date:			
Rev: A	Language:	Check:	
Project No:			
普翔电子貿易(上海)有限公司.			

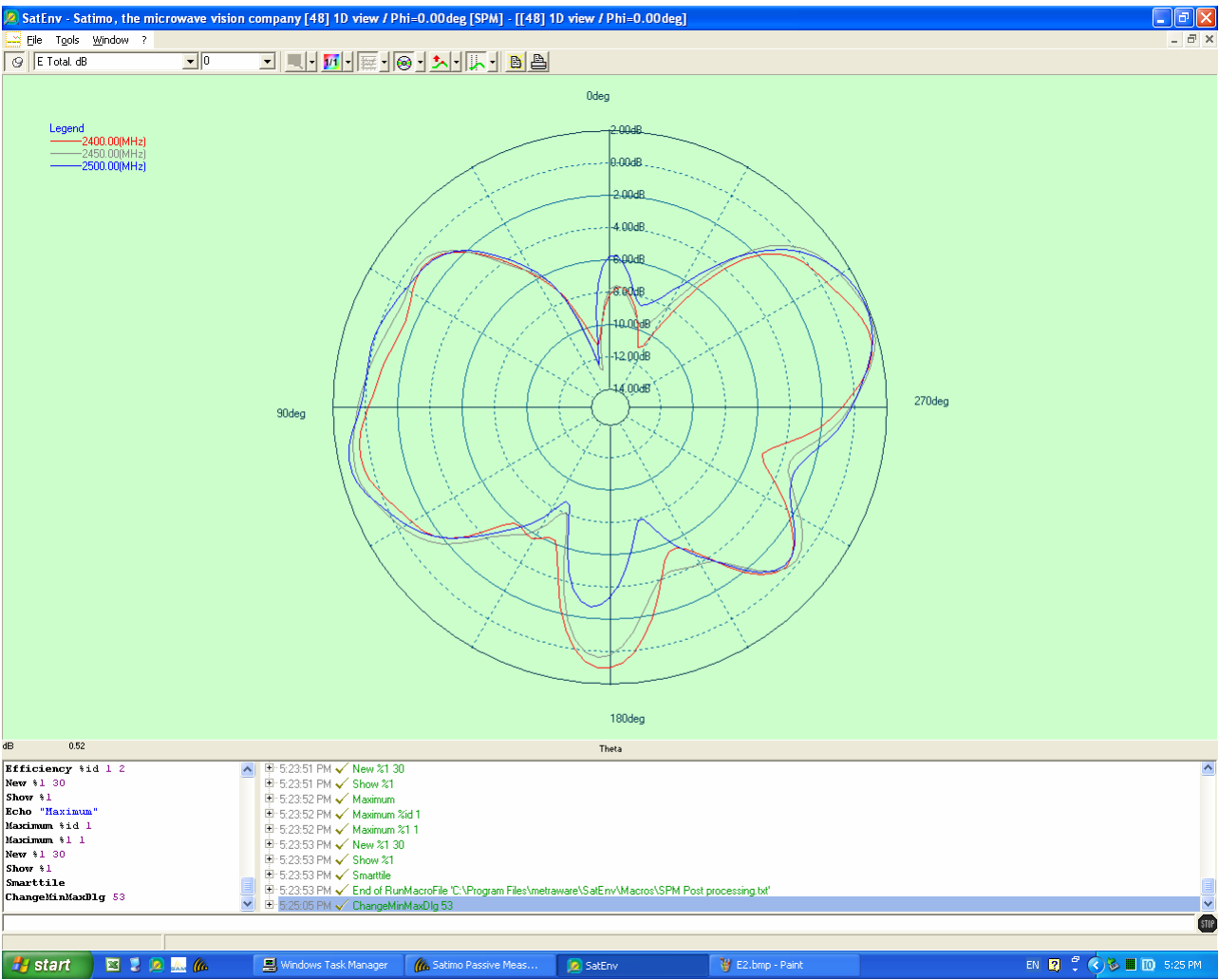
附錄

H 面方向图



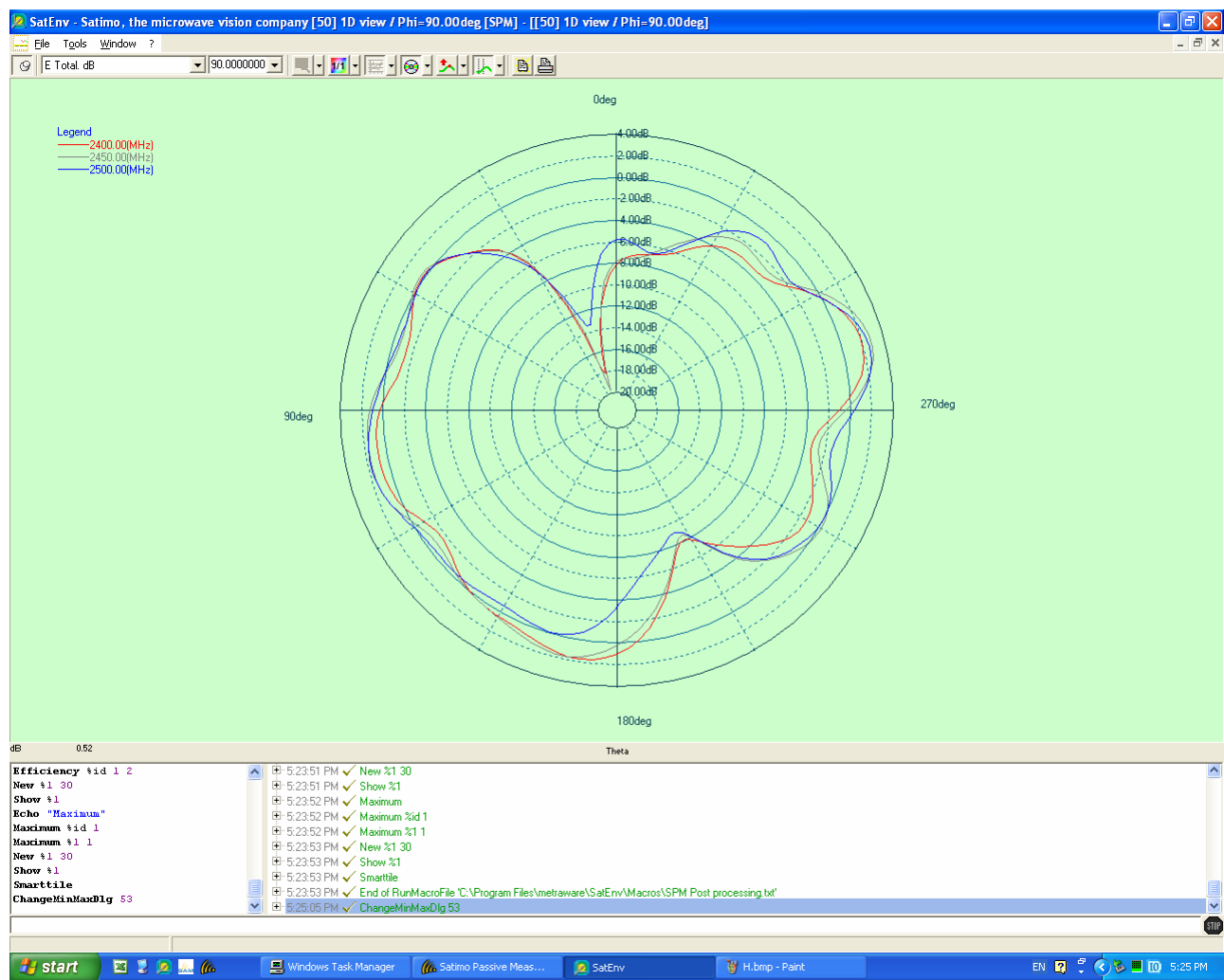
Project:		Author:汪 卫	
Date:			
Rev: A	Language:	Check:	
Project No:			
普翔电子貿易(上海)有限公司.			

E1 面方向图



Project:		Author:汪 卫	
Date:			
Rev: A	Language:	Check:	
Project No:			
普翔电子貿易(上海)有限公司.			

E2 面方向图



Project:		Author:汪 卫	
Date:			
Rev: A	Language:	Check:	
Project No:			
普翔电子貿易(上海)有限公司.			

Test Report

Report No. RLSHD000772450001

Page 2 of 4

Test Result(s)

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

Tested Item(s)	Content
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.

Tested Item(s)	Content
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.

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

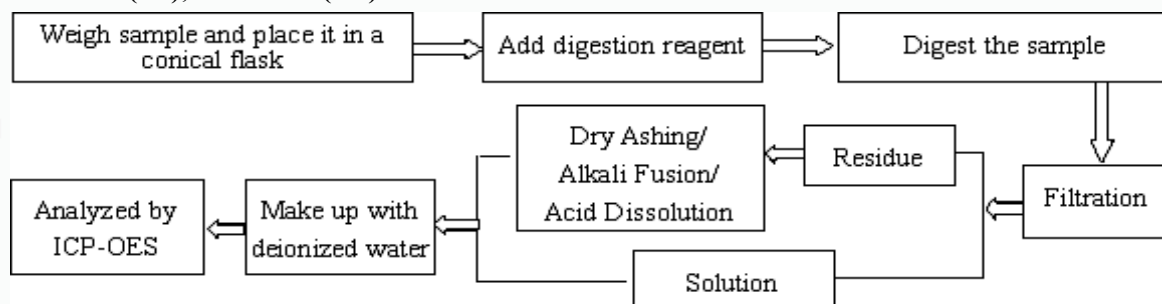
Test Report

Report No. RLSHD000772450001

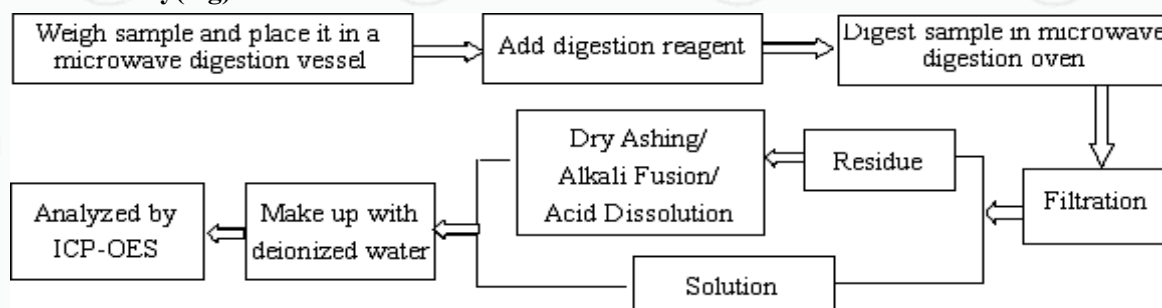
Page 3 of 4

Test Process

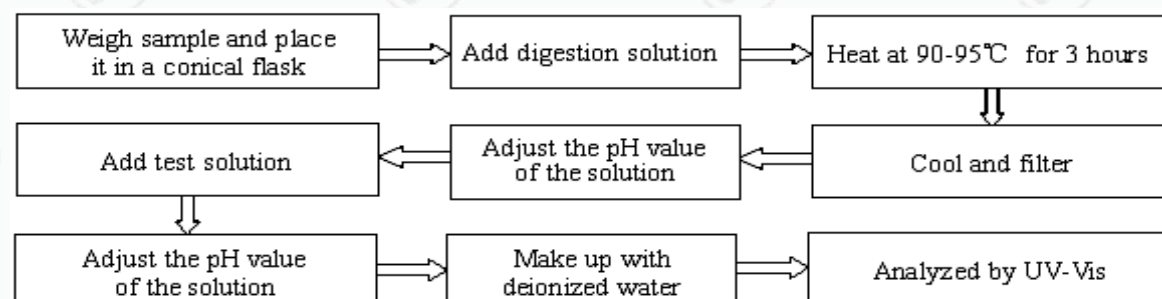
1. Lead(Pb), Cadmium(Cd)



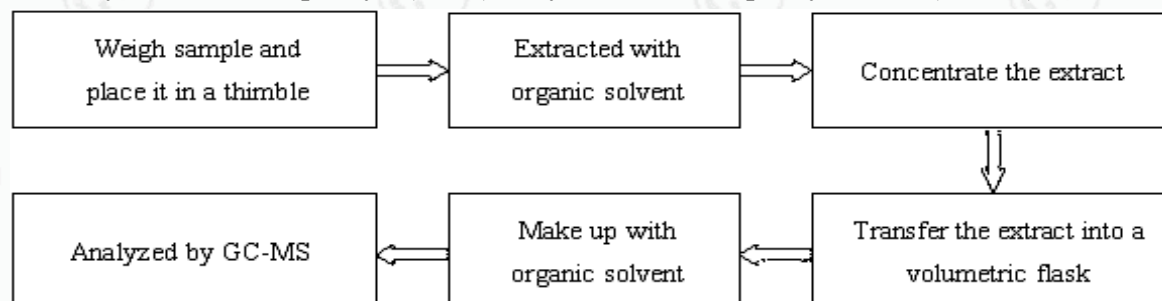
2. Mercury(Hg)



3. Hexavalent Chromium (Cr(VI))



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

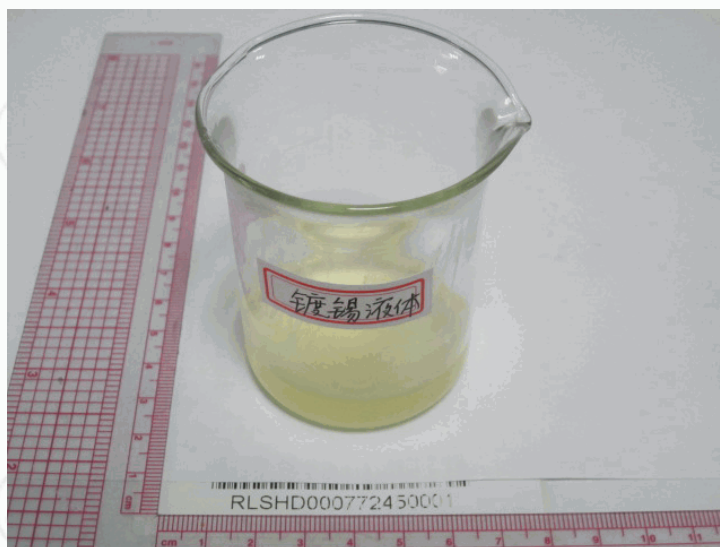


Test Report

Report No. RLSHD000772450001

Page 4 of 4

Photo(s) of the sample(s)



*** End of report ***

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No.1996, Xinjinqiao Road, Pudong, Shanghai

SGS REPORT

SUBJECT: Survey for Environmental-Related Substances

Attachment:

Survey Form on Environmental Impact Substances Contained in Parts and Materials

SGS TEST REPORT for MHF Plug connector

This is applied for the following products: Please refer to the attached SGS REPORT.

Component name	SGS Report No.	I-PEX Part Number
HOUSING (BLACK)	CE_2012_13508	20278-112R-13 20278-112R-32
CONTACT	CE_2011_83804 *	
GROUND CONTACT	CE_2012_23265 *	

Component name	SGS Report No.	I-PEX Part Number
HOUSING (WHITE)	CE_2012_13509	20278-112R-08 20278-112R-18 20351-112R-37
CONTACT	CE_2011_83804 *	
GROUND CONTACT	CE_2012_23265 *	

Remark:* The SGS Test Report can be applied to a component.

Test Report

No. : CE/2012/13508 Date : 2012/01/18 Page : 1 of 12

DAI-ICHI SEIKO CO., LTD.

6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



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

Sample Description : MHF PLUG HOUSING
Style/Item No. : 1844-011-01
Sample Receiving Date : 2012/01/13
Testing Period : 2012/01/13 TO 2012/01/18

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


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

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Test Report

No. : CE/2012/13508 Date : 2012/01/18 Page : 2 of 12

DAI-ICHI SEIKO CO., LTD.

6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



Test Result(s)

PART NAME No.1 : BLACK PLASTIC

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)	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
Antimony (Sb)	mg/kg	With reference to US EPA Method 3050B for Antimony Content. Analysis was performed by ICP-AES.	2	n.d.
Antimony trioxide (Sb ₂ O ₃) (#) (CAS No.: 1309-64-4)	mg/kg	With reference to US EPA Method 3050B for Antimony Content. Analysis was performed by ICP-AES.	-	n.d.
Phosphorus (P)	mg/kg	With reference to US EPA Method 3052 for Phosphorus Content. Analysis was performed by ICP-AES.	2	26400
Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	With reference to US EPA 3540C: 1996 method for PFOS Content. Analysis was performed by LC/MS.	10	n.d.
PFOA (CAS No.: 335-67-1)	mg/kg	With reference to US EPA 3540C: 1996 method for PFOA Content. Analysis was performed by LC/MS.	10	n.d.
Tetrabromobisphenol A (TBBP-A) (CAS No.: 79-94-7)	mg/kg	With reference to DIN 53313. Analysis was performed by GC/MS.	10	n.d.
Hexabromocyclododecane (HBCDD) (CAS No.: 25637-99-4)	mg/kg	With reference to US EPA 3540C method. Analysis was performed by GC/MS.	5	n.d.

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Test Report

No. : CE/2012/13508 Date : 2012/01/18 Page : 3 of 12

DAI-ICHI SEIKO CO., LTD.

6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



Test Item(s)	Unit	Method	MDL	Result No.1
Sum of PBBs	mg/kg	With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.
Monobromobiphenyl			5	n.d.
Dibromobiphenyl			5	n.d.
Tribromobiphenyl			5	n.d.
Tetrabromobiphenyl			5	n.d.
Pentabromobiphenyl			5	n.d.
Hexabromobiphenyl			5	n.d.
Heptabromobiphenyl			5	n.d.
Octabromobiphenyl			5	n.d.
Nonabromobiphenyl			5	n.d.
Decabromobiphenyl			5	n.d.
Sum of PBDEs			-	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.
Halogen				
Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	1080
Halogen-Chlorine (Cl) (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.
Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.

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Test Report

No. : CE/2012/13508 Date : 2012/01/18 Page : 4 of 12

DAI-ICHI SEIKO CO., LTD.

6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



Note :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated
5. (#): The substance was calculated by the test result of Antimony. The MDL was evaluated for Antimony.

$$AX = A \times F$$

AX	A	F
Antimony trioxide (Sb ₂ O ₃)	Antimony	1.1971

PFOS Reference Information : Directive 2006/122/EC

- (1) 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.
- (2) 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.

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Test Report

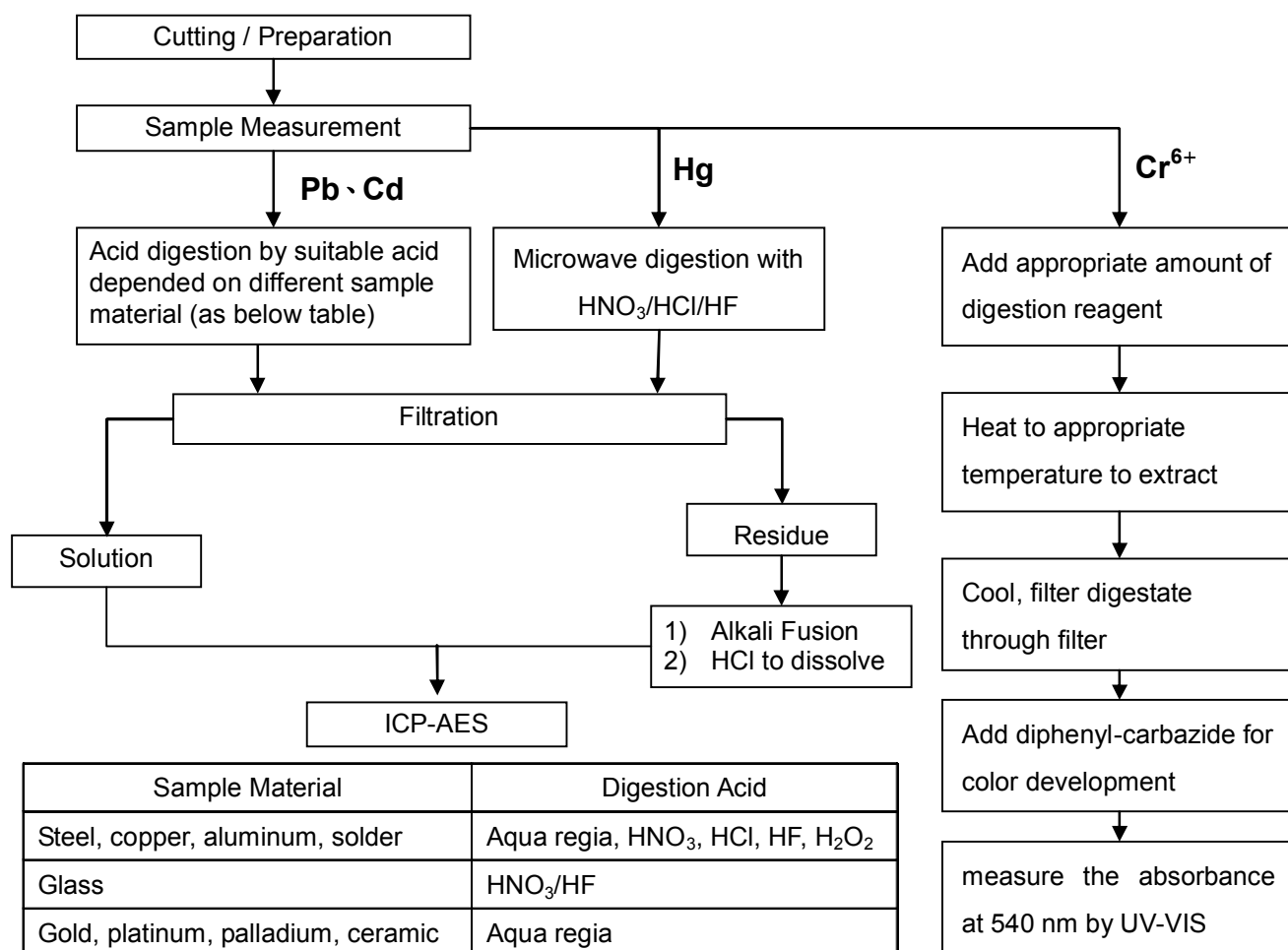
No. : CE/2012/13508 Date : 2012/01/18 Page : 5 of 12

DAI-ICHI SEIKO CO., LTD.

6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



- 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: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



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

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Test Report

No. : CE/2012/13508 Date : 2012/01/18 Page : 6 of 12

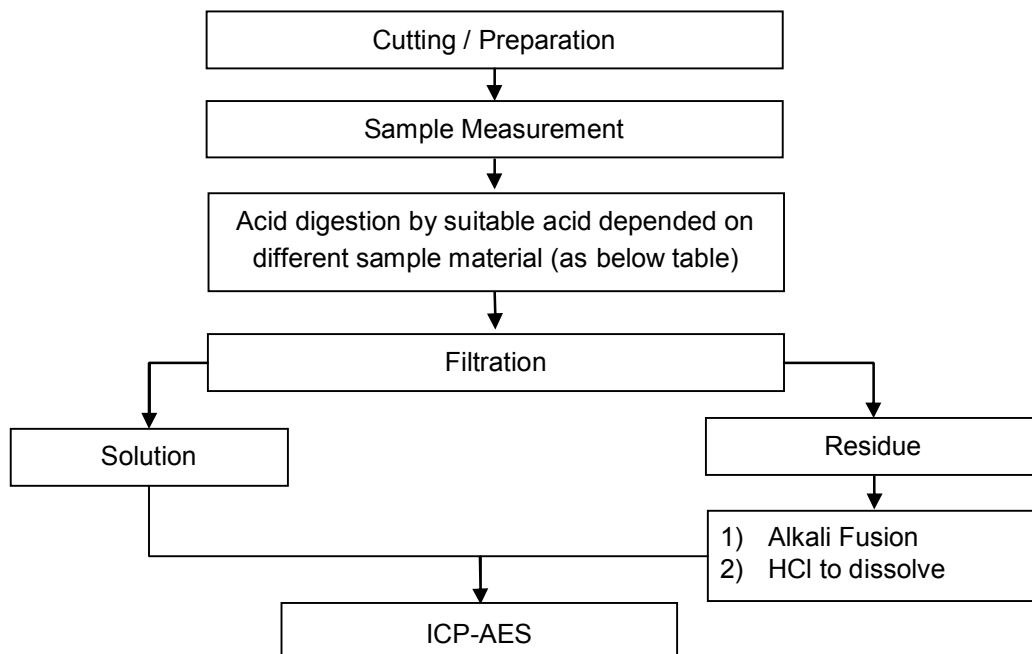
DAI-ICHI SEIKO CO., LTD.

6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
- 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 ₃ , HCl, HF, H ₂ O ₂
Glass	HNO ₃ /HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO ₃
Plastic	H ₂ SO ₄ , H ₂ O ₂ , HNO ₃ , HCl
Others	Any acid to total digestion

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Test Report

No. : CE/2012/13508 Date : 2012/01/18 Page : 7 of 12

DAI-ICHI SEIKO CO., LTD.

6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN

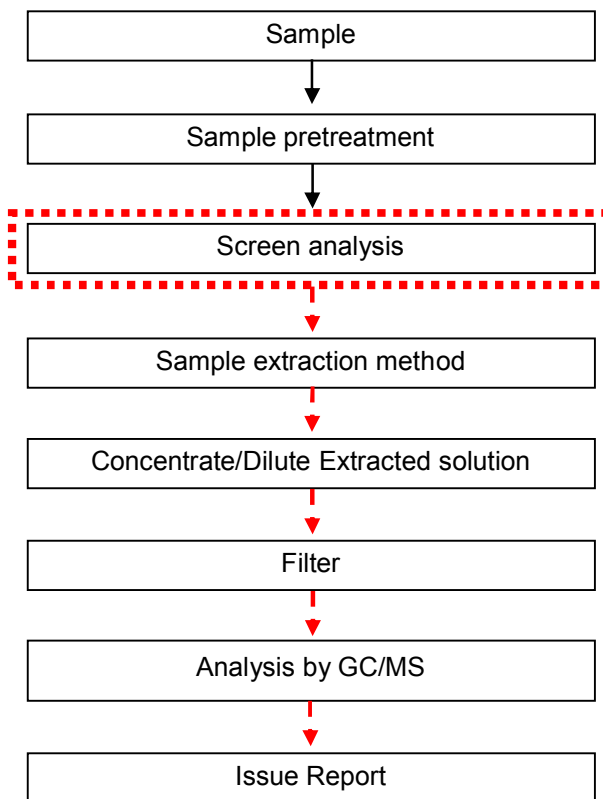


Analytical flow chart

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

【 Test Items: PBB/PBDE, TBBP-A-bis 】

First testing process —> Optional screen process Confirmation process - ->



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Test Report

No. : CE/2012/13508 Date : 2012/01/18 Page : 8 of 12

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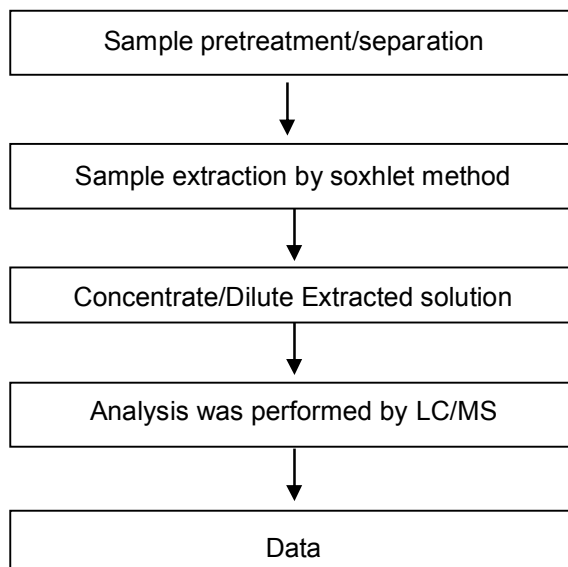
6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



Analytical flow chart of Soxhlet extraction (LC/MS) procedure

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

【 Test Items: PFOS/PFOA 、 Benzotriazole 】



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Test Report

No. : CE/2012/13508 Date : 2012/01/18 Page : 9 of 12

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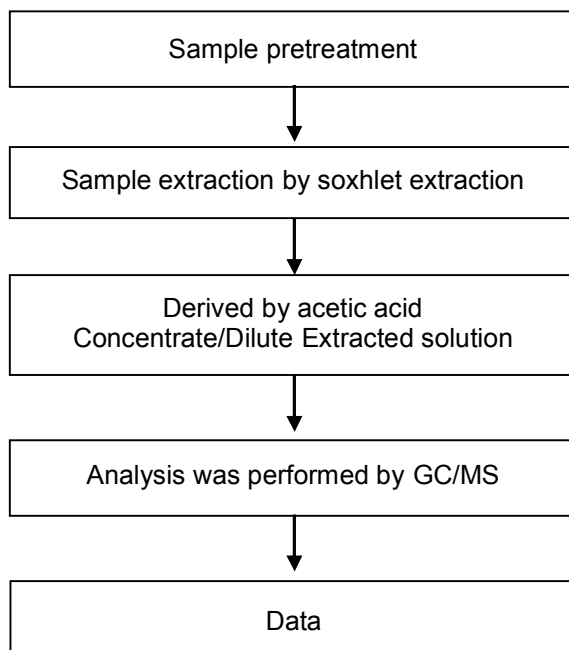
6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



Analytical flow chart

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

【 Test Items: TBBP-A 、 Bisphenol A 】



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Test Report

No. : CE/2012/13508 Date : 2012/01/18 Page : 10 of 12

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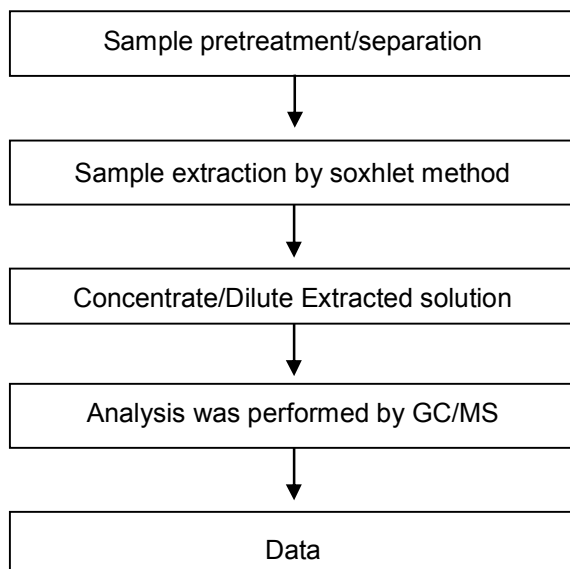
6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



Analytical flow chart of Soxhlet extraction (GC/MS) procedure

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

【Test Items: Phthalate、Benzotriazole、HBCDD、NP、DBBT、
Organic phosphorus compounds】



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Test Report

No. : CE/2012/13508 Date : 2012/01/18 Page : 11 of 12

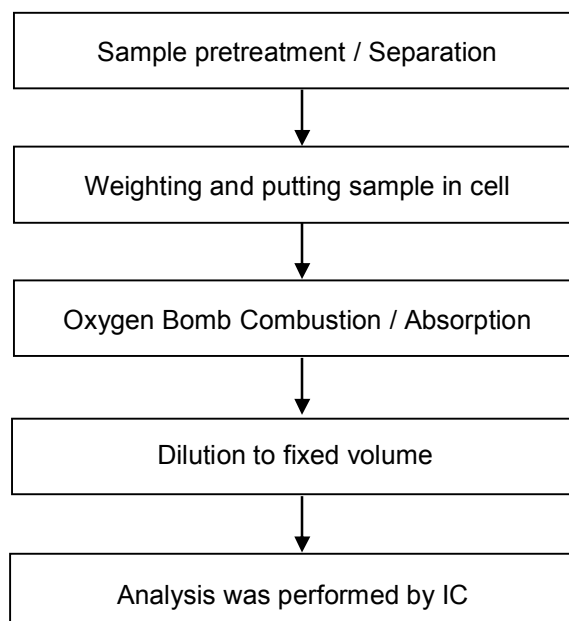
DAI-ICHI SEIKO CO., LTD.

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Analytical flow chart of halogen content

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



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Test Report

No. : CE/2012/13508 Date : 2012/01/18 Page : 12 of 12

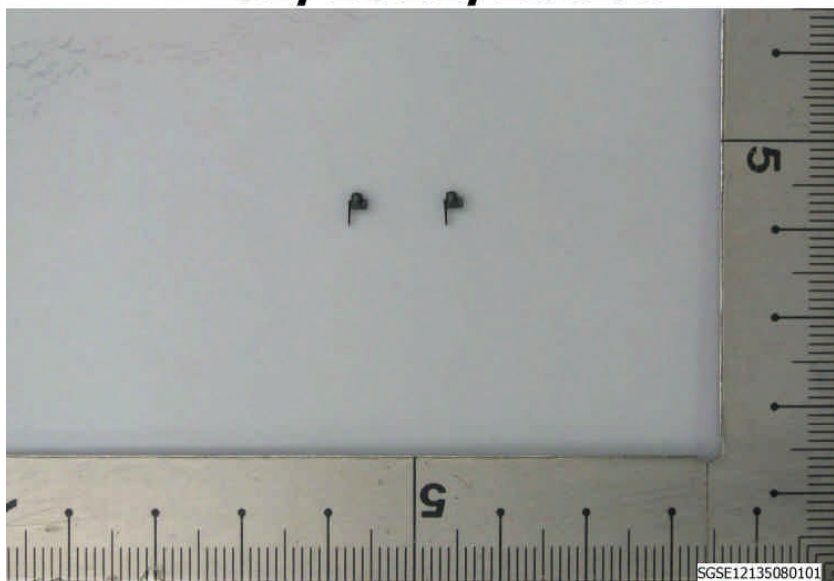
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* The tested sample / part is marked by an arrow if it's shown on the photo. *

CE/2012/13508



** End of Report **

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Test Report

No. : CE/2012/13509 Date : 2012/01/18 Page : 1 of 12

DAI-ICHI SEIKO CO., LTD.
6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



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

Sample Description : MHF PLUG HOUSING
Style/Item No. : 1844-012-01
Sample Receiving Date : 2012/01/13
Testing Period : 2012/01/13 TO 2012/01/18

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


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

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Test Report

No. : CE/2012/13509 Date : 2012/01/18 Page : 2 of 12

DAI-ICHI SEIKO CO., LTD.

6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



Test Result(s)

PART NAME No.1 : WHITE PLASTIC

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)	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
Antimony (Sb)	mg/kg	With reference to US EPA Method 3050B for Antimony Content. Analysis was performed by ICP-AES.	2	n.d.
Antimony trioxide (Sb ₂ O ₃) (#) (CAS No.: 1309-64-4)	mg/kg	With reference to US EPA Method 3050B for Antimony Content. Analysis was performed by ICP-AES.	-	n.d.
Phosphorus (P)	mg/kg	With reference to US EPA Method 3052 for Phosphorus Content. Analysis was performed by ICP-AES.	2	28100
Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	With reference to US EPA 3540C: 1996 method for PFOS Content. Analysis was performed by LC/MS.	10	n.d.
PFOA (CAS No.: 335-67-1)	mg/kg	With reference to US EPA 3540C: 1996 method for PFOA Content. Analysis was performed by LC/MS.	10	n.d.
Tetrabromobisphenol A (TBBP-A) (CAS No.: 79-94-7)	mg/kg	With reference to DIN 53313. Analysis was performed by GC/MS.	10	n.d.
Hexabromocyclododecane (HBCDD) (CAS No.: 25637-99-4)	mg/kg	With reference to US EPA 3540C method. Analysis was performed by GC/MS.	5	n.d.

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Test Report

No. : CE/2012/13509 Date : 2012/01/18 Page : 3 of 12

DAI-ICHI SEIKO CO., LTD.

6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



Test Item(s)	Unit	Method	MDL	Result No.1
Sum of PBBs	mg/kg	With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.
Monobromobiphenyl			5	n.d.
Dibromobiphenyl			5	n.d.
Tribromobiphenyl			5	n.d.
Tetrabromobiphenyl			5	n.d.
Pentabromobiphenyl			5	n.d.
Hexabromobiphenyl			5	n.d.
Heptabromobiphenyl			5	n.d.
Octabromobiphenyl			5	n.d.
Nonabromobiphenyl			5	n.d.
Decabromobiphenyl			5	n.d.
Sum of PBDEs			-	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.
Halogen				
Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	1090
Halogen-Chlorine (Cl) (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.
Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.

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Test Report

No. : CE/2012/13509 Date : 2012/01/18 Page : 4 of 12

DAI-ICHI SEIKO CO., LTD.

6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



Note :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated
5. (#): The substance was calculated by the test result of Antimony. The MDL was evaluated for Antimony.

$$AX = A \times F$$

AX	A	F
Antimony trioxide (Sb ₂ O ₃)	Antimony	1.1971

PFOS Reference Information : Directive 2006/122/EC

- (1) 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.
- (2) 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.

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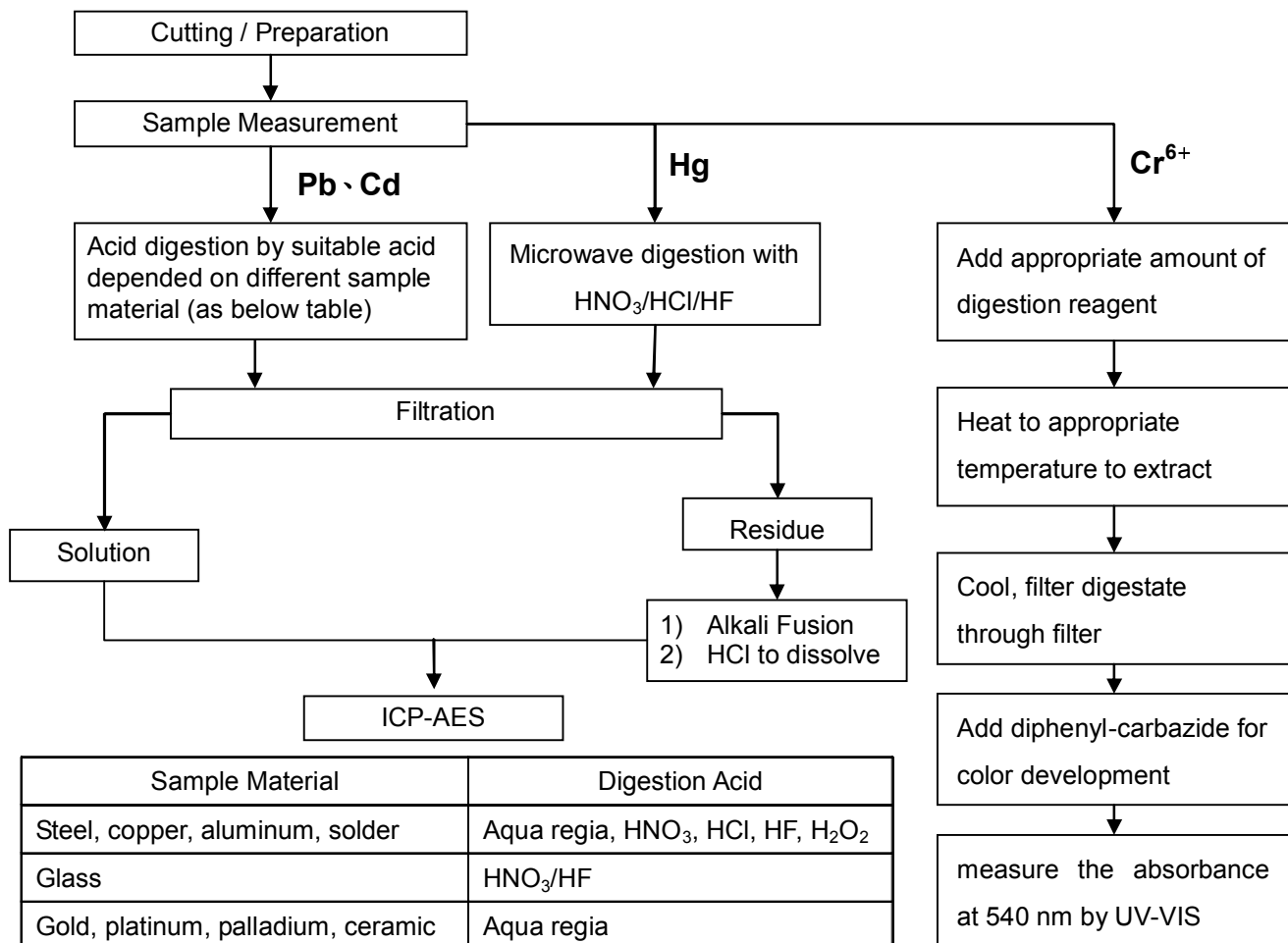
No. : CE/2012/13509 Date : 2012/01/18 Page : 5 of 12

DAI-ICHI SEIKO CO., LTD.

6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



- 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: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



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

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Test Report

No. : CE/2012/13509 Date : 2012/01/18 Page : 6 of 12

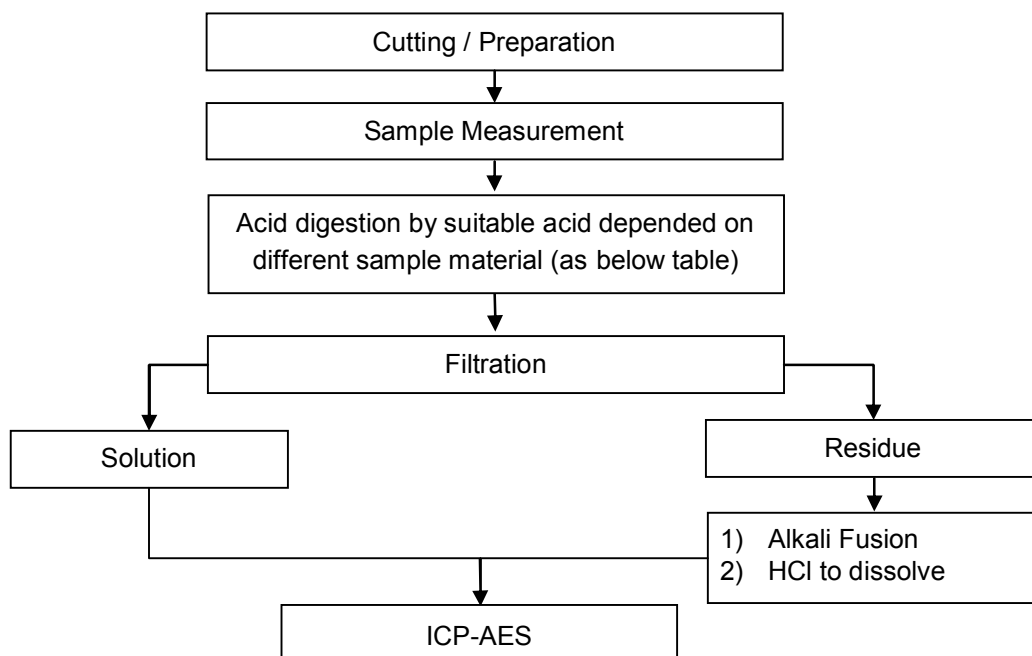
DAI-ICHI SEIKO CO., LTD.

6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
- 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 ₃ , HCl, HF, H ₂ O ₂
Glass	HNO ₃ /HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO ₃
Plastic	H ₂ SO ₄ , H ₂ O ₂ , HNO ₃ , HCl
Others	Any acid to total digestion

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Test Report

No. : CE/2012/13509 Date : 2012/01/18 Page : 7 of 12

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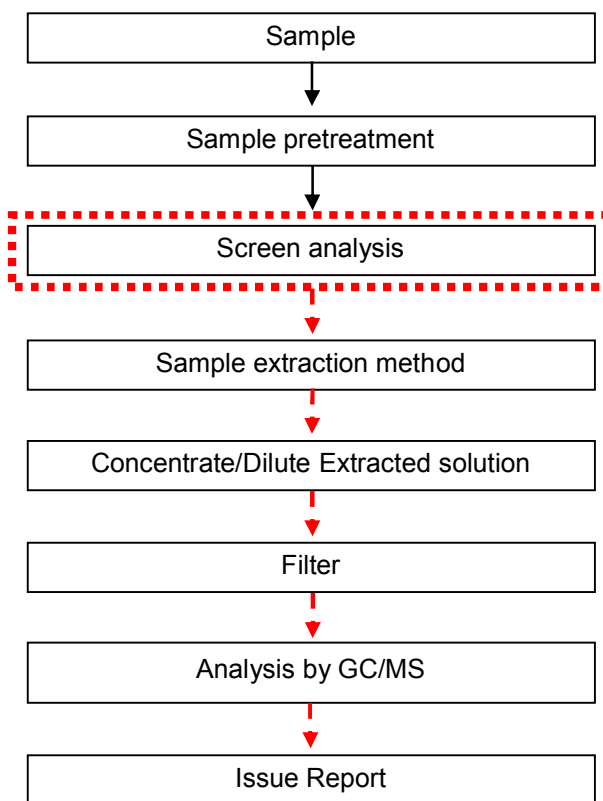


Analytical flow chart

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

【 Test Items: PBB/PBDE, TBBP-A-bis 】

First testing process —> Optional screen process Confirmation process - ->



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Test Report

No. : CE/2012/13509 Date : 2012/01/18 Page : 8 of 12

DAI-ICHI SEIKO CO., LTD.

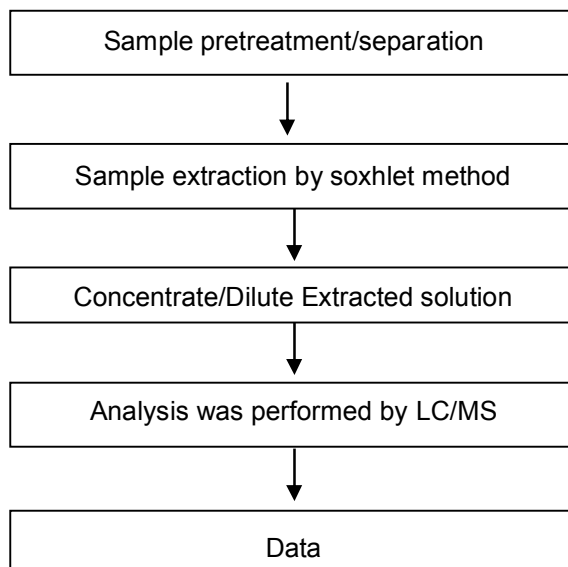
6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



Analytical flow chart of Soxhlet extraction (LC/MS) procedure

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

【 Test Items: PFOS/PFOA 、 Benzotriazole 】



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Test Report

No. : CE/2012/13509 Date : 2012/01/18 Page : 9 of 12

DAI-ICHI SEIKO CO., LTD.

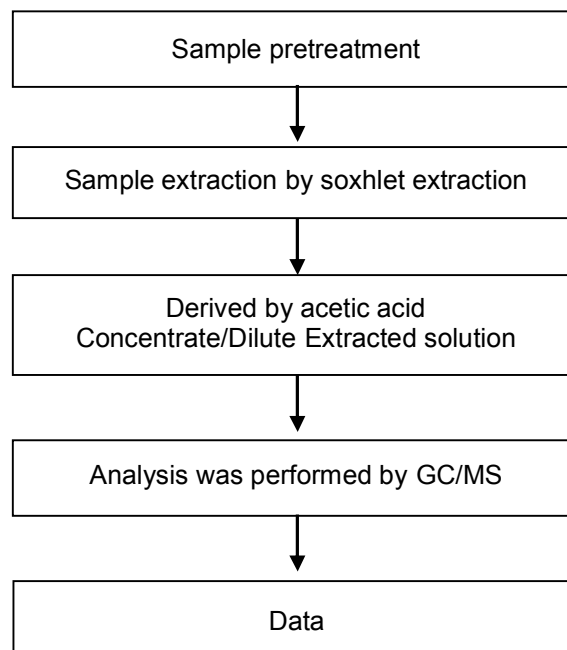
6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



Analytical flow chart

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

【 Test Items: TBBP-A 、 Bisphenol A 】



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Test Report

No. : CE/2012/13509 Date : 2012/01/18 Page : 10 of 12

DAI-ICHI SEIKO CO., LTD.

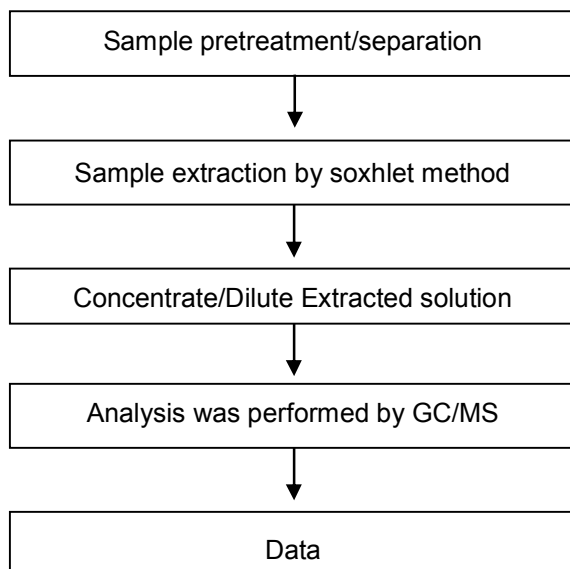
6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



Analytical flow chart of Soxhlet extraction (GC/MS) procedure

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

**【Test Items: Phthalate 、Benzotriazole 、HBCDD 、NP 、DBBT 、
Organic phosphorus compounds】**



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Test Report

No. : CE/2012/13509 Date : 2012/01/18 Page : 11 of 12

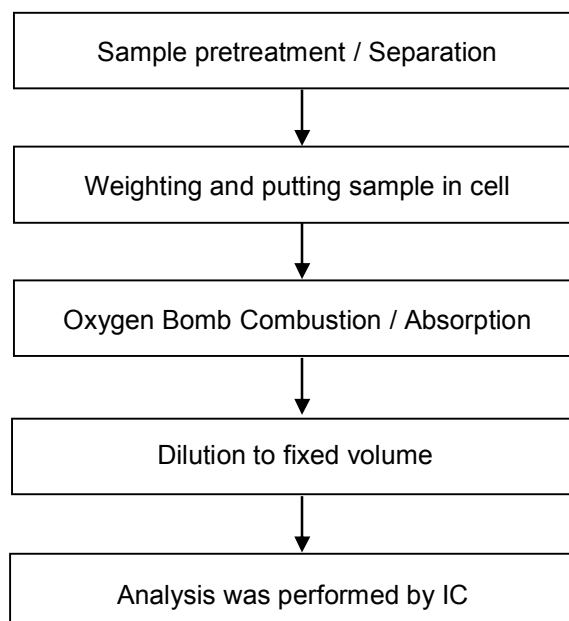
DAI-ICHI SEIKO CO., LTD.

6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



Analytical flow chart of halogen content

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



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Test Report

No. : CE/2012/13509 Date : 2012/01/18 Page : 12 of 12

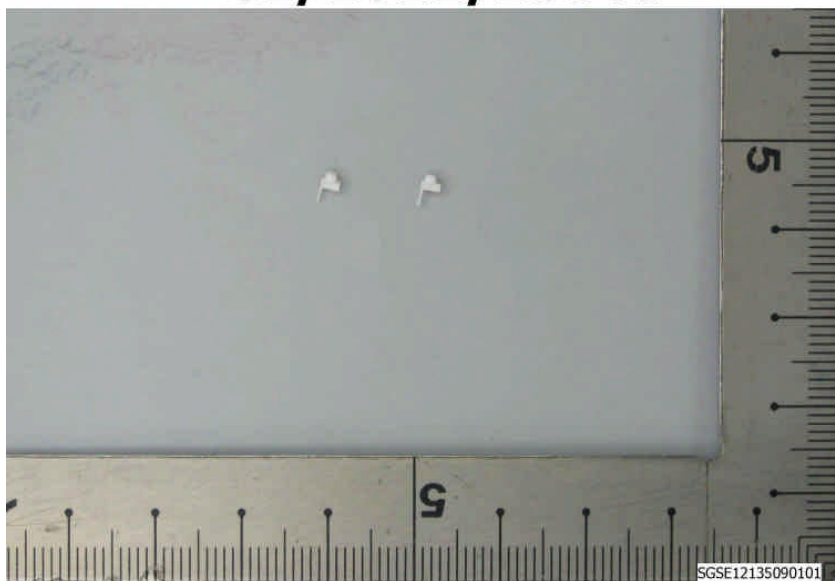
DAI-ICHI SEIKO CO., LTD.

6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



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

CE/2012/13509



** End of Report **

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Test Report

No. : CE/2011/83804 Date : 2011/08/25 Page : 1 of 7

I-PEX JP CO., LTD. TAIWAN BRANCH
6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



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

Sample Description : MHF III PLUG GROUND CONTACT
Style/Item No. : 2172-001
Sample Receiving Date : 2011/08/19
Testing Period : 2011/08/19 TO 2011/08/25

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


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

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Test Report

No. : CE/2011/83804 Date : 2011/08/25 Page : 2 of 7

I-PEX JP CO., LTD. TAIWAN BRANCH
6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



Test Result(s)

PART NAME No.1 : PLATING LAYER OF GOLDEN COLORED METAL
PART NAME No.2 : BASE MATERIAL OF GOLDEN COLORED METAL

Test Item (s):	Unit	Method	MDL	Result	
				No.1	No.2
Cadmium (Cd)	mg/kg	IEC 62321: 2008 application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.	---
	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	---	n.d.
Lead (Pb)	mg/kg	IEC 62321: 2008 application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.	---
	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	---	17
Mercury (Hg)	mg/kg	IEC 62321: 2008 application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.	---
	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	---	n.d.
Hexavalent Chromium Cr(VI) by Boiling water extraction	**	With reference to IEC 62321: 2008 and performed by Boiling water extraction Method.#	#	Negative	Negative
Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	µg/m ²	With reference to US EPA 3540C: 1996 method for PFOS Content. Analysis was performed by LC/MS.	1	n.d.	---

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Test Report

No. : CE/2011/83804 Date : 2011/08/25 Page : 3 of 7

I-PEX JP CO., LTD. TAIWAN BRANCH
6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



Note :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. "---" = Not Conducted
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 cm² tested areas.

PFOS Reference Information : Directive 2006/122/EC

(1) 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.

(2) 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.

Test Report

No. : CE/2011/83804 Date : 2011/08/25 Page : 4 of 7

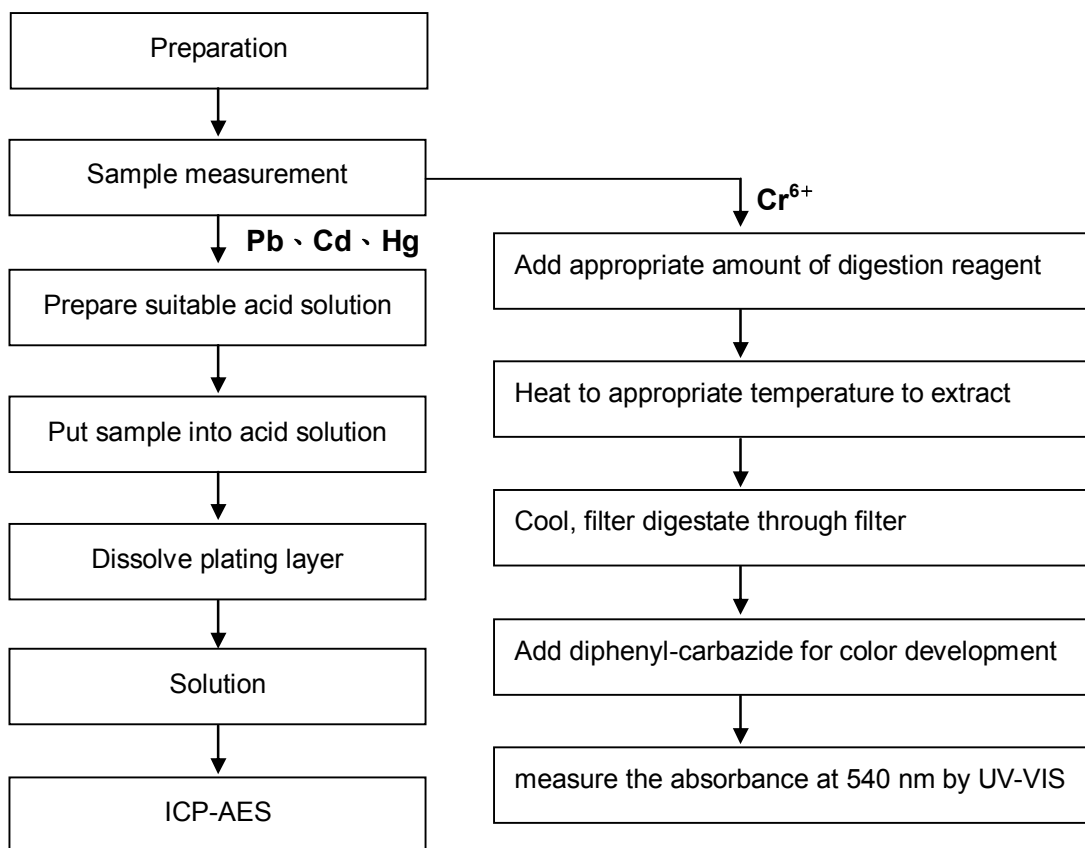
I-PEX JP CO., LTD. TAIWAN BRANCH
6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



NO.1

- 1) The plating layer of samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} test method excluded)
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang

Flow Chart of Stripping method for metal analysis



Test Report

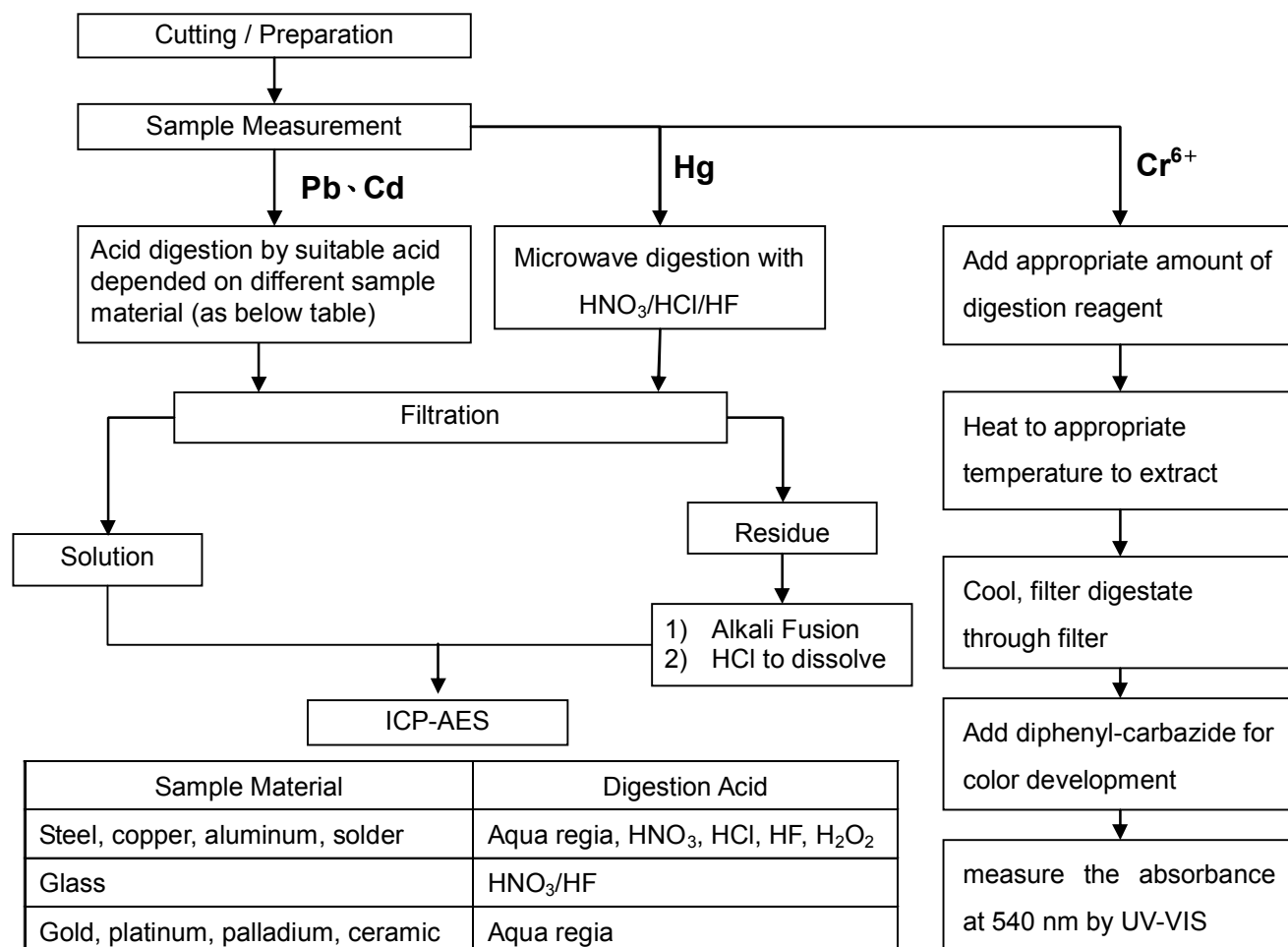
No. : CE/2011/83804 Date : 2011/08/25 Page : 5 of 7

I-PEX JP CO., LTD. TAIWAN BRANCH
6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



NO.2

- 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: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



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

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Test Report

No. : CE/2011/83804 Date : 2011/08/25 Page : 6 of 7

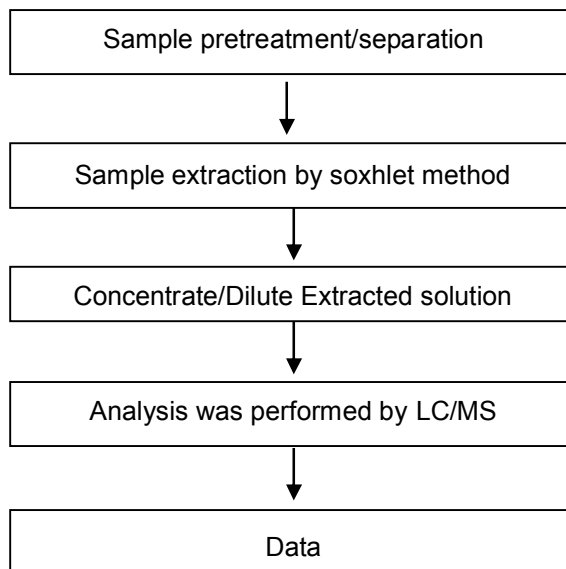
I-PEX JP CO., LTD. TAIWAN BRANCH
6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



Analytical flow chart of Soxhlet extraction (LC/MS) procedure

- 1) Name of the person who made measurement: Roman Wong
- 2) Name of the person in charge of measurement: Shinjyh Chen

■ Test Items: PFOS/PFOA 、 Benzotriazole



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Test Report

No. : CE/2011/83804 Date : 2011/08/25 Page : 7 of 7

I-PEX JP CO., LTD. TAIWAN BRANCH

6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



**** End of Report ****

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Test Report

No. : CE/2012/23265 Date : 2012/02/21 Page : 1 of 7

DAI-ICHI SEIKO CO., LTD.
6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



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

Sample Description : MHF II PLUG GROUND CONTACT
Style/Item No. : 1927-2**
Sample Receiving Date : 2012/02/15
Testing Period : 2012/02/15 TO 2012/02/21

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


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

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Test Report

No. : CE/2012/23265 Date : 2012/02/21 Page : 2 of 7

DAI-ICHI SEIKO CO., LTD.

6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



Test Result(s)

PART NAME No.1 : PLATING LAYER OF GOLDEN COLORED METAL
PART NAME No.2 : BASE MATERIAL OF GOLDEN COLORED METAL

Test Item (s):	Unit	Method	MDL	Result	
				No.1	No.2
Cadmium (Cd)	mg/kg	IEC 62321: 2008 application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.	---
	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	---	n.d.
Lead (Pb)	mg/kg	IEC 62321: 2008 application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.	---
	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	---	17
Mercury (Hg)	mg/kg	IEC 62321: 2008 application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.	---
	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	---	n.d.
Hexavalent Chromium Cr(VI) by Boiling water extraction	**	With reference to IEC 62321: 2008 and performed by Boiling water extraction Method.#	#	Negative	Negative
Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	µg/m ²	With reference to US EPA 3540C: 1996 method for PFOS Content. Analysis was performed by LC/MS.	1	n.d.	---

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Test Report

No. : CE/2012/23265 Date : 2012/02/21 Page : 3 of 7

DAI-ICHI SEIKO CO., LTD.
6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



Note :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. "---" = Not Conducted
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 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 1µg/m².

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Test Report

No. : CE/2012/23265 Date : 2012/02/21 Page : 4 of 7

DAI-ICHI SEIKO CO., LTD.

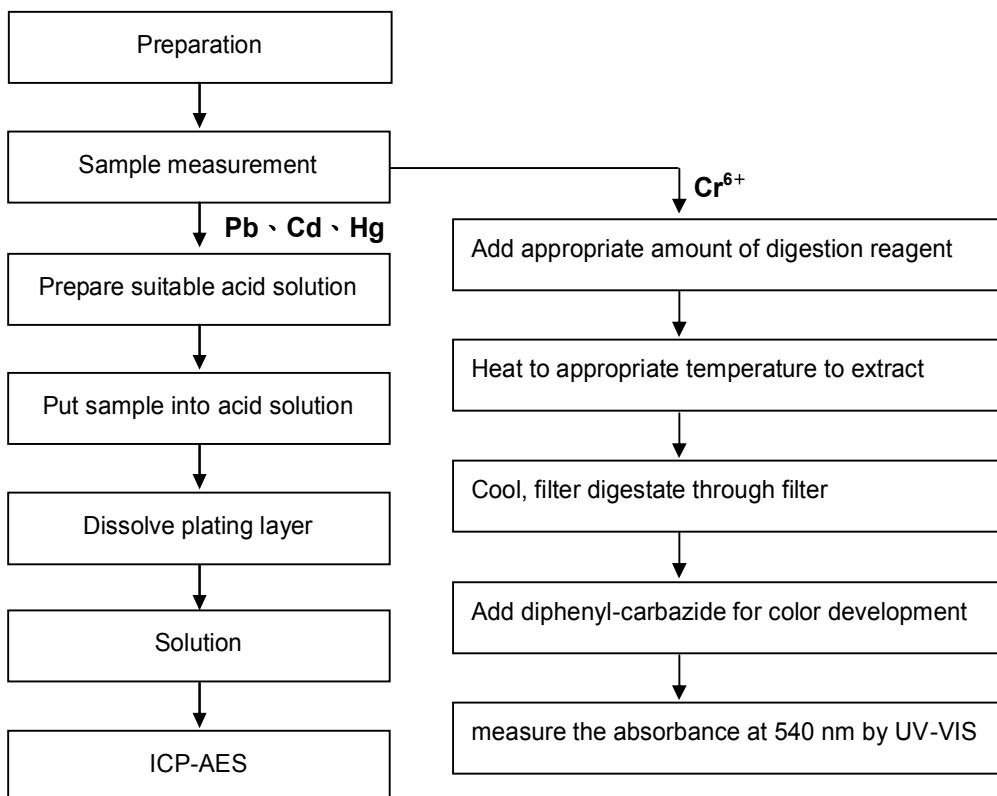
6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



NO.1

- 1) The plating layer of samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} test method excluded)
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang

Flow Chart of Stripping method for metal analysis



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Test Report

No. : CE/2012/23265 Date : 2012/02/21 Page : 5 of 7

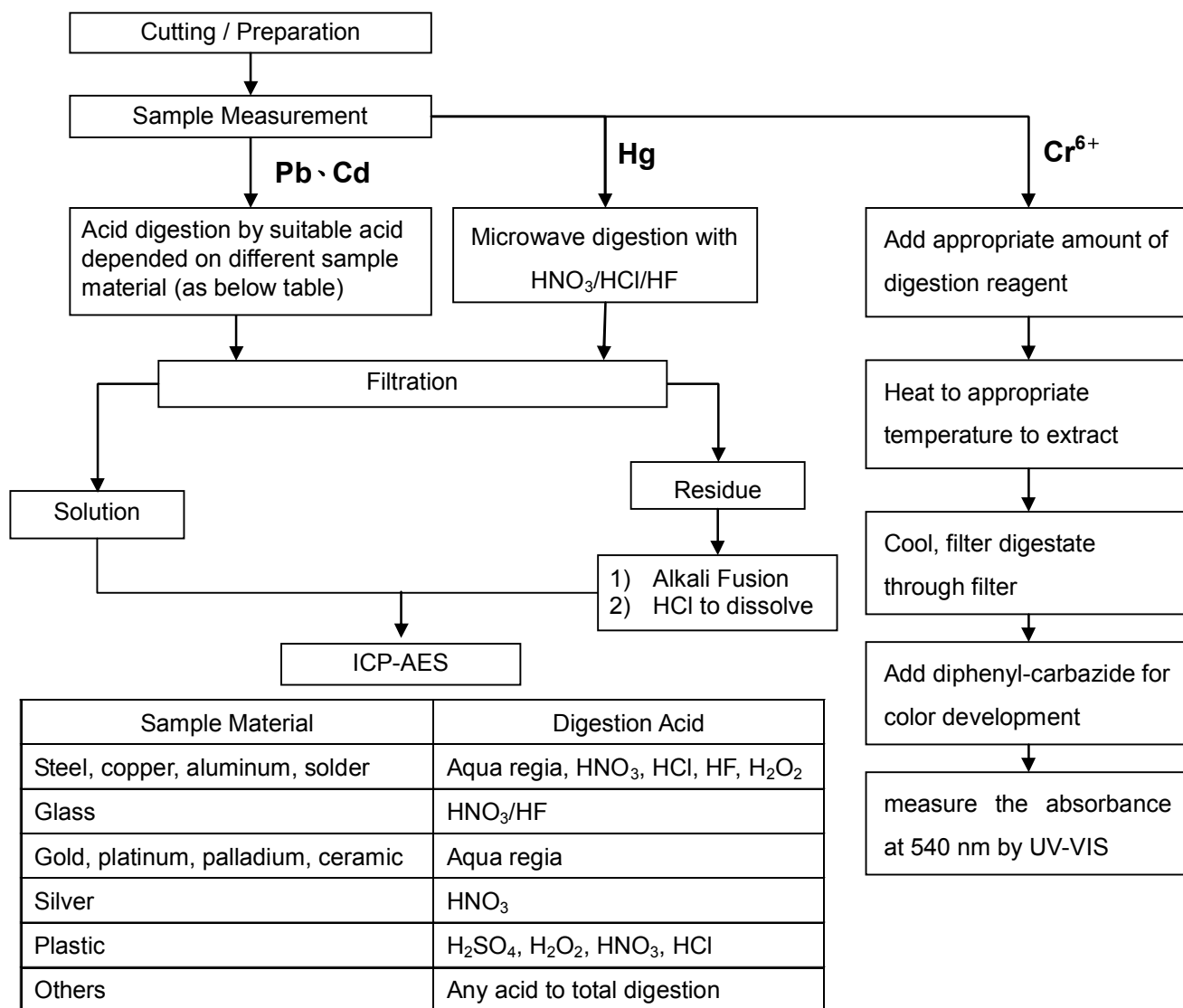
DAI-ICHI SEIKO CO., LTD.

6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



NO.2

- 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: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



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Test Report

No. : CE/2012/23265 Date : 2012/02/21 Page : 6 of 7

DAI-ICHI SEIKO CO., LTD.

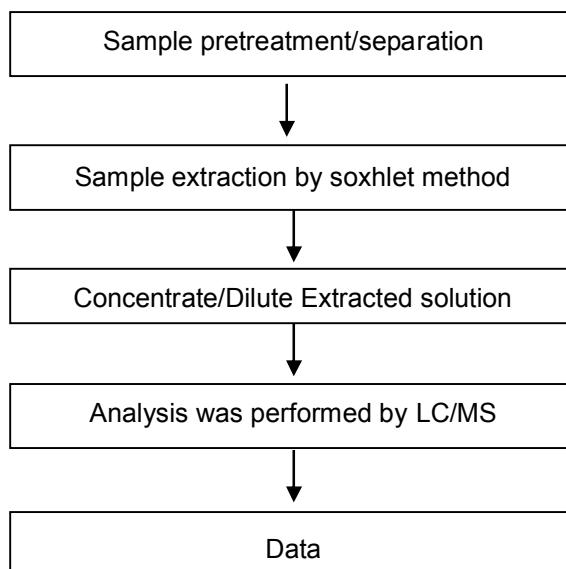
6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN



Analytical flow chart of Soxhlet extraction (LC/MS) procedure

- 1) Name of the person who made measurement: Roman Wong
- 2) Name of the person in charge of measurement: Shinjyh Chen

■ Test Items: PFOS/PFOA 、 Benzotriazole



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Test Report

No. : CE/2012/23265 Date : 2012/02/21 Page : 7 of 7

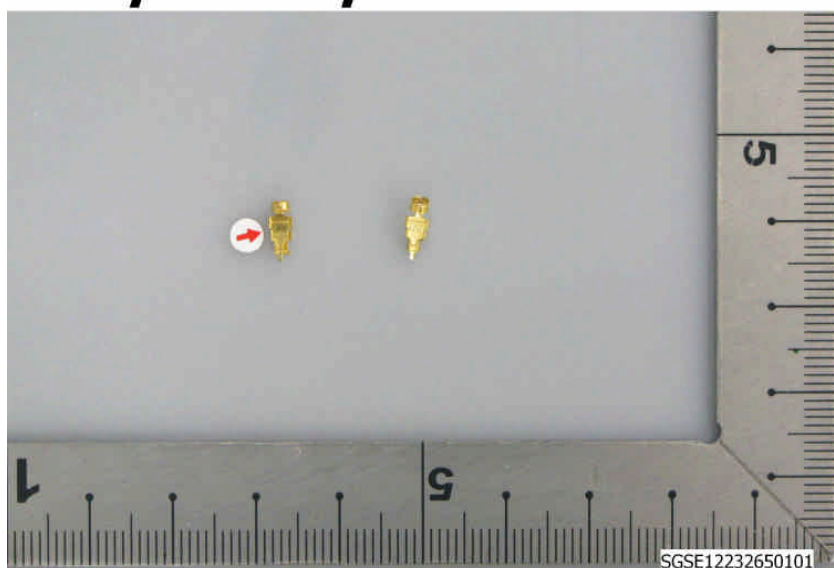
DAI-ICHI SEIKO CO., LTD.

6-27-19 HARAMACHIDA MACHIDA-CITY TOKYO 194-0013 JAPAN

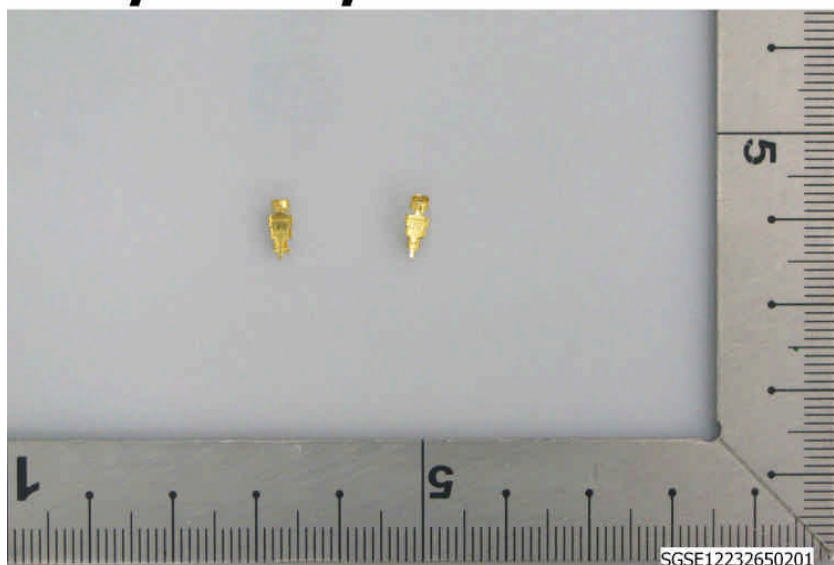


* The tested sample / part is marked by an arrow if it's shown on the photo. *

CE/2012/23265 NO.1



CE/2012/23265 NO.2



** End of Report **

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SUZHOU XIANGCHENG ZHENGXU WIRES AND CABLE CO.,LTD

NO.1 TIANDUOLI ROAD, ANSHAN DEVELOPMENT ZONE, YANGCHENGHU
TOWN, XIANGCHENG, SUZHOU, JIANGSU PROVINCE

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

SGS Job No. : SP11-028813 - SH
Composition : Silver-plated copper wire
Composition : Tinned copper wire
Composition : PTFE
Composition : FEP
Model No. : RG178
Sample May Cover : Flexible cable series : RG142 RG141 RG400D RG400 RG316 RG316D RG179
RG179D RG145 RF1.37 RF1.13 RF1.32 RF0.81
Semi-flexible cable series : RG141 RG141X RG086 RG086X
Semi-rigid cable series : SFT50-3 SFT50-2 SFT50-1 SFT75-3 SFT75-2
SFT75-1
AF200 wire series : 32AWG 30AWG 28AWG 26AWG 24AWG 22AWG 20AWG
18AWG 16AWG 14AWG 12AWG 10AWG AF250 wire series : 32AWG 30AWG
28AWG 26AWG 24AWG 22AWG 20AWG 18AWG 16AWG 14AWG 12AWG
10AWG
Date of Sample Received : 15 Sep 2011
Testing Period : 15 Sep 2011 - 19 Sep 2011
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.

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Signed for and on behalf of
SGS-CSTC Ltd.



Fan Jingjie, JJ
Approved Signatory

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Test Results :

Test Part Description :

Quantity	Code	Description
1	SHA11-148469.001	Silvery metal wire
2	SHA11-148469.002	grey metal wire
3	SHA11-148469.003	White plastic
4	SHA11-148469.004	Brown plastic

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

Test Method:

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)	Limit	Unit	MDL	003	004
Cadmium (Cd)	100	mg/kg	2	ND	ND
Lead (Pb)	1,000	mg/kg	2	ND	ND
Mercury (Hg)	1,000	mg/kg	2	ND	ND
Hexavalent Chromium (Cr(VI))	1,000	mg/kg	2	ND	ND
Sum of PBBs	1,000	mg/kg	-	ND	ND
Monobromobiphenyl	-	mg/kg	5	ND	ND
Dibromobiphenyl	-	mg/kg	5	ND	ND
Tribromobiphenyl	-	mg/kg	5	ND	ND
Tetrabromobiphenyl	-	mg/kg	5	ND	ND
Pentabromobiphenyl	-	mg/kg	5	ND	ND
Hexabromobiphenyl	-	mg/kg	5	ND	ND
Heptabromobiphenyl	-	mg/kg	5	ND	ND
Octabromobiphenyl	-	mg/kg	5	ND	ND
Nonabromobiphenyl	-	mg/kg	5	ND	ND

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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>	<u>004</u>
Decabromobiphenyl	-	mg/kg	5	ND	ND
Sum of PBDEs	1,000	mg/kg	-	ND	ND
Monobromodiphenyl ether	-	mg/kg	5	ND	ND
Dibromodiphenyl ether	-	mg/kg	5	ND	ND
Tribromodiphenyl ether	-	mg/kg	5	ND	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND	ND
Octabromodiphenyl ether	-	mg/kg	5	ND	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND	ND
Decabromodiphenyl ether	-	mg/kg	5	ND	ND

Notes :

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

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.

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>	<u>002</u>
Cadmium (Cd)	100	mg/kg	2	ND	ND
Lead (Pb)	1,000	mg/kg	2	ND	ND
Mercury (Hg)	1,000	mg/kg	2	ND	ND
Hexavalent Chromium (Cr(VI))	-	-	◇	Negative	Negative

Notes :

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

(2) $\diamond$ 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.

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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

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

Test Item(s)	Unit	MDL	003	004
Fluorine (F)	mg/kg	50	>100000	>100000
Chlorine (Cl)	mg/kg	50	ND	739
Bromine (Br)	mg/kg	50	ND	ND
Iodine (I)	mg/kg	50	ND	ND

Test Method : With reference to ZEK 01.2-08 of German ZLS and its amendments, analysis was performed by GC-MS.

Test Item(s)	Unit	MDL	003	004
Total 8 PAHs	mg/kg	-	ND	ND
Benzo(a)anthracene(BaA)	mg/kg	0.2	ND	ND
Chrysene(CHR)	mg/kg	0.2	ND	ND
Benzo(b)fluoranthene(BbF)	mg/kg	0.4	ND	ND
Benzo(j)fluoranthene(BjF)	mg/kg	0.2	ND	ND
Benzo(k)fluoranthene(BkF)	mg/kg	0.2	ND	ND
Benzo(a)pyrene(BaP)	mg/kg	0.2	ND	ND
Dibenzo(a,h)anthracene(DBA)	mg/kg	0.2	ND	ND
Benzo(e)pyrene(BeP)	mg/kg	0.2	ND	ND

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

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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Perfluorooctane Sulfonates (PFOS) and related Acid,Metal Salt and Amide	1000	mg/kg	10	ND
Perfluorooctanoic Acid (PFOA)	-	mg/kg	10	ND

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>004</u>
Perfluorooctane Sulfonates (PFOS) and related Acid,Metal Salt and Amide	1000	mg/kg	10	ND
Perfluorooctanoic Acid (PFOA)	-	mg/kg	10	ND

Notes :

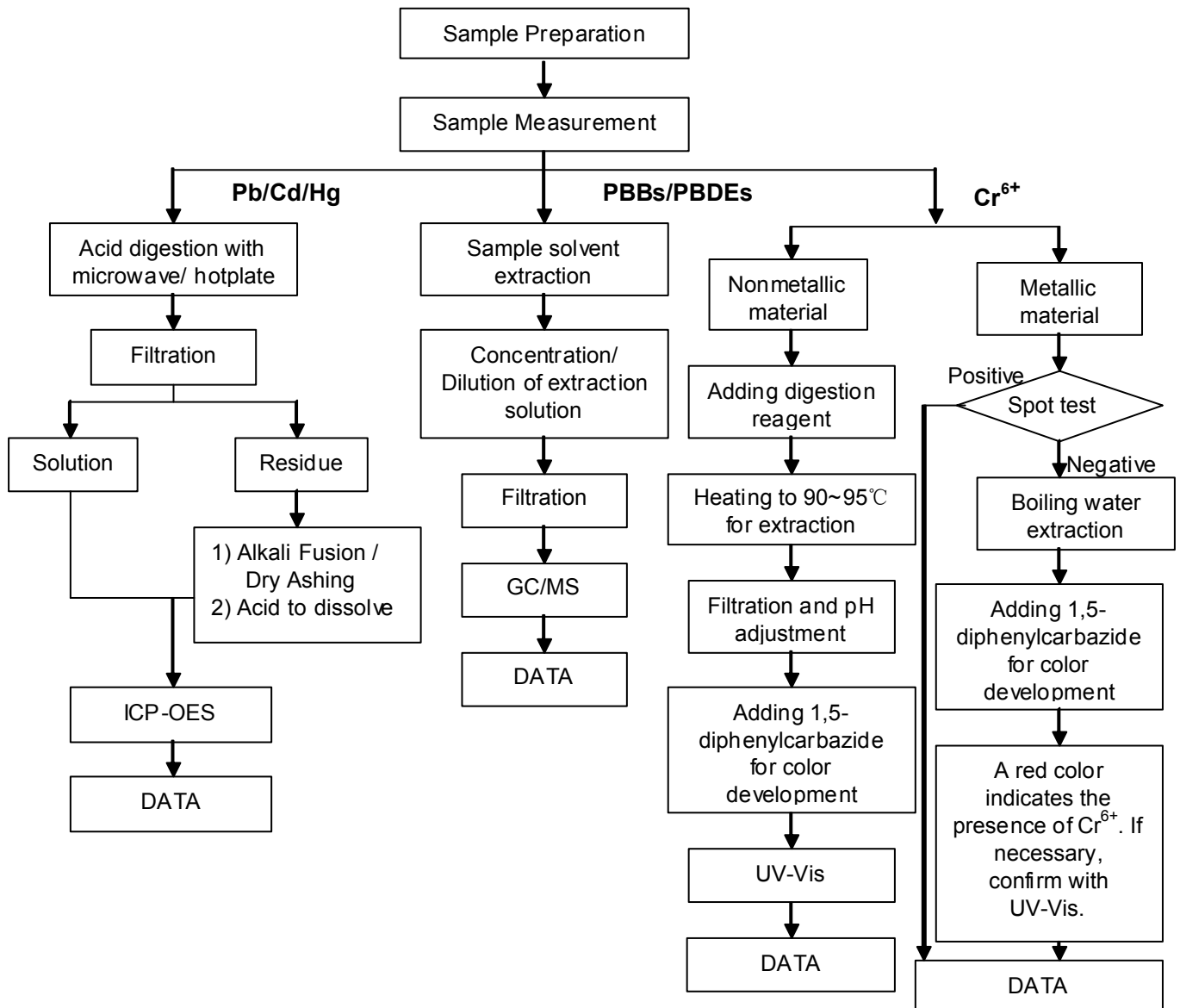
- (1) Max. limit specified by commission regulation (EU) No. 757/2010 (previously restricted under entry 53 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006)

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ATTACHMENT S

RoHS Testing Flow Chart

- 1) Name of the person who made testing: Jan Shi/Yoyo Wang/Allen Xiao/Gary Xu
- 2) Name of the person in charge of testing: Jeff Zhang/George Xu/ Elim Lin
- 3) These samples were dissolved totally by pre -conditioning method according to below flow chart.
(Cr6+ and PBBs/PBDEs test method excluded)

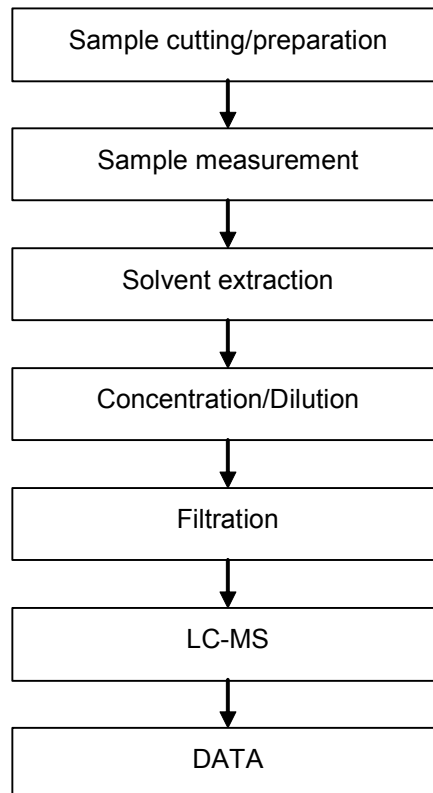


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PFOS/PFOA Testing Flow Chart

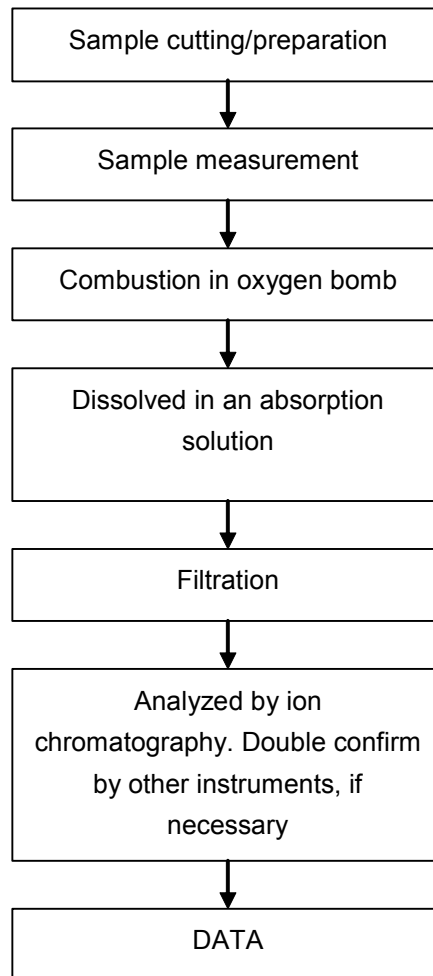
- 1) Name of the person who made testing: Judy Li
- 2) Name of the person in charge of testing: Linda Li



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Halogen Testing Flow Chart

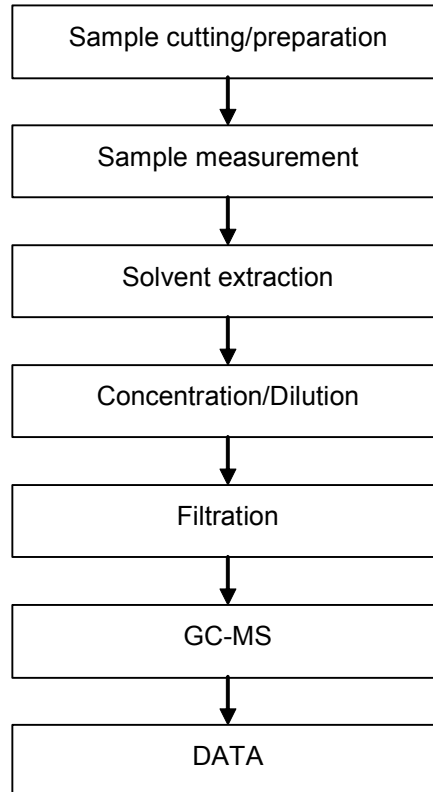
- 1) Name of the person who made testing: Daisy Gong
- 2) Name of the person in charge of testing: Alex Jiang



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PAHs Testing Flow Chart

- 1) Name of the person who made testing: Jessie Huang
- 2) Name of the person in charge of testing: Elim Lin



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Sample photo:



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SHAEC1114846903 A01



SHA11-148469.003

SHAEC1114846903 A01



SHA11-148469.004

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CAREFUL GROUP(HUZHOU FACTORY & JIAXING FACTORY)

HANSHAN INDUSTRIAL AREA,HUZHOU,&HENSHAN INDUSTRY AREA,JIAXING,ZHEJIANG CHINA

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

SGS Job No. : SP11-031484 - SH
 Date of Sample Received : 14 Oct 2011
 Testing Period : 14 Oct 2011 - 18 Oct 2011
 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.



Fan Jingjie, JJ
 Approved Signatory

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Test Results :

Test Part Description :

1 SHA11-164440.001 Grey solid

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated



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.

Test Item(s)	Limit	Unit	MDL	001
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 (Cr(VI))	1,000	mg/kg	2	ND

Notes :

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

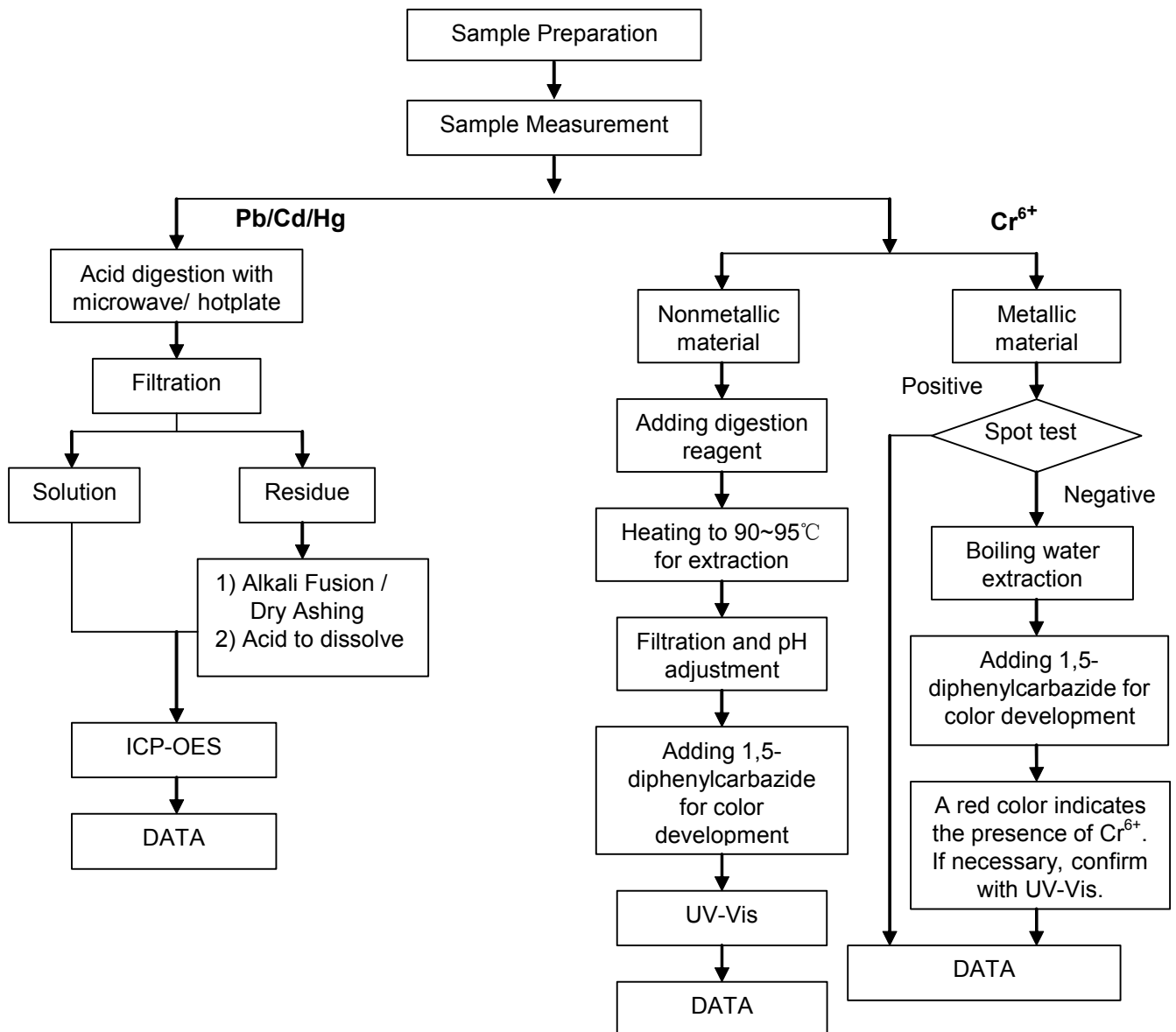


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ATTACHMENTS

RoHS Testing Flow Chart

- 1) Name of the person who made testing: Jan Shi/Yoyo Wang/Allen Xiao
- 2) Name of the person in charge of testing: Jeff Zhang/George Xu
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)



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Test Report

No.: GZ1105059028/CHEM

Date: MAY 18, 2011

Page 1 of 7

SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO., LTD
WOER MANSION, NORTH LANJING ROAD, PINGSHAN, SHENZHEN P.R. CHINA

The following sample(s) was/were submitted and identified on behalf of the applicant as BLACK DUAL WALL HEAT-SHRINKABLE TUBE

SGS Job No. : SZ13124328

SGS Internal Reference No. : 2.1

Date of Sample Received : MAY 12, 2011

Testing Period : MAY 12, 2011 TO MAY 18, 2011

Test Requested : A: Selected test (s) with reference to EU COM(2008) 809/final as requested by client.

C: Selected test (s) as requested by client.

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

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

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

Signed for and on behalf of
SGS-CSTC Ltd.

Manson Yang
Approved Signatory

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Test Report

No.: GZ1105059028/CHEM

Date: MAY 18, 2011

Page 2 of 7

Test Results:

Description for specimen 1 : Black tube

A: RoHS Directive 2002/95/EC

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

Note:

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

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SGS Testing Services Co., Ltd.
Guangzhou Chemical Laboratory

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Test Report

No.: GZ1105059028/CHEM

Date: MAY 18, 2011

Page 3 of 7

B: HBCDD & Phthalate(s)

Test Item(s)	Unit	Test Method (Reference)	Result	MDL
Hexabromocyclododecane (HBCDD)	mg/kg	EPA 3550C: 2007, GC-MS	N.D.	10
Dibutyl Phthalate (DBP)	%(w/w)	EN14372: 2004, GC-MS	N.D.	0.003
Benzylbutyl Phthalate (BBP)	%(w/w)	EN14372: 2004, GC-MS	N.D.	0.003
Di-(2-ethylhexyl) Phthalate (DEHP)	%(w/w)	EN14372: 2004, GC-MS	N.D.	0.003

Note :

1. mg/kg = ppm, 0.1% = 1000ppm
2. N.D. = Not detected (< MDL)
3. MDL= Method Detection Limit

C: Halogen

Test Item(s)	Unit	Test Method (Reference)	No.1	MDL
Fluorine (F)	mg/kg	BS EN 14582:2007, IC	N.D.	50
Chlorine (Cl)	mg/kg	BS EN 14582:2007, IC	N.D.	50
Bromine (Br)	mg/kg	BS EN 14582:2007, IC	N.D.	50
Iodine (I)	mg/kg	BS EN 14582:2007, IC	N.D.	50

Note:

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

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Guangzhou Chemical Laboratory

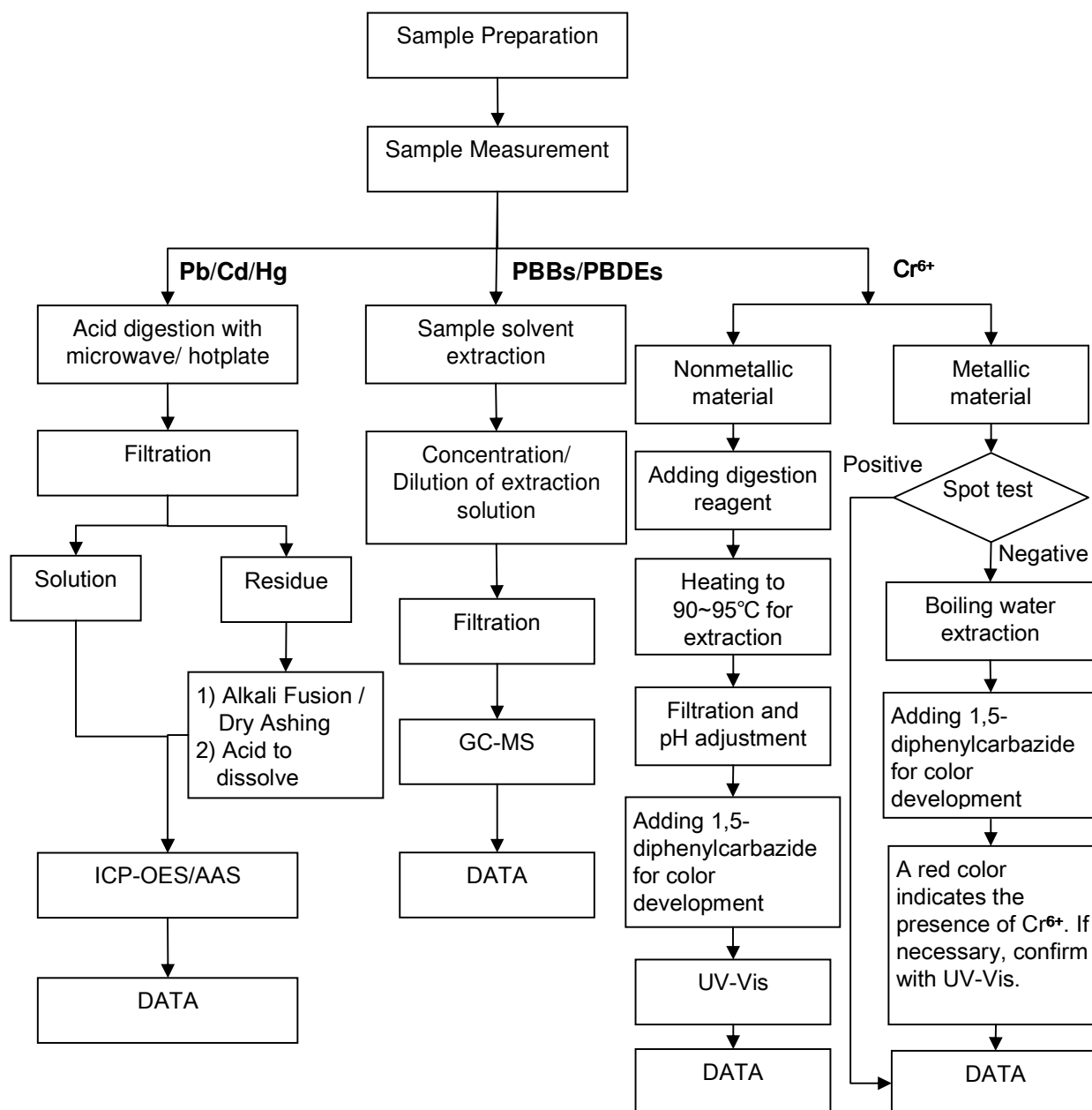
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ATTACHMENTS

RoHS Testing Flow Chart

- 1) Name of the person who made testing: Bella Wang / Cutey Yu / Ross Zhan
- 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 (Cr6+ and PBBs/PBDEs test method excluded).



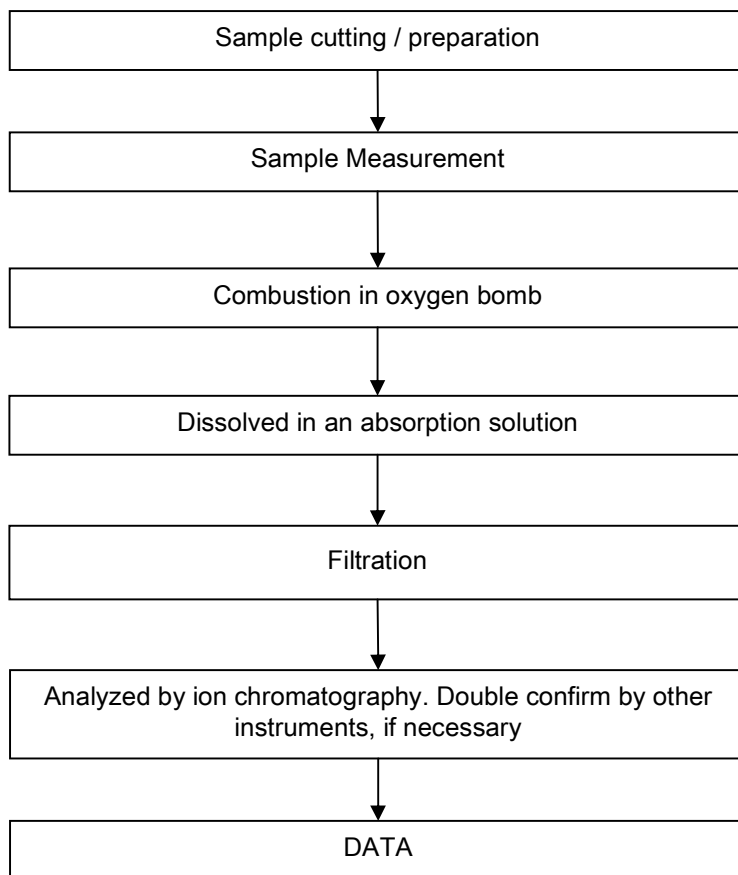
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ATTACHMENTS

Halogen Testing Flow Chart

- 1) Name of the person who made testing: Liang Wang
- 2) Name of the person in charge of testing: Michelle Song



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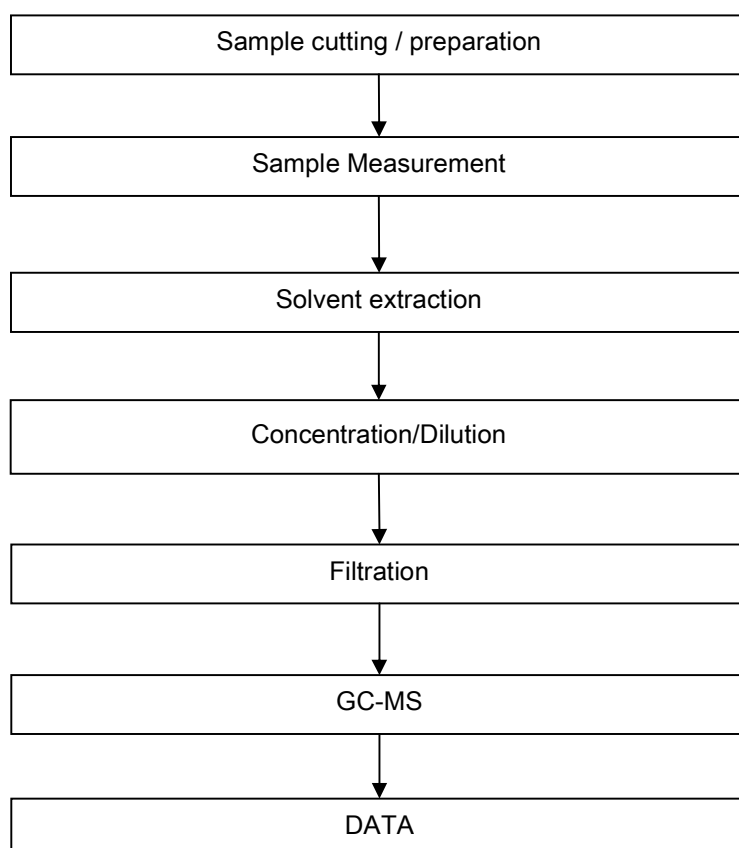
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ATTACHMENTS

Phthalates Testing Flow Chart

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



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Guangzhou Chemical Laboratory

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TEST REPORT

NO.: A001C111221031001-1

Date: Dec 27, 2011

Page 1 of 8

Applicant: GUAN DONG PRECISE (SHENZHEN) CORPORATION

Address: Songgang Town, Baoan District No. 66 Sa Po Road, SHEN ZHEN CITY.GUANG DONG PROVINCE

Report on the submitted sample said to be

Sample name: COPPER PIPE+NICKEL-PLATED

Model: /

Item/Lot No.: /

Material: Copper

Buyer: /

Supplier: /

Manufacturer: /

Sample received date: Dec 21, 2011

Testing period: From Dec 21, 2011 to Dec 27, 2011

Test Requested

As specified by client, based on the list published by European chemicals agency (ECHA) for public consultation regarding regulation (EC) No 1907/2006 concerning the REACH, to determine the seventy-three(73) Substances of Very High Concern (SVHC) content in the submitted sample.

Test Method:

Please refer to next page(s)

Test Instrument:

Please refer to next page(s)

*****FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S)*****

Signed for and on behalf of

Shenzhen AOV Testing Technology Co., Ltd

Prepared by:

Liu Xiao Fang, Fina
Report Clerk

Reviewed by:

Liu Lin Wen, Lewis
Laboratory Supervisor

Approved by:

Lv Jie Hua, Jeewah
Technical Director

SHENZHEN AOV TESTING TECHNOLOGY CO.,LTD

2-6/F, No.5, Yuantou Lane, Tanglang, Taoyuan Street, Nanshan District, Shenzhen, Guangdong, China

Fax : 86-755-8600 8282 Http: //www.aovt.com

(Attention is drawn to the terms and conditions printed overleaf)



Hotline

86-755-8600 8000

TEST REPORT

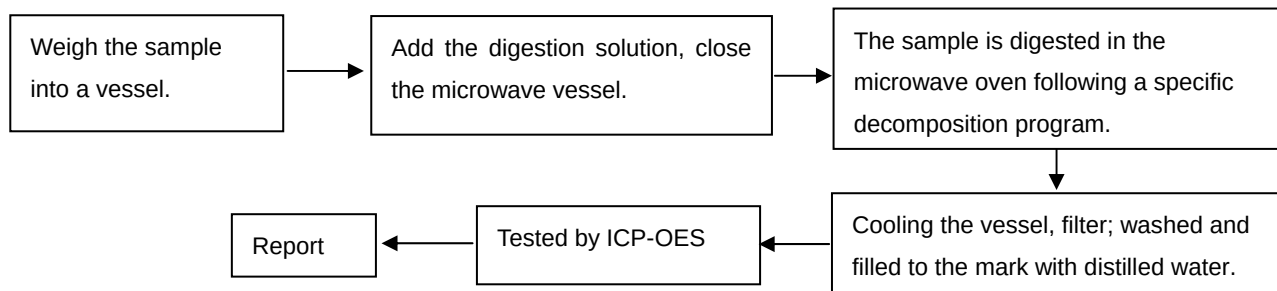
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Date: Dec 27, 2011

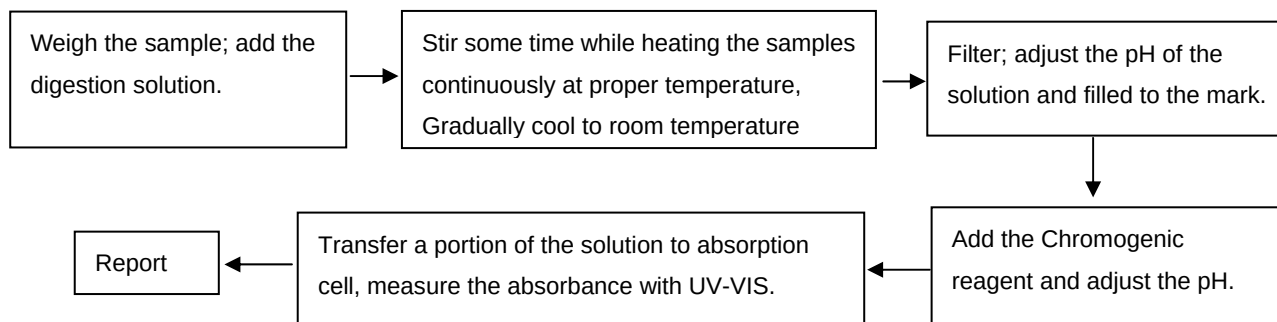
Page 2 of 8

Test Flow:

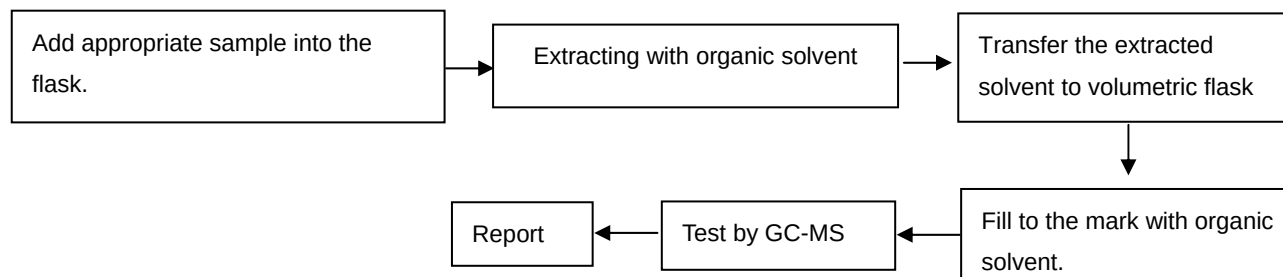
1. To Determine Tin, Lead, Arsenic, Cobalt, Silicon, Aluminum, Zirconium, Molybdenum, Boron, Calcium Content:



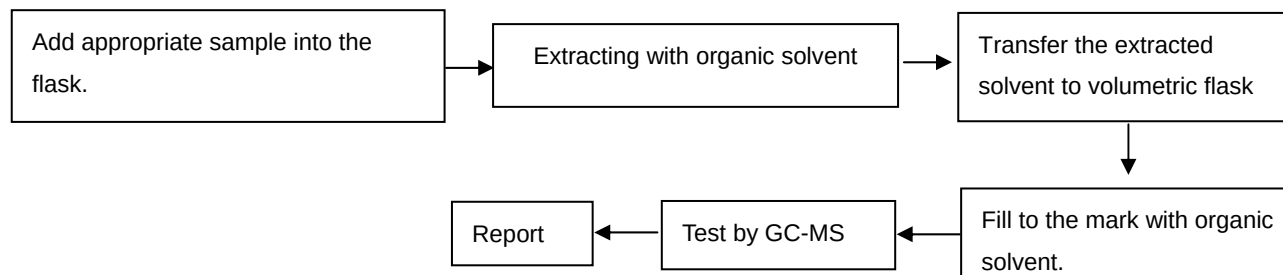
2. To Determine Hexavalent Chromium Content:



3. To Determine Anthracene; Anthracene oil; Anthracene oil, anthracene paste, distn. Lights; Anthracene oil, anthracene paste, anthracene fraction; Anthracene oil, anthracene-low; Anthracene oil, anthracene paste Content:



4. To Determine 4,4'-Diaminodiphenylmethane Content:



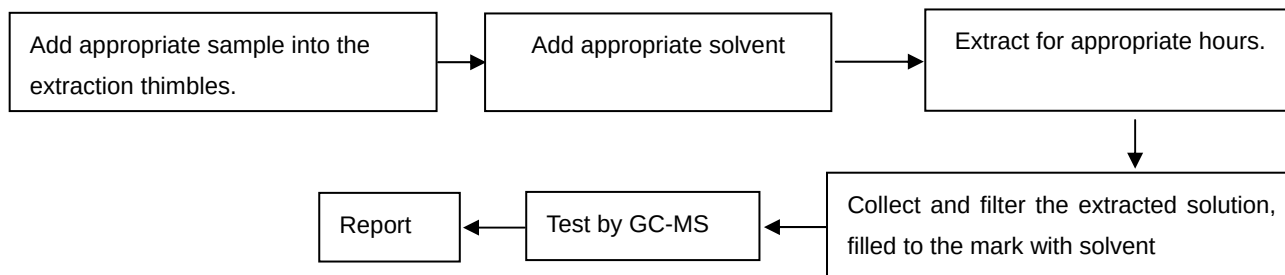
TEST REPORT

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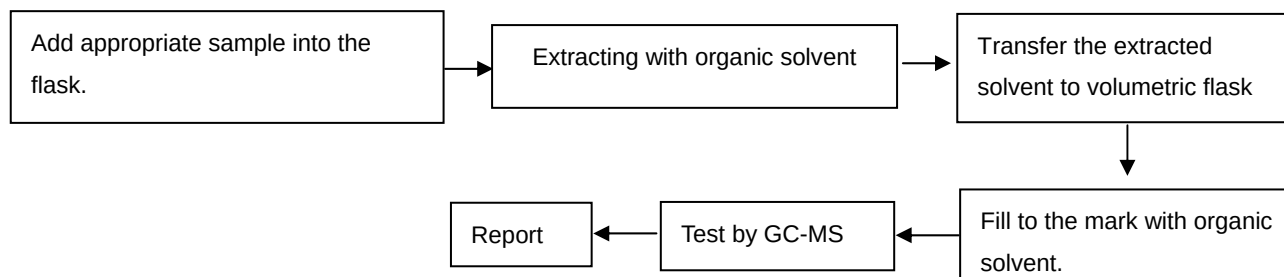
Date: Dec 27, 2011

Page 3 of 8

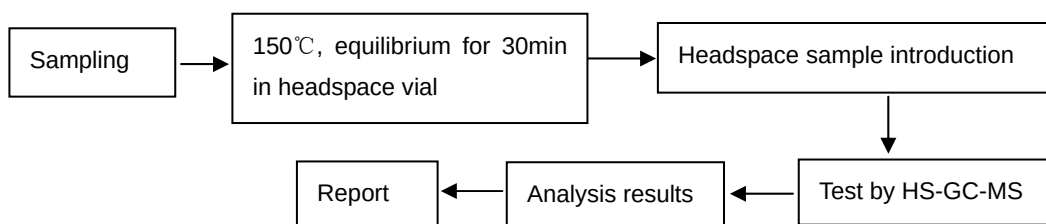
5. To Determine DEHP、DBP、BBP、DIBP、DHNUP、DIHP、DMEP Content:



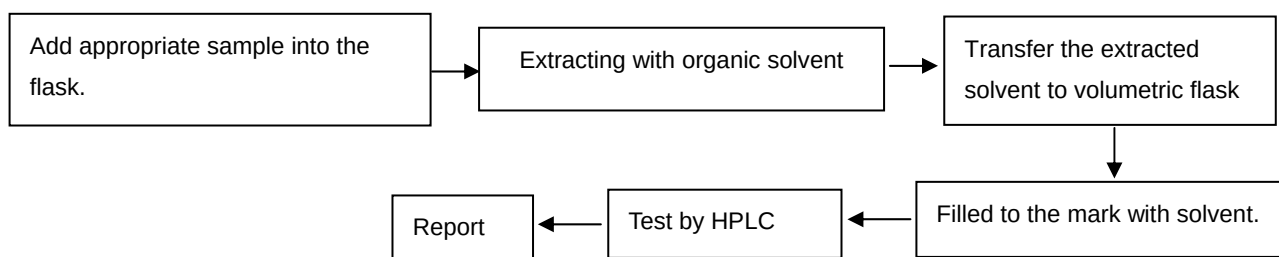
6. To Determine Short-chain chlorinated paraffins, HBCDD, musk xylene, Acrylamide, 2,4-Dinitrotoluene, tris(2-chloroethyl)phosphate, Trichloroethylene, 2-ethoxyethyl acetate, 1-methyl-2-pyrrolidone, 1,2,3-trichloropropane, 2-Methoxyaniline; o-Anisidine, N,N-dimethylacetamide, 2,2'-dichloro-4,4'-methylenedianiline Content:



7. To Determine 2-Methoxyethanol、2-Ethoxyethanol, Hydrazine Content:



8. To Determine Formaldehyde, oligomeric reaction products with aniline (technical MDA)、4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol), Phenolphthalein, Lead azide Lead diazide, Lead styphnate, Lead dipicrate Content:



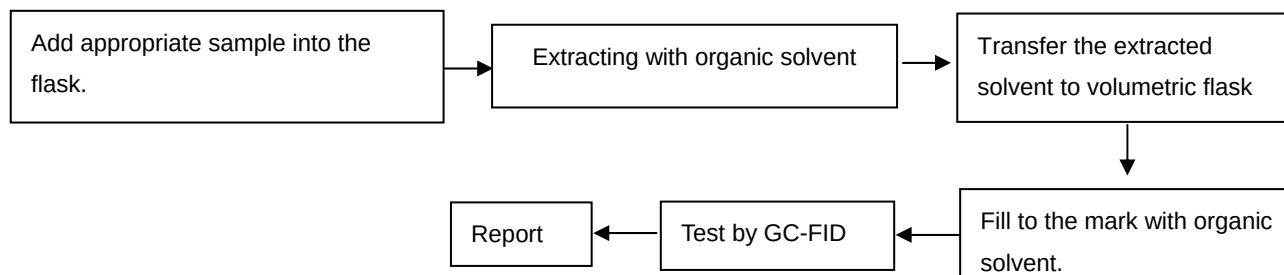
TEST REPORT

NO.: A001C111221031001-1

Date: Dec 27, 2011

Page 4 of 8

9. To Determine 1,2-Dichloroethane、Bis(2-methoxyethyl) ether Content:



Test Results:

Code	Test Item	CAS No.	EC No.	Pretreatment Method /Measuring Instrument	Unit	MDL	Result
							A
1	Bis(tributyltin)oxide**	56-35-9	200-268-0	EPA 3052, ICP-OES	mg/kg	5	N.D.
2	Diarsenic pentaoxide**	1303-28-2	215-116-9		mg/kg	5	N.D.
3	Diarsenic trioxide**	1327-53-3	215-481-4		mg/kg	5	N.D.
4	Triethyl arsenate**	15606-95-8	427-700-2		mg/kg	5	N.D.
5	Lead hydrogen arsenate**	7784-40-9	232-064-2		mg/kg	5	N.D.
6	Cobalt dichloride**	7646-79-9	231-589-4	EPA 3052, ICP-OES	mg/kg	5	N.D.
7	Sodium dichromate **	7789-12-0, 10588-01-9	234-190-3	IEC 62321, Annex B or Annex C, UV-VIS	mg/kg	2	N.D.
8	Anthracene	120-12-7	204-371-1	ZEK 01.2-08, GC-MS	mg/kg	0.2	N.D.
9	4,4'-Diaminodiphenylmethane	101-77-9	202-974-4	EPA 3540C, GC-MS	mg/kg	5	N.D.
10	Dibutyl phthalate(DBP)	84-74-2	201-557-4	EPA 3540C, GC-MS	mg/kg	30	N.D.
11	Benzyl butyl phthalate (BBP)	85-68-7	201-622-7	EPA 3540C, GC-MS	mg/kg	30	N.D.
12	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	201-329-4	EPA 3540C, GC-MS	mg/kg	5	N.D.
13	Bis(2-ethyl(hexyl)phthalate) (DEHP)	117-81-7	204-211-0	EPA 3540C, GC-MS	mg/kg	30	N.D.
14	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified	25637-99-4 and 3194-55 -6(134237-5 0-6,134237- 51-7,134237 -52-8)	247-148-4, 221-695-9	EPA 3540C, GC-MS	mg/kg	50	N.D.
15	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	287-476-5	EPA 3540C, GC-MS	mg/kg	50	N.D.



TEST REPORT

NO.: A001C111221031001-1

Date: Dec 27, 2011

Page 5 of 8

Code	Test Item	CAS No.	EC No.	Pretreatment Method /Measuring Instrument	Unit	MDL	Result
							A
16	Anthracene oil	90640-80-5	292-602-7	ZEK 01.2-08, GC-MS	mg/kg	0.2	N.D.
17	Anthracene oil, anthracene paste, distn. lights	91995-17-4	295-278-5		mg/kg	0.2	N.D.
18	Anthracene oil, anthracene paste, anthracene fraction	91995-15-2	295-275-9		mg/kg	0.2	N.D.
19	Anthracene oil, anthracene-low	90640-82-7	292-604-8	ZEK 01.2-08, GC-MS	mg/kg	0.2	N.D.
20	Anthracene oil, anthracene paste	90640-81-6	292-603-2		mg/kg	0.2	N.D.
21	Pitch, coal tar, high temp.	65996-93-2	266-028-2	Distilment	mg/kg	/	N.D.
22	Acrylamide	79-06-1	201-173-7	EPA 3550C, GC-MS	mg/kg	50	N.D.
23	Aluminosilicate Refractory Ceramic Fibres **	--	--	EPA 3052, ICP-OES	mg/kg	5	N.D.
24	Zirconia Aluminosilicate, Refractory Ceramic Fibres **	--	--		mg/kg	5	N.D.
25	2,4-Dinitrotoluene	121-14-2	204-450-0	EPA 3540C, GC-MS	mg/kg	10	N.D.
26	Diisobutyl phthalate (DIBP)	84-69-5	201-553-2	EPA 3540C, GC-MS	mg/kg	30	N.D.
27	Lead chromate**	7758-97-6	231-846-0	EPA 3052, ICP-OES	mg/kg	5	N.D.
28	Lead chromate molybdate sulphate red (C.I. Pigment Red 104) **	12656-85-8	235-759-9		mg/kg	5	N.D.
29	Lead sulfochromate yellow (C.I. Pigment Yellow 34) **	1344-37-2	215-693-7		mg/kg	5	N.D.
30	tris(2-chloroethyl)phosphate	115-96-8	204-118-5	EPA 3540C, GC-MS	mg/kg	10	N.D.
31	Trichloroethylene	79-01-6	201-167-4	EPA 3540C, GC-MS	mg/kg	50	N.D.
32	Boric acid**	10043-35-3/ 11113-50-1	233-139-2 / 234-343-4	EPA 3052, ICP-OES	mg/kg	5	N.D.
33	Disodium tetraborate, anhydrous**	1330-43-4/ 12179-04-3/ 1303-96-4	215-540-4		mg/kg	5	N.D.
34	Tetraboron disodium heptaoxide, hydrate**	12267-73-1	235-541-3	EPA 3052, ICP-OES	mg/kg	5	N.D.



TEST REPORT

NO.: A001C111221031001-1

Date: Dec 27, 2011

Page 6 of 8

Code	Test Item		CAS No.	EC No.	Pretreatment Method /Measuring Instrument	Unit	MDL	Result
								A
35	Sodium chromate**		7775-11-3	231-889-5	IEC 62321, Annex B or Annex C, UV-VIS	mg/kg	2	N.D.
36	Potassium chromate**		7789-00-6	232-140-5		mg/kg	2	N.D.
37	Ammonium dichromate**		7789-09-5	232-143-1		mg/kg	2	N.D.
38	Potassium dichromate**		7778-50-9	231-906-6		mg/kg	2	N.D.
39	Cobalt(II) sulphate**		10124-43-3	233-334-2	EPA 3052, ICP-OES	mg/kg	5	N.D.
40	Cobalt(II) dinitrate**		10141-05-6	233-402-1		mg/kg	5	N.D.
41	Cobalt(II) carbonate**		513-79-1	208-169-4		mg/kg	5	N.D.
42	Cobalt(II) diacetate**		71-48-7	200-755-8		mg/kg	5	N.D.
43	2-Methoxyethanol		109-86-4	203-713-7	EPA 8260C, HS-GC-MS	mg/kg	5	N.D.
44	2-Ethoxyethanol		110-80-5	203-804-1		mg/kg	5	N.D.
45	Chromium trioxide**		1333-82-0	215-607-8	IEC 62321, Annex B or Annex C, UV-VIS	mg/kg	2	N.D.
46	Acids generated from chromium trioxide and their oligomers	Chromic acid**	7738-94-5	231-801-5	IEC 62321, Annex B or Annex C, UV-VIS	mg/kg	2	N.D.
		Dichromic acid**	13530-68-2	236-881-5		mg/kg	2	N.D.
		Oligomers of chromic acid and dichromic acid**	--	--		mg/kg	2	N.D.
47	2-ethoxyethyl acetate		111-15-9	203-839-2	EPA 3540C, GC-MS	mg/kg	5	N.D.
48	Strontium chromate**		7789-6-2	232-142-6	IEC 62321, Annex B or Annex C, UV-VIS	mg/kg	2	N.D.
49	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters(DHNUP)*		68515-42-4	271-084-6	EPA 3540C, GC-MS	mg/kg	50	N.D.
50	Hydrazine		7803-57-8 302-01-2	206-114-9	EPA 8260C, HS-GC-MS	mg/kg	5	N.D.
51	1-methyl-2-pyrrolidone		872-50-4	212-828-1	EPA 3540C, GC-MS	mg/kg	5	N.D.
52	1,2,3-trichloropropane		96-18-4	202-486-1	EPA 3540C, GC-MS	mg/kg	5	N.D.
53	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters,C7-rich(DIHP)*		71888-89-6	276-158-1	EPA 3540C, GC-MS	mg/kg	50	N.D.



TEST REPORT

NO.: A001C111221031001-1

Date: Dec 27, 2011

Page 7 of 8

Code	Test Item	CAS No.	EC No.	Pretreatment Method /Measuring Instrument	Unit	MDL	Result
							A
54	Dichromium tris(chromate)**	24613-89-6	246-356-2	IEC 62321, Annex B or Annex C, UV-VIS	mg/kg	2	N.D.
55	Potassium hydroxyoctaoxodizincatedi-chroma te**	11103-86-9	234-329-8		mg/kg	2	N.D.
56	Pentazinc chromate octahydroxide**	49663-84-5	256-418-0		mg/kg	2	N.D.
57	Aluminosilicate Refractory Ceramic Fibres (RCF)**	-	-	EPA 3052, ICP-OES	mg/kg	5	N.D.
58	Zirconia Aluminosilicate Refractory Ceramic Fibres (Zr-RCF)**	-	-		mg/kg	5	N.D.
59	Formaldehyde, oligomeric reaction products with aniline (technical MDA)	25214-70-4	500-036-1	EPA 3540C, HPLC	mg/kg	10	N.D.
60	Bis(2-methoxyethyl) phthalate (DMEP)	117-82-8	204-212-6	EPA 3540C, GC-MS	mg/kg	30	N.D.
61	2-Methoxyaniline; o-Anisidine	90-04-0	201-963-1	EPA 3540C, GC-MS	mg/kg	10	N.D.
62	4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol)	140-66-9	205-426-2	EPA 3540C, HPLC	mg/kg	5	N.D.
63	1,2-Dichloroethane	107-06-2	203-458-1	GB 18583-2008 Annex E, GC-FID	mg/kg	10	N.D.
64	Bis(2-methoxyethyl) ether	111-96-6	203-924-4	GB 18582-2008 Annex A, GC-FID	mg/kg	5	N.D.
65	Arsenic acid**	7778-39-4	231-901-9	EPA 3052, ICP-OES	mg/kg	5	N.D.
66	Calcium arsenate**	7778-44-1	231-904-5		mg/kg	5	N.D.
67	Trilead diarsenate**	3687-31-8	222-979-5		mg/kg	5	N.D.
68	N,N-dimethylacetamide (DMAC)	127-19-5	204-826-4	EPA 3540C, GC-MS	mg/kg	10	N.D.
69	2,2'-dichloro-4,4'-methylenedianilin e (MOCA)	101-14-4	202-918-9	EPA 3540C, GC-MS	mg/kg	10	N.D.
70	Phenolphthalein	77-09-8	201-004-7	EPA 3540C, HPLC	mg/kg	10	N.D.
71	Lead azide Lead diazide	13424-46-9	236-542-1	EPA 3540C, HPLC	mg/kg	10	N.D.
72	Lead styphnate	15245-44-0	239-290-0	EPA 3540C, HPLC	mg/kg	10	N.D.
73	Lead dipicrate	6477-64-1	229-335-2	EPA 3540C, HPLC	mg/kg	10	N.D.

TEST REPORT

NO.: A001C111221031001-1

Date: Dec 27, 2011

Page 8 of 8

Specimen Description:

A: COPPER PIPE+NICKEL-PLATED(integrated test)

Note:

- mg/kg =ppm= 10^{-6}
- N.D.= not detected(<MDL)
- MDL=Method Detection Limit
- *The detected DHNUP were the other phthalates of DHNUP except DEHP、DNOP、DIDP、DINP.
- *The detected DIHP were the other phthalates of DIHP except DEHP.
- **The substance is calculated by using the test results of element (Ex. Tin, Arsenic, Lead, Cobalt or Cr (VI), Molybdenum, Aluminum, Silicon, Zirconium, Boron, Calcium respectively). If the sample contains total Cobalt, it needs further test the Chlorine content to make sure whether it includes Cobalt dichloride or not.
- The SVHC concentration is based on the assessment of the testing results, the characteristic of the material and the characteristic of the SVHC.
- Photo is included

Photograph of Sample



A001C111221031001

COPPER PIPE+NICKEL-PLATED

End of Report